

THE
ALPINE JOURNAL:

A RECORD OF MOUNTAIN ADVENTURE

AND

SCIENTIFIC OBSERVATION

BY MEMBERS OF THE ALPINE CLUB

VOL. XXVI.

FEBRUARY 1912 TO NOVEMBER 1912

(Nos. 195-198)

EDITED BY GEORGE YELD

LONGMANS, GREEN, AND CO.

89 PATERNOSTER ROW, LONDON,
NEW YORK, BOMBAY, AND CALCUTTA.

1912.

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vol. 26

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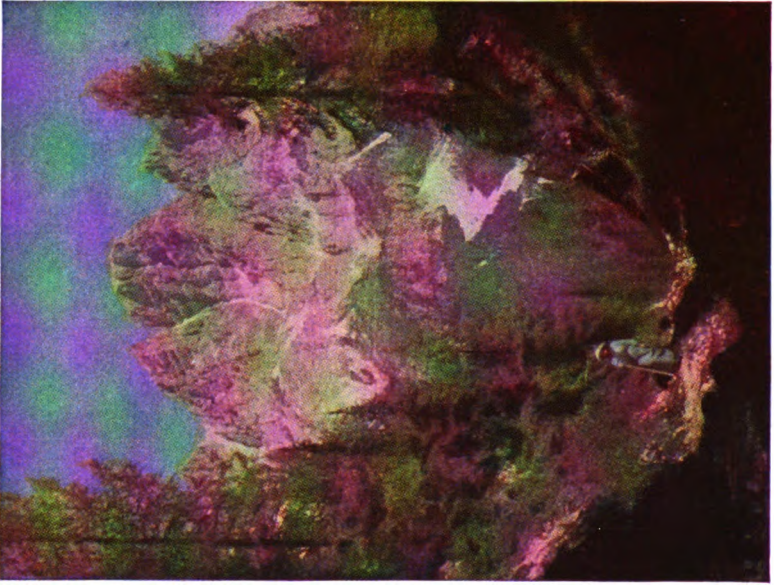
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W. Inglis Clark.

MONTE CRISTALLO.
(From Crepedel.)



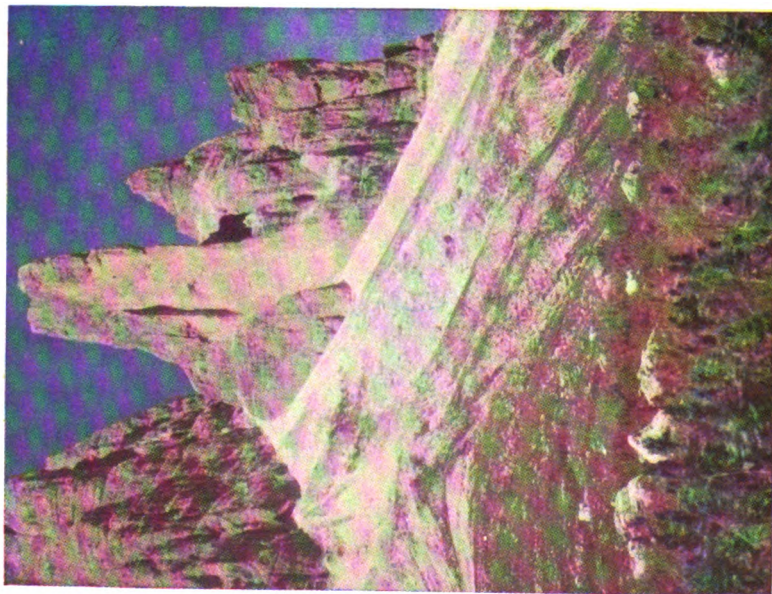
W. Inglis Clark.

MONTE CRISTALLO.
Snapshot in the hand.)



W. Inglis Clark.

THE ALTO NUVOLAU.
(Sunrise.)



THE KLINE ZINNE.

THE ALPINE JOURNAL.

FEBRUARY 1912.

(No. 195.)

COLOUR PHOTOGRAPHY FOR MOUNTAINEERS.

By DR. INGLIS CLARK.

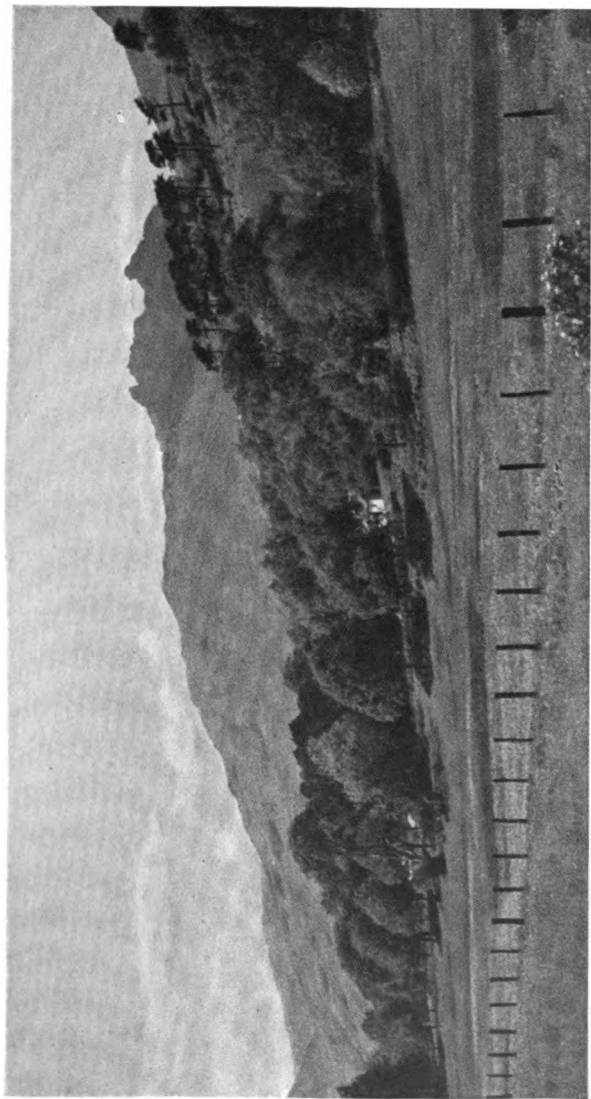
(Read before the Alpine Club, February 7, 1911.)

WHEN I had the honour of lecturing before the Alpine Club on February 7, 1911, this subject was interwoven with some experiences in the mountains of Tirol, and the illustrations which accompany this might therefore properly have appeared along with the paper in the last number of the Journal. The Editor however considered that, as the illustrations in colour had no special reference to the climbs under question, it would be better to issue them separately accompanied by an explanatory paper dealing essentially with colour photography.

Two years ago I wrote a paper for the 'Scottish Mountaineering Club Journal' on this very subject, and a glance at that paper and the illustrations therein will show that, while my method of working and the process generally has not greatly advanced, the reproduction of autochromes (colour positives) has made marked advance. The time has now arrived when it is open to suggest that illustrations in colour of mountain scenery will, as a rule, be much more true and valuable than any merely black and white photograph. As however the majority of climbers still have the impression that photography in colours is an intricate and difficult matter, I shall endeavour to disabuse their minds of any such idea.

In what respects then does photography in natural colours
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differ from ordinary photography? In the ordinary variety a negative is made, and from this prints or lantern slides can be obtained. In colour photography, as a rule, no negative is obtained, but only a glass positive, and it is impossible to print direct on to paper. It is however not the case that one cannot copy the original positive, for it can be duplicated and the resulting lantern slides in colour are practically as good as the original and sometimes better. The colour positive can also be reproduced by commercial processes (see illustrations herewith). The necessary requirements are:—an ordinary camera, a dark slide—a colour filter—a good lens—the colour plates. Beginning with the colour plates: these are purchasable at 2s. 6d. for a box of four (lantern size) as supplied by Lumiere. In using them, place them with the *glass* side towards the lens, in a dark slide, having previously inserted a black card (supplied by makers) in contact with the film side. A colour filter (price about 7s. 6d.) is attached to the inner side of the lens, and the photograph taken in the ordinary way. It will be noticed that the *plate* is reversed, and the colour filter is to be on the *inside* of lens. This is in order that the light may pass through the glass before reaching the sensitive emulsion, and that the focus may still be accurate. If focussing is done by scale, the result will be right. If by focussing screen, the colour filter must be applied to the lens after focussing. So far then no greater difficulty exists in Colour than in Plain Photography, and if a camera stand is used and a time exposure, the two processes are on a level. The *time of exposure* is the first difficulty. With ordinary plates, a skilful photographer can get good results even with very varied exposures, but with colour plates exposure must be fairly accurate. I do not propose here to enter into details, but there are one or two maxims which, when applied with brains, enable one to meet nearly all conditions. The first is—when possible, only take photographs in sunshine. Only unsatisfactory pictures are possible in dull light. Exceptions are portraits, flowers and the like. Give an exposure of two to three seconds at stop f8, from April to August in bright sunshine—morning and evening being longer. Any experienced photographer knows how to use a meter, and with this the corresponding exposure at other times is easily got. Snapshots are only possible with a lens of wide aperture, and I find the Glaukar lens f3:1 suitable for this purpose. Very rapid exposures are impossible, but one may count on $\frac{1}{2}$ sec. at f3 as possible in sunshine and for distant views.



W. Inglis Clark.

THE COBLER—ARROCHAR.

Great Ing. Co.

The after-treatment of the plates is exceedingly simple. Develop in Rodinal (strength 1 in 10 or weaker) till all parts are at least grey. Rinse. Place in Permanganate of Potash and Sulphuric Acid (instructions in box) for three minutes. Rinse. Expose to light and redevelop. Rinse. Place in very dilute Permanganate and Acid for 20 seconds. Rinse and dry. The whole operation fully described ('S.M.C. Journal') in books is complete in 10 minutes, and varnishing and mounting give a slide ready for the lantern.

A glance at the colour illustrations will show the manifold advantages of this process. The pictures selected are just an average of those (180 in number) exhibited before the Alpine Club, and, although the reproductions are of great excellence, they give but a faint idea of the sparkling brilliance of the originals.

Rendering of Rocks.—All mountaineers know that one of the charms of mountain scenery lies in the exquisite and varied colouring of the rocks. Thus the rocks of Skye are brown-blue, taking on blue shades, the rocks of the Dolomite range from ashy white, through golden yellow, to red, or blue; while in Red Sandstone districts the colour is a leading feature. But when one speaks of colour, we mean the colour in white light, or average colour, say about mid-day. But what of sunrise and sunset or of lurid light? The colour of the rocks varies from hour to hour in sunshine and shadow, and according to the angle of the sun. The two illustrations, 'Sunrise on the Alto Nuvolau' and 'The Kleine Zinne,' well show this. In the former the sun's rays coming horizontally through a stratum of cold moist air light up the otherwise yellow rocks, and the peak stands out in dazzling red against the black rock behind still in shadow. Below, where a reflected light illuminates the foreground, we can see that the natural colour (yellow-white) is completely overcome by reflection from the dark blue sky and the ruddy rocks above. The picture is one of an exquisite character, but familiar to the mountaineer.

The Kleine Zinne again, illustrates mid-day. Had it been otherwise, the effect would have been more charming, for the ghastly appearance of the peak hardly commends itself, yet it is true. If one looks at the rocks of the Grosse Zinne to the left, it will be seen that, though of essentially the same colour as those to the right, the angle of the sun being different has imbued them with a richness of colour which gratifies the eye much more than do the brilliant rocks of the Kleine

Zinne. The foreground is worth attention. In a black and white photograph this would have appeared to be barren screes, but even in the distance the faint greens and browns lead the eye down to the immediate foreground where the Alpine larkspurs form a garden in the front.

The two pictures of Cristallo illustrate two difficult types of subject. *Cristallo from Crepedel* is avowedly a difficult subject. The time is nearly mid-day and the heavy shadows in the foreground must still have colour, while the distant illuminated peak has but little chance to appear other than white. Yet close examination shows every variety of hue in the distant rocks, and even the heavy shadows below the trees, though degraded in reproduction, distinctly indicate the nature of the ground.

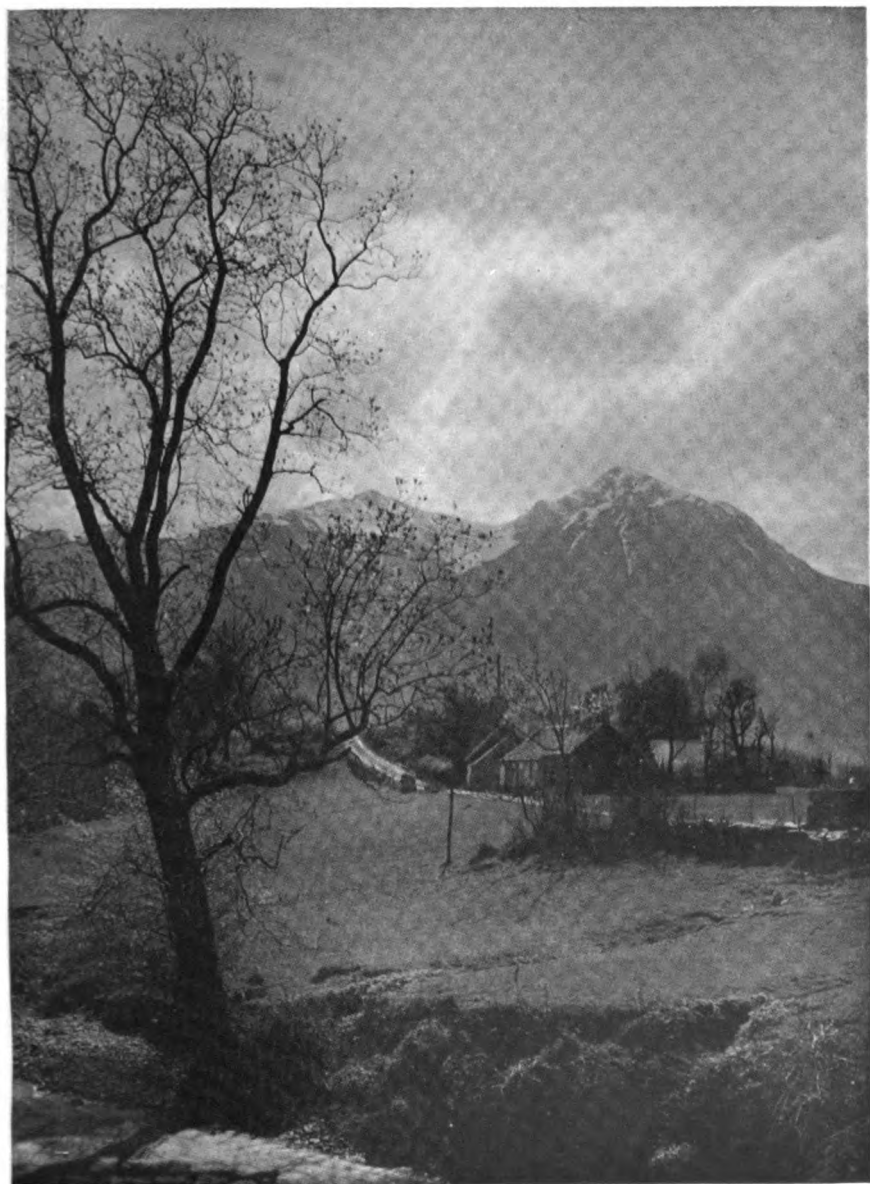
The Snapshot of Cristallo was taken from the motor-car on the road near Landro. Photography is strictly forbidden now (for military reasons), and an attempt to take the scene from the hotel verandah was promptly stopped by the landlady, who threatened two months' imprisonment if I persisted. In this dilemma I ventured to take a snapshot from the motor-car, as we drove past, and I think the success of the venture will be conceded. The deep blue shadows of early morning are well reproduced and the picture stands out in vivid reality.

The two Scottish scenes deal more with the rendering of greens.

The Cobbler has a foreground of complicated grass and wild flowers, a middle distance of early summer oaks and other trees, and the blue-green Scotch firs form a foil to the mountain distance of the peak. The amount of atmosphere is evident and the 'Cobbler' regards the scene from an evident distance.

The mountains of Glencoe in hazy shadow sink into the background, while interest centres on the clachan of Glencoe, the reputed scene of the historical massacre.

I feel that in a hurried sketch like this I can have done but very scant justice to this very interesting subject, but I trust enough will have been said to act as a sort of guide to the illustrations themselves and to induce others not only to produce photographs in natural colours but to utilise them in illustrating papers on mountaineering subjects.



Grout Eng. Co.

W. Inglis Clark.

THE MOUNTAINS OF GLENCOE.

ON THE CANADIAN ROCKY MOUNTAINS NORTH OF
THE YELLOW HEAD PASS.

BY J. NORMAN COLLIE.

(Read before the Alpine Club, December 10, 1911.)

DURING the last twenty-five years the Rocky Mountains in Canada have become accessible to the ordinary traveller, owing to the fact that railways have been built both on their eastern and western sides. The history of this 'Great Lone Land' before that time is practically the history of the fur trade; though after 1858 the prospector wandered through many of the valleys leading up to the main chain of the Rocky Mountains, but he has left but little information of the country. Even at the present day most of the land lying within twenty miles of the watershed is almost unknown. No one lives there, and Indians seldom penetrate into these mountain fastnesses; the land is deserted.

The first man to cross the Canadian Rockies was Sir Alexander Mackenzie, in 1793; he made use of the passes at the head-waters of the Peace River. Much knowledge can also be obtained about this country from the diaries of Alexander Henry, a hunter of the North-West Company from 1799-1814. David Thomson, official geographer of the same company, also collected an immense amount of information about the same districts. He discovered the Columbia River's source and crossed the mountains by more than one pass; his greatest achievement was a 'Map of the N.W. Territory of the Province of Canada.' In 1809 Simon Fraser and Jules Quesnel explored the Fraser River to its mouth. Much also can be found about the mountains in Alexander Ross's book, 'The Fur-hunters of the Far West.'

Up to 1858 this part of Canada belonged to the Hudson Bay Company, and, together with the North-West Company, they built forts in various parts of the mountains, where the fur could be collected. But in 1858 British Columbia became a Crown Colony, and the land was thrown open to the miner and the settler as well as the hunter. A great influx of miners in 1858 took place into the Cariboo district in northern British Columbia. A few, it is true, crossed the Rocky Mountains

from the E., but the majority came from California and the western States up the Pacific coast.

About this time, 1857, Captain Palliser was sent out by the English Government to explore all the country lying between the northern branch of the Saskatchewan and the frontier of the United States, and between the Red River and the Rocky Mountains, and to find if there were any practical passes available for horses across the mountains to British Columbia. Dr. Hector, who was with the expedition, made many journeys into the mountains, and the accounts that he has left in 'Palliser's Journals' are the most important we possess of the Canadian Rockies in those days.

In 1871 British Columbia entered the Dominion of Canada, and at once a survey was started for a trans-continental railway. The valleys into the mountains were explored in every direction, and no less than eleven different passes were actually surveyed, from the Peace River in the N. to the Crow's Nest Pass in the S. In 1886 the Canadian Pacific trans-continental railway was opened. But little advantage was taken of the opportunities offered, as far as mountain exploration was concerned.

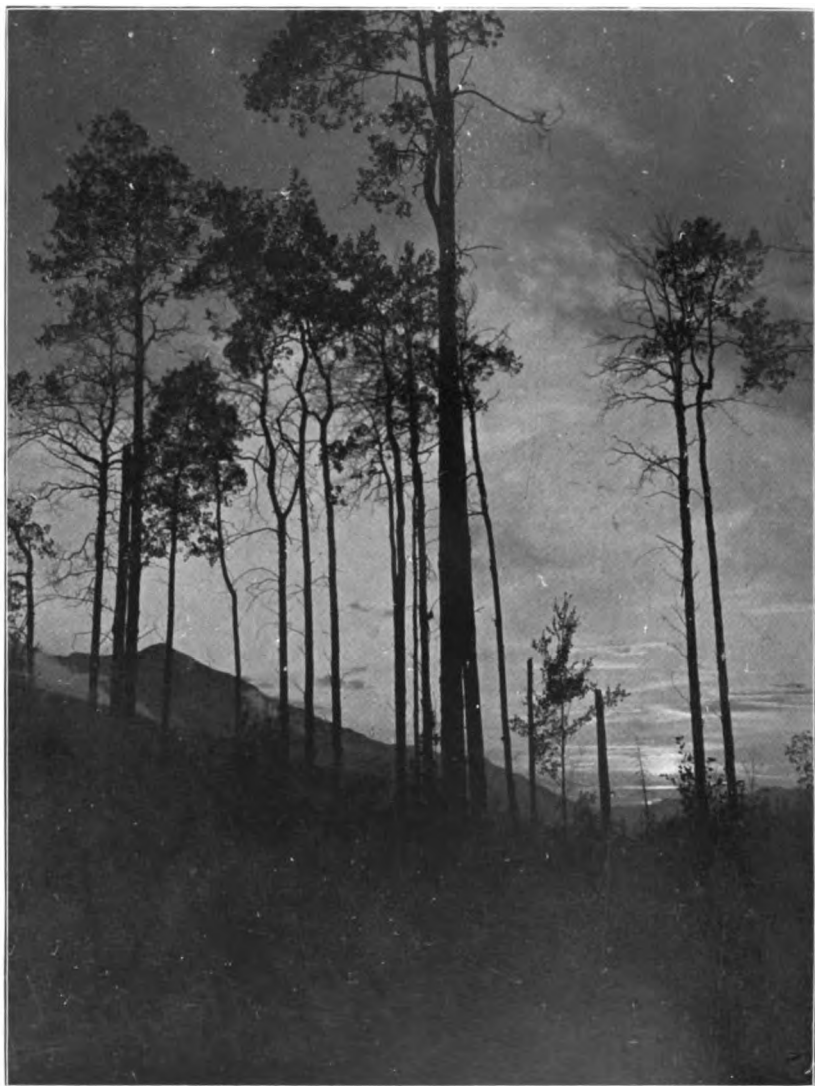
Dr. Dawson, the head of the Canadian Survey, it is true, published a very full report on the physical and geographical portion of the Rocky Mountains between latitudes 49° and $51^{\circ} 30''$ (1886).

Mr. R. G. M'Connell, in 1886, made a detailed examination of the Bow River Pass and the vicinity; and in 1898 Mr. McEvoy surveyed the Yellow Head Pass and measured the height of Mt. Robson, 13,700 ft.

The pioneer of the mountaineers was Professor Coleman, of Toronto; he first visited the Canadian Rockies in 1884 and climbed Castle Mountain in the Bow Valley. Since then, for a quarter of a century, he has been climbing and exploring; he has covered an immense amount of country, and has recently published an account of it in a most delightful book, 'The Canadian Rockies.'

It is true however that the first account of an ascent in the Canadian Rockies was many years before. David Douglas, the naturalist, on May 1, 1827, ascended Mt. Brown on the Athabasca Pass; he believed that the height he had attained was between 16,000-17,000 ft.; but Professor Coleman, in 1892, proved that the true height of Mt. Brown was only a little over 9000 ft.

From 1887-1897 a few of the peaks near the Canadian Pacific



Dr. J. Norman Collie. photo.

Swan Electric Engraving Co., Ltd

SUNSET ON THE YELLOW HEAD PASS.

railway were climbed. Wilcox had discovered Mt. Assiniboine, and the Appalachian Club of Boston had done good work amongst the mountains near the railway.

But there were still hundreds of miles of the Canadian Rockies that were marked on the map like a long centipede practically unexplored. Few people appreciate the enormous area in Canada that at the present day is unknown. Only twenty years ago Dr. Dawson wrote: 'In Canada there are 3,470,000 square miles, of which 954,000 square miles (exclusive of the inhospitable Arctic portions) is for all practical purposes entirely unknown.' It was in the year 1897 that I first went to the Rocky Mountains. I went N. from Laggan, on the Canadian Pacific railway, with Mr. Baker as far as the source of the Saskatchewan River, having seen farther north from the summit of a peak just N. of the railway (which I had climbed with Professor Dixon, Professor Fay, and several members of the Appalachian Club) high snow mountains. Baker and I explored the Freshfield group, and as far as we could see to the northward were an endless series of peaks. The whole of the country was unexplored; the only man who had been there before us and left any record was Hector, in 1860.

In 1898 I returned with Mr. H. E. M. Stutfield and Mr. H. Woolley. We explored as far as the head-waters of the Athabasca, discovered many new peaks, and the largest snow-field yet known in the Rocky Mountains. This great tract of ice and snow drains into three oceans—the Pacific, the Arctic, and into Hudson Bay (or the Atlantic), for it feeds the Columbia, the Athabasca, and the Saskatchewan Rivers. N. of this country as far as the Yellow Head Pass the mountains were better known. Just to the N. of this large snow-field Dr. Habel, in 1901, explored the western source of the Athabasca; in 1892 Professor Coleman had been at Fortress Lake and the Athabasca Pass. Between the Athabasca and the Yellow Head Pass there is only one high mountain, Mt. Geikie, 11,000 ft., that McEvoy had mapped in 1898. The really unexplored mountain range begins again N. of Mt. Robson and the Yellow Head Pass. In 1902, together with H. E. M. Stutfield and H. Woolley, I climbed many of the high peaks at the source of the Saskatchewan. Up till then we had been finding out how it was possible to get at the high mountains, and the discovery of them and finding out which valley one had to follow in order to reach them had taken up most of our time.

I always had intended to visit the main range N. of the Yellow

Head Pass, but it was out of the question; the land lay too far from the railway, and it would take all the time I could spare to get there and back again. Edmonton, where the railway ended, was over two hundred miles from the pass, and in 1909 Mr. Mumm took nearly a month travelling this distance on his way to Mt. Robson. In 1910 however the Grand Trunk Pacific railway was opened as far as Wolf Creek, about half-way to the Yellow Head Pass, and the opportunity I had been waiting over ten years for at last arrived. Mumm and I, on July 17, 1910, started with pack-horses from Wolf Creek. We took with us a camp outfit and provisions to last us two months. With us came Moritz Inderbinen, a Swiss guide, and Fred Stephens, G. Swain, John Yates and Allan McConnochie; the last four to look after the horses, cut trail, and manage the camp.

Our route lay along the valley of the Athabasca till we came to the Miette River; this we ascended to the Yellow Head Pass. Following down a tributary of the Fraser River, we came to the Yellow Head Lakes. Here we stopped for a day and Mumm and Moritz Inderbinen climbed the Yellow Head Mountain on the N. side of the valley. From it a splendid view of the great precipices of Mt. Geikie was seen. This Yellow Head Mountain was probably the one ascended by McEvoy (Geological Survey of Canada, Part D, Annual Report, Vol. xi. 1900, p. 14). On August 1 we camped just short of Moose Lake, on the W. side of the Moose River, and from here struck northwards by a route to Mt. Robson discovered by Yates two years previously when with Professor Coleman. We climbed a peak on the E. side of the Moose Valley, partly after goat, and partly in order to get some idea of the surrounding country, but we were unable to see Mt. Robson on account of the clouds that covered it. However, away to the W. beyond Tete Jaune Cache and the Fraser River, I saw for the first time the Cariboo Mountains, and I was surprised to see how fine they were. From many of the Rockies further S. I had seen the Selkirk range, but they are not, in my opinion, at all equal to the Cariboo group. Two especially fine peaks could be seen; a great snow-field with a grand glacier coming down eastwards towards the Fraser River. This mountain land should prove a great field for the mountaineer. Up to the present, as far as I know, not a white man has ever penetrated into its fastnesses. I have heard stories of how even the most adventurous of prospectors have been turned back. This is not surprising to anyone

who has had to deal with dense British Columbia forest. Huge fallen trees, thick underbrush full of that pest the devil's club, turbulent glacier streams, can render a valley quite impassable. Anyone who has attempted to reach the high mountains on the W. of the watershed, either in the Selkirks along the Columbia River or in the Rockies, knows that he will never try again. Possibly however, when the Grand Trunk Pacific railway has opened up the Fraser Valley, it will be possible to get men who, with two-handed saws and axes, can clear a trail, but both money and time will have to be spent before anyone will win to this magnificent group. It will, though, be well worth accomplishing, for the Cariboo Mountains are certainly as high—perhaps even higher—than the Selkirks; the peaks are finer shaped, and there are some narrow gorges (especially one to the N. end of the group) that must afford grand scenery. If what is marked on McEvoy's map be true—namely, that they belong to the Archaean formation—they are certain to possess fine form, for the Archaean rock weathers into the most picturesque details.

On August 7 we crossed a pass at the head of the E. branch of the Moose River; this took us back again to the E. side of the watershed, and descending on the other side we came to the Smoky River. This we followed up to its source in the great glacier of Mt. Robson. All existing maps of this piece of country, with the exception of Professor Coleman's, are entirely wrong about this part of the mountains. The watershed of the main chain runs N.W. from the Yellow Head Pass, twisting about a good deal, and finally, in ordinary years, running to the summit of Mt. Robson. But there are years when Mt. Robson is entirely in British Columbia, and none of the melted snow from it ever flows eastward. This was the case in 1910. The glacier stream in 1910 flowed entirely down the Grand Forks to the Fraser River. In 1909 nearly the whole of it went down the Smoky River; so that the Robson glacier one year was on the eastern, and the next year it was on the western watershed of the Rocky Mountains. The weather round Mt. Robson is proverbially bad. Professor Coleman's photographs in 1908 of his camp at the bottom of the valley underneath the great peak show about a foot of snow over the tent and trees. Mumm in 1909 was treated in a similar manner, and we had no better fortune in 1910.

We, of course, wished to climb this monarch of the Rockies, but we could see the snow from recent storms still on the lower rocks, and Mt. Robson, like the Dent Blanche, is not a

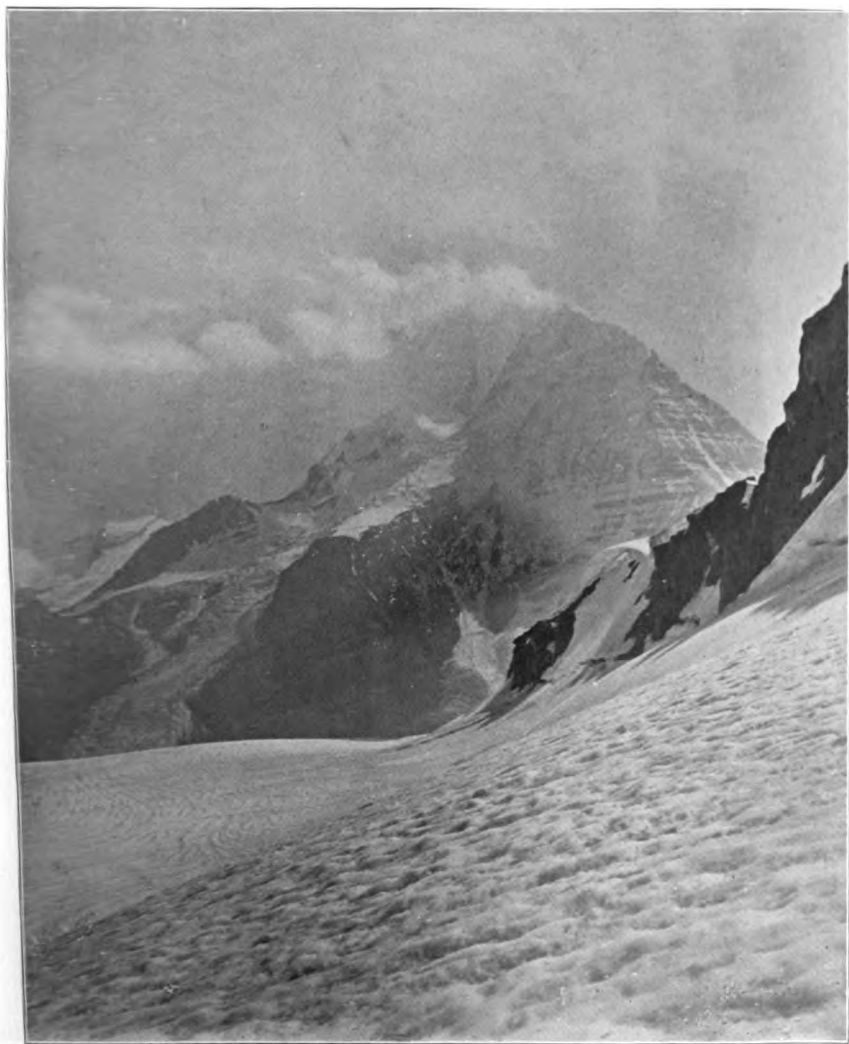
peak to attempt except in the most settled weather. The summit is a narrow ridge with hopeless precipices on the E. side, whilst on the N. and N.W. some excessively steep rock ribs run up to this summit ridge. As far as I have seen, it must always be a difficult climb and often a dangerous one, and as one has to start on the western side at an altitude below 3000 ft. and climb to 13,700 ft. it is also a long one.

Personally, I believe that the safest and best route is that first tried by Professor Coleman up a glacier on the S.W. corner of the peak; this would lead to high up on the southern ridge, just above where Professor Coleman stopped when, a year later, he made his attempt on the south-eastern side, also above where Mumm and his party stopped a year later still, in 1909. During the time we were waiting for the snow to clear off Mt. Robson we made several expeditions; we ascended a rock peak behind our camp on the N. We made one attempt at making a camp on Mt. Robson, but were driven out of it the next morning by rain and snow that had lasted the whole night.

Another peak—probably the third highest in the Robson group (the Horn is the second highest)—we had seen lying far back at the head of a large glacier that emptied into the Grand Forks. This we ascended on August 19, Stephens, Yates, and Swain coming with us. The haze in the air prevented our seeing very far, but we could make out some fine peaks about fifteen to twenty miles farther N.; also just N. of our mountain lay a pass into British Columbia that was below tree-level.

After this the weather became much worse; after three wet days it took to heavy snow, we were snowed up in our camp, and any chance we had of ascending Mt. Robson disappeared. A few days later we tried to ascend the Robson Glacier, with the intention of climbing a shapely snow peak at its head that has been called Mt. Resplendent. We started early in the morning, but the higher we went the worse and the deeper the snow became, and finally, at three in the afternoon, tired out, we had to turn and make our way back to the camp.

Climbing on the high peaks was out of the question. We therefore determined to strike N. down the Smoky River and ascend such valleys as would be likely to lead us to the watershed or to passes over the mountains. We left Robson on August 26, and started down the Smoky River into the unknown land. Our first attempt to ascend a side valley was not successful, owing to the dense forest. Further N. we had better luck. Following a large stream that came from the W.



Dr. J. Norman Collie, photo.

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MT. ROBSON, FROM THE NORTH.

we discovered a splendid snow mountain that Yates named Mt. Bess, also a large glacier on the E. side of the mountain. Another fact which was rather a surprise to us was that right under the almost perpendicular limestone precipices of Mt. Bess on the S. side was an easy pass over the watershed into British Columbia. It is below tree-line and covered with pine forest.

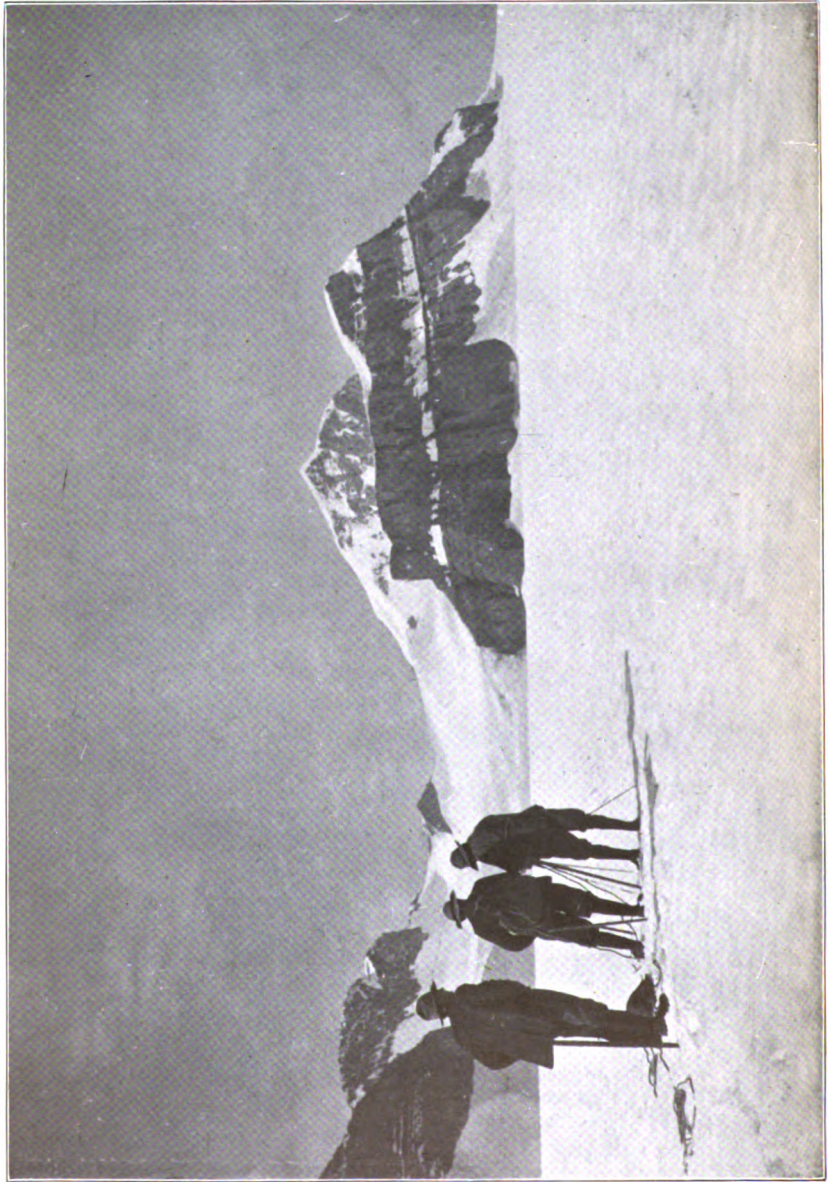
By this time it was necessary to think of returning to civilisation, and the question arose: should we return by the route by which we had come into the mountains, or should we risk trying to work eastwards and hit the Athabasca at either Jasper House or even lower down at Brulé Lake? If we chose the latter route it would mean that we should have to find some pass out of the Smoky Valley to the E., so as to get on to the head-waters of the Stoney River. Yates had heard from some Indians that such a pass existed, but where it was we did not know. What we did know was, that should we miss the Stoney River we should probably be on the head-waters of the Sulphur River, that runs N. to the Smoky Valley again, far to the N. of where we were, and hundreds of miles from Edmonton. We decided however to try, and on September 2 we started down the Smoky River, intending to turn E. up the first promising-looking valley, in the hopes that we should find a pass at its head over which we could take the horses. We found a very beautiful lake in our side valley with two infinitesimal islands, on each of which was one fir tree. Yates, who is the best guide in unknown country I have ever met, by some unaccountable instinct refused to follow the valley to its head and turned up a side valley; two days later he proved to be right, for we crossed an easy pass above tree-line on an old and well-worn Indian trail, descending on the other side into a beautiful valley down which a fine stream ran through pine woods. On the western side of this valley are several glaciers, and as our valley seemed to be leading in the right direction we were satisfied. But some distance down the valley the river however turned again to the N.E., and for the next three days we were uncertain whether after all we had not hit the Sulphur River by mistake. But in the end it proved that Yates had guided us right through about one hundred miles of new country and had discovered a very useful and good trail from the Athabasca to the head-waters of the Smoky River. We did not follow the Stoney River to where it joins the Athabasca, but crossed a low pass to the head-waters of the Hay River;

then across to Solomon Creek, and finally we reached the Athabasca at Brulé Lake on September 16. Next summer Mumm and I decided to utilise our new route to the Smoky River. We however made one small difference: we crossed the Athabasca higher up near Jasper House, where there was a ferry, and cut our way up the lower twenty-five miles of the Stoney Valley that the year before we had avoided by going to Brulé Lake. The party was the same, with the exception of G. Swain, who did not come with us.

We started up the Stoney River on July 24. With us, for a short distance, came J. Smith, who had prospected up this portion of the Stoney and knew the country. He could help us, being a good axe-man, in cutting a trail through the miles of fallen and burnt timber that had stopped us the year before from coming down this last portion of the river. It took us seven days to accomplish the twenty-five miles that lay between the Athabasca and our old trail of the year before. Here Smith left us and returned to civilisation. On our way up we passed some fine falls on the Stoney River. Hector mentions these in 'Palliser's Journals' (p. 126). On August 4 we reached the summit of the pass leading over to the Smoky River. We camped here for three days to give the horses a rest, and also to climb a rock peak from which we hoped to see the surrounding country and to find out where we were with regard to Mt. Robson. All the time we had been travelling in deep valleys that were always changing their direction, and only the peaks on each side of the valley could be seen. On August 7 we ascended the rock peak on the E. side of the pass. I have named it Mt. Hoodoo, after a bull-dog of that name, who much against his will had to be taken to the top of the peak. We could not help ourselves, for he followed our tracks from camp and joined us just below the very precipitous rock summit, that is bare rock set at a very steep angle. He would not go back, so we carefully tied him to the end of the rope and he was pulled up bodily most of the way.

From the summit we were rather surprised to find that we were nearly due N. of Mt. Robson. Mt. Bess of the year before we saw in the distance, and it obviously was only one peak and the most southerly of a group of high snow mountains, one a little to the N. being evidently higher. Glaciers could be seen in more places than one descending to the creeks that led to the Smoky River.

So we started for the Smoky River with the intention of ascending one of those creeks that came down from the foot



Dr. J. Norman Collie photo.

SNOW PEAK, FROM THE ICEFIELD.

Swiss Electric Engraving Co., Ltd.

of this new peak. On August 11 we camped at the snout of a great glacier that lies at the foot of the high snow peak. This glacier is a magnificent one, descending in a series of great ice-falls. It is also the biggest I have seen in the Canadian Rockies, although it is possible that the one at the head of the Bush Valley, that comes from the Columbia ice-field, may be bigger. Here we stopped ten days and explored the country in the neighbourhood. The glacier is evidently advancing and has never in recent times been much higher than at present. Most of the large glaciers I have seen during the last fourteen years in the Rocky Mountains also seem to be advancing.

Several expeditions were made up the glacier. Mumm went to a pass at the head of a side glacier that comes into the main glacier on the S. side. I went to a pass lying nearly N. of our camp; the stream on the other side flows N., but is joined a little distance down by one coming from a glacier on the W.; it is obviously a tributary of the Smoky River.

We also made several expeditions up the great glacier. About two miles from the bottom is the first ice-fall, and about a mile farther up is the second and larger of the two. The first can be easily turned on the N. side, but the second is much more difficult, for a precipice of rock comes down on the same side from the peak above and abuts into the ice. There is a moderately easy way between the ice and the rock, but it is distinctly dangerous, being overhung by huge seracs and walls of ice that are perpetually falling, sending down hundreds of tons of ice that sweep the route from top to bottom.

On August 18, starting before sunrise with Yates and Inderbinen, we ascended above this second ice-fall, finally finding ourselves on a great plateau of level snow that stretched for miles to the north and west, and surrounded by a series of rock and snow peaks. No wonder the glacier was so large; it had to empty all the ice and snow from this great sea of frozen water.

The peak we wished to climb was one on the W. side of this snow-field; we could see an easy route up the highest peak of the group that lay to the S. of us, but the farther-off mountain in the west was nearly as high, and had this advantage—it would give us a splendid view into the unknown valleys on the W. side of the Canadian Rockies. So for four miles we trudged across the snow-field towards a col on the S. side of the peak we wished to climb. This we finally reached, a cairn was built there, and following an easy arête we came to the summit. The day was wonderfully clear, we could see

into the far distance in every direction. To the N. lay part of the snow-field and the surrounding mountains. Beyond the range became much lower, and it was not until about twenty miles further N. that really big mountains and large glaciers could again be seen. On the E. was the great valley of the Smoky River running northwards into the far distance. To the S. and quite close was the highest peak of the group, two or three hundred feet higher than the peak we were on. A little further off was Mt. Bess, dome-shaped and flanked with precipices, and the same altitude as we were. Far away Mt. Robson rose a head and shoulders higher than everything, also the Horn and the snow peak we had climbed in 1910. Again we saw beyond the valley of the Fraser the beautiful Cariboo Mountains, mysterious and lonely, waiting for the time when they too would be first trodden by the foot of man.

Our next intention was to descend the Smoky Valley, and if possible ascend the next large creek that drained the country on the north of the group of mountains we were in. But we found that the travelling was bad, we could see nothing ahead of us but burnt timber and probably muskegs, and the time at our disposal was short. So we decided to spend our last week before returning in something that we knew we could do, and retraced our steps up the valley towards Mt. Bess and the pass we had discovered the year before. We also wished to explore a fascinating piece of country that lay on the W. of the group of mountains we had been on; this we had seen from the summit of the peak we had climbed.

We reached the pass on August 24, and two days later in most brilliant weather we ascended Mt. Bess. Starting from the pass with Yates and Inderbinen, we went in a westerly direction, so as to get to the top of a spur of the big mountain. The walking was abominable, the loose pieces of sandstone quartzite of which the hill is made were most exasperating. On the summit we built a large cairn that can be seen against the sky-line from the pass. Beyond this the real climbing began, and the rock changed to limestone. We had to make our way up steep slopes of snow, and then, in order to finally get on to the S.W. arête high up, to climb up several precipitous bands of rock. Fortunately small gullies helped us, and after a good deal of ice-work Inderbinen brought us out safely on to the ridge that led up easily to the final summit. We also left a small cairn on some of the highest rocks, and hidden in it a small bottle with our names inside. I put mine on a golf card of the St. Andrews links, with a map of the



Dr. J. Norman Collie, photo.

MT. ROBSON, FROM THE SUMMIT OF MT. BESS.

Swan Electric Engraving Co., Ltd.

course marked on it. I have never been on a high summit in more perfect weather. Not a breath of wind, and not in the least cold, small clouds just sufficient to prevent too much sunshine, and a marvellously clear atmosphere—a thing not common in the Rocky Mountains, for somewhere amongst the foot hills there is certain to be a forest fire, and the smoke thus produced will blot out all distant views. But we could see mountains one hundred miles away in every direction. For the first time, through a break in the hills to the E., I saw the level pine forests stretching away to the prairie. The Cariboo Mountains were as usual especially fine. Far away to the S. was a grand mountain in the Selwyn range with a great glacier on its E. and north-eastern faces. Mt. Geikie towered up, showing his grim precipices plainly through the clear air, and far away in the dim distance at the head of the Athabasca was a shapely snow pyramid that looked like Mt. Columbia. As we gazed in every direction over peaks, glaciers, snowfields, and valleys we recognised how much remained still to be done in this new land; as far as I was aware, out of the innumerable mountains that we could see spread out before us, only two, Mt. Columbia and Mt. Robson, had ever been climbed by anyone except ourselves.

Next we moved our camp to the W. side of Mt. Bess, following an old Indian trail that came from the Smoky River over the pass. This trail must have been at one time an important one, but has been deserted for many years, and when we found it in 1910 the old teepee poles on the summit of the pass were lying embedded in the ground and rotten, not having been used for at least thirty years; the trail, moreover, was overgrown and small trees had occasionally grown up in the middle of it. Where this trail goes to is still a mystery; does it finally follow down one of the canyons of the west to the Fraser River, or does it bend back N. of our new group of mountains and so reach the Smoky River once more? After leaving the pass it does not descend on the other side, but climbing for about 600 ft. up the hillside on the right crosses a spur of Mt. Bess and then descending goes to a mysterious valley that runs N., skirting the W. side of the whole of the group of mountains N. of Mt. Bess. Further to the N. this valley turns slightly to the E., but neither from the summit of Mt. Bess nor the snow peak we had been on farther north could I discover where it broke through the range that divided it from the Fraser River. It is most probable that it is the head-waters of the Beaver, a tributary of the Fraser River, but it may be a tributary of the

Smoky River, in spite of the fact that it lies on the W. side of the main range, for the watershed of the Rocky Mountains plays strange tricks, and one never can be sure where the dividing line may be.

Lying to the S.W. of this mysterious valley and between it and the next creek to the S., Horse Creek, lies a curious piece of country. Instead of being a series of peaks it is a rolling moor covered with grass. Over this one can walk for miles, surrounded by the great snow mountains, and with deep pine-clad valleys on both sides, and occasional glimpses through gaps in the mountains of the far-distant glaciers.

But by this time we had to think of returning to Edmonton, and on September 2 started on our homeward journey. During the whole time till we got on to the cars at Prairie Creek on August 16 the weather was wonderfully fine and the autumn colouring of the poplars every day became more and more brilliant. This perfect blaze of yellows and golden oranges, occasionally mixed with scarlet and crimson, that in the beginning of September covers the Athabasca country, is extraordinarily beautiful; those who have never seen it have no conception of the brilliance the clear air adds to the effect that fades away gradually into far distances of blue hills and skies, where the white clouds sharply cut the horizon. We came back by the same route we had gone in by, and followed the Stoney River till we came to where Smith had left us on our journey into the mountains. Here we, instead of going down the last twenty-five miles of the Stoney, again crossed over to the head-waters of the Hay River and to a beautiful lake that is said to be full of fish. However, we were unsuccessful in our fishing, but lower down the Hay River caught plenty of fine trout, some over three pounds weight. Going over the divide between Hay River and Solomon Creek we went down the latter, and finally crossed the Athabasca opposite Prairie Creek. Our wanderings were at an end.

Those who have spent their time in tents in a new land will know how hard it is to suffer the limitations of civilisation after the freedom of the wilds. Our small world was ended for the time being: all the small jokes, the personal character, and the good-fellowship that means so much when half a dozen good friends have lived together for weeks: to all this we had to say good-bye. But once a wanderer always a wanderer, the fever has got into the blood. As one sits in one's armchair on the winter evenings the dreams of the camp life return once more, of the tepee with a roaring fire and the door snugly



Dr. J. Norman Collie, photo.

Swan Electric Engraving Co., Ltd.

PRECIPICE OF SGURR SGUMAIN.

closed ; of Fred's stories, of John's leisurely methods of playing poker, of Moritz's fears that we were lost in a strange land and that the ' grub pile ' was very low ; all these small happenings, as they come back to one, stir the remembrances of the life in the wilds ; it mattered little to one that the snow was racing round the tent and the fir trees singing in the wind outside ; inside all was well with us both in mind and body ; on the morrow the sky would have cleared, the great mountains would glisten in their new robe of snow, the sun would shine over the fair valleys and the trail that led through the mighty pine woods, the glades by the side of fair lakes and the open uplands of the passes would call us ever onward. Yes ! a wanderer's dreams are good dreams, and fortunate are those who have stored up in their memory dreams of such a land, it is one of the most beautiful of mountain countries, and still has the mystery of the unknown clinging about it. There is plenty of room at present for everyone who cares to wander through its fastnesses ; it is a land of great mountains and great woods, of lakes and glaciers and rushing rivers, of rain and snow and blue skies, and it is still a land of mystery—a ' Land of the Far West.'

A WEEK'S EXPLORATION ON THE COOLIN.

BY J. M. ARCHER THOMSON.

SHORTLY after our return from the Alps, H. O. Jones and I, with Miss B. Jones, journeyed to the Isle of Skye, there to finish our mountaineering holiday. L. G. Shadbolt, A. McLaren, and E. S. Reynolds joined us at Sligachan, which became our base.

The hotel is comfortable ; the welcome extended is not so warm as to cause embarrassment, and quite sufficient value is set upon tradition. Aversion from late breakfasting and activity on the Sabbath brought us into touch with the management. However, our boldness was graciously condoned, because, though mountaineers, we so far possessed the *savoir-vivre* of the tourist or the fisherman that we never once returned in the evening late for dinner.

Those acquainted with Skye look upon September as a month of doubtful promise. The weather we happened upon was tolerable. On our last day, already reserved for historical

research, a deluge began which ultimately caused uncommon floods. Of the preceding eight, two were rainless, while six had wet mornings with dry intervals and dry afternoons with wet intervals.

The rocks of Skye throw off water more rapidly than the Welsh cliffs, owing to the relative scarcity of grass; and on their rougher surface humidity is less prohibitive. Accordingly we fared forth for a climb every day, and the chain of routine was unbroken as far as it went. To the many pleasures of mountaineering in the island was added the rare delight of climbing for a week on virgin rock.

**THE SECOND PINNACLE OF SGURR NAN GILLEAN
FROM COIRE BHASTEIR.**

On our first day Miss Jones, H. O. Jones, and I set out for the nearest Grey Coolin to Sligachan. Sgurr nan Gillean is not very near, a vast stretch of marshy moorland comes between. Any crossing of this bog seemed to us, being strangers, certain to entail a too late arrival, if haply we were not swallowed up on the way, at the foot of the Pinnacle Ridge. We went therefore by a stony path towards Bealach a' Mhaim, and then fetched a compass across green slopes to the peak. Our needless caution cost us time; however, two hours of steady going brought us to the top of the rocky spur, thrown out by the ridge, and in sight of a wide range of obvious possibilities.

Knowing nothing myself, I looked with full confidence to Jones for a historical review of the locality. He knew for a solid fact that the Third Pinnacle had been climbed, and, after parading a woefully meagre stock of judiciously vague information, concluded by calling upon me to free the party forthwith from the harassing embarrassment of choice.

My suffrage was given with the impartiality of ignorance to the face of the Second Pinnacle.

Beginning at the foot of the face, midway between the boundary gullies, we climbed directly upwards and crossed at a right angle several transecting terraces. After an hour of leisurely progress we roped at 1.30 P.M. on the uppermost shelf. The crags above looked formidable and, to anticipate, did not belie their appearance. A nearly vertical groove took us up the first thirty feet. At this level a short trail of old nail-scratches, such as had been noticed already at intervals, ceased with sudden extinction. It was a stimulating inference that our first introduction to the Coolin was to be made on untrodden

The 2nd Pinnacle



F. Hunt, photo.

PINNACLE RIDGE, SCURR-NAN-GILLEAN, ISLE OF SKYE.
Sloan Electric Engraving Co., Ltd.

rock. Its reputed tenacity was severely tested at once in the crossing of a steep, smooth slab on the right, which appeared somewhat the more hopeful of two dubious alternatives. Jones followed, and braced himself in a shallow recess on the further side. The scope for excursions was reduced to the narrowest limit. A traverse back of a few yards at a higher level brought me to a standstill, seeking with suppliant hands some contribution towards support from the uncharitable slabs above :—

*σμικρὸν μὲν ἐξαιτοῦντα, τοῦ σμικροῦ δ' ἔτι
μείον φέροντα, καὶ τόδ' ἐξαρκοῦν ἐμοί.*

At length with the aid of a finger-hold to steady the balance a stretching step was taken upwards, and a breezy situation attained on a wide expanse of steep slabs. These were crossed in a diagonal line to a groove defined by one high retaining wall. Herein was a small stance, offering just sufficient security and a very cramped position. I resigned it gladly to Jones on his arrival, and following up the groove made a left exit at its termination, thirty-five feet above, upon a shelf marked by a pair of small blunt pinnacles. On this ideal spot we stopped to perform the usual rites. The back wall, which overlooked it, appeared on inspection altogether unpromising. There remained the question whether the slabs on the other side of the groove could be crossed. The vertical wall, at the base of which it ended, threw out on the right a horizontal cornice of rock extending for twenty feet, to a sky-line ; this it appeared would help with handholds.

It was suggested indeed that the traverse was defective, having no middle, but my difficulty was to find a beginning, until accepting advice I started at a slightly lower level. The crossing was effected with unexpected ease ; there was no arresting obstacle, but the place was shelterless, and the passage will certainly appear to any eye unused to gabbro a somewhat bold venture into the unknown.

On the far side of the corner thus reached we climbed easy rocks for a hundred feet, and could have continued upon them to the ridge ; we bore however a little to the left to a flat rock-platform in quest of a worthy finish. And such we found. An angular recess, an overhanging block, a sharp edge, and a short groove brought us out on the summit within a Roman pace of the cairn.

It was now 2.55, so we hastened over the other Pinnacles and reached the top of Sgurr nan Gillean at 3.50. Descending on the farther side we broke off the W. ridge down what we

should plainly call in Wales a stone-shoot, but the place is named, as it seems to me, with far more courtesy than discrimination, *Nicholson's Chimney*. A stony incline took us up to a col whence we returned by way of Coire Fionn to Sligachan at 7.10 P.M.

The face of the Second Pinnacle will be enjoyed by any strong party; it possesses, I believe, the additional merit of being the nearest climb to Sligachan.

THE SLIGACHAN BUTTRESS.

Rain and wind on our next day bridled ambition, and shelter was sought in the Sligachan Gully on Sgurr nan Gillean. When however the prospect brightened, Shadbolt and McLaren sallied forth from its mouth for an exploring scramble, concluding with a descent of the gully. To us they bequeathed the flanking buttress, and the bequest has enriched a storehouse of mountain memories. A shelf led out on the left to its foot. The angle of the buttress seemed very high, but the gabbro was plainly of excellent quality. In view of the wind and wet rocks a quiet resolve was inly made to resign on the occurrence of any real difficulty. Moral courage did not falter or fail; but I forgot the pious resolution, so engrossing were the sensational severities of this fascinating climb.

The rocks from the very start were steep and my 50-ft. lead had to be lengthened at once to 70 before a semi-circular recess offered a secure place of rest. Two perfect bollards added strength to the position, and the whole party—to wit, Jones, Miss Jones, Reynolds, and myself—met here and found each a perch to rest on. The next move was up the rocks on the left side of the recess, and at the height of 35 ft. a corner rendered difficult by a dearth of holds was carefully rounded to a narrow ledge. Upward advance was now blocked in all directions, for the little ledge ran at a right angle into a blank wall. However, a horizontal slab, overlooked by this projecting curtain, seemed to be within the span of a long stride. In the absence of any belay the need of an anchor was felt. Jones came up and sharing the scanty footing on the ledge held the rope while an aerial stride was followed by a gentle squirm round the overhanging corner.

The rocks above this new base were moderately easy for 100 ft., as far as an upper recess where the whole party again assembled. The spot is marked by a singular slit in the right

wall. This loophole looks into a deep gully. The dripping walls of a black chimney on the left appeared a possibility, but reserving this alternative as a *pis-aller* we took a sharp arête above the recess. The position was very exposed, but after a few difficult steps the rocks became less exacting. Finally an ill-defined ledge was followed to its surprisingly abrupt termination on the brink of a small cave. By bridging up a few feet an exit was made easily upon a spacious shelf. This cave, we learnt later, was the ultimate pitch of one of the two Parallel Chimneys.

A broad ledge ran off to the left, but straight before us rose a blackish wall, almost plumb-sheer near its base. From a tip-toe stance on a needle of rock, unsound but unyielding to downward pressure, it was just possible to plant the left foot on a far hold over the gap of the gully. By a resolute spring, and a simultaneous swing over of the right foot up to a higher notch, a first lodgment was effected on the wall. The aid of a shoulder, which would here be a justifiable demand, cannot be given because the gulf of the gully intervenes, but the other members of an alert party could jerk their leader back in case of an abortive effort. The operation resembles nothing so much as the mounting of a horse on the far side of a ditch. A few yards higher a belay was discovered on a sloping ledge, and was utilised while each man in turn made the move with proper deliberation and without variety of experiment. Then a cautious advance was made across the slabs to the right sky-line. A line of holds was found here, both sound and rough, but for 50 ft. the climbing was impressively steep and shelterless; above this section an easy finish brought us up to a wide platform on the top of the buttress. We built a cairn to mark the termination. Then we crossed the ridge and returned to Sligachan by way of Coire Bhasteir.

All strong parties who share our decided preference for open faces will be well pleased with the 'Sligachan Buttress.' A calm day should be chosen for the ascent on account of the exceptionally exposed character of the climb.

TWO NEW ROUTES UP THE CASTLES FROM HARTA COIRE.

The South Buttress.

On Monday morning rain fell heavily and delayed departure till near noon. By path and morass we hurried away to Harta Coire. The slabby walls of the Castles, darkened by water,

looked forbidding enough, but some one knew that a route had been found by Raeburn in or beside the deeply-cut central gully. The field for further exploration seemed wide, so we divided our forces into two divisions. Shadbolt and McLaren attacked the buttress on the S. side of this gully. Some circumspection was required to find a way on to it. Finally the first stretch of the gully, and a vertical corner beside its great pitch were utilised for this purpose. This done, the party made their way up a series of extensive slabs, until an overhanging wall barred farther progress. A creep along the top of the slabs was necessary towards the central gully, until an assailable point given by a chimney was discovered and used. The width of the buttress contracts as height is gained, and finally the party found themselves on a very narrow arête; this was difficult in places and demanded careful treatment. The arête was followed up to the point of its abutment against the main ridge, by which the actual summit was reached in a few minutes. The climb throughout is good and exhilarating, and the remarkable character of the slabs traversed gives it a special charm and interest.

The Central Buttress.

Jones and I tried the slabs in the middle of the Central Buttress. On their rough surface considerable freedom would be given by shoes. However, the inferior tenacity of our Alpine boots was quite sufficient, but the wide stretches of blank rock compelled a very careful choice of the precise line. This steep, vast glacis is transected into three tiers by two overhanging cornices of rock about 20 ft. high. Each appeared from below a bar sinister to the climb. The first of these walls was overcome by means of a groove near its north end. From a platform thus reached a basalt crack of 70 ft. was climbed by inserting each boot alternately, and the same line was continued up to the second wall; here too the vulnerable point was a groove leading to a platform. A short, stiff pitch above it gave access to an easy stretch of slabs which continued to grass and débris. From this slope springs the final wall, which is cut by three obvious vertical chimneys.

Two appeared possible of ascent, but we, being without waterproof coats, preferred to try the right-hand buttress of the north chimney. An easy beginning led to an unexpectedly difficult pitch of 60 ft., consisting largely of polished basalt. This pitch is a severe test of balance for the leader, while

steadiness is demanded of each man throughout by the paucity of belays, which is a marked characteristic of the whole climb. By way of a terrace we reached the bed of the chimney which had now widened into a gully. A climb up the right wall, followed by a pleasant scramble, brought us up to the top of the peak.

The height of the cliff is 1200 ft., and our ascent occupied very nearly two hours.

The two sections of the party united at the top, and returned to Sligachan over Bruach na Frithe and down Fionn Coire.

THE FACE OF SGURR A' MHADAIDH.

On Tuesday, ultimately bound for Glen Brittle, we walked over Bealach a' Mhaim to Coire Tairneilear. McLaren piloted Miss Jones and Reynolds up the Slanting Gully. Between this and the Deep Gash Gully rises the great face of Sgurr a' Mhadaidh. The scale is magnificent, and the books rightly say 'these crags are sheer and look quite inaccessible.' Our second trio went to try them. The problem of mentally marking a route of greatest promise was complicated by broad belts of heavily overhanging rocks, an obtrusively salient feature of this forbidding face.

From a point roughly equidistant from the bounding gullies we ascended the rocks for one hundred and fifty feet, and then roped on a small platform. Our choice, which was perhaps a trifle wider than Hobson's, then fell on the rocks to the left of a distinctly marked groove. The initial pitch proved a long one, and called for a combination of strenuous effort with exceptional diversity of movement. Jones followed me as soon as an anchorage had been struck on a small stance at the height of eighty feet; a little platform thirty feet above gave the advantage of open formation. Then basalt in a broken line brought us to gabbro rocks and a stiff pitch of twenty feet gave access to a ledge holding a capital belaying bollard. After climbing obliquely for thirty feet to the right I was brought to a stand by a smooth and sloping slippery slab; above this sprang two low vertical walls set at right angles to each other; in the corner the slab rose abruptly into a square stool of basalt. To step up the slab, to set haunch, knee, and foot in turn upon the stool and then stand upright, these must appear easy stages of a simple process. In effect each was a move of supreme delicacy, with surface friction as the potent factor in the operation. In the downward view it was amusing to behold at the

edge of the slab the bust of Jones set in crisp outline against Coire Tairneilear. The dwarf wall was quite easily overcome, and a gathering-ground was soon discovered above in a semi-circular cave of pale green rock.

At this level lines of overarching cornices stretched away on either side; by them we recognised the spot which conjecture had marked at the outset as the crucial point of the climb. Our hopes of penetrating the barrier centred upon a nearly vertical wing of rock sixteen feet high on our left. This gave access to a hidden chimney, which however seemed to me a specimen of the deceitful kind that first attracts and then repels. A sharp edge beyond drew a hard, unbroken sky-line. A long stride out to a triangular hold brought me to an airy position upon it. The subtle charm of exploration was fully realised, when a peep round the corner revealed a line of holds, rudimentary in places but manifestly adequate for farther advance.

This rib, like Hopeful's Key of Doubting Castle, gave us escape from the dungeon, and at the top we found ourselves through the belt of overhanging walls. It was a surprising change soon afterwards to break into a theatre or gaping mouth of a gully. We crossed the bed at once (cairn) and climbing the right wall struck a horizontal basalt dyke; this ledge passed finally under a low roof of spikes, skilfully disposed to trepan the first unwary climber.

This passed, we pursued a careful course up steep slabs of gabbro until forced by lack of hold into a yellow trap dyke. A few yards of this sufficed to show that the bed was verging as nearly upon the vertical as its two retaining walls. Further advance was hardly possible and manifestly dangerous owing to the friable character of the vein. One foothold on the right wall came just within the stretch of a stride, and a lateral lean out therefrom brought within reach of each hand in turn a very prehensible blunt edge. The resulting pose was so oblique that the downward swing of the pendulum best describes the breezy excursion that followed across a blank interval of wall. The goal was a four-foot groove, wide enough to admit one leg, and in Shadbolt's homely phrase: 'One just flopped into it.' It is against the rubric to cross the Rubicon, but here the existence of other holds than were visible on the farther side could be predicted with confident judgment.

The discovery of a land of promise, as the result of a singular lead from an apparent impasse, is not the least among the pure pleasures of pioneering. We thus struck at their lowest limit a line of notches which broadened gradually into perfect ledges.

Filled with a pleasing sense of the fitness of things, we climbed briskly a long reach of slabs at a quickened pace. Then we were confronted by a forty-foot pitch. We should have sought an alternative had it been of rock less scabrous than gabbro. Half way up the use of a stance by the second man protected the advance of the leader. At the top of this we could again move together, and we soon reached the level at which the Foxes' Rake merges in the broken rocks below the summit. We marked the point with a majestic cairn, and ran off to shelter from a cutting wind and a downpour of rain. Two hours and twenty minutes had been spent on the face, and fifteen minutes would be a liberal addition for the scramble up the final rocks to the summit. Here we were joined some time later by the left wing, and a cold, drenched, but jubilant party were soon under way for Glen Brittle.

The distinctive charm of exploration on an open face is, I think, partly due to the full freedom of choice it leaves to the climber. Nature does not delineate the route with ridge or adumbrate it with gully. No bias of this kind is given on the face of Sgurr a' Mhadaidh.

THE CENTRAL PRECIPICE OF SRON NA CICHE.

The wide face of Sron na Ciche has a decidedly repellent aspect, but according to report it had failed to repel a party from some unknown route near its west end. Such was the limit of our information.

At Sligachan a large locked Climbers' Book is admirably kept up to date, but during our sojourn the key was forming part of the kit of a camping party in the south of the island, so that the utility of the volume to us lay rather in what it suggested than in what it revealed. Accordingly we approached these central crags without prejudice, and in the belief that they had never been assaulted. By means of a slanting green shelf we reached with unexpected ease a point in the centre of the lower part of the face, which resembles at a distance both the bottom of a V and the middle of an X. Here it was plain the real climbing would begin. After the usual intervals for lunch and watching rain we divided into two sections.

THE ZIGZAG ROUTE.

Shadbolt, McLaren, and Reynolds continued the upward traverse to the left, until a trap recess gave hope of passing the

overhanging rocks above. This was climbed at its left edge for some thirty feet, when a traverse to a corner on the right was effected by slippery holds. Just sufficient attachment by the fingers rendered a swing round possible. Then a vertical basalt dyke, followed for twenty-five feet, brought the leader to a good platform, ninety-five feet from the starting point.

Close above, a short chimney on the left was climbed to a ledge leading to an easy fifty-foot chimney, surmounted by a patch of grass. From here the party traversed first to the left and after overcoming a vertical corner back again to the right to a green chimney.

This continued for two hundred feet, and involved in its lower section a short difficult passage up a crack. It gave out on a steep arête, above an overhanging projection. A cairn found near this pointed to previous exploration; knowledge is lacking, but the arête would appear to have been struck by a different line of ascent.

THE CHIMNEY AND CRACK ROUTE.

Miss Jones, H. O. Jones, and I climbed the rocks from the bottom of the V and were soon upon the broad and rather steep threshold of a deeply sunk cave. The left wall, which supports a poised block, gave us exit, and a small cairn on a ledge great surprise. Hence upward no trace of man was found on the route we chose.* We continued up the rocks immediately above the cave and in due time reached a low vertical chimney. This compelled bridging. A wide gabbro glacis now lay before us trending east. We soon left it in favour of its flanking wall, which gave a charming stretch of climbing up to a platform. Away on the right, a curving slope of crinkled rocks presented a seemingly simple continuation.

We were attracted however by the cleanly chiselled features of a singular crack that rose directly above us. With the left page opposite the eyes and at right angles to the other, tilt the Journal to an angle of eighty degrees; the position of

* I have learned since that two routes had been made on these crags, one by Messrs. Barlow and Buckle, and the other by Messrs. Steeple and Bowron. The former lies to the east and the latter to the west of this climb, which keeps throughout to the centre of the face.

the crease between the pages is that of the crack between its walls. With the right fore-arm and leg in the crack, I gained height by gripping the square edge with both hands, conscious the while of a gradual but constant increase of gradient. The vertical part had begun when a nick, perhaps 70 ft. up the edge, gave me an opportunity to step forth with one foot on the slabs, and thus perched leave a space vacant for Jones to arrive. The relevancy of this two-inch nick to the issue may be gathered from the threefold purpose it served. It was the second man's mainstay, the leader's belay, as well as his next and necessary foothold. Jones cleverly contrived to permit me the use of it for a moment; I worked upward for some 16 ft., and here found it possible with a foot out on the left wall and the back against the right to take a needed rest in a leaning position athwart the crack. The climb to this point had been exceedingly severe. The continuation was severer. A projecting boss bulged out over my shoulder. Recessed holds, required on over-arching rocks, being sought in vain the same strenuous method of gripping the right-angled edge had perforce to be continued. A period of concentrated effort ensued, then the pendent foot reached a pushing-point on the upper curve of the bulge, and finally, with an upward step, a foothold was gained on the steep slab above. There remained a 12 ft. finish to a platform. This offers a resting-place to climbers, and it could, no doubt, be utilised by experimentists with the human windlass. It is the peculiarity of this passage, as well as an instance of the perversity of matter, that at the merriest moment of the strife a ruck of broadcloth on the thigh fast-pinned by some minute asperity compels the removal of one hand from the edge to release it.

This climb of 110 ft. is comparable in character to the hardest obstacle on the Grépon Ridge, but its length and powers of resistance expressed in terms of the Nantillon Split Block are said, on high scientific authority, to give the formula 3 (N.S.B.). It would be to allow patriotism to encroach upon veracity, if I were to propose a Cambrian match for the Crack of Sron na Ciche.

The ascent of the face was continued by a long sinuous trap dyke, which led up finally to a small cave. Fifty feet above this we came out on the actual summit. The time taken from the bottom of the V was exactly three hours.

The flanking party were soon with us; and with Shadbolt to show the route and set the pace we went down in good time to Glen Brittle.

THE CIOCH BUTTRESS.

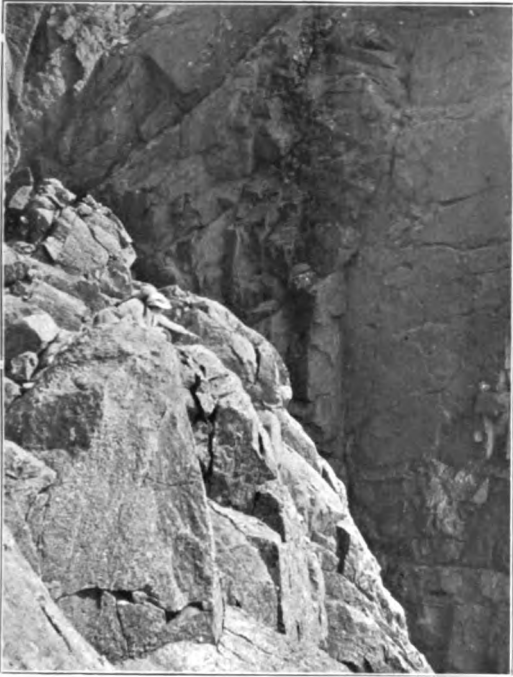
A short stay at Sligachan sufficed to show that the Cioch possessed a certain prestige of its own. Accordingly I felt a thrill of excited interest when first it was alleged to be visible through sheets of mist and driven rain. I believe that it was by the shadow * it casts that Dr. Norman Collie, who made the first ascent, discovered its peculiar nature. It is itself a genuine buttress, standing out from the parent peak, rising to half its height, and connected with it by a narrow neck. Its renown is deserved. The expanse of slabs on its left flank is wonderful to behold. The main route passes up and athwart them. Even when wet, this offers no very serious obstacle, but it charms by its very singularity. Accordingly, Reynolds and I, supremely indifferent to menace and pathetic appeal from the van, made a leisurely ascent to the top with the lunch. Simultaneous discussion of prog and progress was then sustained with unremitting zeal, till a deluge of rain put a sudden end to both. After an interval of discomfort two of us emerged from a shallow pretence of shelter to look at the great buttress that rises above the Cioch to the summit of the mountain. An attack upon it was a cherished idea of Shadbolt's, and to him alone belongs the credit of discovery. A cairn built on a ledge marks the end of the Cioch Gully. It now serves to mark, too, the beginning of the 'Cioch Buttress Climb.'

The view, obtained after a climb of sixty feet up this ledge, enabled us to report confidently on the prospect ahead. The whole party of six then roped together and were soon winning their way along a breezy traverse. Its general trend sloped steeply upward to a sky-line, but the continuity was found to be broken by the intervention of various obstacles; chief among the difficulties were a protruding corner and its antithesis, a curving recess. This was entered from a small, flat stance, so exposed on the face of the cliff as to be suggestive of the 'four chains' platform on the side of a ship.

Overarching rocks confined the view above, but the vast slabs below us were most impressive, and the sight of several blocks that required removal bounding in two appalling leaps to the Cioch and the Coire, brought home to the mind the exposed nature of the ledge we were exploring.

At the sky-line a sloping shelf was found which gave just room enough for the whole party to reunite. From here a

* Vide illustration.



ON THE CHIOCH A' SGUMAIN.



Photos by Dr. J. Norman Collie.

Swan Electric Engraving Co., Ltd.

THE CHIOCH A' SGUMAIN, WITH ITS SHADOW,
AND THE CHIOCH BUTTRESS.

sharp and practically vertical edge ran upwards. The climb of this was very sensational and involved one mid-way step of distinct difficulty which called for a delicate adjustment of balance. My landing on a flat rock platform was accompanied by a rude mental jerk. The suspicion of a cairn lay upon it. A theory of fortuitous concourse, advanced by some of my companions, was not very convincing. It was therefore a great relief to learn some days later that it marked nothing more than the limit of a surveying party's descent. The opinion then formed of the possibility of the Buttress had been emphatically unfavourable, but being good sportsmen the explorers had not bowed the knee to Baal or hanged an innocent virgin with a criminal rope.

Thence we advanced up a curious glacia of 250 ft. and gained the summit of the mountain within an hour and a half of the time of starting from the neck of the Cioch.

The Cioch Buttress will, I think, be found not unworthy of the Cioch itself. The two form a continuous ascent of the face of Sgumain; both are fascinating and uniquely envired. It is safe to predict for the climb great popularity in the near future.

THE SLANTING GULLY ON SGURR A' MHADAIDH.

This gully is already well known, and considered to be the finest in Skye. A word however must be said about it, because our ascent took in the various portions previously omitted, and in the opinion of all the party a further charm is given to the climb by the additional two hundred and fifty feet included in the direct ascent throughout.

Jones, McLaren, Shadbolt, and I, on the day of return to Sligachan, diverged from the route over the Bealach for Coire Tairneilear. At the foot of the gully we roped for convenience in two pairs, rights of precedence being courteously accorded to the strangers to the climb. The lowest pitch was streaming with water, but *the higher the drier* was the happy experience of the day. Indeed the great cave was little more than damp by the time the four of us had bridged up through its whole height. It was a surprise to me to learn afterwards that this passage, an original lead of Shadbolt's, was a correction of the line first taken, for the traverse out of the gully had escaped my notice. The Cracks Pitch was perfection, as are most exposed places with excellent holds. There are various good obstacles above it; when attacking one of them I was checked

by my rope-fellow, who, with a face all wreathed in smiles, pointed to a broad ledge, leading to the right, with a mysterious ending. Such had been the merriment throughout the jocund day that I mistook the proffered counsel for a fresh display of Scottish humour; then our comrades arrived upon our heels with credible assurances that we were indeed treading on the skirts of an inaccessible spinster. We anticipated therefore much ado in the taming of the shrew, but the place yielded at once to assault delivered with the face turned first to the left wall and then to the bed. A frowning bulge of basalt gave momentary pause, but above this a stance with belay was found, as well as a previously hidden reach of sixty feet. Though steep the continuation was simple and innocent. We emerged comfortably and set up a cairn on the Upper Rake.

This section is certainly one of the best in the gully, but the authors of 'Climbing in Skye,' whose interesting account of their attack has been pointed out to me, would seem to have judged somewhat harshly of the amenities of the place.

On the further side of the Rake rose the final wall of the mountain; crossing thereto we noticed in a fairly straight line the proper continuation of the gully, the third and last stretch of the same fault. This part, too, showed virgin rocks, and had not apparently been climbed. We found here a series of small caves which led up to a large one with a colossal chockstone wedged aloft. We made an inside and an outside exit, and came out on the summit ridge at a gap between the first and second peaks.

The expedition recalled to me pleasant memories of the first ascent of the Great Gully of Craig yr Ysfa, and others have proposed a comparison. The Welsh Gully took the first explorers four hours. With omission of a lounging interval on the Foxes' Rake, our time from the foot to the hitherto accepted termination on the Upper Rake was almost two hours, inclusive of all halts. Such indications are quite inconclusive in themselves, but they go to confirm our conviction that of these two magnificent gullies that on Craig yr Ysfa is indisputably the more difficult climb. An appreciation, which precedes, will show freedom from unconscious bias towards my land of adoption.

THE BHASTEIR TOOTH.

Our last day we had decided to devote to a known climb. The morning was sombre with rain; we started however the

five men for the Bhasteir Tooth with high hopes of fine intervals ; and such came, but after three o'clock in the afternoon.

At the base of the cliff Reynolds commended to Jones his new-brand, four-strand climbing freak, and promptly departed himself in prudent haste for Sligachan. We paired accordingly at the entrance to a complicated chasm, the accepted name of which is the Northern Chimney. I saw the two originators of the climb pass up the first pitch with movements so agile and various that I looked forward to the privilege of following the lead of such accomplished guides. When I saw them next they were on the other side of the mountain peering down Naismith's Crack. Though delayed by exhausting wrestles with the cold rigidities of the four-strand abomination, Jones and I were not in reality far behind. The little light that penetrates the devious galleries of this cavern is derived from a dormer-window at the top, whence it filters through several intermediate apertures. One or other of these was constantly corked by one or other of our comrades in front. My predicament and Jones' was similar to that of a blind man searching a dark room for a black cat that is not there. The sense of touch only was serviceable. I went wherever I *felt* I could, but in the search for holds and head-room one thing I never failed to feel :—

'How Bhasteir's blessed river ran
In culverts through the clothes of man
Down to a sunless scree.'

In spite of the guide-line between us, Jones was bewildered at times by the intricacy of the catacombs, and vainly sought of me information I did not possess ; for him certain *éclats de rire* seemed to serve as flashlights on the situation. Eventually we arrived in a cockloft. A disc of daylight at the far end of a tunnel showed the way out. It was a plain necessity to lie flat-long on the shingle in this humiliating conduit. The position was very restful ; the difficulty came with the desire to move on. The only effective method of propulsion my dimensions would permit was plying the feet as levers from the ankles, and thus I ground my way out into daylight on the principle of the rack and pinion.

The North Chimney is beyond doubt very interesting ; our ascent has kindled in me a strong desire to go and see it.

During the period of entombment the dry interval had arrived, and enabled us to cling in comfort to Naismith's Crack, which we descended.

Crossing a gap back into Coire Bhasteir we set our faces towards Sligachan. The worsening weather mattered little to us as we hurried over the miles of spongy cushions and leapt the pockets of peat for the last time. To these deer-forests we had already grown not accustomed only but reconciled. Tedious, as preambles, they prove by virtue of contrast somewhat pleasing conclusions to the mountain expeditions.

In the Isle of Skye the mountain views have a beauty of their own; the exquisite variety of form, the glow and play of colour, the girdle of waters, and the distant background of bristling peaks form an *ensemble* which no prudent man would try to describe until he had fully imbibed the influences of the scenery.

The climbing itself is immense; its excellence surpassed our expectations. All the manifest routes have, apparently, been accomplished, and the aspect of such as I saw in the distance struck me as remarkably fine; for exploring enterprise there is yet wide scope. Thus the island offers a rich and varied store to mountaineers of differing tastes and preferences. Of our party it was said that we 'worked hard.' It is possible we did; it is certain we enjoyed it. Our week in Skye will remain a delightful memory. It was the hope of each of us, as we bade them farewell, to be able ere long to say SALVETE to the Coolin.

AN ASCENT OF MOUNT HERMON.

By G. W. LLOYD.

E. A. ALDRIDGE and I went this spring for a five weeks' tour in Palestine. There were two things we wanted to do, which apparently everyone out there seemed to think unusual, if not impossible: (1) to make a *walking* tour through the country, instead of riding or driving; (2) to make the ascent of Mount Hermon, which our Palestine friends informed us they did not think could be done so early in the year.

The first of our plans we did not quite carry out, as, owing to illness and lack of time, we had to ride the last three stages of our tour, but we did walk some 250 miles, and walking in Palestine is a very different thing from walking in Switzerland, owing to the intense heat and oppressiveness of the air, especially

in the Jordan Valley and in the plain of the Dead Sea, the latter being 1900 ft. below the level of the Mediterranean, and said to be the lowest depression on the surface of the earth.

The second of our plans we did eventually accomplish.

Here perhaps I had better attempt to give a short description of Mount Hermon. Hermon, which has been called the Mt. Blanc of Syria, lies to the N. of Palestine proper, being actually in Syria, Damascus lying some 25 miles to the E. of it. The Arabic name for it is *Jebel-esh-Sheik*, which means 'mountain of the whitehaired'; it is more a chain than a peak, extending from N.E. to S.W. for a distance of 20 miles, its highest point being about 9050 ft. above the Mediterranean. The Bible names for it, as well as Hermon, are *Shenir* and *Sirion*, both meaning 'the Banner,' a fitting name for the great white standard it raises aloft over the whole land.

Mount Hermon, from a climbing point of view, presents no difficulties at all. In fact in summer the usual way the ascent is made is by riding. Nevertheless Mt. Hermon, I think, must have a fascination for all lovers of mountains both from its historical associations and from its 'noble and majestic appearance.' Well did Moses, 3000 years ago, describe it as 'that goodly mountain.'

'A remarkable fact about Hermon is that its white dome is visible from nearly every section of both eastern and western Palestine. Not only from Galilee but from many points in Samaria and Judæa as well, from Olivet and the Dead Sea (which is 120 miles distant), from Gilead and from Bashan, it is clearly seen and is looked up to as the great landmark of the country,' so says a writer in 'Picturesque Palestine.' We were unfortunate in only getting our first view of Hermon when N. of the Sea of Galilee, but when we did see it on that occasion some 35 miles away, covered with fresh snow and glistening in the sun, it presented a sight never to be forgotten.

When at Jerusalem we had made enquiries from a friend who had been up as to the best starting place for the ascent. We were told *Shib'a* on the S.W. or *Medjel-esh-Shems* on the S. were usual starting places for people intending to ride up; also *Hasbeiya*, a small town in the valley of the *Hasbany River* or *Upper Jordan*, which lies to the W. of Hermon, is a convenient place from which to make the ascent.

As, however, we had not time to go up the *Hasbeiya Valley* on the western side, we decided to make for *Medjel-esh-Shems*, and as that place is situated quite at the southern extremity of

the mountain and a long distance from the top, we hoped to find a cave or sleeping place on the mountain somewhere above it where we could spend the night.

We were told to look out for bears, and one of our Palestine friends seriously advised us to take a man with a gun as a protection against them. We did afterwards actually see a bear that had been shot on Mount Hermon.

Before leaving Jerusalem on our walk northwards we had to engage a dragoman. Mr. Hughes, the most kind and obliging proprietor of Hughes' Hotel at Jerusalem, where we had been staying, provided us with a very efficient young man who accompanied us on horseback, armed with a revolver and a belt of cartridges, of which he was very proud. He rejoiced in the name of Jamil, which he informed us meant 'Beautiful,' and which he evidently thought a very appropriate name.

We left Jerusalem on April 6, and in due time, after a delightful tour through Palestine, we arrived on Wednesday, April 19, at Medjel-esh-Shems, *i.e.* 'The Watchtower of the Sun,' a Druse village 3700 ft. above the sea, on the southern slopes of Hermon, where we made enquiries as to the possibility of finding a sleeping place on the mountain. We found there was another village called Arny, much more conveniently placed to make the ascent from, about 6 hrs.' ride further on; so we set out for it accompanied by a Druse, who could talk a little English, as our guide. After a rather exciting ride over mountains, snow-fields and a raging torrent, we arrived at Arny just before dusk. Our guide got lodgings for us with a friend of his, by name Simon Mackoul, a Greek Christian, and we engaged his brother to act as our guide up the mountain for the next day. Our host spread mattresses for us on the floor of the guest room, and we had a very comfortable night.

Arny is a small village, 4500 ft., situated at the foot of the highest point of Mount Hermon on its eastern side. We were told that every winter for a considerable period it is completely buried in snow.

Last winter, which was the most severe one experienced out there for the last thirty years, our host told us that he had been shut up in his house, unable to get out, for fifty-four days, and that the snow had accumulated to a height of 4 metres above the roof of his house.

Next morning, April 20, we started at 5.15, accompanied by our Druse friend and our landlord's brother, the latter of



G. W. Lloyd, photo.

Swan Electric Engraving Co., Ltd.

MT. HERMON.

whom was armed with a small pickaxe, stuck in his belt, which was the nearest approach to an ice axe we could find. His dress was hardly what one is accustomed to for a mountain ascent. He wore the flowing robe of the country, he had no stockings, and on his bare feet were the usual native slippers with no nails in them, which as he attempted to walk up the hard snow slopes literally answered to their name.

Mount Hermon, as mentioned above, directly faces Arny, and as it was almost a cloudless morning we could without any difficulty trace our way up; the actual summit, however, cannot be seen from Arny, as it lies some little distance back behind the main ridge of the mountain.

On leaving the village we crossed a little stream (the infant Pharpar), and then gradually ascended by some bare fields and rough ground till we came to the foot of one of the shallow snow gullies or hollows which lie between the several rock ribs, which are a feature of this side of Hermon. We continued our ascent first by the snow, which was quite hard, and then by the rock rib to the right of it. We followed this rib practically to the top of the main ridge; it was not steep and there was no difficulty of any description to our upward progress. We had a short stop about half-way with a wonderful view of fleecy clouds far below us stretching away to the S.E. over the Hauran (the land of Bashan). We reached the summit just after 9, the first of us arriving there 20 min. before our guide. Baedeker says, 'Mt. Hermon culminates in three peaks; the northern and southern, about 500 paces apart, are each about 9050 ft. in height; the western about 100 ft. lower is separated from the others by a small valley, and is about 700 paces distant from them. On the S. peak are some ruins (called Kasr 'Antar), probably belonging to a temple which is mentioned by St. Jerome' (A.D. 300-400).

We stood on the S. peak. We could distinguish the scattered blocks of stone of the ruins mentioned above which were almost buried in snow. The view was disappointing owing to the haze; the great snowclad range of Lebanon stood out well, but we could barely distinguish the Mediterranean, which is only some 30 miles distant, and could see very little of the details of the country to the S. and to the E. A strong wind was blowing and it was very cold, so after a photograph had been taken of our party, we commenced the descent. As soon as we found a convenient rock to shelter us from the wind, we enjoyed, under the now genial rays of the sun, our first meal on the mountain. Hunger satisfied, we continued the descent by

the snow gully to the right of our ridge, which reached a long way down towards the bottom of the mountain, and down which we enjoyed some moderate glissades. Next afternoon we were in Damascus, the most ancient city in the world.

DR. PACCARD'S LOST NARRATIVE : A NOTE.

BY HENRY F. MONTAGNIER.

It is doubtful whether any chapter of the early history of mountain exploration has proved more attractive or more perplexing to students of Alpine literature than the conquest of Mont Blanc. The rival claims of Dr. Paccard and Jacques Balmat to the discovery of the route to the summit and the initiative of the expedition have been a matter of controversy for more than a century and a quarter. And, although a small library of books, pamphlets and magazine articles has been written about the subject during this long period, the question as to which of the two climbers played the leading rôle in their daring undertaking has not yet been satisfactorily settled.

It was asserted soon after the ascent that Dr. Paccard claimed far more than his due share of the credit for the successful expedition ; that the route had been discovered by Balmat in the course of a perilous excursion alone above the snow-line, and that the doctor could never have reached the summit without the aid and encouragement of his more stalwart companion. An anonymous writer took up Dr. Paccard's defence in a brief note in the ' *Journal de Lausanne* ' of February 24, 1787, and on May 12 the doctor published in the same journal two affidavits (each signed by Balmat in the presence of two witnesses), in which it is set forth that he, and not the guide, was the first to indicate the route and to lead the way to the summit, and that Balmat had accompanied him merely as a porter in the absence of the guide he usually employed, and had been duly paid for his services.

With the exception of a few passing allusions to his claims in letters in the ' *Journal de Savoie* ' of Chambéry nearly forty years afterwards,* these two documents are the only printed statement made by Dr. Paccard with reference to his ascent that has thus far been brought to light. Unfortunately for his cause, however, they remained hidden in the pages of the obscure periodical in which they appeared for more than a century, and, when finally unearthed and published by Mr. Whymper in his guide to ' *Chamonix and the*

* See the two letters reprinted in *A. J.* vol. xxv. pp. 621-4, in which Dr. Paccard maintained, after thirty-seven and thirty-nine years, that he was the first to indicate the ' *ancien passage* ' as a route to the summit.

Range of Mont Blanc' in 1896, their value as evidence was seriously contested.*

Balmat's case on the other hand was given the widest publicity from the very first. Less than six weeks after the ascent Marc-Théodore Bourrit, the Genevese Alpine traveller and author, published a little pamphlet on the expedition with the avowed object of securing fair treatment for the guide.† This version, which was based entirely upon Balmat's verbal account of the ascent, was soon translated into English and German and reprinted in a number of the most widely circulated journals of the Continent, and its influence, moreover, can be traced in the pages of nearly every writer who dealt with the subject during the ensuing fifty years.

Again in 1832, five years after Dr. Paccard's death and forty-six years after the great ascent, Balmat had the rare good fortune to find a sympathetic listener in Alexandre Dumas, *père*, and the interview with the old guide which the celebrated novelist published in his 'Impressions de Voyages en Suisse,' although now known to be little more than a series of grotesque exaggerations and imaginary incidents, has been reprinted in nearly all the recent books and articles on Mont Blanc as the most detailed, if not the most accurate, account of the ascent we possess.‡

Hence, if we bear in mind the fact that practically all our information about the matter is derived either from Balmat himself or from his most enthusiastic champion, Bourrit, it is not at all surprising to find that posterity has formed a rather poor estimate of Dr. Paccard's character and powers of endurance. Within recent years, however, and especially since the publication of Mr. C. E. Mathews' 'Annals of Mont Blanc,' there are signs of a change of opinion in Dr. Paccard's favour. It is felt with some reason that possibly history has not accorded him all the credit he deserved as one of the pioneers

* Mr. Whymper, while admitting that Balmat probably signed these documents, asks whether he knew what he was signing. According to a note recently found among the papers of H. A. Gosse, Paccard did resort to unfair means in order to obtain the guide's signature. Balmat at first refused to sign them; the doctor, however, persuaded him to attach his signature to a blank page promising to rewrite the document to his satisfaction. Several months later, when Balmat learned that the documents had been printed unchanged in the *Journal de Lausanne*, he had a heated discussion with Paccard over the matter, in the course of which they actually came to blows.

† *Lettre de M. Bourrit sur le Premier Voyage fait au Sommet du Mont Blanc le huit Août dernier*, dated September 20, 1787. The English translation is reprinted from the *Scots Magazine*, November 1786, in *Alpine Journal*, vol. xxv. pp. 609-12.

‡ See the various editions of Venance Payot's *Itinéraire de Chamonix; Jacques Balmat, or the First Ascent of Mont Blanc: a True Story*, by T. L. Oxley, 1881; *The First Ascent of Mont Blanc*, by Richard Edgcumbe, in the *National Review* for August 1892; Mr. Whymper's *Chamonix and the Range of Mont Blanc*, 1896; Mr. Mathews' *Annals of Mont Blanc*, 1898; Mr. Francis Gribble's *Early Mountaineers*, 1899, etc.

of mountaineering, and that upon further investigation many of the absurd stories that have clustered around his name may after all be due to the vanity and ill-will of his guide. In the hope of throwing some further light on this much-discussed question, I have made a careful, and not entirely unsuccessful, search during the last half-dozen years for unpublished documents relating to the first ascent of Mont Blanc, and especially for the book or pamphlet Dr. Paccard is supposed to have published about his expedition.

For the one document most needed to rehabilitate his memory, as well as to bring the long drawn out controversy to a close, is obviously his own account of the ascent. If it was ever printed it would assuredly have contained some reference to the charges made by Bourrit. In fact I am inclined to suspect that if it had been accessible to all who have written about the subject from the first, the conquest of Mont Blanc would appear in many of the recent books on the great mountain as a very commonplace affair, and that Balmat would now be known to us as a somewhat less heroic personage. But, although it is still generally believed that Dr. Paccard wrote and published a narrative of his expedition, his work has thus far eluded the most persistent researches. Not a single author has stated in unmistakable language that he has actually seen it ; * nor has anyone yet given us the slightest idea of its contents, and, with one possible exception, to which I shall refer again, not a single quotation from it has ever been discovered. In fact the question as to whether or not it was ever printed is perhaps the most puzzling feature of the Paccard-Balmat controversy.

Apparently the first to appreciate the interest Dr. Paccard's work would offer as an historical document was M. Charles Durier, who spared no pains in his efforts to find a copy of it when collecting material for his well-known work on Mont Blanc in the early 'seventies.' † But, curiously enough, he seems to have felt some reluctance about admitting that he had not had access to so important a book, for his only reference to it is so ingeniously worded that it has led not a few of his readers to believe implicitly that he had actually consulted it. 'Balmat fut quelque peu déçu dans son calcul,' he wrote in a footnote, 'car dans la brochure que Paccard

* This assertion should, perhaps, be slightly modified, as M. Henri Mettrier, whose admirable studies of the early history of mountaineering should be read by everyone interested in the subject, writes in the November number of *La Montagne*, vol. vii. p. 643, 'une personne très compétente et très digne de foi m'a certifié avoir consulté cette plaquette en Avril 1906, à la Bibliothèque Nationale, où je l'ai vainement cherchée depuis.'

Personally, I have been assured by a number of Swiss booksellers that they were positive the narrative had passed through their hands, and one of them told me that he had seen a copy among the books of Mr. John Auldjo. But in later years they all admitted to me that they were mistaken.

† M. Durier's first book on the subject, *Histoire du Mont Blanc*, appeared in 1873. His better-known work, *Le Mont Blanc*, was published four years later.

publia à la suite de son ascension, il ne se fait pas faute de s'en attribuer presque tout le mérite. (*Premier voyage fait à la cime de la plus haute montagne du continent, par M. le Docteur Paccard, Lausanne, 1786.*)* It is certain, nevertheless, that M. Durier had never seen it, for I am informed by Mr. Francis Gribble that the eminent French climber admitted to him 'quite unequivocally that he had searched for it in vain.'

Mr. Whymper also tried to run the missing narrative to earth when engaged in the preparation of his excellent guide to 'Chamonix and the Range of Mont Blanc,' of which the first edition appeared in 1896. After making fruitless inquiries in the libraries of London, Paris, Turin, Geneva, and Lausanne, he appealed to the descendants of Horace-Benedict de Saussure, who informed him that it was not to be found among the books of their celebrated ancestor. As a last resort he sent a circular letter to every inhabitant of the Chamonix valley whose address could be obtained, asking anyone fortunate enough to possess a copy of the desired work to communicate with him.† But it is almost needless to add that no reply was received. At Mr. Whymper's instance, M. Jules Janssen, the celebrated astronomer who established an observatory on the summit of Mont Blanc, caused similar inquiries to be made among the principal scientific bodies of the Continent with the same result.

Another very distinguished climber, Mr. C. E. Mathews, also took up the quest of the lost narrative before publishing his monograph on Mont Blanc in 1898, and evidence of the thoroughness of his search will be found in his advertisements in the most widely circulated Alpine journals of the Continent.‡ Though his efforts proved unavailing, he appears to have entertained no doubt whatever as to its existence. 'That Dr. Paccard's story was written and published,' he concluded, 'is beyond all doubt, but unfortunately it has been irretrievably lost. Probably it was printed for private circulation and not for sale.' §

Finally Mr. Francis Gribble endeavoured to unravel the mystery when writing his very entertaining work 'The Early Mountaineers,' published in 1899. A careful study of the question, and many inquiries in the British Museum and the Bibliothèque Nationale of Paris,|| led him to the conclusion that the much sought for narrative

* *Le Mont Blanc*, 4th edit. p. 109.

† Mr. Whymper assured me that his letter reached nearly every male resident of the Chamonix valley, and that hundreds of copies were sent to Cluses, Sallanches, Bonneville, Annecy and Chambéry.

‡ See *Bulletin du C.A.F.* December 1896, p. 366; *Alpina*, February 1897, p. 24; *Revue Alpine*, January 1897, p. 20; *Rivista Mensile del C.A.I.* December 1896, p. 545; and *Echo des Alpes*, January 1897, p. 32.

§ *The Annals of Mont Blanc*, p. 94.

|| Mr. Gribble writes that M. de Lisle of the Bibliothèque Nationale in Paris told him, that he never seen it quoted in a catalogue, and that the late Mr. Henry Mayhew, who purchased the foreign books for the British Museum, had also looked for it for years without result.

was in all probability a myth, and that the 'wild-goose chase' was very likely due to a bibliographical error.* The result of my own researches, as the reader will see in the course of this paper, would seem to confirm Mr. Gribble's very shrewd suggestion.

I have mentioned here only a few very well-known instances of the time and trouble devoted to the pursuit of this elusive document. In addition to these, many private collectors, as well as the librarians of every Alpine club of any consequence in Europe, have been looking for it for years, and it may be safely asserted that every bookseller who deals in 'Alpina' has the title permanently in his list of desiderata.

My attention was first attracted to this fascinating bibliographical problem some seven or eight years ago by Mr. Whympier, who, after recounting his own efforts to find a copy of Dr. Paccard's narrative during a ten years' search, recommended it as a promising field for investigation. Its discovery, he added by way of encouragement, would count as something of an achievement in the mountaineering world, and as I was then a resident of Geneva, where, if it was ever printed, a few copies must have remained, he strongly urged me to take up the matter. A few months later Mr. Whympier very kindly sent me his notes relative to the subject, and I began the search in earnest.

At the outset the matter seemed very simple. For if, as M. Durier evidently thought, the lost narrative was published in Lausanne, I refused to believe that it could have completely disappeared without at least leaving some trace behind it, either there or in Geneva—two cities which then counted among their citizens such pioneers of Alpine travel as Horace-Benedict de Saussure, Bourrit, Marc-Auguste Pictet, Berthoud van Berchem, Béranger, and Charles Exchaquet, to mention but a few. With a little patience I fancied a copy might turn up as Mr. Freshfield has suggested,† bound in a volume of forgotten tracts or hidden in the pages of some obscure periodical. But a careful examination of the vast collections of tracts in the libraries of Lausanne and Geneva brought forth no result; nor did a tedious search page by page through the periodical literature from 1786 to 1790 prove more repaying. Upon applying for information to the Académie Royale des Sciences de Turin, of which Dr. Paccard was elected a corresponding member March 13, 1785, I received a courteous note from the secretary to the effect

* *The Early Mountaineers*, pp. 174–176.

† *Paccard v. Balmat in Alpine Journal*, vol. xix. pp. 341–9. In a note to this valuable contribution to the literature of the subject Mr. Freshfield writes: 'It would be very useful if some enterprising publisher would put together and print in a small volume all the contemporary authorities I have cited.' And 'The search for Dr. Paccard's missing pamphlet should be persevered in.' I may, perhaps, be permitted to add here, that both Dr. Dübi of Berne and myself each have in preparation books which will include the documents mentioned by Mr. Freshfield, as well as a number of unpublished letters and journals by Dr. Paccard, De Saussure, Bourrit, Balmat, and Baron von Gersdorf.

that they possessed no documents whatever relating to the doctor or to his ascent of Mont Blanc. The De Saussure family very kindly allowed me to examine at leisure the books and papers of the great naturalist, but neither among his correspondence, which has been admirably preserved and classified, nor in his library could I find anything to explain the puzzle. From the descendants of Bourrit, Berthoud van Berchem,* and Marc-Auguste Pictet,† I learned indirectly that they were unable to find anything among their family papers bearing upon the question. Through the courtesy of the mayor of Chamonix, M. Bossonnas, I was able to make a careful examination of the archives of the commune, among which I succeeded in finding a copy of Dr. Paccard's passport, and many references to his activity as mayor of Chamonix and magistrate, but little else of interest. M. J. P. Cachat, the venerable proprietor of the Hôtel du Mont Blanc in Chamonix, whose wife was a granddaughter of Dr. Paccard, was unable to render any assistance. He had never heard of the lost narrative, but as for the doctor's papers, he had a distinct recollection of certain boxes supposed to contain his letters and manuscripts. My hopes were short-lived, however, for he added that on opening them some fifty years ago he found the contents so damaged by rats that he had destroyed the whole lot. Nor could Adolphe Balmat, great-grandson of Dr. Paccard, from whom Mr. Mathews obtained the famous MS. Journal, find any other papers of interest.

Among the unpublished letters preserved in the Geneva library, however, I succeeded in finding a few important references to the subject. There was proof at any rate that less than seven weeks after the ascent Dr. Paccard had already announced his intention

* Berthoud van Berchem was the author of a pamphlet entitled : *Excursions dans les Mines du Haut Faucigny, et Description de deux Nouvelles Routes pour aller sur le Buet et le Breven, avec une Notice sur le Jardin, Lausanne 1787*, and the first guide to the valley : *Itinéraire de la Vallée de Chamonix, Lausanne 1790*.

† Pictet published the following account of the ascent in *Les Nouvelles de la République des Lettres* of September 6, 1786 (reprinted in *Le Journal des Savans* of March 1787, p. 175) : ' Au moment où j'écris cette lettre j'apprends qu'on vient enfin d'atteindre le sommet du Mont-Blanc. M. Paccard, Docteur en Médecine, qui fait sa résidence au Prieuré de Chamouni, et qui joint à la vigueur nécessaire pour ces entreprises les connaissances d'histoire naturelle qui peuvent les rendre intéressantes, accompagné de Jacques Balmat, du Hameau des Pèlerins, y sont montés le 8 Août. On les a suivis avec des lunettes dans presque toute leur route, et on les a vus planter à ce sommet un bâton avec un mouchoir, qui atteste leur arrivée à la cime, où aucun homme sans doute n'était parvenu avant eux. Des guides de Chamouni au nombre de six, très robustes et très experts, avaient fait cette année au mois de Juin une tentative infructueuse, et l'on commençait à regarder la chose comme impossible, lorsqu'elle a été heureusement exécutée ; ils n'ont éprouvé d'autre mal, outre la fatigue, que la brûlure ordinaire du visage et des mains que produit l'action réunie de la neige et du soleil. En attendant que le Docteur publie les circonstances du voyage et ses observations, j'ai cru que cette simple notice ne vous serait pas indifférente.'

of publishing an account of his expedition. For on September 22, 1786, De Saussure's uncle, the Genevese naturalist, Charles Bonnet, wrote to his Scotch friend Mr. Clason :

' Il paroîtra incessamment à Genève une petite Relation du voyage du jeune Docteur Paccard et de son compagnon au Mont-Blanc. Ils ont eu les premiers la gloire de parvenir jusqu'au sommet du plus haut pic de ce Mont majestueux par une route inconnue jusqu'à eux et qui n'est pas dangereuse. Ce fut le 8 du mois passé qu'ils firent cette heureuse expédition. Ils grimpèrent pendant 14 heures et n'arrivèrent au sommet de la Montagne qu'à 6 heures du soir. Leur thermomètre étoit descendu à 6 degrés au dessous de la congélation, et le froid leur paroissoit tellement piquant qu'ils ne purent y demeurer en station qu'une demi-heure. Mon neveu, qui avoit eu une bonne carte de la nouvelle route, s'étoit mis aussi-tôt en chemin pour la même expédition ; mais les neiges tombées en abondance sur ces grandes hauteurs l'ont forcé de renvoyer l'expédition à l'année prochaine.'

On the following day, September 23, 1786, the naturalist wrote to Comte de Bielke, of Stockholm : ' Le jeune médecin de Savoye fait actuellement imprimer à Genève par souscription la curieuse Relation de son voyage. Il n'a pourtant pas vu beaucoup, mais le peu qu'il a vu piquera la curiosité du lecteur.'

Again, in a letter from Bonnet to M. Bailly of the Académie Royale des Sciences de Paris, dated November 3, 1786, we read : ' Vous aurez appris qu'un jeune Médecin des Alpes nommé Paccard et un montagnard, son compagnon de voyage, furent assez heureux le 8 août dernier pour parvenir les premiers des mortels sur la cime la plus élevée du fameux Mont-Blanc à 2426 toises au dessus du niveau de la mer. Vous savez que c'est le plus haut pic de notre ancien continent. Le Médecin a ouvert une souscription pour l'impression de son ouvrage ; mais il n'aura pas beaucoup à raconter, parce qu'il n'étoit pas muni des instrumens qui lui auroient valu des observations importantes, ni vêtu dans le rapport au froid de cette grande hauteur.'

Bourrit also alludes to the doctor's literary project in his pamphlet on the ascent : ' J'apprends déjà que M. le Médecin Paccard espère tirer des fruits de sa course ; qu'il s'est fait annoncer à Lausanne & s'y est fait voir comme le conquérant du Mont-Blanc, dont il promet une description pour laquelle il fait déjà souscrire : tandis que le pauvre Balmat, à qui l'on doit cette découverte, reste ignoré, & ignore qu'il y ait des Journalistes, des journaux, & que l'on puisse, par le moyen de ces trompettes littéraires, obtenir du Public une sorte d'admiration.'

The foregoing extracts left little doubt that the public had been invited to subscribe in advance for Dr. Paccard's narrative by a circular of some sort, but having found no mention of it in the contemporary journals, I concluded that the announcement was probably merely a manuscript note exposed in the windows of a few

bookshops in Geneva and Lausanne, of which there was little chance of ever finding a copy.

In 1909, however, I learned that a biography of Henri-Albert Gosse was about to appear in Geneva.* Gosse, it will be remembered, was the author of the letter in the 'Journal de Genève' of September 15, 1787,† which gave rise to the erroneous belief that the first recorded passage of the Col du Géant was made in 1786 by the English traveller Mr. Hill. As a man of letters and scientist he was a well-known personage in his day, and he was interested in a wide range of subjects. Although prevented by lameness from undertaking any difficult climbs, he was nevertheless an enthusiastic Alpine traveller and a frequent visitor to the Chamonix valley. Knowing him, moreover, to have been on friendly terms with both Bourrit and Dr. Paccard, I hastened to write to Mdlle. Plan, his biographer, to inquire whether she had found anything of importance among his papers bearing upon eighteenth-century mountaineering. With a kindness for which I can scarcely express my gratitude, Mdlle. Plan placed at my disposal all the documents relating to the subject that she could find in the mass of material she had collected for her work. Among them there was a manuscript copy of the original French text of the Windham-Martel letters describing visits to Chamonix in 1741 and 1742, and hidden among its pages there was found a little printed circular, which, upon examination, turned out to be nothing less than the prospectus issued by Dr. Paccard as an appeal for subscriptions for the forthcoming account of his ascent of Mont Blanc. Its edges had been sadly mutilated by mice and one line had nearly disappeared, but fortunately the remainder is quite legible. The text of this unique document reads as follows :‡

SO[USCRIPTION] PREMIER VOYAGE A LA CIME DE LA PLUS
HAUTE MONTAGNE DE L'ANCIEN CONTINENT, LE MONT-
BLANC,

PAR LE DOCTEUR MICHEL-GABRIEL PACCARD,
Médecin dans les Alpes de Chamonix, Le 8 Août 1786.

LE Mont-Blanc, si renommé par les Voyageurs & les Savans, passe pour la plus haute montagne de l'ancien Continent ; il est couvert

* *Un Genevois d'Autrefois, Henri-Albert Gosse (1755-1816)*, par Danielle Plan. Genève 1909.

† Reprinted in *Alpine Journal* for November 1878, vol. ix. pp. 87-9, by M. Durier. Gosse had planned to accompany Bourrit in his attempt on Mont Blanc of September 15-16, 1783, but was detained in Geneva at the last moment. See *Alpine Journal*, vol. xxiv. p. 420.

‡ I must acknowledge here my deep obligation to Mdlle. Plan for the communication of this document, and to Dr. Hector Maillard-Gosse, among whose family papers it was found, for his courtesy in allowing it to be reproduced. In the fac-simile published with this paper (which is copied from a photograph Dr. Maillard-Gosse very kindly had made for me), the reader will observe the words 'et par Jacques Balmat des Pelerins son guide' in the handwriting of Henri-Albert Gosse.

d'un manteau de neige & de glace qui traîne jusqu'à sa base : des foules de Voyageurs viennent l'admirer toutes les années & parcourir les Glaciers qui en découlent : les tentatives des chasseurs de chamois les plus hardis pour atteindre sa cime, ont échoué jusqu'à présent : L'Auteur y est parvenu le 8 Août 1786. Plusieurs amateurs des montagnes désirent connoître des détails de ce nouveau Voyage ; il en est même qui ont étendu leurs accueils jusqu'à solliciter une souscription pour former un prix qui fasse l'éloge & la récompense des Conquérens du Mont-Blanc : l'Auteur, pour mieux mériter ces accueils & pour . . . faisant le premier cette course, tâchera, dans la relation de son voyage, de renfermer tout ce qui peut les intéresser : il donnera une histoire abrégée des tentatives qui ont été faites pour escalader cette montagne, décrira les pierres & les rochers, autant qu'il lui a été permis de les observer, les insectes qui habitent ces lieux, les plantes rares que l'on trouve en y allant, & donnera ses observations physiques & médicales, &c. avec un Dressein de la route du Mont-Blanc, & toutes les notices nécessaires à ceux qui veulent visiter les Glaciers de Savoie.

'Le prix de la souscription du Livre avec la Planche gravée en taille douce, est de 6 liv. de France sur papier fin, & de 4 liv. 10 s. sur papier ordinaire. Les personnes d'une plus haute classe qui désirent concourir à former un prix à l'auteur de cette conquête, partageront quelques curiosités qu'on a trouvé sur le Mont-Blanc. Les noms des Souscripteurs seront imprimés à la tête de l'Ouvrage. On souscrit pour l'un & l'autre à Chamonix, aux Glacières de Savoie, chez l'auteur, où les amateurs pourront voir une collection des plantes & des pierres de ce singulier pays. On prie d'affranchir les lettres.

'La souscription sera ouverte jusqu'à fin de Décembre prochain. Quelques Voyageurs se trouvoient à Chamonix au moment que l'auteur faisait le plan de cette souscription ; leur empressement à souscrire lui fait espérer un heureux succès.

Mr. A. Trau[gott . . . de Gersdorf . . .]

Mr. John Moore, Irlandais.

Mr. Henri Cerjat, Capitaine Anglois.

Mr. Robert Gordon, Capitaine Anglois.

Mr. le Comte Charles Imbonati, Milanois.

Madame Sannazari Imbonati, Milanoise.*

Mr. François Zinammi, Milanois.'

With this prospectus before us it will be seen at once that

* The Countess Sannazari arrived in Chamonix a few days after the ascent bearing a letter of introduction from De Saussure to Jean-Pierre Tairraz. The text of this letter, in which the naturalist acknowledges the latter's note, sent by special courier to inform him of the successful expedition, will be found in *La Grande Chartreuse, le Mont Blanc etc.* by L. D. F. Audiffret, Paris 1845, pp. 84-7. It is translated into English in Albert Smith's *Story of Mont Blanc*, London, 1853.

Dr. Paccard evidently contemplated publishing something more ambitious than a mere pamphlet, for an account of the numerous unsuccessful attempts to reach the summit of Mont Blanc, with a narrative of the first ascent and chapters on the geology, botany and entomology of the great mountain, could hardly have been compressed within the limits of a brochure, as the work is now almost invariably described. The possibility of a book describing a feat which had aroused the greatest interest at the time—probably an octavo volume of at least a hundred pages—remaining unknown, or else deliberately ignored, for a century and a quarter, seemed so remote that doubts began to rise in my mind as to whether it was not, after all, a myth as Mr. Gribble had already suspected.

The prospectus, however, suggested at least one new clue that seemed worthy of investigation. On the third page the names of seven subscribers are given, and the first of them, though partially eaten away, can be clearly recognised as 'Mr. A. Traugott de Gersdorf.'

Late in the afternoon of August 8, 1786, two German travellers, Baron Adolphe Traugott de Gersdorf, of Meffersdorf, near Görlitz, and Charles André de Meyer, returned to Chamonix from an excursion to the Montanvert. On reaching the village they learned that the day before, at noon, Dr. Paccard and Jacques Balmat had set out for the Montagne de la Côte with the intention of attempting to attain the summit of Mont Blanc the next day. The two Germans at once looked for the climbers with their telescope, and after scanning for some time the upper slopes of the mountain, finally caught sight of them shortly after five o'clock ascending rapidly towards the summit. From a chalet on the north side of the valley, in which Bourrit frequently passed the summer months, they continued to watch the two adventurers, until at 6.23 they saw them reach the highest point and disappear on the south side. Dr. Paccard's father, the Royal Notary of the Chamonix valley, who was one of the witnesses of his son's triumph, at once asked the two Germans to sign an attestation to the effect that they had actually seen the two climbers on the summit. This document, which was duly signed after Dr. Paccard's return, was luckily discovered in Chamonix a few years ago by the late Dr. Michel Payot.*

Gersdorf was much impressed by the daring achievement of which he had been one of the few spectators. On returning to Germany he reprinted Bourrit's pamphlet on the ascent, with an introduction in German soliciting contributions to a fund he was raising with the object of presenting Balmat with a suitable reward for the courage and determination he had displayed in the expedition.

* See *Document sur l'Ascension au Mont Blanc par le Dr. Paccard et J. Balmat (le 8 août 1786)*, in the *Revue Alpine*, vol. xi. pp. 90-91.

In the course of the following year he sent, through Bourrit, a considerable sum of money to the young guide.*

With such evidence of his enthusiasm over the conquest of Mont Blanc, added to the fact that his name appeared first in the list of strangers who had already subscribed for Dr. Paccard's book, there seemed to be some chance of finding a copy of it among Gersdorf's papers and books if anywhere. But it was no easy matter to locate his papers. The German biographical dictionaries were silent as to his life, and I was unable to obtain the names of any of his descendants. I ventured, however, to write to the librarian of the Scientific Institute of Görlitz (which I had learned in the 'Encyclopædia Britannica' possessed a very valuable library), to ask if he could oblige me with any information regarding this interesting traveller. To my delight I received soon afterwards a most courteous answer from Prof. Dr. Jecht, the secretary and librarian, informing me that Baron de Gersdorf was one of the founders of the institute, and had bequeathed to it the greater part of his papers and library. The lost narrative, as I had feared, was not to be found, but among the papers there was a number of letters from Dr. Paccard and Bourrit of the greatest interest. As these documents were far too numerous to be copied in Görlitz, Dr. Jecht very generously offered to lend them to any Swiss public library providing the request was made through the German Legation. This my friend Dr. Dübi, of Berne, was fortunately able to arrange by having them sent to the Swiss National Library.

According to the prospectus the subscription for Dr. Paccard's book was to close by the end of December 1786, and with one exception every author who has quoted the title appears to have believed that it was undoubtedly published in that year. But the Gersdorf papers afford us irrefutable proof that it had not yet appeared by the summer of the following year, for on May 3, 1787, Bourrit wrote to Baron de Gersdorf, 'Monsieur Paccard n'a rien écrit encore et son libraire de Lausanne n'a rien reçu de lui pour imprimer.' And on the 31st of the same month we find Dr. Paccard himself writing to Gersdorf to explain the delay :

'Je n'ai point encore publié la relation de mon premier voyage au Mont Blanc, Monsieur, mille entraves en ont été la cause. J'ai été en butte aux auteurs qui ont écrit sur nos Alpes jusqu'à présent.

* Gersdorf's sympathy for Balmat was probably due partly to a fact which has been overlooked by all who have written about the early history of Mont Blanc. In the *Registre des Décès* of the commune of Chamonix the following entry will be found :

'L'an mil sept cent quatre-vingt six et le huit du mois d'aoust est décédée sur les quatre heures du soir et le dix du même mois a été inhumée—Judith fille de Jacques Balmat et de Jeanne-Marie Simon, âgée de dix-huit jours.'

From this it will be seen that Balmat's child must have died less than two hours and a half before he reached the summit of Mont Blanc, and the day after he returned to Chamonix he must have been present at the funeral in the village churchyard.

Vous aurez sans doute vu la lettre de Mr. Bourrit sur le premier voyage, puisqu'il assure dans le Journal de Lausanne que vous l'avez fait réimprimer avec une préface en allemand. Vous aurez peut-être appris que le même auteur se flatte que vous lui avez écrit *que vous aviez vu avec peine l'indifférence pour ne pas dire plus du Docteur Paccard à l'égard de son guide.* C'est pour me justifier que j'y ai pareillement fait imprimer le certificat que j'ai l'honneur, Monsieur, de vous envoyer ci-joint. . . . Voudriez-vous me faire part en français de la préface de la lettre que vous avez fait imprimer, qui j'espère doit faire mauvaise figure à la tête d'une si mauvaise et si méchante lettre.' *

We may gather from these two extracts that even by midsummer 1787 Dr. Paccard had not succeeded in getting subscribers enough to enable him to publish his book, and his own resources were probably too limited to permit him to print it at his own expense. The lack of enthusiasm on the part of the public was due partly, perhaps, to the accusations made by Bourrit that he had acted unfairly towards his guide, but mainly to the general belief that he would have little of importance to relate in the way of scientific observations. It must be remembered that a mere record of mountain adventure would have attracted but little attention at that time. The public was far more interested in the readings of various scientific instruments on the summit than in the difficulties experienced by the two climbers.

Nearly two years after the ascent Dr. Paccard was apparently still at work on his book, if we may judge by the following reference in a letter by the German poet Frederick Matthisson, dated July 7, 1788 :

'We also visited Dr. Pakkard, who gave us a very plain and modest account of his ascension, for which he does not appear to assume to himself any particular merit, but asserts that anyone with like physical powers might have performed the task equally well. He is at present employed in a work upon the glaciers, which will contain the results of many years' examination into their origin. From an intelligent man who lives at their very foot, and can observe them at every season, we may reasonably expect something satisfactory relative to so important and curious a subject.' †

As Matthisson does not mention any previous publication by Dr. Paccard relative to his ascent, it would seem that the narrative had not yet appeared at the time of his visit to Chamonix. Possibly the doctor had changed the plan of his book, and decided to add a

* From the Gersdorf papers in the library of the Oberlausitzischen Gesellschaft der Wissenschaft in Görlitz. I must express here my very sincere thanks to Dr. Prof. Jecht, the secretary of this society, for his kindness in connection with these valuable MSS.

† *Letters written from various parts of the Continent between the years 1785 and 1794. Translated from the German of Frederick Matthisson by Anne Plumtre, London 1799, p. 130.*

few chapters on the study of the glaciers, but in any case it cannot be doubted that the work he had in hand in the summer of 1788 would have contained something about the ascent.

In the first account of his ascent of Mont Blanc, published towards the end of August 1787, De Saussure does not mention any publication by Dr. Paccard, but in vol. vii. p. 223 of his '*Voyages dans les Alps*,' which did not appear until 1796, he wrote: '*Le succès de cette entreprise a été connu du public par les relations qu'en ont données le D. Paccard et M. Bourrit.*' This reference, which has been brought forward as proof of the existence of the lost narrative, I take to be an allusion to the famous certificates or affidavits published by Dr. Paccard in the '*Journal de Lausanne.*' For the editor himself described them thus: '*Nous recevons aujourd'hui copies des Relations ou certificats. . . .*'*

In 1795 Lalande, the celebrated astronomer, visited the Chamonix valley, and published an account of his journey under the title '*Voyage au Mont Blanc*' in the '*Magasin Encyclopédique*' of the following year. He called on Dr. Paccard to hear from him the story of the great ascent, and gives many details, learned in the course of his chat with him, but it is a significant fact that he does not say a word about the lost narrative. One can hardly believe that Dr. Paccard would have carried his modesty so far as not to present a copy of his book to his illustrious visitor had he ever published it; and it is not likely that Lalande would have passed it over in silence had his attention been called to it.

During the rest of his life—and Dr. Paccard survived his famous ascent by more than forty years—many travellers came to pay their respects to him as the conqueror of Mont Blanc. He lived to see fourteen climbers follow in his footsteps to the summit.† Several of the latter were indebted to him for much courtesy in lending them scientific apparatus, and nearly all of them published accounts of their ascents. Yet one searches in vain in their books and pamphlets for the slightest allusion to a narrative of the first ascent.

In 1854, twenty-seven years after Dr. Paccard's death, we find a passing reference to the matter in a pamphlet by Michel Carrier, entitled: '*Notice Biographique sur Jacques Balmat dit Mont Blanc,*' p. 17. The author was born in Chamonix in 1797, and was consequently about thirty years of age at the time of Dr. Paccard's death, and claimed to have known him intimately.

'Après quelques jours d'intervalle, M. Paccard rédigea la relation de leur voyage. S'il ne put l'enrichir d'un grand nombre d'observations, ce n'est pas faute de connaissances; l'incertitude du

* Dr. André Matthey also seems to refer to these documents in his article in the *Bibliothèque Universelle* for May 1834, p. 53, in which he wrote in parenthesis '*Voyez la relation du Dr. Paccard.*'

† Of these De Saussure, Beaufoy, Matzewsky, Van Rensselaer, Howard, Undrell, Clissold, Jackson, Markham Sherwill and Clark published narratives of their ascents, and most of them mention having met Dr. Paccard.

The three following illustrations are fac-simile reproductions of Dr. Paccard's Prospectus of the book he intended to publish on the first ascent of Mont Blanc. From an unique copy of the original in the Library of Dr. Hector Maillard-Gosse, of Geneva.

Mr. *A. François de Ge*
Mr. *John Moore*, Irlandois.
Mr. *Henri Cerjat*, Capitaine Anglois.
Mr. *Robert Gordon*, Capitaine Anglois.
Mr. le Comte *Charle Imbonati*, Milanois.
Madame *Sannazari Imbonati*, Milanoise.
Mr. *François Zinammi*, Milanois.

On peut également souscrire ,

- à AMSTERDAM, chez M. *Changuion*.
- à BASLE, chez M. *Serini*.
- à BERLIN, chez M. *La-Garde*.
- à BERNE, chez M. *Emmanuel Haller*.
- à BOLOGNE, chez MM. *Guibert & Bouchard*.
- à BRUXELLES, chez M. *Le Maire*.
- à FRANCFORT, chez M. *Streng*.
- à GENES, chez M. *Yves Gravier*.
- à GENEVE, chez MM. *Barde Manget & Comp.*
- à LA HAYE, chez M. *Goffé*.
- à LAUSANNE, chez MM. *J. P. Heubach & Comp.*
- à LEIPZIC, chez M. *Junius*.
- à LONDRES, chez M. *Elmsli*.
- à LYON, chez M. *Louis Rossét*, rue Merciere.
- à MILAN, chez MM. *Reycends*, Freres.
- à PARIS, chez M. *Buiffon*, Hôtel de Mesgrigny, rue Poetevins.
- à PARME, chez MM. les Freres *Faurer & Comp.*
- à ST. PÉTERSBOURG, chez M. *Weitbrecht*.
- à ROME, chez MM. *Bouchard & Gravier*.
- à TURIN, chez MM. *Reycends*, Freres.
- à VENISE, chez MM. *Foresti & Bettinelli*.
- à VIENNE en Autriche, chez M. *Græffer*.
- à ZURIC, chez MM. *Orel, Gesner, Fucli & Comp.*

succès, la spontanéité du départ, le peu de temps qu'ils restèrent sur la cime, et plus que tout l'impossibilité d'y porter à eux deux des instruments de physique, en furent la cause. Il était réservé à l'illustre de Saussure, qui fit l'ascension en août 1787, de rendre compte au monde savant de l'intéressante série d'observations que le temps lui permit d'y faire.'

It should be noted that, while Carrier says that Dr. Paccard wrote an account of the ascent, he does not say that it was ever published; in fact he rather conveys the impression that De Saussure was the first to publish a narrative of the ascent of Mont Blanc. Yet he must have known all about the mystery, and if the lost work had ever existed he would certainly have heard of it.

Stéphen d'Arve (Vicomte Edmond de Catelin) assures us in his 'Histoire du Mont Blanc,' published in 1876, p. 307, that Dr. Paccard published only a geological treatise,* from which we may infer that he also was certain that the narrative never existed. As he was well acquainted with Michel Carrier it is possible that he learned something about the matter from him.

In the foregoing pages I have considered only the evidence, which would seem to prove that the mysterious book was never printed. I have shown that it was certainly not published by the summer of 1787, and probably not by the summer of the following year, and that the few people who wrote from personal knowledge of Dr. Paccard, such as De Saussure, Bourrit, Matthiesson, Lalande, and the early Mont Blanc heroes, had apparently never heard of it.

Let us now turn to the series of books in which the title of the narrative is quoted as that of a work which was undoubtedly printed.

The earliest printed mention I have heard of occurs in an anonymous work entitled 'Notice Historico-Topographique de la Savoie,' edited and printed in Chambéry towards the close of 1787 or early in 1788,† by Jean Lullin, on p. 50 of which we read:

'*Chamonix*, dans le Haut-Faucigny, très connu par ses *Glacières* et ses hautes Montagnes, entre lesquelles on remarque le *Mont-Blanc*, dont la cime, toujours couverte de neige, est le point le plus élevé de l'ancien Monde. On voit de-là toute la Savoie à ses pieds, comme enfermée entre le cours du Rhône et celui de la chaîne des Alpes. Le cours du Rhône ne peut mieux ressembler qu'à un C, qui embrasse la Savoie au Nord-ouest; et le cours de la chaîne centrale des Alpes représente très-bien un 7, qui la sépare de la Val d'Aoste et du

* The only work Dr. Paccard is known to have published is a well-written article in *Observations sur la Physique, sur l'Histoire Naturelle et sur les Arts etc.* for July 1781, vol. xviii., entitled 'Extrait de quelques lettres du Docteur Paccard sur les causes de l'arrangement en arc, en feston, en coin, &c., et de la direction oblique, perpendiculaire, horizontale, des couches vraies et apparentes etc.' It was probably to this article that he owed his election as corresponding member of the Turin Academy.

† No date appears on the title-page, but permission was granted to print it on September 7, 1787. In the *Preface de l'Éditeur* Lullin describes the work as a compilation made from various sources.

Piémont Les provinces qui avoisinent la chaîne centrale des Alpes, sont les plus montagneuses ; elles sont hérissées de petites montagnes composées par les revêtements secondaires du Globe, dont il n'est resté que des lambeaux au milieu des sillons creusés en partie par les eaux qui fuyoient la chaîne centrale Le plus grand espace plat que l'on remarque, est dans la Province du Genevois (*Voyez le Premier Voyage fait à la Cime de la plus haute Montagne de l'ancien Continent, par M. le Docteur Paccard*). *

This passage is, I believe, the only reference to the missing narrative that can possibly be taken for a quotation from it.† The only description of the view from the summit of Mont Blanc which had been published down to the end of 1787 was De Saussure's 'Relation Abrégée,' but there is nothing in the great naturalist's narrative to which the foregoing details can be traced, and it would be difficult, to say the least, for anyone who had not stood on the summit to have imagined them. It is possible however that Lullin may have had access to Dr. Paccard's manuscript, or that the note about Chamonix and Mont Blanc was written by the doctor himself. The title is given about as it appears in the prospectus, but no date is mentioned, a fact which seems to confirm one or the other of these two theories.

We hear nothing further about the matter until 1807, when Abbé Jean-Louis Grillet published a very learned compilation entitled 'Dictionnaire Historique, Littéraire et Statistique des Départemens du Mont-Blanc et du Léman,' in which the following notice of Dr. Paccard appears in the article on Chamonix (vol. ii. p. 197) :

'M. Paccard (Michel), docteur médecin et membre correspondant de l'Académie des sciences de Turin, qui le premier parvint le 8 août 1786, avec Jacques Balmat, à la sommité du Mont-Blanc, regardée jusqu'alors comme inaccessible. Il publia la relation et les difficultés de son entreprise dans l'ouvrage intitulé :

'*Premier voyage fait à la cime de la plus haute montagne du continent, 1786.*

'M. Bacler d'Albe, qui a séjourné si longtemps à Sallanches, a peint et gravé le portrait de M. Paccard ‡ avec cette épigraphe :

'*Scendit inaccessos brumali sydere montes.*'

Here we have the title quoted, with the addition of the date, 1786,

* The three series of four dots each (thus) occur in the original text.

† I am indebted to Dr. W. A. B. Coolidge for the communication of this very important reference to the lost narrative, and also for a number of valuable suggestions.

‡ A copy of this very rare portrait may be seen in the Alpine Club Library. Louis-Albert-Guislain Bacler d'Albe (1761-1824) lived in Sallanches from 1786 to 1793, when he enlisted in the French Army. After a brilliant career as a military engineer, he was appointed by Napoleon director of his topographical cabinet with the rank of brigadier-general, and the title of Baron of the Empire. See *Michel Paccard et Jacques Balmat : Deux Portraits Savoyards du XVIII^e Siècle par un Artiste Savoisien devenu Général de l'Empire*, by M. J. Cochon, Chambéry 1908.

but as Grillet also mentions the 'Notice Historico-Topographique' elsewhere in his work, it is not at all improbable that he simply copied it from that book, assuming that it had actually been printed.

Five years later we find a mention of the lost narrative in Philippe-Xavier Leschevin's 'Voyage à Genève et dans la Vallée de Chamouni' (p. 245), published in 1812.

'Le Docteur Paccard étoit membre correspondant de l'académie de Turin. A la suite de son voyage à la cime du Mont-Blanc il fit paroître l'ouvrage intitulé : *Premier voyage fait à la cime de la plus haute montagne du continent*, 1786, in-8vo. Son portrait a été peint et gravé par M. Bacler d'Albe, avec cette épigraphe, etc.'

Leschevin mentions both the 'Notice Historico-Topographique' and Grillet's 'Dictionnaire' in his introduction (pp. 18 and 27), and his notice of Dr. Paccard is clearly borrowed almost word for word from the latter work. The fact that he gives the format of the lost narrative has been brought forward as evidence that he must have seen it. The addition of 'in-8vo' to the title, however, was probably only a plausible inference, as the book was not likely to have been of any other format.*

The next mention is found in a bibliographical work running into many volumes by Joseph Marie Quérard in 1836, and entitled 'La France Littéraire ou Dictionnaire Bibliographique . . . des XVIII et XIX Siècles' (vol. vi. p. 541) :

'Paccard (Michel), docteur médecin et membre correspondant de l'Académie des Sciences de Turin : né à Chamonix, commune et vallée du Haut-Faucigny.—*Voyage (premier) fait à la cime de la plus haute Montagne du Continent (le Mont-Blanc)* 1786. Paccard fut le premier qui parvint le 8 août 1786 avec Jacques Balmat, à la sommité du Mont-Blanc, regardée jusqu'alors comme inaccessible. Le brochure qu'il a publiée contient la relation de son ascension et les difficultés de son entreprise.'

Here again the information is copied almost literally from Grillet, whose work and that of Leschevin are both mentioned by the author.† These four references to Dr. Paccard's book, dating back to 1787, 1807, 1812 and 1836, complete the early bibliography of the subject,‡ but it is extremely doubtful whether any of these

* In his introduction Leschevin gives a bibliography of works relating to Savoy, in which the title of the lost narrative appears (No. xxviii), but without the format and place of publication, although these useful details are given in connection with nearly every well-known book in the list. At least one other work is mentioned (No. xxxiv, *Le voyage curieux d'un Lord Anglois en Faucigny*), which has never as far as I am aware been found, and in this instance also only the title is given.

† Vol. iii. p. 447, and vol. v. pp. 237-238.

‡ Among the more recent works in which the title of Dr. Paccard's narrative is quoted I may mention : *Swiss Travel and Swiss Guide-Books*, by Dr. W. A. B. Coolidge, 1889, p. 132, in which it is cited on the authority of M. Durier ; *Savoie et Savoyards* by M. François Descostes, 1889, p. 307 ; *An Account of Shelley's Visits to Switzerland and Savoy*, by Mr. C. Elton, 1894, p. 107 ; and

four authors ever saw a copy of it, especially in the case of the last three. Yet there is a curious development in their accounts of it, which is not easily explained. Thus Lullin, in 1787, gives only the title without the date; Grillet in 1807 adds that it was published in 1786, and Leschevin in 1812 mentions both the date and the format. Moreover, while both Grillet and Leschevin describe it rather vaguely as an 'ouvrage,' Quérard, in 1836, informs us that it was a brochure, although I have already shown that Dr. Paccard probably intended to publish a good-sized volume.

I have now quoted, I believe, every important reference to Dr. Paccard's book, from the time the public was first invited to subscribe for it in the autumn of 1786 down to the present day. What conclusion are we to form as to its existence? With the evidence before us, and at any rate until further light is brought to bear on the question, I think we are justified in believing that it was never printed. The legend of the lost narrative is very probably due to Lullin, who in quoting the title in his 'Notice Historico-Topographique de la Savoie' doubtless thought the book had already appeared or that it was soon to be published. For my part I have accepted this conclusion very reluctantly, and I confess I find it hard to abandon the hope that some day some lucky collector may yet run across a copy of a book that has been the object of so much fruitless research.

MOUNTAINEERING IN SIKKIM AND GARHWAL.

MR. KELLAS sends us the following diary of his very successful Himalayan Expedition in 1910, the third he has undertaken. It will be noted that a number of ascents of over 20,000 ft. were made with none but native companions.

- April 24. Started from Lachen, 8 days' march N. of Darjeeling.
Bridges over Tumrachen and Lonach Chu had to be built.
27. Near Green Lake. Heavy snowstorm.
29. Green Lake Plain (15,400 ft.). Snowstorm at night.
- May 1. Ascend to 18,000 ft. N.E. of Green Lake. Route over snowpeak possible but difficult.
2. Ascend to 18,000 ft. N. of Green Lake. No easy pass could be found.
4. Ascend Tent Peak icefall and examine Green Lake Glacier.
5. Ascend to Nepal Gap (21,000 ft.). Small rock wall at summit not ascended.

finally the *Bibliographie Nationale Suisse (Voyages)*, by Herr Wäber, 1899, p. 176 —who adds the following note in parenthesis: 'Obwohl eine Schrift unter diesem Titel von Ch. Durier: Le Mont-Blanc, 3ième édit. p. 109, Paris 1881, erwähnt wird, ist es doch fraglich, ob eine solche wirklich existirt.'

- May 7. Ascend Tent Peak icefall and then crossed pass (Lhonak La, 19,500 ft.) to N.E. leading to Lhonak. Too difficult and dangerous for laden coolies.
8. Attempt to find pass to S.E. of icefall. Ascend to 18,500 ft. Unsuccessful, but route is not impossible.
 10. Start for Zemu Gap (19,300 ft.).
 11. Camp at 18,200 ft. in the Gap.
 12. Ascend to summit and retreat to glacier.
 13. Ascend and camp on summit of Simvu Saddle (17,700 ft.). Icefall to the south would be practicable with some difficulty.
 15. Proceed up Tent Peak Glacier and camp on summit of Tent Peak Pass, between Tent Peak and Peak to east.
 20. Cross the Chorten Nima La (18,300 ft.).
 21. Ascend to summit of Sentinel Peak to east of pass (21,240 ft. in one map, 21,700 in another).
 22. Recross Chorten Nima La.
 24. Cross the Jongsong La.
 25. Ascend to Langpo Saddle, but driven back by wind, and camp at 20,700 ft.
 26. Ascend to near summit of Langpo Peak (22,500 ft.) to investigate the summit ridge of Jongsong Peak. Driven back by snowstorm and thick mist. Ascent far more difficult than in August 1909, when the summit (22,800 ft.) was reached.
 30. Ascend to the summit of Long Ridge Pass (19,520 ft.), south of The Outlier, a solitary peak of the Jongsong Massif.
 31. Attempt on Chabuk La. Cross Long Ridge Pass and camp under The Outlier.
- June 1. Advance to deep gorge and return to camp.
2. Recross Long Ridge Pass.
 3. Recross Jongsong La.
 5. Cross Lungnak La and arrive at Thango. Very wet and misty weather, deep snow on pass.
 10. Send Sirdar to explore approaches to Arun R.
 11. Reach Giagong on way to Pawhunri.
 13. Camp at 18,500 ft. on Pawhunri.
 14. Attempt on Pawhunri. Driven back by high wind at 20,700 ft.
 15. Move up camp to 20,000 ft.
 16. Ascend to summit of Pawhunri (23,180 ft.).
 20. Back at Thango. Meet Mr. Bell (Resident from Gangtok).
 22. Leave for Sebu La and cross that pass on 23rd (17,600 ft.). Snow, rain, &c.
 25. Recross the Sebu La. Weather bad.
 26. Arrive at Thango.

- June 28. Send coolies to investigate north and west faces of Chumiomo. Unsuccessful.
- 29 to July 4. Wait for Sirdar, who should have arrived on June 25.
- July 5. Cross Lungnak La.
7. Advance to south-west face of Chumiomo—mist and snow. Route practicable but somewhat difficult. Rock falls common.
9. Circle round to north-west of Chumiomo. Camp about 18,500 ft.
10. Camp at 19,500 ft.
12. Ascend to summit of Chumiomo (22,430 ft.).
13. Thango.
25. Darjeeling.
30. Arrive at Katgodam and push on to Bhim Thal.
- Aug. 1. Almora.
4. Gwaldam.
10. Cross Kuari La. Heavy rains.
11. Joshimath. Letter from Deputy Commissioner of Garhwal prohibiting further advance.
13. Reach Badrinath.
16. Start for Kamet.
19. Ascend to 16,500 ft. Khaiam Glacier.
20. Ascend to Khaiam Pass (19,300 ft.).
21. Move up camp to 18,500 ft.
22. Re-ascend pass and examine west face of Kamet. Climb snow peak near top of pass 20,200 ft.
24. Camp at foot of Donerau Glacier.
25. Advance to north-east source of Donerau Glacier.
26. Ascend Donerau Peak (19,000 ft.) and examine north and north-west faces of Kamet. Retreat to Mana.
27. Joshimath.
29. Recross the Kuari La.
- Sept. 9. Leave Bombay for London.
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IN MEMORIAM.

EDWARD WHYMPER.

EDWARD WHYMPER, born April 27, 1840, was the son of Josiah W. Whympers by his first wife, Elizabeth Claridge. His father, the son of an Ipswich brewer, was himself of an artistic temperament. He walked up to London with the traditional few shillings in his pocket, made an improvident marriage and became the father of eleven children. But his talent overcame all obstacles and justified



Swiss Alpine Club

Edward Whymper.

(at the age of 25)

Jan 1860

Ed. 1861

his choice of a career. He made a name both as an etcher-engraver and as an original artist, and died a Member of the Royal Society of Painters in Water-Colours, leaving behind him a well-established business for the production of book illustrations. Among his pupils were Frederick Walker, A.R.A., and Keene—one of the finest draughtsmen of his time, well known afterwards from his contributions to 'Punch.'

Edward was the second son in this large family. He was privately educated. While still a youth he entered his father's business in Lambeth and in time succeeded to its control. For many years he maintained its reputation for the production of the highest class of book illustrations until towards the close of the last century the improvement in cheap photographic processes destroyed the demand for such work. His hand may be recognised in many books of travel between 1865 and 1895; among his more important productions may be mentioned Wolf's 'Wild Animals,' and 'Picturesque Europe.' He superintended for a short time the artistic branch of Messrs. Cassell's business as publishers.

Edward, although he seldom exhibited, was, like his father, a water-colour artist of considerable ability, and it was to this gift that he owed a commission that proved a turning point in his life. In 1860 William Longman, afterwards President of the Alpine Club—a member of the firm of publishers—needed illustrations of the then little-known mountains of Dauphiné for the second series of 'Peaks, Passes, and Glaciers,' and young Whymper was sent out to make drawings for this purpose. He states ('Alpine Journal,' vol. v. p. 161) that he saw in the chance of going to the Alps a step towards training himself for employment in Arctic exploration, an object of his early ambition. In the following year he proved his ability as a mountaineer by climbing Mt. Pelvoux ('Peaks, Passes, and Glaciers,' 2nd Series). In the seasons of 1862-65 by a series of brilliant climbs on peaks and passes he made himself one of the leading figures in the conquest of the Alps. In 1864 he took part in the first ascents of the highest mountain in Dauphiné, the Pointe des Ecrins, and of several peaks in the chain of Mont Blanc. In 1865 he climbed the W. peak of the Grandes Jorasses and the Aiguille Verte.

Whymper's fixed ambition, however, during this period, was to conquer the reputedly inaccessible Matterhorn. In this he had formidable rivals in Prof. Tyndall and the famous Italian guides, the Carrels of Val Tournanche. He made no fewer than seven attempts on the mountain from the Italian side, which were all foiled by the continuous difficulties of the climb, or by bad weather. In one of these, while climbing alone he met with a serious accident. At last the plan of trying the Zermatt ridge was adopted and success was gained at the first attempt. The details of the tragic sequel are well known. The party, from no fault of Whymper's, was too large and ill-constituted for such an adventure. The youngest member

of it, a lad inexperienced in rock-climbing, fell on the descent and dragged over with him three of his companions, among them the famous guide, Michel Croz. The rope broke and Whymper was left with the two Taugwalders clinging to the mountain side, while his companions disappeared from sight over the precipice. Investigation showed that the rope that broke was a spare piece of inferior quality. Whether it was accidentally used by the Taugwalders is a point which has never been satisfactorily cleared up, and on which Whymper himself never expressed a positive opinion.

This terrible catastrophe gave Whymper an European reputation in connexion with the Matterhorn, which was extended and maintained by the volume in which, six years afterwards, he told the story with dramatic skill and emphasis. It terminated, however, his active career as an Alpine climber, though he often subsequently visited the Alps and once repeated his ascent of the Matterhorn for literary purposes.

In 1867 he turned his attention to Greenland with the idea of ascertaining the nature of the interior and, if possible, crossing it. A second preliminary trip in 1872 convinced him that the task was too great for his private resources. The literary and scientific results of his journey were three entertaining papers in the 'Alpine Journal' (vols. v. and vi.), a lecture to the British Association (39th Report, 1869) and a paper by Prof. Heer ('Philosophical Transactions,' 1869, p. 445) on the fossils, trees and shrubs collected. The chief practical result was to show that the interior of Greenland was] a snowy plateau which could be traversed by sledges provided the start was made sufficiently early in the season, and thus to pave the way for Nansen's success in 1888.

In 1880 Whymper turned his attention to the Andes of Ecuador. At that date the still unsettled problem of the power of resistance, or adaptation, of the human frame to the atmosphere of high altitudes was being vigorously discussed. Whymper proposed as his main object to make experiments at heights about and over 20,000 ft. The results he obtained, if they did not settle a question complicated by many physical, local and personal variations, served to advance our knowledge and have been in important respects confirmed by the experiences of Dr. Longstaff, Dr. Kellas, the Duke of the Abruzzi and others at still higher levels between 20,000 and 25,000 ft.

From a climber's point of view the expedition was completely successful. The summits of Chimborazo, and six other mountains of between 15,000 and 20,000 ft., were reached for the first time. A night was spent on the top of Cotopaxi, and the features of that great volcano were thoroughly studied. Shortly after his return Whymper read a paper on his explorations in the Andes at a meeting of the Club which was honoured by the presence of the then Prince of Wales, Edward VII. From the wider point of view of the geographer and the general traveller Whymper brought home

much valuable material which was carefully condensed and embodied in the volume published twelve years later (1892). Its value was recognised by the Council of the Royal Geographical Society, which in 1892 conferred on Whymper one of their gold medals in recognition of the fact that—apart from his mountaineering exploits—he had largely corrected and added to our geographical and physical knowledge of the mountain systems of Ecuador, fixed the position of all the great Ecuadorian mountains, produced a map constructed from original theodolite observations extending over 250 miles, and ascertained seventy altitudes by means of three mercurial barometers.’

The Society also made a grant to the family of his leading guide J. A. Carrel of Val Tournanche, ‘to mark their appreciation of the high services he had rendered to geographical science.’

For these explorations Whymper devised the form of mountain tent, known by his name, which is still in general use with explorers. He also suggested sundry improvements in aneroid barometers.

In 1901 and several subsequent summers, Whymper visited the Canadian Rocky Mountains, but did not make any extensive explorations or publish any account of his journeys.

With strangers Whymper’s manner was apt to be reserved and sometimes self-assertive. But amongst acquaintances and persons interested in the same topics with himself his talk was shrewd, instructive and entertaining. He was by instinct both a craftsman and an artist. With these gifts he coupled great physical endurance and intellectual patience and perseverance, qualities which he displayed both on the mountains and in his business. In everything he aimed at thoroughness. He would never, if he could help it, put up with inferior material or indifferent workmanship. To his own volumes he devoted years of careful preparation. Finding his craft practically brought to an end Whymper employed his leisure mainly in compiling and keeping up to date two local handbooks to Chamonix and Zermatt. Well illustrated, and not devoid of personal and picturesque touches, these attained high popularity and passed in his lifetime through fifteen editions. In the autumn of 1911 Whymper paid his last visit to the Alps and made what was destined to be a final round of his old familiar haunts. He first stayed some time at Zermatt, where he met various old friends, and then crossed to Grindelwald and Bern, where he paid promised visits to Dr. Coolidge and Dr. Dübi. From Bern he went on to Chamonix where he died suddenly on September 16th. His health had been manifestly failing for some time previously and his broken appearance in the spring had given cause for serious anxiety to his friends. He was buried in the churchyard of the English Church at Chamonix, being carried to his grave by members of the Corporation des Guides.

Whymper was, as stated above, a Gold Medallist of the Royal Geographical Society; from 1872 to 1874 he served as a Vice-President of the Alpine Club. In 1872 he was created a knight of the

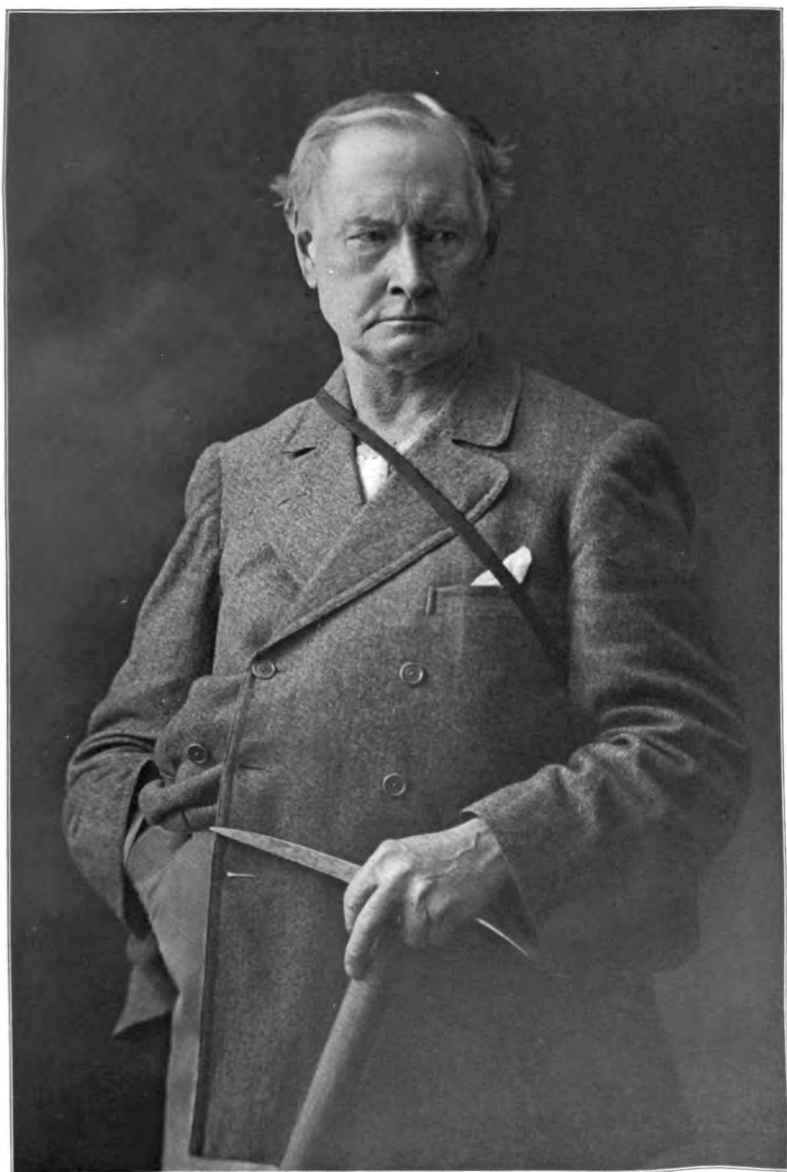
Italian Order of St. Maurice and St. Lazarus. He was an Honorary Member of the French Geographical Society and of most of the principal mountaineering Clubs of Europe and North America. He married in 1906 Edith Mary Lewin, by whom he left a daughter.

There is a good photograph of him in his later years at the Alpine Club. His portrait also appears in several of the illustrations to his books. Whymper's principal published works were: 'Scrambles amongst the Alps,' 1871; 'The Ascent of the Matterhorn,' 1880; 'How to use the Aneroid Barometer,' 1891; 'Travels amongst the Great Andes of the Equator,' 1892; 'Guide to Chamonix and Mont Blanc' 1896; 'Guide to the Zermatt District and the Matterhorn,' 1897; articles on Greenland, 'Alpine Journal' vols. v. and vi.

THE SCIENTIFIC WORK OF EDWARD WHYMPER, F.R.S.E. AND F.R.G.S.

THOUGH Edward Whymper, so far as I know, never received any scientific training, he made very considerable additions to natural knowledge, which perhaps were a little thrown into the shade by his repute as a mountaineer. Thoroughness and tenacity of purpose characterised his work, whatever that might be; he was a careful collector and a keen observer, who might be trusted not to miss anything worthy of notice. He spared no pains before a journey in making all the preparations which should contribute to its success, or after it in working out the results, so that the accounts of his travels will for long be valuable as books of reference for certain districts. These are four: the Alps, Western Greenland, the Ecuadorian Andes, and the mountains of Western Canada. By treating them separately we can the better show the nature of the work which he accomplished in each.

His first published volume—'Scrambles amongst the Alps'—at once made it clear that he was far more than a lover of a particular type either of gymnastics or of scenery, and its third chapter affords an excellent indication of his mental characteristics. This gives a description of the 'Fell railway' which had been carried across the Mont Cenis pass to bridge over the gap in the railway from Paris to Turin, while the tunnel between Modane and Bardonnèche was being made. His account of the plan, construction, and machinery could not well be more precise and clear, and will always be valuable as the history of an important episode in the progress of mountain railways. Scattered through the book are interesting notices of the habits of the people, which in the earlier days of his travels had but little changed, in some districts of the French and Italian Alps, from the end of the previous century; together with notes on the bouquetin, the chamois, and flowers growing at high



M. Willmann, Chamonix, photo.

Swan Electric Engraving Co., Ltd.

Edward Whymper,

Oct. 1910

altitudes ; but he keeps most constantly in view the sculpturing action of running water and of ice. These, which are especially described in the sixth chapter, receive further illustration from his experiences in Greenland, which he had visited after his chief expeditions in the Alps, but before publishing the book. It would be difficult to find clearer or more accurate accounts of the forms resulting from the action of torrents and of glaciers, and his conclusions are adverse, not only to the lake-excavating hypothesis of Ramsay, and the valley-making one of Tyndall, which at that day chiefly occupied attention, but also to the resuscitation of the last, varieties of which have rather suddenly won so many adherents among the geologists of North America and Europe, not forgetting our own islands. Whymper, reasoning from his own wide and varied experience, utterly discredits (by anticipation) the 'plucking,' 'sapping,' and other digging powers now so freely claimed for glaciers, and comes to the conclusion 'that glaciers, in their life as well as after their death, either considered by themselves or in comparison with other powers, should be regarded as eminently conservative in their acts and in their intentions' ('Scrambles,' p. 154). Besides this he paid considerable attention to the veined structure of glacier ice, the explanation of which had led to much controversy, especially between Forbes and Tyndall, and he gave another example of the thoroughness of his methods by employing men to dig a pit into the snow at the top of the Col de Valpelline. Though the results, from various causes, one being the extreme badness of the weather, were less successful than he had hoped, the excavation was carried to a depth of about 22 feet and showed some interesting facts illustrative of the passage from snow to blue ice.

He visited Greenland in 1867 and 1872. In the first of these journeys he made an attempt to discover the mysteries of the inland ice, which, however, from causes beyond his own control, met with but little success. Still it and his other studies made some interesting and important additions to his knowledge of ice action in a region where it forms a sheet instead of valley glaciers, and he made a good collection representative of the 'stone age' in Greenland, which only came to an end about a couple of centuries ago. Another purpose of his journey was to obtain a large series of specimens of the fossil plants which occur in Disco Bay. In this he was very successful, and brought to England a collection which was afterwards described, with extracts from Whymper's 'Report on the Geology,' by Professor O. Heer in the 'Philosophical Transactions' for 1869 (vol. 159, p. 445). It contained eighty species, twenty-five of which were new.

But his journey in the Andes of Ecuador, which occupied several months of 1880, was his most important piece of scientific work, for which he made all possible preparations and secured the aid of Jean Antoine and Louis Carrel. Whymper's chief aim, in addition to

investigating those volcanic giants, which crown the elevated plateau where Quito stands at well over 9000 feet above sea-level, was to study the effect of a much diminished atmospheric pressure upon the human frame (a subject on which very contradictory opinions then prevailed), to compare the values of boiling-point observations, the aneroid and the mercurial barometers, in the measurements of heights, and to collect rocks, plants, and animals from the greater altitudes. His efforts were successful. He made scientific surveys of important areas; twelve times reached positions more than fifteen thousand feet above sea-level, gaining two summits above 17,000 feet, three above 19,000 feet, and twice ascending Chimborazo, which is well over 20,000 feet, and, like more than half the others, had not been previously climbed. He spent a night on the summit of Cotopaxi, and afterwards saw it burst into sudden eruption during his second ascent of Chimborazo, where he watched the cloud of dark dust from its crater as it drifted through the upper air till at last, while he was seated on the summit, it came down and sullied the snow after an aerial journey of more than sixty miles. He brought back to England a number of rock specimens and volcanic dusts representative of the several mountains, which were described by the writer in five papers published in the 'Proceedings of the Royal Society' (Nos. 229-234), together with collections of plants, insects, and other animals. To a description of these and other scientific results the supplementary volume to his 'Travels among the Great Andes of Ecuador' (1892) is more especially devoted, but of them, important as they were, a very brief summary must suffice. Among the insects collected from the level of the sea up to 8000 feet, 16 per cent. were new to science; of the 160 species from 8000 feet upwards, 60 per cent. were previously unknown; all taken higher than 15,000 feet being new. Crustacea appear to be scarce, and only five representatives were obtained, all of which were previously known. The reptilia were represented by three species of lizards and two of snakes, only one of the former ranging up to 12,000 feet; the amphibia by four species of frogs. He also brought a number of specimens of the fish which, according to Humboldt, was sometimes ejected from Cotopaxi, a report which Whympere gives good reason for discrediting. These specimens showed that *Pimelodus cyclopus* had figured under five or six names. His zoological collections, as Mr. H. W. Bates pointed out, have an important bearing on questions relating to the migration of species, and he also brought back sundry objects of ethnological interest.

His journeys among the mountains traversed by the Canadian Pacific Railway enabled him to make additions to scientific knowledge, though these, as he was but rarely on untrodden ground, were necessarily less numerous than in the Ecuadorian visit. But he brought back from the Ice River valley a set of specimens representing a beautiful sodalite rock and its associates, and a more miscellaneous one from several other points of interest, which were

described by the present writer in the 'Geological Magazine' for 1902 (pp. 199 and 544), together with a collection of Middle Cambrian fossils, chiefly trilobites, from Mount Stephen, of which Dr. H. Woodward has given a full account in the same volume (pp. 502 and 529). Whymper's knowledge of geology and natural history generally, though the pressure of his professional work obliged him to remain among the amateurs, was wide enough to show him what was worth recording or carrying away. This was very noteworthy when he brought back rock specimens from any place of interest. Most climbers collect pretty or curious odds and ends, such as bits of minerals or vein-stones, which help a geologist but little. Whymper always laid hold of what was characteristic and useful, and his remarks upon what he had seen were shrewd and suggestive. Had he been able to devote himself wholly to geology or some other branch of natural history I believe he would have risen to a high position among men of science.

T. G. BONNEY.

SIR JOSEPH DALTON HOOKER, O.M., G.C.S.I., F.R.S.

By DOUGLAS W. FRESHFIELD.

By the death on December 10, 1911, at his home at Sunningdale of Sir Joseph Hooker in his ninety-fifth year, the Alpine Club has lost the most distinguished of its Honorary Members and one of the most successful pioneers in practical and scientific mountain exploration. The table of Sir Joseph Hooker's honours, the long list of his publications, will doubtless be published in full elsewhere. Here in the Alpine Club and in these pages, we remember him not so much as the greatest botanist of his generation, as the earliest confidant and friendly critic of Darwin—to whom as his 'affectionate friend' he dedicated his 'Himalayan Journals,'—but as the enthusiastic lover of mountains, the first systematic explorer of the Sikkim Himalaya and the borderlands of Nepal and Tibet, the companion in the Atlas of our late President, John Ball.

In the opportunities as well as in the length of his life, Hooker was fortunate above most men. Born in 1817 at Halesworth in Suffolk, the son of a distinguished botanist, whom he was subsequently to succeed as Director of Kew Gardens, he inherited both his father's tastes and talent. In 1839 he took a medical degree at Glasgow University, and in the next year was appointed nominally as assistant-surgeon, but practically as naturalist, to the Antarctic Expedition of 1839-43, under Sir James Ross. In the course of the voyage Australia and New Zealand, Kerguelen Island, the Falklands and Tierra del Fuego were visited. The botanical results were published in six splendid quarto volumes, in which the young observer found opportunity to put forward 'many novel conclusions

as to the laws governing the distribution of plants over the earth's surface.'

After some hesitation between the Andes and the Himalaya Hooker in 1847 accepted an official invitation from Lord Auckland and Dr. Falconer to visit India. Sikkim was at that time ground 'untrodden by traveller or naturalist,' and was recommended to Hooker as the most promising field for his explorations and botanical studies. The height of Kangchenjunga had not then been ascertained, and it was the prospect of visiting Chumulari, of which he had read in Turner's 'Travels in Tibet,' that chiefly excited Hooker's interest. In 1848 after some previous travel in the course of which he visited Parasnath, a Holy Mountain, a sort of Monte Generoso, towering above the steamy plains of Bengal, Hooker set out from Darjiling on his Himalayan journey. His 'Journals,' published in two volumes in 1854, have been re-issued in a popular edition, and it would take too long to attempt to sketch his itinerary here. Despite serious political obstacles, Hooker, in company with Dr. Campbell, succeeded in making extensive journeys over the high passes on both flanks of Kangchenjunga, penetrating on the east to the frontier of Tibet, and on the west to Nepalese valleys, none of which were visited again by any European for fifty years. The merits of the 'Journals' have been done justice to recently by another veteran of Himalayan exploration, Lieutenant-Colonel Godwin Austen in sentences I am glad to quote and endorse. 'It is,' he writes, 'for a book of the kind, a pattern to be taken by any writer. It has interested hundreds, made many a naturalist, and exemplifies on every page what a precious gift is that of observation. Here Anglo-Indians had a book dealing with trees and plants, the fauna, the geology, physical geography and ethnology, together with descriptions of the scenery so perfect that not a single character of importance is left out.' Examples of Hooker's powers of description may be found in the pages referring to the Yangma Valley and Chunjerma Pass, while every chapter is enlivened by quaint and entertaining incidents of travel. It may be added that Hooker was one of the first travellers able to recognise an ancient moraine when he met one, and that he consequently threw much new light on the former glaciation of the Eastern Himalaya.

After his return to Europe Hooker visited Chamonix and Zermatt in 1853, and probably on other occasions. In that year he crossed the Old Weissthor, to which he refers in a letter to me as 'a pass of grim memory.' In 1860 he visited Syria and pointed out the obvious, but apparently up to that time unnoticed, fact that the Cedars of Lebanon stand among ancient moraines.

In 1871, in company with John Ball and W. George Shaw, Hooker undertook a more important journey into the Southern Atlas behind Mogador and the recently notorious Agadyr, the result of which was a joint volume, 'The Journal of a Tour in Morocco and the Great Atlas, 1878.' It may be noted that the travellers declared that the

best hope for Morocco lay in a French occupation. Their mountain ascents were limited by tribal hostility, but they were able on two occasions to gain an elevation of over 11,000 ft., some 2000 ft. below the estimated height of the culminating points of the range.

Hooker held the post of Director of Kew Gardens for twenty years (1865–85) and of President of the Royal Society for five years (1873–78). His greatest scientific works are the 'Flora Indica' and his 'Genera Plantarum,' a complete set of Latin definitions and descriptions of all known genera of flowering plants. One of the most attractive is his volume on 'The Rhododendrons of the Sikkim Himalaya,' which he was the first to introduce into this country.

Regarded as a man of science Hooker stands out by the singular width of his interests. To the too familiar modern type of specialist he was the very opposite. Laborious and pre-eminent in botany he was keenly interested and an acute observer in many other branches of natural research. He studied their mutual relations and their bearings on the great problems of creation and development. It was by this quality of his intellect that he became a stimulative influence on Darwin. To lesser minds he revealed the varied interests, the readiness to impart, the quickness to receive, the sympathy and simplicity of a first-rate intelligence. At the age of eighty-six, despite his years, nothing could exceed his enthusiastic welcome of fresh tidings from the great peaks and glaciers that had impressed themselves so vividly on his imagination. He revelled in Signor Sella's photographs and panoramas. In the glow of his own rekindled memories he appreciated beyond their deserts the results of my travels with Professor Garwood and S. Sella in his old footsteps. Though conscious of the risk to any credit I may have for modesty, I cannot resist, in conclusion, quoting some sentences from one of Sir Joseph Hooker's letters to me. For they are a striking testimony to the return mountains may make, in after years, to their true lovers:—

'THE CAMP, SUNNINGDALE,

'December, 16, 1903.

'MY DEAR FRESHFIELD,—I have just concluded my reading "Round Kangchen" with absorption, with pleasure that I cannot express in words. Never since reading, as a boy, Franklin and Richardson's journey to the Polar Sea have I been so fascinated. You have brought to me visions of my happiest early years that I never hoped to see; for your descriptions are as happy as they are truthful; so much so that they have set me dreaming by night of the Teesta, Zemu river, Jongri, and, above all, Jannu. In your mention of my work you have gone far beyond justice, and I thank you heartily for this.

'The sum of work done and light thrown on the structure of Sikkim by your journey is indeed great, and remembering the terrible snowfall surprising. I was not prepared for your being able to hug the great massif so clearly, *i.e.* at such heights, nor for so complete

a chart of the origin and course of the glaciers. This is really a fine piece of work. The photographs giving the sculpturing and structure of both snow and rocks are of the greatest beauty, and remind me of every detail impressed on my mind when studying the realities. Appendix A has almost upset me. I had no idea that my geological work had any value; no one hitherto had paid any attention to it, and I had myself forgotten it—I may say *utterly*. Mr. Garwood's resurrection of it, and his most liberal appreciation of it is, I need not say, an extraordinary gratification. He has turned it to great purpose in his original views of the origin and building up and sculpturing of Sikkim, and his speculations are of very great interest and promise for the future.

'Again thanking you heartily for your book and for my rejuvenescence, Believe me, sincerely yours,

'JOS. D. HOOKER.'

THE ALPINE CLUB LIBRARY.

THE following additions have been made to the library since September 1911 :—

Club Publications.

- Akad. Alpenklub Innsbruck.** 18. Jahresbericht 1910–11. 1911
 $9\frac{1}{2} \times 6$: pp. 83.
 Contents :—
 L. v. Hibler, Ueberschreitung der Meje : Library catalogue : Tours, etc.
- Appalachian Mountain Club.** Bulletin. Vol. 4, 10 numbers. 1910–1911
 $7\frac{1}{2} \times 4\frac{1}{2}$: pp. 110.
- C.A.F. Travaux en montagne,** 1911 : see Vallot, H.
- **Vie Concours international de ski.** Chamonix 3–8 février 1912. 1912
 $8\frac{1}{2} \times 5\frac{1}{2}$: pp. 10.
- **Lyon.** Revue alpine. Vol. 17. Rédacteur en chef : Claudius Joublot. 1911
 Among other articles this contains :—
 E. Fontaine, Aiguille du Géant ou Dent du Géant.
 R. Godefroy, Massif de la Collette Verte.
 W. A. B. Coolidge, Les grands sommets des alpes de la Tarentaise dans l'histoire.
 B. Oglietti, Le Grand Séru.
 J. Capedon, A l'Aig. Doran par le face nord
 E. Gailliard, Le chaîne du Mont-Blanc avant 1800.
 M. Piacenza, Comment fut vaincue la dernière arête du Cervin.
 C. Meade, Le face sud-ouest de la Maledia.
- **Sud-Ouest.** Bulletin. 3me sér. No. 2. Marseille, Juillet, 1911
 Contents :—
 E. Durègne, La première, par un bordelais, du Mont-Perdu par le Col de l'Astazou, 1861.
 Saint-Saud, Aux Dolomites.
 L. Briet, Relèves dans le Haut-Aragon.
- — — Guides et porteurs au 1er juin, 1911.
 Folio sheet.

C.A.I. Torino. Società Alpina Ragazzi Italiani. Regolamento sociale. 1911
6 x 4: pp. 15.

Il gruppo giovanile 'Sari' della Sez. di Torino già Soc. alp. ragazzi italiani fondata nell' ottobre del 1908, ha per scopo l'educare gli adolescenti alla vita sana dei monti e lo sviluppare lo spirito e le forze mediante proporzionati esercizi di alpinismo.

— — — **Sari.** Revista del gruppo Sari della Sezione del Club alpino italiano.
Anno IV, N. 1-12. 1911

9½ x 7½: pp. 88, ill.

The Climbers' Club Journal. Edited by A. W. Andrews. Vols. 12-13, nos. 45-50. 1909-11

Contains the following, *inter alia* :—

G. Barlow, New climbs in Coire Labain, Skye.

E. W. Steeple, June days in the Coolins.

A. E. Riddett, The monolith crack.

Club library catalogue.

H. Bishop, Climbs on mountain limestone in Derbyshire.

F. W. Steeple, S.E. gully of Sgurr a'Mhadaidh.

H. Bishop, Wharcliffe Crags, Sheffield.

— — — Contents and index to vols. xi., xii. and xiii. 1910

Club alpino español. Estatutos. Madrid, 1908

6 x 4½: pp. 12.

— — — **Reglamento del chalet general.** 1910

8½ x 5½: pp. 4.

D.u.Oe.A.-V. Mitteilungen. Redigiert von H. Hess. N.F.Bd. xxvii, der ganzen Reihe xxxvi. Bd. München-Wien, 1911

11 x 8½: pp. viii, 298.

Among other articles occur the following :—

O. Langl, Auf d. Westliche Zinne.

G. Mayer, Im Firnreich d. Marmolata.

Neue Turen 1909 in d. Ostalpen.

R. Liefmann, Campanile dei Camosci.

W. Deye, Winterturen im Dauphiné.

Dr. v. Zimmerman, Erstbesteig. d. Zehnersp. in d. Fanesgruppe ü.d. S.O.-Wand.

E. Leonhard, Der Campanile di Val Montanaisa.

M. Grosse, Auf d. Turnerkamp ü. d. Südgrat.

G. Meikel, Anwendung d. Seils.

G. Herold, Die Rocksp. in d. Lechtaler Alpen.

O. Oettel, Neue Turen in d. Sextener Dolomiten.

H. Wödl, Mte. Rotondo u. Monte d'Oro.

J. Nieberl, Die Nordwand d. Rosskopfs: Die Nordwand d. Seekarlsp.

J. Moriggl, Der Besuch d. Alpenvereinsstätten im Jahre 1910

251 huts: 226,000 visitors.

E. Leonhard, I. Begehung d. Umrahmung d. Lagaunferners: I. Erststeig. ü. d. Ostgrat d. Rappensp.

Eröffnung d. Alpen Museums in München.

— — — **Augsburg.** Satzung. 1911

9 x 5½: pp. 4.

Ladies Scottish Climbing Club. The second annual record. From January 1909 to January 1910. 1910

4½ x 2½: pp. 20.

The Mountaineer. Mount Adams number, vol. iv. Seattle, 1911

11 x 7: pp. 76, 21 plates.

Nederlandsche Alpen-Vereeniging. Kalender voor het jaar 1911.

10 x 6½: ill.

— — — 1912. 10 x 6½: ill.

A page to a week, with illustration and letterpress.

Den Norske Turistforenings aarbok for 1911. Utgit av H. Horn.

9 x 6½: pp. 273: ill.

Kristiania, 1911

Contains:—

F. Schjelderup, Med norsk flag i Nordland: *E. Randers*, Til fjelds: *K. Tandberg*, En snartur i Romsdalsfjeldene og Søndmør: *H. Tønsberg*, Jostedalsbraeen: etc.

Oesterreichische Alpenzeitung. Organ des österreichischen Alpenklubs.

Geleitet von Hans Wödl. XXXIII Jahrgang. 1911. Nr. 825-848.

10½ × 7½: pp. viii, 388: plates.

Wien, 1911

This contains among other articles:—

J. Kugy, Altes u. Neues v. Wischberg u. v. Montasch.

H. Hoek, Das Schigebiet d. Lenzerheide.

R. Damberger, Gebirge v. Korsika.

E. Thiemann, Der Westabsturz d. Rotwand.

A. v. Martin, Von der kulturellen Mission des Alpinismus.

K. Jaksche, Ueber das Alt-Weisstor.

G. Künne, Neue Turen in d. Pyrenäen.

L. Patéra, Herbsttage in d. Radstädter Tauern.

Fr. Nieberl, Karwendelfahrt.

E. Kiene, Neue Turen in d. Brentagruppe.

O. Schuster Bergsteigen u. Psychopathologie.

M. Pfannl, 1. führerlose Begehung d. S.W.-Grates d. Piz Roseg.

Helene Kuntze, Ersteigungen in d. Sugan-Doppachgruppe.

O. Schuster, Der Midagrawinpass in d. Kasbekgruppe.

Among the new expeditions recorded are the following:—*E. Meyer*,

Mur d. Rosses ü. d.O.-Wand: Oldenhorn N.-Grat; *J. Klammer*,

Hoher Göll ü. d. W.-Wand; *G. Künne*, Pyrenäen; *R. Damberger*,

Kampilbrunnsp. ü. d. W.-Grat; *A. Andreoletti*, Cima

Moschesin v. W.: Mte S. Sebastiano ü. d.N.-Wand; *A. Wützenmann*,

Cima Bagni v. N.; *R. Gerin*, Totenkopf; *K. Blodig*, Mt. Blanc v.

Col Emil Rey: Gabler, Silvrettagruppe; *K. Endell*, Lille Ottertind;

Store Ottertind; Polvartind; *F. Tham*, Hoher Nock ü. d.O.-Wand.

Oesterreich. Touristen-Zeitung. Hsg. v. Oesterr. Touristen-Klub. XXXI. Bd.

11½ × 8½: pp. 304: ill.

Wien, 1911

Among other articles this contains:—

T. Helm, Auf d. Ortler.

K. Baum, Im Drautale.

F. Mielert, Mte Rotondo u. andere Bergriesen Korsikas.

K. M. Baumwolf, Auf das Selbhorn and das Birnhorn.

S.A.C. L'écho des Alpes 47me année.

1911

Among the articles are the following:—

E. Fontaine, Ascensions et passages nouveaux dans la chaîne du Mont-Blanc.

L. Spiro, Le piolet.

F. F. Roget, Traversée sur skis des massifs Diablerets, Wildhorn, etc.

E. R. Blanchet, Traversée du Gr. Clocher de Planerense: une variante à la Cime de l'Est.

E. Busset, A la Cape du Moine.

E. Ruchonnet, Une course au Bietschhorn.

G. Vallette, Le montagnard dans la littérature suisse contemporaine.

J. Schmutz, Une traversée des Aiguilles dorées.

— **Alpina.** Mitteilungen des S.A.-C. xix. Jahrgang 1911. Redigiert von Dr. E. Walder.

Zürich, Tschopp, 1911

12 × 9: pp. 232: ill.

This contains the following articles:—

H. Müller, Die Mythen.

A. Kuenzle-Engler, Führerlose Touren im Ortlergebiet.

In memoriam P. Gosset.

P. B., Ueberschreitung d. Spillgartenmassiva.

D. Stokar, In d. Gegend d. Clubhütte in d. Martinsmaad.

H. Kempf, Traversierung d. Frundenhorns.

S. Zurlinden, Besteig. d. Matterhorns ü. d. Zmuttgrat.

The Scottish Mountaineering Club Journal. Vol. 11. Nos. 61-65.

Among the articles are :—

February 1910-June 1911

G. Thomson, The coming of age of the S.M.C.

W. N. Ling, Beinn Lair and Beinn Airidh a' Charr.

J. A. Parker, Craig Rennet and Winter Corrie, Clova.

A. White, A climb on Sail Mor, Beinn Eighe.

C. Macpherson, Mam Sodhail and Carn Eige.

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- Bourrit.** Lettre de M. Bourrit à Miss Craven sur deux voyages faits au sommet
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- Briet, Lucien.** El Valle de Ordesa. Madrid, Impr. Admin. Milit., 1911
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side of the Pyrenees.
- Christomannos, Th.** The new Dolomite road Bozen—Cortina—Toblach and
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- Ferrand, Henri.** Le Mont Blanc d'aujourd'hui. Grenoble, Rey, 1912. Fr. 30
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- Fleischmann, Wilhelm J.** Bayerischer Wintersport-Kalender 1912. 1. Jahrgang.
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- Forrester, J. Campbell.** A Four Weeks' Tramp through the Himalayas. A
 guide to the Pindari Glacier. Calcutta, Thacker, 1911. 1/-
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 A short account of a trip with drawings of the snout of the glacier at
 various dates and notes by various visitors.
- France. Ministère de l'agriculture.** Services des grandes forces hydrauliques
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 M. Mougins, Etudes glaciologiques en Savoie: Etudes et observations
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 C. J. M. Barnard, Etude du Glacier de Tré-la-Tête: Programme
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- — — — — Compte rendu et résultats des études et travaux au 31 Décembre,
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 $11\frac{1}{2} \times 7\frac{1}{2}$: pp. 556.
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- Freeston, Charles L.** The high-roads of the Alps. A motoring guide to one
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 Oct. A. Neve, Journeys in the Himalayas and some factors of Hima-
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 2, Août: L. Rudaux, L'hydrologie souterraine de la Belgique.
 3, Septembre: J. Révil, Les glaciations des Alpes françaises.
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- Ghiringhelli, Paolo.** Armonie montane. Poesie della montagna.
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- Holmes, D. T.** A Scot in France and Switzerland. Paisley, Gardner, 1910
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- Hope, Ascott R.** Seeing the world. The adventures of a young mountaineer.
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- Mansfield, George R.** An unusual type of lateral hanging valley. In Bull. Geogr. Soc. Philadelphia. Vol. 9, No. 4. October, 1911
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Verses, written chiefly for the 'Mountaineers,' full of the feeling of mountain-camping.
- Miethe, A. und H. Hergesell, Hsg v.** Mit Zeppelin nach Spitzbergen. Bilder von der Studienreise der deutschen arktischen Zeppelin-Expedition. Mit einem Vorwort S.K.H. des Prinzen Heinrich von Preussen. Berlin, etc., Bong (1911). M. 12
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A charming description of camping in the Sierras in 1869 by an ardent lover of all natural scenes and animals and open-air life.
- Neve, Ernest F.** Beyond the Pir Panjal. Life among the mountains and valleys of Kashmir. London, Unwin, 1912 [i.e. 1911]. 12/6 nett
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- Pocock, Noel.** Below Zero. A Travesty of Winter Sport. With Verses adapted to the Occasion by A. E. Johnson. London, Hodder and Stoughton (1911). 7/6 nett
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- Russell, Henry.** Monument Henry Russell. Souvenir du 5 Septembre 1911. Offert par le Comité. Bergerac, Imprim. générale, 1911
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- San Martino di Castrozza.** Wege und Markierungen in der Umgebung von San Martino di Castrozza (Südtirol). Zusammengestellt durch den Verein der Freunde und Gönner. 4. Aufl. (Leipzig, 1911)
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- Scapinelli, Carl Conte.** Gipfelstürmer. Roman. Leipzig, etc., Grethlein (1910)
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- Schäffer, Mary T. S.** Old Indian Trails. Incidents of Camp and Trail Life, Covering Two Years' Exploration through the Rocky Mountains of Canada. With 100 Illustrations from Photographs by the Author and by Mary W. Adams, and a map. New York and London, Putnam, 1911. 7/6 nett
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A delightfully written expansion of a diary of camping trips in 1907 and 1908, very well illustrated.
- Schaubach, A.** Naturbilder aus den Alpen. Natur-Bibliothek Nr. 37-38. Leipzig, Th. Thomas (1911) Pfg. 50
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- Serano, J.** Topo-guides. Edités avec le concours du C.A.F. Ancecy, etc. 1910-11
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- Stobbing, E. P.** *Stalks in the Himalaya. Jottings of a sportsman-naturalist. With upwards of a hundred illustrations by the author and others.* London and New York, Lane, 1912. 12/6 nett
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- Täuber, Dr. C.** *Das Walliser Hochgebirge.* Zürich, Tschopp, 1911. Fr. 2
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- Tibet.** *Further papers relating to Tibet.* Cd. 5240. London, Wyman, 1910
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- Vallot, H.** *Instructions techniques pour l'établissement des projets et l'exécution des Travaux en Montagnes.* Paris, au siège du C.A.F., 1911
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- Weingartner, Josef.** *Durch Tirol.* Brixen, Tyrolia, 1911
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- Der Winter.** *Illustrierte Zeitschrift für den Wintersport. Amtliche Zeitschrift d. mitteleuropäischen D.u.Oe. Skiverbandes . . . Schriftleitung C. J. Luther u. W. Schmidkunz. Jahrg. V.*
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 F. Barth, *Skifahrten in d. Ortlergruppe.*
 Dr. v. Eccher, *Wie Thaddäus Brettlmann Skilaufe lernte.*
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 This paper is weekly during winter, and contains all information as to meetings of various wintersport clubs.
- Wintersport in Wien und Niederösterreich.** *Saison 1911–1912. 3. Aufl.*
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- Zoller, Otto.** *Janpeter Bruns Abenteuer in den Tessiner und Graubündner Bergen.* Zürich, Orell Füssli, 1910. Fr. 4
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- Briquet, Dr. John.** Les réimmigrations post-glaciaires des flores en Suisse. In Verh. schw. naturf. Ges. 90. Versammlung. 1907
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- Brunhes, Jean.** Comment creusent les glaciers. In Le Globe, Genève, 2 Févr.-Avril, 1907
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- Carey, William.** Travel and adventure in Tibet, including the Diary of Miss Annie R. Taylor's remarkable journey from Tau-Chau to Ta-Chien-Lu through the heart of the *Forbidden Land*. London, Hodder and Stoughton, 1902
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- Caviezol, M.** Das Oberengadin. 5. vermehrte u. verbesserte Aufl. Im Selbstverlag des Verfassers. Chur, Sprecher, 1886
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- Coquoz, Louis.** Histoire et description de Salvan—Fins-Hauts avec petite notice sur Trient. Lausanne, Pache, 1899
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- Delachaux, Louis.** Physiologische Wirkung der Bergluft auf Gesunde und auf Kranke. Inaugural-Dissertation. Bern, Haller, 1871
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- Duval, M.** La grande caravane. Seize jours dans l'Oberland. (12-27 juillet 1854.) Genève, Duchamp, 1855
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- France.** Guide Pittoresque du voyageur en France. Route de Paris à Perpignan . . . Département des Pyrénées-orientales. Paris, Didot [c. 1840]
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- Fünfundfünfzig, Dr.** Journal du Dr. Fünfundfünfzig. Trois jours dans l'Oberland. Marseille, Olive, 1872
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- Geiger, Prof. Rupert.** Die Ortler Alpen. Eine monographische Studie. In Programm d. deut. Landes-Oberrealschule in Krensis. 1907-1909
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- Heer, J. C.** Streifzüge im Engadin. Frauenfeld, Huber, 1907
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- Hooker, Sir J. D.** Himalayan journals. (A new edition.) London, Ward Lock, 1905
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- Hürzeler, Jerome.** Panorama du Napf. Soleure, 1883
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- Jones, Harry Longueville.** Illustrations of the natural scenery of the Snowdonian mountains: accompanied by a description, topographical and historical, of the County of Caernarvon. London, Tilt: Cambridge, Stevenson, 1829
16 × 13: 14 lithog. plates, pp. 54.
- de Laveleye, Emile.** Le Mont Rose et les Alpes Pennines. Souvenirs de voyage. Feuilleton in La Patrie, Lausanne, nos. 180-189. 4-15 août, 1865
- Lenthéric, Charles.** Le Rhône alpestre et le Valais. Avignon, Seguin, 1883
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- Macknight, Edward.** A fourteen days' tour in Switzerland. With drawings. MS. 7½ × 4½: pp. 53: 5 sketches. July, 1855
- Malleson, Rev. F. A.** Holiday Studies of Wordsworth by Rivers, Woods, and Alps. The Wharfe, the Duddon, and the Stelvio Pass. London, etc., Cassell, 1890
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- Morgan, John Minter.** Letters to a clergyman during a tour through Switzerland and Italy, in the years 1846-1847. London, Longmans, 1849
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- Paris, G. C.** Des excursions et ascensions d'Hiver dans la montagne. Bibliothèque alpine militaire. Grenoble, Drevet (1894)
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- Porchat, F.** Observations, 1839 : *see* Atkins, H. M.
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Items.

Photographs of the Summit of the Dom from the Festijoch and of the Lötschenlucke have been presented by the photographer, A. Rupp, Saarbrücken.

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ALPINE ACCIDENTS IN 1911.

On June 17 **Dr. Hermann Rumpelt**, aged 28, was killed by a fall from the summit of the **Gross Wehlturm** (Saxon Switzerland). He was a well-known climber and an authority on the Hohe Tatra group, where, usually with Dr. A. v. Martin, he had made several first ascents. He also had to his credit the first ascent of the S.E. face of the Zehner (Sella Dolomites). Dr. Rumpelt appears to have overbalanced himself when about to descend by a doubled rope and fell about 60 metres, succumbing within 2 hours to his injuries. (Cf. 'Ö.A.Z.' vol. xxxiii. pp. 214 and 217-218.)

On June 25 **Herr Karl Jene** and **Herr Ludwig Koziczinski** were killed in attempting to ascend the N. face of the **Rohač** in the Hohe Tatra. They were apparently ascending a rock rib about the centre of the face, and when attempting to traverse to the right across rotten sloping slabs, Jene must have fallen, dragging his companion with him. The rescue party reached the spot where

the party had apparently quitted the rib, as a rucksack and axe were found there, by an easy traverse from the other side. The bodies were found after some days' search about 1200 ft. lower down. Death must have been instantaneous.

On June 28 **M. Jean de Rufz de Lavison**, aged 25, camped alone just below the Col des Chamois in the Etançons Valley, giving orders to two of the Gaspards to bring him further food supplies on July 4. They found the tent empty, and after some search discovered the body of the unfortunate climber at the foot of the **Great S. wall of the Meije** below the Brèche Zsigmondy. It is surmised that M. de Rufz was attempting to complete the climb on which Emil Zsigmondy lost his life in 1885. He had apparently got as far as the end of the great snow band which intersects the face and fell while attempting to climb the wall below the Brèche Zsigmondy. M. de Rufz was an enthusiastic mountaineer and had just taken with much distinction his degree of docteur ès sciences naturelles.

On July 2 the Signori Farani with their sister ascended the **Corno Miller** in the Adamello. Descending a steep snowfield the sister slipped and broke her arm. One brother went to fetch assistance, the other brother managed meantime to throw a rope to his sister and attempted to pull her up to a better place. The rope, however, broke, causing her to fall further, when she was killed.

On July 4 **Herr K. Stenauer** was found dead at the foot of the N. face of the **Reichenstein**. This ascent is one of the most difficult ascents in the Gesäuse, and is also not free from falling stones.

On July 9 **Herr Reinhard Lindemann, Frä. Else v. Zimmermann** and **Frä. M. Krose** ascended the **Ellmauer Halt** in the Kaisergebirge. They were apparently overtaken by darkness when descending and missing their way were all killed.

On July 12 the body of **Herr M. Trebessiger** was recovered out of a crevasse of the **Gossau Glacier**, on which he had ventured alone.

On July 25 **MM. Joseph Caillet** and Jacques de Lépinez, with the guide Paul Bellin and the porter **Léon Simond** left the Chalet du Plan at 1.30 A.M. to make the difficult ascent of the N. face of the **Aiguille du Plan**. At 9.45 they reached a difficult couloir, rather off the usual route. While the guide went ahead to explore, a stone fell, striking Simond on the head so severely that he died in about a quarter of an hour. The party considered it more prudent, for fear of stones, to cross the summit and descend on the other side. At a particularly difficult place, to give the guide more rope, M. de Lépinez was untied. A snow slope gave way with M. Caillet, and although the guide managed to give the rope a turn round a rock, the strain broke it and M. Caillet slid down to his death. The survivors returned by the line of the ascent and reached the Chalet du Plan de l'Aiguille about noon next day.

On July 27 the young guide **Thomas Widauer**, aged 24, slipped and was killed while ascending the **Ellmauer Halt** in the Kaisergebirge, by the Gamsänger, with a tourist.

On July 28 the young student **Ednard Leisner** ascended alone the **Sas Rigais** from the Villnösthal. In attempting to descend by the Mittagscharte to the Broglesalpe he was killed, his body being found on August 3 at the foot of the N. face of the Sas Rigais.

On August 8 **Herr Josef Schiller**, whilst crossing the **Gaiskarferner** with two friends, unroped, fell into a crevasse about 70 ft. deep. Help was speedily forthcoming, but the unfortunate man was dead before he was got out.

On August 14 the body of **Herr Karl Mandl** was recovered out of a crevasse of the **Pasterze Glacier**, on which he had ventured alone.

On August 19 **Professor Ludwig Forbelski**, **Frl. Hilda Waldert-Brunner** and **Frl. Minna Furtner**, were killed when descending the S. side of the **Grosser Pyrgas** in the Gesäuse. The party was badly equipped, one of the ladies having thin shoes with high heels and no stick—the other had nailed boots and a sunshade. The party improvised a rope out of various garments. Apparently one of the ladies fell and was killed; the second lady soon after shared the same fate, and very shortly afterwards the professor lost his footing and was found dead with his neck broken in the crevasse between the rocks and the snowslope at its foot. The lamentable loss of these three young lives was the result of almost unexampled levity.

On August 19 **Herr Fritz Reithmeyr** and **Herr Anton Bucher** left the Guggi hut at 6.30 A.M. to ascend the **Mönch** by its N. face. The former was leading and the party had not yet roped, when the icy condition of the slaty slabs that are encountered before reaching the Upper Firn caused **Herr Bucher** to slip. He was unable to stop himself and was killed.

On August 20 **Herr Zachmann** when descending the **Bristenstock** fell into a crevasse of the glacier above the Bristenseeli and was killed.

On August 24 **Herr Eugen Prosch** was killed in descending the **Guglia di Brenta**. The party was descending the N.W. edge, and when level with the piton in the W. face **Herr Prosch**, with the rope held by his two companions, who were well placed, started to traverse to gain the piton. He was out of sight of his companions, who suddenly heard the sound of a rock giving way, followed by an exclamation and a slight pull on the rope. The rope was on examination found to be cut clean through. The unfortunate climber fell some 400 mètres; his body was recovered in the gully between the **Guglia** and the **Campanile Alto**.

On August 28 a lamentable accident on the **Monte Cristallo** resulted in the death of the excellent guide **Angelo Gaspari** of Cortina, in his 46th year. He had accompanied **Hauptmann Viktor**

Kail, an Austrian officer, up the mountain by the ordinary route and slipped in descending the so-called Böse Platte. Although he was pulled up by the rope, his skull was so badly fractured as to cause instant death. It is said that he had been climbing almost every day since June, and it is thought that he may have had a sudden heart failure. He was one of the best of the Dolomite guides, and had also travelled in Switzerland.

On September 1 **Dr. Ernst Ludwig Pinner** (who was one of the party on the occasion of the fatal accident on the Guglia on August 24) was killed while attempting alone the ascent of the **Punta Emma** in the Rosengarten.

On September 4 **Herr Sepp Nieberl** was killed when attempting the first ascent of the S. arête of the **Guffert**. This very promising young climber was only 22 years of age, and a younger brother of the well-known Herr Franz Nieberl. He was at the time of his death President of the Akademischer Alpenverein München. The Guffert is a summit in the Unter-Achenthal, which joins the Valley of the Inn at Jenbach E. of Innsbruck. Herr Nieberl was with two quite inexperienced companions and had only 15 metres of rope. The arête in question is very difficult. Coming to a high step in the ridge, Herr Nieberl had to untie his companions to give himself rope enough. When nearing the top of the step his strength gave out, and he slid slowly down face to the wall. His feet struck the ledge on which his companions stood and he toppled over backwards, falling some 80 ft. clear and being instantly killed. His two companions were only rescued next day with very considerable difficulty. Herr Nieberl was intimately acquainted with the Guffert, having ascended it already six times by other routes. The loss of this brilliant and enthusiastic young mountaineer is greatly to be regretted. He is the subject of a very touching memorial notice by his brother Franz in the 'Ö.A.Z.' vol. xxxiii. p. 308 seq.

Many other accidents are recorded in the papers, due either to leaving the made path, plucking flowers, making ascents without proper boots or equipment, sudden attacks of illness and other causes, but as they offer no instructive features to mountaineers they are not here mentioned. Ordinary ski-accidents are not recorded.

NEW EXPEDITIONS IN 1911.

Graian Alps.

POINTE D'HERBETET (3778 m.=12,396 ft.) BY THE W. ARÊTE.—The ascent by the W. arête described in 'A.J.' vol. xxv. p. 735 was previously made in 1907 by Signorina Ottavia Dumontel and her brother Signor Giacomo Dumontel accompanied by another amateur as recorded in 'Rivista' 1908, pp. 96–97.

Pennines.

MATTERHORN (4505 m. = 14,705 ft.), BY S.E. 'FURGGEN' ARÊTE. Signor Mario Piacenza with the Valtournanche guides Joseph Carrel and J. Gaspard, September 4, 1911. (Cf. 'R.M.' 1911, p. 266 and especially pp. 320-26, with splendid photographs on which route is marked.) The party had previously explored as much as possible of the route from the direction of the Col Félicité, the late J. B. Pellisier of Valtournanche taking a leading part in the exploration.

The party left Hörnli hut at 3 A.M. and Breuiljoch at 5 A.M. (dawn). Rapid progress, unroped; danger from falling stones continuous; *first* shoulder attained 6 A.M. Then up very steep chimneys; obliged to take shelter frequently; to famous vertical gully which had stopped Guido Rey for so many hours. Gully crossed at a run. Reached base of *second* shoulder, found Rey's rope still sound. Here Gaspard dislodged huge boulder but though somewhat badly hurt, insisted on proceeding. Attained top of *second* shoulder (marked 'a') at 7.30 A.M. Route vainly attempted by Guido Rey now abandoned. Party bore diagonally to the left by an upward traverse on to the S.W. slope of the arête for some 70 ft. A great perpendicular boulder then encountered (this is the most difficult bit of the whole ascent, marked 'b'); it was climbed by the party standing on one another's shoulders. Progress continued over hard loose rocks, gully of disintegrated rock turned by slabs and difficult crevices. Finally snow ribbons beneath and S. of the summit attained and crossed. In front of the party is now a great snowy couloir, dangerous crossing and a rope had to be left. Party then about 500-600 ft. distant from the summit, the tremendous Furggen 'overhang' in full view below, and the advance is solely by means of minutest holds. A rocky ledge descending from direction of Swiss summit too dangerously raked by stones, not attempted. Party 'rushed' a gully and took cover on the crest of the arête above a projecting rock (marked 'c'). Waited 1 hour till other parties clear of summit, then attempt made to climb up by a slab some 100 ft. distant from the crest (still on its S.W. slope); attempt a failure, so another smooth slab found with difficulty; and a human pyramid proving successful, a small platform attained in about half an hour. Progress now appeared impossible, consultation took place, during which an enormous mass of rock parted company from the ridge close to the party. Great couloir fearfully dangerous till in shade, party finally chanced traversing back to the crest. Rope fixed, Carrel cautiously climbed, rocks crumbling below him, to a secure boulder, where he fastened other end of the rope; remainder of party then quickly followed. Another slab next overcome by again fixing a rope; crest of arête then attained (view for the first time since leaving *second* shoulder, opens out to the N.E.). In $\frac{1}{4}$ hour Rey's abandoned ladder is passed (marked 'd'), difficulties diminish, in another 20 minutes

summit attained (1.30 P.M.), or $8\frac{1}{2}$ hours from leaving Breuiljoch. Left top 3 P.M., Giomein reached at 10 P.M.

[The reference letters are to the frontispiece in 'R. M.' which, by the kind permission of Dr. Piacenza, will be reproduced in the May Journal.]

LEITERSPITZE (3218 m. = 10,558 ft.), BY THE S. ARÊTE.—On August 24, Mr. H. A. Millington, with Joseph Georges of Evolène, leaving Randa at 8 A.M. on a hot and steamy morning following bad weather, diverged from the Zermatt path and crossed the shoulder of am Berg to the path to the Täsch Alp. Leaving this again they mounted a ridge on the left which develops into the S. arête of the peak, and followed its crest to its point of merger in the S.W. face, some 100 ft. below, and to the W. of the summit, which was reached thence in about 10 minutes by the N.W. arête (2.30 P.M.). The S. arête, on which no traces were found of a previous ascent, gives for the last $2\frac{1}{2}$ hours rock-climbing of some interest. Randa was regained by the N.W. arête and gullies on the S.W. face at 7 P.M.

Bernese Oberland.

TRAVERSE OF TWO PEAKS (S. TO N.) ON THE GISIGHORN-UNTERBÄCHHOHN RIDGE (*circa* 3333 m. = 10,932 ft.).

On August 4, 1911, Mr. H. A. Millington, with Joseph Georges of Evolène, left Bel Alp at 5.15 A.M. and crossed the glacier to a gap in the ridge N. of a small pyramidal peak separating it from the next peak N. of the Dame Alys (8.30).

From the gap they descended on the W. face in a slanting direction to the N. for about 80 feet to a shallow couloir; this was climbed to the arête, which was then followed to the summit (1 hour 15 mins.). The arête was descended to a little col, separated from a second little col by a big gendarme which was climbed directly over. From the second col the arête of the next peak was ascended directly. The summit ridge was followed to the highest point at the northern end. Here a cairn was found, the point having apparently been reached from the N.W., by which route a descent was made, a col at the north foot of the peak being reached by a traverse on the west face in about 10 minutes, and the bergschrund, by means of a short rock and snow couloir, in 15 minutes more.

The traverse of these little peaks, which occupied, including a short halt on each summit, $3\frac{1}{4}$ hours from col to col, was found to be of a continuously interesting character; the arêtes being very sharp and the rock, much of which is granite, entirely satisfactory.

The expedition links up the sections of the whole ridge traversed by Mr. Young's parties in 1898 and 1909 ('A.J.' vol. xix. p. 355; xxiv. p. 682), with the exception of the peak N. of the Dame Alys (climbed 'up and down,' I am informed, by an English party in

1899), and a small peak and a tower immediately S. and N. respectively of the traverse here recorded. The traverse of the whole ridge, possibly within the compass of a very long day, would seem to offer rock climbing of very considerable interest, containing one indifferent section only, viz. the above-mentioned peak N. of Dame Alys.

GRUNERHORN* (3510 m.=11,513 ft.) BY THE W.N.W. ARÊTE forming a short route from the Schwarzegg to the Oberaar hut. On August 14, 1908, Messrs. G. H. Bullock and H. E. G. Tyndale left the Schwarzegg hut at 7.45 A.M., after a night of wind and rain. They were blown up to the Strahlegg Pass in rapidly improving weather, and on the far side descended the Strahlegg Firn as far as the foot of the N.E. buttress of the Studerhorn. Passing below these rocks, they ascended the glacier-bay lying to the N.W. of the Oberaarhorn, and after turning a small icefall traversed E. gently upwards over the glacier, striking the rocks of the W.N.W. ridge of the Grunerhorn about half-way up from their base. These rocks can probably be ascended direct from their base. The ridge led them quickly up over firm broken rocks interspersed with snow to the summit of the Grunerhorn (3510 mètres), on the far side of which they descended for some distance by good steep snow before traversing S.W. on a level to the Oberaarjoch. This expedition took $7\frac{1}{4}$ hrs. easy walking and involved no step-cutting: it is suggested as an alternative to Mr. Tucker's route (*see* 'A.J.' vol. xxv. p. 670), when the snow is not lying deep on the mountains. In any case it is far shorter than the route often taken by the Scheuchzerjoch.

NAMELESS HIGHEST POINT (? 3510 m. = 11,513 ft.) ON THE SCHEUCHZERHORN-OBERAARHORN ARÊTE.—On August 1, 1911, the Herren W. Baumgärtner and Hans Schneider starting from the Pavillon Dollfuss reached the Scheuchzerjoch (3 hours) and the Scheuchzerhorn (3471 m.) (2 hours more). They then followed the W. ridge to its lowest point—at first over snow, finally along a sharp rock ridge—and ascended point 3386 m. ($1\frac{1}{4}$ hours) up a sharp, somewhat rotten and difficult rock ridge.

They then traversed the flat snow dome of the Grunerhorn and so reached in about 2 hours more the highest point in the arête, Scheuchzerhorn-Oberaarhorn. This point consists of several sharp granite teeth and offers no room. A stoneman was erected on a projection on the E. side a few metres down. No signs of any previous ascent were found. They continued along the ridge and descended to the Oberaarglacier from the lowest gap between this unnamed peak and the Oberaarhorn, reaching the Oberaarhut in about $2\frac{1}{4}$ hours.

The two climbers contend that the height 3510 m. given on the Siegfried map to the Grunerhorn is incorrect and probably belongs to their summit, as the Grunerhorn is, they consider, certainly lower

* See remarks below as to height and position of this peak.

than the Scheuchzerhorn (3471 m.) and probably does not exceed 3420 m. They think that the name Grunerhorn properly belongs to their summit, as it is the highest point and is of a much more characteristic shape. Cf. 'Alpina,' 1911, p. 162 *seq.*

OBERAARHORN (3642 m. = 11,946 ft.) BY THE W. ARÊTE.—On August 2, 1911, the same party left the summit of the Oberaarhorn at 6 A.M., and cut down the W. ridge, at first Firn, finally ice. The Altmann was reached at 7.30 and the Studerhorn at 9 A.M. The Pavillon Dollfuss was reached at 1 P.M. by way of the Unter Studerjoch.

KLEIN SCHRECKHORN (3497 m. = 11,474 ft.) BY THE N. ARÊTE, JULY 4, 1911.—Mr. J. W. S. Brady, with Christian and Hans Kaufmann of Grindelwald, leaving the Gleckstein Hotel at 3 A.M., followed the Lauteraarsattel route to the upper snows of the Ober Grindelwald glacier. Turning to the r. (E.) they reached the base (marked 2815 metres on the Siegfried map) of the long N. arête of the peak. This arête was then followed over a few broken rocks, snow, and steep firm rocks to the summit, which was reached at 9.15 A.M., or $6\frac{1}{4}$ hours (including halts) from the Gleckstein Hotel.

GROSS LAUTERAARHORN (4043 m. = 13,265 ft.) BY THE N.E. FACE, AUGUST 10, 1911.—Mr. Brady, with Christian Kaufmann and Alexander Nägeli (of the Grimsel Hospice), left the Pavillon Dollfuss about 2.30 A.M., and went up the Lauteraar glacier to the foot of a prominent lateral ridge (well shown on the Siegfried map), that commences at the spot marked 2746 metres and runs up to the main Lauteraarhorn ridge. Turning to the left up this lateral ridge the party, over snow and broken rocks, reached the glacier basin, which is situated at the E. base of the Lauteraarhorn wall. They crossed this glacier basin horizontally to the left (S.), and, taking to broken rocks, climbed diagonally towards a rocky rib which descends from the rock tower immediately N. of the highest summit, and is easily recognised from the Lauteraar glacier by a great snow couloir to its right hand. This rib was struck a little above the bottom of this couloir, and then its steep, good rocks followed to the main ridge, along which a few minutes' walking brought the party to the summit. Time—about 12 hours (including halts) from the Pavillon Dollfuss.

JUNGFRAU (4166 m. = 13,669 ft.) FROM THE JUNGFRAUJOCH BY THE E. ARÊTE.—This ascent was made on July 30 by Hauptmann Weber of Bern with young Hans Schlunegger, a Wengen guide. No details have appeared so far.

Bregaglia Group.

FERRO OCCIDENTALE (3273 m. = 10,739 ft.) BY S. ARÊTE.—The route described in 'A.J.' vol. xxv. p. 744 is the same as that taken by Signor A. Bonacossa and Herr C. Prochownick, July 17, 1910.

FERRO ORIENTALE (PUNTA QUALIVO) (3207 m.=10,522 ft.).—The W. arête was previously *ascended* in 1882 or 1887 by the San Martino guide Giacomo Fiorelli acting under Count Lurani's instructions, but the ascent has not been hitherto recorded.

Bernina Group.

LA SELLA, W. PEAK (3587 m. = 11,769 ft.); **E. PEAK** (3566 m. = 11,700 ft.), S. Map [3580 m. and 3559 m., It. map]. BY THE S. FACE. Signor Aldo Bonacossa and Herr Carl Prochownick, August 15, 1910.—* From the Marinelli Club hut the party followed the route of the Fex-Scerscen pass as far as the foot of the great snow and ice gully, mounting from the lower Scerscen glacier to the gap (3486 m., *It. map*) between the two peaks of La Sella (1½ hrs.). This gully is raked by falling stones, so the party avoided its lowest and most dangerous bit by crossing the double bergschrund into the next (E.) chimney. They then scrambled up a difficult diagonal rock crevice, 300–400 ft. long to the rib immediately E. of the main gully, and climbed up this rib till they were gradually driven into the aforementioned gully. They now mounted by the rocks of the gully's E. bank, till it intersected another smaller couloir, when they cut straight up the *main* gully, which soon becomes very narrow and in places extremely steep, till they reached the gap in the watershed (3486 m.) whence either peak is easily (¼ hour) attained (4–5 hours).

Eastern Alps.

NEW ASCENTS IN 1910.—The 'Ö.A.Z.' vol. xxxiii. pp. 342–46, pp. 360–61, pp. 374–80, contain a very careful summary, compiled by Herr Fritz Hinterberger of Vienna, of the new routes in the Eastern Alps which were opened in 1910. The summary is divided into groups and gives the necessary references to published accounts of the various expeditions.

NEW ASCENTS IN THE HOHE TATRA IN 1910.—The 'Ö.A.Z.' vol. xxxiii. pp. 341–2 contains a very careful summary compiled by Dr. Jenő Serénji of Budapest, of the new routes made in this group in 1910.

Arctic Norway.—Tysfjord.

DR. GEORG KÜNNE and **HERR RICHARD PÖTZSCH** of Berlin made in June last several first ascents in this district which they describe as very little known to tourists. They went from Narvik by steamer through the Ofotenfjord to Lödigen, and from there into the Tysfjord to Kjöbsvik, the last steamer point of call. The ascents made were—

* *Alpenvereins Sektion, Bayerland*, xv. 1911, p. 95.

Botnelvtind (1205 m.), Central Leirelvdaltind (1150 m.), Northern Leirelvdaltind (about 1050 m.), and a tower on the E. peak of the Blaafield (cf. 'Ö.A.Z.' vol. xxxiv. p. 31 *seq.*).

Arctic Norway.—Lyngenfjord.

DR. KURD ENDELL and DR. WILHELM MARTIN, both of Berlin, made, in August last, several new ascents in this district, including the first ascents of Kaiser-Wilhelm-Tind (1320 m.), Urkjaerringa (1340 m.), Lille Ottertind (990 m.), Polvartind (1200 m.), Store Ottertind (1320 m.), Rassevarcokka W. and E. peaks (1230 and 1300 m.), Metatind (1310 m.). Full particulars are given in 'Ö.A.Z.' vol. xxxiii. pp. 362-64.

Andes.

CERRO JUNCAL (6100 m. = 20,008 ft.).—The ascent of this mountain was made, after several days of careful reconnaissance, by Dr. Robert Helbling and Dr. Fritz Reichert on January 17, 1911. The party left their tent at an altitude of 4200 m. on January 16, and after overcoming great difficulties due to the enormous séracs and walls of ice, bivouacked under an icefall at the foot of the N. main arête at an altitude of about 5200 m. (very cold). On January 17 they gained this arête up steep Firn and through a complicated system of crevasses. They followed the arête without difficulty to the summit (3.20 P.M.). Marching all night they reached their tent at 3.30 A.M. on the 18th. Dr. Helbling states that the best time for snow expeditions in that region is mid-December to the end of January, as earlier there is too much snow and stormy weather and later too little snow and too many 'Penitentes' ('Ö.A.Z.' vol. xxxiii. p. 201. Cf. also Mr. Larden's Sketch Map, 'A.J.' vol. xxv. p. 403, and 'Statement presented on behalf of Chile in reply to the Argentine Report, London, 1902,' with many maps.)

Kashmir N.W. Himalayas.

DEO MUSJID. (Lat. 34.10.10 Long. 75.07.05=14,562 ft.).—June 16, 1911, Capt. J. B. Corry, R.E., D.S.O., and Lieut. R. D. Squires, 45th Sherwood Foresters, with Asdu Mir Shikari and L. N. Rajwali Khan, 3rd Sappers and Miners, left a camp in the Surphrar Valley and reached the summit of the pass leading to Lidarwat. From the pass they turned S. and ascended a peak about 14,000 ft.; they descended by easy snow and scree to a col and thence followed the arête to the top of Deo Musjid. As a direct descent to the Jajimarg Valley proved impossible they returned to the col between the peaks, and descended by scree and snow to the Jajimarg Valley and thence to Sekwas.

KOLAHOI N. PEAK (17,830 ft.).—June 22. Same party, Ajiza, coolie, taking the place of Rajwali Khan. It had been intended to

join Dr. Ernest Neve and Lieut. Mason, R.E., in an attempt on Kolahoi S. Peak, but Capt. Corry's party was unable to reach Dr. Neve's camp by the date previously arranged. The S. Peak was successfully ascended by Dr. Neve and Lieut. Mason on the 21st, 'A.J.' xxv. p. 679. The two parties met at a camp on the Kolahoi plateau and Capt. Corry's party decided to attack the N. Peak which Dr. Neve had previously attempted.

They left the camp at 6.45 A.M. and following the route indicated by Dr. Neve reached the E. ridge in about 4 hours. Following this ridge and traversing on S. face they reached a large gendarme, Dr. Neve's highest point, at noon. The gendarme was turned by a long traverse, partly over bad snow, and they then followed the ridge traversing round most of the gendarmes and reached the last rocks about 40 ft. below the summit at 1.25. Here they were forced to leave the ridge owing to a cornice and attempted to traverse across the face to the W. ridge, but owing to the very bad condition of the snow and threatening weather, they turned back about 30 ft. below the summit at 1.45 P.M. They descended by the same route, reaching camp at 6.30, and the following day descended by the N. glacier to Aro.

CENTRAL KOHINOOR PEAK (about 17,000 ft.).—June 30. The same party, with the addition of Lieut. Mason, R.E., left camp at the S. end of Shesha Nag Lake on the 29th and made a route to the snowfield by circling round the glacier to the E. They camped on a rock rib in the middle of the snowfield at 14,600 ft. Starting at 6.45 on the 30th they ascended by N.W. face, keeping well to the S. in order to cross the bergschrund. By an ice slope and loose rocks they reached the W. ridge, which was followed by steep rocks to the summit 12.15 P.M. Left at 12.45 and returned to camp at 4.45, at first by the line of ascent then by N. arête and N.W. face.

SNOWY PEAK 'A.' (Lat. 35.57.54. Long. 75.23.50. = 16,025 ft.).—July 6. The same party (without Lieut. Mason) left a camp above Tolien Valley to the N. of the glaciers at 13,000 ft. at 6.10, and descending to the N. glacier, traversed it and the lower glacier. Thence they ascended by snow and easy rocks to the W. ridge of the Peak, which was followed by steep snow to the summit 10.40. Descended by the same route to the moraine between lower and N. glaciers and thence direct to base camp in Tolien Valley.

PEAK W. OF SONASAR PASS (about 15,600 ft.).—July 12. Messrs. Corry and Squires with Rajwali Khan left a camp to the S. of Sonasar Lake at 6.50 A.M. and ascended by steep snow towards Sonasar Pass till 8 A.M. and then traversed to the W. and up rocks and snow till they reached the ridge dividing the valleys that unite at Zoljpat. They followed this ridge to the S. by steep snow and reached the summit by a rock ridge at 10.30. Descended to S. by a rock rib, then traversed slabs to E., and descending to the snow

slopes by a couloir eventually joined the track over the pass, reaching Suknes in the Wardwar Valley at 3.35 P.M.

PEAK GAH LING (17,100 ft.), near Machai station S.W. of Uмба La. July 28. Left camp in the Kuskokh Than Nullah S.W. of Uмба on the 27th and camped on the Machai-Uмба-La ridge at 15,750 ft. The following day the party (including Asdu Mir) started at 6.50 and climbed W. by loose rocks and bad snow to a shoulder about 1000 ft. above camp reached at 8.50. By a zigzag route crossing from one rock rib to another by steep snow couloirs they reached the top at 6.50. The ascent was difficult owing to bad snow and loose rocks. They descended by the same route to the shoulder and thence by a couloir to the bottom of the valley and thence to Uмба. The height by aneroid was 17,100 ft., but judging from a reading made on the Uмба La the following day the peak is probably just under 18,000 ft.

PEAK ABOUT 16,650 ft. at head of W. Branch of Shunderi Nullah. August 2. The same party left camp at the head of W. Branch of this nullah with the intention of climbing Peak D. 4 and ascended by a snow gully and good rocks to N.E. to a serrated ridge, which was followed S.E. to its highest point.

According to the survey map, the peak climbed was in the position of D. 4, but it did not seem high enough. Owing to misty weather it was difficult to ascertain if it was the highest peak in the neighbourhood; there appeared to be one or two higher points, but there was no peak N. of the Dras Valley, which looked more than a few hundred feet higher. The actual height of the peak ascended must have been about 18,100 ft. if D. 4 is 18,400 ft.

VARIOUS EXPEDITIONS.

Pennines.

OBEGABELHORN (4073 m. = 13,364 ft.).—On August 20, 1911, Mr. R. W. Lloyd, with Josef Pollinger as guide and Franz Imboden as porter, ascended the Gabelhorn by the N.E. arête from the Wellenkuppe, descending by the S. face. The intention was to descend by the route by which they ascended in 1904 (cf. 'A.J.' vol. xxv. p. 86), but owing to the ice in the couloirs they were forced out on to the slabs to the left, and had to traverse back across a good deal of the face low down to get off. The climb is an exposed one and there were somewhat frequent falls of ice from the Cornice and a good many stones.

PIGNE D'AROLLA (3801 m. = 12,471 ft.) BY THE N. FACE.—August 7, 1911. Messrs. G. Collins, G. A. Solly, and J. M. Archer Thomson. An ascent of the Pigne d'Arolla from the north was projected and a promising line selected in the belief that the face had not been

climbed. This hope was banished afterwards by the books, which noted a route made as far back as 1889. According to latest information the climb is little known and a few details will be useful.

We went up the west side of the Glacier de Pièce to a steep snow-couloir in a rock ridge called Loitecondoi. A quantity of avalanche débris first gave food for thought but proved afterwards a blessing in disguise and greatly facilitated ascent. After scrambling out of the couloir below its proper exit, we followed up the ridge over a glistening dome and thence to a sharp snow-arête which curved to the right. This inspired caution. Strange to say, a continuous crevasse gaped along the crest. Delicate work on the left flank brought us round eventually to a snow-slope and this again to a bergschrund, which we crossed with some ado. On the farther side we cut obliquely upwards and across a steep ice wall, and landed on a shattered rib in low relief.

The edge, not quite easy to follow, is the strongest part and the safest for a further reason. Stones make merry with dance and song. This rib brought us up to the snow cap that forms the actual summit. We descended easily in thick mist to the Col de la Serpentine.

J. M. A. T.

MARINELLI HUT FROM THE RIFFELHAUS.—The Marinelli hut may be reached from the Jägerjoch without any ascent on the Italian side.

On August 30, Mr. L. W. Rolleston with Josef Lochmatter and Albert Chanton left the Riffelhaus at 4 A.M. and arrived at the Marinelli hut at 1.30 P.M.

The Jägerhorn was ascended and the walking was slow owing to heavy loads (total halts about $1\frac{1}{2}$ hrs.).

The easy E. buttress of the Jägerhorn was descended for about $\frac{1}{2}$ hour and then a fairly straight traverse, descending slightly most of the way, made to the snowfield a few hundred feet above the hut. A couloir in which stones may fall must be crossed.

Bernese Oberland.

FINSTERAARHORN (4275 m. = 14,026 ft.) by the S.W. BUTTRESS AND THE S.E. ARÊTE.—Mr. H. A. Millington writes as follows:—

In 'A.J.' vol. xxv. p. 171 is recorded an ascent 'by the S.E. arête, reached from the S.W.,' or as I should prefer to describe it, 'by the S.W. buttress and S.E. arête.' The route by this buttress is altogether distinct from, and different to, the other more southerly routes to the S.E. arête, and it seems to me that the editorial note there leaves an impression which scarcely does it justice. Not only is it the most direct route up the mountain from the Finsteraarhorn hut, but it provides probably more continuously interesting rock climbing than any other (leaving out of account the one ascent by the E. or N.E. buttress).

On August 17, with Joseph Georges of Evolène I followed this

general route, but took to the rocks at their lowest extremity (just W. of the point 3536 on the S. map) and to the right (spectator's) of the 'great gully' referred to in Dr. Th. Thomas's account, which was not entered at all. The 'minor gully' there mentioned was encountered and cut across, and the whole of the 'several rocky pyramids rising on its edge' climbed over their crests. These, especially 'the most important at its upper end,' yield capital work, and give an interesting variation. The route could be indicated on Dr. Thomas's photo facing p. 170 by a prolongation of the dotted line downwards from the minor summit *straight* (instead of breaking away to the spectator's left) to the point of junction of the rocks with the glacier. With the exception of the lowest rocks for about $\frac{3}{4}$ hour, the rock is satisfactory. The usual route by the S.E. arête was followed from the minor summit to the top and the descent made by the N.W. arête.

The times were as follows: Left Finsteraarhorn hut 5.45 A.M., at foot of rocks 7 (detained by huge crevasses), at junction of S.W. buttress and S.E. arête 9.55, left same 10.35, summit 11.15.

ALPINE NOTES.

'THE ALPINE GUIDE.'—Copies of Vol. I. of the new edition of this work, price 12s. net, and of 'Hints and Notes, Practical and Scientific, for Travellers in the Alps' (being a new edition of the General Introduction), price 3s., can be obtained from all booksellers, or from Messrs. Stanford, 12 Long Acre, W.C.

'THE ALPINE GUIDE,' THE CENTRAL ALPS. PART I.—A new edition of this portion of the 'Alpine Guide,' by the late John Ball, F.R.S., President of the Alpine Club, reconstructed and revised on behalf of the Alpine Club under the general editorship of A. V. Valentine-Richards, Fellow of Christ's College, Cambridge, is now ready, and can be obtained from all booksellers, or from Messrs. Stanford, 12 Long Acre, W.C. It includes those portions of Switzerland to the north of the Rhone and Rhine valleys.

'THE ALPINE GUIDE,' THE CENTRAL ALPS. PART II.—A new edition of this portion of 'The Alpine Guide,' by the late John Ball, F.R.S., President of the Alpine Club, reconstructed and revised on behalf of the Alpine Club under the general editorship of the Rev. George Broke, is now ready, and can be obtained from all booksellers, or from Messrs. Stanford, 12 Long Acre, W.C. It includes 'those Alpine portions of Switzerland, Italy, and Austria, which lie S. and

E. of the Rhone and Rhine, S. of the Arlberg, and W. of the Adige.'

THE ALPINE CLUB OBITUARY.—M. Schintz (1888), R. F. Backwell (1902), A. Cust (1874), E. Whymper (1861), H. C. Robinson (1894), J. G. Ouston (1902), A. S. Bicknell (1881), Sir Joseph Hooker (Hon. Mem.), Graf Hans von Hallwyl (1859), H. Smith-Stanier (1860), G. B. Tunstall-Moore (1902).

THE PHOTOGRAVURE OF THE LATE EDWARD WHYMPER.—The photogravure in the present number of the 'Alpine Journal' is reduced by the Swan Electric Engraving Co. from an extremely fine platinotype enlargement which Dr. C. Atkin Swan was good enough to make for the President last year of a small photograph ('carte de visite' size) taken by M. Boissonnaz of Geneva in 1865, and now in the possession of Dr. Alexander Seiler.

ZURBRIGGEN'S ASCENT OF MT. COOK.—We have received the following note on this subject:—

'A recent sensational writer on mountaineering work in various parts of the world stated incidentally that "there was a prevalent opinion amongst New Zealander climbers that Zurbriggen did not reach the top of Mt. Cook."

'I wish now while in London to emphatically contradict that statement, and to say, on behalf of Alpine men in N. Z., that no question has ever been raised as to Zurbriggen's ascent.'

ARTHUR P. HARPER.

'THE CENTRAL ALPS OF THE DAUPHINY: CONWAY AND COOLIDGE'S CLIMBERS' GUIDES.'

It will be remembered that the second revised English edition of this indispensable work appeared in 1905. Dr. Coolidge is now engaged in thoroughly revising the English text, which is to be translated into German and to be issued as an authorised translation after he has seen the German proofs. The work is to be published in Vienna in June under the auspices of the 'Ö.A.Z.' Dr. Coolidge has already received many contributions of information from English and French friends and the bulk of the English revised text is already delivered in Vienna. THE Ö.A.C. is anxious to receive any unpublished information as to new expeditions, new huts, etc., or of any kind likely to be useful. Communications should be addressed to The Ö.A.C., Rahlgasse No. 6, Vienna, VI/1.

MONT BLANC GUIDE (IN GERMAN).—The Ö.A.C. has undertaken the preparation of a Guide-book to the Mont Blanc district suited to the needs of mountaineers. The general editor is Dr. Richard Weitzenböck, some of whose expeditions in this district have already been recorded in this Journal. A great deal of attention has been paid to this district since the appearance of M. Louis Kurz's 'Climbers'

Guide' many years ago, whilst the recent volumes of our own Journal contain much new and valuable information. There ought, therefore, to be no great difficulty in preparing a thoroughly up-to-date Guide-book to the district. The Ö.A.C. desire to call the attention of mountaineers to their undertaking and to request co-operation of every kind, particularly in furnishing unpublished information as to new routes, etc.

It is understood that the Mont Blanc Guide-book now announced will contain sketches of routes, maps and panoramas. Information should be sent as soon as possible to the Ö.A.C., Rahlgasse No. 6, Vienna, VI/1.

EASTERN ALPS.—A series of sketches of various mountains with the routes marked and accompanied by a short description is in course of publication by the Deutsche Alpenzeitung, Munich. The price per sheet is 25 pfg.—say 3*d.* Among the sheets published or announced to date are the Fünffingerspitze, Guglia di Brenta, Marmolata, Terglou, Kleine and Grosse Zinne, Campanile di Val Montanaia, and others.

'FÜHRER DURCH DAS KAISERGEIRGE.'—The third edition of Schwaiger's Guide to this small but interesting and difficult group, has just been published. The editor is Dr. Georg Leuchs, who can claim to have done 192 out of the 200 routes described—surely a unique experience. The book is well provided with sketches with the routes dotted in. This group has been explored with a thoroughness hardly reached in our own Lakes or in Wales—thus 40 new routes have been discovered since 1904 and as many as 25 routes exist up the famous Totenkirchl.

'DER HOCHTOURIST IN DEN OSTALPEN' VON L. PURTSCHELLER UND H. HESS. Vol. III., price m5.50. The fourth edition of this volume has now appeared. It covers the Dolomites, the Karnic Alps, the Karawanken and the Terglou district. The editor is Herr H. Hess, and he has had the valuable assistance of specialists in each group. The book contains 23 maps and a number of indispensable route-sketches. The whole work is well known for its thoroughness and practical value and should be in the hand of every student of the Alps.

FRANZ PÖLL of Mathon, who will be remembered as the guide of Weilenmann, and to whom many references occur in the classic works of that author, is still alive and well at the age of 93. He is in receipt of a small pension from the Section Schwaben of the D. u. Ö.E.A.V.

'GUIDE DE LA CHAÎNE DU MONT BLANC.'—M. Louis Kurz is about to bring out a new edition of his well-known 'Guide to the Mont Blanc Chain,' and would be much obliged for information,

photographs with routes marked, &c. His address is 7 Rue St. Honoré, Neuchâtel, Switzerland.

GLACIERS ON THE ITALIAN SLOPES OF MONT BLANC.—A very interesting article on the movement of these glaciers (with two illustrations), by Professor P. Revelli, will be found in the 'Rivista Mensile' for September 1911.

THE ST. THÉODULE PASS IN HISTORY.—Dr. Coolidge has an exhaustive history from the earlier times on this subject in the 'R.M.' for October 1911.

THE MEMORIAL TO THE LATE PRESIDENT OF THE C.A.I.—The September 'R.M.' describes the inauguration of the Memorial to the late President of the C.A.I., Antonio Grober. There was a large gathering of Italian mountaineers, and, as a further commemoration, the Punta delle Loccie 3498 m., conquered by SS. Grober and Antonelli in 1874, was officially renamed Punja Grober.

HEIGHT OF THE MATTERHORN.—It has been long recognised that the Siegfried map is incorrect in fixing the heights of the Swiss and Italian summits of the Matterhorn at 4505 and 4482 m. respectively. According to an official publication of the Italian military Geographical Institute the latest measurements are 4478·28 m. for the Italian and 4477·96 m. for the Swiss summit, or 14,689 ft. and 14,688 ft. respectively. The distance between them is stated to be 92 m. = 302 ft.

THE N. FACE OF THE ALETSCHHORN.—'Alpina,' 1912, p. 12, gives a sketch of a so-called new route. This route was descended on August 7, 1903, by the late Daniel Maquignaz and myself with a porter. Mr. J. E. C. Eaton with Abraham Müller as leader, and Messrs. C. B. R. Ellis, and the late Frank Bergne with Josef Biner as leader followed us down. We took from the summit to the level glacier 3½ hours.

J. P. FARRAR.

AIGUILLE DU MIDI.—On September 20, 1911, Mr. Ruthven Stuart, with the guides Fabien and Laurent Croux, was prevented from completing this ascent by a great cleft in the E.N.E. snow arête. The cleft was some 5 feet broad, and could not be jumped by an ascending party. It was about two-thirds of the way up the arête, and no doubt was due to the exceptional season.

CORSICA.—'La Montagne' No. 8, 1911, contains some very comprehensive 'Notes sur l'Alpinisme en Corse' by M. André Lejosne. The article is accompanied by a sketch map of the Monte Cinto Massif and has also several good illustrations. A detailed and

apparently very complete history of the principal ascents is given as well as a bibliography of the recent books and articles on Mountaineering in Corsica. For facility of reference the bibliography referred to is here reprinted :

1° MASSIF DU MONTE CINTO.

- Zeitschrift des Deutschen und Oesterreichischen Alpen Vereins*, années 1901 et 1903.—Deux articles très documentés formant une monographie très complète du groupe du Monte Cinto, avec cartes et photographies, par M. le Dr Felix von CUBE.
- Jahresbericht des Akademischen Alpen Vereins München*, vol. VII, X et XII.—Itinéraires d'ascensions nouvelles dans le massif du Monte Cinto en 1899, 1902 et 1904, par M. le Dr Felix von CUBE.
- Jahrbuch des Schweizerischen Alpen Club*, vol. XXXVII.—Streifzüge durch Korsika und seine Berge, par Walther FLENDER. Récits détaillés de voyages et de courses dans toute l'île.
- Oesterreichische Touristen Zeitung*, vol. XXIX, nos 20 et 21.—Auf Korsikas höchsten Gipfeln, par Albert GERNGROSS. Récits de 1^{re} ascensions effectuées en Mai 1906, notamment : 1^{re} ascension du Capo Tafonato, sommet Sud ; 1^{re} ascension de la Punta Castelluccia, face Nord Est ; 1^{re} ascension de l'un des sommets des Cinque Frati par la face Ouest.
- Oesterreichische Alpen Zeitung*, vol. XXXI, nos 793, 794, 795.—Bergfahrten auf Korsika, par Hans WÖDL.
- Alpine Journal*, vol. XXIV, n° 186.—'Dix-neuf jours en Corse,' par T. G. OUSTON. Récit très documenté et précis de courses autour du 'Ballone de Calasima.' Excellent itinéraire au Capo Tafonato (2^e ascension).
- Jahresbericht des Akademischen Alpen-Club, Zurich*, vol. XIV.—Itinéraires d'ascensions nouvelles, par A. BRYN, G. et M. Finch. Entre autres : 1^{re} traversée des 2 sommets du Capo Tafonato ; 1^{re} traversée intégrale des cinq pointes des Cinque Frati ; 1^{re} ascension de la Paglia Orba par la muraille Est.
- Aarbok Norske Turistforening*, 1910.—Escalades en Corse, par A. B. BRYN.—Récits avec photographies des ascensions accomplies par l'auteur et résumées dans le XIV^e Annuaire du Club Académique de Zurich (voir plus haut).
- Bollettino del Club Alpino Italiano*, vol. XL, n° 73, année 1909.—Récits d'ascensions (avec cartes et photographies), par K. LIES et E. ISOLABELLA.
- Oesterreichische Alpen Zeitung*, vol. XXXIII, n° 828.—Bref exposé des courses effectuées en 1910 par MM. R. DAMBERGER, W. von OEBEL et P. ZLOLIKOWITZ, notamment la première ascension du Capo Tafonato par la muraille Est.

2° AUTRES GROUPES.

- Oesterreichische Alpen Zeitung*, vol. XXVI, nos 665-666.—Zwei Korsische Hochwarten, par le Dr H. BERTRAM, de Meiningen. Ascensions au Monte d'Oro et au Monte Rotondo (Itinéraires nouveaux).
- Jahresbericht des Akademischen Alpen Vereins, München*, vol. XIV.—Itinéraire d'ascension au Monte Rotondo (1^{re} traversée de la Cresta Pozzolo), par le Dr Th. HERZOG.
- Oesterreichische Alpen Zeitung*, vol. XXXII, nos des 20 Juillet, 5 et 20 Août 1910.—Voyage dans les montagnes de la Corse, par le Dr R. LUCERNA. Narration de voyage très touffue.
- Jahrbuch des Schweizerischen Alpen-Clubs*, vol. XLI et XLII.—In Korsika, par le Dr Wilh. SCHIBLER.
- Oesterreichische Touristen Zeitung*, vol. XXXI, n° 5.—Récit d'ascension au Monte Rotondo, par Fritz MIELERT.
- REHWICK, GEORGE.—*Romantic Corsica*, avec un chapitre sur les ascensions en Corse, par T. G. OUSTON ; London, Fisher Unwin, 1909.

FUNICULAR RAILWAY UP THE AIGUILLE DU MIDI.—The first bit of this is now complete as far as La Paraz (1460 m.) and is expected to be operated this summer. The next stage to Pierre à l'Échelle is in active construction.

REFUGE DU COUVERCLE.—This hut has been considerably enlarged by the Chamonix section of the C.A.F., and will now hold 28 to 30 people; but for the present there are only 12 sets of mattresses and rugs.

REVIEWS AND NOTICES.

ENCYCLOPÆDIA BRITANNICA.

'Caucasus.'

It is with regret that we find that the article on 'The Caucasus' in the 1911 edition of the 'Encyclopædia,' signed by Prince Krapotkin and Mr. J. T. Bealby, leaves in the portion treating of the Central Caucasus, which alone is dealt with here, much to be desired and a great deal to be corrected. In some respects it contrasts unfavourably with the, for its date, excellent article by Sir E. Bunbury in the previous edition. The writers would seem to have little personal or intimate knowledge of the range. As regards orographical detail and bibliography their article is specially defective. The list of ascents in the 'West Central Caucasus' furnished by them is both incomplete and erratic, e.g. Mr. Hermann-Woolley and Mr. Clive Phillipps Wolley are united as 'C. P. Woolley.' Mr. H. Woolley has been at the pains to compile a more accurate list, complete as far as he knows, which is printed below.

The following notes of a few of the necessary corrections in the text of the article are supplied by another Caucasian explorer.

'The Caucasus is said to be "a mountain range of Asia": this dogmatic assertion on a disputed point is surely out of place. The "mountain-range" is 600 not "900" miles long; it is only 700 miles (see map p. 554) from the Straits of Kertch to the Caspian, and the range does not reach either extremity of the projecting promontories. It is true that "the chain is not cleft by deep trenches forming natural passes." But the centre of the chain offers a choice of grass passes, higher, it is true, than the lowest passes of the Alps, but convenient for traffic. Janga Tau and Shkara are on not *off* the principal range—the watershed; Tetnuld and Ushba (not mentioned) are off the watershed, and so is Adai Khokh, but close to it. A secondary range to the north, known as the Bokovoi Khrebet, is said to run parallel to the watershed through both the Western and the Central Caucasus, and in the latter portion of the chain to surpass

the peaks of the watershed in height. It is obvious this can only be true if the Dykhtau group is included under the name. But there is no continuous elevation N. of the main chain of the character described, and the name, Bokovoi Khrebet, is not to be found in Merzbacher's, Déchy's, or Freshfield's index. The nearest thing to it is Bogkhabashi applied to the ridge N. of the Uruk in the earlier Russian maps, but recently (according to Merzbacher) discarded. The comparison drawn between the drainage of the Alps and the Caucasus seems in the main unfounded. The "headwaters of the Rion" flow in one, or two, longitudinal troughs, according to the limitation given to "headwaters," those of the Kura and Kuban flow not in longitudinal troughs but transverse valleys. It is not till they reach the plains that these rivers take the course imputed to them.

'It would be interesting to learn where "sheer cliffs" of 2000-3000 feet occur on the Black Sea coast?

'The highest summit W. of Elbruz, Dombai Ulgen, 13,206 feet, is left out. The military road over the Klukhor Pass, constructed many years back, is not mentioned.

'The paragraph on "glaciers" culminates in the astounding assertion that "the longest is the Maliev on Kasbek 36 miles long"! The Dychs is left out, the Tuiber is *not* "given off by Tetnuld" as here stated. The list of "Passes" has got into a sad mess; frequented cattle passes, difficult hunters' routes, and passes over minor ridges (e.g. Bak and Bezingi) are mixed up. But the writers' conception of Caucasian orography is a tangle it would take too long to unravel here. There is neither method nor accuracy in their dealings with this branch of their subject. They fail to distinguish between the main range—the watershed—and the geological axis, and hence fall into such blunders as the statement that the Mamison Pass "is situated a little south of the main range." The Karaul Passes are duplicated.

'The upper basin of the Ingur, Suanetia, is called "a mountain glen." The authors write of the "rivers (glens)" Lechkhum and Racha: these are names of districts in the valley of the "Tskhenis-Tskhali."

'In the Bibliography, Dubois de Montpéroux's "Voyage autour du Caucase," 6 vols. and atlas, 1839-43; Mr. Freshfield's book "Travels in the Central Caucasus, &c." 1869, M. de Déchy's work "Der Kaukasus," 3 vols., 1905-7; Mourier's "Guide au Caucase," 1894; Telfer's "Crimea and Transcaucasia," 2 vols., 1876; Bernoville's "La Souanétie libre," 1875; J. F. Baddely's "The Russian Conquest of the Caucasus," 1908, are a few among the more important omissions. V. Dingelstedt's very unreliable articles in the "Scottish Geographical Magazine," criticised by Mr. Freshfield, are cited separately, but no reference is made to the numerous articles on the Caucasus contained in the "Geographical Journal," the "Alpine Journal," and the publications of the Club Alpino Italiano, and other foreign clubs.'

**LIST OF PRINCIPAL PEAKS ASCENDED IN THE
CENTRAL CAUCASUS PRIOR TO 1912.**

Compiled by H. WOOLLEY.

[The heights in this table have been taken, wherever possible, from the more recent Government surveys.]

Date.	Name.	Altitude in feet.	By whom ascended.
1852	Zilga Khokh (W. Peak ?)	12,645	General J. J. Khodsko.
1868	Elbruz, E. Peak . . .	18,347	D. W. Freshfield, A. W. Moore and C. C. Tucker.
1868	Kasbek	16,546	Freshfield, Moore and Tucker.
1874	Elbruz, W. Peak . . .	18,470	F. C. Grove, H. Walker, and F. Gardiner.
1874	Sultran-kol-Bashi . . .	12,490	Grove, Moore, Walker and Gardiner
1884	Adai Khokh*	15,244	M. de Déchy.
1886	Gestola	15,932	C. T. Dent and W. F. Donkin.
1887	Tetnuld	15,920	Freshfield.
1887	Ukiu	14,260	Freshfield.
1887	Shoda†	11,840	Freshfield.
1887	Gulba ca.	12,500	Freshfield.
1888	Dykhtau	17,054	A. F. Mummery.
1888	Dongusorun, S.E. Peak . .	14,550	W. F. Donkin and H. Fox.
1888	Shkara	17,038	J. G. Cockin.
1888	Janga, E. Peak	16,529	Cockin.
1888	Ushba, N. Peak	15,400	Cockin.
1888	Saluinan	14,265	J. G. Cockin and H. W. Holder.
1888	Adish (Katuintau) . . .	16,296	H. W. Holder and H. Woolley.
1889	Laila, N. Peak	13,046	D. W. Freshfield and C. H. Powell.
1889	Laila, Central Peak . . .	13,156	V. Sella.
1889	Ullauz Bashi	15,351	V. Sella and E. Sella.
1889	Koshantau	16,880	Woolley.
1889	Mishirgitau, E. Peak ca.	16,250	Woolley.
1889	Ailama	14,850	Woolley.
1889	Kogitai (Chat Bashi) . .	12,536	V. Sella.
1889	Bangurvyan	12,583	V. Sella.
1889	Dashi Khokh	12,233	V. Sella.
1890	Tsikhvarga	13,580	Cockin and Holder.
1890	Tsikhvarga E. Peak ca.	13,500	V. Sella.
1890	Burdjula	14,295	Cockin and Holder.
1890?	Khalatza	12,917	A. V. Pastukhoff.
1891	Laila, S. Peak	13,105	G. Merzbacher and L. Purtscheller.
1891	Dongusorun, N.W. and Central Peaks	14,603	Merzbacher and Purtscheller.
1891	Sullukol Bashi	13,972	Merzbacher and Purtscheller.
1891	Gimarai Khokh	15,672	Merzbacher.
1892	Maily Khokh	15,157	N. de Poggenpohl.

* The ascent of this peak made in 1890 by Messrs. Cockin and Holder was believed by them to be the first ascent and was accepted as such in 1896 by Mr. D. W. Freshfield (*Exploration of the Caucasus*, Vol. I., p. 143). M. de Déchy, however, who in 1884 climbed a peak identified at the time with *Khamkhakhi Khokh*, above the Mamison Pass ('*A. J.*' Vol. XII, p. 317), has more recently satisfied himself that the summit he gained is the Adai Khokh of the new Russian map.

† The height (11,180) previously assigned to this peak was taken from the old 5-verst-map. That here given is taken from the new Government maps.

Date.	Name.	Altitude in feet.	By whom ascended.
1894	Bak (Charinda ?)	11,740	J. Collier, F. W. Newmarch and G. A. Solly.
1894	Mashkhin	ca. 12,700	Newmarch and Solly.
1895	Tsiteli (Tana)	13,930	Dent and Woolley.
1896	Tepli, Central Peak	14,510	V. Sella and E. Gallo.
1896	Skatikom Khokh	ca. 14,100	Sella and Gallo.
1896	Sugan, N. Peak	ca. 14,730	Sella and Gallo.
1896	Kom	ca. 12,370	Sella and Gallo.
1896	Adyrsu Bashii.	14,278	Cockin, Holder and Woolley.
1896	Gumichi (Cheget-tau-chana)	13,482	Cockin, Holder and Woolley.
1896	Koia-ugu Bashii	12,720	Cockin, Holder and Woolley.
1900	Zalmiag.	13,095	W. R. Rickmers and Mrs. Rickmers.
1903	Ushba, S. Peak	15,413	R. Helbling, F. Reichert, A. Schulze, O. Schuster & A. Weber.
1903	Ushba, both Peaks		L. Distel, G. Leuchs and H. Pfann.
1903	Shikhilditau	14,173	Helbling, Reichert, Schulze, and Weber.
1903	Janga, all Peaks	16,570	Helbling, Reichert, Schulze, and Weber.
1903	Skimeri	ca. 11,810	F. Scheck and A. Schulze.
1903	Lodehttau	12,552	O. Schuster and J. H. Wigner.
1903	Leirag	11,550	Schuster and Wigner.
1903	Hevai	13,058	Schuster and Wigner.
1903	Nameless Peak (Dalla Kora Ridge)	11,400	Schuster and Wigner.
1903	Shtavler	13,107	Frl. C. v. Ficker, H. v. Ficker, Rickmers, Scheck and Wigner.
1903	Tsentsitau	12,644	Frl. v. Ficker, and Rickmers.
1903	Nashkodra	ca. 12,959	H. v. Ficker.
1903	Lialver	14,272	Schulze.
1903	Lakra	12,188	L. W. Rolleston and T. G. Longstaff.
1903	Lataga (Ullu-tau-chana)	13,790	Rolleston and Longstaff.
1903	Bashiltau	13,685	Rolleston and Longstaff.
1903	Tikhtengen	15,267	Rolleston and Longstaff.
1903	Shkara, W. Peak	16,592	Rolleston and Longstaff.
1903	Behedukh	14,013	Distel, Leuchs and Pfann.
1907	Nameless Peak (Mamison Group)	ca. 12,910	V. Ronchetti and F. Colombo.
1909	Nakhashbita	14,410	Madame H. Kuntze.
1909	Sugan, S. Peak	14,731	Madame Kuntze.
1909	Tsikhgartikhon	13,565	Madame Kuntze.
1910	Nameless Peak (Kasbek Group)	ca. 13,120	W. Fischer, G. Kuhfahl and O. Schuster.
1910	Resi Khokh	12,533	Fischer, V. v. Friedrichs and Schuster.
1910	Suatisi Khokh	14,675	Fischer, Kuhfahl and Schuster.
1910	Tsiti Khokh	12,817	Fischer and Schuster.
1910	Tsariat Khokh	13,327	Fischer and Schuster.
1910	Kaltber	14,462	Fischer and Schuster.
1911	Shau Khokh	14,340	Fischer and Schuster.
1911	Tamiakom Khokh	13,570	Fischer and Schuster.
1911	Nameless Peak between Zirkhu Bason and Tsariat Khokh (Kasbek Group)	ca. 12,796	Fischer and Schuster.
1911	Kalaan	12,595	Fischer and Schuster.
1911	Zilga Khokh, E. Peak	12,677	Fischer and Schuster.

My Climbing Adventures in Four Continents. By Samuel Turner. (London : T. Fisher Unwin.

Mr. Samuel Turner (who had previously ascended Pilatus and the Rigi and ran down the former in two and a half hours) had made 'a trip over the Mer-de-Glace glacier and a climb up the Aiguille du Dru to about 9000 ft.,' and took for his first climb Mont Blanc. This mountain he ascended on September 8 and 9, 1898, by the Grands Mulets and Bosses route. He descended the same way and, 'after a few minor climbs, had the date of the climb and the mountain's name burnt in my ice-axe, to indicate I had ascended the highest mountain in Europe. I took and paid for a certificate from the chief guide's office, and I felt that this completed the novice stage of my climbing, and that I had carried out all the formalities which seem ridiculous in after years.' In 1899 he ascended the Matterhorn and Monte Rosa by the usual routes from Zermatt. On both these expeditions he encountered perils and observed phenomena which are somewhat unusual. On the latter mountain, for example, he found a 'knife-like ice ridge leading up to Dufour Spitze summit,' so curious in consistency that the party hastened down to it on the descent, 'because it would have made it much more dangerous if the sun went down, and the steps on the ridge had a chance to freeze.'

In 1900 he does not appear to have visited the Alps. But in 1901 he traversed the Charmoz from south to north, made an unsuccessful attempt on the Aiguille du Midi (apparently from the Rifugio Torino), crossed the Col du Mont Tondou, and 'ascended Col des Grands Montets.' This is the sum of his climbing on the continent of Europe; but to it must be added certain climbs in Cumberland, Derbyshire and South Wales, one assisted by a rope 'got over the top,' and one forcing the author 'to climb down on some overhanging rocks,' but all very remarkable.

During the winter of 1902 he travelled in Siberia, was beaten by adverse circumstances on Mount Belukha, but ascended an unknown mountain which he christened Willers' Peak. His aneroid registered 17,850 ft. 'My aneroid was tested before and after my return to England, and found to be correct. Mr. Edward Whympers also tested my aneroid on my return to England.' So he deducted 50 ft., 'allowing the known error,' and 'was surprised, but elated, at having discovered a higher peak than the highest known up to the time of my visit to Belukha.' Both emotions are pardonable. Mr. Turner on this historic voyage added to the sum of human knowledge by sliding down a very steep ice slope,' and 'sliding on my back down the glacier,' and finding that 'it worked all right'; and by observing certain hitherto unrecorded customs of the inhabitants of Siberia, with whom, despite their 'reckless disregard of life,' you may place yourself 'in a friendly position' if you can follow Mr. Turner's example in 'balancing a paper cup on my nose and burning it while balancing it, etc' The 'reckless disregard of life' is proved

by another peculiar custom. 'The usual way of killing bears in that part is to let the bear run at you, and just as it is going to spring you get behind your long knife, lying flat, and so the bear impales itself on the knife.' Adventures are to the adventurous.

Mr. Turner next turned his attention to New Zealand. In the autumn of 1905, that is, in the New Zealand spring, he ascended Mont Ngauruhoe alone. The height of this mountain is not stated, but the conditions were wintry, and although, 'climbing in a spiral route, Mr. Turner reached the summit of the mountain in safety,' and even had the satisfaction, according to his usual custom, of photographing himself 'by long tube,' he suffered a good deal of discomfort, was benighted, and was attacked by snow blindness. He then joined a strong party of New Zealanders, ascended the 'Priest's Cap,' failed in an attempt on Mount Sealey and in two attempts on Mount Elie de Beaumont, and succeeded in crossing Mount Cook. In 1909 he visited South America, and failed in an 'attempt to rush Aconcagua.'

Such is the plain tale, garnished only by those flowers of eloquence which we have culled from his narrative, of Mr. Turner's climbing adventures in four continents. And there might be some difficulty in expressing a judgment upon it, were it not that he has saved us the trouble. With copious comment on his own qualities and the deficiencies of his companions, assisted by cuttings from such mountaineering authorities as the *Westminster Gazette*, the *Daily Mail*, the *Wellington Press* and *Truth* (New Zealand), he enables us to estimate his feats at their true value and incidentally adds to the store of Alpine history. Thus his climb of the Matterhorn was, he thinks, a record one: 12 hours, 35 mins., Zermatt to the top and back, excluding a halt at the hut. He 'had read about a record climb of the Matterhorn, and wished to beat it. An old guide at Hotel Monte Rosa acted as timekeeper.' Few of us, when we are foolish enough to risk ourselves and our guides in racing, are hardened enough to confess it. Mr. Turner does not aggravate his fault by apology. But he has a twofold claim to forgiveness. First, his conduct appears to him to be natural and indeed laudable: and, second, he is mistaken in his facts. The mountain has been traversed from Breuil to Zermatt at least twice in less time than that stated, and—horrible to relate—has once been ascended from, and descended to, Zermatt in less than ten hours. His Charmoz traverse was the first from south to north and 'the most dangerous rock climb in Switzerland.' What is even more remarkable, 'the south to north had hitherto been looked upon as unclimbable by fair means.' It seems a pity to shatter an illusion, but probably all frequenters of the Montanvert are aware that, when the gully, which constitutes the main difficulty of the mountain, is iced, the south to north route presents divers advantages; it was first taken in 1893 (5 years before Mr. Turner's climb) by a party of well-known climbers (including two ladies), and has since been repeated frequently. Then we know (from the

Westminster Gazette) that Mr. Turner is 'the most adventurous living climber'; (from the *Daily Mail*) that he is a 'well-known Alpinist'; (from the *Wellington Press*) that he is an 'intrepid climber' and possesses 'indomitable pluck and endurance'; (from Mr. A. B. Holmes) that he is 'one of the first rock-climbers and mountaineers of the present day'; (from his own testimony) that he is 'one of the most careful of living climbers,' and further that he is the holder of 'the world's record skip,' certified to by the third and fifth officers, the purser, and the doctor of the s.s. *Osterley*, the last-named of whom 'examined him afterwards, and found him by no means exhausted and, in my opinion, capable of continuing the skip for a considerable time longer.' It is unpleasant to think that such a man should have been hampered by the incompetence or faintness of heart of his companions and should have been forced to chronicle the fact. Even on Mount Cook, 'X. talked about provisioning the bivouac and staying up a month rather than be beaten by it. I said I would climb alone if they would not climb. Y. said, "What if we cannot get across the snow plateau?" I said I would lead across it, no matter how deep the snow. Z. was silent. I had told the party several times that they had too much respect for the mountain.' Perhaps X. Y. and Z. (whose names are not so shrouded in the volume) might have a word to say if they were this side of the water.

Before the heroism and the eloquence of Mr. Turner, criticism and wonder are silent. The earnest searcher after truth may try the 23rd volume of this journal, wherein, at p. 124, he will find how what happened to Mr. S. Turner appeared to Mr. Malcolm Ross. The moral to be drawn from a comparison of the two accounts of the same adventure seems to be that every man is his own best biographer. Many an intrepid autobiographer might not have been so dear to us, had some one of his companions, possessing Mr. Ross's knowledge of the subject and mastery of English, told the story first.

With so many delights before him, the reader will scarcely ask for more. Yet we give him one more treat, for which perhaps he is in fact indebted to the publisher—namely, the task of transposition to their normal shapes of the following—Zurrier (which it needs some ingenuity to reduce to FÜRrer), Tangwald (possibly Taugwald), Binen, Ker Knotts, Bergener, Mountainrest, Nantillon, Refugio Torino, Kaufman, and Valley Alle Blanche.

Mr. Turner's ambition is Everest. Like Gil Blas' archbishop, we wish him 'toutes sortes de prospérités et un peu plus de goût.'

Peaks and Pleasant Pastures. By Claud Schuster. Oxford: 1911. 8vo. 7/6.

'These papers,' the preface tells us, 'are republished almost in the form in which they first appeared in print. . . . They are not presented as having any value of the topographical sort, nor do they embody the results of original research, and any one is free to doubt

whether a book on mountaineering can have any value if it is not in one or other of these two matters.' With the exception of 'The Middle Age of a Mountaineer,' which was recently read to the Alpine Club and appeared in the 24th volume of this Journal, the contents are, in fact, essays in the difficult art of interesting the general reader in ordinary mountaineering, devoid alike of thrilling incident and of moral edification. This being the case, it seems more appropriate for the reviewer to forget that he too is a mountaineer, and, so far as may be, to put himself in the position of that same 'general reader.' In other words, this book must be judged from the literary rather than from the technical point of view. We need not concern ourselves to ask whether the author's geography is invariably accurate, or whether his impressions of the climbs which he describes agree with our own. The question to consider is whether he has succeeded in conveying to the mere outsider, who may know less of the Alps than of the Arctic regions—for he is more likely to have read his Nansen and his Peary than his Whymper and his Mummery—why we go to the mountains and what we do there; and more, whether he has fused the raw stuff of his experiences and emotions into literature. Judged thus the book will, we think, take a high rank. The 'mere climber' may speed through its two hundred pages at his best pace, and proclaim with disgust that there is 'nothing in it.' And there is nothing—for him. But those to whom the Alps are something more than a glorified gymnasium, or a collection of peaks which offer endless opportunities for correcting the topography and outdoing the achievements of their predecessors, will recognise here one of those books, all too rare in our Alpine libraries, which are inspired by a profound love of all that the mountains have to give. For you are no true lover, the author seems to tell us, until you can enjoy not only the great expeditions in perfect weather, the days when everything goes as it should go, but the weary hut-tramp, the hours of toil up endless snow-slopes, the days of tempest and failure; not only the giants of the upper world, but the low passes, the life of the villages, the 'sacred implements of the cheese-making,' the peasant 'renewing year by year his secular strife with nature.' And it is because this book succeeds in expressing some of the joy which is to be found in all these things, and many more, that one will often take it up again, long after the brilliant climbing records have been laid aside and forgotten.

Where the author fails is in some passages where he seems to ignore his true objective, the general reader, and to address the expert. There is far too much of mere geography, unessential and confusing, in the chapter called 'Between Doron and Dora' (see especially pages 104 to 106), and the preciseness of such details as 'We were off at 3.42' is incongruous. For the same reason 'The Middle Age of a Mountaineer' should have had some judicious editing before it was republished. The personal allusions, *φωνήματα συνειρησιν*, and the references to previous numbers of the ALPINE JOURNAL,

are out of place in a book aimed at a wider audience, and the topography in the last section of the paper is unintelligible without a map. Among minor matters we may note that the snare of the unverified quotation has not been altogether avoided. It is odd to find 'Beautiful as an army with banners'; it is distressing to see what the combined efforts of author and printer have done with a line from 'Love in the Valley' on page 191; never, surely, can such havoc have been wrought by the simple insertion of a comma. More serious, in a book which ranks as literature, is the occasional lapse into the exhausted phrases of the journalist, 'another story,' and even 'superfluous adipose deposit.'

Both to students of mountaineering psychology, if such there be, and to those who endeavour to date literary documents by internal evidence, we commend a comparison of the two papers from the 'Cornhill Magazine' with 'The Middle Age of a Mountaineer.' The former were written many years earlier, yet the author, in 'The Cup and the Lip,' not only speaks of himself as a 'scarred and bearded veteran' but writes with a sobriety befitting his assumed age and infirmities. Can this indeed be the same as he who, but a few years ago, mocked at middle-age even while he pretended to welcome it? The scholiast who disputes the fact will point out triumphantly that on page 205 it is the 'callow youth' who has a taste for carrying his own knapsack, while on page 152 this is a sign of middle-aged wisdom.

In such a book as this, photographs and ordinary maps would be incongruous, but there are five charmingly decorative sketch-maps by Mr. E. H. New, which indicate just enough of the essential features to enable one to follow the text. We only regret that one of the Oberland was not added, to illustrate the author's wanderings in 1911. The get-up of the volume is perfect. Happy the mountaineer who is published by the Clarendon Press.

Julien Gallet, Dans l'Alpe Ignorée. Explorations et Souvenirs. Lausanne, Imprimeries Réunies, S.A. 1910.

M. Julien Gallet is not only a successful climber but an enthusiastic lover of the mountains, and in this well-printed and well-illustrated volume of 374 pages he has given us some delightful reading. M. Gallet has made many first ascents in the Bernese Alps, especially in the Bietschhorn Group, and quite a number of new passes, as well as many new routes on such mountains as the Lauterbrunnen Breithorn, the Gletscherhorn, the Ebnefluh, the Mittaghorn, and the Schienhorn. One of the most notable of his triumphs is the first traverse of the Mont Dolent. So that from the climbing point of view the book is full of interest, and the stories of difficult climbs graphic and absorbing. On many of his expeditions the author was accompanied by his wife.

M. Gallet has the mountain lover's eye for all the interesting

details of life in the mountains—the chalet, the flora, the peasants and their occupations. He gives us for example in his story of the Schilthorn (pp. 230 foll.) a sympathetic account of his night at the Ebnet Alp which is most entertaining. Want of space forbids us to quote many *morceaux* that have attracted us, but we must reproduce one short passage from his account of an ascent of the Grivola from Val Savaranche (p. 80).

‘A peine avons-nous atteint les premiers gazons, que nous voyons s’ébattre toute une troupe de jolis chamois, puis, un peu plus loin, nous découvrons plusieurs bouquetins. Tous ces animaux paissent dans une quiétude complète. Certes, ils sentent que nous n’avons pas de sang royal dans les veines, car ils se laissent approcher de très près. Joseph [Kalbermatten]—qui ne connaît que les chamois suisses, toujours anxieux et toujours traqués—déborde d’exaltation : “Monsieur, mais voyez donc ces bouquetins ! regardez cet énorme animal là-bas . . . oh ! si près ! Voilà quatre gros mâles ! et ces cornes, Monsieur ! ces cornes !”’

Only 300 copies of the book have been printed. Happy are those who are fortunate enough to possess it.

PROCEEDINGS OF THE ALPINE CLUB.

A GENERAL MEETING of the Club was held in the Hall, 23 Savile Row, on Tuesday evening, November 7, at 8.30 P.M.

Sir Edward Davidson, *President*, in the chair. Messrs. C. G. Monro, V. A. Fynn, L. C. F. Oppenheim, B. Lawford, C. G. G. Stewart, E. B. Ormond, R. G. Rows, C. L. Chute, H. J. Macartney and H. O. S. Gibson were balloted for and elected members of the Club.

The PRESIDENT said : I have to announce the gift of an oil-painting of the Dent Blanche by Mr. Henry Howard, who deserves the hearty thanks of our Club for presenting us with this fine specimen of his work. I should like to point out that this is a good example that other artistic members of the Club might follow with advantage. The Club will, no doubt, wish me to convey their best thanks to Mr. Howard for his handsome present.

I think that the Club will like to know that, acting on a hint given by my predecessor in this chair, it has been determined to issue the ALPINE JOURNAL after the end of this year in an annual volume, consisting of four quarterly numbers, as the biennial volume of eight numbers has now become inconveniently large and bulky to handle. The Committee hope that the change will be acceptable to the Club.

I have to announce the deaths of the following members. Mr. T. G. Ouston, a well-known and very distinguished surgeon in the North, who was a member of the Club for ten years, has passed away prematurely at the age of forty. He was specially known in connexion with his climbs amongst the Scottish Hills, and also with

explorations in Norway and Corsica. Mr. H. C. Robinson who was elected a member of the Club in 1894 has also passed from us. He was formerly well known as a keen rock climber to those of us who went to the Zermatt district, and he was also one of the first Englishmen to make some of the more difficult Dolomite ascents in the Cortina district. He had been in bad health of late, and was probably not so well known to the younger as to many of the older members of the Club.

You all know that on September 16 passed away, suddenly and painlessly, Edward Whymper, in the seventy-second year of his age. By his death the whole Alpine world, of which he was in many ways the most renowned and remarkable figure, is deeply affected, while this Club, of which he was a most loyal and faithful son, sustains a grievous loss.

For himself, as an old friend of his of many years' standing, I will venture to say that he was 'felix opportunitate mortis.'

Death came to him swiftly and unexpectedly, as I think he would himself have chosen, under the shadow of the great range with which so many of his early mountaineering triumphs were connected.

He had already exceeded the span of life allotted by the Psalmist. His health, hitherto of the most robust, showed signs of giving way, and he was threatened at no distant date with the loss of what was to him the most precious gift of all, his eyesight.

He had lived to see the art of wood-engraving, of which he was in his day, perhaps, the finest living exponent, practically destroyed by the mechanical processes of a material age.

Most of the companions of his Alpine triumphs had preceded him across the Great Divide, and his life was rather in the past than in the future.

His was a masterful nature overflowing with an exceptional energy; a dogged determination which declined to own defeat, and a phlegmatic persistence before which most obstacles eventually vanished.

He had a fine physique and a perfectly magnificent constitution, impervious alike to equatorial heat and to arctic cold.

He was not only a skilful and experienced mountaineer but a born explorer and investigator of nature in all her various forms.

In the art alike in his early days of preparing for the ascent of some virgin peak and subsequently for a prolonged tour in unknown and unexplored regions he was unsurpassed.

Nothing escaped his all-pervading attention. Everything was mapped out and planned beforehand in the most careful manner.

As a writer he was no less distinguished and successful. Pains-taking and elaborate to a degree that has rarely been equalled, it may be said that he wrote hardly a line

' quod non
 Multa dies et multa litura coeruit, atque
 Præsectum decies non castigavit ad unguem.'

Yet withal he managed to preserve an apparent spontaneity of style and raciness of narrative which instantly fascinated the attention of the reader and held him fast within its magic grasp.

In 1869, after four years of careful preparation, he published his 'Scrambles in the Alps,' that classic work which at once obtained and has ever since retained, not only in mountaineering circles but also with the general reader, a popularity unequalled by any other book of the kind. Since that date it has passed through many editions in various forms and has been translated into, at least, three foreign languages. It may be predicted with great confidence that this most fascinating and dramatic book will remain a lasting memorial of its writer for all mountaineering time.

Subsequently he produced other works of great merit and permanent reputation, though the 'Scrambles' will always retain unquestioned supremacy as his masterpiece in public estimation.

If genius consists, as has been said, in the infinite capacity for taking pains, then Edward Whymper possessed it in no ordinary degree.

After the terrible catastrophe of 1865 his chief energies were diverted, as was to be expected, from the Swiss Alps. He made successive exploring expeditions of the highest value to Greenland in 1867 and 1872, and to the Cordilleras of the Equator in 1880. In the first years of the present century, he several times visited the Canadian Rocky Mountains, where many new ascents, more especially in the summer of 1906 when the well-known guides, Christian Klucker, Joseph Pollinger and Christian Kaufmann accompanied him, were made under his auspices.

Of these ascents, so far as I am aware, no account has yet been published, though many of them were very important.

Whymper did not 'suffer fools gladly.' He had in his time endured much at the hands of the inquisitive stranger and had laid to heart the advice of Juvenal concerning him. To such percontatory persons he doubtless may have appeared abrupt, reserved and taciturn in his demeanour, but beneath the somewhat grim exterior there beat a kindly heart, and in the circle of his old friends he was a genial and agreeable companion, full of interesting reminiscence and of a dry humour all his own.

'He was a man, take him for all in all,
We shall not look upon his like again.'

Requiescat in pace.

I have also, with great regret, to inform members (a further notice will appear in the forthcoming number of the ALPINE JOURNAL) of the death through a sad accident on Mont Dolent, of Auguste Blanc of Bonneval. He was a young guide of great distinction and of charming disposition, who was dear to all who knew him, and, had he been spared, there was a great career before him.

It is right that, although he was not a member of this Club, the death of Colonel Edmund Smythe should be recorded with an expression of most sincere regret on our part. He died at

Bordighera on November 2 at an advanced age. He took part in the first ascent of the Höchste Spitze of Monte Rosa in July 1855. He also accomplished some remarkable ascents in India and on several occasions penetrated into Tibet.

Mr. SOLLY mentioned the death of Mr. Max Schintz in September last.

The PRESIDENT said that he had not previously heard of Mr. Schintz's death, which would be much regretted by the Club, but that he well remembered him in his early years as a brilliant cragsman and as one of the fastest walkers he had ever known, who had for many years been in the foremost rank of climbers.

Mr. H. O. JONES read a paper on 'Mont Blanc and the Grépon in 1911' which was illustrated by lantern slides.

Mr. YOUNG said: It is difficult to add anything to what Mr. Jones has said. My own principal feeling about the Mont Blanc expedition was one of gratitude to Blodig and H. O. Jones for asking us to go up with them. As regards the general mountaineering our route gave a sense of space and of height greater than I have felt elsewhere in the Alps. We had good fortune. We timed the ascent luckily, so that for 1500 feet in the couloir we had the shadow of the moon following just behind us, and we had barely an hour to wait on the Col for the sun. It was almost romantic. We found our climbing irons indispensable.

As regards the Grépon climb, Jones' restrained way of telling the story gives a better idea of the varied sensations and difficulties than could be given by more profuse detail or description. Nothing but perfectly dry rock, with a warm and sunny day and clear weather, would have made the climb possible. Some of it was the most difficult rock-climbing that I have seen. Our ascent of the final summit could be avoided by going up the 'Dunod' chimney. The climb provided an instance of the superiority of the first-rate guide over any type of amateur. With the exception of the two chimneys there would have been no part that good amateurs could not have done, but after the cumulative effect of the long previous strain, the chimney must have beaten all of us. Knubel, however, after all his hard work, remained as fresh as ever.

Mr. MORSE said: I can only say that I think the Club should congratulate the party very much on the very fine ascent they have made. I know nothing about that side of the peak except that once I saw a rock about the size of a grand piano go down that couloir. I can say that the top point which was climbed in so fine a way by Knubel was extremely difficult. Naturally a guide can do better than an amateur. I have often looked at the route but never tried to ascend. I know the other side of the peak and I consider that a very fine climb has been accomplished.

Dr CLAUDE WILSON said: I remember being let down from the top of the Grépon on a rope, no doubt at the place where Knubel climbed up the final crag. We had gone up by the 'Dunod' chimney

and having got to the top found that we had left an ice-axe and I was let down on the Mer de Glace side. I am quite sure that I could not have climbed up it. I remember on another occasion inspecting that side of the Grépon with the idea of finding a route from the Trélaporte side, and while looking I saw coming down from the Col between the Charmoz and the Grépon an avalanche of stones that lasted for some minutes. This year there was so little ice that probably there was much less falling matter than usual. The other expedition strikes me as one of the finest ever made in the Alps, and I do not suppose that so magnificent an expedition has ever before been made anywhere in the course of a single day. I should like to ask one thing that interests me. I have often had a wish to get up the Peuteret ridge, and I wish to know whether, if you get up, you might find yourself cut off by a cornice to prevent you getting to the ridge of Mont Blanc de Courmayeur. At the end of an expedition like that to be cut off by a large cornice would place one in a very bad position.

The PRESIDENT said: I am certain that everyone in the room is delighted that it has fallen to Mr. Jones to put a coping stone to the series of explorations he has made in past years on the southern side of the range of Mont Blanc and to accomplish this magnificent ascent. I entirely agree with Dr. Wilson's view that such a fine expedition has rarely if ever been accomplished in one day either in the Alps or in any other mountain range in the world. The weather was so magnificent this year that the party was able to do what it will probably be many years before even persons of such skill and pace as they will have a chance of accomplishing again. I beg to move a very hearty vote of thanks to Mr. Jones for his most interesting and admirable paper.

In reply Mr. Jones said: One feels glad to have succeeded in doing something so often tried. The advantages necessary to success, the weather, the condition of the mountain, one's companions were perfect. In answer to Dr. Wilson I should like to say that there is no cornice at the point, at least not so big as to prevent one getting up. Beyond that point there is a formidable cornice.

A GENERAL MEETING of the Club was held in the Hall of the Club on Monday evening, December 11, at 8.30 P.M., Sir Edward Davidson, *President*, in the chair.

The following candidates were balloted for and elected members of the Club: Messrs. Bernard Meredith Allen, George Thomas Amphlett, John Mackintosh Bell, Allston Burr, Alexander Morris Carr-Saunders, Charles Inglis Clark, Philip Scott Minor, Edward Fielden Pilkington, William Seaford Sharpe, Edward Oliver Wheeler.

The PRESIDENT said: The Club will be very sorry to hear—I only heard the sad news myself just before entering this room—that Sir Joseph Hooker died this afternoon. He was one of the pioneers of exploration in the Himalayas, and afterwards explored the Great Atlas Range with his great friend, the first President of this

Club, Mr. John Ball. He was almost the last survivor of the great scientific generation of fifty years ago which included Darwin, Huxley and Tyndall, with all of whom he was intimately acquainted. There is one, and only one, of that great generation who still lives in the person of Alfred Russel Wallace. Sir Joseph Hooker has died at the age of ninety-four, full of years and honours, but we shall all regret no longer to see his most distinguished name in the list of our Honorary Members.

I have to announce to the Club that the Committee by virtue of the powers conferred upon them have elected as Honorary Members, Professor Dr. Karl Diener of the University of Vienna, who has been several times President of the Austrian Alpine Club, and Professor Coleman, F.R.S. Both of these gentlemen have accepted this honour, the greatest which we can offer them, with expressions of pleasure and satisfaction.

I declare the following gentlemen to be duly elected for 1912 as officers of the Club :

As Vice-President : Mr. E. A. Broome in place of Capt. J. P. Farrar, D.S.O., whose term of office expires.

As Honorary Secretary : Mr. C. H. R. Wollaston in place of Mr. J. J. Withers, who retires.

As New Members of the Committee : The Rev. G. Broke, Messrs. C. Cannan, and W. N. Ling, and Major E. L. Strutt, in the places of Messrs. L. C. M. S. Amery, A. D. Godley, Eric Greenwood and J. H. W. Rolland, whose respective terms of office expire.

The President, the Vice-President, Mr. J. Norman Collie, and the other elective members of the Committee, being eligible, are re-elected.

Mr. H. WOOLLEY said : I have great pleasure in moving a vote of thanks to Mr. Withers on his retirement, and in doing so I need hardly emphasise our indebtedness to him. We all know how onerous the duties of the Honorary Secretary are, and how thoroughly and cheerfully they have been performed during the past three years. The correspondence alone demands a very great sacrifice of time, and a characteristic feature of our Honorary Secretary's methods is that no communication, however unimportant, ever fails to receive a reply by return of post. During the last few years exceptional matters have demanded attention. Among many others there have been the protracted negotiations for the renewal of the lease, which Mr. Withers concluded on very satisfactory terms ; but the circumstance which impressed me most was that in addition to his ordinary official duties he was able to undertake and complete the revision of several sections of the new volume of the 'Alpine Guide.' All his colleagues will retain very pleasant memories of his willing helpfulness and of the happy relations that have marked the whole period of his tenure of office, and in retiring he carries with him the assurance of our high appreciation of all that he has done for us. I move that our warmest thanks be tendered to Mr. Withers for his valuable services as Honorary Secretary of the Club.

CAPTAIN FARRAR seconded the motion, and said : No one admires more than I do the energy and tact displayed by Mr. Withers during his term of office.

The motion was carried unanimously.

The PRESIDENT returned thanks for Mr. Withers and said : As many of you know, Mr. Withers has been, through overwork, visited with a complete loss of voice, and though he is very much better now, he has been forbidden by his medical man to speak above a whisper, and has been warned that it would be unwise for him to attempt to address an audience of this size. He has, therefore, written a letter to me which he has asked me to read to the meeting :—

The President then read the following letter :—

‘ MY DEAR PRESIDENT,

‘ I am rather perturbed at your statement that according to precedent a vote of thanks to me will be moved to-night at the General Meeting.

‘ If it must be, and if the Club is good enough to carry it, will you very kindly tell them that owing to the state of my throat my doctor will not give me permission to try and speak even a few words.

‘ Will you say for me that I am deeply moved by this act of appreciation of my poor services, that I thank my fellow-members one and all for their forgiveness of my numerous sins of act and omission. Please add that one of my most cherished memories will be the recollection of the courtesy and consideration which I have received, and the numerous friendships I have formed, as Honorary Secretary of the Alpine Club. Will you beg them to extend their goodness and generosity to my successor, who is a much better fellow than I can ever hope to be.

‘ I am, My dear President,

‘ Yours truly,

(sd) JOHN J. WITHERS.’

The PRESIDENT added : I am perfectly certain that the Club will not agree with the latter portion of the last sentence of this letter, although they will with equal certainty extend their generosity to Mr. Withers’s successor whose services we all feel we have been most fortunate to secure. I should have liked to add a few more words to show my own appreciation of Mr. Withers’s assistance and kindness to me personally, but I shall have a more public opportunity of doing this at a not very distant date.

Mr. Freshfield, as you knew Sir Joseph Hooker well, I am sure the Club would like to have a few words from you in regard to his loss.

MR. D. W. FRESHFIELD : I very willingly avail myself of the invitation of the President to add something to what he has said with regard to the very distinguished Honorary Member of whose death we have just heard. Sir Joseph Hooker’s name has been familiar to

me from my boyhood. Ever since I first read, fifty years ago, his 'Himalayan Journals' I have revered him as one of the first of mountain explorers, as well as the first of living botanists. When I became in 1881 an Honorary Secretary of the Royal Geographical Society, I lost no time in urging his too long overlooked claim to one of our Gold Medals. Mountain travel, up to that date, had been comparatively scantily recognised at the lower end of Savile Row. Of late years a Gold Medal has fallen to the lot not only of Edward Whymper, but of several less distinguished members of this Club.

When in 1900 I came home after treading in Sir Joseph Hooker's footsteps in Sikkim and Nepal he welcomed the results of my journey with almost boyish enthusiasm. At the age of eighty-four he ran upstairs at the Athenæum—despising the lift—to see Signor Sella's photographs. After reading the volume I had the honour of dedicating to him, he wrote me the most delightful letters, dwelling on the pleasure he had in having the great mountains brought again before his eyes. He described it as a 'rejuvenescence.'

Hooker was a type of the really great man of science—simple, enthusiastic, appreciative, large-minded, as eager to receive as to give out; the last survivor—but one—of the famous group of the nineteenth century in this country. To have been able to add anything to the pleasure of his splendid old age is the result of my Himalayan journey on which I most congratulate myself.

The present seems a fit occasion to mention to the Club that in the summer of 1910 one of our own members, Dr. A. M. Kellas, carried out a most successful four months' climbing tour in the Himalaya, mainly in the north of Sikkim, the scene of Sir Joseph Hooker's explorations and of my own travels. Using my Jonsong La as a means of passage backwards and forwards he explored thoroughly the source of the Zemu Glacier and climbed three peaks of over 22,000 feet, the highest, Pawhunri 23,180 feet. These ascents were made with no assistance except from native followers. Mr. Kellas had paid two previous visits to Sikkim, in which he had done much exploring work, and taken a number of valuable photographs.

Mr. J. NORMAN COLLIE then read a paper 'On a new group of mountains north of the Yellow Head Pass' which was illustrated by lantern slides.

Mr. MUMM said: Dr. Collie has left practically nothing for me to say, and the only addition I should like to make has to deal more with the upper part of the Stoney Valley, to sing its praises. There is a very attractive range on the south side practically untrudged. I went up to a gully in a side valley and looked down to the Moose Pass. There is a great deal more to be done there beyond the river which would be an interesting field for exploration. A minor thing I wish to refer to is the remarkable appearance of the mountains of a comparatively low range opposite the last one Dr. Collie spoke of. The mountains on the opposite side of Robson looked as if

they would give extraordinarily good climbing. I should like to mention that last year I had a Whymper tent made by Silvers of a material half the weight of Willesden canvas, and it proved thoroughly satisfactory. It was watertight and warm.

Mr. WOOLLEY said: Professor Collie and Mr. Mumm are to be congratulated on the excellent work they have done. They have certainly added a very important chapter to the history of the exploration of the Canadian Rockies. I remember that in 1898 when on Mount Diadem—our farthest point north—I was rather disappointed to notice that the mountains to the north of the Columbia snowfield appeared to decrease in altitude, but since then it has been proved that Mount Robson is higher than any of the southern peaks, and now another very attractive group still farther north has been found. The paper reminds me of a remark made a year ago by Mr. Mumm, that as fast as new peaks are climbed in the Canadian Rockies other new peaks are discovered in their place, so that the demand shows no sign of overtaking the supply. The members of the Alpine Club have in the past played an important part in the exploration of the Canadian Rockies and it is very gratifying to us that Professor Collie and Mr. Mumm are still carrying on the work so successfully.

Mr. AMERY said: I have listened with great pleasure to the paper and I have nothing to add, but I should like to ask whether the new range explored by Collie and Mumm had any suggestion of bigger peaks beyond. When we tried Robson we saw what looked a tremendous peak to the north-west in the morning, but it afterwards disappeared. I should like to know if there is any evidence of big peaks to the north-west of Robson. I was greatly impressed by the Caribou mountains. No one has been near them except one man who came over by the Canoe River and he thought some of them as large as Robson.

Mr. STUTFIELD said: We may congratulate Collie and Mumm on the paper and on the beautiful photographs shown. I followed the paper with a keen, I might say almost a personal, interest. I know Collie's keen interest in geography and his love for working out problems. I fear, however, that when I was with him I never took his conclusions on trust and we consequently had long discussions over every one of them. Dr. Collie has shown what an enormous amount of work there is to be done. There must be hundreds of mountains in the north-west still to be explored.

CAPTAIN FARRAR said: I think Dr. Collie is not aware of the vast amount of unrecorded exploration that is done by the prospector for gold and other minerals. It would probably be found that some of these men have penetrated even into the wilds of the Caribou Mountains. Dr. Collie places us under a great obligation in mapping these districts. I am not an explorer and always wait for the map maker to precede my visit to a new country.

I was in the neighbourhood of Mt. Robson this Autumn—in fact

by a peculiar coincidence the two Vice-Presidents of this Club must at one period of their respective journeys have been within a very few miles of each other.

Dr. Collie is held in high honour in Canada, although when one of his admirers told me that Dr. Collie had been a climber but was now an explorer, I was for the moment taken back. Yet however highly our explorers are esteemed elsewhere, it is, I tell them, on the floor of this Club that their deeds are most truly appreciated.

The PRESIDENT said: I beg to propose a hearty vote of thanks to Dr. Collie. I trust that other members of the Club will be induced by his example to visit and explore these practically unknown regions. I cannot imagine anything more beautiful, from the artistic point of view as photographs, than those we have seen to-night, and their value topographically is also immense. Dr. Collie has re-mapped and practically re-constituted the greater portion of the area of his explorations and I hope his success in opening up this extraordinary new field to us will encourage others to follow in his footsteps.

The vote of thanks was unanimously carried.

THE WINTER DINNER of the Club was held at the Whitehall Rooms, Hotel Metropole, on Tuesday, December 12, 1911, at 7 p.m., Sir Edward Davidson, K.C.M.G., *President*, in the Chair. Two hundred and thirty-three members and sixty-seven guests sat down, among the latter being the Very Rev. the Dean of Norwich, the Rt. Hon. Viscount Churchill, the Hon. Mr. Justice Darling, Sir Alfred Cripps, K.C.V.O., K.C., M.P., Sir Alfred Ewing, K.C.B., Sir Henry Morris, Bart., Sir Thomas Barlow, Bart., Sir W. Ramsay, K.C.B., Sir Kingston Fowler, K.C.V.O., Sir F. C. Gould, etc.

AN EXHIBITION of Alpine Paintings and Drawings was held in the Hall from Tuesday, December 12, to Saturday, December 30, both days inclusive. Tea was provided on the afternoon of December 12, on which occasion between 600 and 700 visitors were present. The exhibition was attended by about 1200 visitors altogether.

THE
ALPINE JOURNAL.

MAY 1912.

(No. 196.)

THE MOUNTAINS OF NORTHERN SIKKIM AND GARHWAL.

By A. M. KELLAS.

(Read before the Alpine Club, February 6, 1912.)

A LONG the northern border of India stretches the most stupendous mountain barrier in the world. The main axis of the series of parallel ranges and mountain masses known collectively as the Himalaya extends for over 1500 m. from E. to W. and only comparatively small sections have so far been explored. The present paper deals with those divisions which cover the northern portions of Sikkim and of Garhwal, and is essentially a continuation of the explorations carried out by Mr. Freshfield and by Dr. Longstaff's party, and reported upon to this Club.

Sikkim is a small state about 2700 sq. m. in area lying between Nepal and Bhutan. To the S. lies the district of Darjeeling or British Sikkim, from the capital of which one generally starts when visiting the mountains to the North.

It may be well at the outset to enter briefly into orographical detail. The chief mountain of this portion of the Himalaya is the five-peaked Kangchenjunga, which rises to 28,150 ft. : it is probably the second as regards height and the first as regards mass of the measured mountains on the earth's surface.

The group of which Kangchenjunga is the chief is roughly speaking enclosed between the sources of the Teesta on the

E., and the Arun river on the W. Its backbone runs nearly N. and S., forming the boundary between Sikkim and Nepal, and is crossed at right angles by three ridges running E. and W.

On the southernmost range which forms the northern skyline of the famous Darjeeling view rises Kangchenjunga itself, flanked by Simvu (22,360 ft.) and Siniolchum (22,620 ft.) on the E., and Jannu (25,310 ft.) on the W. Between it and the central range lie the two greatest glaciers of the group, the Zemu to the E., and the Kangchenjunga to the W. N. of the Central Ridge which meets the N. and S. axis in the Tent Peak (24,100 ft.) lies the broad shallow trench known as Lhonak. The range bounding Lhonak on the N., which forms the Tibetan boundary for a considerable distance, contains several lofty peaks: notably Chumiomo (22,430 ft.), the Kangchenjhau (22,700 ft.), and Pawhunri (23,180 ft.).

About the middle of April of last year (1911) I left Darjeeling with forty-four coolies, and in eight days reached the village of Lachen, which is about 110 m. N. of Darjeeling by road. The scenery of the foot-hills passed through on the way has been so thoroughly and interestingly described by Mr. Freshfield and the late Sir Joseph Hooker that we may start our journey at Lachen.

Having sent on a considerable quantity of stores to Thango, about 12 m. to the N., I left Lachen on April 24 with thirty-one coolies, eight of whom were Sherpa Nepalese who were to remain with me permanently, the remaining twenty-three being Lachen men who were to return after four days' march to the N.W.

At Zemu Samdong (Zemu Bridge) about 2 m. N. of Lachen, one leaves the pony track leading to Thango and Tibet, and proceeds through forest along the side of the Zemu River which we follow to its source (about 15 m. off) in the glacier of the same name. This short distance is generally counted a three days' march on the upward journey, as the route is very rough.

Many different types of animals are met with in these upper valleys above 10,000 ft. A large troop of monkeys was seen near Zemu Samdong, and the Lachen men lassoed a beautiful mountain fox a few miles further on. They wished to sell me the animal, declaring that its skin would fetch a considerable sum in Calcutta, but released it on my refusal. I was glad that they did not kill the creature for its long fur, which was a beautiful brown and black. It would be better if only dangerous predacious creatures like bears and wolves or game

which is plentiful like hares were killed in these upper valleys for some time. The Government is fortunately restricting the number of each of the different species of animals which may be shot on one gun licence.

In the afternoon we were stopped at the Lhonak Chu, a tributary of the Zemu, the bridge over which was down. Next morning a primitive bridge having been made from a few tree trunks, we crossed and proceeded as far as the Tum-rachen Chu, a bridge over which we built that day. On April 26 we reached the end of the Zemu Glacier, our course for the greater part of the day being over avalanche snow, which had filled up the lower part of the valley, the river finding its way underneath. We had already passed about a dozen snow bridges. To the S. towered the crags of the Lama Anden (19,250 ft.).

On the fourth day from Lachen (April 27) we crossed the Zemu Glacier, and advanced to within 3 m. of the Green Lake, camping in a thunderstorm accompanied by heavy snow. Some of the flashes of lightning were very brilliant, and the thunder seemed to roll from end to end of the chain to the S. Now and again a loud crash without reverberation was heard as if an ice field had split. The twenty-three Lachen men were paid off immediately, as they desired to descend the valley for some distance that night although it was quite dark (7 P.M.).

The storm stopped about midnight, but throughout the rest of the night there was a constant flicker of lightning along the southern horizon, and frequently in the course of the next few weeks we noticed similar phenomena, as if there was continual friction between plain and mountain air currents.

On advancing to the Green Lake we found the greater portion of the region deep in snow, and the Green Lake itself was only half its summer size, the eastern half being a muddy flat.

Our first object was to find a pass suitable for laden coolies over the mountains to the N., which rise to a little over 20,000 ft. We made five attempts, but only managed to force two passes, one of which was suitable for coolies. We began with two frontal attacks. The first attempt was made on a ridge leading up to a small snow peak N.E. of the camp, but after ascending to 18,000 ft. we found it to be unsuitable for coolies, but practicable for a roped party.

We next tried further to the W. close to Green Lake Mountain, but a heavily crevassed glacier was met with, passable with difficulty by laden coolies in the area investigated. Here I was partially incapacitated for some days through slipping on

glazed rocks. The accident was due to an experiment with boots two sizes too large with two pairs of socks, admirable for wading in deep snow in the early morning but quite unsuitable for rocks.

The camp was then moved round to a small plain adjacent to the Tent Peak Glacier (marked as Green Lake Glacier on Professor Garwood's map), and on the following day the main icefall of this glacier was climbed. This icefall looks much more formidable than it really is, but at the same time requires care. One found the coolies inclined to sit and smoke cigarettes right under most dangerous seracs from which tons of ice might have fallen at any moment. After pointing out the dangers a few times they became quite cautious. Two coolies named Sona and Tuny were found to be good at ice work, especially the latter, who is by far the best all-round coolie that I have ever met with. His ice steps were admirable. At the top of the icefall, which is about 1000 ft. high, we found that although the E. Tent Peak Glacier was a maze of crevasses, it would be possible to advance up its true left to the top of a pass just under a buttress of the Tent Peak. It was evident that Prof. Garwood's map here requires correction. It shows the E. Tent Peak Glacier as stretching up to the Pyramid 3 m. further to the N.W.

Perhaps a few words might be said here with regard to the nomenclature employed in this paper. The system of naming the mountains is the same as that followed by Mr. Freshfield in his book 'Round Kangchenjunga,' namely to give them descriptive designations either from their form or position. Glaciers are named either from the chief peak feeding them, from the pass at their head, the place at which they debouch, or from the river flowing from them. In a case where several glaciers flow from one mountain, they are named after the peak with a prefix indicating direction of flow, unless a good special name is possible.

An easier route than that up the Tent Peak Glacier seemed to lead N. Eastwards up a tributary glacier coming down from a plateau which obviously connected with Lhonak. The Nepal Gap to the W. seemed so easy of access that we could hardly credit that there must be a rise of about 5000 ft. from our camp to its summit.

On the following morning at 6 A.M. we started for the Nepal Gap instead of attempting the pass, because I was still a semi-invalid from the accident of three days before, and had on the previous day required considerable help from the rope in

ascending the icefall. We had to cross the main Tent Peak Glacier, and proceed up its western branch, which might be distinguished as the Nepal Gap Glacier. In about a couple of miles we came to an awkward icefall which took us nearly 2 hrs. to negotiate. It was far more difficult than when visited on two previous occasions (1907 and 1909), the arrangement of the seracs having entirely altered. We went right up through the centre of it, some gymnastics being required. Deep troughs containing ice-covered lakelets constituted one of the main difficulties. Above the icefall I had expected that we would proceed rapidly, but the crevasses were more numerous than expected and progress was slow. Tuny, who was leading, spent too much time in exposing narrow crevasses, but one hardly liked to correct him, in case he might go to the opposite extreme, and at 2 P.M. we were still some distance from the pass. Up to this time the glare of the sun had been very trying, the heat being terrific, but quite suddenly on reaching about 20,000 ft. we passed into an icy cold wind, which was pouring through the gap from the W. The sun became obscured, mists were sweeping up, and the coolies wished to turn back. As we had been as far in 1909, one had to refuse. Progress after that was slow. The wind coming through the gap became a gale and was piercingly cold. The snow was frozen on the surface, but soft beneath and we sank nearly to the knees. The coolies complained of incipient frost-bite, and we had to stop until they had rubbed their feet, and put dried grass, of which they carried a small supply, into their boots. About 3.15 we reached the base of the small rock wall at an elevation of 20,850 ft. which formed the summit (21,000 ft.). This ridge was not difficult on the right, and although we were all extraordinarily tired, probably because we had done too much in the preceding week, I was strongly averse to turning back without climbing it, but Sona showed me that a few of his toes looked white and numb, and to climb the wall might have taken at least half an hour in our exhausted condition. We therefore retreated as rapidly as possible, but owing to our meeting with a second set of seracs below the icefall, we were delayed nearly three-quarters of an hour, and did not reach our camp until 6.30 P.M. In 1907 and 1909 there were no seracs in that position, and imagining we were past all danger we had taken off the rope. We did not put it on again, but it would have been better to have done so. One would strongly recommend anyone attempting to cross the Nepal Gap, and probably the other side is not impossible, to camp

above the main icefall of the Nepal Gap Glacier so as to leave plenty of time for the upper portion. The map is wrong with regard to the connection between the 'Sugarloaf' and 'Twins' Groups. These are separate and connected by a low Col.

On the second day after attacking the Nepal Gap, having moved the camp up about 500 ft., we proceeded to attempt the pass into Lhonak. The great icefall having been surmounted, we turned up the centre of the glacier on the E. To begin with there were several deep and broad crevasses, but we found crossing places and proceeded rapidly. We seemed to have surmounted all the difficulties when we came to a large crevasse which we just managed to leap at one point. A couple of hundred yards further on, however, we found ourselves cut off by an enormous gap. On each side, too, were impassable crevasses. We were on a huge isolated rectangular mass of ice. Retreating on our tracks for about a quarter of a mile, and proceeding to the left, we found ourselves on an ice slope. Cutting zigzags up this we reached a narrow edge about fifty yards long which was probably the most difficult mountaineering work tackled in our entire expedition. On each side were steep snow and ice slopes ending in crevasses. Tuny, as being by far the best step-cutter, was sent to the front after instructions to make big steps and turn out his toes. I am confident that few first-rate Swiss guides could have equalled him in steadiness and the admirable character of his steps. This knife-edge was certainly more sensational than is generally allowable when with coolies. After getting beyond the crevasses, the route followed was comparatively easy, but the pass was far off towards the edge of the slope which descended steeply to Lhonak. It was merely a tramp of $1\frac{1}{2}$ m. through soft snow with very few crevasses. The view from the summit was interesting. Due N. was the Chortenima La practically free from snow on its S. side. To the W. lay the Langpo and Pyramid Peaks. The pass has been named Lhonak La and its elevation is about 19,500 ft. As it was only 1 o'clock I wished to descend to Lhonak, and force our way back over the gap which lay at the head of the Tent Peak Glacier, it being at least 500 ft. lower than our pass. We would thus miss the knife-edge, which would be more dangerous on the descent. The coolies while anxious to miss the knife-edge were strongly against the idea and I thought it well to give in. Sona, who, as I learned by experience, was rather a pessimist, declared that the other side of Tent Peak Pass was a sheer precipice, and that we would be benighted without food

or shelter. Descending rapidly to the knife-edge we rested before passing it. Evidently the steps had suffered from the sun, and some would require repairing. Sona turned to me just before we started and said 'How many men?' a rather cryptic remark he usually made when we were in what he considered to be a dangerous position. As far as I could understand, he meant 'How many men will get through?' I reassured him, and put Tuny as leader, telling him to freshen the steps if necessary. Tuny's leading was simply perfection. With a few well-directed blows he remade the steps, so that we passed without serious danger. On the ice slope below, however, Sona slipped out of the ice steps. Only one man was moving at a time, and I found that I could hold him fairly easily. In any case we would only have shot down about 200 ft. and there was no crevasse immediately at the bottom. On returning to our camp Sona and Tuny were emphatic in their decision that no laden coolie could traverse the pass. It must be pointed out, however, that if we could have pursued our way up the centre of the glacier, the pass would have been easy. We had so far as we saw got over all the main difficulties when stopped by the impassable crevasse, and glaciers alter rapidly in the Himalaya. Perhaps one might explain here that the criticisms of the coolies given in this paper are intended in the most friendly spirit. Taking everything into consideration the men behaved as well as could have been expected.

On investigation next day it was found that Tent Peak Pass was an easy snow slope on the N. side, and exclamations of 'achchha' (good) were heard in the camp throughout the evening. The coolies were delighted because, if we could not have managed the Tent Peak Pass, they might have had to carry the baggage over the Changthung and Thé passes about 15 m. to the E. As it would have taken between two and three weeks by that route, since there were more than three loads to each coolie, the saving of time and trouble was considerable. Four coolies were told off to move the baggage under Tandook's direction over Tent Peak Pass, while the other three, including Sona and Tuny, came with me to attempt the Zemu Gap and Simvu Saddle, on the South side of the Zemu Glacier.

Our plan was to ascend to the Zemu Gap, descend to near the Guicha La, force a pass to the Passanram Glacier, and return to the Green Lake over the Simvu Saddle.

Crossing the Zemu Glacier we camped for the night on a

sheltered bank partly covered with dwarf juniper about 2 m. W. of the N. Simvu Glacier. This was the only place of its kind for many miles, the last outpost of plant life in that wilderness of rock and snow. Next day we proceeded to an altitude of about 18,200 ft. in the Zemu Gap. Our route at first lay up the E. side of the Zemu Gap Glacier. Towards 8 o'clock we found ourselves forced on to the side of Simvu by crevasses, and others barred further progress in front. A traverse to the right and short ascent showed us that all the crevasses had been turned, and that the remaining 1100 ft. should present no difficulty. The night was bitterly cold with wind and drifting snow. At 5 A.M. I roused the coolies, but the cold was so intense that they soon rushed back into their tent and covered together. On my protesting they declared it impossible to do anything in such cold, and that we would have to wait until the sun reached the tents. This would not occur until between 9 and 10 o'clock, as the sun would have to rise above a lofty buttress of Simvu. The manœuvre of retreating to their tent was repeated a second and third time, and I began to lose patience. It should be explained that they had been given on the preceding night two large down quilts, so that they were as well protected as myself—I did not use a sleeping bag—and they were wearing quite as much clothing. Eventually we got away about 8.30 A.M. just as banks of mist began to sail up the Zemu Glacier. Going at full speed and halting only once for a few minutes, we reached the top of the gap (19,300 ft.) about 9.30 A.M., our pace being considerably over 1000 ft. per hour. The going would have been very easy, had it not been for six inches of snow which had fallen in the night, and which in places had blown into wreaths. Half an hour before we reached the top, however, grey mists were sweeping through it, and from the summit, which was only a few yards across, the view was spoilt by mist. An icy wind blew through the gap and it snowed intermittently. The slope fell away steeply in front, and a few yards down there was a crevasse which stretched right across the gully.

After waiting for an hour, only rewarded by a glimpse of a great white peak (presumably Pandim) through a rent in the clouds, as it seemed too hazardous to attempt a descent with heavily laden coolies through mist, we retreated and proceeded to our old camping place near the Simvu Glacier. On the way the view of the crags of Kangchenjunga was very imposing, and we noted that the N.E. buttress seemed almost inaccessible

and would in fact require difficult climbing to get properly on to it, as it degenerates into a narrow rock ridge which rises at the end into a small peak. On the following day we ascended to the summit of the Simvu Saddle (17,700 ft.). The climb was merely a walk along the W. side of the Simvu Glacier, and could have been made the whole way unroped. At the bottom of the glacier, about 1½ hrs. from our previous camping place, the coolies wanted to halt for the night, promising to start at 4 A.M. next morning. Referring to their behaviour on the previous day at the Zemu Gap, I jokingly suggested that it was not 4 A.M. they meant but 10 A.M., whereupon they laughed good-naturedly, and we went on to the summit. This incident indicates one secret of how to deal successfully with coolies, who usually have a weakness for wanting to camp about an hour after starting in the morning. Mist was sweeping up from the S., when we reached the top at 3 P.M. The descent was much steeper in that direction than to the N., and was blocked by an icefall about 250 yards down. We camped about 100 yards from the icefall. Towards evening the mists cleared except to the S., and there was a magnificent sunset over Simvu and the crest of Siniolchum. The W. side of the latter mountain is very precipitous, but may not be quite impossible. The air was moist, and a camera left for a time exposure for a few minutes was covered with a thick deposit of ice crystals.

On the following morning we carefully surveyed the icefall, and came to the conclusion that it was practicable for a roped party of loaded coolies, but that great care would be required, especially on the descent. Fine views were obtained from the summit both to the N. and S., but the latter direction was quickly obscured by mist. We unfortunately had not enough provisions to descend the icefall, cross a ridge, and attack the Zemu Gap from the S. as one would have liked. The weather too was stormy, and we therefore decided to cross the Tent Peak Pass and join our other party in Lhonak. The afternoon of the following day found us camped on the summit of Tent Peak Pass. The route is quite easy. On the final ascent to the pass there are several large crevasses, so that coolies must be roped. We had intended to join Tandook that night, but the weather being bad we camped on the summit (19,000 ft.), so as to get photographs on the following morning. Snow fell at intervals during the night and continued next morning. While we waited patiently for the mists to lift, three coolies of Tandook's section came up to remove some baggage we found

on the pass. They informed us that Tandook was camped 2 miles to the N.

After waiting till the afternoon, as snow continued to fall under the influence of a southerly wind, while sunshine prevailed to the N. we descended the easy snow slope, crossed a glacier and the ridge beyond and joined Tandook near a small lake. On the way we had to cross a glacier, and in trying to find a passage over a rapid icy stream on this glacier I slipped in up to the waist, owing to the bank giving way. Fortunately I managed to scramble out unaided. Another couple of feet would have taken me into water at least 10 ft. deep running like a mill race. The incident is only worth mentioning, because there were delays afterwards with other streams, so that an attack of mountain lassitude from which I suffered for the following two days may have been due to waiting about in wet and freezing clothes. The lassitude showed itself in a disinclination to strenuous exertion, and breathlessness in ascending the small hills round the camp, although the height was only about 17,700 ft. The gaps leading into Nepal were examined, as our original intention had been to cross the Langpo Gap S. of the Langpo Peak, and investigate the S. side of the Jonsong Peak. This gap, although practicable for a roped party, was not suitable for coolies. At least, that was our conclusion at the time, but from later experience, as detailed below, I believe coolies could cross it with some difficulty.

On the afternoon of May 18 the camp was moved down beyond the end of the N.E. Langpo Glacier, which is incorrectly given in the map, and on the following day after crossing a ridge and passing a small lake, we camped in the afternoon by the Langpo Chu, just at the bottom of the descent from the Chorten Nima La. As it was still early, coolies were sent back to near Tent Peak Pass to bring up the rest of our baggage, and with three coolies we ascended the great glacier bank on to the plateau which leads to the S. ascent of the pass. Next day we crossed, getting a magnificent view from the summit. Our intention was to ascend the fine peak which guards the pass on the E., and which we have provisionally named 'Sentinel Peak.'

About 7.30 A.M. on May 21 we started on the ascent. Our route lay chiefly up toilsome scree slopes for about 1500 ft. when we reached a crevassed snow slope. From the moment we reached snow we had to cut steps, although it was only *névé*. Very soon we were stopped by a wide crevasse, but on traversing horizontally for about 200 yards we found a narrow bridge,



A. M. Kelias, photo.

Swan Electric Engraving Co., Ltd.

(Lower row) Tuny

Tandook
(Sirdar)

Sona

GROUP OF SHERPA NEPALESE COOLIES.

and after that there was little difficulty. First we proceeded S. towards what looked like the summit, but near this another higher summit appeared on the left. On reaching that, however, we found it to be merely the heavily corniced edge of a precipice which plunged down to a large glacier on the E., and a third summit appeared as a sharp snow peak right in front. It was now about 1.30 p.m. and the coolies were discouraged. Tuny, who had cut steps the whole way, confessed to being exhausted and Sona was pessimistic as usual, but after a rest they agreed to come up to the top. Unfortunately a small portion of the arête was green ice, and necessitated careful step-cutting, so that it was past 3 before we reached the summit (about 22,000 ft.). The peak has probably not been triangulated, but it may be the peak marked 22,060 ft. and perhaps misplaced on the map. The last portion was soft new snow, the slopes on each side being steep. It was misty and snowing when we reached the top, and after a halt of only a few minutes we had begun to descend when the mist was blown aside and we got a fine view. It appeared that we had been at the end of a nearly horizontal narrow crest, but whether the other end was a few feet higher or lower, I was unable to make out. It was obvious that glaciers occupied the defiles to both E. and W. instead of rivers as marked on the map. Mr. Freshfield has already pointed out how inadequately the Himalayan Glaciers have been treated in the survey maps, and from what we saw here and in other places near the southern boundary of Tibet, the area under glaciers as represented in the latest map of Sikkim (1906) showing adjacent parts of Nepal and Tibet, should be nearly doubled.

After a rapid descent we arrived at our camp about 5.30 p.m. On the following morning we recrossed the pass and joined the main camp.

Next day found us on our way to the Jonsong La (20,300 ft.) (traversed by Mr. Freshfield's party in 1900), which was crossed on the following day, and our camp pitched at about 19,000 ft. near the S. Langpo Glacier. From this position we had in 1909 ascended the Langpo Gap and also the Langpo Peak. Our present intention was to repeat the ascent of the Langpo Peak, which was particularly easy in 1909, and from the summit decide on a route up the Jonsong Peak (24,400 ft.) and more especially to investigate the summit arête of that mountain.

In August 1909 the ascent was similar as regards difficulty to that of the Zermatt Breithorn from the Leichenbretter Hut

with the exception that the last 600 ft. was steeper than anything on the Breithorn. From the denuded appearance of the mountain, as seen from the Jonsong La—there is more snow below and less snow above 19,000 ft. in May as compared with August—we were afraid that the final 1000 ft. might be icy and difficult. This proved to be the case. The mountain at this early season of the year was considerably more difficult than the Finsteraarhorn *via* the Hugi Sattel.

On May 25 we started, intending to camp between the Langpo and Langpo Chung Peaks. From our experiences on the Nepal Gap Glacier, and also near the summit of the Jonsong La, where a coolie was only saved from falling into a crevasse by the large pack of firewood he was carrying, I insisted on roping on the S. Langpo Glacier, and had reason to be most devoutly thankful that I had done so. Near the head of the comparatively level portion of the glacier there is a rise of about 400 ft. and in the middle of this Sona, who was leading, suddenly disappeared. Tuny, who was next, and too close to him, stopped with a startled cry. In front of Tuny the rope disappeared into a great blue cavern. Moving steadily backward first Sona's pack appeared, and then he himself was drawn out in a very dishevelled condition, and minus ice-axe and hat. I was glad to find that he quickly recovered from his alarm and was quite ready to proceed. As neither axe nor hat could be readily replaced an attempt was made to recover them. After some time Tuny discovered them in a crack between 30 and 40 ft. down, where the crevasse abruptly narrowed from about 10 to 5 feet; beyond this crack the crevasse continued to unknown depths. By lowering Tuny we were fortunate enough to secure both hat and axe. Of course I pointed out that the accident would not have occurred had Sona been leading properly, and, as was to be expected, the experience was most useful to us. Tuny's main fault, as had been indicated to him several times, was a tendency to get too close to his neighbour in places which looked easy, while Sona's faults included a reckless carelessness, which he had been warned would end in accident. After this they both greatly improved. In 1909 I led on nearly all ascents, but experience taught me that it was better for the coolies to do most of the leading.

Near the top of the S. Langpo Glacier we turned to the right and proceeded up a broad steep slope under ice cliffs to the Col. This slope had been an easy uncrevassed climb in 1909, but now a few crevasses ran practically right across it, and this

caused delay. Eventually we reached the Col just after sunset. It had taken us 7 hrs. from our camp ; in 1909 we did it on each of two occasions in $2\frac{1}{4}$ hrs. Our troubles were not ended. After nearly half an hour spent in fruitless attempts to pitch our tent in a freezing gale, we were ignominiously forced to retreat and camp at 20,700 ft. in deep snow about 300 ft. below the saddle.

It snowed during the night, and the weather next morning was bad. Mist was blowing up even at 8 A.M. when we started. Before we left the saddle it again began to snow and the wind was very keen. We climbed slowly and the coolies were evidently discouraged by the weather. At about 22,000 ft. they wanted to turn back, and all baggage was left behind except a camera. We were hampered on most of our climbs by carriage of bottles for estimation of carbon dioxide in air. The remaining 900 ft. looked distinctly formidable. It was difficult to credit that the gaunt cone in front corresponded to the blunt wedge ascended in 1909. There was, too, a greenish shimmer over the whole face which indicated hard ice, the mountain being obviously in an exceptionally difficult condition. It took us 3 hrs. to cut our way up the next 600 ft., although the first 200 ft. was only hard névé. The coolies evidently could not understand why anyone should persist in going on in such weather, and during the showers of hail we had to halt. We had cut back on the arête, and were proceeding up it, when we met with a crevasse which would have necessitated cutting back on to the face and zigzagging to the top. Unfortunately, however, it snowed and the coolies clamoured for descent. Apparently nothing was to be gained by proceeding, as the Jonsong Peak had been shrouded in mists for some time, so that after taking a photograph in a lull of the storm we turned back. We were within 250 to 300 ft. of the top. It was very annoying to have to retreat in the circumstances, but one gets accustomed to disappointments of this sort in the Himalaya. If we had all had crampons we could have reached the summit in half the time we had taken.

It took us about $1\frac{1}{4}$ hrs. to descend the 600 ft. of the final peak, only one man moving at a time in certain places. Tuny went first, then came Anderkyow, third Sona, and last the only man with hobnailed boots, which was of course the proper place for him in the circumstances. It was abundantly proved during this portion of the descent that the cloth boots worn by the coolies were not satisfactory on ice. It was misty and

snowing and it was difficult to keep the ice steps clear. Twice Sona fell out of the ice steps, and on the second occasion he very nearly pulled me down, because he was so long—probably at least twenty seconds—before he managed to wriggle back into them. We were back at the camp at 4 o'clock, having experienced dense mist all the way.

On mentioning to Sona that another attempt might be made next day, so as to get photographs from the top, he coolly replied—'The coolie-men have no Khana (dinner), Sahib, and we must go down to-morrow,' and on inquiry we found that they had not taken so much provisions with them as instructed, and that they had finished all their food that morning. Nothing could be done but descend, which, strongly against the coolies' will, I insisted on doing that night in spite of mist and snow. It was quite dark when we arrived at our camp near the foot of the S. Langpo Glacier. The coolies soon forgot their troubles over tea, biscuits and meat. The weather continued bad for the next two days, mist enveloping our camp a great portion of the time. On the third day we descended the S. Jonsong Glacier and turned N.W. up a glacier provisionally named Long Ridge Glacier from the mountain on the W. A pass at the N. end of this mountain looked easy, but on investigation on the following day was found to be of the writing-desk type, a long easy slope to the E. and a fairly sharp precipice to the W. When we were on the summit of the pass the coolies pronounced the descent impossible, but on the following morning, after a little persuasion, three coolies agreed to come with me and attempt the descent.

Our intention was to cross Long Ridge Pass (19,520 ft.) and proceed W. until we could find a way over the Chabuk La, or some other pass to the N.W., and then return into Lhonak by the Chorten Nima La. We would by so doing get a proper estimate of the Jonsong Massif, and ascertain whether any attack on the Jonsong Peak was possible from the S.W. Our main object, however, was to find out the relationship of the lofty range, which we felt convinced prevented the Mt. Everest, Chomokankar or Chomo Langmo group from being clearly seen from this portion of the range.

The ascent of the pass was not difficult, although there were several awkward crevasses. The descent was however very steep—probably at least an angle of 60° to 70° —and was made unroped, the coolies greatly preferring that arrangement; the rope would have been cut to pieces on the sharp rocks, so that I was quite agreeable. A stone tossed from the summit would

have fallen on snow 500 ft. below. A few small gullies filled with glassy ice were troublesome, requiring careful step-cutting. After descending we crossed a glacier and camped on rocks about a mile to the W., under the precipices of a sharp isolated peak of the Jonsong group which we have provisionally named 'The Outlier.' It is probably about 22,500 ft. high. From our camp we had a magnificent view of the N.W. face of Jannu, which looked like a great cathedral with twin towers.

Next morning we proceeded along the glacier, which ended abruptly in the most peculiar way at a corniced edge to a precipitous descent leading down to a glacier about 1500 ft. below us. It was a regular 'cut-off,' and a discussion and delay followed. We had not expected anything of the kind. The route seemed impassable for laden coolies in front, and the head of the glacier below us was barred by cliffs. Beyond the great trench in front was an array of peaks and passes. The coolies asked me point-blank which was the Chabuk La, and I had to confess that I did not know. We had only two days' provisions and were probably at least four days from the Chorten Nima La by that route. The map was hopelessly wrong, showing the unknown marvel of a river flowing in at the head of a glacier as being in front of us. The person who mapped this portion of the range seems to have been mentally related to the 'scientist' mentioned in Mr. Freshfield's 'Caucasus' who undertook to prove that there were no glaciers at all in the Himalaya. To advance further with heavily laden coolies seemed unfair to them, but I regret now that we did not seek another route of descent and make the attempt. We could have hidden some of our baggage and sent back for it if necessary, but the idea did not occur to me until it was too late. As usual the weather gave the casting vote, so to speak. The clouds which had been massing round Jannu all the morning blew up with astonishing rapidity and it began to snow. Reluctantly the order to retreat was given, and we returned to our old camp. In the afternoon a fine avalanche fell from 'The Outlier,' which I was fortunately able to photograph. The clouds of snow dust look like mist.

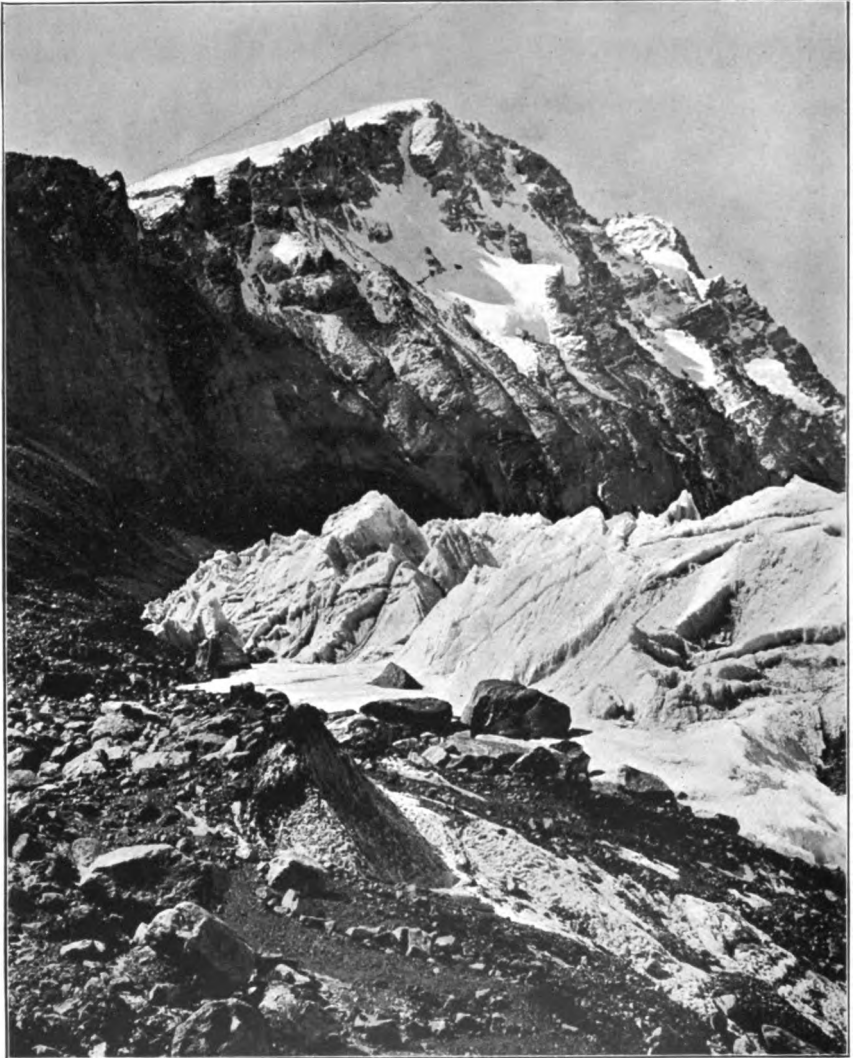
On the following morning we crossed Long Ridge Pass and reached our old camp by the Langpo Glacier, and next day crossing the Jonsong La, we reached Tandook's Camp at the foot of the slope leading to the Chorten Nima La. Taking two fresh coolies two days afterwards we were at Thango having crossed the Lungnak La.

Only one incident occurred, and from the mountaineering point of view it is worth relating. At the foot of the rocks of Long Ridge Pass I indicated to the coolies as clearly as I could that we must all keep close together, otherwise there might be danger from falling stones. The coolies, however, went at such a pace that they quickly gained on me. It was not that it would have been impossible to go at their rate, the height being only 19,000 ft., but simply that I did not want to go so fast, as I wished as usual to keep well within my powers, and to stop loaded coolies when going satisfactorily is bad policy.

A few stones came down, but they went wide of me, and I thought that instead of making the coolies halt I could arrange to take a somewhat different route from theirs. This was difficult because of icy gulleys requiring steps, and the coolies doubled back until they were right above me. The rocks being steep and broken I could not see them, and the first intimation I had of their position was a stone of almost 2 in. diameter whizzing past my nose and hitting me a resounding thump on the chest. As I happened to be in a slightly awkward position, if the stone had been bigger, or if it had hit me on the head, I might have been knocked down. I shouted to them at once, and Anderkyow peered over a ledge about 60 ft. above me. It was he who had sent down the stone. On inquiry, at the top, as far as I could make out, the coolies had thought that the injunction was for them to keep together, but that the Sahib could do as he pleased. The blame was mine for not stopping them earlier. Elementary mountaineering rules cannot be disregarded with impunity.

It must be pointed out that what we saw from Long Ridge Pass conclusively proves that the Pandit Chandra Das must have crossed the Jonsong La, so that Chatang La as given by him is perhaps another name for this pass. Professor Garwood's adverse criticism of the pandit's description of the route is probably due to his having passed over the ground in the reverse direction under different conditions. The pandit's description of his route from Ramthang northwards is correct except as regards compass directions. The portion of the path mentioned as being among boulders is about 2 m. N. of Pangperma, and the seracs referred to are those at the confluence of the S. Langpo and Jonsong Glaciers.

At Thango the party divided. Coolies were sent to Darjeeling and into Tibet for supplies, and four coolies with two yaks to carry wood came with me to attempt Pawhunri, a mountain on the N.E. frontier of Sikkim.



A. M. Kellas, photo

Swan Electric Engraving Co., Ltd.

VIEW OF PAWHUNRI (23,180 ft.), FROM THE
TEESTA GLACIER (17,000 ft.).

Proceeding to Giagong and the Tso Lhamo (lake of the goddess), we reached the snow level at 18,000 ft. on the third day. Here one of the yaks—aided and abetted by its owner—refused like a sensible animal to come further, so that we had perforce to camp early. On the following day an ascent of 20,700 ft. was made, but we were driven back by a high wind which whirled the fine surface snow into dense clouds. The camp was next moved up to 20,000 ft., and on the following day we reached the summit 23,180 ft. The view was unfortunately spoiled by clouds beneath us, but was nevertheless interesting. W. and S. nearly everything was obscured by a rolling sea of mist, above which some of the great peaks, Kangchenjunga, Chumiomo and the Kangchenjhaul, showed their crests like rocky islands. About 4 m. to the E. was an accessible snow peak about 23,000 ft. high, and between us and it there flowed northwards a fine glacier and not a river as marked on the map. On the way up we had glimpses of the N. end of the Chomolhari Range, but the most interesting view of all was two lofty snow peaks bearing E.N.E., about 100 m. off, which towered up above the horizon in a most imposing manner. Only snow was visible and must have represented about 6000 ft., which would make the mountains at least about 25,000 ft. high. They seemed to be distinctly N. of the main chain; mist covered them before we reached the top. We took nearly 6 hrs. to ascend but did not hurry. Keeping close to the edge of the western cliffs until about 1000 ft. from the top, we then made a bee line for the summit through snow nearly a foot deep.

The summit was corniced to the E., and was some distance from and much higher than the tops of the western cliffs. We remained on the top about 35 mins. We felt quite comfortable except for the cold wind, and I am confident that there would have been no difficulty in carrying out moderately complicated experiments, *e.g.* estimating the number of red and white corpuscles in the blood. This is specifically mentioned, because authorities have stated that such estimations would probably be impossible above 16,000 ft. Samples of air were taken and estimations of carbon dioxide started.

Had we brought a spade with us we might have dug a big hole on the top and brought up a tent next day to carry out some experiments and get photographs. It was quite hopeless to think of pitching a tent unless we had some protection from the wind, the tussle with which on the Langpo Saddle we were not likely to forget. The descent took us about 2½ hrs.,

but we did not descend nearly so quickly as in 1909, when we only took about 2 hrs. between 23,000 ft. and a camp at 18,500 ft.

During the ascent I carefully compared the climbing capacity of the two coolies with me—Sona and Tuny's brother—with my own, and found that they climbed much better, especially above 22,500 ft. Above that elevation they could have given me at least 300 ft. in 1000 ft., that is to say they were at least 30 per cent. better although they were lightly loaded. In 1909 the two coolies with me seemed only slightly better than myself, but they were weaker than Sona or Tuny's brother.

This comparison of the white man with the native has some interest, and perhaps one might take this opportunity of succinctly stating the results of our experience in three visits to the mountains.

At any height up to 15,000 to 17,000 ft. one could hold one's own with the unloaded coolie and easily beat the loaded man. Above 17,000 ft., however, their superiority was marked, an unloaded coolie climbing much quicker than myself, and even a moderately loaded coolie going up as fast as one cared to go, up to 21,000 to 22,000 ft. Above that elevation a moderately loaded coolie could run away from me, and with an unloaded coolie one had not the slightest chance.

Why should there be this distinct difference in acclimatisation to high levels between white man and Indian mountaineers, and is the difference universal? I venture to think that Mr. Freshfield, Professor Collie, Dr. Longstaff and Mr. Mumm would agree with me so far as their experience goes. The Brocherels might, however, be taken as exceptions to the rule, according to Dr. Longstaff's narrative of their behaviour on Gurla Mandhata and Trisul.

I have only had experience of two professional guides—Swiss—in the Himalaya, and they were more adversely affected by elevation than myself.

It is not impossible that people accustomed from childhood to pressures of $\frac{3}{4}$ atmosphere or less may either require less oxygen or may have greater lung capacity. A little more will be said about this interesting subject—the effect of elevation—later.

On descending to the desolate flats called Pawhunri Waaghs at the base of the mountain, one is struck by the extraordinary variety of wild life which may be met with. A herd of eight kiang passed quite close to us. Several types of wild birds were met with about the Tso Lhamo, including eagles, pheasants,

and two pairs of handsome geese with black and white wings. Later on, we saw on the way to Chumiomo another half-dozen pairs of these geese, but we only saw one young one, of which the parent birds seemed very careful. It made one annoyed to think that a certain type of gunner—one does not mean sportsman—could easily have exterminated all these geese, for they were quite easily accessible.

There was an extraordinary number of small birds, of which the commonest was a species of lark (*Melano-corypha maxima*), which must have been there in hundreds. We found four nests without looking for them, one with three young ones, two with two, and the fourth with two brownish eggs. The young ones differed in many respects from the older birds, which had a peculiar black collar. They began to sing before 4 A.M., apparently quite irrespective of sunrise, for there was no trace of the sun until at least an hour later. When one went near their nests their pleasant warbling was changed to a characteristic plaintive note, which no one could fail to recognise. Quite unwittingly we erected our tents about three yards from a nest. From the plaintive notes heard after we had settled down, I was sure that we must be trespassing, and on looking found the nest with two young ones. I was inclined to move the tents as I was afraid they would starve, but in a short time one of the birds came to feed them and continued to do so at intervals of a few minutes during the afternoon, and next morning. Deer, hares and little creatures like marmots were also seen.

We found the whole of this trans-Himalayan portion of Sikkim in the hands of Tibetans. There were four large black tents and many smaller ones, the number of Tibetans being about fifty. The people were friendly, and men, women and children were quite pleased to be photographed. These Tibetans were well off and owned at least 2000 sheep and 150 to 200 yaks. It seemed somewhat an anomaly that while these people were given free entry into Sikkim no white man was supposed to set foot in Tibet.

On the way back to Thango we met Mr. Bell, the British resident from Gangtok, who was most kind and hospitable. He was much interested in the report of the existence of lofty snow peaks to the E.N.E., which he suggested were part of the Kuhla Kangri Mountains. He had seen the S. of Kuhla Kangri from Bhutan, but his account did not agree with the two peaks seen, which were probably about 12 m. apart and different in appearance. On asking Mr. Bell whether it would be possible

to investigate the peaks from Bhutan he stated that that country was quite closed to white men at present.

The weather continued so broken towards the end of June that we had to give up our intentions of attacking the Jonsong Peak and turn our attention to Kangchenjhou (22,700 ft.) and Chumiomo (22,430 ft.). On the way back from Pawhunri we had examined the N. face of the former mountain as far as mist would permit, but could see no good way leading to the summit. The mountain had never been clear, however, even in the early morning. In order to investigate the S. side we determined to ascend the Sebu La (17,600 ft.), and started on June 22. We had the pleasure of Mr. Bell's company for part of the way. The whole of Kangchenjhou was never visible at one time, but enough was seen to show that the mountain was practicable by a long icefall, which started E. of the main peak and curved round towards the S.W. It was impossible however to climb the mountain in the circumstances, because the relationships of the crevasses were complicated, and the possible route was only visible for a few minutes in the morning. It was therefore decided to cross the Sebu La and attempt Tsen-Gui-Kang, a fine peak 21,000 ft. high, which we had admired from Momay Samong in 1909.

On June 23 we crossed the pass and camped at about 17,000 ft. not far from a small ice-covered lakelet. On the ascent we met with large numbers of plants of the mountain rhubarb. The coolies seemed to appreciate them greatly and gathered large quantities. I tried them but found them somewhat insipid, and with none of the sourness of the cultivated plant. As however fresh vegetables had been very scarce, I asked Sona to cook some and serve with tapioca at dinner. In this form it was more palatable, but I am inclined to think contributed somewhat to insomnia and a peculiar intermittent throbbing in the cerebellar region, which occurred every few minutes for some hours.

It was about 2 o'clock when we reached the snow on the pass, and to my surprise the coolies were most unwilling to cross. They declared the snow far too soft, and I had to ascend alone nearly three-fourths of the entire distance to the summit before they started to follow. Having a rather hazy idea of the proper route, I went quite close to a few small crevasses which might easily cause trouble to an unroped party. I found later that these small crevasses are specially mentioned by Mr. Claude White in his book on Sikkim and Bhutan. It snowed or rained nearly the whole of the day and two nights

spent near Sebu Lake, and as the crests of Tsen-Gui-Kang and Kangchenjau remained obstinately in the mist we moved back to Thango. Here followed an awkward delay because a portion of our party had not returned. This resulted from my mistake in giving the Sirdar a certain amount of latitude, although his instructions seemed definite enough. In the circumstances Sona and Anderkyow were sent to look at the W. face of Chumiomo, which I had examined with a telescope from near the Jonsong La, and which had seemed possible. They returned three days later, and reported that they had not been able to get over the ridge to the N. of it as instructed. On inquiry I found that they had mistaken Lachen Kang, a peak 21,600 ft. high, for Chumiomo, and had been trying to cross the difficult ridge N. of that mountain. This experiment showed that I had over-estimated the intelligence of the men, to whom Chumiomo had been repeatedly pointed out when on the way to and from Pawhunri. When dealing with coolies it is necessary to be more than usually precise, and to get them to repeat what is required. The fault obviously lay with myself.

As our defaulters had not come in, and the weather continued bad, we determined to make a serious attack on Chumiomo, the only mountain which might now and again be out of the mists. The coolies were somewhat discouraged on starting as they declared that the Lachen men said that Chumiomo was impossible. They brightened up on being assured that we had no intention of clambering up the precipices which form the E. and S. sides of the mountain, and that the W. side when examined from a distance seemed not at all difficult. Coolies have a very keen sense of the value of their lives, and dislike being taken into places even approximately dangerous.

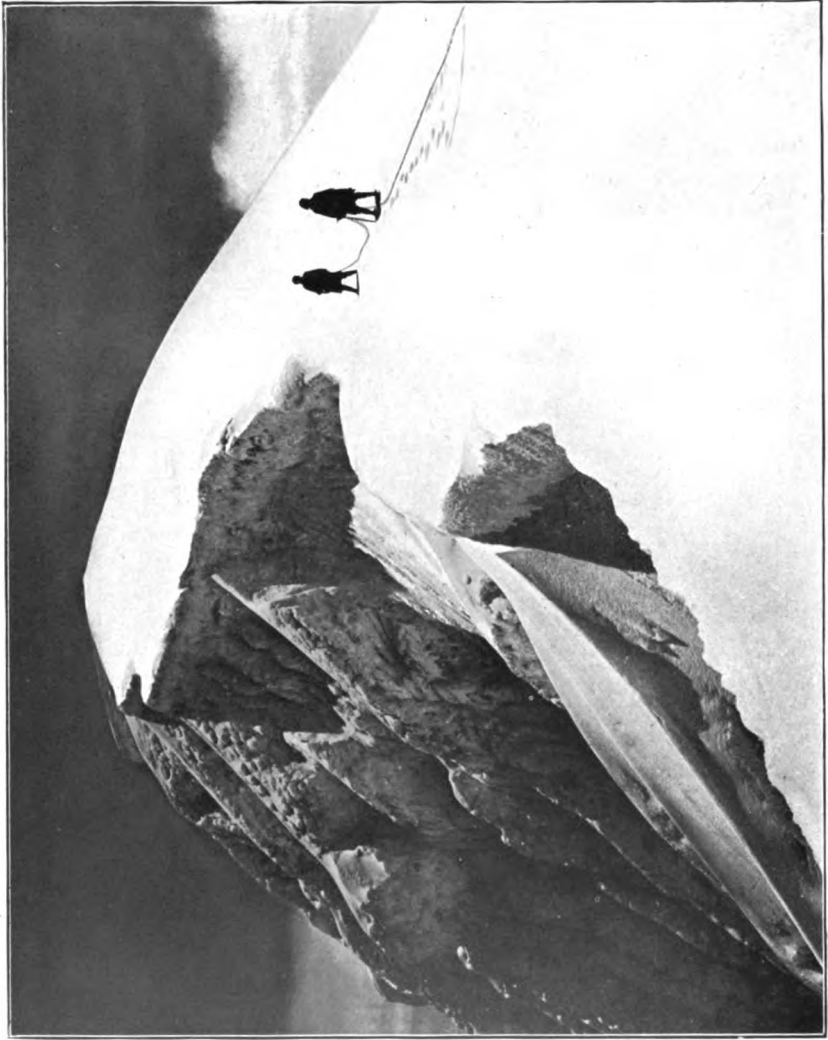
Crossing the Lungnak La in heavy rain we proceeded along by the Naku Chu, passing the ruins of an old Tibetan fort (Dzong) on the way. There were some fine herds of yaks in this valley. The evening of the fourth day found us encamped on the S.W. escarpment of Chumiomo under towering precipices. We found that Chumiomo was certainly possible from the S.W. but that the N.W. arête looked much easier. Mist was almost continuous, and snow fell at intervals. This incessant moisture seemed to affect the rocks, and falls were more frequent than I have ever known them. Some tremendous rock avalanches fell from the precipices of the S. face.

As our tents on the rocks were more exposed to the dangers of falling stones than is allowable for moderately orthodox

climbers, and as the weather seemed much better a couple of miles to the N., we moved our camp round to the N.W. face of the mountain. On the way, soon after crossing the Tibetan frontier we saw a large party near the head of the Naku La about half a mile off, and two men on ponies immediately started in our direction. The coolies were alarmed. 'Tibet men! Tibet men!' was the cry. There could be no question of retreat, for we had excellent reasons for being there unless we interpreted our 'pass' to Upper Sikkim in what seemed to us an absurdly academic manner. Sending the coolies on by a route which would be difficult for ponies I carefully examined the party through a telescope. The men on the ponies seemed to be Tibetans, but on scrutinising the party near the top of the pass a lady in European costume was distinguished, who could only be Mrs. Grieve, who was with Mr. Bell's party, which we thought to be 40 m. off. We met Mr. and Mrs. Grieve afterwards in Darjeeling and learned that, although quite unaccustomed to high altitudes, they had ascended to about 18,500 ft. without difficulty. Mr. Bell himself had reached about 19,000 ft. Mr. Bell's party was however particularly well equipped, so that fatigue should have been a minimum. The men on the ponies halted and we proceeded on our way. We camped near a beautiful clear stream of water flowing from a small glacier on the N.W. flank of Chumiomo at 18,500 ft. and next day moved our camp up to 19,500 ft., camping on rocks which obviously contained a large quantity of copper. Although only about 2 m. in a direct line from our old camp at the end of the S.W. arête, and in a similar position—namely on rocks near precipices—the weather was quite different. Rock-falls were very rare and the mist never came down to our level.

The S. end of the mountain remained obstinately in mist, while the N. end was fairly clear, and we looked over a large portion of Tibet. Tuny arrived from Thango on the evening before we made our attempt, along with Anderkyow, who had been sent for provisions. He reported that Tandook had returned with supplies.

On July 12 we started at 6.30 A.M. The morning was doubtful. Ascending to near the head of the glacier, we crossed, and went up to the right of some séracs which nearly touch the N.W. rock arête. At a height of a little over 20,000 ft., near the base of the final ascent were a few awkward crevasses, but after passing these the mountain was surprisingly easy. Tuny and Sona wished to try the N.W. rock arête, but I insisted on trying the snow which although steep was in



A. M. Kellas, photo.

Swan Electric Engraving Co., Ltd.

NEAR THE SUMMIT OF CHOMIUMO (22,430 ft.)

excellent order, and probably took not more than a third of the time that the rocks would have taken. I mention this because the coolies always balked from steep snow, being under the impression that it was dangerous. We arrived on the summit arête in mist, and had to wait for some time before the N. top loomed up about 200 yards off. Ascending to this top, which is only a couple of yards broad and appears as a sharp snow peak, we halted until the mist lifted somewhat, and then proceeded along the arête to the S. summit, which is about 300 ft. higher. It was a beautiful walk without the slightest difficulty, although in places the way was narrow and we were quite close to the edge of the formidable Eastern precipices. The snow was never more than a foot deep. The S. top is bounded on the S. and E. by precipices, but is several yards broad and quite safe. We remained for about half an hour on the summit (22,490 ft.) and then proceeded back by the way we had come. Mist had interfered greatly with our views from the top, but fortunately we managed to get some photographs, and we took others while proceeding along the arête. We were back in camp about 4 o'clock after a day which impressed us all by its easiness. On the return journey the snow on the steep slopes was in good condition, but near the crevasses at the bottom was so soft that we sank repeatedly nearly to the waist.

Sona and Tuny did not seem to be much affected by the elevation, while I felt that I could have climbed considerably higher. Whether this was due to a rest the day before, or to my becoming acclimatised to high altitudes is somewhat difficult to decide. Probably both factors contributed, especially the latter. One of the main difficulties at high altitudes depends on the fact that one does not breathe rapidly enough to oxygenate one's blood sufficiently, and it is only after some weeks that one seems to be able to accustom oneself to breathing faster, which makes a great difference to one's comfort in climbing. Next day we proceeded to Thango, a fairly long day's march. We crossed the N. Chumiomo Glacier, and ascending the ridge to the E., descended to the pony track which proceeds N. from Lachen to Kamba Dzong. From the summit of the ridge (about 20,000 ft.) a magnificent view was obtained of the mountains stretching away to the W. What we had suspected before became clearly evident, namely that on the E. side of the Arun River there are several lofty peaks, which would almost certainly hide the Mt. Everest group from any traveller on the mountains of N. Sikkim, unless from view-points over

21,000 ft. The highest of the range, which is called Kanglingen, appears as a massive snow peak, and must be over 23,000 ft. high. Near it a route leads from Saar over an easy pass called the Tok Tok La to the Arun River. We are therefore nearly sure that Mr. Claude White and others are in error when they stated that they had good views of the Mt. Everest group from positions on or near the mountains of N. Sikkim. It is probable that on very clear days the loftier peaks may show over the Kanglingen group, but they could hardly be very conspicuous. Observers may have confused the two groups.

As we would have had to wait at Thango for at least a fortnight before the weather was good enough to guarantee a satisfactory view from the summit of the Jonsong Peak, we decided to go round to the other side of Nepal and make an attempt upon Kāmet. This was not a judicious decision, as our time was too limited. Darjeeling was reached on July 25, and here we bade farewell to the faithful coolies who had accompanied us for about three months. In order to prevent misunderstanding one must state that all of these men were in the best of health and spirits. They were thoroughly satisfied with food and pay and the amount of work expected of them, and when asked at Thango whether they would remain for another month if we decided to attempt the Jonsong Peak and the Kangchenjau, every one of them volunteered to stay without hesitation. These Sherpa Nepalese coolies are in fact most agreeable to work with, and if treated kindly will do anything reasonable.

Taking Tuny and Sona with us we left Darjeeling on July 27, and three days afterwards arrived at the railway terminus of Katgodam, where our route joins that taken by Messrs. Mumm, Longstaff and Bruce in 1905. Anyone wishing to get a good idea of Kumaon and Garhwal cannot do better than read Mr. Mumm's book. On the third day from Katgodam we reached Almora, the capital of Kumaon. The Deputy Commissioner was absent, but the Assistant Deputy Commissioner was most obliging and gave me a note to the Tahsildhar, who threw himself into the business of getting coolies with a most praiseworthy energy. Within half an hour two sets of seven coolies each were paraded for inspection. I wished to select a few from each batch, but was informed that no one of the first batch shown would travel with any of the second because of caste prejudice. The men selected were quite different in physique from the Sherpa Nepalese coolies, being tall and slim, and their stamina was found to be inferior. They would only

carry about two-thirds of the loads taken by the Sherpas, but they agreed to come through the Badrinath, about ten days' journey by the Kuari La. This was the first time that any arrangement of the kind had been entered into, and it worked well. The coolies required more encouragement than Nepalese coolies, and being Hindoos preferred to be paid cash for food. Any white man or Buddhist like Sona and Tuny touching their food would spoil it. I therefore left them entirely to themselves when at meals. The unconscionable time they took to breakfast—about three hours—during the first few days caused me to make inquiries. I found that they had only one small griddle pan between the seven of them, and that each of them used it for cooking ten to twelve chupatties in rotation.

The three days' march from Almora to Gwaldam was easy but very hot. Sona and Tuny although very lightly loaded had complained of the heat since leaving Darjeeling, and I was disappointed to note that they were not nearly so happy as in Sikkim.

At Gwaldam we entered what seemed to be a region of continual rain. For the next six days we pushed on through torrents of rain and dank and dripping forests to Joshimath. We generally camped on the path and trenched our tents thoroughly. At Joshimath we met with a surprise and disappointment. At Almora the Acting Deputy Commissioner told us that he had no jurisdiction over Garhwal, the Deputy Commissioner of which resided at Pauri, about 100 m. off, and advised us to write and ask permission to proceed to Badrinath. We had done so, and from our experiences in Sikkim never doubted that it would be granted. At Joshimath the *patwari*, or local magistrate, called with a letter from Mr. Stowell prohibiting further advance, and threatening legal action if we proceeded. After telegraphing twice and losing a day we were allowed to advance.

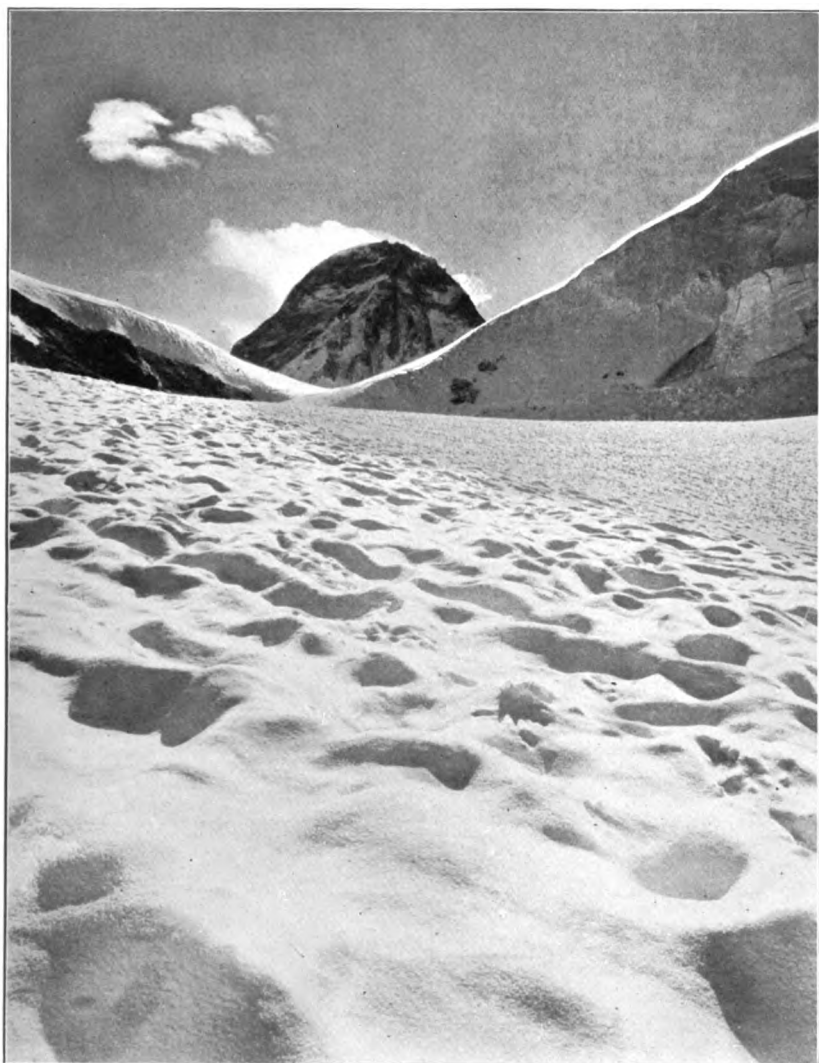
At Badrinath we visited the temple and were kindly received by the Rawal Sahib, the Chief Worshipper, and his assistant, the Pandit Bidya Datt.

Taking in all fifteen coolies, we proceeded northwards, and the second afternoon found us encamped at the end of Khaiam Valley. The coolies here quite misled me, insisting that this valley afforded the best way to Kāmet, whereas we should have taken the Khāti (or Gastoli) Valley to the S. We found these Mana coolies most unreliable as regards information, and would never again trust them. On ascending to Khaiam Pass (19,800 ft.), the tops of the mountains being in mist, Mana

Peak was pointed out as Kāmet. This is difficult to understand, seeing that the men had been on Kāmet not long before, but I have noticed that the geographical sense of many coolies is remarkably vague. We next pushed up a camp to 18,500 ft., and ascending the pass early in the morning were fortunate enough to get a magnificent view of Kāmet and attendant peaks.

The mountain looked impossible from the W., but it might be practicable to ascend a steep slope of snow to the S. of the peak, and bend round on to the N.E. face, which looks the most probable direction for a successful ascent. We climbed a small snow peak about 20,200 ft. high to the N. of the pass, but the mists had covered Kāmet before we got to the top, and little further was learned. In addition to the peak marked as 24,170 ft. in Dr. Longstaff's map, there is a fine rock peak of about the same height to the N.W.

The total result was disappointing. The E. face of the pass was crevassed, and although routes could have been forced in two places given sufficient time, we decided to try further to the N. in order to see whether the N.W. face of Kāmet was accessible. Sending off the Almora men homewards under Tuny, we proceeded N. towards Mana Pass, camping at the end of the Dhanarau Glacier, which has two main branches. During the whole of the next day we were toiling up by the side of the N.E. branch, which we followed nearly to its head, camping at about 17,000 ft. On the following day, sending Sona and two other coolies to Dhanarau on the Alaknanda, Alum Singh and I climbed Dhanarau Peak, a long easy mountain about 19,000 ft. high, lying to the N. of the glacier. From the summit we had a fine view of the N.W. face of Kāmet. This face looks practicable if one could get on to it. The arrangement of the gorges to the N.W. of Kāmet is probably incorrectly given on the map and would repay investigation. If we had only had another fortnight! It was however imperative that we started for Bombay. Our Almora men were already three days' march ahead of us. We therefore decided to go on to Mana that night, and the coolies ably seconded our efforts. It was however quite dark when we passed through the Mana gorge, which was filled with mist. The coolies knew every step of the way however, and one man followed another closely, slowly and with great care. It was between 9 and 10 P.M. when we reached Mana. Next day we went on to Joshimath, a long 22 miles. We halted for about 3 hrs. at Badrinath, so that we had the interesting experience



A. M. Kellas photo.

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SUNRISE ON KĀMET (25,400 ft.), FROM NEAR THE SUMMIT OF
KHAIAM PASS (19,300 ft.).

of going along the slightly dangerous path above the Alaknanda in darkness, it being nearly midnight before we reached the bungalow. The Mana coolies preferred to stop soon after it grew dark, and I told Sona he could stop if he liked and join me early next morning. He preferred to come on, but waived doing his share of the leading. In many places a false step would have precipitated us into the foaming Alaknanda 500 ft. below. We went slowly, but even then both of us were drenched with perspiration because of the almost incredible heat radiated from the rocks of that wonderful valley. There was only one really troublesome place, just after crossing the junction of the Dhauli and Alaknanda at Vishnu-prayag, the path having been washed away. I thought that we would have to halt there for the night, but after several fruitless attempts we got across. Next morning, the coolies having joined us, and all feeling quite fresh, we went on to near the top of the Kuari La. From there to Gwaldam we had even more rain than on the upward march.

One incident is worth noting for the sake of future travellers. On the night we stopped at Rhamni, Sona omitted to trench my tent, and I awoke about 2 A.M. with one shoulder in a pool of water. My bedding and clothes were nearly saturated, and my maps and books which formed part of my pillow sopping wet and spoiled. It was what is sometimes referred to as a 'wash out.'

At Rhamni I came across a mission outpost, and the native missionary told me among other interesting information that the Christian converts were required to give up smoking, and that the Government prohibited the manufacture of intoxicating beverages. Although I happen to have an antipathy to tobacco, I must say that the first regulation seems unduly hard upon the poor Indians, especially as the smoking in this part of India is not in the slightest degree objectionable to others, and the cost trifling. My seven Almora coolies, who used the solitary griddle pan, had one hubble-bubble pipe between them, which was passed from one to the other during halts. The simple life could hardly be carried further. The tobacco used is admixed with sugar, so that after the smoke has been washed with water the odour is faint and not disagreeable.

Two double marches had to be negotiated between Rhamni and Almora,—a rather difficult proceeding—but by the friendly aid of the old *patwari* of Ghat, whom I will always gratefully remember, and the kindness of Messrs. Nash of Gwaldam we managed to get through.

Pushing on ahead of the coolies, I arrived in Almora on the same day as Tuny and his men. Next forenoon Sona came in with the others, and with fresh men we started at once for Katgodam, the railway terminus, which we reached in good time.

Before concluding, perhaps a small contribution might be made here to the already voluminous literature on that debateable subject, the so-called mountain sickness. From our experience the alternative term 'mountain lassitude,' first introduced by Major Bruce and subsequently endorsed by Dr. Longstaff, is a much more satisfactory term. None of our party were in the slightest degree sick at high altitudes, and the climbing powers of the strongest coolies seemed to be only slightly affected even at 23,000 ft. Elevation in the case of a normal individual simply reduces his vitality and strength, and therefore capacity for resistance to the onset of sickness, which when met with is chiefly due to other more active factors. Elevation is essentially a predisposing factor rather than an active one, and the bad effect presumably depends upon the diminished formation of oxyhemoglobin during respiration.

The other factors, which, when aided by elevation, tend to upset one's capacity for keeping all the organs in the proper co-ordination which we call health, might be summarised as follows :

1. Inadequate training.
2. Indigestion due to unsuitable food.
3. Over-strenuous exertion.
4. Want of acclimatisation to high altitudes.
5. Exhaustion.
6. Psychic effects.
7. High temperature.
8. Chill.
9. Snow glare.
10. Advancing age.

1. *Inadequate Training.*—This is serious in the Alps, but much more potent in the Himalaya. Training takes longer than in Europe.

2. *Indigestion due to Unsuitable Food.*—The best possible diets for high altitudes have yet to be devised. There is probably no doubt that the appetite is lessened. After long and careful experiment, we found that the best mainstay of both morning and evening meals was a large bowl of soup, thickened with rice and with added butter. The three ingredients were served separately. One could then add tongue, boneless sardines, &c.

as wanted, but it was found that the entire elimination of meat by substitution of four or five freshly made chupatties—unleavened pancakes—with jam and butter, was occasionally a good plan. Of course different men require different diets.

We carried several tins of plasmon with us for use on an ascent of the Jonsong Peak or Kāmet, if opportunity offered, but unfortunately had no opportunity of testing them.

Perhaps peptonised foods and prepared glycerophosphates like sanatogen might be useful for protracted camps at heights over 23,000 ft. Hot tea in Thermos flasks we found excellent at high altitudes, but the two flasks taken were broken within a month. Failing tea Professor Collie informs me that citrate of caffeine is an excellent substitute.

3. *Overstrain.*—Over-strenuous exertion is a frequent cause of real sickness because the co-ordination of the different organs is rendered far more difficult to maintain. It is therefore probably better to go slowly, so that in this respect I would venture to disagree with Dr. Longstaff, and to follow Mr. Mumm who says 'Camp high and start late.' I would prefer to read this 'Camp high and start as early as you safely can.'

4. *Want of Acclimatisation to High Altitudes.*—In attacking very lofty peaks it would probably be found advisable above 20,000 ft. to push camps up only from 1000 to 3000 ft. per day, according to the difficulties met with. The idea that the bad effects of high altitude are cumulative is, we think, completely negatived by the ease with which, at the end of the expedition, we climbed Dhanarau Peak (19,000 ft.), marched about 20 m., and then made 22 m. next day.

5. *Exhaustion.*—When one is near the limit of one's powers, especially when fasting, the waste products thrown into the blood are beyond the possibility of natural elimination, and toxic effects are produced.

6. *Psychic Effects.*—These might be important, especially in the case of a beginner finding a place more dangerous than anticipated. Probably local blood congestion supervenes—perhaps due to splanchnic dilatation or constriction—which has a deleterious effect.

7. *High Temperature*, 8. *Chill*, and 9. *Snow Glare* vary greatly in their effects. They are indefinite factors which tend to upset the co-ordinating balance.

10. *Advancing Age* is like elevation itself a general depressant of one's powers, but if we consider that one of the veterans of the Club when getting towards three score led a large party over a pass more than 20,000 ft. high into an unknown country,

the effect of age is obviously variable and must be greatly discounted in certain cases.

It must not be supposed that the natives are never afflicted with what looks like mountain sickness. I have met with several cases but usually at comparatively low levels.

When camped near Pangperma, two natives of Kangbachen, an old man and his son, started to cross the Jonsong La, but at about 19,000 ft. the father, a man of about fifty, was seized with a violent headache, and they went back to Kangbachen. The headache passed off to some extent after having tea at our camp.

Mr. Claude White mentions in his book on Sikkim and Bhutan that many of his Nepalese were affected by sickness at 14,000 to 15,000 ft.

Alum Singh, the leader of the men from Mana, who came with me from Badrinath, informed me that he and other coolies when with Lieutenant Slingsby, earlier in the year, had been badly affected by mountain sickness.

Perhaps three facts might be emphasised in conclusion.

1. The ordinary mountaineering rules regarding use of ropes, &c., should be carefully followed in the Himalaya, even in the case of snow passes used by natives, unless the position of crevasses is known. This is especially important before the summer snows begin, as numberless crevasses are then thinly covered. Exceptions are made in the case of moraine-covered ice streams like the Zemu and Kangchenjunga Glaciers.

2. Men with cloth boots should not be taken on dangerous ice slopes, and especially ice traverses. This follows from what has been related above, and is confirmed by the experience of Professor Collie in Kashmir. Many members of the Club will doubtless consider such a statement superfluous, but when in the Himalaya one is frequently strongly tempted to use the material at hand.

3. Many of the Sherpa Nepalese are first-rate climbers as well as coolies, and could be used for serious climbing of the big peaks like Kangchenjunga, after proper training. Serious climbing in the Himalaya can hardly be said to have begun, but I might venture to express agreement with Mr. Freshfield's dictum that all the great peaks can and will be climbed.

I have to offer my sincere thanks to Professor Collie for very kind advice and assistance.

THE TÊTE DE GRANDCROU AND THE TOUR DE GRAUSON.

BY THE EDITOR.

WHEN Benjamin Pession and I arrived at Cogne on August 8, 1909, I had hardly made up my mind as to what I wished to do. On the day after our arrival I wandered out as usual into the middle of the Cogne meadows, and lovingly regarded once more the well-known landscape with all its wealth of pleasant memories. And then two questions persistently presented themselves. The Tête de Grandcrou and the Tour de Grauson are not great peaks, but they are conspicuous from that green triangle of the St. Ours pastures. Had they been climbed? If so the ascents must have been made last year. Inquiry followed. They had certainly not been climbed within the last twelve months. I at once hastily cried to Benjamin: 'Well, then, they have not yet been climbed at all.' This added zest to the construction of a programme—if I may use so serious a word of the unpretentious task which we proceeded to set ourselves.

But before taking them in hand—or ought I to say afoot?—I wished to visit the ridge between the Val de Grauson and the Val d'Arpisson. I wanted to ascend all the points in it S. of the Tour d'Arpisson. The new map has on it a Punta Vachères which I knew not. So on August 10 we went up this point *via* the Testa Chaplane—a splendid point of view. Fine as is the prospect from Gmillian, that from the Testa surpasses it. Those who have visited it speak of it with enthusiasm. But the thorough exploration of the ridge which I had purposed was defeated by the weather, for thunder came on, and rain and mist completed our dismay; though when we were well on our way home the weather improved.

August 11 I spent at Cogne, and on the 12th Benjamin and I climbed the Cima di Leviona, or Punta del Tuf, by a variation of the route by which Sig. Bobba and I had made the first ascent in 1893. We then descended the W. ridge—a new way. On our way up above the Campement du Roi at Lauson we saw a great herd of chamois, probably nearly 100, and the best *Gentiana lutea* I have come across in the Alps. On the descent we followed a sort of special bouquetin route, and then took to the actual crest. I enjoyed the pleasure of leading. We went over point 3262 of the new map. The rocks after this point was passed became steep and slabby. And when I turned to

the right, I had some trouble on steep slabs with shallow snow upon them—'Assez raide,' as Benjamin said, when we were looking back from the snow at the foot of the Inferno Glacier of the new map. The rocks near the summit were red, but these truculent fellows were a blackish grey. There were many flowers on this mountain. On our way down to Dégioz the most conspicuous blossom was *Campanula cenisia* in charming tufts. The views of the Herbetet and the peaks between it and the Paradiso were imposing in clear sunshine. We got down to Dégioz about 7.0 in the evening after a very enjoyable day.

On August 13 we went up to Pont, and then to the Rifugio Vittorio Emmanuele. We had engaged a porter at Dégioz, of whom more hereafter.

From the Vittorio Emmanuele Refuge we crossed the Col du Grand Paradis, traversed the great Noaschetta Glacier, ascended the Becca di Noaschetta, which enjoys a view of Cogne over the main chain, and traversed *via* the Colle di Noaschetta to the gap between the Tête de Valnontey (11,625 ft.) and the Tête de Grandcrou (11,286 ft.). This point had not previously been attained.*

So far all had been easy, but a change now ensued. It took us 1 hour 30 minutes to descend the 462 ft. to the Col de Grandcrou. We had many amusing bits, and it was distinctly exhilarating to hear Benjamin, after peering over the cliff in answer to demands for direction from the porter, shout 'Avancez seulement,' with a smile on his face, which was a better comment on the situation than mere words. The rocks were, in places, loose and sometimes came away in one's hand when tested. We encountered various narrow chimneys and one curious tunnel floored with ice, which the porter regarded with much suspicion. The porter was somewhat of a survival from earlier stages of mountaineering. He was not, I ought to say, on the official list. He reminded one of those porters of old who were wont to contribute the comic element to Alpine expeditions. Benjamin and I knew him as 'Bottles,' as he had a perfect mania for collecting empty bottles. When we

* The illustration, for which my hearty thanks are due to S. Vittoria Sella, shows the Gran Paradiso and his satellites to perfection. In the left-hand corner is the Col de Grandcrou, above it the Tête de Grandcrou, then the Tête de Valnontey (very dark), then the Tête de la Tribulation with the ridge running to the Becca di Noaschetta, the rocky dome at the extreme left of the picture. The sharp point behind is the Pic de la Lune or Pointe de Ceresole:



Vittorio Sella, photo

Swan Electric Engraving Co. Ltd.

THE GRAN PARADISO, FROM THE COLLE BARETTI.

arrived at Noasca (to anticipate a little) and I proceeded to search my rucksack for a clean shirt, the first thing I pulled out was an empty bottle. I searched again, and drew forth another bottle. I searched a third time, and yet a third empty bottle appeared! He was a three-bottle man! But I forgive him much for supplying my broken teacup, which I preferred to a tin drinking cup, with the title of 'le goblet.'

After one or two more little difficulties, I remarked to Benjamin 'This is rather an amusing little peak.' 'Oh justement,' he replied. After a bad place the porter exclaimed that he had been on the Paradis and the Herbetet, but they had not faced him with such difficulties as these. As a fact we really had a good many by no means easy places to descend. The excitement was kept up to the last, for the final difficulty took the most patois and the longest time. When we reached the Col and looked back Benjamin said 'Can you trace our route?' 'No!' I answered. 'Nobody,' he added, 'would believe that we had come down there.' I agreed with him, but we were both in an expansive mood, for the little peak had been a banquet to us.

I ought to mention that I discovered many flowers in the crevices of the rock walls, which I searched pretty carefully while waiting for the porter to find the way. *Geum reptans* was the most striking—jewels of gold, like glittering stars, set in the crannies of little sheltered ledges.

The wind had been lively and rather cold, but on the Col de Grandcrou the sun was hot. The sky was lovely, belted with tender clouds—long gauzy lines of a milky white, suffused with pink in the upper layers, and with a red or purple tint in the lower.

We had intended to go down to Cogne by the Col de Grandcrou, but when we had been to the eastern end of the pass and traversed back westwards toward our peak, it became quite clear that a descent on the Valnontey side would involve a good deal of step-cutting in ice, and this, after consultation with Benjamin, I decided not to tackle; as, though the porter had done fairly well on rocks, his movements on steep snow were not such as to encourage us to face a staircase in ice in his company. We therefore, at 1.35, returned to the col, and started for Noasca.

After we had left the glacier and descended rough pastures where there was a large herd of cattle, though the herdsmen were too far off for us to consult them as to the road, we took a path to the left. There is no question, I think now, that we ought to have followed a track that seemed to lose itself in a

shallow lake on our right. I had great doubts as to whether we were choosing wisely, but the voluble assertions of the porter that we were making a great mistake possibly helped to decide me, out of a spirit of pure contradiction, to continue to the left. We presently came to a narrow glen with a noisy torrent, and found that the bridge over it had been carried away. I think the porter expected us to turn back, but we stuck to our digression 'like the driven pig,' as a famous climber puts it. We crossed the torrent by way of a huge rock, which projected well into the middle of the water, and a vigorous leap. Then we came to a place which looked like the battlefield of rock-hurling giants. It was not possible to go quickly, but still we progressed, and still the rocks confusedly hurled called for energetic, if spasmodic, athletics. I could imagine a cheerful critic crying 'Let me see thee caper—ha! higher! ha,—ha! excellent!' Unpleasant questionings as to where we should spend the night now began at times to suggest themselves. One could imagine this vast wilderness of rocks to be the spot where dwelt :

Pigmies and Polyphemes, by many a name,
Centaur and Satyr, and such shapes as haunt
Wet clefts,—and lumps neither alive nor dead,
Dog-headed, bosom-eyed, and bird-footéd.

SHELLEY, *Witch of Atlas*, stanza xi.

By-and-by we saw that the torrent made almost a right angle and disappeared round a cliff-end. I felt certain that there was no passage for us there, as indeed was the case, but eventually we got down into a little marshy plain, spied a bridge of two planks across the torrent, where he had forgotten his exasperation with the steep rocks and meandered lazily through a morass, and so crossed to the true right bank of the stream. Here Benjamin pursued some youths who were carrying up wood for fuel, and obtained from them some information about the way. I think he must have misunderstood their directions, as he declared that they said we must, when we had gone to a point visible below us, turn to the right. Now, though I *had* made a mistake higher up, one thing I *did* know, and that was that if you were going to Noasca you must keep to the left; so when we got to the junction, though the porter was against me, Benjamin, on my appeal to the map, supported me. It was here, as far as I can remember, that we looked back and saw the Grand Paradis, the Glacier de l'Abeille, and the Cresta Gastaldi, greatly exalted and glorified in the afternoon sunshine.

We before long came down to the great hollow to the S.W. of the mass called Blanc Giuir on the new map. I think what most struck us here was the extreme steepness of the pastures on the other side of the torrent under the ridge running from Blanc Giuir through Trasen Rosso to Gran Carro. Benjamin remarked that the cattle must have been reared on the spot to be able to graze on slopes so steep. 'Cattle from an ordinary Alp,' he laughingly added, 'would tumble off the mountain side.' I was very glad to see this great hollow under favourable circumstances—it remains with me as unique of its kind. There were many flowers and ferns—the flower was *Dianthus neglectus*, and the Parsley fern, *the fern*; but holly and beech ferns were also fairly plentiful. When nearly at the bottom of the hollow, we enjoyed a feast of bilberries. The path just below the bilberries had been destroyed for a considerable distance, and we had some trouble.

It was still a good way to Noasca, but the evening was beautiful; and when we got sight of the Levanna Orientale a golden sunset cloud was just enfolding his comely head. The last part of the descent we made by a new zigzag track which afforded easy walking but took us a long curve to the right. Night had fallen before we reached Noasca and were welcomed by the cold air and sonorous voice of the Orco.

The old rhyme about Noasca is no longer true—

Noasca, Noasca,
Poco pane, lunga tasca.

at any rate, as far as the first half is concerned; for we found good food and clean beds at the Albergo Reale. We were not the only visitors, for a party had just come in from Locana in a motor-car and were at supper when we arrived.

After supper I paid off the porter and agreed with the owner of a carriage to take us to Locana and Pont. We were to reach Pont at 11.30; I need hardly add that we were late.

On August 15 we soon descended into a beautiful world of chestnuts and walnuts, gurgling streams, rich meadows, and mellow sunshine. There were many pale green willows in the meadows, and many a dark green ash, though the latter had been severely cropped. The alders down by the Orco were beginning to lose their leaves, but the birch was grace itself. There were many country people in the road, as it was August 15, one of the great festivals of the year.

At Fornolosa there were some fine richly coloured geraniums in big pots on the balconies of two of the houses. A little

lower vines trained on tall trellis-work or up and over the houses were very picturesque. There were also figs, apples, and plums, and of course everywhere beans, often mixed with potatoes, growing rampantly. Hayfields here and there richly scented the fresh morning air with a homelike fragrance.

At Locana there was a great crowd. Our first task here was to send a telegram to Cogné to mine host of the Grivola to let him know our whereabouts, as we had said we should be back there on Saturday. There was much fruit on sale in the street—the market was, in fact, glutted. We bought good peaches at 2½*d.* the kilo (2 lbs.), and Benjamin said quite good small ones could be had for 1*d.* for the same quantity. Nectarines looked very tempting, but our ‘coward lips did from their colour fly’ when their adamantine hardness became but too undeniable.

At Pont, at the Corona Grossa, there were seventeen people at lunch. After a meal, we drove up to Ronco. Just as we got out of the town we saw a beautiful fair-haired girl very becomingly gowned, with three roses in her bosom, and immediately afterwards two young women in picturesque dresses driving three cows.

In this valley of the Soana the people seemed more smiling—perhaps they had a stronger appreciation of the feast day—certainly no one could wish for more beautiful natural surroundings than are here to be found. The valley is clothed with wood, mainly chestnuts, though walnuts may also be seen, and the Soana far below the road makes music in its foliage-hidden bed.

Before we got to Ronco we came upon a rustic festival in full swing, with a tent and a planked floor for the dancers. Ronco was much altered since my last visit in 1895. It now boasts a big fashionable hotel—the Lavina-Soana—and offers the traveller excellent accommodation in lieu of the ‘entomological night on crackling maize-stalks in an old lumber-room’ of which history speaks in 1859! There were many people to be seen, most of them visitors who had come up from the plains to avoid the heat. We went on up the Val Campiglia to Campiglia, where we found quite a decent inn. On the way we saw some boys killing a snake in the road.

The cool of a beautiful evening was very grateful to us, and the voices of falling streams, not too loud to be musical, soothed our ears. The rambling inn seemed full of people, but I secured quite a decent room. The food was fair. The landlord was polite and anxious to do his best for us, but the cares and toils of probably the heaviest day in his season had obviously told upon him. Card-players were still busy and



C. F. Bennett, photo.

Swan Electric Engraving Co., Ltd.

TOUR DE GRAUSON.

noisy when I went to bed, and Benjamin said that the landlord could not get rid of them till August 16 was some hours old.

The next day, while we were parleying with an old herdsman at the Rancio chalet, I saw a very fine dog which reminded me of the splendid creature I had seen there in 1882. This I mentioned to the old man. He seemed to be much pleased, and said that the present dog was a descendant of the one I had admired so much twenty-seven years ago. We crossed to Cogne by the Col des Eaux Rouges. There were many flowers, *Saxifraga longifolia* amongst them, and we saw a number of chamois. Instead of going to Brouillot, we kept on the left bank of the main torrent and eventually joined the route from the Col Bardoney. The day was beautiful.

On August 19 we went up to the Grauson chalets. Before turning aside into the little flat where the chalets lie, there is an exceptionally fine view of the Grivola which fills the end of the valley. In the evening light I thought it one of the most impressive views of the great Cogne peak that I had seen. Later, with a new moon in the sky, we watched it again.

The herdsmen at Grauson were very hospitable—they gave us new milk, and offered us the choice of their own beds or clean hay in a chalet a little distance away. We chose the latter and were quite comfortable.

When I remarked to a herdsman that the pastures looked very brown, he said 'Yes; we have not had sufficient rain this season, and consequently we have not here as many cows as usual.'

We left the chalets at 6.20 A.M. on August 18.* We crossed the Lussert torrent and then went N.E. to a little col in the N.E. arête of the Tour de Grauson, from which the Lussert lakes were visible. After that we ascended for some time in a south-westerly direction along this arête. We then went from S.E. to N.W. from ridge to hollow and from hollow to ridge, the inclination in many places being decidedly steep. At 10.30 A.M.—about 3½ hours' walking from the chalets—we arrived just under the summit of the peak. When we had examined the peak from Cogne we had been very doubtful as to which of the many points of the summit ridge was actually the highest. When we found, after careful examination, that we were undoubtedly on the highest point I was much pleased, for it was unnecessary to spend the rest of the day in exploring all the 'fantastic

* See *Rivista Mensile C.A.I.* 1910, pp. 279–80.

pinnacles' of which the 'Climbers' Guide' speaks. The mountain on the N. or Lussert glacier side is very steep, and seemed to us decidedly dangerous by reason of falling stones. Of course it is quite possible that a better way up may be found from below than we could discern from the summit. We built a stone man on the highest point.*

On the descent we followed an entirely different route. There are several great couloirs in the S. face of the mountain that are well seen from the Grauson chalets. One of them begins almost under the very summit, descends straight down for some considerable distance, then turns to the right (W.) and finally becomes a torrent-bed, in parts very steep and not altogether easy. In this couloir, or on its sides, except in one place where for a short time a lateral gully was followed, we made our descent, Benjamin leading. The very last bit of the torrent bed, the steep part of which was about 100 metres above the Grauson chalets, was turned by the left bank.

Our route is probably much the quickest for the descent, as we only took 2 hours 10 minutes actual walking from the summit to the Grauson chalets. This couloir, in which we descended at least 3000 ft., is the great feature of the mountain, and was carefully examined by us from the chalets on our return.

The most interesting part of the view from the summit was the sight of the Valnontey from end to end. We returned leisurely to Cogne, well satisfied with our day's work.

THE FIRST ASCENT OF THE MATTERHORN BY THE FURGGEN ARÊTE.

BY DR. MARIO PIACENZA.

[We offer our hearty thanks to Dr. Mario Piacenza and to the Editor of the 'Rivista Mensile' for permission to publish the following article. The translation we owe to Major E. L. Strutt.—EDITOR 'A. J.']

TO climb the Matterhorn by the Furggen arête has been my idea for many years, and has inspired in me a great desire to lift the veil of mystery which enshrouds it. The expedition certainly appears strenuous and impossible for

* I am indebted for the illustration to the kindness of Mr. C. F. Bennett. The photograph was taken from the Valnontey and gives an excellent idea of the Val de Grauson as well as the Tour.



H. G. G. G. G.

H. G. G. G.

The Furggen crests of the Matterhorn
(Self-photo)

those not gifted with the strongest tenacity and daring; should I succeed where so many brave mountaineers have hesitated, and from which all have turned back mistrusting, and declaring the undertaking was impossible? The idea of attempting the ascent grew on me by jealous degrees, and I spoke no word to anyone about it. It was, however, necessary to make inquiries from my predecessors as to how the mountain appeared on that side. Somehow by gossip on the verandah of the hotel, I managed to sound all the guides who accompanied Rey, but in such a way that I appeared perfectly careless to their replies.

Ange Maquignaz informed me 'C'est fou d'aller par là, on va se casser le cou.' The small and intelligent Daniel, however, with his accustomed vivacity and dash, which contrasted strangely with the quiet characteristics of the other guides, informed me 'Ah, moi j'ai dans la tête, qu'on peut trouver un passage, regardez là?' with which words he pointed out to me the ribbons of snow beneath the final summit. 'C'est là qu'il faut passer; où il reste la neige on peut toujours passer.' In fact, he showed himself convinced of the possibility of forcing a way, and I comforted myself with the idea that he at least, although doubtless considering it a risky undertaking, nevertheless thought it a possible one.

We could at least but try; before renouncing the splendid expedition we could anyhow attempt it, so as to see whether the ridge was invincible or not. The guides were to be found who would accompany me, although their looks might have cooled my ardour, and I knew well that without courage and faith it was useless to set out, also that we should encounter too many rebuffs if we attempted the ascent without great previous reconnoitring.

For the first part of my undertaking I secured first my worthy friend Joseph Pellisier, then later Joseph Carrel and J. Gaspard, all of Valtournanche. With them alone was I confident, my anxieties and hopes were shared with them. Pellisier, beyond all the others, was keen about the expedition; he had aided and abetted Rey's attempts, he knew well the difficulties of the Matterhorn and also, in part at least, those of the Furggen Ridge.

We all of us knew of Rey's different adventures, described in such a masterly way in his book 'Nel Regno del Cervino'; in each of us grew some measure of his feelings and enthusiasm—we lived over again in ourselves the many hours spent by him on the mountain!

It was impossible to climb direct from the shoulder of the Furggen Ridge to the summit—the crest of the arête cannot be followed at a very obvious point ; for in this one part there is a great void of some 80 metres filled by an immense projecting ‘nose.’ Whatever happens one must here turn on to the Swiss or Italian slope. Rey chose the way on the Swiss side, possibly because it is intrinsically more beautiful, possibly because it appears more feasible for a direct ascent to the summit, as one can keep nearer to the crest. How many hopes, how many varying emotions passed through the soul of the man, quivering with the longing for conquest ! Then the agony, the horror of the final repulse !

Dreaming of the gallantly-borne discomforts of my predecessors, and the causes which brought them about, I yet became certain that a way must exist, *not* on the Swiss slope so often tried, but on the Italian side. I determined to reconnoitre with the guides that part of the mountain lying between the final peak and the shoulder of the Furggen, making the Italian shoulder our starting-point. So began my climbs on the Matterhorn, using the Luigi di Savoia Club hut as our base. The hut became the home of myself and my trusty companions, and whenever the weather allowed it we scrambled along the ridge on to the top, in the attempt to disclose the new route. At first we were content, from the Pic Tyndall, to gaze at the opposite face, but the uncertain weather compelled us to bivouac frequently and fruitlessly. Not only was it the weather that proved itself a nuisance, there were also our worthy colleagues ; these latter found it strange—and no wonder !—that we should continue our prolonged sojourns at such a height, while they themselves were all trying as quickly as possible to complete the trying ascent, in order to return happy and proud to the comfortable beds of the hotel. Our reply to these people was always that we lived up there for the sake of fresh air and the photography of the Italian ridge, which had long been neglected in this respect ; this was quite true, the camera was always there and, weather permitting, was in daily use, although whenever a favourable moment occurred for a photograph, our eyes fled ever to the great precipice of the Furggen ; we gazed at its graceful outline, at the great couloir, at the slopes ; we watched the wreckage of the avalanches thundering down from the summit of the Giant and guessed from their traces the angles of the slopes and precipices.

As for the telephotographs, they were equally useful whether taken from the Château des Dames or from the Pic Tyndall.

After having well studied the slope of the wall, we determined to hazard ourselves on the snow ribbons stretching beneath the final tower, but to consider this merely as an exploration, and above all to avoid being seen; accordingly we left the hut in the early hours, by moonlight, long before the other parties, and before daybreak, following the usual route, we attained the Col Félicité. When early dawn lit up the rocks, we left the ordinary route, and as quickly as possible, to avoid the stone falls, we traversed the snow ribbons, and found ourselves on the flanks of the dreadful summit. We were well supplied with rope to secure ourselves across the gullies and slabs while searching for a possible route. For this purpose, and to enable us to return quickly when daylight appeared and when stones began to fall, we left behind us ropes and 'pitons.' In turn held by the others, we clambered across vertical bits. As soon as we heard from the depths the cry of 'That will do, pull the rope!' the work of hauling up our invisible companion began. The silence was dramatic at such a moment, nothing could be heard but the gaspings and oaths of our friend attempting to climb up and being continually crushed by the rope against the sides of the gullies.

Hardly had the sun shown itself up above the horizon when the horrors of the Matterhorn began. The Colossus awoke only to begin anew his slow disintegration. Rock-slides wrecked the faces and couloirs, leaping, whistling, and thundering down towards the glaciers which fringe the peak. It was the dread trumpet-call which signals 'Retreat!' Stealthy and swift the humming stones which leapt over our heads directed themselves towards the ordinary route, avoiding somehow the ropes fixed on that ascent.

As soon as we were out of danger we seized the camera hidden under a rock, and scrambled up to the summit by the ordinary route, hesitating in the neighbourhood of the places most exposed to the stones, in order to prove to the other parties that photography was our sole object.

In the evening we used to return to our dear hut, and after a frugal meal, if the weather was fine, stretched ourselves on the little platform encircled by so many glorious mountains and deep-lying glaciers, and discussed our ideas on what we had seen and found in the dawn. Sometimes the evenings were sad and full of discomfort; we execrated the mountain, the hard life, the fatigues it entailed. Sometimes the evenings were happy and calm; smiles and fun were on our lips, perhaps, because we had found some new means of access, and in

consequence imagined we had guessed the riddle to the conquest of our Sphinx, the shoulder of *our* Furggen Ridge! At such moments our enchanted eyes dwelt on the ever-marvellous spectacle of the sun setting in a sea of stormy cloud of the most garish colours, while the eerie silent moon rose above the frozen Monte Rosa!

In such explorations we spent several years, and on many a day did we leave and return to the Luigi Savoia hut, 'midst the highest hopes or bitterest disappointments.

In the year 1909 it was my fate to uselessly reach the hut twice. The first time we found ourselves imprisoned for six days, and on the seventh day we reached the little peak with 30 centimetres of fresh snow; the second time hardly had we reached the hut when bad weather forbade us to stir a step.

My three guides Pellisier, Carrel, and Gaspard, were the only ones to know of our attempt, Pellisier being still the keenest about it. He used to say that the last ridge of the 'Becca' must remain as a prize for those from Valtournanche rather than for the Zermatt men, because although Italians had *not* first set their feet on the summit, yet *they* were still capable of attaining the peak by the most difficult way. 'Mais sans se casser le cou.' Poor Pelissier, he was not destined to scale the mountain by the most difficult route! He died in my arms in the Caucasus last year, after accomplishing with me the ascent of Elbruz.

This year *if* the weather were only propitious! . . . and all thanks to it, it set fair and smiled at the mountaineer. We knew that if the elements were favourable we had almost lifted the veil from the last mystery of the Matterhorn. We set about a last series of reconnoitings. Starting again from the Luigi di Savoia hut, in different attempts we succeeded in storming new points nearer to the famous shoulder. The most formidable 'step' appeared to be feasible from below; in consequence there remained nothing to be achieved except the knowledge as to the possibility of combining the passage of the foot of the precipice with the shoulder itself.

Everything appeared ready; we resolved to embark on the assault.

On a Saturday evening we set out for the Hörnli hut, for the reason that we knew that the Swiss guides do not willingly climb the Matterhorn on a Sunday. On the following day we left the hut at 3 A.M. for the Breuiljoch. We waited

for dawn at the foot of the arête. Day broke with a lurid light, a sure sign of bad weather ; nevertheless we set out and climbed up on to the ridge, taking every conceivable precaution to avoid dislodging the loose blocks with the rope. The sky cleared, the air was chill and prevented stone-fall ; in fact, loose rocks were in consequence few in number, and fell far away. When we arrived at the shoulder a sudden violent squall struck us. Clouds rapidly blotted out the sky and mists eddied around us ; a thick hailstorm dispersed the mists, followed by the wind whirling the loose snow over us. Full of bitterness and discomfort, we struggled down to Breuil.

On September 3 we returned to the Hörnli hut to try again ; this time the hut was full of people. We three started off on the following day, leaving the others still sleeping, and arrived before dawn at the Breuiljoch. We awaited the light. The night was calm, cold ; stars glinted everywhere. Many falling stones were audible in the distance. As soon as dawn appeared at 5 A.M., we put ourselves in motion, desiring to reach the first shoulder as quickly as possible ; accordingly we did not rope and, each of us choosing his own line, we made height with unusual rapidity. The cold increased with the dawn ; falling stones were more numerous but still distant. In an hour we reached the first shoulder. The sun appeared, and the rock-falls increased in number and severity. The boulders which we had to pass were very threatening—so much so that we had to press ourselves against the mountain, sometimes crouching down beneath a projecting rock. Having scaled the first shoulder we clambered up by precipitous gullies, and soon attained the famous chimney which had stopped Rey for so many hours ; we traversed it at a run 'midst the screech of falling missiles.

We arrived at the foot of the second projecting shoulder, finding the still sound rope left behind by Rey. Raising ourselves by it, Gaspard dislodged a boulder, which fell on him with two or three bounds. We hurried towards him, he had a finger crushed and blood was oozing from it ; the stone had also given him a severe wrench, and had badly bruised his knee. Nevertheless the thought of retreat never entered his head. The weather was splendid. We must reach the summit now or never.

Gaspard bound up his injured hand with a handkerchief and continued to lead until the ridge was attained. At 7.30 A.M. we reached the base of the second shoulder, having in two

and a half hours accomplished a bit which had always cost other climbers four to five hours.*

At this spot we renounced the route vainly attempted by Mummery and Rey, on the Swiss flank. We halted a moment and rested, observing the route of our predecessors and longingly contemplating our own, the first steps of which were now unfolded before us and appeared more or less inaccessible. We started again, and traversed diagonally for some 20 metres till we confronted a high, steep, and holdless boulder. To climb it we had to get on to one another's shoulders, Gaspard standing on Carrel, and I above Gaspard. Having thus attained a hand hold, the rope was secured, and by its aid the others scrambled up over my head. I waited for a long time, but at length felt the tug of the rope; they seemed to have forced the passage, so I advanced too—the bad bit was accomplished. †

Traversing other rocks of uncertain hold, we found ourselves at the base of a gully of loose rock, which we turned by slabs and crevices of no uncertain difficulty.

The weather still remained marvellous; there was no breath of wind stirring. Far above us on the ridge we perceived a party of friendly guides, who saluted us with shouts of happy augury. At length we attained the snow ribbons beneath the final summit of the mountain; now at least we ought to be sure of victory! There remained only the last 'step' of the ridge, of which the difficulties were, however, unknown to us. Before us was the great ice-filled couloir, which drove us to perilous gymnastics; we were obliged to abandon a rope here.

We now considered ourselves 150–200 metres distant from the final ridge. We looked across at the terrific 'overhang,' which concentrates in itself all the terrors of the Matterhorn. We advanced with the utmost care over the minutest holds. Below us, looking like a microscopic toy, we could perceive the Giomein hotel surrounded by its verdant pastures.

We were now getting into unknown country. We turned away from a ledge descending from the direction of the Swiss summit. The snow was all speckled with stones, a sure proof of constant rock-falls; availing ourselves of this urgent warning, we hurried across the gully, and took refuge on the crest of the

* 'Shoulder' is indicated by letter 'a' in the illustration given in the *Rivista*.

† This point is indicated by letter 'b,' and is technically the worst of the entire ascent.

ridge beneath a great boss.* From this spot we perceived the Swiss parties on the Hörnli Ridge, who greeted us without, it must be confessed, the cordiality of the Italian guides on the other arête. The glory which will accrue to the men of Val-tournanche is lost for ever to those of Zermatt !

We remained here for an hour to avoid stones dislodged by the descending parties. As the falls ceased we emerged from our hiding-place and resolutely attacked the final wall. We attempted to advance up a slab some 30 metres distant from the crest, but it proved impossible. We clambered about here and there, and found another smooth and perpendicular slab, which we contrived to scale by means of yet another human pyramid. Another great struggle for the professionals ; another long and lonely wait for the amateur clinging to the grand old wall ! There I hang, as it were in space, all the while eagerly listening ; I seem to have been deserted. I can only hear the voices of the guides, who out of my sight are arguing how to proceed. At length, after half an hour, I feel the rope drawn taut ; I hear the voice of Gaspard crying ' Avancez ! '

We were once more reunited on a tiny platform. As we consulted together, an enormous mass dislodged itself from the mountain and, raising a cloud of smoke, plunged down the couloir with a hideous crash. The guides no longer know how to proceed ; in every direction impossibilities apparently confront us. Nothing else is left but the avalanche-swept couloir, feasible only at night when frost has bound the débris. Almost we determined to halt on our lofty eyrie and to bivouac there till night permitted us to risk ourselves in the couloir ; our hesitation was, however, brief. We made up our minds to hazard the traverse of some dangerous rocks and to get back on to the ridge. We securely belayed a rope, and then with infinite care Carrel crawled up towards a great boulder, a few stones broke away from beneath his feet with dreadful clamour ; he kept his balance, however, and at length we saw him safe and sound by the boulder. The rope was secured to it and we others got across out of danger.

The difficulties are, however, not yet over ; again we have to fasten a rope in order to traverse a bare slab, which we accomplished without any untoward incident. And now for the last obstacle ! We are on the ridge, the view over the Swiss side unfolds itself ; clouds are rolling up towards the

* This point is indicated by letter ' c. '

summit. We are certain of victory! Another scramble of a quarter of an hour, and we perceive not far from us the ladder abandoned by Rey after his last attempt.* The way reveals itself before us, difficulties diminish, the summit approaches. Proudly and full of confidence, we advance. We assemble on a little rock buttress whence we perceive the cross on the Italian summit. Twenty minutes more, and at 1.30 P.M. we attain the top. . . . We are mad with joy . . . we embrace and wave a red flag as a token of victory to our friends at Giomein.

At 3 P.M. we descend the ordinary route and at 10 P.M. we arrive at Giomein.

MARIO PIACENZA.

(Sezione di Biella)

From *Rivista Mensile*, 1911, pp. 320-7.

A NIGHT ON THE HINTERSUSTENHORN.

BY H. L. HUTTON.

STORY? God bless you, mine is ancient history! In an unguarded moment I told it to the Editor in the train between Bern and Boulogne in September 1909. Then it was a living thing, now it is a recollection into which writer and reader must enter by an act of volition. But who may say nay to the repeated requests of the Editor? Flog my jaded memory into an ambling gait I must, and so reach the repose of print! 'I never can recapture that first, fine, careless rapture.'

This then is the recollection of how F. Harrison, H. L. Joseland, Rev. W. H. Hodges and the writer climbed the Hintersustenhorn from Stein on August 17, 1909. Hodges was chaplain at the Rhone Glacier and joined us the day before. His experience consisted of a snow peak and a snow pass, so he may be called a novice. We had promised him a little coaching in rock-work and general mountaineering without guides. He proved a pupil with a touch of genius: witness his faith in us. 'Come along,' we said, as he hesitated at each strange-looking traverse or chimney; 'come along! it's quite easy. Put your hand here and your foot there.' He put his hand here and his foot there, and came. The

* This point is indicated by the letter 'd.'



H. L. Josland, photo.

Swan Electric Engraving Co., Ltd.

THE SUSTENHÖRNER, FROM THE OBERTHAL GLACIER.

repeated success of these movements confirmed his faith. Only when he had acquired a month's experience in thirty-eight hours, he remarked meditatively, 'I see now how much you bluffed me!' We other three had done many guideless climbs together.

We had been on the lower slopes of the Hintersustenhorn before for exercise and exploration, and with the knowledge gained and the times given in Ball, we decided on a start at daybreak. Dr. Dübi's S.A.C. translation of the 'English Climbers' Guides to the Bernese Alps,' vol. iv., we only saw afterwards; the routes are so clearly described there that I give references to them. It was nearly 5 o'clock when we left the inn, walked up the Lower Stein Glacier, traversed the shoulder of the Bockberg and crossed the Upper Stein Glacier to the grass slope opposite. (Dübi, p. 107, route 4, lies more to the right, i.e. to the S.) There is a snow couloir some little distance to the right (S.) of this slope. Those who wish for some mild excitement may find their way down it between the snow and the rock walls. It is better to zigzag up this slope to the head of the couloir rather than to make for the ridge, as the ridge is shaly and unpleasant to walk on.

We crossed the head of the couloir and ascended a chimney, narrow enough in smooth places to allow the use of legs against the sides, but full of loose stuff which the leader had to clear away and send down between the legs of the second man. Our general direction was to the right, and then back on to the main N.W. buttress, where we joined the route 5, p. 107 in Dübi, the continuation of the Kalchtallüche route. The distinguishing feature is 'numerous gendarmes.' The rocks here were much iced, and after making slow progress for some time we left the buttress (as in Dübi); but, after consultation at 2.30 P.M. we decided, in view of the iced condition of the rocks, not to work back on to it, but to traverse across the face to the right and reach the summit by the S. arête. A previous examination with field-glasses had made it clear that this traverse was possible at several points. I think that we took a route higher than the 'broad snow-band' described in Dübi, but at any rate, 'at a point almost directly under the summit' we mounted a narrow couloir, thickly iced, on to a rock platform. A direct attack on the wall opposite carried us on to the arête, a few minutes to the S. of the summit, at 4 P.M. (Dübi, p. 107, route 4.)

We had decided to take this last stage rather than descend owing to the information given in Ball, which implies that

the arête leading down to the Steinjoch is easy. This is misleading.

We left the top at 4.15, feeling confident that we should have enough daylight to reach the meadows at the foot of the Steinjoch, if not the Stein-Wassen track. The first glance gave an impression of easiness. We followed the arête and then traversed the S.E. face, not far below the ridge, till our advance was unexpectedly blocked by the drop at the big gendarme, described in detail by Dübi, but not mentioned in Ball. Advance here was obviously impossible; we mounted to the arête once more. The gendarme was iced and looked difficult. Was a traverse on the N.W. possible? If, as Ball implied, the arête were easy, it must be only a question of finding the route. We could see our way down to a point level with the foot of the big gendarme. Could we cross the last hundred feet back on to the arête? We decided to try. The route was by difficult rocks—there was ice everywhere—with some help from a snow couloir, to a point where a slope sprinkled with snow and scree descended rather steeply into a snow couloir at the foot of the gendarme. Things did not look promising here, but if the snow in the couloir were good, it might still be possible to regain the arête. Anyhow, we must try.

The last man anchored himself immovably on a projecting spit of rock, and the second man was able to belay the first on a big knob as he descended half the slope. The third man then advanced to the knob and allowed the second to move forward till he had enough rope to let the leader reach the couloir. But the couloir was no better than the slope—smooth sloping rock, with but little more snow and no holds of any kind. So the leader was gently drawn back up the slope, and by this time it was dusk, too dark to reach the top again. We had risked and lost. There was nothing for it but to sit astride the projecting spit, which was just big enough to take four.

It was nearly 8. How long should we have to sit there? was our first thought. The moon would be up about 12.30, we calculated, and if the sky were clear we might be able to move to a more comfortable position. Cheered with the thought of a limited sit of five hours, we dined. We had not arranged for many meals out. We had sufficient, but plain, fare, and we had something over for to-morrow's breakfast, but we had little to drink. The writer carried the bag, and in recognition of his negligence, drank nothing—and suffered

nothing, though as it turned out he was without drink, except for a few drops of cognac and a little snow, for 24 hours. Hodges, as a novice, had exerted himself and suffered much from thirst. It is difficult to write a true history. One member of the party remembers nothing about eating after 4 P.M.; another thinks we dined chiefly on thoughts of breakfast at Stein, which thoughts next day turned to 'at any rate lunch,' and then 'we hope dinner.'

It was a magnificent position. The flanks of the Hintersustenhorn dropped almost sheer below our feet. Facing us to the N. was the Stein Pass, and down this we could see wayfarers wandering with lanterns on their way to Wassen, so near and homely a sight that involuntarily we shouted into the deaf air. Below us the mists were gathered and would have hidden C. F. Hill's kindly lantern-signals from us, even if we had been on his side of the mountain. The mists surged up towards us, but never submerged us, and we watched the august procession of the stars as they climbed above the Spannorts, a blaze of light heralding their approach minutes before they rose, such as is seen only in 'the ampler, the diviner air' of mountain heights.

Our rock-saddle was sharp, uneven-edged; only two had sacks to sit on, and change of position was impossible. From time to time each man leaned back, clasped in the arms of the man behind, for rest and warmth; but the weight on the chest could not be borne for long. We wound up our watches, we kicked our heels against the rock-flanks to keep up some semblance of circulation. Song and peppermint-lozenges warmed our hearts in turn. A cold wind from the N. rose and pierced us; it was a mercy that it did not last long. So the hours passed till moonrise. Would the mists rise with the moon? No; never did moon shed purer, intenser light; but the rock walls behind us only stood up the blacker. To climb them was not to be thought of. It was 1 o'clock by the time we reached this decision. By 4 surely it would be light enough to move. And we told stories—the alpine joke, other jokes, tales of mystery and adventure; all were gratefully but quietly received. Heads nodded, bodies swayed; a vigorous shake from a wakeful arm was needed. We began to reckon the flight of time correctly without our watches.

Nearly 4, but it is not so light as it was. The mist has wrapped us round and snow is falling. At 5, we scramble one by one off our rock-saddle bed, swallow a drop of cognac and wonder what our feet feel like, and our hands. Numb,

but not frost-bitten. Ten minutes' exertion on the rocks sets the blood flowing; in twenty we are warm. It takes a full hour to climb to the ridge again, and there in view of the fresh snow, fallen and falling, we decide to make our way down to the Wallenbühl Glacier and over the Steinjoch to the Stein-Wassen track.

We descend slightly to the left for half-an-hour to a snug shelter where with greater prudence we might have spent the night, and breakfast. Our last crust of bread has been sat upon and soddened. We discover unexpected pears. Chocolate and raisins we have in plenty, but some cannot eat them without a drop to drink.

The mists lift but little; we pick our way by instinct rather than reason to the left and strike a spot where by creeping on all fours along rock-ledges we descend a long drop easily on to a snow-covered rib. This rib we follow down till the snow ends, and then cross to a smooth gently sloping rib on our right. This rib leads us at last into a corner with a rock-wall on our right, where a couloir enables us to drop on to a steep slope, half snow and half ice. (We may have used three ribs in this descent. Owing to the mist it is difficult to locate our exact route. Dübi, p. 106, route 1, a.) The patches of ice made a glissade impossible, and the kicking and cutting of steps was laborious. The bottom of the slope was much crevassed. Once across the crevasses, we were on the flat of the Wallenbühl Glacier. It was now 2 P.M. We could hear water to our right, but the thirstiest was more eager to cross the Sustenjoch than to drink, so we pushed on up the easy slope to the joch. Just before we reached it, we heard a shout, and as we reached the other side an English invitation to afternoon tea. Messrs. Ashley and Gillett were watching for us. We had discussed the descent to the Voralp Hut with them, and they had felt sure we had spent the night there and should return this way. Tea would be ready for us in the meadows below.

Our troubles seemed over, but our dangers now began. Perhaps the taking off of the rope relaxed our attention, perhaps the thought of tea hurried us, perhaps the rotten rocks exasperated our strained nerves. As Joseland turned to see if Hodges were following, the boulder he held spun round, taking him with it. He clasped another with his disengaged arm and that did not move. Lower down, he stepped carefully on to a jammed stone, tested it cautiously and let go his handhold. It tipped. A leap saved him from incalculable

consequences. Harrison varied these experiments with fate. He jumped from a rock-ledge on to a snow-slope to glissade and started well. His hat blew off. Involuntarily he raised his hand from his axe to clutch it. With the brake off, his pace quickened. A big stone lay in his way. He jumped, cleared the stone, but lost his axe and his balance, then whirled round and round, faster and faster down the slope. By luck he got his feet foremost and pulled up close to the rocks at the bottom. Some bruises and a finger cut to the bone were light punishments for all this. We met again round the tea-things at 4 P.M.

In the strength of that tea we walked with pleasure three hours to Stein: three hours that might have been four and a weariness without tea.

As we crossed the Susten Pass, a gun-shot gave the official signal to a search-party of local guides to retire—they had found our tracks and watched the base of the mountain all day. A wire to Meiringen stopped the departure of a strong relief column: its labours were limited to drinking our health.

All visitors at the Stein Inn considerably refrained from leaving the dining-room, but the good landlady and her maids stood in line to welcome us: 'We thought you were dead! We knew you had nothing to eat. We thought you were dead.' Thanks to the tea, we were not even dead tired.

The route up is certainly interesting, and probably more direct than route 4 of the guide. Under good conditions the complete ascent of the N.W. buttress should be very attractive. The best route down is a question to consider. Our route was long and without much climbing interest.

INDOOR TRAINING FOR CLIMBERS.

By R. P. COCKBURN, M.D.

(Read before the Alpine Club, April 9, 1912.)

BEFORE success can be attained in any of the several branches of athletics, a certain qualifying examination as it were, common to them all, has to be passed. The entrance examination requires a certain measure of health, a certain standard of general muscular development, a certain rapidity

of co-ordination between the different organs and limbs, a certain degree of hardness, endurance, courage, and perseverance. These are necessary for all athletics. After passing this qualifying examination the student can train himself for any special subject, climbing, rowing, or what not. There is thus a General and Special Training to be considered.

It is difficult by indoor work alone to acquire the health and general development, etc., necessary to pass the qualifying examination, but certain of the special subjects can be well practised in one's bedroom or bathroom; that is to say, the muscles necessary for climbing work can be developed to a great extent indoors. Of course, there is nothing like practising the thing itself. There is no training for climbing like climbing. No one would train in his bathroom who could get to Cumberland, or practise golf strokes in a room if he could get out on to the links. Most men, however, are tied and bound by a chain of duties which compels them to exercise at home or not at all. Some men are so blessed by the gods that they require very little exercise to keep in good condition. Their muscles remain hard and they are able to undergo great exertions with comparatively short training. Others get soft easily. They cannot get into training quickly, and need prolonged preparation before going out to Switzerland. Advancing years, it is to be feared, tend to place all of us in this category. Everyone has a certain reserve of energy which he can draw upon in an emergency which enables him to perform quite unexpectedly surprising feats of agility and strength (under the stimulus, for instance, of a mad bull or a fire), and one is apt to be misled into overestimating one's capacities in consequence; it should therefore be noted that this reserve can only be tapped by strong emotions—that in the performance of his feats the individual may strain himself seriously—that he cannot execute unfamiliar movements with accuracy, and that this reserve is not easily replenished. Training, of course, enables us to enlarge this reserve of energy, to tap it and to replenish it easily and quickly and to prevent strain or undue fatigue while using it.

There are different sorts or qualities of energy. We may take as two examples that of the ox and that displayed by the tiger. The former has great strength, patience and endurance, but lacks quickness, and especially the power of making sudden or small movements and of getting into his stride rapidly.

The tiger has his energy stored up in the most explosive form available for instant use. The spring of a tiger—a standing jump—is a wonderful example of what can be done with nerve

energy. Man can, with training, acquire some of the quickness of the felidae combined with oxlike endurance and strength. Extreme rapidity is seldom required by climbers, but when it is wanted it is needed very badly, and should therefore be practised during training.

Before going any further, in order to understand the rationale of training it is necessary to glance at the physiology of muscular action.

The ordinary view of a movement is that it is simply a question of muscles, but a muscle fibre left to itself is a poor thing. Separated from its nerve-cell it cannot move, but lies inert and soon degenerates. In speaking of a muscle, then, we really mean a nerve-muscle combination. The nerve-cells control all the activities of the body. They are for greater efficiency of working grouped together in variously shaped areas. On the surface of the brain, where lie the cells which have to do with muscular movements, they are arranged in groups known as 'centres.' One centre on the left side of the brain superintends the movements of the toes of the right foot, another those of the foot itself, another those of the leg and thigh. These centres placed close together, without any sharp line of demarcation between them, form the centre for the right leg. The arms, trunk, head, etc., are provided for in a similar way. The cells are equipped with numerous branching filaments or 'processes,' by one of which they communicate with their particular muscles (*i.e.* in the case of the muscle-controlling or 'motor' cells), by the others with their neighbours, and indirectly with all the other cells in the body. By this interlacing network of communications stimuli which affect primarily one cell may travel on to its neighbours and, if sufficiently powerful or prolonged, may spread to all the cells in the nervous system: a fact of the utmost importance. The irritation, for instance, of one point of the brain's surface may spread suddenly to the rest and cause a general convulsive fit. Again, fatigue of the tiny group of cells which have to do with the minute internal muscles of the eyeballs may in cases of severe eye-strain spread to the whole brain and incapacitate a man from using the full strength of, say, his legs. On the other hand, refreshment of one group may refresh all the others. The cells which have to do with the appreciation of music are stimulated by a band, and the dragging legs of the weary soldier step out with renewed vigour.

The nerve-cells tire sooner than the muscle fibres, so that when a muscle is worked to a standstill, its inability to do further

work is due to the exhaustion of its guiding nerve-cell, not to exhaustion of the muscle itself. These are points of practical importance. A tired muscle can be refreshed only by rest, but tired nerve-cells can be refreshed in several ways, because many other things besides fatigue due to exertion tire them. Monotony, depressing thoughts, and a number of other factors impoverish these sensitive structures.

The muscles we have to do with particularly are those of the heart, the blood-vessels, and of the trunk and limbs, etc.

The heart accommodates its activities to the demands of the body for more or less blood. It responds to work as do all the other muscles, and grows stronger and more vigorous with exercises, provided that they are not too strenuous. It must be remarked that the heart may suffer serious or even permanent damage from exertions which are not felt to be excessive by the rest of the body.

In the walls of the blood-vessels are circular muscle fibres which control the calibre of the vessel. When more blood is sent to a part these muscles relax to allow of its passage contracting again when the stream becomes smaller. If they do not allow the vessel to expand quickly enough, unnecessary strain is thrown on the heart and the blood-pressure rises. A slight increase in blood-pressure acts as a stimulant, but too great a pressure is a serious disadvantage. Exposure to wind is also said to increase the blood-pressure, thus perhaps accounting for the invigorating effects produced by such exposure. The pressure is also raised temporarily by food. With increasing years the vessels become less elastic and slower in their response, so it is especially important for the no-longer-very-young climber to take things quietly after meals. If the demand for more blood is made gradually, the vessels accustom themselves to the necessary extent without causing temporary breathlessness.

The phenomenon known as 'Getting one's second wind' may, it has been suggested, be due to the temporary reluctance of the vessels to dilate, the result being great breathlessness. When they do expand a feeling of relief is experienced.

The 'Voluntary' muscles are attached to the skeleton, and are at first moved instinctively and unconsciously as in young infants. By degrees, with the growth of volition, they are or may be set in motion by the will consciously.

It is difficult to realise the complexity of apparently simple movements. If I wish, for instance, to raise my left knee, my will (how, we do not as yet know) sets in motion the motor

centre for that leg. The muscles which elevate the knee contract, and the knee is raised. If these muscles alone were used the knee would come up with unnecessary violence; therefore the muscles which prevent the raising of the knee are also put into action less vigorously, but sufficiently to control the former. The balance of the body is disturbed by the movement of the leg, therefore the trunk, head, and perhaps arms are moved backwards and towards the opposite side. The other leg at the same time is braced up and held firmly to meet the increased strain on it. On this present occasion consciousness also plays a part, as I am conscious of raising my knee. Successfully to carry out even this simple manoeuvre it is necessary that the *timing* of the successive muscular acts should be perfect. If the trunk is drawn back before the leg comes up, or is allowed to come forward too soon, or if the various groups of muscles involved act irregularly, the knee will not be raised quietly and a loss of balance will result.

Imperfect timing of the muscles concerned in speech has a great deal to do with stammering; inaccurate timing of the muscles of locomotion sometimes leads to curious sudden stumbles and trippings.

Consciousness may or may not be involved in the execution of movements. It is remarkable that any action should be possible without the direct personal supervision of the conscious intellect. It is made possible by the subdivision of the nerve centres into higher and lower. The workings of the higher ones are attended usually by consciousness, those of the lower usually are not. The lower carry on the purely automatic functions (breathing, digestion, etc.) instinctively, but can also be trained to execute almost any actions.

Consciousness and all it implies is a very wonderful thing, and I would not say a disparaging word of anything of which we are so justly proud, but it must be confessed that unconscious movements are much to be preferred to conscious ones. For the first training of the limbs in learning new combinations of movements attention is necessary, but, once learned and sufficiently practised, they can be carried out by the lower centres unconsciously, and more effectually thus:

The higher the centre, or the more highly developed the function of a cell, the sooner it tires. Prolonged consciousness of anything, of movements perhaps especially, leads quickly to fatigue, and fatigue, as we have said, tends to slowness and uncertainty of action. The greater the complexity of the movements the sooner does consciousness of them lead to exhaustion.

Fatigue, again, is induced apart from exertion by depressing emotions such as shock, fright, or grief. A man who has seen a friend injured or perhaps killed, or who has all but precipitated a disaster himself, will exhibit symptoms of profound fatigue. His consciousness is occupied by what has just happened, and if he is called upon to do anything that he cannot do automatically he will most likely be unable to comply for a time at least. He might, however, be able to perform an automatic act, *i.e.* he might be able to manage a difficult bit of balancing if balancing came automatically, but not otherwise.

If the task is further complicated by one's having to do something besides 'passive balancing' (by that I mean standing or walking on a narrow ridge or walking in steps cut by someone else, and so on), if one has to cut steps oneself, or look about for hand-holds, etc., the difficulties in the way of conscious co-ordination grow so great that a breakdown is to be expected. If the balancing and the step-cutting can be done automatically, the principal factors in the production of fatigue and embarrassment under these conditions will have been removed. Now, there is only one way in which movements become automatic, and that is by being performed very frequently. Many men are a source of anxiety to their friends for perhaps half the time they are climbing, because they have not practised balancing till they get to the mountains, and do not pick it up quickly. They are uncertain and not to be depended upon in steps or in difficult places. My contention is that the most complicated acts involving balancing can be practised indoors.

The importance of familiarising oneself with balancing lies in the fact that a breakdown in this particular thing leads to very widespread disturbance of the whole body. A man who loses his balance throws himself into extraordinary attitudes. His face is contorted, his mouth opens, the eyes stare, he flings his arms about, twists his trunk and strains his legs in the desperate attempt to recover himself. Moreover, he experiences a great loss of confidence. Anything which can avert such a trying state of affairs is worth practising.

INDOOR EXERCISES :—(1) GENERAL ; (2) SPECIAL.

¹ One of the best indoor exercises is the 'Running Exercise.' It is really marking time at the double. Raise the knees alternately to the level of the hips at a walking pace at first, and then at a run. The toes should be pointed downwards as the knees are raised. Do this twenty or thirty times with

each leg to begin with, gradually increasing the number to 400 or 500. I think that 500 times with each leg is about or a little more than equal to a half-mile run.

The 'Full Knees Bend' with arms raised is also a good one. With the heels together and the toes turned out, rise on the toes and bend the knees till the thighs touch the calves, raising the arms to the horizontal or above the head. The body should be kept erect the while. Jumping in the air while in this position improves the exercise. This should be done ten to thirty times without the jump, half or less than half that number with the jump.

Skipping is also a splendid exercise, but terribly destructive to ornaments and electric lights. It should be done about the same number of times as the 'Running Exercise.'

The Highland Fling is also a first-class exercise. A number of other general exercises will be found in any manual.

The following are some exercises particularly useful for climbers :—

FOR HAND-HOLDS.

Begin with 'Grips,' such as Sandow's grip dumb-bells, Terry's Grip, or Clements'. The latter is perhaps the most comfortable to use. Twenty to forty grips would be an average number of times to work up to.

Next in difficulty are 'Pull Ups' on a bar or trapeze. The 'over-grip' should be taken, *i.e.* with the backs of the hands towards the face. Five to twenty times is enough. Harder still is the same exercise performed on a door five to ten times. N.B.—Fix a wedge under the door to keep it from swinging and also to spare the hinges.

FOR CRACKS AND NARROW CHIMNEYS.

With the body at full length drop on to the hands and toes. Without moving the hands bring the knees together, up to the chest and back again ten to twenty times.

On the hands and toes as before, let the body sink between the arms till the nose nearly touches the floor and rise again.

Lying on the back raise the legs (alternately at first) till they are vertical. After a time both legs should be raised together.

Each of these last may be done ten to thirty times. So should the 'Sitting-up Exercise.' Lying on the back, come up slowly to a sitting posture, and lie down again slowly.

Rise on the trapeze to the full length of the arms, sink slowly till the elbows, are level with the shoulders, and rise again five to twenty times.

I have spoken of a trapeze. It is quite easy to fix up a light trapeze in any room at the top of the house. If the weight is distributed over four joists, one is quite safe. The trapeze and fixing cost me one pound, and I had the apparatus in use for several years.

Plenty of useful exercises are to be found in any manual of Swedish Exercises ; the ones I have alluded to are only samples. All-round development of the body should be aimed at, paying particular attention to the above.

BALANCING.

In practising exercises, *e.g.* with clubs or dumb-bells, in the usual way one stands with the toes turned out and with the feet apart, so that one's base is—sideways—some sixteen to twenty inches wide. Now this is an attitude seldom taken up on a mountain. The usual position in which one finds oneself is with the feet one more or less in front of the other. In traversing slopes the feet are often strictly behind one another. The base of support here is the width of the feet and often less. One should therefore do as many of one's exercises as possible in this position. Choose a line on the floor, place the feet on it one behind the other, and standing thus do the Swedish dumb-bell or other exercises in the ordinary way. Practise with the right and left feet in front alternately and resist the temptation to turn the toes out. Indian clubs test one's balance more perhaps than anything else. The use of them in this position is capital practice.

Still more useful will be found a little apparatus which I have devised to represent an ice slope. It consists of two boards three feet long by nine or ten inches wide, and about one inch thick, hinged together along one side and laid on the ground like an inverted V. To prevent the boards from collapsing adjustable straps are fixed to the ends. On one side are screwed four blocks of wood, two of them some seven inches long and three wide ; the other two about four inches long by two wide. The former represent comfortable steps ; the latter, steps quickly cut and more difficult to balance on.

Fix up the apparatus, stand on two of the blocks, and with an axe pretend to cut steps at, above, and below the level of the feet. Do this with the right and left feet alternately in front.

Standing on the steps do the ordinary Swedish club and other exercises.

The other side of the apparatus is covered with a sheet of rubber and represents a hillside. Ordinary exercises practised on this slope strengthen the ankles wonderfully.

MORAINÉ EXERCISE.

This exercise I have devised, too, as a means of practising the loss and recovery of balance.

Procure about fourteen feet of 4 by 2 inch wood. Saw into pieces as follows:—Four pieces twelve inches long; ten, eight inches long, and ten of four inches. Of the 12-inch pieces leave two untouched; all the others divide diagonally. Stand the two undivided ones on their ends the length of an ice axe apart, and lay an axe on them. This gives something to jump over. Scatter the rest of the blocks on either side of the axe in different positions. Standing on the blocks on one side, jump over the axe on to those on the other. The longer blocks are fairly steady, the shorter ones 'tip up' when one jumps on to them. The rule should be that when the balance is lost one should not touch the floor at all but should recover one's balance by stepping on to other blocks. Having recovered it, jump back again and repeat *ad lib*. The blocks represent to some extent the loose stones of a moraine. In conclusion, may I warn you against over-development of limited groups of muscles? Such muscles are slow in action, prone to stiffness, and tend to undergo fatty degeneration.

THE BRENVÁ FACE OF MONT BLANC.

By J. P. FARRAR.

It may be interesting to record here all the ascents by the magnificent Brenva route, one of the greatest ice-climbs in the Alps, so far as I can trace them.

1. July 15, 1865.—F. Walker, Senr. (then aged 59), H. Walker, A. W. Moore, George Mathews. Guides—Melchior and Jakob Anderegg. Cf. 'A.J.' ii. 369 *seq.*, and 'The Alps in 1864,' 378 *seq.* (Kennedy's edition.) The account of the climb is by Mr. Moore. There are few Alpine narratives to compare to this. For accuracy of observation, topographical clearness, and general interest it is

almost unrivalled. The party left their bivouac at 2.45 A.M., and at 7.20 A.M. reached the top of the buttress [at about 8 on illustration].* They got to the end of the famous ice arête which they crossed *à cheval* by 9.40, and then followed $2\frac{1}{2}$ hrs. of step-cutting. They reached the head of the Corridor at 1.20 P.M. Thus for the ascent of the actual wall from the foot of the buttress [just below 3] they took nearly 8 hrs.

2. July 15, 1870.—W. A. B. Coolidge. Guides—Christian and Ulrich Almer and Chr. Gertsch. Cf. 'A.J.' v. 135. Durier 330. Mr. Coolidge's party left a bivouac (1 hour below Moore's) at 2.45 A.M., and reached the summit of Mont Blanc at 5.35 P.M. No account of this great expedition apparently exists beyond the short note in 'A.J.' v., but Kurz, 'Guide du Mont Blanc,' states that the party reached the main N.E. arête of Mont Blanc at the level of the Petits Mulets, although the Petits Rochers Rouges, which point is the more easily attained, may be meant. Mr. Coolidge's note in 'A.J.' v. states that 4 hrs. were required to get through the Brenva Glacier. The party was led by Almer, then in his very prime, so that the time, nearly 15 hrs. seems to indicate that the step-cutting on other parts of the route must in addition have been very severe.

3. July 14, 1881.—G. Gruber. Guides—Emile Rey and Joh v. Bergen. Herr Gruber, one of the great mountaineers of his day, hardly published anything, nor could his family after his death find any records of his numerous and brilliant expeditions. According to Kurz (French edit. 1892), p. 128, Herr Gruber ascended by a rocky spur and an arête of snow on the right (ascending) of the great couloir descending from the Col de la Brenva, and so reached the Col de la Brenva immediately at the S. foot of Mont Maudit. This was a distinct route from the others.

4. August 16, 1892.—P. Güssfeldt. Guides—Emile Rey and two others (unnamed). Cf. 'Der Mont Blanc,' 234 *seq.* Dr. Güssfeldt's account is very vivid and interesting. The unnamed guides were Laurent Croux and Michel Savoie (letter from Croux to me). They left their bivouac soon after 2 A.M., and took 3 hrs. to the foot of the buttress [below 3].* They then ascended the great couloir, taking 1 hr. 'to get through the zone in which they were threatened with annihilation from falling ice.' They reached the crest of the contrefort or buttress at about 3950 m., but just before doing this, in crossing a bergschrund the steps broke under one of the men, dragging down Dr. Güssfeldt and causing the loss of his axe. The two others fortunately stood firm. On reaching the crest of the buttress they witnessed a large avalanche sweep the route up which they had come. Then followed 2 hrs. over snow and ice-slopes, where the loss of the axe

* See p. 205.

was much felt. At 10 some rocks about 4240 m. were reached and were followed for an hour, but they were so difficult that only about 80 m. were ascended in the hour. The rocks were then left, and now came a desperate passage through the séracs, each step taking 60 strokes. This lasted till the main arête was reached, at about 1, at about 4510 m., close to the top of the Rochers Rouges. Thus the ascent from the foot of the spur on the Brenva Glacier to the main arête took 8 hrs.

5. July 26, 1893.—J. P. Farrar. Guides—Chr. Klucker, D. Maquignaz. This ascent took from the bivouac on the rock island in the Brenva Glacier 11 hrs. 40 mins., or from the foot of the buttress 9 hrs. 40 mins. (including 1 hr. 55 mins. halts) to the main N.E. arête of Mont Blanc (10 mins. from the Rochers Rouges hut). It involved the most continuously heavy step-cutting in hard steep ice I have ever seen. The two guides were then at the zenith of their great powers. For long stretches the ice was so hard as to require thirty-five to forty axe strokes per step, and the slope was such that, forced to keep close together to prevent being struck by the chunks of ice from the step-cutting, I had to be very careful to avoid being kicked in the face as the leader moved his foot to advance. Short stretches of ice of the colour of plaster of Paris were encountered, so tough and unbrittle that the axe-head simply stuck in them without bringing anything away. I have never seen such ice elsewhere. The famous ice arête was exactly as described by Mr. Moore. From above it we traversed steep ice-slopes towards the summit with a great line of square-cut ice-cliffs above us on our left. We finally got through a rift in the ice-cliffs out on to the easy slopes below the Petits Rochers Rouges. Our route at the top was more to the left, in the direction of the summit, than is shown in the illustration in the present number. We wore no crampons in those days, but even with them the ice was such as would have certainly demanded much labour. We took from the Rochers Rouges hut to the summit 52 mins., and 18 mins. for the return, and slept there (very bad weather came on). This face is pretty certain to mean very hard work indeed for the leaders, and the others must be perfectly safe in steep ice-steps and should be able to relieve the leader of any load. No doubt the conditions may vary somewhat, but the expedition will, for the men who do the work, be always an arduous one. I understand on the authority of Laurent Croux that the séracs flanking the slopes above the famous ice arête are in some years so threatening as to preclude any ascent.

The best way is no doubt to start very early from the Col du Géant Inn and cross the Col de la Tour ronde to the foot of the rocky spur beyond the foot of Mont Maudit, where the ascent commences. In this way the séracs of the Brenva Glacier (cf. 'The Alps in 1864,' p. 386, Kennedy's

edition, and 'A.J.' xvii. p. 539, for an account of these) can be avoided.

6. August 5, 1894.—A. F. Mummery, J. Norman Collie, G. Hastings. No guides. Cf. 'A.J.' xvii. 537 *seq.* This was the greatest of this famous party's ice-climbs in the Alps. They left their bivouac at 3.30 A.M., and were on the top of the buttress at 8. They got to the end of the ice arête at 9.50, and then followed continuous step-cutting in hard ice from 10.30 to 2.15 P.M. They attempted to reach the easy upper slopes up an ice-cliff about 60° to 75°. Up this Mummery proceeded to cut steps, but at 4 it was decided to turn back. The ice-ridge was reached in 1 hr. 25 mins., and the party finally bivouacked at the top of the buttress. Leaving their bivouac at 6 A.M. next morning they followed their steps of the previous day for a time, but instead of turning off to the left they made for a low ridge of rocks higher up. Finally after some extremely difficult ice-work they got through the séracs, and at 3.18 P.M. reached the summit of Mont Blanc. No finer exhibition of determination and skill has ever been given by any amateur party.

7. August 10–11, 1900.—Julius Kugy. Guides—Daniel and Aimé Maquignaz. Cf. D. Maquignaz's Guide Book. A short note of this expedition is to be found in 'R.M.' vol. xx. p. 59–60. My friend Dr. Kugy has kindly given me the following particulars :

August 9. Went up to the highest bivouac.

August 10. Rocks good, but otherwise everywhere hard ice with no snow covering. Tremendous step-cutting work. Weather at first good, then bad; and towards evening, as we reached the main arête, a snowstorm. Reached with difficulty the broken-down hut on the Rochers Rouges. It was full of ice. Passed the night in a corner between the ice and the floor. Had to 'powerfully handle' Daniel the whole night as he would insist on going to sleep. My right foot got frostbitten, but it got eventually better.

August 11. Weather fine; very cold. Reached summit 7 A.M. Descended to Chamonix and Montanvert.

August 12. Via Col du Géant to Courmayeur.

Dr. Kugy concludes :

'We had very bad conditions. It is certainly my greatest ice-climb. A marvellously great and beautiful memory. Whoever finds snow on this face can have no conception of how we found it.'

I cannot help being somewhat concerned at the 'powerful handling' of my unforgotten friend Daniel at the hands of his Herculean employer.

Dr. Kugy has made most of the great ascents in the Alps, and is the only man who has done the Brenva face of Mont Blanc and the Macugnaga faces of the Dufourspitze and of

the Nordend, and no man living is a better judge of a great expedition.

8. July 9, 1901.—Signor Ettore Allegra. Guides—Laurent Croux, Alexis Brocherel. Cf. 'R.M.' 1901, 248. This party took 18 hrs. for the ascent.

9. July 29, 1904.—C. Wilson, J. H. Wicks, E. H. F. Bradby. No guides. See 'A.J.' xxv. 697, footnote. No account of this magnificent expedition has ever been published, but since writing this note Dr. Wilson has kindly let me see his Notes. The party, starting from Courmayeur the previous evening, followed the usual route to the uppermost outcrop of rocks and then proceeded to cut across the terrible ice-slope to the Col de la Brenva. They encountered hard viscous ice such as I have mentioned above, and it was only after the most severe exertions and by the exhibition of superb icemanship that they finally gained the Col at about 8.30 P.M. I was on the Mont Maudit later in the same year, and saw the great wide trough across the hard frozen surface of which they had, at the end of a 20 hours' ascent, hewn their way. The expedition deserves to rank with the best things ever done in the Alps.

10. July 10, 1906.—V. E. Ryan. Guides—Josef and Franz Lochmatter. Mr. Ryan was the first to start from the Géant Inn, and only took 9¼ hrs. from there to the summit, or about 6 hrs. for the actual climb. His party was notoriously extremely fast, and in addition this E. face is nearly certain to demand less cutting early in the season. It is much to be regretted that detailed accounts of Mr. Ryan's many brilliant expeditions have never been published.

11. July 11, 1911.—R. W. Lloyd. Guides—Josef Pollinger, Adolphe Rey. See under Various Expeditions.

12. July 28, 1911.—Allston Burr. Guides—Adolphe Rey, Joseph Taugwalder.

Mr. Burr writes to me as follows :

'I take pleasure in answering your inquiry about my Brenva route climb last summer. With Adolphe Rey, of Courmayeur, as leader, and Joseph Taugwalder, of Zermatt, on July 28 I left a camp on the rocks to the east of the Brenva glacier at 12.07 A.M., and reached the summit of Mont Blanc at 12.12 noon. We left at 12.50, and arrived at the Cabane du Dôme at 5 P.M. We did not go up by the great buttress and over the ice knife-edge, but up the snow-slopes to the north of that. Above the last rocks is a place that Mr. Moore, in his "Alps in 1864," describes as follows : "Before us was a narrow shelf of névé, stretching from the base of a perpendicular wall of ice, fifty feet high or more, to the edge of a huge crevasse."

'Rey told me that about three weeks earlier, with an Englishman, he had gone into and across this crevasse, but said it was no longer

possible, so he cut himself up the ice-wall. I am sorry I did not time this, as it seemed long.

'The whole climb was extremely interesting.'

13. August 5, 1911.—J. C. H. Runge, W. R. Caesar. Guides—Abraham II. and Gottfried Müller. See under Various Expeditions.

14. (?) August, 1911.—John W. S. Brady. Guides—Christian Kaufmann, Alexis Croux.

No particulars have been received of the last expedition.

It is a most peculiar fact that up to last year every party encountered the greatest difficulties with ice. Last year my friends Lloyd and Runge tell me they had no continuous step-cutting in ice until quite at the end, getting through the line of ice-cliffs. In a dry season like the last, I should have expected exactly the reverse, and that the whole face would be one sheet of ice. It is tolerably certain that, generally, hard ice will be found, and he who leads or even shares in the leading up that mighty face needs no further testimony to his abilities.

THE ALPINE CLUB LIBRARY.

THE following have been added to the Library since January :

Club Publications.

- Akad. Alpen-Verein Berlin.** VIII. Jahresbericht 1911. 1912
 $9\frac{1}{2} \times 6\frac{1}{2}$: pp. 22.
 Notes of ascents in Arctic Norway, by Dr. Künne and Herr Endell.
- Akadem. Alpiner Verein Innsbruck.** Bericht 1905-1910. 1911
 9×6 : pp. 85.
- Akadem. Alpenverein München.** XIX. Jahresbericht 1910-11. 1912
 $8\frac{3}{4} \times 5\frac{3}{4}$: pp. 86.
 Among the Neue Touren are ;—
W. T. Dörpinghaus, Various first ascents in S. Morocco : *L. Distel u. andere*, Ullu-kara-Tau : *H. Pfann u. andere*, Aig. Trélatête O.-Gipfel ü. d. N.-Wand ; *H. Pfann*, Mont Blanc v. Col Emile Rey, I. führerl. Erst. ; Pta Margherita, I. führerl. Erst. ; *J. Nieberl*, Rofan ü. d. N.-Wand : *H. Pfann*, Lackenkarsp. ü. d. N.-Wand : *E. Wagner*, Vogelkarsp. ü. d. N.-Grat.
- Alpen-Club Amicitia**, Zürich, 21. November 1901. Statuten. Revidiert. 1907
 $8\frac{3}{4} \times 5\frac{1}{2}$: pp. 16.
 ——— Touren-Programm pro 1912.
 $6\frac{1}{2} \times 4\frac{1}{2}$: pp. 4.
- C.A.F. La Montagne.** Maurice Pailon Rédacteur en Chef. Vol. vii. 1911
 9×6 : pp. xxxvi, 732 : ill.
 Among other articles this volume contains ;—
H. Beraldi, Le Capitaine Durand, 1787-1835, Alpes et Pyrénées.
M. Goybet, De la Grave à Vallouise par la Brèche de la Meije et le Col d'Ecrins par les chasseurs alpins 1910.

- R. Perret, *Les Crêtes du Fer-à-Cheval*.
 E. Santi, *Ascensions nouvelles dans le Dauphiné*; Gr. Lance d'Allemont, Aig. d'Olan, Pic Lamartine, Les Bans.
 R. Touchon, *Le groupe de la Grande Manche*.
 E. Gaillard, *Les Aigs. de l'Argentière*.
 A. Lejoëne, *Alpinisme en Corse*.
 H. Mettrier, *Albanis Beaumont: son 'Voyage pittoresque aux Alpes Pennines.'*

Interesting notes on this anonymous work, a copy of the rare English version of which was recently acquired by the Club library.

A. Ferrari, *Les Alpes Dolomitiques*.

- *Lozere et des Causses: see Les Causses.* 1892
 — *Section vosgienne. Bulletin, 30me année.* Nancy, 1911
 9 × 5½: pp. 102.

This contains several articles on the Eastern Alps in general.

- C.A.I. Rivista.** Redattore Walther Laeng. Vol. xxx. 1911
 10 × 6½: ill.

Among the articles are the following;—

- A. Andreoletti, *Il Cimone d. Pala per la parete sud-ovest*.
 M. Frizzoni, *La Bassanese per la cresta sud-ovest*.
 G. B. Bozzino, *Grande Rousse, Bassac: prime ascensioni*.
 F. Santi, *Colle e Cima del Ciarforon, Gran Paradiso*.
 M. E. Tabusso, *Attraverso le Ande peruviane*.
 W. Laeng, *Carè Alto e Monte Folletto, Adamello senza guide*.
 G. Carugati, *La parete occidentale del Sasso Cavallo, prima ascensione, 25 sett. 1910*.
 A. Andreoletti, *M. Tamer o Cime di S. Sebastiano*.
 — *La catena d. Croda Grande*.
 A. Calegari, *Ascensione invernale al M. Leone*.
 R. Balabio, *Torrone occidentale, parete ovest, senza guide*.
 P. Revelli, *Le fronti di 7 ghiacciai d. versante ital. d. Mte Bianco nel 1910*.

G. Belvigliere, *Grandes Rousses*.

M. Piacenza, *La prima ascensione del Cervino per la cresta di Furggen*.

Among new ascents described, in addition to the above, are;—

- R. Balabio, M. Zocca: D. Baldinelli, Pizzo Fizzo: L. Tarra, Torriane Carducci: F. Canzini, Punta Barale per S.E.: L. Borelli, Aig. d'Olan: A. Andreoletti, Torre di Campido, Guglia Giannina: R. Balabio, Pte Sant' Anna cresta S.: L. E. Rusca, P. d. Margna: L. Borelli, Dal Refugio della Gura, V. di Lanzo: G. Bozzino, Alto di Sella, N.: E. Fasana, Pta Devero, Kl. Schienhorn: G. Scotti, Sasso Manduino, S.E.: R. Rossi, Parete N. d. Pizzo di Coca, senza guide: G. Dumontel, Gr. Cordonnier, S.O.: G. Bramati, Corno Grande, parete meridionale.

- Cambridge Alpine Club. Rules.** November 1911
 7 × 4½: pp. 2.

'The Club's object shall be to promote good fellowship among lovers of the mountains who are members of the University of Cambridge . . . Candidates who are resident Members shall show that they possess a genuine love of the mountains . . . Non-resident Members shall show that they possess a genuine love of the mountains and also that they have some experience in climbing.'

- Centre Excursionista de Catalunya.** Butlleti. Any xxi, num. 192-203. Barcelona, 1911
 9 × 6½: pp. 365: ill.

Among the articles are the following;—

V. de L., *La setmana de sports d'hivern, 1911*.

A. Marques, *Una ascensio al Popocatepetl*.

J. Soler y Santalo: *Los Mallos de Riglos, Sotaspireneous d'Osca*.

Canadian Alpine Journal. Vol. 3.

1911

9 × 6 : pp. 199, plates.

This contains ;—

- J. E. C. Eaton, Expedition to the Freshfield Group.
 C. D. Ellis, First ascent of Mt Hammond.
 T. G. Longstaff, Across the Purcell Range.
 — Mountain sickness and its probable causes.
 J. W. A. Hickson, Two first ascents, Mts Douglas and Quadra.
 H. C. Parkè and B. Browne, Expedition to Mt McKinley.
 W. D. Holway, Mt Sugarloaf.
 A. O. Wheeler, Motion of the Yoho Glacier.
 Mary Vaux, Observations of Glaciers in 1910.

Club Montagnard Dauphinois. Société d'alpinisme et de sports d'hiver :
Grenoble 27 août 1905. Statuts et règlements. 1909

5½ × 4¼ : pp. 8.

Club Montanyenc, Barcelona : see Sota Terra, 1909.**D.u.Oe.A.-V. Zeitschrift, Bd. xlii.** Redigiert von Heinrich Hess.

10¼ × 7½ : pp. viii, 328 : maps, plates.

München, 1911

The articles are ;—

M. Grosse, Ueber Alpenluftfahrten.

A description of crossings of the Alps, with photographs from balloons, and a list of crossings from 1890 to 1910, some 80 in all.

G. v. Saar, Typische Wintersport-Verletzungen.

A. Dreyer, Ludwig Steub der Alpenwanderer und Alpenschilderer.

A. de Quervain, Fjord-, Berg- und Schneeschuhfahrten in Grönland.

W. Fischer, G. Kuhfahl u. O. Schuster, Aus dem zentralen Kaukasus.
 First ascent of Suatisi-Choch : Kaltber, Adai-Choch group, etc.

G. Künne u. H. Schmidt, Hochturen in d. Zentralpyrenäen 1908–1910.
 Balaitous, Maladetta, Pic Maudit, Crête du Milieu, Les Crabioules, Cuje de las Palas, Intermédiaire, Caperan de Ger, Pic de Seaques, I. Ersteig., Pic Ténébre, I. Ersteig., Pic Rouge de Pailla, Pic de Tuquerouye, I. Ersteig. v. S., Col Maudit, I. Ueberschreitung.

E. Hasenclever—Besteig. d. Bietschhorns, zur Erinnerung an Alexander Burgener.

K. Steininger, Aus d. Lechtaler Bergen. Ein Begleitwort z. Karte, Rotsp., Griesmuttekopf, Friesp., Saxersp., Ruitel, Karlesp., Furgler.

J. Baumgärtner, Schneeschuhfahrten in d. Niedere Tauern.

A. Jäckh, Der zentrale Teil d. Rieserfernergruppe. Magerstein, Casseler Nock, Wildgall, Hochgall, Patscher Schneid, Gr. Lenkstein, Mullesp., Fleischbachsp., Dreiecksp., Stuttenock, Rieser-nock.

A. v. Radio-Radiis, Die Lienzer Dolomiten. Spitzkofel, Gr. u. Kl. Gamswiesensp., Roter Turm, Laserwand, Laserköpfe, I. Durchkletterung d. N.-Wand, Westl. Wildensenders I. Ueberschreitung, Keilturm, I. Ersteig., Schwärza, Schneeklammkopf I. Ueberschreitung.

L. Patéra, Die Cavallogruppe.

— **Kalender** f. d. Jahr 1912. 25. Jahrgang. Mit Notizbuch, Verzeichniss end. Schutzhütten, Führer u. Rettungsstellen u. einer Beilage : ' Rundgang d. d. alpine Museum.' München, Lindauer, 1912. M. 2
6 × 4.

— **Ein Rundgang durch das alpine Museum** von Karl Müller. Gratisbeilage z. 25. Jahrgang d. Kalender. München, Lindauer, 1912
6 × 4 : pp. 25 : plates.

— **Asch. Statuten.** 1907
6 × 4 : pp. 8.

— **34. Jahres-Bericht, 1911.** 1912
8½ × 5½ : pp. 18 : frontispiece.

- D.u.Oe.A.-V. Auerbach.** Satzungen. 1906
 8 × 5½: pp. 10.
 — Bericht für 1911.
 13 × 8: pp. 5, typed.
- **Bayerland.** xvi. Jahresbericht. 1912
 8½ × 5½: pp. 147.
 Among the first ascents described are the following:—
M. Winkler, Schneefernerkopf W.-Wand: *F. Keyfel u. H. Pfann*;
 Lackenkarsp. N.-Wand: *J. Nieberl*, Rofan, N.-Wand: *P. Preuss*;
 Gross-Litzner, N.-Wand: *A. Deye*, Cime Brenta, S.-Wand:
K. Ibscher, S. Pisciadu-Turm: *I. Glaser u. a.*, Delagoturms S.W.
 Kante: *F. Jori u. a.*, Winklerturm N.-Wand: *A. Bonaccossa*;
 P. Scalino N.W.-Wand: *P. Cassandra v. N.*: *H. Aikelin*, Korsika:
G. Künne u. R. Pötzsch, Arktisches Norwegen.
- **Berlin.** Jahresbericht für 1911. 1912
 8½ × 5½: pp. 192: frontispiece.
 Contains *inter alia*:—
 W. Wildt, Bergfahrten im Rhätikon.
 Dr. Schiess, 1910 in d. Montblanc-Gruppe.
 Dr. Schmalbruch, Reise in d. Kaukasus.
 R. Schietzold, Ueberschreitung aller 6 Vajolettürme an einem Tage.
 L. Treptow, Berliner Hütten-Festtage.
 K. Endell, Hochtouren im Lande d. Mitternachtssonne.
- **Bozen.** Jahresbericht f. d. 42. Vereinsjahr, 1911. 1912
 8 × 5½: pp. 54.
- **Cassel.** Festschrift zur Feier ihres 25jährigen Bestehens. 1887 bis 1911.
 10½ × 7½: pp. 71: plates. München, Bruckmann, 1911
 Contains:—
 A. Jäckh, Der zentrale Teil der Rieserfernergruppe.
- **Freiberg.** Bericht über die Jahre 1904 bis 1909. 1910
 8½ × 5½: pp. 51.
- **Garmisch-Partenkirchen.** Satzungen. 1901
 8½ × 5½: pp. 8.
 — Jahresberichte, 1909–11. 1910–12
 8½ × 5½.
- **Hannover.** 27. Jahresbericht. 1911
 8½ × 5½: pp. 48.
- **Hildburghausen.** Satzungen. 1899
 6½ × 4: pp. 8.
- **Heidelberg.** Jahres-Bericht für 1911. 1912
 8½ × 5½: pp. 21.
- **Hildesheim.** Satzungen. 1909
 7½ × 5: pp. 7.
 — Jahres-Bericht, 1910. 1911
 8½ × 5½: pp. 18.
- **Hohenzollern.** Mitglieder-Verzeichnis (u. Bericht). 1912
 8½ × 5½: pp. 15.
- **Kottbus.** Berichte 1906, 1909, 1910. 1907–11
 8½ × 5½.
- **Landau.** 13. Rechnungs-Abschluss und Mitgliederverzeichnis. 1911
 11½ × 9: pp. 4. 1912
- 14. Abschluss. 1912
- **Memmingen.** Berichte 1907–1911. 1908–1912
 8½ × 5½.
- **Mölltal.** Jahresbericht, 1911. 1912
 9 × 6: pp. 4.
- **Oberland, München.** XIII. Jahresbericht für d. Jahr 1911. 1912
 8½ × 5½: pp. 38.
- **Pfalzgau.** Satzungen. 1911
 9 × 5½: pp. 5.

- D.u.Oe.A.-V. Pfalzgau.** Berichte 1908 u. 1909.
 8½ × 5½.
 — **Pforzheim**: see Ski- und Winterführer d. d. Münstertaler Alpen, 1912.
 — **Prag.** Jahres-Bericht, 1911. 1912
 8½ × 5½: pp. 32.
 — **Reichenau.** Bericht ü. d. 26. Vereinsjahr 1911. 1912
 9 × 5½: pp. 26.
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 — — Katalog der Bibliothek. 1911
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 — **Saarbrücken.** Bericht ü. d. IX. Vereinsjahr (1911) 1912
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 Contains notes on new expeditions in the Grösslitzner district.
 — — Bücherverzeichnis. [1911]
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 — **Sonneberg.** Bericht 1909-10. 1911
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 — **Steyr.** Bericht über die Jahre 1899-1909. 1909
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 — **Verein z. Schutze u. z. Pflege d. Alpenpflanzen.** 11. Bericht.
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 Contains reports on the alpine gardens at the Lindauerhütte, Neureuther, Raxalpe, Schachengarten, etc.
 — **Villach.** Jahresbericht. XLII. Vereinsjahr 1911. 1912
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 — **Vorarlberg.** Jahresberichte 36, 38-42. 1905. 1907-1911
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 — — Satzungen. 1910
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 — **Warnsdorf.** Festschrift z. Feier d. 25jährigen Bestandes. 1887-1912.
 10½ × 7: pp. 53: map, plates. 1912
 — — Bericht, 1911. 1912
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 Among the articles are:—
 G. Seatree, Early Lakeland mountaineering.
 C. B. Phillip, Early recollections.
 H. B. Lyon, New scrambles in Mosedale.
 T. R. Burnett, Glaramara caves.
 T. C. Ormiston-Chant, Climbs round Coniston.
 L. J. Oppenheimer, Climbing in the Buttermere valley.
 A. P. Abraham, The Coolin from end to end.
 H. S. Tucker, First traverse of the Rateau.
 — Annual Report and Accounts 1910-11. 1911
 10 × 8: pp. 4.
 — List of Hotels, Inns, Farm-houses, etc. n.d.
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Ladies' Scottish Climbing Club. Fourth annual record, January 1911 to January 1912.
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Oe.T. Klub, Wr. Neustadt. 33. Jahres-Bericht 1911. 1911
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 — — Bücherei-Katalog. Nachtrag 1911.
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- Oe.T. Klub, Wr. Neustadt.** Rundschau d. Wr.-Neustädter Warte im Rosaliengebirge Gezeichnet v. A. Jirasek. Ortsbestimmungen u. Durchsicht v. W. Eichert. 1894
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- Touren-Verzeichnis . . . 2. Aufl. 1907
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- The Rucksack Club, Manchester.** Rules, Members, etc. 1912
 $4\frac{1}{2} \times 2\frac{1}{2}$: pp. 48.
- **Journal.** Edited by Ernest Brozap. Issued yearly. Vol. 2, no. 2.
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- S.A.C. Taschen-Kalender** pro 1912. IX. Jahrgang. Redaktion: Dr. C. Täuber. Zürich, Tschopp, 1912
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 Clubhütten, Bergführer, Führertaxen, Statuten d. S.A.C., u.s.w.
- **Schw. Alp. Museum Bern.** Zentralstelle d. S.A.C. für alpine Projektionsbilder. Katalog 1908, 1909, 1911.
 $8 \times 5\frac{1}{2}$: pp. 40, 41, 55.
- **Basel.** Jahresbericht pro 1911. 49. Vereinsjahr. Beilage: Einige Bemerkungen über Gefahren und Technik des Bergsteigens von Dr. Andr. Fischer.
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- **Chaux-de-Fonds.** Bulletin annuel No. 20.
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 Contains;—
 Rapport: Courses en 1911: Course au Catogne, au Toedi, à la Cime de l'Est: Orta, Le glacier d'Argentière: Courses individuelles: Bibliothèque.
- **Weksenstein.** Festschrift z. 25-jährigen Bestehen der Sektion 1886–1911.
 $9\frac{1}{2} \times 6\frac{1}{2}$: pp. 55: plates. Solothurn, Gassmann, 1911
- Slebenbürg. Karpathenverein.** Jahrbuch, xxxi. Jahrgang 1911.
 $9\frac{1}{2} \times 6$: pp. 136: ill. Hermannstadt, 1911
- Ski. Akad. Skiklub Graz.** Satzungen. n.d.
 Folio, pp. 3: typewritten.
- **Akad. Ski-Club München.** X. Jahresbericht 1910–1911. 1911
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- **Dresdner Ski-Club.** Jahres-Bericht 1910–11. 1912
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- **Föreningen för Skidlöpningens främjande i Sverige.** På Skidor. Årsskrift 1911–12. Stockholm, 1912
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 This contains an index to the year-books from the commencement in 1894–5.
- **Foreningen til ski-draettens fremme.** Aarbog. 1910, 1911
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- **Frederiksberg Skøjteleberforening.** Love. 1901
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- **Gruppo romano skiatori presso la Sez. di Roma del C.A.I.** Statuto. 1910
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- **Mittleuropäischer Ski-Verband.** Ski-Chronik 1910–11. III. Jahrgang.
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 This contains, *inter alia*;—
 Rigele, Skifahrten in d. Ortlergruppe.
 Pflege d. Skilaufes in d. Schulen.
 Gabinet, Skisport in Frankreich.
 Bilgeri, Verwendung d. Skier im Kriegsfall.
 C. Kutscha, Hochschwab.
 H. Hook, Ski Literatur.
 Verzeichnis d. Ski-Vereine.
- **National Ski Association of America.** The Skisport. 7th Ann. Report 1910–11. Ashland, Wis. 1910
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- Ski Norges Skiforbund.** Aarsberetning for 1911. Kristiania, Grøndahl, 1912
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- **Oesterr. Ski-Verband.** Wettlauf-Ordnung. 1910
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- Jahresbericht, XIX. Jahr. 1910-11. Wien, 1911
8½ × 5½: pp. 36.
- Skitouren-führer für die österreichischen Alpenländer. Zum Gebrauche d. Wiener Skiläufer. Wien (1911)
6½ × 4: pp. 57.
- **Ski-Club Gotthard.** Skifahrten am Gotthard mit Ausgangspunkt Andermatt. Andermatt (Huber, Altdorf) 1911
4½ × 7¼: pp. 20, ill.
- Ski-ing round about St. Gotthard starting from Andermatt.
6 × 4½: pp. 18. Andermatt (Huber, Altdorf) 1909
- **Ski-Club Milano:** see Bertani, F., *Vademecum d. skiatore*, 1907.
- **Skien-Telemarkens Turistforening.** Aarskrift for 1910.
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- **Soc. Escursionista milanesi.** Sezione skiatori. 1911-12
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- **Unione dei Ski Clubs Italiani.** Statuto. n.d.
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- Soc. alpina delle Giulie.** Alpi giulie. Rassegna bimestrale. Anno xvi, 1911.
10½ × 7: pp. vii, 152. Trieste, 1912
- Soc. d. Alpinisti tridentini.** Bollettino, rivista bimestrale. Anno viii. 1911
9 × 6: pp. 140: ill.
- Soc. Excursionnistes marseillais.** Bulletin annuel. 14me année—1910.
8½ × 5½: pp. 210. Marseille, 1911
- Turner-Bergsteiger Graz.** Bericht über die Jahre 1901-1910. 1911
9 × 5½: pp. 57.

New Books and New Editions.

- Abraham, G. D.** My most thrilling British climbs. In Fry's Mag. London, vol. 3, no. 1. April 1912
9¾ × 6½: pp. 2-13: ill.
- Album** ricordo della patriottica ascensione alpina popolare del 4-5 giugno 1911 organizzata dalla sezione di Milano del C.A.I. Passo di Zocca, Cima di Castello e Ghiacciaio dell' Albigna. Milano, Caimi, Novembre 1911
9¾ × 13½: pp. 38: plates.
- American Geographical Society.** Bulletin, vol. 43. 1911
9¾ × 6: pp. xvii, 1082: maps, ill.
Contains of interest here, the following:—
U. S. Grant, Glaciers of Prince William Sound.
H. W. Hobbs, Pleistocene glaciation of N. America and existing glaciers.
D. W. Johnson, Hanging valleys of the Yosemite.
- Baratta, Mario.** Sopra alcuni schizzi di Leonardo da Vinci riguardanti il territorio bresciano e bergamasco. In Riv. geogr. ital. xviii, 1-2.
9¾ × 6½: pp. 1-32: ill. Firenze, Gennaio-Febbraio, 1911
- Barnes, A. H., and Denman, A. H.** Our greatest mountain and alpine regions of wonder. (Tacoma, 1911)
11 × 9: pp. 69: 56 plates.
A finely got up work, with excellent plates, some of them coloured. This is the second fine monograph on Mount Rainier, published in Tacoma, the first being 'The Mountain that was God,' already noticed in the Journal.

- Barton, Wm. W.** Engadine Year-book 1912. Second year.
London, Siegle : Paris, Brentano : Samaden, Engadin Press, 1912. 3/-
7 × 4½ : pp. xii, 216 : ill.
This contains pp. 17-51, Mountaineering by Major E. L. Strutt ;—
List of first ascents, local mountain tours, guides, tariff, &c. There
are also articles on the various sports of the Engadine, skating,
curling, fishing, ski-ing.
- Bertani, Francesco e Antonio Rossini.** Vademeccum dello skiatore.
7½ × 4½ : pp. 126 : plates. Milano, Ski-Club (C.A.I.) 1907
- Blobel, Oscar.** Little Herta's Christmas Dream. A Christmas fairy-tale of
the mountains. (London, Low) Printed Schammler, Innsbruck, 1911.
12 × 9 : pp. 26 : col. plates. 3/6 nett
The story in verse of a dream which the author's 8-year old girl had
upon a ski-excursion. The plates show considerable life in design
and good colouring.
- Bommeli, R.** Wie Berg und Tal entstehen. Kurzer Abriss der dynamischen
Geologie. Die Geschichte der Erde, I. Stuttgart, Dietz, 1911. Pf. 75
8 × 5½ : pp. 127 : ill.
- Bonin, Charles Eudes.** Les Royaumes des Neiges (Etats Himalayiens).
7½ × 4½ : pp. x, 306 : plates. Paris, Colin, 1911
- Bruce, Hon. Mrs. C. G.** Peeps at many lands. Kashmir. With twelve
full-page illustrations in colour by Major E. Molyneux.
7½ × 5½ : pp. 96 : col. plates. London, Black, 1911. 1/6
- Burrard, S. G., et Hayden, H. H.** Esquisse de la géographie et de la géologie
des montagnes de l'Himalaya et du Thibet. Traduite et résumé par le
vicomte François de Salignac Fénélon. Toulouse, Privat, 1911
11 × 9 : pp. 39.
- The Cape of Good Hope**, being the Official Handbook of the City of Capetown.
2nd edition. City Hall, Capetown, October 1911
7 × 4½ : pp. 216 : ill.
pp. 45-72, Table Mountain and ascents.
- Carozzi, Carlo.** Le novelle delle Alpi. Milano, Pirola, 1911. L. 2
7½ × 5 : pp. 101.
Very well told, tragic and amusing, short stories of mountaineering.
- Cleaver, Reginald.** A winter-sport book. London, Black, 1911
9½ × 7 : pp. 62 : plates.
- Deutsche Alpenzeitung.** XI. Jahrgang (1911-12) II. Halbband (Oktober
1911-März 1912). Schriftleitung : Eduard Lankes.
12 × 8½ : pp. 310 : ill. München, Verlag d. Deutschen Alpenzeitung, 1912
Among the articles are ;—
E. Christa, Vom Täschhorn zum Dom.
E. Lars, Vom Hochnissl.
F. Kröner, Von der Cima Presanella zum Mte Adamello.
H. Barth, Die Steiner Alpen.
A. Steinitzer, Neue Wegbauten im Wetterstein.
A. Frank, Der Grand Combin.
E. Bertram, Schilderungen deutscher Mittelgebirgslandschaft aus d.
romantischen Zeit (1800-1848).
W. Fischer, Der Zariut-Choeh.
F. Kröner, Skitouren um Kitzbühel.
H. Dübi, J. V. Widmann als Alpenwanderer.
W. v. Orel, Eine Winterfahrt auf den Dachstein.
J. Nieberl, Meine erste Klettertour, Totenkirchl.
F. W. Sprecher, Ueber die Mechanik der Staublwinen.
E. Hofmann, Skitouren in Kühltal.
There is the usual excellent selection of photographs and pictures. Among
the coloured plates are reproductions of the following paintings ;—
Gerolamo Varese, Ostwand d. Mte Rosa.
Schmid-Fichtelberg, Königsbachtal.
Thomas Riss, Schöonna bei Meran.
E. Adam Weber, Ehrwald mit Daniel.

Deutsche Mitteilungen d. Deutschen Alpenzeitung Nr. 13-24, pp. 83-144.

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Ferrari, Dr. Agostino. La Valle di Viù. Impressioni e ricordi di escursioni, storia e leggende, usi e costumi.

8 × 5½ : plates, pp. vii, 239. Torino, Lattes : Firenze, Bologna, 1912. L. 3

The author visited the valley every year from 1879 to 1890 and knew it thoroughly, and here he gives a delightful account of its many charms. Many ascents, first and other, are described.

— Nella catena del Monte Bianco. Impressioni e ricordi di ascensioni.

8 × 6½ : pp. 251 : plates. Torino, C.A.I. Casone, 1912. L. 6

Fischer, Dr. Andr. Einige Bemerkungen über Gefahren und Technik des Bergsteigens. In Jahresber. S.A.C. Basel, 1912, q.v.

Fulton, J. H. W. With ski in Norway and Lapland.

7½ × 6½ : pp. xv, 254 : plates. London, Warner, 1911. 5/- nett

Glaciers. Comm. internat. d. glaciers. XVI^{me} rapport rédigé par Charles Rabot et E. Muret. Extrait d. Annales de Glaciol. t. vi. Novembre 1911

9½ × 7 : pp. 81-103.

Gray, Maxwell. The mysterious guide. An alpine adventure. In vol. entitled An Innocent Impostor. A new edition.

London, Long, n.d.

8vo, pp. 85-92.

H., A. A. Where the world ends. A description of Arosa as a centre for summer holidays or winter sport and as a health resort for convalescents and invalids.

Arosa, Jungunger-Hefti, 1911. 3/-

7½ × 5 : pp. 95 : plates.

v. Hahn, C. Neue kaukasische Reisen und Studien.

9 × 6 : pp. 267. Leipzig, Duncker u. Humblot, 1911. M. 6

Contents:—Nekrolog, Dr. G. v. Radde: Reise n. Mingrelieu u.

Abchasien: Reise in d. Tschetschnja: Im höchsten Daghestan 1901:

Täler d. Gr. Ljachwa: Schüerexkursion n. Etschmiadsin: Nomina

geographica Caucasica: Tierwelt d. Kaukasus: Erforschung d.

Klimas im Kaukasus.

Heim, A. Bericht der Gletscher-Kommission für das Jahr 1910/1911. In Verh. Schw. Natur f. Gea. Solothurn.

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8½ × 6 : pp. 5.

Henderson, Junius. Extinct and existing glaciers of Colorado. Reprinted from University of Colorado Studies, vol. viii, No. 1, Boulder, Col.

10 × 6½ : pp. 76 : plates. December 1910

Definition, economic relations, historical, extinct glaciers, existing glaciers,

bibliography, plates of Arapahoe, Isabel, Fair, Hallets Glaciers, &c.

Henry, Abbé. La parole aux amis de la montagne. In Bull. Soc. flore valdôtaine, Aoste, No. 7.

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Continuation of Ascensions du clergé valdôtain.

v. Hubl, Artur. Die stereophotogrammetrische Aufnahme des Goldberg-gletschers im August des Jahres 1909. Grundlage einer Erforschung d.

Einflusses d. klimatischen Verhältnisse auf d. Veränderungen d. Goldberg-

gletschers. Denksch. math.-natur. Kl. k. Akad. d. Wissen., Wien, 87. Bd.

12 × 9½ : pp. 8 : map. 1911

Jirasek, A. Rundschau d. Wr.-Neustädter Warte: see under Alpine Clubs, Oe. T. C. Wr.-Neustadt.

Kassner, Theo. My journey from Rhodesia to Egypt including an ascent of Ruwenzori. . . . London, Hutchinson, 1911

8½ × 5½ : pp. xiv, 309 : maps, plates.

Koenigsberger, Dr. Joh. Erläuterungen zur Geologischen und Mineralogischen Karte des östlichen Aaremassivs von Disentis bis zum Spannort.

Freiburg i. B. u. Leipzig, Speyer u. Kaerner, 1910. M. 9

9½ × 6½ : pp. 63, map, ill.

Formationen u. Gesteine, präobercarbon. kristalline Schiefer—prä-

granitische Eruptiva—carbonische Eruptiva—Carbon—Mesozoicum—

- Gesteine d. Gotthardmassivs—Quartär: Tektonik, Mineralfundstätten, Technisches u. Hydrologisches—Zusammenstellung einiger Exkursionen—Literatur.
- v. Koenigsmarek, Hans.** Der Markhor. Sport in Kashmir.
8½ × 5½: pp. xiii, 160: plates. Berlin, Paetel, 1911. M. 4
An interesting account of sport in Kashmir and the Himalayas.
- Lehmann, Otto.** Beitrag zur Anthropogeographie der Alpen. Die ständigen Siedlungen an der Adamellogruppe und die Bodenformen. S.A. Mitt. Ver. d. Geographen Univers. Leipzig, Bd. I. 1911
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- Lunn, Arnold H. M.** Oxford Mountaineering Essays. Edited by A. H. M. Lunn.
7½ × 5: pp. xi, 237. London, Arnold, 1912. 5/- nett
Contains:—
M. T. H. Sadler, An Artist of Mountains, C. J. Holmes.
J. S. Huxley, Behaviour of a Chamois.
N. E. Young, Mountains in Greek poetry.
H. M. Lunn, A journey.
H. E. G. Tyndale, Mountaineer and the Pilgrim.
F. T. Huxley, Passes.
H. R. Pope, British hills.
Roof-climbing at Oxford.
A. H. M. Lunn, The Mountains of Youth.
- Luther, Carl J.** Ueber Wintersport-Photographie. Dresden, Ica, 1912
5½ × 4: pp. 39: ill.
- Der Moderne Wintersport. Ein Hand- und Nachschlagebuch für Anfänger und Sportleute. 2. Aufl. Leipzig, Weber, 1912
6½ × 4½: pp. viii, 152: ill.
- Macdonell, Alice C.** Songs of the Mountain and the Burn.
7½ × 5: pp. 123. London, Ouseley, 1912. 2/- nett
Pleasant verse full of quiet feeling and description of nature in the Scottish Highlands.
- Marinelli, Ollinto.** Prime ricerche sui ghiacciai del gruppo di Brenta. In Tridentum, anno 13, fasc. vi-vii.
9½ × 6½: pp. 311-313. Trento, Soc. tip. edit. trentina, 1911
- Montandon, Fréd. J.** La fée d'Al. Légende alpestre en quatre tableaux suivie d'esquisses poétiques. Genève, Edition Atar, 1911
7½ × 5: pp. 202.
- Monti, V.** Primo saggio di nuove ricerche sulle oscillazioni dei ghiacciai del Gran Paradiso. In Riv. geogr. ital. xviii, 1-2.
9½ × 6½: pp. 46-60: ill. Firenze, Gennaio-febbraio, 1911
- Moreland, A. Maud.** Through South Westland. A journey to the Haast and Mount Aspiring New Zealand. London, Witherby, 1911
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- Munich.** A guide for resident foreigners. Munich, Gerber (1911)
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Contains *inter alia*:—
B. Rüttenauer, The Munich landscape.
A. Dreyer, Mountaineering.
C. Luther, Sports.
- Münstertaler Alpen:** see Ski- und Winterführer, 1912.
- Natal Province.** Descriptive Guide and Official Hand-book. Published by Authority. Durban, S.A. Rys Print. Works, 1911
10½ × 7½: pp. 320-358, The Drakensberg: ill.
- Oxenham, John.** Their high adventure. London, etc., Hodder & Stoughton [1910]
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- Peck, Annie S.** High mountain climbing in Peru and Bolivia. A search for the apex of America, including the conquest of Huascaran . . .
8 × 5½: pp. xviii, 370: plates. London, Unwin, 1912. 12/6 nett
French surveyors have shown that the height of Huascaran is close to 22,190 ft.

- Du Plessis de Grenédan, Comte J.** Voyage dans le Salzkammergut. In Tour du Monde, Paris, N.S. 17e année, No. 31-3 : 44-7. Août et novembre 1911
12½ × 9 : pp. 84 : ill.
- Post-cards.** Die Alpen. Künstlerkarten nach Original-Aquarellen von E. T. Compton. 1. u. 2. Serie. München, Andelfinger, 1911. M. 1.20
Montblanc, Aig. du Géant, Aig. Verte, Meije, Grivola, Les Ecrins, Mte. Rosa, Jungfrau, Matterhorn, Schreckhorn, Finsteraarhorn, Dent Blanche.
- Ricci, Leonardo.** Prime osservazioni fisiche sul ghiacciaio del Trobio, Alpi bergamasche. In Riv. geogr. ital. xvii, 5. Firenze, Maggio, 1911
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- Richardson, E. C.** The 'shilling' ski-runner. 2nd edition.
7½ × 5 : pp. 36 : ill. London, Richardson & Wroughton, 1911
- Riekmers, W. R.** Erinnerungs-Listen für den Ski-Läufer.
4½ × 3½ : pp. 8. Kitzbühel, Ritzler [1911]
- Rieger, Max.** Sven Hedins Anteil an der Erforschung Zentralasiens. Görres-Ges. z. Pflege d. Wissenschaft, 2. Vereinsschrift f. 1911.
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- Robertson, Eric.** Wordsworthshire. An introduction to a poet's country, illustrated with forty-seven drawings by Arthur Tucker, R.B.A.
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- Rodrigues, Duarte.** A missão desportiva do 'Tiro e Sport' na Serra da Estrella. O alpinismo é praticavel. In Tiro e Sport, Lisbon, anno xvii, no. 480. 15 Novembro 1911
13½ × 10 : pp. 10 : ill.
- Rübel, Dr. E.** Pflanzengeographische Monographie des Berninagebietes. S.A. aus Botan. Jahrbücher, Bd. 47, Hft. 1/4.
9½ × 6 : plates, pp. x, 615 : map. Leipzig, Engelmann, 1912. M. 8
A valuable monograph. The matter is arranged as follows;—Die Geographie des Gebietes, Das Klima, Geolog. Ueberblick, Die Pflanzengesellschaft, Vegetationstypus d. Wälder, u. d. Geüschte, der Hochstaudenflur, der Grasfluren, der Sumpfluren, des Süßwassers, der Gesteinfluren, Vertikale Gliederung d. Vegetation, Die geograph. Elemente d. Alpenflora, Vergleiche der Flora von N.- und S.-Seite, Berninabachtal mit Puschlav: Standortskatalog: Literaturverzeichnis.
- Schenker's Führer und Hotel-Anzeiger für Südtirol.** Verfasst von Karl Felix Wolff, Bozen.
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- Sessely-Richardson, J.** Une lumière sur la question des attaches.
8 × 5½ : pp. 108 : ill. Genève, l'Auteur-éditeur, 1911
- Sievers, Wilhelm.** Die heutige und die frühere Vergletscherung Südamerikas. Sammlung wissensch. Vorträge a. d. Geb. d. naturw. u. d. Med. 5. Hft.
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A short history of the discovery of glaciers in S. America, with bibliography.
- Ski- und Winterführer durch die Münstertaler Alpen und angrenzenden Gebiete :** West. Ortlergruppe, Malser Heide, Unterengadin und Alpen von Livigno. Unter Mitwirkung d. D.u.Oe.A.-V. Sektion Pforzheim, herausgegeben von Fr. Berger, München. München, Deutsch. Alpenzeitung, 1912
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- Sota Terra.** Ressenya ilustrada de les escursions espeleopogiques verificades durant l'any 1907 pel Club Montanyenc de Barcelona.
8 × 6 : pp. vi, 176 : ill. Barcelona, Club Montanyenc, 1909
- Spont, Henry.** La Corse. In Le Figaro illustré, Paris, 30e année, No. 259.
16½ × 12 : pp. 24 : ill. Octobre 1911
- Stein, Max Aurel.** Ruins of desert Cathay. Personal narrative of explorations in Central Asia and westernmost China.
2 vols., 9½ × 6½ : maps, plates. London, Macmillan, 1912. 42/- nett

- Stock, E. Elliot.** Scrambles in storm and sunshine among the Swiss and English Alps. London, Ouseley [1910]
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- Ströhmfeld, Gustav.** Die Kunst zu Wandern. Frankfurt a.M., Tourist, 1910
 9×6 : pp. 195. Reprinted from Der Tourist.
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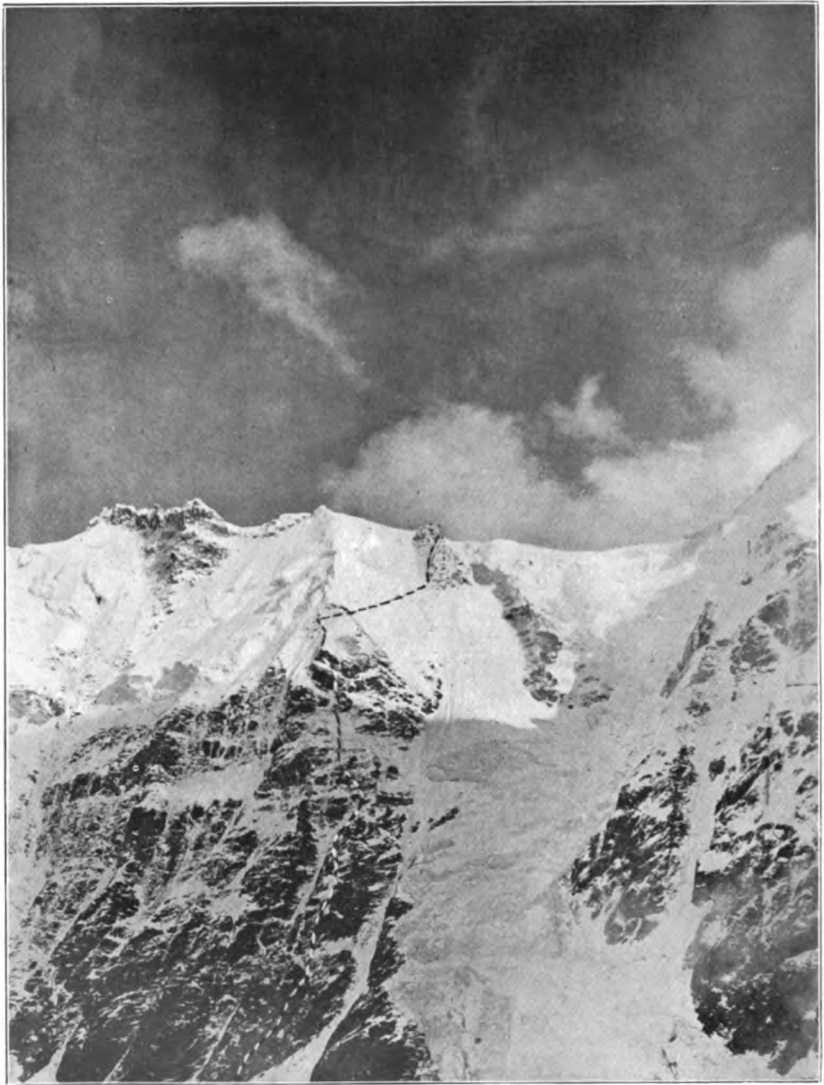
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Brèche de la Meije : *C.A.F. Montagne.*
Brenta : Marinelli, O., Ghiacciai.
Canada : *Canadian Alp. Journ.*
Caré Alto : *C.A.I. Rivista.*
Caucasus : *D.u.Oe. A.-V. Berlin.*
 — *D.u.Oe. A.-V. Zeit.*
 — Deutsch. Alpenz.
 — v. Hahn, C., Reisen.
 — *Zeit. Ges. Erdk. Berlin.*
Cimone d. Pala : *C.A.I. Rivista.*
Col Emile Rey : *Akad. A.-V. München.*
Coolins : *Fell and Rock.*
Corno Grande : *C.A.I. Rivista.*
Corsica : *C.A.F. Montagne.*
 — *D.u.Oe. A.-V. Bayerland.*
 — Spont, H.
Croda Grande : *C. A. I. Rivista.*
Dachstein : Deutsch. Alpenz.
Dauphiné : *C. A. F. Montagne.*
Delagoturm : *D.u.Oe. A.-V. Bayerland.*
Dolomites : *C.A.F. Montagne.*
 — *D.u.Oe. A.-V. Zeit.*
Engadine : Barton, M. W., Year-book.
Fer-à-Cheval : *C.A.F. Montagne.*
Fiction : Blobel, O., Herta's Christmas Dream.
 — Carozzi, C., Nouvelle d. Alpi.
 — Oxenham, J., High Adventure.
 — Williamson, C. and A., The Motor Maid.
Freshfield Group : *Canadian Alp. Journ.*
Geology : Bommeli, R., Wie Berg. u. Tal entstehen.
 — Königsberger, J., Aaremassiv.
Glaciers : *C.A.I. Rivista.*
 — Henderson, J., Glaciers of Colorado.
 — v. Hubl, A., Goldberggletscher.
 — Marinelli, O., Brenta.
 — Monti, V., Gr. Paradiso.
 — Ricci, L., Trobio.
 — Sievers, W., Südamerika.
Gr. Comblin : Deutsch. Alpenz.
Gr. Cordonnier : *C.A.I. Rivista.*
Gr. Paradiso : *C.A.I. Rivista.*
 — Monti, V., Ghiacciai.
Grande Manche : *C.A.F. Montagne.*
Grande Rousse : *C.A.I. Rivista.*
Greenland : *D.u.Oe. A.-V. Zeit.*
Grosslitzner : *D.u.Oe. A.-V. Bayerland : Saarbrücken.*
Himalaya : Bonin, C. E., Royaumes des neiges.
Himalaya : Burrard, S. G., Esquisse.
Hochschwab : *Ski, Mitteleurop.*
Huascaran : Peck, A. S.
Kashmir : Mrs. C. G. Bruce.
Lackenkarsp. : *Akad. A.-V. München : D.u.Oe. A.-V. Bayerland.*
Lake District : *Fell and Rock.*
 — E. Robertson, Wordsworthshire.
Lechtaler Alpen : *D.u.Oe. A.-V. Zeit.*
Matterhorn : *C.A.I. Rivista.*
Medical : *D.u.Oe. A.-V. Zeit.*
Military : *C.A.F. Montagne.*
Mont Blanc : *D.u.Oe. A.-V. Berlin.*
 — A. Ferrari.
 — Glaciers, *C.A.I. Rivista.*
Mte. Leone : *C.A.I. Rivista.*
Mte. Zocca : *C.A.I. Rivista.*
Morocco : *Akad. A.-V. München.*
Mt. Hammond : *Canadian Alp. Journ.*
Mountain sickness : *Canadian Alp. Journ.*
Mountaineering : Lunn, A. H. M., Essays.
 — *S.A.C. Basel.*
Münstertaler Alpen : Skiführer.
Museum : *D.u.Oe. A.-V. Kälender.*
New Zealand : Moreland, A. M.
Niedere Tauern : *D.u.Oe. A.-V. Zeit.*
Norway : *Akad. A.-V. Berlin. D.u. Oe. A.-V. Bayerland : Berlin.*
 — Fulton, J. H. W., Ski in Norway.
Ortler : *Ski : Mitteleurop.*
Pisciadu-Turm : *D.u.Oe. A.-V. Bayerland.*
Pizzo di Coca : *C.A.I. Rivista.*
Pizzo Fizzo : *C.A.I. Rivista.*
Poetry : Macdonell, A. C., Songs of Mountain.
Popocatepetl : *Centre Excurs.*
Portugal : Rodrigues, R.
Pta Barale : *C.A.I. Rivista.*
Pta Devero : *C.A.I. Rivista.*
Pta d. Margna : *C.A.I. Rivista.*
Pyrenees : *D.u.Oe. A.-V. Zeit.*
Rainier : Barnes, A. H., Greatest Mountain.
Rieserferner : *D.u.Oe. A.-V. Cassel.*
Rofan : *Akad. A.-V. München.*
 — *D.u.Oe. A.-V. Bayerland.*
Ruwenzori : Kassner, T., Rhodesia to Egypt.
Salzkammergut : Du Plessis de Grenédan.
Sasso Cavallo : *C.A.I. Rivista.*
Sasso Manduino : *C.A.I. Rivista.*



O. K. Williamson, photo.

Swan Electric Engraving Co., Ltd.

THE GLETSCHERJOCH, FROM ROTHTHAL HUT.

The first passage was made on 8th August, 1911, by Dr. O. K. Williamson,
as described in A. J. xxv., pp. 741-2.

Schneefernerkopf : *D.u. Oe. A.-V. Bayerland.*
Ski : under Clubs.
 — Bertani, F., *Vademecum.*
 — Cleaver, R., *Winter-sport book.*
 — Fulton, J. H. W., *Ski in Norway.*
 — Luther, C. J., *Moderne Winter-sport.*
 — Richardson, E. C., *Ski-runner.*
 — Rickmers, W. R., *Listen.*
 — Sessely-Richardson, J., *Attaches.*

Ski : *Turismo e Sports.*
Steinalpen : *Deutsch. Alpenz.*
Table Mountain : *Cape of Good Hope.*
Tamer : *C.A.I. Rivista.*
Täschhorn : *Deutsche Alpenz.*
Torrione Carducci : *C.A.I. Rivista.*
Troblo : Ricci, L., *Ghiaociai.*
Vajolettürme : *D.u. Oe. A.-V. Berlin.*
Viù, Valle di : Dr. A. Ferrari.
Vogelkarsp. : *Akad. A.-V. München.*

ALPINE ACCIDENTS IN 1911.

THE fatal accident on the **Aiguille du Plan** was recorded 'A.J.' xxvi. 77. 'La Montagne,' 1911, pp. 571-81, gives a full account from the pen of Dr. Th. Thomas, of the heroic enterprise of his guide, the late Auguste Blanc, to which was due the recovery of the body of M. Caillet from the difficult and dangerous ice couloir where it had lodged, frozen into the ice. It was only after many hours of extremely dangerous work that success crowned the efforts of Dr. Thomas and his two guides. A photograph of that face of the mountain accompanies the description, on which the lines of usual ascent are marked and the places of the twofold accident are to be seen. 'La Montagne,' pp. 592-98, gives a full account by Dr. Thomas of the lamentable accident by which a few days later Auguste Blanc lost his own life.

On August 18 Drs. Guillemard and Régnier, with the guide Antonin Claret-Tournier and the porter **Pierre Casoli**, reached the observatory on the **summit of Mont Blanc**. On the 21st about midday, during a violent thunderstorm, lightning struck the hut, knocking Casoli senseless and setting his clothes on fire, resulting in severe burns. He received every possible attention at the hands of the two scientists and of M. Vallot, but succumbed to his injuries a few hours after reaching Chamonix.

NEW EXPEDITIONS IN 1911 (AND 1894).

Graian Alps.

ALBARON (3662 m. = 12,015 ft.), STRAIGHT UP THE E.N.E. FACE AND **POINTE REGAUD** BY THE E.N.E. FACE.—On August 6, 1911, Mr. C. F. Meade with Pierre Blanc left the Chalet des Evettes at 3.10 A.M. and arrived at the bergschrund E.N.E. of the top of the Albaron and directly under it about 5.50. The bergschrund appeared to be practicable at one point only. Above it a fairly steep slope of good snow led to shale and loose but very easy rocks by which the

summit was gained in 63 mins. from the bergschrund. It is only when these rocks are dry that this way up the Albaron can be safe. It is the most direct way from the Chalet des Evettes, and without hurrying only 3 hrs. 43 mins. were employed between the chalet and the top.

At 9.20 A.M. on the same day the same party left the Albaron track below the Pointe Regaud and mounted to the shoulder of this little peak. From the shoulder they traversed southwards across the E.N.E. face to the foot of a difficult chimney where the rope was put on. The chimney (well seen from the Chalet des Evettes) straggles southwards and upwards across the E.N.E. face. Its ascent occupied three-quarters of an hour. The rock is green and very slippery and *Kletterschuhe* were useful. The chimney ends close to the top of the peak, which was reached at 11.35 A.M. With much dawdling the party returned by the ordinary route to the Chalet des Evettes by 2 P.M.

Mont Blanc Group.

AIGUILLE DE TRÉLATÊTE, E. PEAK (3885 m. = 12,750 ft., *Barby map*). BY THE E. ARÊTE REACHED FROM THE N. Herr Hans Pfann, Dr. Kostitcheff, and Count Ugo di Vallepiana, August 3-5, 1911. (Cf. 'R. M.', 1912, pp. 39-41.)

From the Miage glacier the party mounted the second couloir to the N. of the Petit Mont Blanc, 3431 m., for some 250 ft., then abandoning it turned to the right, W., and by rotten rocks and an easy slab reached a small platform conspicuous from below, where they camped at a height of about 350 ft. above the Miage glacier. Leaving at 4.30 A.M. on August 4, they turned at once to the right, W., and climbed on to a rock rib. Straight up these rocks, then into a couloir to the right, W., safe at this hour, then up this latter, snow good; easy rocks to the left, E., attained at 5.45 A.M. Now up these rocks for a bit, then, always bearing to the left, to a broad and convenient ledge which leads diagonally upwards to a snow gully very visible from below. Ledge far more suitable for camping than the lower bivouac. From the said ledge to the right, E., by rocks apparently much exposed to stone fall; rocks soon abandoned for the trough of gully; party roped. Up this gully or the steep slabs of its true right bank till a slice of dangerous hanging glacier attained, then by the rocks to the left, E., and so to the upper shoulder of mountain, where the ordinary route falls in, 10.10 A.M. Party unwilling to *strictly* follow said route, which, passing over the upper plateau of the left branch of the Glacier du Petit Mont Blanc, leads by the E. arête to the summit, accordingly mounted the crest of said arête for some 180 ft. Now a traverse on to N. slope of arête, till it was judged that a point below summit was attained, then straight up to the top, 12.45 P.M.

Descent by S.W. arête and bivouac at 9 P.M. on rocks above the last ice fall of the Glacier de l'Allée Blanche. Courmayeur regained next day, August 5.

Pennines.

AIGUILLES ROUGES D'AROLLA, N. PEAK (about 3600 m. = 11,811 ft.).—On August 11, 1911, the N. peak of the Aiguilles Rouges was climbed up the centre of the Arolla face. This is a short, steep, open climb up slabs which offer small sound holds and few belays. Discrimination is needed in choosing the precise line. The party, J. M. Archer Thomson and W. P. Haskett-Smith, took two hours, which included an interval for lunch.

DENTS DES BOUQUETINS, N. PEAK (3783 m. = 12,412 ft.).—On August 14, 1911, a wide variation of the usual route was made up the N. peak of the Dent des Bouquetins from the E. A short distance above the bergschrund, the snow-incline, which gives the ordinary route up to the gap between the central and N. peak, was left and the rocks of the face were climbed by pleasant prominent ribs. Several couloirs were crossed from left to right; and in some places the traverses were very difficult and awkward. The summit ridge was struck at the penultimate gendarme. This variant takes at least an hour more than the normal ascent. The party consisted of J. M. Archer Thomson, G. L. Collins, and G. K. Edwards.

Bernina Group.

PIZ BERNINA (4055 m. = 13,304 ft.), BY THE N.E. FACE, i.e. the precipitous portion of the *final* summit which is recessed between the N. (or 'Berninascharte') and E. arêtes.*—Herr Julius Frohmann with Niklaus Kohler of Meiringen, Christian Zippert and Caspar Grass of Pontresina, July 24, 1911. The party having gained the 'Sass del Pos' (3208 m., *S. map*) *via* the Labyrinth, more or less followed the ordinary route in a S.W. direction to the upper slopes of the great inclined snow plateau N.E. of the summit (2 hrs. 10 min.). Thence leaving the commencement of the E. arête to the left (S.) they cut up the icy slope, the angle of which varies from 50° to 64°, immediately below the rocks of the N.E. face. Having surmounted this slope, which, owing to a thin layer of snow being firmly frozen on to the ice, was in admirable condition, the party attained a kind of rock rib leading slantways up towards the summit (3 hrs.). They scrambled up this rib, badly iced at first, over broken loose rocks, gradually giving place to great equally treacherous slabs, till they reached a yellowish crevice furrowing the final red rocks of the peak. The crevice was scaled with much difficulty, but from its upper extremity far easier rocks brought the party to the top (2½ hrs., or, including all halts and several nocturnal deviations, 11½ hrs. from the Boval Club hut.)

[The face is extremely exposed to falling stones and ice, and its

* Kindly communicated by Professor A. Corti: cf. *R. M.* 1911, pp. 310-311, 364.

ascent would barely be possible save under 1911 conditions. It will be remembered that the late Mr. L. Norman Neruda with Christian Klucker, July 18, 1890, reached the inclined snow plateau *direct* from the lower surface of the Morteratsch glacier by the precipitous and excessively dangerous gully known as the 'Gurgel' (Herr Frohmann's party found the bergschrund unassailable), thence with great difficulty the party contrived to reach the Berninascharte, which is only a short distance to the N.W. of the N.E. face. A great storm then compelled the party to abandon the expedition and entailed a terrible descent of the N. arête and its lower W. slopes to the Tschierva glacier.*

No one has so far repeated the ascent of the 'Gurgel.']

E. L. S.

CRIST AGÜZZA (3872 m.=12,704 ft.) BY THE S.W. FACE.—The 'Alpi Retiche Occidentali,' Part iv. Regione Bernina, edited by Dr. A. Corti, gives on pp. 425-6 an account with a marked sketch of the above route which was done in 1906 by Dr. Corti and Signor Valesini, as they thought for the first time. This ascent was, however, made on July 21, 1894, by the guide Chr. Klucker and myself with a porter. We left the Marinelli Hut at 4.25, struck across the glacier and up the hard snow of the couloir on the W. of the peak to the foot of the rocks of the S.W. face (6.45 A.M.). This face is a great rock slope broken up into steps. Up a flat gully, iced rocks, under lee of the wall we reached a snowfield (7.10). Traverse this to the right, to where it forms a small arête and cross, exposed to stones from a couloir more to the left, this arête to the foot of another shallow couloir (slabs). Go up left of this protected by the wall (7.20). This couloir is a watercourse and was hard frozen, hence forced at once to traverse it and take to rocks on its right bank (ascending), getting round a ledge on their lower edge. Follow these rocks till they flatten out to snowfield. Traverse again away to right to outcropping rocks over snowfield (exposed to icicles from ridge on left). Halt 8.5 to 8.35. Traverse over rocks and snow to S.E. (right) till reach ridge running S.W. and overlooking Scerscen and S.W. precipices (9 A.M.). Sun here struck us. Follow ridge on or near till it becomes precipitous and broadens out into a wall. Here you climb a short wall and reach foot of main wall just between two small towers forming gateposts. Climb a chimney in wall about 10 ft. from its left edge. Chimney all ice, very bad, 40 ft. long (took about 20 m. for the three of us). 10 A.M. Traverse to left and follow main W. arête to top—junction of ridges 10.20, summit 10.30. Among other cards that of Dr. Paul Güssfeldt: 'Landete 19 Aug. 1875, 11.18 A.M. in Liverpool von Aequator. Afrika kommend und traf 19. Sept. 1875 um dieselbe Stunde d.h. nach 31 Mal 24 St auf der Crast' Agüzza ein. Viva Hans Grass.'

* *Alpine Journal*, xv. 314-5, 468-71.

I went over to Sils last July to look up my old friend Klucker and discussed the above ascent with him. Subsequently on September 3 he repeated the ascent with two acquaintances, but owing to stones falling he was forced on the upper portion more to the left, so that he gained the main W. arête rather lower down than when leading me. He took with him a photograph kindly marked by Dr. Corti, but thinks that about the middle of the face Dr. Corti's route is marked too much to the right, as there the rocks are precipitous and impossible. He considers that our unpublished route of 1894 is in the main identical with the published route of 1906.

J. P. FARRAR.

EASTERN ALPS.

NEW ASCENTS IN 1910.—The 'Mittheilungen des D.u.Ö.A.V.,' 1912, pp. 19–20 and 34–37, contain a very careful summary, prepared by Dr. Franz Hörtnagl of Innsbruck, of the principal new routes in the Eastern Alps which were opened in 1910. The summary is divided into groups and gives the necessary references to published accounts of the various expeditions.

Zillertal.

ZSIGMONDYSPITZE, formerly called Feld Kopf. (3085 m.=10,119 ft.). BY THE E.N.E. ARÊTE FROM THE FLOITE. In 'A.J.' xxv. p. 664, the direct ascent of this mountain from the Floite, a much discussed problem, was recorded.

The same party, viz. the guide Hans Fiechtl and the guide-candidate Hans Hotter (spelt Kotter in the previous account) have now opened another route from the Floite. The slabby ridge is followed to the foot of the first slabby precipice. An upward traverse to the right leads to a grass-covered projection. Then a 100 m. well-marked narrow crack. Then on the right flank of the arête, very difficult, to a projection on the arête covered with loose stones. Stoneman built. Follow the ridge to the next great step. Then traverse upward to the left and follow exposed and difficult grass ledge to good stand. From here, 30 m., extremely difficult and exposed traverse close under the overhang to the left up to a gap. Then to the left up very smooth wall (fixed 3 pitons) and finally rejoin last year's route on the arête. Follow this till close under the summit tower, then bear to left and gain the summit by a very difficult crack which seams the final tower. Time from foot of rocks, 4½ hrs. The climb is described as one of the finest as well as most difficult in Fiechtl's experience. (Cf. 'Mittheilungen,' 1912, p. 85.)

Fiechtl also made two new routes up the same peak, viz. (1) by the W.S.W. arête and (2) along the whole ridge from the Feldkopfscharte.

HIMALAYAN EXPEDITIONS.

DR. W. HUNTER WORKMAN has been good enough to furnish the following abstract of the 1911 journey of Mrs. F. Bullock Workman and himself :

June 1 to Oct. 14 : During the summer of 1911 I explored with Mrs. F. Bullock Workman the region lying between the Baltoro glacier on the N., the Shyok and Saltoro valleys on the S., the Kondus-Siachen watershed on the E., and the western barriers of the Hushe tributaries on the W. Found it a region of high, precipitous, mostly unscalable mountains with serrated ridges and summits, and deep, narrow valleys occupied by sharply descending, greatly broken, in many places unscalable, glaciers, with no discoverable passes northward to the Baltoro.

Explored the Dong Dong, Sher-pi-gang, Kondus, Chogo Lisa, Kondokoro, Masherbrum, and Alin glaciers. Ascended mountain-spur separating the Dong Dong from the Sher-pi-gang to a point 16,604 feet directly overhanging the latter and giving a wide view over both glaciers. Also ascended snow-capped peak, 16,839 feet in altitude, W. across the Masherbrum glacier from Mt. Masherbrum, the slopes of which were everywhere deeply covered with shattered fragments of quartzite.

Having explored this region, ascended, the middle of August, the Bilapho glacier to the E., crossed the ice-pass at its head 18,450 feet, and descended a large affluent leading to the great Siachen glacier. Passed a month on this glacier, exploring it and some of its large tributaries, as weather permitted. Among others ascended a large E. tributary, which, some 25 miles long, leads up to a wide snow-basin or plateau 19,000 feet and above in altitude, that connects with a snow-pass and a glacier descending toward the E. and, apparently, towards the Karakoram Pass.

At the head of another large affluent joining the Siachen from S.W. a point 20,000 feet in altitude was reached at the base of an almost perpendicular precipice rising thence to the summit of K3, 25,415 feet. Also a snow-peak of 21,000 feet, overhanging the junction of the E. affluent above mentioned and the Siachen, was ascended. From this a very extended view over the Siachen and its tributaries was obtained.

CAPTAIN J. B. CORRY, D.S.O., made the following expeditions in 1911. It will be seen that they included several first ascents :

- June 13 : Ledwas—Mahadeo to Handil traversed—Camp S. of Surphrar in Sind Valley.
- June 16 : Camp in Surphrar Nullah—Deo Masjid and lower peak traversed first ascent—Sekwas in Lidar Valley.
- June 19 : Aro—Climb on spur up to 13,200 ft.—Aro.
- June 20 : Aro—Har Nag Pass—Harbagwan Valley.

- June 21 : Harbagwan Valley—Ascent to plateau—Camp on Kolohoi plateau.
- June 22 : Kolohoi Camp—Kolohoi N. Peak to within 30 ft. of top—Kolohoi Camp.
- June 23 : Kolohoi Camp—Descent of N. Glacier—Aro.
- June 29 : Shesha Nag Camp—Explored lower part of Kohinor C Peak up to about 15,600 ft.—Kohinor Camp.
- June 30 : Kohinor Camp—Kohinor C. Peak, first ascent—Kohinor Camp.
- July 1 : Kohinor Camp—Climb on Peaks E. of Shesha Nag up to 15,100 ft.—Chandar Wari.
- July 5 : Tolien Valley Camp—Climb on ridge overlooking Mampal Valley up to 15,150 ft.—T. upper Camp.
- July 6 : Tolien upper Camp—Snowy Peak 'A' first Ascent—T. Valley Camp.
- July 12 : Camp S. of Sonasar Nag—Peak W. of Sonasar Pass traverse first Ascent—Suknes in Wardwhan.
- July 14-17 : Suknes—Bhat Kol Pass—Suru.
- July 18 : Suru—Climb on ridge above Purkubse La up to 14,500 ft.—Suru.
- July 21 : Tongul E. Valley—Climb on Sentik Glacier—Sentik La.
- July 22 : Sentik La—(Blizzard all night)—Tongul.
- July 27 : Khushokh Than Nullah W. of Umba—Climb on ridges N.E. of Machai—Camp on Machai Umba ridge.
- July 28 : Camp—Peak Gah Ling first Ascent—Umba.
- July 29 : Umba—Umba La—Lamagus La—Dras.
- Aug. 1 : Camp near Shingo La—Peak at head of W. Branch of Shunderi Nullah, first Ascent—Dras.
- Aug. 3-4 : Dras—Zogi La—Balbal.

CAPTAIN O. E. TODD reports the following exploratory work in 1911:
In Kaghan Valley.

- June 22 : From Camp near Safus Malook—Attempt to climb Mali ka Purbat—reached col 15,500 ft. on E. face.
- June 24 : From Camp near Safus Malook—Manoor 15,129 ft. by steep snow gully on E. face.
- June 30 : From Camp above Duddur, 11,750 feet—Attempt to climb Mali ka Purbat by N.E. arête, reached col. 15,000 ft. (Dubooka).
- July 6 : From Battakundi—Dubooka 16,196 ft. by N. arête. Traverse of the whole mountain (4 summits).
- July 11 : From Battikundi; crossed over Dubooka N. arête and over large glacier and snowfield, attacked Rewuree by N. arête, reached summit after a difficult rock climb in a snow-storm; went back by the same route and made a new pass down the Rewuree Valley to Burawai.

July 14: From Basil—Peak about $1\frac{1}{2}$ miles south of Basur Mountain (un-named) 15,300 ft. A steep and difficult rock climb, from the S.W. arête.

July 30: From Badulgraun—crossed the Rasee Bojee ridge, traversed the whole of the Sukhi Sangal snowfield.

Traversed back by a entirely new route, eventually landing in the Shikara nullah. 18 hours. In terrible weather, snow-storm and thick mist. A very awkward expedition.

All these climbs are new ground and first ascents.

MR. C. F. MEADE'S EXPEDITION TO THE GARHWAL HIMALAYA.—Mr. Meade left for India at the end of March by the ss. Mantua. His baggage including camp kit went down in the unfortunate s.s. Oceana, but he was able to replace it all at the last moment. He is accompanied by his old guides Pierre and Justin Blanc and in addition by Franz Lochmatter and the latter's brother-in-law Perren. The party is bound for Kamet, 25,447 ft. (cf. Mumm 'Five Months in the Himalaya' with a map by Dr. Longstaff showing the district). We wish this party every success, and look forward to the results of their expedition with the greatest interest.

THE HIMALAYA.—The 'Morning Leader' of April 10 contains an interesting article by Mr. Douglas W. Freshfield on 'The Conquest of the Mountains.' He concludes that Kangchenjunga, rather than Mount Everest or Mount Godwin-Austen, offers the best chance and will be attacked first. The article concludes with the following advice printed here verbatim :—

'Now, what are the requisites for a party in order that it may have the best possible chance of success? Its nucleus should be three practised mountaineers, by preference between 30 and 40, accustomed to climb together and ready, if needful, to carry up themselves what is wanted to a final bivouac. Natives of Eastern Nepal—Sherpas—have been trained by Dr. Kellas, who recently described his experiences to the Royal Geographical Society, to climb and carry up to 23,000 ft. It is doubtful if they could be got higher, unless where a fairly easy way can be discovered—"Mountain lassitude" in a more or less degree is inevitable at great heights, varying with the individual and the weather; close attention to diet, frequent and light meals, are the best preventives of its developing into sickness that incapacitates from climbing. An Arctic equipment, as light as it can be made, both for camping and clothing, should be provided. Footgear should be specially studied. The form that will most effectually preserve from frostbite and yet not be dangerous in icesteps has, so far as I know, not yet been evolved. The two special dangers are in avalanches and rapid changes of weather. A prolonged fair spell such as is needed for the ascent of a great peak is rare in most parts of the Himalaya. Early summer is perhaps a better season than autumn—at any rate, in Sikhim.

Mont Blanc de Courmayeur

Mont Blanc.

Col de la Brenva.



Alfred Holmes, photo.

Swan Electric Engraving Co., Ltd.

THE BRENVA FACE OF MONT BLANC. FROM THE
COL DE LA TOUR RONDE.

'It is to be hoped that any attempts that may be made will be under the control of competent mountaineers—otherwise fresh disasters similar to that in which five lives were lost seven years ago on Kangchenjunga may confidently be anticipated.'

No reader of this Journal needs reminding of Mr. Freshfield's book, 'Round Kangchenjunga,' and if that mountain is the first to be ascended among the giants it will be in a great measure due to the arduous pioneer work done by the author and recorded with such detail for the service of his successors.

VARIOUS EXPEDITIONS IN 1911.

MONT BLANC (4810 m. = 15,782 ft.) BY THE BRENUVA.—For years Josef Pollinger and I have wished to climb Mont Blanc by this most fascinating route, and two years ago we made the ascent by the Tête Rousse in order to inspect it, but the weather and conditions generally were too unfavourable for the attempt.

This year after the traverse of the Herbetet, the Grand Paradis and the Grivola by the N. arête, we both concluded that snow with an East aspect ought to be in excellent condition. Accordingly we left Cogne early on July 8 for Courmayeur, where we arrived during the afternoon.

Our intention was to go to the Gîte next morning, but having had a week's continuous climbing, we decided to risk the weather and wait a day, meantime engaging Adolphe Rey as second guide.

On July 10 we left the Royal at 7.55 A.M., and arrived at the Gîte at 2.45 P.M. We had several long halts on account of the porters, who felt the heat very much. The actual going time was 5 hrs. 25 mins.

Joseph, Rey and I went on a little higher to get an idea of our route in the morning as we were contemplating a very early start. As is well known, the Gîte is a little rock promontory in the face of the glacier which falls very steeply all round. The view of the Aiguilles Noire and Blanche de Peuteret and the ridge to the summit of Mont Blanc in the setting sun is something to be remembered all one's life; in fact, I think it would be difficult to imagine a more perfect view on a brilliant summer evening; the harshness and ruggedness of the ridges to right and left toned down by the evening sun and the lovely softness of the Italian landscape in the distance.

At 6.30 I turned into my sleeping bag, and in a few minutes we were all settled for the night. As the evening drew on the scene was more and more beautiful. The gathering twilight, the brilliant heavens, the noise of the avalanches, the feeling of remoteness and the immensity of space were impressive in the extreme.

We started on our climb at 12.6 A.M. with a brilliant moon and starlit sky, and all the appearances of a perfect day before us.

On leaving the Gîte we crossed a small col on to the upper edge of the Brenva glacier, then bearing to the right climbed the small mountain in front of us traversing away to the right along its, in places, somewhat sharp snow ridge to a col. Here we turned sharp round and descended over easy and good snow on to the flat Brenva glacier above the lower ice fall and in a few minutes reached the foot of the Great Couloir. It was now 2.6 A.M., and as we had been travelling fast we halted a few minutes for a little food. The scene was most impressive, the full moon and brilliant stars lighting up the great arête of the Brenva towering above us, while the Great Couloir was all in shade. The feeling that at last our hopes of the great climb were to be realised filled us with enthusiasm.

At 2.15 A.M. we started to scramble over the débris at the foot of the couloir and advanced up it until almost below the end of the second rock spur on our left where it widens out. Just as we were about to turn out of the couloir down came some small bits of ice, one of which slightly damaged Joseph's head and others hit Rey and myself. A few minutes later, when we heard a few tons of ice descend, we congratulated ourselves on being well out of reach. We proceeded to cut back towards the rocks of the first spur [in the direction of point 5],* but always keeping upward until we passed very close under the snout of the hanging glacier; then, instead of continuing in the same direction so as to reach the rocks above mentioned, we cut up and round the glacier snout turning sharp to the right and reached at 4.45 A.M. the crest of the very narrow arête, but some two-thirds of the way along [this would be at about 9 of illustration]. It will thus be seen that our route to the main arête lay considerably to the right of the rocky spur [Nos. 3 to 8 of illustration], and that we struck the main arête considerably higher up than is, I am informed, usual. I do not recommend our variation, as even in the early morning, as I have mentioned, it may not be safe.

The arête is very narrow, and from below we could see the light through it in places. We advanced along it, sometimes on the top, sometimes with a foot on each side, till after twenty minutes it widened and merged into very steep snow slopes. We breakfasted at 5.5 on the little plateau at the foot of the snow slopes, well pleased with our progress. At 5.28 we started up the steep snow slopes, and at 6.55 reached the top rocks and rested for fifteen minutes. Less than ten minutes later we reached the top of the arête, which is exceedingly steep all the way after leaving the first knife edge but otherwise broad and not difficult.

* See illustration.

We quite thought, from what we had been told in Courmayeur, that our difficulties were over now, but this proved to be far from the case. At the top of the ridge on the left was a perpendicular ice wall which looked difficult to turn on the left but easier on the right, so we decided to try and get through the ice fall in this direction. Bearing round to the left, we came to a narrow overhanging ice couloir. This Rey proceeded to cut up, but found great difficulty where the ice overhung, owing to the couloir being too narrow for the full swing of the axe. Josef and I had to stand for over an hour while he cut away sufficient of the overhanging ice to make two or three safe steps. It was a difficult business for Rey and gave him a good deal of trouble, although there were not more than three or four bad steps and about eight or nine in all to cut.

Eventually Rey got on to the edge of the partly covered-in crevasse above, where we joined him, soon attaining the upper part of the ice fall when all difficulties were over, and at 9.15 A.M. we stood on the main arête of Mont Blanc.

We were all very tired, the long and fatiguing cutting and standing in the couloir at the end of a big climb having taken a good deal out of us. Having plenty of time we advanced slowly along the arête, and at 11.50 stood on the summit of Mont Blanc, having accomplished the finest and most interesting snow climb of our lives. We reached Chamonix at 6 P.M. (7 P.M. Italian time). The climb is a magnificent one and worthy of its reputation.

R. W. LLOYD.

MONT BLANC (4810 m. = 15,782 ft.) BY THE BRENVA ROUTE. Messieurs J. C. H. Runge and W. R. Caesar with Abraham Müller, Jr., and Gottfried Müller, of Kandersteg, August 5, 1911.

The Rifugio Torino was reached on August 4 about noon, and during the afternoon the two Müllers prospected the proposed route to the Col de la Tour Ronde for a practicable way over the bergschrund, which this season was not quite easy to negotiate. On August 5 we left the Rifugio Torino at 2.5 A.M., and gained the foot of the Col de la Tour Ronde at 3.40 A.M. A glorious dawn with peculiarly beautiful colouring cheered us as we strolled up the higher reaches of the Géant Glacier; the more so as the weather had been none too promising the previous afternoon, clouds blowing across Mont Blanc with only fitful glimpses of the mountain.

After crossing the bergschrund, rocks, which afford some pleasant though not difficult scrambling, led up the left bank of a narrow ice-gully to the top of the ridge, 4.25 A.M. The descent on the S. side is quite easy (bear well to the right to avoid crevasses on the glacier below). In twenty minutes the Brenva Glacier was gained, and a further fifteen minutes, nearly level walking across the glacier led to the foot of the Brenva ascent, 5 A.M. Time from the hut 2 hrs. 55 min. Here, as is frequently the case, a longer halt was

made than intended ; it was 5.45 A.M. before we had fed the inner man and put on crampons (1).* The crampons were very useful on this expedition. We ascended for a short distance over avalanche débris (2), then reached the well-known rock buttress on the left (3) by a very steep snow-slope, partly ice, entailing the cutting of about 100 steps (4). The top of the first stretch of rocks, which are not difficult, was gained at 7.30 A.M. (5) Here we took off the crampons ; halt, 5 min.

A narrow snow-ridge (5) led up to the second and longer stretch of rocks, which though not really difficult afford some nice scrambling, including an easy chimney of about 35 metres (6)—(7). At the top of these rocks (8) a bottle of Bouvier in the far-away Chamonix was offered as a prize for him who first 'eisenened' up again ; halt, 5 min. Up to this point Abraham had led, thence Gottfried led to the summit. We went the whole day two on a rope, Caesar with Abraham, Runge with Gottfried. Though it is not to be recommended it saves time, and having heard sundry reports as to the great length of the Brenva route we wished to make certain of avoiding a night out. This is our excuse. The arête now to be tackled (9) is rather steep and very narrow : we found it only partly ice, practically a snow arête, but the snow was soft and treacherous, requiring care. There was in places a small cornice overhanging to the right, followed by an ice-ridge stretching away nearly horizontally. This arête in its entire length is remarkable not only by reason of its exceeding narrowness, but because the drop on the right is sheer whilst on the left it is extremely steep. [This is the famous arête illustrated in 'A.J.' II., p. 369.] A strong cold wind was encountered, and it continued for the rest of the tour. The arête finally abuts against very steep snow and ice, leading higher up to rocks. We cut up these slopes and then, encountering difficult crevasses, bore away to the right and kept where possible to the rocks (11) which overhang the upper part of the glacier towards the Mont Maudit, higher up skirting them on their west side for a little distance, and then again taking to them (10 A.M.) (12). We were now above point 3921, Imfeld map ; a well-jolted aneroid registered approximately 13,000 ft. Actual going time from the Brenva glacier, 4 hrs. 5 min. Here a chilly forty minutes were consumed, also food and tobacco. It is a most impressive and magnificent spot, the scenery on a grand scale, perched as we were on a steep outcrop of rock—with little room to spare—on the one side a huge drop to the glacier separating us from the Mont Maudit, on the other steep slopes sinking far away below. The eye travelled beyond the immediate imposing surroundings over the huge expanse of glorious scenery, revealing peak after peak right to the Engadine, amongst them many old friends, or searched the S. horizon through the blue

* The numbers inserted in the text refer to the accompanying photograph.

haze of La Bella Italia. Time slipped by and the halt appeared all too short.

Towering straight above us was a huge ice-wall (14), which this year was the crucial point of the whole route; indeed under certain conditions it might prove an impasse. Two alternatives appeared to us to offer: either to bear to the left, in the direction of the ascent, cutting across and up the face of the great ice-wall, or bearing slightly round to the right, to ascend from a narrow gap (13) in the rocks, cutting up a wall of hard blue ice which was extremely steep. After inspection we decided for the latter as the shorter route, judging also that once up it there would be plain sailing. The height of this part of the wall we estimated at something over 100 ft. The first 20 ft. were perpendicular; Gottfried cut small footholds just sufficient to take the front spikes of the crampons, and very good handholds, and the rest of us just slung our axes and climbed up the whole way as if on rocks. It was a fine exhibition of icecraft on the part of the leading guide. Standing in a narrow gap (13), with the wind whistling through one's garments, paying out the rope and watching Gottfried cutting steps, or slowly following with fingers in icy handholds, is interesting but decidedly chilly work. The first 50 ft. or so, bearing slightly to the right, took about 20 min. rapid cutting. On the last part of the wall we bore back again to the left, and, surmounting the last difficulty, we emerged on to easy slopes which led to the highest séracs (15), which this year offered no difficulty. Leaving the actual Brenva Col far away on our right, we bore (16) S.W. towards the Petits Mulets. A cold tramp through powdery wind-driven snow whirling up and cutting our faces brought us to the summit of Mont Blanc at 1.30 P.M.—actual going time from the Brenva glacier, 6 hrs. 55 min.

It was far too cold to linger more than five minutes on the top, so we ran down to the Vallot hut. Chamonix was reached comfortably at 8.30 P.M., and Argentière at 10 P.M.

LES COURTES (3855 m. = 12,645 ft.), ASCENT FROM THE GLACIER D'ARGENTIÈRE AND TRAVERSE.—Dr. Richard Weitzenböck, Dr. Günter Freiherr von Saar and three companions (two ladies), July 23, 1911. Cf. 'Ö.A.Z.' 1912, p. 42.

A rocky rib falls direct from the summit towards the Argentière glacier. The upper part dives under the névé, while the lower third widens out into a great rocky triangle, seamed in the centre by a steep ice couloir. Leaving the hut on the Jardin d'Argentière at 2 A.M., the party made for the foot of the ice couloir mentioned, crossed the bergschrund, and followed the rocks of the left bank until the couloir could be comfortably crossed. E. of this they climbed steep, somewhat rotten, rocks interspersed with patches of ice, until they reached the crest of the ridge on the left. This was followed, becoming always sharper, without difficulty, but higher up several slabby steps gave trouble. At the foot of a striking

yellow tower they bore to the left towards a steep snow couloir, but as soon as possible regained the arête on the right. The arête now flattens and higher up disappears under the névé. It is however in range of a few patches of small stones higher up. The party advanced in constant danger of stones until they were able to gain a rather less exposed rib on the right, which they followed to the last steep ice slope. They cut up this, threatened by the summit-cornice, to the highest rocks, whence they gained the summit in a few steps (12.15 to 1.20).

From the summit they followed the snow ridge W. to the gap before a great unclimbable tower (Tour des Courtes, 3813 m.), at the foot of which they descended to the S. by steep loose rocks to the névé. They struck to the right across this névé, crossed a Geröll-arête to a second rib in the face, which was followed to its end. They then crossed the avalanche run (risky) to the right, jumped the bergschrund, and so reached the Glacier de Talèfre. Couvercle hut 6.10 P.M.

Pennines.

DENT BLANCHE (4364 m. = 14,318 ft.), ASCENT BY THE VIERESELGRAT, DESCENT BY W. RIDGE.—Mr. L. W. Rolleston, with Josef Lochmatter and Albert Chanton, on September 6, 1911. Mountain in excellent condition, though with much loose rock on lower third of E. ridge. On the final E. ridge the cornices were small and in no way dangerous, and the ice, though steep and narrow in places, always permitted safe steps to be cut. On the W. ridge a little difficulty was experienced in finding the best route; the difficulties are turned by keeping to S. side of ridge, the N. side being touched once only at a point about half-hour above where the ridge is finally left (descending), but the ridge is not left for any greater distance than is necessary to turn the difficulties, and this distance is never considerable. The actual climbing was not very difficult.

Left Mountet at 2.40 A.M., summit 10.30 (halts about $\frac{3}{4}$ hr.), left summit 11.15, Ferpèche Glacier 4.30 P.M. (halts about $\frac{3}{4}$ hr.), Col d'Hérens 6.50, Zermatt 11.0 P.M. Total halts about 2 $\frac{1}{2}$ hours.

DENT BLANCHE (4364 m. = 14,318 ft.), TRAVERSE BY S. AND W. ARÊTES.—On September 1, 1911, the writer, with Julius zum Taugwald and Ferdinand Furrer, left the Schönbühl hut at 2 A.M. and reached the top of the Dent Blanche by the S. arête at 7.30. We began the descent by the W. (Ferpèche) arête at 9. At first we followed the ridge, which was quite bare of snow, the climbing being easy (about 50 min.). We turned the great gendarme to the left, but went too far to the left and had to cut across a broad couloir to get back upon the ridge (11.15). We then followed the ridge for about an hour, when we heard a shout below and saw a party of three climbing the face considerably to the left of the ridge.

Thinking they knew the way we left the ridge, and after a difficult traverse with more step-cutting reached a large tower standing prominently out from a subsidiary rib to the left (S.) of the main ridge (1 o'clock), the other party having a short time previously passed over the same spot. We shouted to ask them the way, and they pointed straight down and warned us to beware of stones. After a halt of half an hour we started down the rib, experiencing some fairly difficult climbing on slabs. When we got near the bottom of the rocks we looked in vain for any tracks left by the other party. The steep snow slopes on both sides of our rib were covered with stone marks and we were faced with the two alternatives: (a) of risking a somewhat perilous descent to the bergschrund, which however looked quite close, or (b) climbing back on to the ridge (a long business), hoping to find a better way off it further down.

It was a very hot day and we decided on the former course. We went as fast as possible, but took half an hour to reach the bergschrund owing to several deep avalanche troughs which were invisible from above. One of these was at least eight feet deep. Steps too had to be cut in places. We jumped the bergschrund without difficulty at 3 o'clock and had seen nothing fall, though the slope was littered with débris. After a further halt and some trouble with the séracs on the glacier, we reached the Abricolla Alp at 5.45.

EDMUND G. OLIVER.

OBERMOMINGHORN (3968 m. = 13,015 ft.).—The Obermominghorn is a peak which suffers from rather undeserved neglect with climbers at Zermatt. The rock-climbing on it is excellent, and, taken together with the passage of the Hohlicht Glacier, there are few expeditions which combine more variety and charm. Mr. L. W. Rolleston and myself, with Josef Lochmatter and Melchior Kohler, had a day on the peak in August last. We left the Mountet Inn at 3, taking the usual route up the Rothhorn by the Zinal arête. Before reaching the point marked 4065 on the Federal map, a traverse almost on a level took us to the foot of the Ober-Moming rocks; from there to the summit is a shortish climb of about half an hour over steep but good rocks. The descent to the Col de Moming, which we reached in $1\frac{1}{2}$ hours from the summit, is an excellent scramble. A rapid descent takes one to the Hohlicht Firn, and from there we descended the ice-fall, eventually emerging on the right bank after considerable difficulties. The ice was probably last year rather more broken up than usual: be that as it may, the work for an hour was sufficiently exciting to please most people, and Josef at times cheerfully remarked that we should sleep the night on the glacier. He proved however to be wrong for once. We took off the rope at 12.50, and reached Täsch two hours afterwards. Without doubt, it is possible to avoid all the

difficulties by a traverse to the right from a high level, but the route down the ice-fall is much the most direct and satisfactory.

H. C. BOWEN.

TÄSCHHORN (4498 m. = 14,758 ft.) BY THE TEUFELSGRAT AND TRAVERSE TO DOM (4554 m. = 14,942 ft.)—On September 5, Miss M. T. Meyer, with Gabriel Lochmatter and his nephew Johann Perren as porter, left the regular sleeping place on the Weingarten Glacier at 4 A.M. Miss Meyer writes: 'The Teufelsgrat was, I should think, much easier than it often is, though its rocks have an unpleasant tendency to come off in one's hand.' The top of the Täschhorn was reached at 11.30. The party then descended to the Domjoch and followed the arête to the summit of the Dom (4.20 P.M.), finding the rocks distinctly better than those of the Teufelsgrat. The whole ridge was unusually free from ice and snow except near the Domjoch.

The Festi hut was reached at 7 P.M. and Randa at 10.30 P.M.

MONT VÉLAN (3765 m. = 12,353 ft.) by W.N.W. arête.—On August 11, 1911, the writer with Dr. R. G. Rows, and the guides Alexander Tännler and Heinrich Fuhrer of Innertkirchen, left the Cantine de Proz at 5 A.M. and climbed up the grassy slopes to the Glacier de Proz. After walking up the centre of the glacier for some way we turned N., and made for the base of a large snow couloir just N. of figure 8 in point 3185 on Swiss map, and having negotiated the bergschrund crossed obliquely to the decidedly rotten rocks on the left of the couloir. The couloir lies between the third and fourth teeth of the Dents de Proz, and from the saddle between them we climbed the fourth tooth, composed of red, very rotten rock. We kept mostly to the arête, but occasionally traversed to the right, and descended to the foot of the fifth and final tooth. This is composed of a black shaly rock in extremely bad condition. It was therefore decided to traverse across the W. face of the mountain to a well-marked rock couloir in the situation of figure 3649 on Swiss map. This traverse gave half an hour of interesting and difficult climbing. The rock was of the rotten shaly description, so that we could rarely find points to belay the rope. Just before we reached the couloir the character of the rock changed and the vertical ascent was over granite, with excellent hand and foot holds, and half an hour's thoroughly interesting climbing brought us once more to the ridge, which is here quite narrow and runs N. and S., at right angles to the original arête we were climbing. We kept along this ridge till we came to a sudden dip, on the far side of which stood a large gendarme; this we negotiated by an interesting traverse on its left, which led to a much corniced snow arête, then more easy rock and another sharp snow arête to the point marked 3680 on the Swiss map, the end of the W.S.W. arête by which the usual ascent is made. From here we walked up the broad snow plateau to the top of the Vélan. We descended

by the much crevassed Glacier de Valsorey. We had intended to cross the Col des Chamois, but found that to reach this would entail much step-cutting in ice at an uncomfortably steep angle, so retraced our steps, and ascending some 500 feet of glacier crossed the ridge by an unnamed col to the S.E., and descended past the Chalet de By, reaching Ollomont at 9.15 P.M. On the edge of a crevasse close to the top of Mont Vélán we found a very perfect specimen of the *Convolutus Hawk Moth (Sphinx Convoluti)*, evidently only quite recently dead.

HUGH ROGER-SMITH.

[This expedition is a variation of the route described 'A.J.' xix. 62, when the arête was attained at a rather lower point. Cf. also the splendid article on the Mont Vélán by Signor Agostino Ferrari in 'Boll. C.A.I.' xl. The illustration on p. 146 shows the face in question.]

Bregaglia Group.

AGO DI SCIORA (c. 3201 m. = 10,502 ft.).—On August 5, 1911, I left the Allievi hut at about 4 A.M., with the guides Johann and Wilhelm Summermatter of Randa. We went to the Forcola di Sciora up the steep snow gully shown in the illustration on p. 209, 'Alpi Retiche Occidentali.' Here Johann and I put on *Kletter-schuhe* (Wilhelm was not provided with a pair), and we started for the rock climb, leaving boots and ice axes on the col. We ascended S.W. for about 100 feet over easy rocks, and then traversed S. in a horizontal direction across the W. face of the Ago. The rocks for about half the distance across the face were very rotten, and had to be handled carefully. They were steep throughout, and one or two places were difficult. On the latter part of the traverse the rocks improved, and near the *Bocchetta* (i.e. the gap at the S. base of the final pinnacle) they were quite sound and afforded excellent climbing. When near the *Bocchetta* we ascended diagonally to the right instead of continuing to the *Bocchetta* itself, and struck the final portion of the route about 100 ft. above the gap. From this point to the summit is a short climb of about 40 min. (we lost time by missing the route in one place). The rocks on the final climb are excellent. We reached the summit at 9.45, but only stayed there 5 min.—to my regret—as Johann was nervous about a possible change in the weather. We descended into the gap (*Bocchetta*) and from there by the route of the original climbers (Route a, Strutt, p. 92) to the S.W. corner of the Ago Glacier. We went a short way down the glacier to some rocks, and waited there while Wilhelm went back to the Forcola to fetch the boots and ice axes. We then descended the Albigna Glacier and went down to Vicosoprano.

E. B. HARRIS.

Dolomites.

CAMPANILE DI VAL MONTANAIA (2171 m. = 7121 ft.).—This singular-looking rock needle stands in an isolated position in the centre

of Val Montanaia. *Vide* full-page illustration opposite p. 392, 'Zeitschrift,' 1905, and illustrations in 'Hochtourist,' vol. iii. 1911, also 'Le Dolomiti della Val Talagona,' and 'A.J.' xxv. p. 560. The new hut on the Pra di Toro, built by the Padua section of the C.A.I., has greatly facilitated climbing in this out-of-the-way district. It is about 4 hours from Pieve di Cadore. I went to the hut on September 11, 1911, with the guides Johann and Ferdinand Summermatter of Randa, and two ladies, with whom I had climbed at Cortina. On the 12th we left the hut at daybreak, and after 4½ hours' walk, at first through pine woods and then up steep scree slopes to the Forcella Montanaia, followed by a descent into the Val Montanaia, we halted for a meal near the foot of the Campanile, and then walked round to the *Einstieg* on the S. side. One of the ladies remained here to photograph, while her sister made the climb. We roped two and two, Johann leading. The route goes up a chimney, then a traverse to the left over a rock face, small holds, then a longer chimney, followed by a traverse to the right, and then back to the left, up to a projecting rock (Kanzel). From here straight up a rock face, Cozzi Riss, with small holds for 12 or 15 feet, and then up easier rock to the celebrated traverse just below the big overhang. This traverse is about 30 feet to the left, along a narrow shelf; it is impressive, as the rock immediately below it overhangs considerably, nothing below being visible, but the actual going is not difficult. At the end of the traverse a crack leading upwards is reached; the lower part overhangs a bit and is rather hard—above the crack widens out and an easier slope leads to the broad upper platform (*ballatoio*). From here to the summit there is no particular difficulty. The summit is a small platform which falls away steeply in all directions. On the descent we came down by *Abscilen* from a point on the upper platform above the Kanzel to the Kanzel itself, some 40 or 50 feet, avoiding the overhanging crack, and the traverse and Cozzi Riss, and from thence descended to the *Einstieg* by our line of ascent. The ascent took 1½ hours and the descent 1 hour 55 min. The rocks of this Campanile are inclined to be rotten in places. As far as I could judge no alternative line of ascent is likely to be discovered on this peak.

There are many other good climbs in this group, but we had no time to attempt any more. The hotel Marmarole at Calalzo near Pieve is very comfortable: the proprietors, the brothers Fanton and their sister, are keen climbers and have made many first ascents in the group.

E. B. HARRIS.

ALPINE NOTES.

‘**THE ALPINE GUIDE.**’—Copies of Vol. I. of the new edition of this work, price 12s. net, and of ‘Hints and Notes, Practical and Scientific, for Travellers in the Alps’ (being a new edition of the General Introduction), price 3s., can be obtained from all booksellers, or from Messrs. Stanford, 12 Long Acre, W.C.

‘**THE ALPINE GUIDE,**’ **THE CENTRAL ALPS. PART I.**—A new edition of this portion of the ‘Alpine Guide,’ by the late John Ball, F.R.S., President of the Alpine Club, reconstructed and revised on behalf of the Alpine Club under the general editorship of A. V. Valentine-Richards, Fellow of Christ’s College, Cambridge, is now ready, and can be obtained from all booksellers, or from Messrs. Stanford, 12 Long Acre, W.C. It includes those portions of Switzerland to the north of the Rhone and Rhine valleys.

‘**THE ALPINE GUIDE,**’ **THE CENTRAL ALPS. PART II.**—A new edition of this portion of ‘The Alpine Guide,’ by the late John Ball F.R.S., President of the Alpine Club, reconstructed and revised on behalf of the Alpine Club under the general editorship of the Rev. George Broke, is now ready, and can be obtained from all booksellers, or from Messrs. Stanford, 12 Long Acre, W.C. It includes ‘those Alpine portions of Switzerland, Italy, and Austria, which lie S. and E. of the Rhone and Rhine, S. of the Arlberg, and W. of the Adige.’

THE ALPINE CLUB OBITUARY.—Sir George Clerk, Bt. (1871).

THE CLUB HUT BRITANNIA.—This hut is now in course of construction on the Hinter Allalin(3,077 m.), and is expected to be finished by the end of July. The inauguration is to take place in August. The ground floor contains caretaker’s room, dining-room, 16 ft. by 22 ft., and guides’ sleeping-room for twelve. On the first floor are dormitories for sixteen men and eight ladies, and a small dining-room and stove for the winter.

The cost is as follows :—

	frcs.
The building itself, including furniture and sundries	13,800
Transport of the whole	6,080
	19,880

or nearly £800.

This amount exceeds the original estimate by £100, and it will be necessary to raise this difference as the total amount collected to date is £717.

The hut is intended to be one of the best built and equipped huts in the Alps, and as the President of the Association states that it does not intend to build any more, it is earnestly hoped that the

present deficit may be speedily wiped out, and the matter set at rest.

Subscriptions should be sent to C. E. King-Church, Esq., Clive Lodge, Albury, Surrey, or to C. T. Dent, Esq., 61 Brook Street, W.

STRAHLEGG HUT.—This admirable hut built by the Basel Section of the S.A.C. is stated to have cost 18,300 frs. = £732.

HEIGHT OF THE MATTERHORN.—In the note in the last number of the JOURNAL (p. 92), the heights 4505 m. and 4482 m. of the two summits were transposed by a printer's error. In the 'Echo des Alpes,' 1912, pp. 99–108, M. Ch. Jacot Guillarmod, an engineer of the Swiss topographical service, examines in great detail the various authorities on the subject and shows that the heights calculated by the surveyors vary by several metres. His conclusion is that the question will not be solved until a detailed triangulation with modern instruments of precision is made.

MT. GHITSA, OR GYSA, AND CASSIORTE (AROLLA DISTRICT).—Canon Sloman descended last summer the N. arête of Mt. Ghitsa. Neither it nor Cassiorte is named on the Siegfried map, and some doubt appears to exist as to their exact identity. The Mt. Ghitsa ascended by Canon Sloman forms the most Eastern end of the Dolin ridge, and has a cross on it. Canon Sloman has had some correspondence with Mr. Larden on the subject, as the latter places Mt. Ghitsa 'between Dolin and La Roussette,' which the Canon thinks would answer to the small point forming the S. side of the Col de la Forclette.

JUBILEE OF THE S.A.C.—To commemorate the fiftieth anniversary of its foundation the Assembly of Delegates of the S.A.C., held at Zug on November 6, 1911, has commissioned Dr. H. Dübi to write a history of the Club from 1863 to 1913.

SCHWEIZER ALPEN-CLUB.—The published accounts to December 31, 1911, of this Club give the following interesting information:—

Total members (including 1,424 new members)	. . . . .	12,298
Total income	. . . . . frs.	75,692 = £3,028

The principal items of expenditure are:—

For new huts (5)	. . . . . frs.	22,500
Repairs to old huts, furniture, assurance and paths	. . . . .	3,870
The fortnightly 'Alpina'	. . . . .	8,454
Assurance of guides	. . . . .	9,572
Various subventions	. . . . .	12,604
General expenses	. . . . .	6,577
The rebuilding of the Swiss Alpine Museum (instalment)	. . . . .	10,000

frs. 73,577 = £2,943

Volume 46 of the 'Jahrbuch' with the Album of Club Huts cost 49,365 frcs., but this cost is covered by the allocation of a portion of the annual subscription, and hence is not shown as an item of general expenditure. The total assets of the Club amount to 72,581 frcs. = £2,903.

D. U. G. A. V.—The total income of this great Association for the year 1911 was as follows:—

Members' subscriptions (94,277, including 3079 new members)	mks.	639,629
Interest		7,219
Various sources		12,561
Advertisements		20,020
		679,429 = £33,971

The expenditure was as follows:—

Zeitschrift	mks.	201,398
Mittheilungen		112,992
Huts and paths		176,438
Management		45,566
Expenses in connexion with guides.		28,508
Central Library		13,418
Alpine Museum		20,000
Accident Fund		18,000
Other objects		15,596
		631,916 = £31,595

The total assets of the Association amount to 365,262 mks. = £18,263.

RECORD ASCENT OF MONT BLANC.—On August 20, 1910, MM. Joseph and Marcel Bouchard and Alfred Couttet, the ski champion, left Chamonix at 10 P.M. and reached the summit of Mont Blanc at 7.15 next morning. They left the summit at 8 and reached Chamonix at 11 A.M., or 13 hours in all including halts.

Their time from the Grands Mulets to the summit was 4 hours ('La Montagne,' 1912, p. 105).

THE NADELGRAT.—The ascents recorded in the Dom hut book are as follows: Dom, 116; Hohberghorn, 5; Nadelhorn, 25; Stecknadelhorn, 14; Südlenzspitze, 14; Täschhorn, 10. The total number of visitors to the hut was, tourists, 132; guides, 39.

ASCENTS OF SOME TYROLESE SUMMITS.—The Alpine Museum in Munich contains tabular statements of the number of ascents made of well-known peaks from the year 1897 to 1910. Thus the visitors to the Marmolata increased from 234 in 1897 to 1113 in 1910, and whereas in 1897 there were 29 guideless and 118 guided travellers,

the figures in 1910 were 515 and 326 respectively. The 1910 figures include 24 guideless and 4 guided ascents of the S. face. The total number of persons who gained the summit from 1897 to 1911, both inclusive, was 10,366.

The Kleine Zinne appears to have been ascended altogether by 3495 people, viz. :—

By the S.W. face	.	.	.	.	.	.	2,918
By the N. face	.	.	.	.	.	.	553
By the E. face	.	.	.	.	.	.	24

The Zugspitze is the most remarkable for its visitors, as on August 14–15, 1910, alone there are 700 entries in the visitors' book. The Totenkirchl is another great favourite, as in 1910 its summit was reached by 63 guided and 556 guideless climbers, including 8 and 23 ladies respectively.

ASCENT OF THE N. FACE OF THE MÖNCH—A COMPARISON.—Dr. Rudolf Beck of Vienna describes in 'Alpina,' 1912, p. 49 *seq.*, his experiences on this expedition, which he carried out on September 3, 1911, with the guide Josef Maria Biner (son), of St. Niklaus. Much ice was encountered, and it was decided to cut up the left or E. face of the famous 'Nollen' instead of attacking it in front, as has usually been done. It took Biner nearly three hours' hard work before he reached the top of the 'Nollen.'

Dr. Beck makes the following interesting comparison of the great ice climbs known to him :—

1. The E. face of Monte Rosa is the finest and most splendid.
2. The N. face of the Jungfrau is the longest and most arduous.
3. The N. face of the Mönch is the most difficult.

THE JUNGFRAU RAILWAY.—The tunnel from the Eigerwand station to the Jungfraujoch was pierced on February 21. A station is in course of construction at the Joch.

THE ZMUTT ARÊTE OF THE MATTERHORN.—It is a matter of interest to meteorologists that the four days' storm (August 20–24) which put a heavy covering of fresh snow on the Zermatt peaks was thought to have rendered the Zmutt arête quite impossible of ascent. A view obtained on the descent of the Italian side of the mountain brought our party to its foot on the next day. The ridge had escaped the storm in the sense that no fresh snow lay upon it, and the route was in good order.

J. M. ARCHER THOMSON.

FIRST ASCENT OF CERRO LA PALOMA (4,930 m. = 16,170 ft.).—According to an article in the 'South Pacific Mail' of March 13, 1912, the first ascent of this mountain was made on February 20 by Signor Felix Mondini, the well-known member of the C.A.I., and Messieurs N. R. Temperley and H. Trehweler. The peak is well seen from Santiago. The ascent was made from Los Bronces by a

N. ridge free from ice, and thence by the snowy edge seen from Santiago, the central and highest peak being attained.

THE BERGLI ACCIDENT.—The total amount subscribed for the sufferers from this accident was 47,334 francs, and in addition the guides were insured for 19,056 francs, making together 66,390 francs. The amount was distributed under the direction of Pfarrer Strasser, assisted by a very representative Commission, as follows :

I. *To the Grindelwald families.*

1. Peter Inäbnit's widow and 11 minor children :		frcs.	
Subscribed		22,081	
Insurance		4,000	
		<hr/>	26,081
2. Chr. Bohren's widow and 3 minor children :			
Subscribed		6,966	
Insurance		4,000	
		<hr/>	10,966
3. Rudolf Inäbnit's relatives :			
Subscribed		1,843	
Insurance		4,000	
		<hr/>	5,843
4. Fritz Brawand (wounded), wife and 6 minor children :			
Subscribed		1,420	
Insurance		256	
		<hr/>	1,676

II. *To the Eisten families.*

1. Alexander Burgener's widow and daughter :			
Subscribed		5,278	
Insurance		2,000	
		<hr/>	7,278
2. Adolf Burgener's widow and 1 minor child :			
Subscribed		5,278	
Insurance		4,000	
		<hr/>	9,278
3. Alexander Burgener, Junr. (wounded), wife and 5 minor children :			
Subscribed		4,468	
Insurance		800	
		<hr/>	5,268
			frcs. <hr/> 66,390

The families of the two travellers who were killed subscribed to the fund as liberally as their means permitted. The amount subscribed by members of the Alpine Club was £108 19s.

ACCIDENT ON THE DOLDENHORN IN 1904.—It will be remembered that on June 19, 1904, three young Swiss medical students in descending the Doldenhorn slipped down a snow-slope, two falling into a crevasse. One of them died the same night and the death of the other, Herr Ernst Krebs of Oberbalm, is now announced. Herr Krebs, who was a man of very fine physique, a strong and practised mountaineer, never recovered the use of his legs after the accident, being paralysed from the waist.

FATAL ACCIDENTS IN 1911.—The 'Mittheilungen des D.u.Ö.A.V.,' 1912, pp. 37-40, 52-55, 65-67, and 79-82 gives a critical analysis of the many accidents recorded in 1911. The principal have already been dealt with in these pages.

The following summary speaks for itself. Fatal accidents occurred to :

1. 34 travellers unaccompanied, viz. :—

Fall from rocks	25	Eastern Alps	21
Fall into crevasse	6	Western Alps	12
Cause unknown	2	Non Alpine	1
Frozen to death	1		
	—		—
	34		34

2. 68 travellers accompanied by others, viz. :—

Fall from rocks	44	Eastern Alps	38
Fall from snow and ice	10	Western Alps	23
Fall into crevasse	2	Non Alpine	7
Stone fall	7		
Exhaustion	2		
Lightning	1		
Frozen to death	1		
Unknown reason	1		
	—		—
	68		68

Injuries were reported to 89 travellers, while quite a number were reported missing.

FATAL ACCIDENTS IN 1911.—The 'Echo des Alpes' for April 1912 contains a list, compiled by M. F. Montandon, of the fatal accidents in 1911. He records the loss of 114 travellers (including 10 ladies) and 8 guides. The nationalities were as follows :—

German	45
Austrian	35
Swiss	20
French	9
Italians	7
English	2
Others	4
	<hr/>
	122

M. Montandon makes the following classification :—

I.—*Unavoidable Accidents.*

a. Objective, <i>i.e.</i> caused by the mountain without contributory negligence	12
b. Subjective, <i>i.e.</i> caused by a sudden seizure, &c., without contributory negligence.	4

II.—*Avoidable Accidents.*

a. Alone	27
b. Accompanied	
1. Unroped	7
2. Novices without guides	6
3. Want of skill or nerve	6
4. Getting into dangerous places	3
5. Insufficient equipment	3
6. Bad weather	2
c. Unexplained accidents	40

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The causes of the various accidents are stated to be the following :—

1. Breakage of snow bridge or cornice	12
2. Storm, mist, or nightfall	9
3. Fall when gathering flowers	8
4. Slip on hard snow	7
5. Struck by stones	6
6. Weakness, sudden attack of giddiness, &c.	4
7. Missing the route (fine weather)	4
8. Falls in inhabited valleys	3
9. Avalanches from above	3
10. Disappeared	2
11. Avalanche trodden loose	1
12. False step on rocks and cases incompletely explained	51

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It is not at all clear why M. Montandon should set down as avoidable such accidents as happened to solitary climbers. Many of the accidents recorded are not mountaineering accidents in the strict sense, *and one thing is quite clear from all these records, and that is that an accident to a party of properly equipped and practised mountaineers is rare.* Mountaineering, properly practised, is not a mere risky sport, but is a pursuit that makes great demands on and builds up a man's endurance, strength, watchfulness, determination to overcome and skill in overcoming difficulties, and what, by careless or unskilled handling, do often become most serious dangers.

RELATIVE FREQUENCY OF ACCIDENTS.—Some very interesting tables have been drawn up for the Munich Alpine Museum which throw an interesting light on the relative frequency of accidents in the Eastern Alps. It has been calculated that the number of visitors to the huts of the D.u.Ö.A.V. between 1901 and 1910 has increased by 80 %, whereas the number of fatal accidents, even including flower pickers, has only increased 40 %. The members of the Section Bayerland of the D.u.Ö.A.V., which contains a large proportion of active mountaineers, have in fifteen years made 79,440 expeditions, of which 77,327 were without guides. These expeditions, many of which were difficult, involved only thirteen fatal accidents. Probably our own Club can show even a smaller proportion of fatal accidents.

Naturally the nearness of the Kaisergebirge to Munich makes it much frequented, and 47 fatal accidents are recorded against that district alone. (Cf. 'Mitth. D.u.Oe.A.-V.', 1912, No. 3.)

REVIEWS AND NOTICES.

The Climbers' Club Journal, 1912. *New Series. No. 1.* (To be continued annually.) Edited by A. H. M. Lunn. 3/- net. Horace Marshall & Sons.

WE welcome this New Series of the 'Climbers' Club Journal,' and wish it every success. The type is clear, the illustrations are good, and the Editor has succeeded in enlisting the help of many well-qualified contributors. The first article is on the 'Ascent of the Grépon by the Mer de Glace Face' by R. Todhunter. It is illustrated by a photogravure of the Grépon from a beautiful painting by E. C. Compton. This paper is followed by a characteristic article from the pen of G. Winthrop Young on 'Climbing Down.' J. M. Archer Thomson tells the story of the 'Exploration of Llechog

and Clogwen yr Ddysgl.' These mountains of sonorous sound supply climbs the very names of which 'enshrine the poetry' which they have awakened in the hearts of their conquerors—'The Cloister Climb,' 'The Mermaid Climb,' 'The Torpedo Route.' This paper has four attractive illustrations. There is a 'Note' on the Gletscherjoch by O. K. Williamson, with two illustrations.

Amongst other contributions are 'Ostertage in North Wales' by Dr. Karl Blodig, an ascent of *Ætna* by the Editor, on 'Claws and Ice-craft' by O. Eckenstein, and an interesting and instructive paper on the 'Pyrenees' by C. A. Elliott, who strongly recommends them as a practice ground for guideless climbers, and to our mind thoroughly justifies his recommendation. Art is not neglected, for M. T. H. Sadler discusses fully the merits of C. J. Holmes as 'An Artist of Mountains.' Two illustrations accompany this paper.

We regret that want of space prevents us from writing at greater length on this excellent number: the standard which it sets is high, and we wish the Editor every success in maintaining it.

PROCEEDINGS OF THE ALPINE CLUB.

A GENERAL MEETING of the Club was held in the Hall on Tuesday evening, February 6, at 8.30, Sir Edward Davidson, *President*, in the chair.

The following gentlemen were balloted for and elected members of the Club:—Messrs. Ralph Todhunter, Walter Nelson, Joseph Murison Davidson, James Robert Dennistoun, and Henry Arthur Hinton.

The PRESIDENT said: I regret to have to announce the deaths of two of the oldest members of the Club, each of over fifty years' standing. Graf Hans v. Hallwyl, who became a member in 1859, and Mr. Hubert Smith-Stanier, who was elected in 1860, and who attained the age of eighty-nine years and a few days. Mr. Smith-Stanier wrote a very interesting book, published in 1874, entitled 'Tent Life with English Gipsies in Norway,' which was reviewed at the time in the 'Alpine Journal,' Vol. VII.

I also have to announce that Mr. Percy H. Thorp has presented to the Club an oil-painting of the Val d'Anniviers, and I am sure the Club would wish me to convey to Mr. Thorp our hearty thanks for his handsome present.

This is the first time we have met since the close of our Picture Exhibition in December, and I feel confident that we shall be unanimous in according a most hearty vote of thanks to Mr. G. P. Baker for the great trouble, care and skill displayed by him in his

capacity of Hon. Secretary of the Exhibition, which was one of the most successful we have ever had.

Mr. E. H. F. BRADBY said : Mr. President, having regard to the disappointment of some members who were unable, on account of the limited number of tickets available, to invite guests to the Winter Dinner, might I ask whether the Committee propose to lessen the number of guests in order to make room for a larger number of members, or whether they propose to leave the Whitehall Rooms and engage a hall with a larger seating capacity? Of course, if you are not in a position to make any statement on the subject at present, I do not wish to press the question.

The PRESIDENT said : I am very glad Mr. Bradby has asked this question, as I am now in a position to make a statement which may be of interest to members of the Club. For a long time past this question has engaged the attention of the Committee, as, although we all feel that at the Whitehall Rooms we have been treated very well indeed, we have found it impossible to accommodate there anything approaching the number of members and their guests who desired to be present, without the addition of several small corner tables, and (in 1911) of an overflow room, which was a very unsatisfactory arrangement, and, as far as the small tables were concerned, an uncomfortable one. It was, however, only the consideration of want of space at the Whitehall Rooms, where we were able with the addition of the small tables to seat, and that not very comfortably, a company of about 270 in the large room itself, that determined the Committee to make inquiries with a view, if possible, without increasing the price of the dinner, to find a more spacious place in which to hold it. The Sub-Committee appointed for this purpose, of which I was a member, together with Mr. Withers (the late Hon. Secretary) and Dr. Waugh, made careful inquiries as to what rooms were available, and came to the conclusion that the best room, if the terms were suitable, was the new ball-room at the Savoy Hotel. This room was undoubtedly the best room seen, and 400 people can there be seated comfortably. Last December we had 310 at the Whitehall Rooms, of whom forty dined in the overflow room, and came in to hear the speeches afterwards. We found we could get a dinner for the same price if about 300 (or more) members and guests dined, and I think I was justified in saying that we might count upon that number. It seems safe to estimate that we shall, in all probability, have more than 310 people next year, as the number of guest tickets can be increased beyond the present limit of fifty, and having engaged the room, the Committee hope that in the new quarters we shall be as successful as we have been in the past in the old. We all feel how extremely well we have been treated by the Whitehall Rooms, and it is only the imperative consideration of want of space, which we think ought to come before everything else, that has compelled us to seek other quarters. We shall take

care to convey this in suitable terms to the management of the Whitehall Rooms. It may be convenient that I should take this opportunity of announcing that the Annual Winter Dinner will be held on Tuesday, December 10.

Mr. A. M. KELLAS then read a paper on his experiences in 'The Sikkim and Garhwal Himalaya in 1911,' which was illustrated by lantern slides.

The PRESIDENT said: Before inviting discussion on the very interesting paper we have just heard, I should like to read to the Club a letter which has been received from Dr. Longstaff, who extremely regrets his inability to be present here to-night. He is at present travelling in Africa, and writes from Hammam R'Irha as follows:

'If you have a suitable opportunity please read this at Kellas's paper, or part of it, or words to that effect.

'I am very sorry indeed to miss hearing Dr. Kellas. Much of his remarkable success in Himalayan exploration during the last few years has probably been due to the unusual degree to which he covers his tracks and avoids observation. Now that he has been induced to speak, it is a great disappointment to me to lose the chance of hearing him, especially as I feel perfectly certain that he will not tell the Club of many of the little unofficial expeditions he has made into localities which are certainly believed to be inaccessible—even to members of the Alpine Club. May I express my profound admiration for the manner in which Dr. Kellas has gained and kept the confidence of his exclusively (and exclusive) native companions in his several expeditions? It is really no exaggeration to liken his achievements to those of the three brothers Schlagintweit.'

I thought I would like to read that, as it contains the expressions of one of Mr. Kellas's friends, and one of the men best qualified to judge of Mr. Kellas's achievements.

Mr. FRESHFIELD said: I feel that some apology is due to the members of the Club, for the too frequent intrusions of veterans like myself in our discussions. On the present occasion, however, I have this excuse, that there is probably no one in the room except Professor Garwood and myself who has ever been over any of the ground in Sikkim described by Mr. Kellas.

I have listened to Mr. Kellas's remarkable account of his climbs with admiration and, I must add, not without envy. Envy, because the way in which he ran backwards and forwards over our 20,000 ft. pass, the Jonsong La, as if it were a Himalayan St. Theodul, suggested too vividly the contrast between the condition of the country last summer and that in which we found it after the great snowstorm of September 1899, when it took our coolies five days to get across the range.

The only fault I can find with Mr. Kellas's narrative is that it,

to some extent, fails to do justice to the extent and nature of his exploits. He has visited Sikkim three times, he has described only his last journey; he has climbed two great mountains of over 22,000 ft. and one of over 23,000 ft.; he has explored to their head all the sources of the Zemu Glacier and the gaps at the head of Lhonakh, and in so doing has been able to correct Garwood's map in more than one locality. And, most remarkable of all, he has done this with native followers whom he has trained to be efficient mountaineers—in the technical sense of that word. In so doing he has furnished the most practical contradiction to the reports of some previous explorers, and the most valuable help to future travellers. Further, by climbing at a pace of 700 to 1,000 ft. in the hour at heights of over 20,000 ft., he has added another proof that the limit of human powers on the mountains is still far from having been reached.

I may take this occasion to express an opinion as to the ascent of Kangchenjunga. Mr. Kellas confirms me in thinking that the climb from the head of the Kangchenjunga Glacier among the cliffs and crevasses of the N.W. face of the mountain is likely to prove a perilous one on account of ice avalanches, and should only be undertaken after very careful reconnaissances. The only possible alternative seems to be a route from the head of the Yalung Glacier on the S.W. of the mountain, up crevassed slopes, and then by a transverse shelf, visible from many points of view, on the rock-face of the mountain to the base of the W. ridge of the highest peak. It was in this direction that a futile attempt which ended in disaster was made by an unfortunately organised party some years ago. Success would depend on the possibility of establishing at least one and probably two camps on the rock-face.

Professor GARWOOD said: I should like to associate myself with every word which Mr. Freshfield has just spoken. With the possible exception of Mr. Freshfield, I expect I was more interested than anyone else in the room while listening to the paper we have just heard, and I should like to add my congratulations to Mr. Kellas on his really splendid expedition in the district round Kangchenjunga which I visited with Mr. Freshfield in 1899. As allusions have been made to my map of the Kangchenjunga district which was shown on the screen I should like to say, that it does not claim to be more than a preliminary sketch map of the line of route actually traversed during our expedition, and that as regards outlying portions—as, for instance, the N.E. tributary of the Zemu Glacier which was explored by Mr. Kellas—the map is to a great extent hypothetical, as stated in the notes accompanying the map in the 'Geographical Journal.' I was interested to hear of the alterations in the height of certain peaks given in the recent edition of the Government map, and would like to ask whether these changes are the result of a new official survey or of a recalculation of the earlier field observations. I should like also to ask the author of the paper whether he happened

to bring back with him any rock specimens from the limestone ridges in the Lhonakh Valley, as this district was the only one in which sedimentary rocks were met with during our expedition in 1899. The age of these limestones is of special interest in connection with the date of the upheaval of this portion of the Himalayan Chain, and the age of the Kangchenjunga gneiss.

Mr. MUMM said: I was overwhelmed with admiration at Mr. Kellas's work, which is far and away beyond anything that has ever been done in this region. It seems to me that the moral of his success is, that he was extremely wise in leaving Kangchenjunga severely alone and confining his attention to peaks of lesser elevation, and in consequence he succeeded in getting to the top of a surprisingly large number of very big mountains. Yet even he was tempted at the last, and went a long way round in order to have a go at a 25,000-footer in the shape of Kamet, and I rather regret that he did not stick to his earlier principles, and attack one of the many fine peaks of 21,000 and 20,000 ft. between the Mana and Niti Pass routes. In regard to Kamet I do not think anybody has realised before what a difficult mountain it is all round. Dr. Longstaff never got a very good look at it from the side Mr. Kellas showed us, and certainly had no idea of the difficulties of the western face, but he did ascertain that the eastern face was horribly steep and, I should imagine, absolutely impossible. Whether farther round to the N. it is more practicable I do not know. I quite accept Mr. Kellas's modification of my remark as to camping high and starting late.

Colonel MICHELL said: My field of exploration in the Himalayas has been just to the E. of Mr. Kellas's ground, away up the valley of the R. Lachoong to the Donkia Pass; but that was in the old days, and I was not a member of the Alpine Club at that time.

I recognised several views, having ascended the Kanchinjhaw Ridge opposite Pauhunri, whence I saw the N.E. slope of Kangchenjunga, and thought an ascent was possible on that side. I attended Mr. Freshfield's lecture and remember the route he pointed out as perhaps feasible, but I cannot say whether it is the same as the N.E. slope that I saw from Kanchinjhaw.

Dr. COLLIE said: I am sure we all owe a very great debt to Mr. Kellas for his paper, and especially for the way in which he has trained natives for Alpine work in Sikkim. A case in point occurred this summer. Lieutenant Slingsby with natives made an attempt on Kamet. He wrote to me saying that he had managed to get to about 21,000 ft., and as far as he could see there was nothing more of difficulty between him and the top, but he had to give up the attempt for the natives refused to go on; this would probably not have occurred if he had had with him men trained to the work in the same way that Mr. Kellas's men were.

The **PRESIDENT** said : There remains to me the very pleasant duty of proposing a most hearty vote of thanks to Mr. Kellas for his interesting lecture and beautiful photographs. The only fault I have to find with the lecture is that it was such a Gargantuan banquet, almost bewildering in its profusion, containing as it did sufficient material to furnish forth at least five feasts fit for an Alpine Lucullus, that we have not yet had time to digest it. One thing on which I particularly wish to congratulate Mr. Kellas is, that he managed all his expeditions without the help of Swiss guides. Speaking now from a selfish standpoint, I have for some time past in my modest Alpine jaunts been embarrassed by the fact, that the two eminent experts who are kind enough to sustain my faltering footsteps every summer are constantly being bombarded, either directly or indirectly, with requests of the most tempting character from younger members of the Club to go with them to the Himalayas, and other distant mountain ranges, and I think that after what Mr. Kellas has said in regard to his natives, there will possibly be less desire to take Swiss guides out to India. Without trenching on political matters, I am all for the protection of home industries, and for the employment of natives in their own land.

I am sure we are all very much obliged to Mr. Kellas for his delightful paper. Perhaps he would like to say a few words in answer to some of the questions that have been put.

Mr. KELLAS said : With regard to Mr. Freshfield's remarks on Kangchenjunga, I think the S.W. face looks the most practicable. I investigated the N.W. face but found this extremely difficult, because the rocks usually have ice-falls along the top. There may be a possible route from the N. and, perhaps, another from the W. In reply to Professor Garwood's question, I may say that I did not bring any rock samples from the place he mentioned. I intended to go back to the Jongsong Peak, and might have taken some samples then, but I found there was not time to do that.

As regards the natives I might mention, in connexion with what Dr. Collie said, that the coolies who were with me in Sikkim were thoroughly satisfied with the pay and food, and that they were splendid fellows for work. I took two Swiss guides with me in 1907, and the result was not satisfactory. The natives do a great many things that the guides would not do, and Swiss guides judge everything according to Swiss standard.

A **GENERAL MEETING** of the Club was held in the Hall on Tuesday evening, March 5, at 8.30 P.M., Sir Edward Davidson, *President*, in the chair.

The following gentlemen were balloted for and elected members of the Club : M. le Chevalier Victor de Cessole and Mr. Richard Harold Francis.

The PRESIDENT said: I regret to have to announce the death of two members of the Club. One of them, Sir George Clerk, Bart., the head of the old Scottish House of Penicuik, was elected to the Club in 1871 and remained a member until his death, although for many years past he had ceased to engage in active mountaineering and was rarely seen at our meetings. The other member whom we have lost was well known as one of the most active and enterprising of modern mountaineers. I refer to Mr. G. B. Tunstall Moore. He was a first-rate mountaineer and was specially remarkable for possessing exceptional endurance, pace, and stamina, which enabled him to accomplish several of the longest and most severe climbs recorded in Alpine annals. One of his exploits which comes back to my mind was his ascent, within the compass of a single day, of the Aiguille de Rochefort and of Mont Mallet, finishing up with the traverse of the Aiguille du Géant. He was a great sportsman all round: a splendid shot, a very good man to hounds and a fine fisherman. He has died at the early age of 42, and his loss is indeed a great one to the Club.

Mr. G. WINTHROP YOUNG then read a paper on 'Two Ridges of the Grandes Jorasses,' which was illustrated with lantern-slides.

The PRESIDENT said: I have no doubt that several members of the Club would like to address us on this very interesting paper, but I think we should first of all wish to hear what Mr. H. O. Jones, who took so great a part in these expeditions, has got to say about them. Perhaps he would in the course of his observations explain what to me, at any rate, is a mystery, and tell us something about this new chemical body to which Mr. Young assigns the formula of 'HO₂.' H₂O we have heard of, but HO₂ seems to be an allotropic modification of Mr. Jones's initials and has, I gather, something to do with the most honourable letters of F.R.S. which have lately been added, to our great satisfaction, to the other extremity of Mr. Jones's name.

Mr. JONES said: I find it very difficult to add anything to the thrilling account which Mr. Young has given of these two expeditions. I had not realised before what an exciting time we must have had, but those two days will certainly remain among the most pleasant memories of my life. I should not have tried the ascent of the West Ridge had I not been with Young and Knubel. The latter having once started on the rocks above the Col des Grandes Jorasses was determined to go on at least as far as the point which had been reached by previous parties. The ascent of the West Ridge has the advantage over the descent of the East Ridge only in that there is much more satisfaction in going up than in coming down. Perhaps I might explain that the dropping of my ice-axe, an incident which Young has mentioned, was due to the interest I was taking

in working the knee-brake on the rope when coming down the cut off to the 'V' notch on the East Ridge.

Capt. FARRAR said : The expeditions that have been described to us are really a point above me, but the feeling I had while listening to Mr. Young was that they were incomparable climbs and that it was an incomparable paper. No three men deserve better the success they had.

Mr. BROOME said : I am not sure that I am the right person to voice the general chorus of thanks to Mr. Young for the interesting, exciting, and poetical paper he has read to us this evening. We have all enjoyed it very much, and I really think that just now, when we are going through such gloomy and troublous times, it is something to have our thoughts turned away, if only for one night, to pleasanter and more congenial scenes and adventures. If Shakespeare were with us this evening, he would say :—

The time is out of joint ; oh cursed spite
That Geoffrey Young can't read a paper every night !

Now I should like to say something of a different character, and it has reference to the late member whose name, by a very sad coincidence, has been mentioned in Mr. Young's paper, and whose death has been announced to the Club by the President. Mr. G. B. Tunstall Moore was a fine fellow, a true friend, and his loss is a very great one to this Club, to which I had the honour of seconding him for election. He was a keen mountaineer, a hard rider to hounds, a great fisherman, and a good all-round sportsman. It was in 1902, as I think Mr. Young has said, when he attempted his climb down the East Ridge of the Grandes Jorasses with a large party, but he was very much handicapped by the icy conditions of the mountains that year. He told me a good deal about it. The paper to-night was especially interesting to me as I know that range well and have been on most of its peaks and passes, also inspected both of these big ridges from the summit downwards. I also looked carefully up at the E. one from the Col des Hirondelles, and at the W. one from the Col des Grandes Jorasses. I ventured to prophesy that the East Ridge might possibly be descended, but would never be climbed up. With regard to the long W. arête, it never occurred to me that anyone would ever want to traverse it, and I still doubt if anyone except these two gentlemen would have done so. I congratulate Mr. Jones most heartily on the honour he has attained in his election as F.R.S. After his and Young's sensational climbs of last season, I don't know what they can have in reserve for another year, but rather expect there is still something up their sleeves.

Mr. A. E. FIELD said : I happened to be at Montanvert in 1902

at the time Tunstall Moore made his attempt to climb down the E. Ridge, and we watched his attempt for several hours through a telescope, and, I think, if my recollection is correct, he certainly got more than half-way down to the notch. Later on when I took another look at him I saw that he had just turned back. I saw Tunstall Moore afterwards and he told me something about it.

The PRESIDENT said: If nobody else has anything to say I will perform my usual and pleasant duty of proposing a most hearty vote of thanks to Mr. Young for his extremely interesting and charming paper. It is really a literary gem, and as an account of two of the finest climbs which could by any possible stretch of the legs or the imaginations, even of such exceptional mountaineers, be called justifiable, it is almost unique. I am sure we are also all of us very much obliged to Mr. Young for the splendid photographs he has shown us. As he was good enough to refer to me in connexion with the early exploration of the E. Ridge of the Grandes Jorasses, I would like to say at once that my efforts at exploration consisted in sitting on the top of a lump of snow rather to the E. of the Col des Hirondelles proper, which we had just reached from the northern side, and looking through an extremely good stalking-glass at this awful notch. We certainly satisfied ourselves that the ridge was, at this point, quite impossible of ascent, and I am very glad to find that any opinion I formed thirty years ago was correct enough to have stood the test of time. Even Mr. Young's and Mr. Jones's party had for once to stoop to conquer. I should like to ask Mr. Young whether he does not think that it would be easier, and also safer, for anybody who ever attempts to repeat the ascent of the W. Ridge to approach the Col des Grandes Jorasses from the N. side. There is a very nice cave which we discovered on the right bank proper of the Glacier de Leschaux. It makes a most comfortable gîte and is about 2½ hours distant from the Montanvert. The glacier on that (the N.) side is not very difficult and one might be able to reach the Col des Grandes Jorasses without any risk, while there is always on the S. (or Courmayeur) side some appreciable danger of falling stones. Mr. Young knows all these glaciers so well that I am sure he will be able to give us some information which will be useful to anybody who may want to try this climb.

I have much pleasure in proposing a very hearty vote of thanks to Mr. Young, and I am confident that the prediction of the Vice-President will be fulfilled and that he will be found to have something up his sleeve, or up both sleeves, for us on a future occasion.

Mr. YOUNG stated that it was impossible for the President to escape the responsibility of having been the first to make any serious explorations of the E. Ridge: explorations which extended over more than one season. He agreed with the President that it

would be undoubtedly better to ascend the Col des Grandes Jorasses from the N. This had been his original intention, and was only interfered with by the fact that they found themselves more conveniently placed to make the attempt from the S., and were anxious not to lose time and the good weather.

With regard to the point reached by Mr. Tunstall Moore, they had been in correspondence with him about it, and there could be little doubt that the point he had indicated was approximately the correct one. The ridge was very deceptive seen in profile.

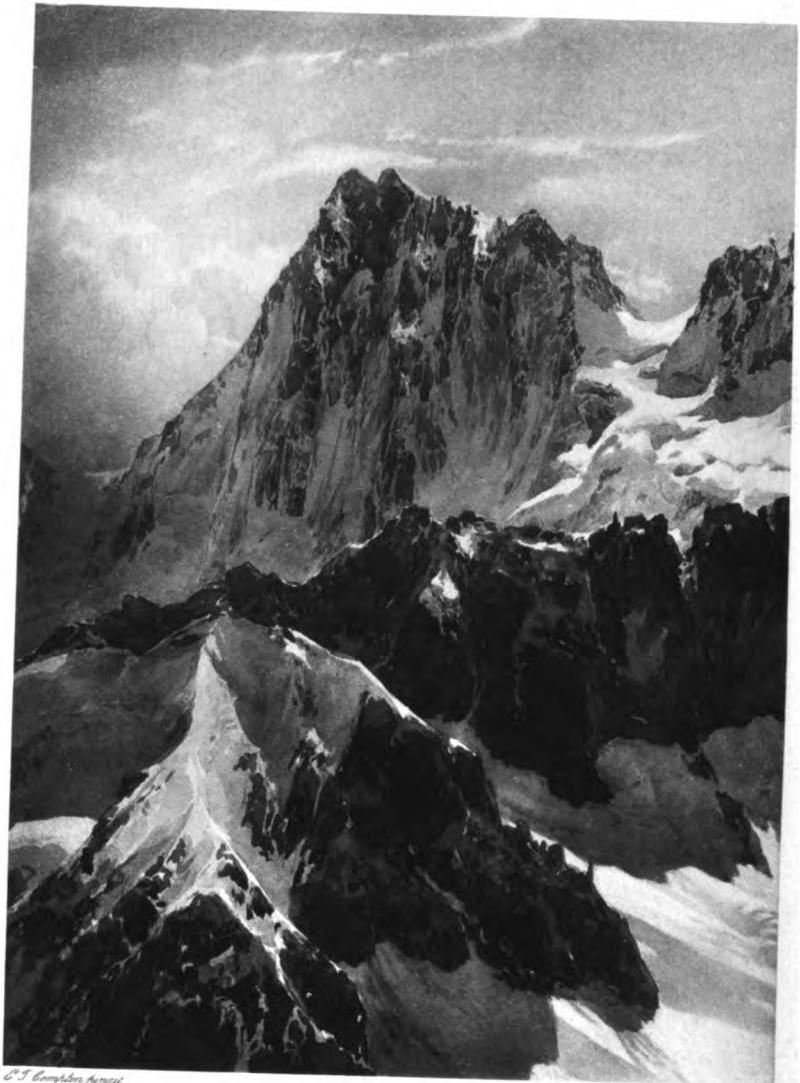
He wished to express, on behalf of Mr. Jones and himself, their sincere thanks for the cordial words of appreciation.

Errata in No. 195.

Page 92, line 8, for 'earlier' read 'earliest.'

Page 105, line 4, for 'In 1869 after four years' read 'In 1871 after several years.'

Page 110, line 25, for '1910' read '1911.'



L. J. Compton, France

San Diego Company Co. St.

Les Grandes Jorasses, from the Charmoz

THE
ALPINE JOURNAL.

AUGUST 1912.

(No. 197.)

TWO RIDGES OF THE GRANDES JORASSES.

BY G. WINTHROP YOUNG.

(Read before the Alpine Club, March 5, 1912.)

IN spite of their democratic character—orographically considered they are little more than a company of even summits upon a continuous wall, arbitrarily divided from their neighbours on either side by the accident of a considerable depression—the Grandes Jorasses have always been invested with an isolated, almost exclusive, celebrity that many independent mountain monarchs do not enjoy. Their reputation may be attributable partly to their theatrical position at the head of the most frequented and most exhaustively photographed of the alpine glaciers; partly, possibly, to the severe even puritanical aloofness of their visible ridges; partly also, and to my mind in large part, to a unique peculiarity of their majestic northern precipices. For their aspect is that of twin summits, duplicating the ferocity of their upward-sweeping lines, the vastness of their dark interspaces in a twofold association of strength, at once doubly satisfying to the eye and dominating to the senses.

It would appear to be one of the most primitive instincts of the human mind to associate the phenomenon of duality with the presence of supernatural force and mystery. Twin brothers built Rome, twin brethren saved her. The pairs of brothers or linked comrades march through the pages of legendary and

later Greek history, invested as deliverers or law-givers with almost divine attributes. Old Testament history is rich with the assonance of melodiously coupled names. Even as late as the Middle Ages the sincerest of the Lays concern themselves with the marvellous achievements of the dual hero.

It would be audacious to assert that the great twin Jorasses ever wrought as heroic actors in the Savoyard valleys; battled, as Jura and Jora, with the Griffin, or matched their Giant Teeth with the mythical Shark, before they finally retired to a frigid watch beside their chosen and frozen sea. But any one who has ever marvelled at them from the ridges of the Tacul or the Périades, couched like two colossal sphinxes under their lion's mane of snow, or shadowing shapeless heads against the Italian clouds, like two huge images hewn in a gigantic age as symbols of a yet untrammelled and impersonal nature-worship, will no longer be a stranger to some understanding of this primeval veneration.

Leslie Stephen speculated with delightful wit as to why the Col des Hirondelles, the most obvious pass in this region and over this range, should not have been attempted before his party traversed it. But mountaineers have such a habit of mysticism that it is possible we have found in this primitive sense of the sacredness of duality the reason why these summits remained so long inviolate. It took a race of giants to conquer them even in their frozen age. Whymper reached the first peak in 1865; Horace Walker the higher in 1868. And it must be recorded that, even so, these triumphs were won from the rear, where the spell of the dual aspect could not work. In 1864 the Mathews attempted the East shoulder from the Glacier de l'Eschaux, but were deterred. In 1864, also, the Wills, Taylor, and Milman reached the West shoulder, now called the Col des Grandes Jorasses, but found themselves unable to complete the crossing into Italy. In 1867 Hereford George and Mortimer reached the lower summit by a variant from the south. In 1873 Leslie Stephen, Loppé, Kennedy and Marshall at last traversed the Col des Hirondelles; and in 1874 Middlemore passed the Col des Grandes Jorasses, but again from Italy in the rear—an expedition that inspired a memorable controversy and one of the bitterest of alpine jests. This passage was repeated by Schintz in 1899, and a few days later by Mazucchi. In 1894 Evan Mackenzie completed the traverse of the pass in the opposite direction. The honour of the first lady's ascent of the summit fell to Miss Brevoort, with Coolidge, in 1867; and that of the first winter ascent to Güssfeldt in 1891. A noble



H. C. Jones, photo.

Swan Electric Engraving Co., Ltd.

GRANDES JORASSES, FROM COL DES HIRONDELLES.

list of names, and one that honoured the mountains even in their undoing. Ascents innumerable have followed up the rearward beaten track, but even to this day no one has been found so daring-hardy as to brave the black brothers on their dual northern face.

A materialist might assert that a reason more solid and less mystical is to be found in the far greater steepness of the rocks upon this North side. It is a fact that the nearer the approach to the precipices the more hopeless is their aspect. Most mountains seem to have been constructed with an eye to the future passage of man: the flaws and cleavages are contrived just within the compass of the average human reach. But Jorassic rocks would appear to have been erected for giants. The ledges, rare enough, recur at cyclopean intervals, and if a continuous vertical rift tempts the eye from in front, trial proves it to have been traced in mockery up some appalling overhang that leans out and over until even imagination grows dizzy in pursuing.

The stories of success in the Alps are single, and by their nature commonplace. The real romances and adventures are the manifold failures that have preceded the solitary success and made it possible. Of these only rumour informs us. The succeeding and successful bands of adventurers are fortunate if they find the evidence of a mean and discarded meat-tin to assure them that their predecessors at least suffered from hunger in approximately the same spots. But the rest of their heroism and the triumph they all but achieved have passed with their footsteps from the changing snows of the years.

Of the half-century of assault upon the Jorasses ridges we only know that it has been directed chiefly at the savage fascination of the East ridge, the ridge from the Col des Hironnelles. This ridge is marked at about a third of its height by a deep notch or cleft, the boundary of all attempts from this direction. Our President, with C. J. Hartley, undertook the first serious exploration in 1881 and 1882. Mummery, brilliantly led by Rey under conditions that demanded superlative iceman-ship, was turned back by the notch in 1892. Ryan, with the Lochmatters, attained only to the same point; and the same fate appears to have attended a party of guides sent out to explore the way for the Duc d'Abruzzi. The gaunt wall of precipice above the notch has defeated all alike.

Yet all of us, I suppose, who have concerned ourselves with the exploration have cherished different theories of how to

surmount or evade this barrier. To mention only the latest, H. O. Jones, after an investigation that must have considerably enriched the mountain photograph-sellers of half Europe, adopted, and I believe still educates at his own expense, an orphan belief that the ridge can be reached above the nick by the aid of magic climbing-irons and a glacier that hangs from the N. side of the crest as sheer as a wet sheet from a clothes-line. Some of us have even tested our infant theories. I have myself spent more than one night and an absurd number of days on futile efforts to cheat the ferocity of the ribs of the N. face. But the spell of the twofold sphinx has been on us all; and we have invariably fled incontinent, with a sudden and unconquerable preference for climbing yet another of the neighbouring Périades pinnacles. After a number of vacant years Knubel and I gave up hope, and 'with the West in our eyes' began, about 1906, to centre our intentions upon the ridge from the Col des Grandes Jorasses. But then came the lean climbing seasons, when nothing was possible but to make plans in England and forget them in the Alps. Meanwhile Jones had become active on the Italian side, on which, I believe, Mazucchi had already made one determined assault by the S. ridge, and with Laurent Croux he had attacked the S.E. ridge, best described as the ridge just round the corner from the Col des Hirondelles. Here they were beaten at about the same height, and not improbably by a continuation of the same impassable band as that which surmounts the notch on the E. ridge. In 1911 the drift of common failure, like the drift which assembles the derelicts in the Sargasso Sea, brought us together, and we agreed to join hands across the range. In London—London is the home of unrealised mountain ideals—our plan was to ascend from opposite countries and by the opposing ridges, eastern and western, on the same day, and to speak each other in passing on the top. After a week of realities in Dauphiné it seemed more practical and sociable to combine forces as far as the Italian hut, there to separate, and each swing out and up his chosen ridge. He chose the East: I the West. Jones is a scientist, and I am even less. Empirical research had not told him that the East ridge might not go, so he was going to try the East. Franz Lochmatter and literature had told me that it would not, so, for want of better argument, I was bound for the West. As you will realise, we had no sooner got to real grips with the mountain than we saw that we should have to concentrate all our forces to do even one ridge, and the romantic meeting on the top joined the lost legion of opportunities.

I had a premonition last year that it was going to be the season of seasons ; I am glad to think how often I said it in the spring, and how little I was believed. I may add in qualification that I have an invariable premonition every evening in a hut that the next day is going to be the day of days ; and as fortune has been most amazingly indulgent in this respect—I think we have only once been turned back by weather in ten years—I now enjoy an agreeable reputation as a ‘Glückskind.’ Guides will never allow that an amateur, in action, can be anything as competent as a ‘prophet,’ but they courteously concede that he may be ‘lucky.’ Dauphiné gave us all that we could wish for, even to me the precious opportunity of analysing the sensations of falling into a deep crevasse. Growing in impatience, as the weather gave signs of changing, with ever more frequent storms and clouded nights, we rocked and trembled across the passes of Savoy in hair-breadth motor-diligences to Courmayeur ; there to meet the guides safely circuiting with the baggage by forlorn Italian railways. No time was to be lost. We arrived in the evening, and in the morning despatched two sturdy porters to prepare a bivouac on the top of the Col des Hirondelles, from which we could determine, finally and for ourselves, whether the East ridge would yield to the unparalleled simplification of the hot season. The guides turned up, but with only a patriotic and unwarrantable faith that the luggage would follow. At mid-day we were still waiting. Why elaborate an old story ? Telegrams, Mercurys, motors were despatched down that fateful valley. The streets of Courmayeur were trodden frighteningly clean by the to and forwardness of our feet, and in a fury of resolution we vowed that at whatever hour the boots arrived we would start, if it meant tramping all night. At 8 p.m. fate repented, at 9 we set out. I have known few more sentimental starts. To ease our path up the long Val Ferret we had hired the only remaining chaise in the village. Into this were crowded Knubel, Croux, Jones, myself and the driver. The single horse had already been somewhere near to Aosta that day, and was suffering from melancholia. He rarely quickened to a walk, and as we stole imperceptibly through the moonlight we could only realise that we had moved at all, from hour to hour, by the slight readjustment of prominent landmarks. We had other causes for depression. One of the guides had not had a telegram from one of his offspring for at least four days, and was determined to believe him lost on the Brenva route. The depression was infectious, if not

convincing. Jones and I exhausted ourselves in casuistical attempts to escape the character of confemners of the domestic ties. Only to be forced to abandon ourselves finally to the oppression of midnight, and to the marvellous quiet of the moon, as it prowled in and out of the ghostly spires of the Peuteret ridge and flashed haunting lights from the higher glaciers across our noiseless and interminable pilgrimage up the valley. The last of the moonlight left us, by this time on foot, stumbling doggedly up the wearisome slopes below the Frébouzie Glacier. The sight of the consecrated gîte at its foot proved altogether too much for the overwrought paternal feelings. We had barely reached the porters' tracks on the beginnings of the snow-covered icefall when the spirit of tragedy overcame even our hardened feelings, and we released an anxious parent so that he might return in time to set out on a search from Courmayeur at dawn. The sequel revealed to us that a comparatively comfortable night had been spent in the gîte only a few hundred feet below our sympathetic parting, and that the prodigal had returned riotously living, his only fault having been a preference for wasting his substance and time on the postal rather than the telegraphic system of his country. We remain of the opinion that there ought to be a clear understanding in such details between the members of an affectionate guide family, more especially if their activities are spread over two lands.

The glacier was in an unspeakable condition this year—what glacier was not?—and for myself, not being allowed a rope, I found the trapeze work among the seracs by the light of a single dip a nerve-wracking performance. But we consoled ourselves with the thought that we should get some hours' rest in the good gîte doubtless contrived by the porters on the col above. Suddenly, in an icy scoop in the very middle of the fall and far below the loom of the pass, Knubel stopped with a shout; and there, a dark mass, lay the porters, curled up in our sacks and too lazy or frightened by the seracs to have even forced a way to the warmer rocks a short shout away on our right. Brutally and without a word we kicked them out. Knubel crawled into the one sack, Jones and I into the other, and we fell asleep in a single breath. Within an hour dawn waked us, to the grim humour of watching the shadowy porters clacking their cold heels on the tiny ice island. We left them to cower again in our warm sacks, and tracked on, with the pensive feeling that we were depositing a good deal of our party by the wayside and that very little of it showed signs of

springing up. But the scales had still to touch the beam. We reached the pass with dawn, only to look into a fearsome blackness over the Mer de Glace, and to meet a driving storm heavy with stinging butterflies of snow. All idea of the E. ridge had now to be abandoned ; but we were still resolute to make certain of the unthoroughfaresomeness of the big 'notch,' once and for all. We left our sacks at the foot of the E. ridge, and climbing rapidly—I forget whether we used the rope—after some two strenuous hours of steep and satisfying rock work we clustered on the sharp little Pisgah on the hither side of the fatal gap. One by one, as we had ascended, the various traverses suggested by previous examination had been sadly rejected, and now as we faced the facts even the most shortsighted of us was silenced. Springing from the gap before us in a preliminary overhang of 60 ft., the ridge rose a clear 150 ft. above our heads to the first possible standing place. In fact from the notch upwards the ridge is no longer a continuous edge, but a series of colossal protuberances, marking at intervals a sort of salient but interrupted line up the huge rounded butt of the E. wall of the peak. On our right any possible evasion of the overhang was barred by a fortification of slab, undercut with a superfluity of naughtiness that I have never elsewhere seen approached. To the left any idea of a traverse was negatived, after a few feet of impracticable wall, by an enormous open couloir, down which all the refuse of the abominably rotten rock on the upper part of the face hooted continuously and harshly. Slightly to our left, and slanting crookedly up the overhang above us, was the crack of which we had heard report. It overhung for more than 50 ft., of which the first thirty alone offered any prospect of hold. Like John Silver beside the empty treasure-pit on Spyeglass Hill, without a word we 'found our temper and changed our plan before we had had time to realise the disappointment,' concentrating our examination on the prospect of a descent. Above the crack was a slight stance, from whence a man might be lowered and not suffer unduly ; above again, we thought we could trace, by crack and rib and ledge, a possible route to the remote impending nose, whence we knew the ridge eased backward to the summit. Satisfied of the absolute impossibility of an ascent under the most favourable conditions, we shot down the arête, to the detriment of our breeches, made sure of an easier line for the future through the ingenuities of the Frébouzie Glacier, dodged an avalanche in the torrent, drank a jaded tea at La Vachey, and trudged into Courmayeur to a late dinner, after some

21½ hrs. of almost continuous going and considerable unnecessary mental stress.

We had had enough for the time of the Jorasses, and the Brouillard ridge of Mt. Blanc was crying to us round the corner. The Twins waned into a dim and misty remoteness, and as Jones has already told you, on the next day we trudged the eight hours up to the Quintino Sella hut, took a second day exploring the route up the Mt. Blanc Glacier, and on the third sped over and back to Courmayeur, to the confusion of the 'bivouac' prophets. We would willingly have given Knubel a day's rest after his crowded and single responsibilities, and Jones and I even offered to make an interim attempt on the West ridge alone. But Joseph was wrought almost to tears by the thought of our innocence gambolling in and out of the teeth of such a monster; so we added Laurent Croux as relief for the roping manoeuvres, and set off the next morning for the Jorasses hut. We had decided to make sure of the descent of the E. ridge, of which we felt some immoral certainty, and to leave the still dubitable W. ridge to the still more doubtful future of the weather. Tunstall Moore—whose death, while this Paper was in preparation, has meant for our Club the loss of a most gallant and accomplished mountaineer—was the first to attempt this descent in 1902.* The fact that a party of such pace and power had spent six and a-half strenuous hours, and yet been turned back at a point where his guides were of opinion that further descent would only be possible with an additional 600 metres of fixed rope, was not encouraging. But the conditions were now widely different, and we had the memory of our previous exploration to assure us that, if we could only hold on long enough and firmly enough, 20 m. of rope and good fortune should see us to the col.

It is a matter of experience that guides are least enterprising in their own valley. Familiarity with the tradition of the unclimbed and the loud voice of the inferior herd uplifted against any attack upon the tradition weigh heavily on their initiative. As the moment approached for defying the terrors of the ridge, associated for him from childhood with the superstition of inaccessibility, our own local providence was evidently fighting a losing battle with the germs of valley pessimism. We dawdled on a somewhat hesitant line up the lower glacier, and on reaching the Rochers de Réposoir unroped and each

* *A.J.* vol. xxi. 425.

followed his own angle of inclination, with much better results. We crossed the great couloir to the Rochers Whympfer, and having hurried across the higher glacier halted for a time to examine Herr Pfann's enterprising variation route up the S. face,* which joins the ordinary ascent on the bluff of glacier just below the end of the rib which ascends to the Pic Walker. Then we advanced separately and in leisurely fashion on to the peak. Jones' recording notebook, that fluttered like a yellow folio angel in and out of his pocket on the most hazardous passages, gives our time as $4\frac{1}{2}$ hrs., with halts. There was nothing, not even imperfect weather, to stimulate us, and as we looked down over the grim foreheads of the Twin summits something of the old spell returned, and we lounged in the crisp snow looking out idly, and in my own case rather sadly, over the exquisite view of the Mer de Glace, with its long memories of lost comradeship.

But no sooner were we roped up and fairly over the edge than the mere steepness of our prospective descent braced us like cold water. The incalculable looseness of the higher rocks, every ledge loaded with crazy fragments, called forth our most delicate caution and a heartening freedom of language. Then the ridge stiffened into the bridge of one of its abrupt noses, and slanted us out more briskly and firmly to where its grey tip leaned dizzily against space and the deep-seen glacier. Close to the tip we came on some tins carefully lodged in a crack, as if for record, and there is little doubt that this nose marks the limit of the descent made by Tunstall Moore. The height of the whole ridge from the col is some 2500 ft. This point, as can be seen in profile, is from a quarter to a third of the way down the ridge, and from here the rocks suddenly sweep over in cliffs of a perpendicularity fearsome to any party which had only seen them from above. Tunstall Moore's guides estimated at the time that 1800 ft. of rope would be required to enable them to reach the 'notch' from here, and I am prepared to say that hardly a consecutive 50 ft. of the further way, and especially a passage immediately below this nose, could be descended with safety in the condition in which they found the slabs. Clear evidence is to be found in the fact that Moore's very fast party took $6\frac{1}{2}$ hrs. in doing the 600 preliminary feet of the rib, which occupied us only $\frac{3}{4}$ hr. The remaining 1100 to the notch took us, in admirable conditions, about 4 hrs. Under snow and ice, as the first party found them, the upper and lower

* *A.J.* vol. xxv. pp. 163-4.

sections of this flight of giant steps would have made impossible demands upon time and human skill.

We secured ourselves above the broken nose, while Croux, with an ever more and more vocal pessimism, that only drew songs and discords of purposeful gaiety from the rear, cut and clung down the flying bridge under the retroussé tip. It was an awkward passage: a sharply curving and holdless slab, with a faint fringe of ice on its upper edge down which steps had to be scraped. Knubel, as last man, shamed our timid crawl by waltzing down it on a single jodel. It is difficult to distinguish between the steps that followed. We clambered down crack and edge; and each time were pulled up abruptly on the bald grey pate of some huge gargoyle, craning into space and seeming to wriggle with pleasure in the wind at our disappointment. Each time we hoped it was the last, and each time the sheer distance to the pass looked further and the angle steeper. And each time we worked round and down the nose by some cleft on the South, and traversed back on to the ridge again.

The last 500 ft. to the notch we had expected to prove the real crux. The last but one of the great noses skewed out in a treacherous overhang above the Mer de Glace; and far below us, and to the right, we looked down on a small grey nob that we felt must be the 'step' overhanging the notch. But between us and it lay some 300 ft. of daunting slabs that bulged away over the rounded sky-line to our right. Beyond this sky-line, as we had seen from below, lay a big open couloir, and down its nearer side a possible line of descent. Both were now hidden from us. Whether we could have reached the couloir by a direct traverse across the slabs I am not certain. Anyhow it did not occur to us; and we prepared for a zigzag descent down and across the slabs to where the curve of the sky-line descended on the neck behind the lowest grey step. The slabs were faced with enormous crystal-shaped pillars, like magnified sections of the Giant's Causeway, sloped at an angle of some 70°. Between the pillar edges there were rectangular chimneys, with few holds but good friction. I do not think there was any portion of our descent here that could not be climbed, upward, by a first-class cragsman; but for security we made use of a succession of 'doubled ropes,' descending each time some 60 ft., traversing on some ledge to the right, and so descending again until we reassembled on the shattered rock-bridge behind the last nose. Viewed with a cautious eye over the rounded edge, the fall of the overhang to the col

- a Bracket to which doubled rope was fixed for the last overhang.
- b—Beginning of crooked chimney
- c Neck behind the last "Nose"
- d—Remote commencement of Anvil slabs.



H. O. Jones, photo.

Swan Electric Engraving Co., Ltd

EAST RIDGE, GRANDES JORASSES
Slabs above the "V" notch.



H. O. Jones, photo.

Swan Electric Engraving Co., Ltd.

WEST RIDGE : The traverse on South face. (Indicated by dotted line.)

looked terrific, and far greater than we had estimated. But for the memory of that little crooked chimney, crinking down somewhere to our right and back again invisibly below us, it is possible that even now we might have been forced to admit defeat, and have faced the formidable re-ascent of the slabs. Our first man was frankly despairing, and even the optimist chewed his cheeks in silence. Tentatively we crept down the wrinkled nostril on the S. and recognised, with very little reassurance, the casual opening of our small crack. A precipitous angular trough, it crooked downward through two sections and ended in a tiny bracket over space. Jones and I unroped, and ate bon-bons from green and pink paper on an airy perch, and made conversation, while the guides faded away down the trough. The ridge had played so many tricks that we were almost afraid to irritate it by confident speech. Presently the whanging of axes on the metal heads of pitons cheered us up, and I crept down the trough far enough to see Croux launching himself emotionally into the void, with the rope passed through two pitons that peeped like another pair of mysterious baby twins from an inspired cranny at the side of the bracket. A long series of grunts, a silence, and then one of the most relieved shouts conceivable from a human throat. It breathed at once the vanishing of many years of doubt, and of many days and hours of anxious foreboding. We, with our trials to come, echoed it with a cheer from above that contained still something of defiance; and then Jones followed. The manipulation of the unfamiliar rope-brake had such charms for him that he sacrificed a pet axe to the impatient Twins before he wound, and unwound, himself gracefully on to the little col. I came next. The first 25 ft. from the top overhang, and could never be ascended without a rope ladder. Then the crack bends back towards the pass below, and its interior provides some useful holds; useful, because a further direct descent on the rope alone would necessitate a deeper drop down a smooth wall to the steep ice of the couloir which falls precipitously past below descending from the South side of the little col. But by means of the holds we could keep in the crack, and follow it down and across towards the col, until we stood on a small traverse that ran all but on to the sharp snow crest of the 'V' notch itself. Knubel frolicked down; and the doubled rope—a rare triumph—followed without a hitch.

Muscularly tired, but content, we lunched on the now familiar Pisgah; and fretfully, as becomes men who have the interest of the day behind them, potted on two ropes down

the remaining 2 hrs. of ridge to the Col des Hirondelles. The Frebouzie Glacier, grown even more intricate in the interval, was taken at a gallop; the ordained chaise of course failed to meet us at La Vachey, and we tramped once again in the dusk and dust into Courmayeur—a day of some 16½ hrs.

Descending is always less attractive than ascending. The muscular effort is greater, the pleasure in each finished effort markedly less. The nervous output is proportionately more considerable, for the possibility of a mistaken course is increased, while the consequence of error becomes more serious. With the consciousness that retreat means return up an ever-lengthening chain of stiff passages, the appearance of fresh and invisible problems brings an increasing measure of doubt that intrenches on delight. From below, the steeper a wall may appear to be, the better it can be seen, and the more the mind can concentrate on present action. From above, the steeper the wall may actually be, the less it can be seen, and the greater becomes the strain upon imagination, and nerve, and patience.

We were pleased with our big descent, the more so that we had previously proved, to our own satisfaction, that the ascent was impossible. But at the back of our minds was the feeling that the success would remain only lopsided unless we could ascend the West ridge, and so join up the climbs into one sequent traverse of the arête.

We took an off day—our first—in Courmayeur, for the good of our souls and tissues, and spent part of it in a sunny meadow, staring at the splendid prospect of the West arête. Above the Col des Grandes Jorasses the first nameless peak springs sharply against the sky, with a deeply serrated summit ridge. This we knew represented the limit of all previous attempts. Milman, describing the first ascent of the pass in 1864, when the Jorasses had not yet been ascended, first called attention to the ridge. He speaks of the 'inaccessible cliffs to the East,' which might 'be ascended for 200 or 300 ft,' whence 'some crack might communicate with the glaciers seen from the Val Ferrex,' but it would be 'very difficult and dangerous.' The foreshortening of the ridge, viewed along the line of summits, clearly deceived him as to the proximity of the glaciers. Subsequent parties have always been of the opinion that to evade the series of towers, the traverse would have to be made on the N. or French side. In recent years the first peak has been climbed by Ryan with the Lochmatters, partially by the two Brocherel with Signor Joseph Gugliermine, probably again by

the two Brocherels alone, when exploring for the Duc d'Abruzzi—and for crystals, and subsequently by two Austrian mountaineers, Herren Leuchs and Hoff. These two gentlemen took to the rocks of the N. face below the bergschrund that subtends the Col des G. J., and after a valiant day on the rocks, slept out near the summit of the little peak, but failed to advance further, and returned by the same route. All alike have been turned back by the sheer descending E. wall of this first little peak; the wall falls into a deep gap, from which again rises a cheerless serrated knife-edge to the nearer peak of the Punta Margherita. This last, formerly known as the Dome des Jorasses, was first ascended by the Duc d'Abruzzi from the S. and E. in 1898. Since then it has been closed to mountaineers until last season, when three parties—Herr Pühn's, Blodig and Todhunter's—and our own visited it in the space of a few weeks. We were not hopeful of succeeding where so many had failed, but we had a cheerful vista behind us, and faith in Farrar's principle that 'you can't say for certain it won't go until you have rubbed your own nose into a place.'

We returned once again to the jolly little Jorasses hut, Knubel, Jones and myself. The conditions of this season were of course incomparable, but the weather in August rarely took itself for granted, and the storms, which had been threatening us in brief evenings for all the fortnight, now began to encroach upon our nights and mornings. The few night hours of pleasant and by this time established companionship in the isolated hut among the glaciers, with still views over the fall of the southern alps, were full of anxious watching of a low pall of smoking clouds that herded and scattered like startled sheep about the peaks. We woke to a chilly and grey night, and nothing but an almost proverbial good fortune justified, in the issue, the optimist's insistence that there was a feel of sun behind, and that at all hazards 'the route must be explored for another day'—that well-known euphemism!

A silent rush took us up the glacier to the opening of the black throat of a couloir that descends from the Col des Grandes Jorasses; and here, on a little island of rock in the ice that gave protection against the fall of chance stones, we waited for a cold hour upon the dawn. The optimist sang conscientiously, to charm warmth and a cheerful heart, for Knubel is a true son of the hills and sunshine, and his moods darken with the sky. But what really braced us to a firmer hope was the sight on the faint horizon of our faithful friends the starry Gemini. It was a heartening coincidence, even for two such materialists as

Jones and myself, that on all our expeditions, whatever the mist and the foreboding of the night, these sympathetic stars never failed to laugh in our sleepy faces when the hour of starting came. They led us on the Ecrins, the Meije, the E. ridge of the Jorasses, and on Mt. Blanc. And it was the best of omens that when we were out to solve the last mystery of the great Twin summits, now one, now the other of the yet loftier twin Brethren flashed through the driving scurry of cloud, with an assurance of clear skies beyond.

With the first whisper of light we straightened our cold knees for the attack.

Between us and the base, some way above, of the rock buttress by which the ascent to the col is now made, intervened a huge hanging trough of hard ice, 20 ft. deep and 40 ft. across. It is the funnel down which the couloir (by which the first ascent was made) discharges all its refuse of rock and snow avalanche, and the hot season had beaten and polished it to rather more than a half section of glittering turquoise ice. The leader cut steps on an upward traverse down into and round its hollow interior. He paused to prospect under the curve of the farther wall, and the second man, to give him rope, moved in over the edge. A breaking step and the shrill grit of scraping claws and axes; and two-thirds of the party were whirring down the glassy trough to the bergschrund. The rope of connexion to the third man cut into the hard snow corner on a slanting curve, and had carved out a perfect sugar cone some 7 ft. high, when its deeper cleavage was arrested by the shaft of a deeply driven axe. The leader seemed rather braced than otherwise by the cool plunge; and a bandaged hand was soon forgotten in the strenuous wrestle with the slabs of the buttress with which we were soon engaged. We had been on the look-out for stone-falls, but for a year in which the shrinkage of ice had exposed remarkable depths of hitherto hidden and disintegrated rock, producing on many faces a horrid precipitation of pinnacles and bastions, this buttress showed comfortingly few traces of bombardment, those blue angry bruises that the evil tempers of the hills inflict upon their own bones. We followed the few wooden pitons that marked where the doubled rope had been used by previous parties. One had been knocked out, and another set loosely awry in the worst passage. The climbing we found of a decidedly exacting character. On the pass we emerged into the full dawn, and the growl of the northern glaciers came up to us on sudden gusts of biting wind that burned our cheeks with the ice pelt of high frozen snows. While we halted



H. O. Jones, photo.

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FIRST PEAK ON WEST RIDGE OF GRANDES JORASSES.



H. O. Jones, photo.

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WEST RIDGE OF GRANDES JORASSES,
PUNTE MARGHERITA E ELENA.

for a standing breakfast we noticed, to our discomfort, that the night had left a plastering of white drift on all the tiny but indispensable ledges of the N. face. This was a serious matter, as we expected to have to traverse largely on this face, and the slabs seemed in no cordial condition.

The first peak is climbed directly from the col, up the pendulous steepness of its N.W. face. The cliffs start abruptly and sternly. My friends in front and behind appeared to glide upwards with hateful composure, but for myself I found fingers, which frost-bite has rendered sensitive, of little comfort on the ice-clogged and infinitesimal hollows sketched as holds up the hanging slabs, where we wandered perpendicularly up a dim and alarming line of so-called least resistance. Knubel looked down on my dolorous wriggles with an expression of grave and half quizzical abstraction, the look which betrays, I feel sure, once the courtesies of the valley are remote, his real attitude of mind towards the motions of all futile mortals upon mountains, always excepting those of the adored Franz Lochmatter and some of his own.

Here and there on the higher reaches we came upon rope-rings, significant of the difficult retreats of earlier explorers; and as we clung dizzily up through the cold northern shadows keen golden triangles of dancing sun-specks poured through the black fangs of the ridge far above our heads, and suggested how thin was the gloomy supporting wall, whose southern face through all its countless facets was already saturated with the glare of day. It was a welcome and inspiriting moment when we could at last traverse out and up into one of these golden angles not far below the first summit and warm our fingers and our hopes in sunlight. The ridge was like nothing I have ever seen. Behind and before us the sharp spires of bronze rock curled over to left or right like the alternating halves of an abbot's mitre, cloven jets of misty fire in the liquid morning light. The edge has for a space no continuity and no coherent backbone. Disregarding alike its position as an outline for purposes of view, and its duty as the traditional free way of the mountaineer, secure in its aloofness and its inaccessibility, the solid rock bursts upward in a foam of irrational rejoicing—a rock surf of fantastic impulse, surprised in a moment of frolic with the winds and the wasting of time.

From a shoulder behind the top of the small peak we looked out, across the precipitous fall of a great couloir in the South face, at the south-eastern wall of the Punta Margherita, distant and repellent. The wall of our peak dominated this couloir with

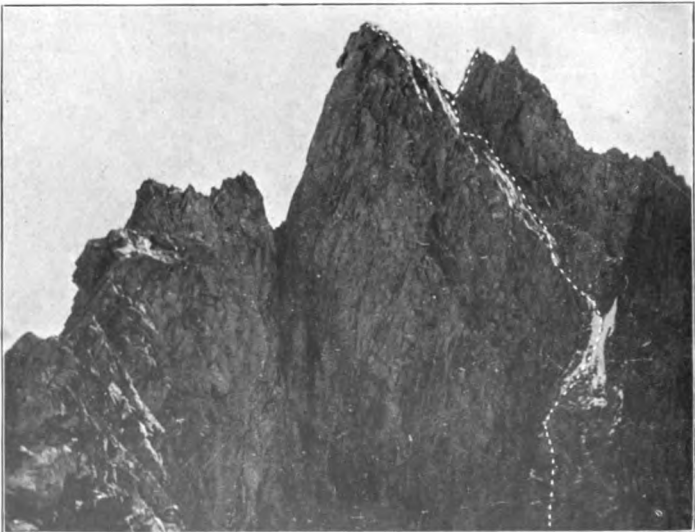
an apparent overhang of some hundreds of feet. Behind the top of the peak, on our left, the ridge bent away to the N.E., fringing the amphitheatre at the head of the couloir with a semicircle of ill-ordered spires, raw and unfinished, offering neither holds nor hope. Beyond these, the ridge finished on to the eastern summit of the Margherita with an insolent upward swirl of smooth crag that sufficiently accounted for the unanimity with which previous parties had turned back, refusing to be entrapped into a useless struggle with the introductory steeples of the sickle-shaped crest. We had resolved, and failing other issue we should undoubtedly have attempted, a descent and a turning movement of traverse on the N. face, but the sun and clear rocks of the S. wall were a great temptation, and the longer we looked at the Punta, the surer we felt that, could we but cross the intervening bay, we might force a way up a certain ragged depression in the S.W. face of the peak to a patch of snow, whence we could either traverse up to the highest summit from the S., or invent a crack up to the neck between the two summits. The problem was to find a way down from our eyrie and across the gaping couloir of corrugated and dusty slabs. Moving back along the crest behind the small summit, Joseph first took a prospect over its S. wall, and then with exaggerated solemnity—for had not the incomparable Lochmatters here desisted?—Jones was launched over on a trial flight, with a double of our light reserve rope as security. A crack that cunningly concealed the most surprising holds gave a delightfully easy descent, and on a shelf some 60 ft. below he was able to shout reassurance. A downward slanting traverse would clearly take us off the precipice of our first peak. We were soon reunited, with the comfortable feeling that should we be defeated later, a return up the tower would be feasible without the nuisance of having to abandon our spare rope as a precaution. A goblin of venerable standing had been exorcised with startling rapidity, and we embarked on the traverse of the cirque with light hearts. The whole length of the succeeding traverse to the foot of the depression was probably about 300 to 400 ft. The line ran on a wavering level across several incipient gullies, backed with a sort of concrete, and round the blind protuberant bases of one or two huge rock fangs. The rock was what is reckoned as perpendicular for climbing purposes, the holds gritty, often loose, and generally non-existent. About the middle we enjoyed—and we really did enjoy it—the ‘hundred-foot hand-traverse.’ For two short sections of this, as we contoured the breasting of the most



H. O. Jones, photo.

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WEST RIDGE OF GRANDES JORASSES,
FROM PUNTA MARGHERITA.



H. O. Jones, photo.

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PUNTA MARGHERITA : Line of ascent of S W face and W. peak.

ferocious of the towers, a defective architecture compelled us to swing freely from hand to hand, with only a graceless protest of friction from our lower extremities. At one point, on a 'sheer' wall, the hands, by a subtle winding of the body, had to attach themselves to a ledge between the feet, and thence to lower the useless body again to the extent of the arms. We had sound small belays for each other's protection, but I can recall few details, except a sense of selfish concentration on my next cranny and the growing extra weight of Knubel's sack. I have my own idea that the outposts of the hills have by now learned to use our sacks as a sort of postal service, for exchanging their dreams, so ponderous do the contents feel as we pass between the peaks, so trifling do they look when we come to open the sacks upon their summits. And the first thoughts of the yielding Jorasses were heavy thoughts.

It was a very sunny moment when we raced across the last slabs of the couloir and swung without a check up the more deliberate angles of the depression in the S.W. face of the Margherita. The peak still loomed above us, but we could choose our several lines up the shallow and broken trough with almost voluble certainty and not even the shadow of a falling pebble. The depression ended on a small snow slope under the wall of the summit, but a narrow and deeply cut crack soared steeply up to our left to the notch between the peaks. It was a dignified finish, with a friendly resemblance to a score of familiar British climbs. We bridged and serpented our way up it with grateful appreciation; and after a breathless and silent pause on the col, Joseph and I passed to erect a cairn on the W. peak in honour of its first conquest, while Jones made directly for the higher summit and photography.

The link which so many of us, and for so many years, had been forging was now made, and, though the feeling is a familiar one, I was never before so acutely conscious of the regret that walks with gratified desire. The brief pleasure of realisation was dearly bought with the ending of long hope, and with the solitary triumph of one actual route perished that happy family of pleasant courses, which had enjoyed for years, together and without prejudice to the other's chances, each its recurring moments of imagined success.

Three parties had already reached the Punta from the E., two of them only shortly before ourselves after a five years' enforced interval of waiting. We followed their reported line down the slabs of the N. face, though the better line undoubtedly this year would have been to have followed the arête. The slabs were

drowsy with snow and exceedingly tricky. Our progress down the loose knobs that projected from the smooth curtains of rock was cautious and laboured. Some of the long traverses were all that is most offensive of bleak and fragile instability. We came up at last on to the arête, and out into the sun by the small secondary peak which is known as the Punta Elena, with an unspoken relief, and in my own case with a touch of the suspicion that 'everybody else in the party is rather cross,' which usually accompanies a relaxation of one's own nervous tension.

We were now at the point where an easy face of rotten rock, descending on the S. of the main ridge, indicates the line by which the three previous ascents and descents had been made. 'H. O.,' very rightly considering that the new route was completed, prepared to descend; but I, who in all matters of principle am but as air and water to his substance, a sort, if I may put it shortly, of 'H. O.,' had a wish to reach one at least of the main summits beyond, and so far as was not quite absurd to connect the traverse of the two arêtes. The ridge was now absolutely straightforward, and much of it had been previously traversed. I can make no excuses for a watery idealism. But without a word of real dissension 'H. O.' stood looking intently down the wall, and I stared fixedly up the arête. In the harmonious issue he proceeded slowly down the face, in an isolated progress that was subsequently forced upon us all by the unspeakable state of the rocks, and Joseph and I fled like frightened 'agile Gibbons' up the ridge. We had allowed 45 mins. at the least, but in 25 we were panting on a snowy peak that we assumed to be the Pic Whymper. I am now convinced it was the small adjacent summit which forms the culmination of the Rochers Whymper on the S. side, and of the great westerly bastion on the N. I do not think that, even had we known our error, we should have added the extra 10 mins. of superfluous snow slope up to the supposed Pic Walker (but actual Pic Whymper). There are limits even to pedantry. In another 20 mins. we were back again, and shouting warnings of our distasteful progress down the detritus of the rotten rib. On the edge of the glacier we all roped up again, and marched with aching heads down the crevassed ice fall, slovenly and treacherous in the late sun. The sight of the hut, with its reminder of the despondency with which we had left it twelve hours before, first recalled us to a sense of what our present emotions ought to be, and brought us the yet sweeter soothing of a brew of hot tea.

The evening halt at the base of the actual climb is the fitting finish of a remembered day. Tea and the rest at the half-

way hut have cleared the brain, dull with the pressure of changing heights, and are fashioning laughter out of the petulance of passing fatigue. The solitude of impression is still free from the incursion of commonplace ideas; from the resolution of romance into a few stereotyped incidents; from the distortion of adventure by question and repetition. The breaking of the rhythm of movement has served only to release thought from its concentration upon an immediate purpose, and is preparing it agreeably, by a restful commune with slower and gentler sensations, and by a wandering attention, for the pleasant trifling of the levels, where we move at the call of convention and the clock and not to the undertones of time and death and chance.

Already the half regret with which we looked down from the peak and back along the broken enchantment of the ridge is forgotten. The summits are again above us, challenging and remote, each shadowy line no more than hinting at the memory of some hidden place of contest, and, for the upward glance, invested once again with the glamour of seclusion and difficulty. We might return and prevail a second time, but it would now be with no less effort and uncertainty than before. Even while we are still within the measure of our victorious day, we realise that we have already surrendered the few hours of success stolen from an existence as mutable in substance, and more indomitable in spirit, than our own. Could we repeat our ascent, the rocks would not be the same rocks, as we should not be the same men. Wind and rock and weather, and strength and mood and fortune, can never be matched twice in the same circumstances of conflict or lead inevitably to the same issue.

As we watched from the hut the great ridges of the Jorasses were already brightening with a new armour of frost, and noisily shaping fresh rock escarpments as a challenge to other explorers. For us, in any later season, their defiance will have lost nothing of its magic, and their distant splendour seem only the greater for the recollection of its formidable discovery. There is a charm in revisiting, with curious and different minds, the sights or stories that leave a familiar but mysterious aftermath in the sun-coloured pictures that survive from our childish impressions; but the mountain that we once have climbed recalls us afterwards with a more vivid appeal, the spell of a friendship formed in the fiercest moments of intense living, strange to our later and more subdued consciousness, but even in the imagination of its recovery alive with the memory of every detail of elusive pleasure once dreamed of in its company.

MONT BLANC AND THE GRÉPON IN 1911.

BY HUMPHREY OWEN JONES.

(Read before the Alpine Club, November 7, 1911.)

Di reverenza gli atti e il viso adorna,
 Sì che i diletti lo inviarci in suso.—*Purgatorio*, xii. 82.

THE climbing season of this year will be memorable not only for the extraordinary spell of unbroken fine weather and for the magnificent condition of the rock peaks, but also for the troublesome state of most glaciers and for certain unusual peculiarities. Thus, in the early part of August the weather often showed every sign of breaking up; the nights and early mornings were characterised by a marked absence of the low temperatures which are usual at these times in fine weather, yet this never portended more than a passing thunderstorm. Lastly, the snow mountains and ridges were still snow and not ice: a striking contrast to the state of things in 1906.

It was therefore clear that here was the opportunity for tackling certain problems for which all had been waiting for the last four years. This view the guides also held and stated strongly in the form: 'A rock peak that does not go this year never will go,' so I looked forward to realising or relinquishing hopes raised by the explorations of previous years in the chain of Mont Blanc.

It was my good fortune to accompany Geoffrey Young and R. Todhunter, two old Cambridge friends, with neither of whom had I previously climbed in the Alps; but well I knew that in their train I should be expected to move quickly, especially on rocks. We worked together in various combinations with one or more of the guides, Josef Knubel, Laurent Croux and Henri Brocherel, until the temporary break in the weather in the latter half of August hastened the departure of my companions. Altogether the party made six new expeditions, and it falls to my lot to describe two of these: an ascent of Mont Blanc by the Brouillard Ridge and an ascent of the Grépon from the Mer de Glace.

The contrast between these two expeditions is very striking; the former completes the exploration of the chief rock arête of the Monarch of the Alps and provides a route to its summit



11000
A medeo.
Tauri

Col Emile
Key.

Mr. Brouillard

Suva Electric Engraving Co., Ltd.

BROUILLARD RIDGE, FROM PUNTA INNOMINATA.

H. O. Jones, photo.

which is certainly among the finest ; the latter is a fancy rock climb of the most difficult kind on a peak which has been described somewhat unjustly as '*nur ein Kletterblock vom Montanvert.*'

With long expeditions in the Mont Blanc chain in prospect we decided to get into training elsewhere, and for this purpose selected the Dauphiné, a district new to all except Todhunter and Croux. We all met on the way and duly arrived at La Grave, whence four of us set off the same evening for the Chalet de l'Alpe. We slept the second night at the Promontoire Hut, and the third in the bivouac beside the Glacier du Vallon de la Pilatte, in which we were completely sheltered from a heavy thundershower of considerable duration. The next day all six made a new route to the Dôme de Neige des Ecrins by its west arête and traversed it, the Pic Lory and Les Ecrins. On the descent the Glacier Blanc gave us a considerable amount of work to do, and the downward jumps over two enormous crevasses were of the biggest and most exciting kind. The next night saw us again at the Promontoire Hut, whence Todhunter and Brocherel reached La Grave by the Brèche de la Meije, while the rest of us made a most enjoyable traverse of the Meije under ideal conditions in about nine hours, including many halts that amounted to two and a half hours. The behaviour of the weather surprised us all, but we were obsessed with the idea that it could not last and that it behoved us to make the best use of it as long as it did. Consequently we made all haste to Courmayeur, crossing the Cols du Galibier and du Petit St. Bernard in motor diligences. The passage of the former in a light car of the topheavy variety, which skidded continually on the narrow, rough, and dusty road, I shall always remember as one of the most dangerous experiences of my life.

The prospect of a return to the chain of Mont Blanc restored my spirits. To me this group so far surpasses any other I know in beauty and interest that I find it impossible to understand how it could have been thought that 'he has neither the beauty of the Oberland nor the sublimity of the Dauphiné.'*

The passage of the Petit St. Bernard was less nerve-shattering, and landed us on August 4 at Courmayeur, where our arrival was awaited with impatience for reasons which I will endeavour to explain.

* Whympers, *Scrambles*, p. 222.

My connexion with the ascent of Mont Blanc by the Brouillard Ridge is due to Dr. Blodig, the well-known Austrian mountaineer, who set himself the task of climbing all the peaks in the Alps of 4000 metres or over. This task (a 'fantasy,' as he calls it) was thought to have been completed in 1906 when the Aiguille Blanche de Peuteret and Mont Brouillard were added to the bag, bringing the total up to sixty-five. In the meantime, however, two new peaks had been added to the list by being ascended, named and duly recorded on the new Barbey-Imfeld-Kurz Map. Here then was Blodig at the age of forty-seven faced with the problem of ascending the Punta Margherita and the Picco Luigi Amedeo in order to complete his self-imposed task and earn his well-merited repose. The first was a comparatively simple problem, and it was only necessary to wait for a year, when its north face would be free from ice, a state of things which was not realised until this year; but the ascent of the Picco Luigi Amedeo was quite a different matter. This peak was first ascended in 1901 by Signori G. B. and G. F. Gugliermina, who, starting from the Quintino Sella Hut,* climbed the west face by means of difficult rocks, on which they spent two nights, and reached the summit of Mont Blanc at 9 p.m. on the third day. A repetition of this magnificent expedition was not suggested by Blodig, even in moments of greatest enthusiasm, so some other method of attaining his desire had to be found, and inspection made it clear that the west face might be neglected for this purpose. During the last fifty years many well-known mountaineers had already studied the Brouillard Ridge, including the east face of the Picco Luigi Amedeo, from the Brouillard Glacier, and though little information relating to most of these expeditions or attempts is to be found in the literature the following are recorded: Mr. Birkbeck (1864),† Marchese Durazzo (1870),‡ Messrs. Utterson Kelso and Girdlestone (1873),§ Messrs. T. S. Kennedy and T. Middlemore (1874),|| Mr. J. Eccles (1875),¶ Dr. Collie and Major Bruce with H. Thapa (1899),** Signori Gugliermina (1899).†† In many cases the opinion that the ridge is unclimbable from that side is definitely expressed.

In 1908 therefore Blodig contemplated making a descent

* *Boll. C.A.I.* 1902, xxxv. 244 *et seq.*

† *A. J.* viii. 409.

‡ *Boll. C.A.I.* vi. 292.

§ Moore, *Alps in 1864*, pp. 420, 425.

|| *A. J.* vii. 110 and 225.

¶ *A. J.* viii. 409.

** *Climbing in Himalaya*, p. 178.

†† *Boll. C.A.I.* xxxv. 191.

Mt. Brouillard.

Col Emile Rey



H. O. Jones, photo

Suan Electric Engraving Co., Ltd.

from Mont Blanc to the Col Emile Rey by the Brouillard Ridge, a rather unattractive proposal, which was carried so far that enormous quantities of rope of various kinds appeared at Courmayeur. However, careful scrutiny of the east side of the ridge from a convenient view-point on the road near Courmayeur revealed a couloir, or rather a gully, descending to a point just below the Col Emile Rey, and this gully Eckenstein persistently maintained could be ascended, at any rate if free from ice. As the gully is obviously the main outlet for the water coming from the conspicuous snowfield above it would probably only be dry in a fine year. This view so far prevailed that in 1908 E. H. Compton and I ascended to the Col Emile Rey, which took us three hours and twenty-five minutes from the Quintino Sella Hut. While my companion sketched industriously, I descended to the foot of the gully and examined it. It was then filled with ice and its sides garnished with pendent icicles, which conditions precluded any thoughts of ascending it at the time. It looked however to my optimistic eye as if it could be ascended without much difficulty when dry, and it was certain that once up the first 200 feet or so it seemed very unlikely that any insuperable difficulty would be encountered. The slope soon becomes less steep, the slabby protogine gives way to a different rock, more broken and dark brown in colour.* This view was confirmed by further inspection from the summit of Mont Brouillard, which we ascended. There seemed to be another route, a short distance west of the Col, which might be feasible, but though it would usually be found free from ice it would obviously be much more difficult. This report and the onset of bad weather that same day sent Blodig home in a very sorrowful mood.

In 1909, two days before the arrival of Blodig and myself at Courmayeur, the gully was reported free from ice; but it was certainly iced for the rest of the season, and, as we failed in an attempt to ascend the Punta Margherita, Blodig departed more despondent than ever.

Last year (1910) it is almost needless to say the expedition was

* Dr. Bonney has kindly examined a specimen of this rock, and reports that 'it is a biotite gneiss, not rich in quartz, with some iron oxide, epidote and minute accessory minerals, mostly decomposition products from the felspar. It belongs to the older Alpine group of gneisses and crystalline schists, and thus is more ancient than the well-known protogine.'

absolutely out of the question from the first, and Blodig never even came to Courmayeur. Meanwhile others had taken up the task of ascending all the 4000 metre peaks, and in 1909 one of them, Dr. Pühn, had ascended the same sixty-five peaks as Blodig. Also, Blodig's attitude towards the ascent of the Brouillard Ridge altered somewhat, and he came to regard the chief object of the expedition to be the making of a new route to Mont Blanc by its main south ridge. When we arrived on August 4 this year Blodig was in a state of great excitement, he having thought that we were coming on August 8, while I was under the impression that the date appointed was August 8. Further, Dr. Pühn had already ascended the Punta Margherita and had designs on the Picco Luigi Amedeo. Herr Pfann was also there with the intention of ascending Mont Blanc by the Brouillard Ridge. However, partial equanimity was finally secured by urging the consideration that the full moon, which we had agreed was very desirable, if not necessary, for the expedition in question, was not due until August 10; by Young consenting to join the party with Knubel, an accession of strength which assured the success of the expedition if it was feasible; and by an arrangement with Todhunter to set out for the Punta Margherita on the morrow. We met again on August 6, Blodig having ascended the Punta Margherita, while Young and I, with Knubel, had had a strenuous day of twenty-one and a half hours exploring the east ridge of the Grandes Jorasses, and it was agreed to start the next morning for the Quintino Sella Hut. At 10.40 A.M., a most unusually late hour at which to start for this hut, Blodig, Young, Knubel and myself, with two porters, set out. We arrived at 6 P.M., pleased to find that the hut had already been occupied this year and was dry, but not pleased with the prospect of the weather, as it was raining.

It was decided to start at midnight, but at 11 P.M. we were enshrouded in mist; so counsels of prudence prevailed, though Young's impatience was curbed with difficulty. We spent a part of the day on the eastern branch of the Glacier du Mont Blanc, working out a route to the foot of the couloir leading to the Col Emile Rey. This part of the glacier had been reported impassable, and it was fortunate that we made a preliminary reconnaissance. The couloir, which is over 400 metres long and at an average angle of about 47° , would be a formidable obstacle if it contained much ice. On my two previous visits to it there was a certain amount of hard

ice in it, but this year, to our great delight, it was filled with snow in excellent condition. We returned in cheerful mood, enjoyed the magnificent panorama from the hut, rendered still more beautiful by the evening colours, and retired with high hopes for the morrow.

At midnight we rose to find a cloudless sky and brilliant moonlight. So having put on our crampons we set off at 1.10, and, following the tracks made the previous day, had crossed the bergschrund, at the foot of the couloir leading to the Col Emile Rey, at 2.20. Here we unroped and ascended to the Col, which we reached at 4.22—earlier than we had expected. The moon had served us well, and as we ascended it gradually disappeared behind the Aiguilles de Trélatête, the shadow of which followed us up the couloir. The situation is admirably described in Shelley's words :

‘ The cold earth slept below ;
 Above the cold sky shone ;
 And all around,
 With a chilling sound,
 From caves of ice and fields of snow,
 The breath of night like death did flow
 Under the sinking moon.’

Blodig and I sat down to await the appearance of the sun, while Young, showing his usual inexhaustible energy, made certain of at least one peak by ascending Mt. Brouillard with Knubel. This ascent took them nine minutes from the Col, and caused Blodig to mutter many things about the foolishness of a man of his age coming out with such ‘*Teufelsgänger*.’ These insatiables having returned we learnt that Knubel was confident of being able to ascend the gully on the east, in the bed of which there was but little ice, and even of being able to reach the ridge by the more difficult route on the west of the Col. We then breakfasted, and tried to cheer Blodig, who could not yet be brought to believe that he would soon have attained his long-desired object. It was agreed that, if we were to succeed and to avoid an involuntary bivouac, it would be necessary not to lose time ; so at 5.15, in brilliant sunlight now, we roped up and moved on to the foot of the gully. This we ascended mainly by its true right wall. The climbing was interesting, but a corner requiring some delicacy of balance and a fairly difficult slab of about 30 feet provided with small holds were the only passages which needed serious consideration. In an hour we had reached easier ground near the ridge, where

we rested and unroped. Then at 6.40 we were on the snowfield which is so conspicuous from Courmayeur,* and continued the ascent by the low rock rib on the east of this until the main ridge was reached at 7.50,† and the summit of the Picco Luigi Amedeo fifteen minutes later. Blodig stepped first on to the summit of his last *viertausender*, his face wreathed in smiles, and proceeded to call three cheers for the Climbers' Club, the ascent having been made by the one and only honorary member of that club and two ordinary members with a Swiss guide. We were actually a very cosmopolitan party, as no two of us had the same native tongue. The air was still, everything was perfectly clear, and we fully enjoyed the glorious prospect spread out before us ; but after forty minutes of these joys the consideration that the greater part of the day's work was still before us caused us to turn our backs reluctantly on all this and to move. The rope was put on and retained until we had passed the gap between the Picco Luigi Amedeo and the arête of Mont Blanc de Courmayeur and had ascended the first step in the latter. This was somewhat difficult, owing to our choosing a chimney in firm rock on the left instead of the easier route over looser rock on our right. At 9.15 we had surmounted the obstacle, and, after discussion, Young and I elected to go on unroped, while Blodig and Knubel decided to follow roped. Young led rapidly up the easy serrated ridge over an apparently unending succession of rock towers : we roped again on the snow ridge. Later this carried a small cornice, which grew into a large one near the summit of Mont Blanc de Courmayeur, as near as possible to which we passed at 11.25. The summit of Mont Blanc was reached just after midday.

It would be presumption in me to attempt to write of the view, as this has been done so admirably by so many masters of Alpine description. Let it suffice to state that it was at its best. Yet, though there was very little wind, the cold forced us to forgo the enjoyment of the superb panorama, and we elected to wait in the shelter of the hole where the Observatory had once stood. Blodig and Knubel arrived about half an hour

* I am informed that at the end of August the snow had entirely disappeared from this place, and that no one remembers any previous year in which this had occurred.

† The point at which we struck the ridge must be near that at which the Signori Gugliermina reached it on their ascent, whence easy rocks led to the summit.

Peutereet Ridg

Mt. Blanc de
Courmayeur

Pizzo Lavigi
Amedeo



Swan Electric Engraving Co., Ltd.

H. O. Jones, photo.

SOUTH EAST FACE OF MT. BLANC FROM PUNTA INNOMINATA

later, and we left the summit at 12.45, intent on rest and refreshment at the Vallot Hut, which we reached at 1.7 and left at 2.45 to descend by the Dôme route. The two enormous bergschrunds gave us considerable trouble, and were only crossed by a combination of sidling along vertical walls of ice and some exciting jumping. Then we found the glacier so badly crevassed that for some time it seemed doubtful if we could win through. During this time Blodig, though surprised at the rapidity with which the ascent had been made, yet finding it difficult to disabuse his mind of the preconceived idea that the expedition would involve at least one involuntary bivouac, thought that, after all, the time had come for the said bivouac, and incautiously made a joking remark to Knubel about choosing a suitable place for it. This called forth a burst of patois, from which we gathered that the *heilige Strohsack* was called to witness that, rather than bivouac, he would make *pitons* of the ice-axes and use them for crossing crevasses as long as they lasted. Eventually the hut was reached at 5.30, where we indulged in half an hour's rest, and later we had another at La Visaille. The long walk down the Val Veni by moonlight was beguiled by an exchange of impressions of the day, and as we were all very cheerful the way did not seem long. Blodig was so happy that, if the rest of us had had no other reason for feeling the same, the fact of having contributed in some measure to his happiness would have been enough. Young was delighted to have made his first ascent of Mont Blanc by such a fine new route, and derived additional satisfaction from having broken what he calls the Courmayeur tradition of bivouacs; while I was greatly pleased with the expedition, all of which I had enjoyed so thoroughly, and agreed with Young that, even if nothing more was done, the season would still be a memorable one. We entered Courmayeur at 10.30 to the surprise of all; none expected us back that night, and some had even predicted three bivouacs for us. The machinery of the Hôtel Savoye was put in motion for providing us with food, and we soon retired to rest in a very contented mood after a day of over twenty-one hours.

Thus was that long-standing problem, the ascent of the Brouillard Ridge * of Mont Blanc, solved and a new route to

* Later this year Les Monts Rouges du Brouillard were ascended from the Glacier de Miage by Mr. A. W. Andrews; thus the whole of the great Brouillard Ridge has now been climbed.

that magnificent peak made over the greatest of its rock arêtes. The expedition is a highly interesting one, in which there is a combination of first-rate snow, ice, and rock work for which it would be difficult to find a parallel. Under really good conditions, such as we found this year, which are however probably rare, the expedition presents no particular difficulty, but it is undoubtedly very long, and speed is necessary if it is to be completed in the day. We had moved rapidly throughout, and the pace at which Blodig still moved on the descent caused his juniors to marvel greatly, and to wonder how near it they would be able to get at the same age.

During the ascent we saw no stones fall, but later in the day some stones must be expected, both in the couloir leading to the Col Emile Rey and also in the gully above this. In the couloir all danger from them can be avoided by keeping on its left side, but in the gully little or no shelter could be found.

It seldom happens that at the time a new expedition is recorded there is so much subsequent history to tell as in this case. The expedition just described has already been repeated twice this year. On August 11, two days after our ascent, Herr H. Pfann and Count Ugo di Vallepiana started from the hut at midnight and reached the summit of Mont Blanc at 5 P.M. On August 18, Dr. Pühn with Adolfe Rey and a porter set out at 8 A.M., and reached the summit of Mont Blanc at 6.30 P.M. Both parties spent the night in the hut on the summit and were exposed to some risk from stone falls before reaching the Picco Luigi Amedeo.

The next day Blodig returned home, proposing in the future to be content with the ascent of lower peaks in the Eastern Alps. Young and I set out for other expeditions, the chronicles of which will be written by him in a style more fitting to the subject than is at my command. Meanwhile Todhunter had been busy, and among other expeditions had made the first traverse of Mont Gruetta. On August 16, Todhunter and I went to the Quintino Sella Hut with Brocherel, my sixth visit, and the next day we crossed Mont Blanc to Chamonix. The only facts worthy of note are that, owing to the crevasses, we found considerable difficulty in reaching the upper basin of the Glacier du Mont Blanc, and also in effecting a lodgment on the rocks. In the former process we were disturbed by a large flake of ice which fell after Brocherel had climbed over it and before we did. Fragments hit us, and we were fortunate in escaping any injury. We arrived at Chamonix in good time for tea and the inimitable raspberry tarts. Young was already



H. O. Jones, photo.

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MT. BLANC DE COURMAYEUR, FROM MT. BLANC.



H. O. Jones, photo.

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SUMMIT OF PICCO LUIGI AMEDEO.

there, having come over the Col du Géant ; Knubel in charge of the baggage effected the passage by means of the Col Ferret ; Croux had left us to fulfil another engagement.

Apparently the weather was still on its best behaviour, so it was agreed that we should all five proceed to a camp on the north side of Trélaporte and make a determined attack on the Mer de Glace face of the Grépon, the ascent of which had been an ambition and a study of Young's for many years. The history of previous attempts on this face is, as far as I know, brief. The late Mr. Mummery* chose it as his first line of attack on the peak, but only reached a point quite low on the face near a 'great red tower' which is conspicuous from below, from which it seemed possible with great difficulty to reach the Charmoz-Grépon Col or the gap between the Pic Balfour and the highest peak, both which points were known to be much more easily reached from the Nantillons side. The former route was subsequently followed by Mr. Ryan with Joseph and Franz Lochmatter, and this expedition was repeated by Mr. A. Stuart Jenkins with Jean Bournissen and Léon Tournier. Both parties reached the summit ridge above the top of the 'Mummery crack,' and in each case it was found necessary at one place to throw a rope in order to render further progress possible. Young visited the face twice, and other parties have also explored it.

This face turns out to be a splendid case in support of the theory, which one of our worthy vice-presidents maintains was originated by the late Alexander Burgener, that the only way to ascertain whether difficult rocks can be ascended or not is to go and rub your nose against them—in fact, that prospecting from a distance is useful only in the case of comparatively easy rocks, and close inspection is necessary in the case of difficult rocks.

Our camp was all that a camp should be, only that, owing to this exceptional year, there was no water near it, so ice had to be carried up from the glacier. There I spent the most comfortable night I have ever spent in a camp, which is saying a good deal. The next morning, August 19, under a perfectly clear starlit sky, we got off at 3.5, and by traversing round the promontory of the Trélaporte reached the glacier of that name at 4.15. We then moved up the glacier towards the most northerly of the three couloirs. (Mummery had tried first the middle one and then the most southerly.) Below the

* *My Climbs in the Alps and Caucasus*, p. 121.

bergschrand at 5 A.M. we roped in the order Knubel, Brocherel, Young, myself, and Todhunter, which order remained the same throughout the ascent.

The formidable bergschrand, surmounted by 'a wall impregnable of beaming ice,' was turned by the rocks on its north side, which gave climbing that helped to tune our muscles to the pitch required for the day's work. The steep snow slope above the bergschrand was then traversed to the south and a lodgment on the rocks effected at 5.35. The route now bore upwards to the left, and, proceeding at as rapid a pace as I should ever care to have set for me on rocks, we passed near the 'great red tower' at 6.15; then followed the line of a lively little stream until much more serious work began at 6.55. We were now to the right of and somewhat below the end of an enormous stretch of yellow slabs that seemed to extend downwards from the summit ridge, and which are bounded by two ribs of rock, one extending downwards from the highest peak of the Grépon, and the other, which is less prominent, from a point on the ridge more to the north.

It became clear about this time that Knubel was not in his best form, and Young showed not only a remarkable knowledge of his psychological peculiarities but also extraordinary skill in nursing him back into the splendid form which he showed later in the day. A traverse to the right, followed by an easier traverse back to the left again, brought us to the edge of a deeply cut chimney, and here it seemed as if the expedition would come to an untimely end. Knubel proposed to go to the right, a line which, if followed, would inevitably force us on in that direction, with no hope of getting on to the rib leading up to the highest point by which it was proposed to ascend. The traverse to the left had to be made here or not at all. The situation was undoubtedly critical, and the success of the expedition hung in the balance for a time; but it was saved by Young, who quickly descended the chimney and called out that a traverse was possible from that point. Knubel came over and, after inspection, admitted that the traverse could be made with the aid of a fixed rope, but said it would be impossible to return. This objection was overruled by Young, who pointed out a ledge above the traverse from which the first man to return could be secured; that point conceded, a spare rope was fixed, and the traverse, which was difficult and remarkably free from holds, was executed. Easy rocks then led upwards to the crest of the rib which we desired to reach, where a convenient breakfasting-place, dominated by



From painting by E. T. Compton.

Swan Electric Engraving Co., Ltd.

GRÉPON, FROM THE COUVERCLE

the famous 'Crag on the Grépon' on the left, was found at 8.25. The pace had been fast, and so, after nearly five and a half hours, we all needed some rest and refreshment; these coupled with reminiscences of recent triumphs restored Knubel to his usually cheerful and optimistic mood, so that we felt assured of the success of the expedition if it was possible.

At 9 we were off once more, and from this time until the summit was reached at 2 the climbing was always difficult, usually exceedingly difficult, twice verging on the impossible, but it was undoubtedly superb. Chimney, slab and crack, always steep, sometimes even overhanging, followed one another in rapid and bewildering succession; often the slabs provided only a crack-hold for the hands and the foothold had to be obtained by friction on vertical slabs of rough protogine. It would be impossible to describe the route in detail, and fortunately such a description is unnecessary; there could be little difficulty in finding the route, as it keeps fairly directly up the rib towards the summit, and seemed to us to be practically the only feasible line of ascent.

A few of the passages however stand out in one's mind for one reason or another, and I will merely mention some of these, including the crux of the climb, which none of us is ever likely to forget. From the breakfast-place an ascent of about 60 feet brought us to a great triangular platform backed by a right-angled, vertical recess. This it was agreed ought to have a name; it was therefore dubbed '*la niche des amis*' and was selected by Knubel as a suitable place for a bivouac in case of a retreat—the last we heard of such an undesirable contingency. A very long stretch of difficult climbing, relieved only by two short easier bits, brought us to a small gap in the rib, from which the 'Crag' was seen close on our left and whence smooth slabs seemed to stretch directly up to the summit. This was about 10.30 A.M. From this point some slabs and steep cracks led to a horizontal terrace about a yard wide and about fifty yards long; a glance to the right revealed nothing but hopeless slabs; about 15 yards to the left an abnormally steep chimney led upwards for about 200 feet, and beyond that again there seemed no hope of ascending. A small cairn was placed at the foot of the chimney and we started up. About two-thirds of the way up the chimney narrowed and became overhanging. Here Knubel passed his sack down to Young, who, with admirable foresight, had left his own behind; then, facing the true right wall of the chimney, he surmounted the overhang with considerable difficulty and reached a stance. Brocherel

then ascended, but with a sack had to face the left wall, a method adopted by the rest of the party. Todhunter and I moved up to Young; while, though we could not see what was happening, it was obvious that serious work was going on above us. Here, as in several other difficult places, while I was still gasping for breath after severe exertion and preparing to take in Todhunter's rope, I was much astonished to find his gloved hands, delicately holding the coils of rope which he gathered in as he came up, suddenly appear between my heels. In answer to my expressions of surprise he would mildly respond that he thought it advisable to come along to save time and was taking no risks. After some time we gathered that Knubel had arrived somewhere or other, and that Young was expected to move up to Brocherel, who announced that he was safe and able to hold but not to give any further assistance.

At the first attempt Young found the sack so troublesome at the narrow, overhanging part of the chimney that he announced that he could not be expected to get up with such a handicap. This information, conveyed by Brocherel to Knubel in the form '*Josef! Monsieur Young ne monte pas,*' had such a stimulating effect that Brocherel was very soon using Young's head as a foothold for the next step. Later Young availed himself of my head for the same purpose; then he disappeared from sight, and later very considerably sent down the rope for us, an operation which was not by any means easy. It is impossible to convey any adequate impression of the next 30 feet. First there was the constricted part of the chimney slightly overhanging, which gave out on a slab provided with rudimentary holds; this in turn led to a hopeless overhang, which had to be turned by rounding a corner on the right, whence a steep slab, practically devoid of holds, led to a good stance and belay. Knubel's ascent of the last-mentioned slab, relying solely on an axe, with its point inserted into a minute crack as hand-hold, and merely on friction for the rest, is one of the most remarkable climbing feats I know of. It was perhaps fortunate for the morale of the party that he was out of sight when doing it.

A short, sharp struggle next brought us severally to a platform where we all met at noon and recovered after our recent violent exertions. The prevailing feeling of relief that the last passage had been successfully accomplished was followed by a feeling of annoyance and regret because the upper slab was so excessively difficult as to make it unsafe for anyone to lead who was not master of the 'ice-axe hold,' which, so far

as I know, is practised only by Franz Lochmatter and Knubel. At 12.30 we moved on again, the first obstacle being an exhilarating chimney of 120 feet; then steep slabs and cracks brought us to the cleft between the Pic Balfour and the highest point of the Grépon at 1.30. At one place, where the arm jammed in a crack was the only available hold, Young and I rejoiced to find that for once we, by virtue of our slightly greater bulk, were able to proceed with somewhat less difficulty than Todhunter.

At this time we were ignorant of the way in which a rope can be fixed to assist the leader in climbing the 'Dunod' chimney; and further we were particularly anxious to finish the climb by the Mer de Glace face. So leaving the gap by the detached leaf on the face, Knubel and Brocherel ascended to an uncomfortable position under the overhang of the final peak, where Brocherel anchored himself and gave Knubel such help as he could. The rest of us watched with breathless interest Knubel's violent struggle, again using his axe, this time with the handle inserted between two stones as hand-hold, which finally landed him on the summit. A spare rope was then fixed and we all forgathered on the summit at 2. The last pitch is that which had beaten all early attempts to climb the Grépon by the south-west ridge, and in Monsieur Dunod's last attempt Aug. Tairraz had failed to reach the summit by this route even with the assistance of a 36-foot ladder.* Knubel, who was supremely happy, was warmly congratulated by all on his magnificent feat.

I trust that it has been made sufficiently clear that this expedition is entirely due to Young and Knubel; my part in it was confined to the aforementioned provision of a foothold on one occasion and to giving as little trouble as possible. It has been decreed also that mine is to be a task of the humble chronicler.

After a well-earned rest we turned to the descent, which, taken in a leisurely manner, brought us to a welcome tea at the Plan des Aiguilles, and, with many a story by the way and many a halt to enjoy a glorious sunset, to a still more welcome dinner at Couttet's before 8.

This expedition stands alone in the experience of all the members of the party, not only for the long-continued severity of the climb, but also for the great technical difficulty of several passages. It is only the excellent firm, rough character of

* *C.A.F. Ann.* 1885, pp. 88 *et seq.*

the rock which makes some of these at all possible.* The Chamonix guides received the news of the ascent with the sullen silence of incredulity, which after our departure changed to active denial of our statements.

The weather now became bad for five days, during which Todhunter and Young both left the mountains. Later J. M. A. Thomson and I, with Knubel, traversed the Matterhorn twice in three days, which brought Knubel some small measure of consolation for the departure of his beloved patron; and so home. Thus ended the most memorable and most successful season I have ever had or indeed am ever likely to have in the Alps—a season in which weather, conditions, comrades, and luck were all that could be desired, a season which has provided pleasant memories to carry one through the years to come. It is surely not possible that two such can fall to the lot of mortal man.

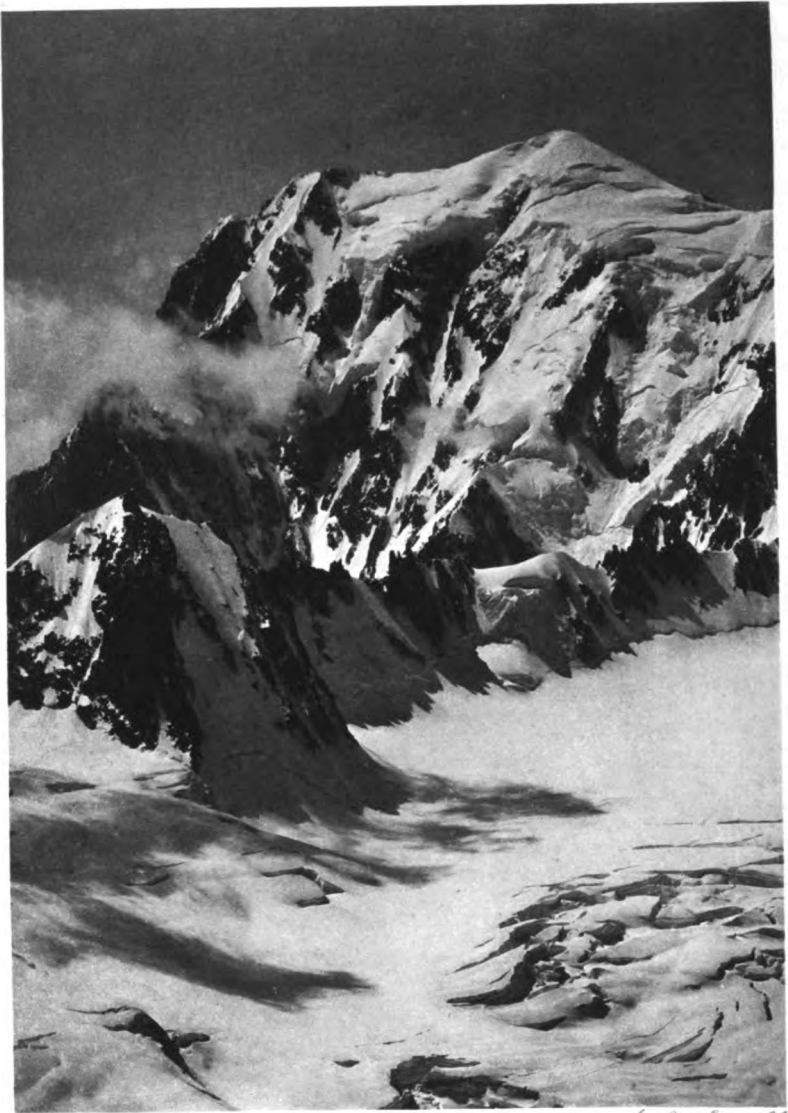
THE COL DE LA BRENVA.†

By CLAUDE WILSON.

AT 8.20 P.M. on July 28, 1904, Wicks, Bradby and I, accompanied by two porters, walked out of the courtyard of the Hôtel Royal at Courmayeur into the moonlight. The porters were to go with us as far as the usual bivouac, but a long day was in front of us three, for we hoped to cross by the

* During the discussion which followed the reading of this paper it was stated, by some members who had previously studied this face, that large stones had been seen to fall down it. Our experience showed the face to be so sound throughout that it is difficult to understand how stones could fall on such steep rocks, except during a thaw in the spring or after a heavy snowfall; the face is normally quite dry.

† This paper was written when the events which it records were fresh in the memory of the writer. It was put by in an unfinished state, and recently unearthed by Captain Farrar in the course of his investigations into the history of the various expeditions by the Brenva Face (*see ante* p. 171). From Captain Farrar's researches it would appear that, while Mt. Blanc has been ascended about a dozen times by this face, the expedition here recorded is probably the first and only passage of the Col de la Brenva, used as a route across the range.



F. S. Smith photo

James Gordon Engineering Co. Inc.

The Brenva face of M^t Blanc

from ridge below Aiguille du Grand

*In the background are the Aiguilles Rouges and
the white snows of the Glacier du Tac*

Brenva Glacier and the Corridor to the Grands Mulets. Whether or not we reached the summit of Mt. Blanc we did not care—indeed the day seemed long enough in any case, and we had already ascended Mt. Blanc from the Mich Hut, thus meeting the final slope from the Col de la Brenva by the Mur de la Côte. The expedition is an exceptional one, and all the parties who had preceded us—some eight or nine—had camped at a bivouac six or eight hours above Courmayeur. Only once before had this route been attempted by a guideless party, and I well remember the night (August 4-5, 1854) when Mummery, Hastings and Collie slept out for it; and we, on the Aigu des Glaciers, often thought of them next day. High up, they got too far to the left, and it was only after a second night out that they succeeded in surmounting the difficulties with which they found themselves confronted. All the other parties had been led by first-rate guides, and most of them had found the expedition long and arduous even when starting from the bivouac. It seemed daring and almost impudent of us to start on such an expedition direct from the valley. But we were very fit: it was the end of a fine-weather holiday during which, in addition to making numerous ascents, we had already crossed the Mt. Blanc chain five times transversely, and once longitudinally: the weather was glorious; and, most important of all, the light of a full moon began early and ran on to meet the dawn. There were in addition other considerations which affected us: we knew well the steep route up to the gîte—and we feared it in the heat of the day; and, finally, we knew of friends who had expended—some of them more than once—time, money, and energy, in reaching the miserable sleeping place, only to get wet through in the night, and to return to Courmayeur next morning. The weather was now quite perfect, and one more fine day seemed certain. We wanted that day for this expedition—and fortune favoured us.

Forty minutes by road and meadow led us to Entrèves, where we turned to the left into the rough lane which leads to the Brenva Glen. The route was quite familiar to us, but the narrow track through the upper woods is easily lost even in daylight, and, as was to be expected, we got off it, and had to scramble as best we could up the steep grass and rubble which leads to the shoulder just before the stream is crossed at the curious passage sometimes called the Brenva Brèche. Were it not for this shallow basin, where the torrent, impassable above, shallows out before its plunge into the valley, the diverse



F. S. Lewis photo

Leavenworth Engineering Co.

The Brenva face of M^t Blanc

from ridge below Fig. du Géant

*In the foreground are the Four Arêtes and
the entire series of the Grandes Tuêtes*

Brenva Glacier and the Corridor to the Grands Mulets. Whether or not we reached the summit of Mt. Blanc we did not care—indeed the day seemed long enough in any case, and we had already ascended Mt. Blanc from the Midi Hut, thus meeting the final slope from the Col de la Brenva by the Mur de la Côte. The expedition is an exceptional one, and all the parties who had preceded us—some eight or nine—had camped at a bivouac six or eight hours above Courmayeur. Only once before had this route been attempted by a guideless party, and I well remember the night (August 4–5, 1894), when Mummery Hastings and Collie slept out for it: and we, on the Aig. des Glaciers, often thought of them next day. High up, they got too far to the left, and it was only after a second night out that they succeeded in surmounting the difficulties with which they found themselves confronted. All the other parties had been led by first-rate guides, and most of them had found the expedition long and arduous even when starting from the bivouac. It seemed daring and almost impudent of us to start on such an expedition direct from the valley. But we were very fit: it was the end of a fine-weather holiday during which, in addition to making numerous ascents, we had already crossed the Mt. Blanc chain five times transversely, and once longitudinally: the weather was glorious: and, most important of all, the light of a full moon began early and ran on to meet the dawn. There were in addition other considerations which affected us: we knew well the steep route up to the gîte—and we feared it in the heat of the day: and, finally, we knew of friends who had expended—some of them more than once—time, money, and energy, in reaching the miserable sleeping place, only to get wet through in the night, and to return to Courmayeur next morning. The weather was now quite perfect, and one more fine day seemed certain. We wanted that day for this expedition—and fortune favoured us.

Forty minutes by road and meadow led us to Entrèves, where we turned to the left into the rough lane which leads to the Brenva Glen. The route was quite familiar to us, but the narrow track through the upper woods is easily lost even in daylight, and, as was to be expected, we got off it, and had to scramble as best we could up the steep grass and rubble which leads to the shoulder just before the stream is crossed at the curious passage sometimes called the Brenva Brèche. Were it not for this shallow basin, where the torrent, impassable above, shallows out before its plunge into the valley, the diverse

routes to which the Brenva Glacier leads would be much more difficult of access. We had been going pretty fast after leaving the valley, and crossed the stream, after imbibing freely of its refreshing contents, at 10.35. Thence, up to the rock shelf, now generally used as a bivouac, higher and to the E. of the place made use of by the earlier parties, involves about $3\frac{1}{2}$ hrs. of exceedingly steep walking, varied near the foot of the Aig. de la Brenva by crossing the E. branch of the glacier, to the rock island which separates the upper snows of Mt. Blanc from those of the Tour Ronde. On the ice at the foot of this island we took our first meal (12.20-12.50) and started up the steep pathless slope of moraine and broken rock towards the gîte, where we arrived at 2.45. Here we dismissed our porters, shouldered the sacks, put on the rope and crampons, and commenced the climb where it is generally begun, at 3.15 A.M., seven hours after leaving Courmayeur. The rocks immediately above the shelf present some little difficulty in shadowed moonlight, but in half an hour we were above them, and on the ridge of hard snow which forms a crest between the upper basins of the glacier. Our inclination was to bear to the left as soon as possible, but there is no escaping from the ridge, which has to be followed to its logical conclusion, where it eases off, at a point rather higher than one would have chosen, and a gentle downward slope of easy snow leads in the direction of Mt. Blanc.

Dawn was now breaking, and the light sufficient to allow us to examine at close quarters the great ridge by which we hoped to make our way.* Rocks in the lower portion led up to a little peak of snow, at the top of which we knew must lie the celebrated level ice arête, above which, according to our recollection of Moore's graphic account of the first ascent, no very serious

* Our route is traced in red on the map published in the *Alpine Journal* vol. xxv. p. 497, and may be easily made out from the marked photograph in the present volume p. 203. From 1 we went transversely to the left to a point vertically below the gap between Mt. Blanc and Mt. Blanc de Courmayeur. Thence we went up the main ridge and joined the traced track at 8. Thence we followed the marked route to the highest rocks (13), from which we traversed horizontally to the right to the Col de la Brenva. On Sig. Sella's beautiful photograph, here reproduced, our route from the ice arête to the Col. de la Brenva can be easily traced. The difficulties likely to be met with above the rocks—at the level of the Col—are clearly shown.

difficulties were encountered. The arête we could not see, as it was hidden by the pyramid of snow which forms its nether end : and if what lay above should prove to be snow and not ice—as, to our encouragement, looked possible—there appeared to be no special difficulty until a small rock tower, corresponding in height to the Col de la Brenva but a good quarter mile to its S., should be reached. Here however difficulties of a formidable nature appeared. To the left, where Mummery's party had turned back, the slopes appeared horribly steep, and obviously consisted of ice : immediately above the tower a double tier of vertical, or slightly overhanging séracs, presented the appearance of a continuous wall, with no apparent gap, and looked far from encouraging : while to the right, the gentle final slope leading to the Brenva Col—where 'even a roll down would not be attended with any serious consequences '*—was separated from the tower by a broad couloir of glassy ice of somewhat appalling steepness, topped by the vertical ice wall just alluded to, and bounded on the right (N.) by a ridge of broken séracs. Perhaps we did not analyse the situation very carefully : we knew that many inequalities in the ice wall might exist not discernible from this distance, and we thought that, once the 'arête' was passed, we should get up somehow, and very likely find a gap as others had done in the line of straight ascent towards the summit of Mt. Blanc. Anyway, this was no place to pause for long, so on we went, and in 10 or 15 mins. after leaving the snow ridge, came to a steep slope downwards with a bergschrund at its foot, beyond which a level passage of crevassed névé, above the ice fall of the Brenva Glacier which our route had 'turned,' led to the foot of the great ridge where the true day's work was to begin. Here we were confronted by another schrund involving some pushing of the first man, and subsequent pulling of the others ; and above this, a short steep slope of what unfortunately proved to be ice, led to the rocks of the buttress, where at 5.40 we partook of our second meal, enjoyed for half an hour the lovely air and glorious surroundings, and started off at 6.15—10 hrs. from the valley—to attempt the celebrated Brenva route—an expedition we had long desired to try.

We were soon on the ridge of the buttress, and climbed to its top by means of fairly easy rocks, interspersed with short ice slopes, passing at 6.45 the only trace of a previous party which

* Moore, *The Alps in 1864*, p. 348. Moore's account is also published in *Alpine Journal*, vol. ii.

the day's climb afforded—in the shape of Captain Farrar's card in a bottle. These rocks, owing chiefly to the large amount of interpolated ice, took longer to ascend than we expected, and it was not till 9.30 that we reached their top. Here we again partook of the harmless and necessary repast, and started off at 10.10, kicking steps up the little pyramid of snow which marks the southern end of the ice arête. The descriptions which we had heard and read of this arête had led us to expect something very terrifying. So it was, perhaps, not surprising that what we saw, though very steep on both sides, looked fairly easy. Of course, looking straight along it, there was foreshortening—and it certainly took much longer to negotiate than we anticipated. It looked as if 20 mins. might see us at the further end, whereas it took an hour. The top of the ridge consisted of very hard snow and not of actual ice, but in all other respects Moore's description of it in 1865 was exactly what we found.

'On reaching the little snow pyramid on which we now stood,' says Moore,* 'the apparent peak proved not to be a peak at all, but the extremity of the narrowest and most formidable ice arête I ever saw, which extended almost on a level for an uncomfortably long distance. On most arêtes, however narrow the actual crest may be, it is generally possible to get a certain amount of support by driving the pole into the slope below on either side. But this was not the case here. We were on the top of a wall, the ice on the right falling vertically (I use the word advisedly), and on the left nearly so. On neither side was it possible to obtain the slightest hold with the alpenstock. The space for walking was at first about the breadth of an ordinary wall, in which Jakob cut holes for the feet.' Later it became narrower, and 'regular steps could no longer be cut, but Jakob, as he went along, simply sliced off the top of the ridge.'

This latter plan was what we adopted from the first, and had we simply walked along it, all moving at the same time, as we did for a part of the distance, half an hour would have sufficed to traverse it. As it was—in the latter half—the leader made the pathway as far as the length of the rope would permit, and then sat down astride while the next man came along, so that two were always sitting to one moving. This process was repeated many times over, which shows that the length of the ridge must have been considerable, as we were using a

* *Loc. cit.*, p. 356.

100 ft. length of rope, and advanced nearly 50 ft. at each stage.*

We found but little actual difficulty, however, in crossing this arête, and congratulated ourselves on reaching its further end. The time was now about 11.30, and we had gained a height of about 12,500 feet. A steep slope of what looked like hard névé led first to the right, then to the left, and then to the right again, before we could reach a ridge of rocks which stretched upwards and ended just below the ice cliffs in the little rock tower already alluded to, some 1700 ft. above us. We had been lucky in finding the crest of the arête to consist of hard snow rather than of actual ice, and the white slopes above us looked as if one might kick or scrape steps. Alas! until we were within 15 mins. of the Col, there were not more than a dozen steps which could be so negotiated. 'Ice, white like snow, but hard like ice' (Güssfeldt), was what we had to deal with, and two or three hours were consumed before we reached the rocks. Here some help was found by climbing up the edge of the rock-rib, and occasionally upon it, but it was 4 o'clock in the afternoon before we reached the rock tower, and sat down on a ledge to take a little food. From the time when we had sat astride on the arête there had only been one place, and that only about an hour above it, where the three of us could have got near enough to each other to unpack a sack and get at our provisions.

The little tower of rock, where, at the hour of 4 P.M., we partook of a late lunch or early tea, is clearly visible on many of the photographs which show this ridge, and all of the parties who had ascended by this route must have rested there, for in the only accounts I know of this expedition (Moore—Hastings—Güssfeldt), the rocks just below the wall of séracs are mentioned, and this tower marks their topmost limit. Some would seem to have kept well to the left of the rock rib in ascending to this point, and if the ice is snow—to use an Irishism—this would certainly save time. But the ice hereabouts is in all probability very seldom snow, and I am sure we acted wisely in keeping near or on the upper rocks, though to arrive at them needed some pretty severe work.

But Moore's party having found ice on the arête—where we found snow—obviously found this part of the ascent in much better condition than we did. 'There was no particular

* The classic method adopted by the first party, and insisted on by Melchior Anderegg, is for all but the leader to cross the arête *à cheval* (*loc. cit.* p. 357).

difficulty beyond what arose from the extreme steepness of the slope, necessitating almost continuous step-cutting. Sometimes there was snow enough to help us, but . . . I suppose that altogether about every other step had to be cut in ice.' We had no such luck, and with the exception of some twenty paces on a fairly level shelf about an hour above the arête, there was no single step where we found any snow to help us. Everywhere it was ice—and hard ice. In spite of the favourable condition, Moore's party, with the best of guides, took $2\frac{1}{2}$ hrs. from the end of the arête to the rocks at the foot of the wall of séracs. We took $4\frac{1}{2}$ hrs. on this part of the ascent, and this has always seemed to me to be very slow going. But though we made some use of the rocks we must have *cut* at least three ice steps for every two of theirs, and it is not surprising that we took an unconscionable time about it. Mummery's party, on their second and successful assault, made considerable use of the rocks, and appear to have found them in better condition than we did—more free that is from ice in cracks and gullies.

I am unable to account for the idea which we had formed, and which others seem to have shared,* that no formidable difficulty would be encountered after the ice arête was passed, for in re-reading the accounts, all three parties evidently found serious obstacles where we did—and certainly in our own case the previous difficulties of the expedition sank into insignificance in comparison with the work we had to do after leaving the rock tower.

The situation in which we found ourselves was briefly this: the rocks above the tower ran up towards the foot of a vertical and unbroken wall of ice, and became buried before reaching its foot, the wall being thus separated from us by a short ice slope of extreme steepness. No breach of any kind existed in this wall, which cannot have been less than 20 ft. in height, so that progress directly upwards was impossible. We reconnoitred to the left, only to find, as we anticipated from Mummery's experience, a hopelessly long slope of steep hard ice, ending in further séracs at a higher level. To our right lay the direct way towards the col—but the only part of the route visible to us was the first 300 or 400 ft., which consisted of a hard, smooth, slightly concave slope of glassy ice at an angle of

* This notion seems still to be prevalent (*see ante*, p. 205), and though in Moore's account the formidable passage here alluded to is fully described, he distinctly states at the close of his paper that 'the ice arête is the only *very* serious difficulty on the route.'

about 65°, originating above at the foot of the ice wall, and stretching downwards to the Brenva Glacier, 8000 or 4000 ft. below—thus forming the chute by which masses and fragments from the séracs commonly descend.

Three reasons obtruded themselves against attempting to cross this formidable slope or couloir. The obvious danger of an avalanche falling while we were in transit was the least of the three. The sérac wall, so far as we could see it, formed a vertical cliff with no irregularity or overhang: the weather was intensely cold, and the sun sinking rapidly behind Mt. Blanc. There was therefore little danger from this source. The risk of a slip during the transit was a very real one, and the position was one where the rope would be a danger to the other two and of no help to the one who slipped: if one fell all would inevitably go. The third difficulty arose in the doubt as to what might be encountered at the opposite side of the slope, for it was walled in on the far side by a bank of steep and broken séracs, whose projecting pinnacles and towers stood out in sharp outline against the evening sky, almost as if cut in cardboard. Somewhere beyond them, we knew, lay the gentle slope of 'névé' on which one might 'roll' with impunity, but whether this would prove to be separated from them by another ice slope, or perhaps by impassable crevasses, we could not tell. Our position was a somewhat anxious one. To spend the night on the tower would mean bad frostbite—or worse—and to descend to the rocks below the ice arête, where Mummery's party spent their second night, was already but doubtfully possible at this hour. Go on we felt we must—but how to go on?

Our predecessors had all reached this tower much earlier in the day, but those who have left records would all appear to have experienced at this spot a similar doubt and difficulty as to how to proceed.* Let us see what each of the three printed records says.

Güssfeldt. (1892.)†—'At the moment when we quitted the rocks at 4320 m., we entered the worst phase of the expedition. . . . Moreover we began again to doubt whether we should be able to get up. For the first time we did not know which direction to take. Everywhere were steep slopes where each step required sixty strokes of the axe. . . . At 10.45 we were at a height of 4320 m. One hour later, I wrote

* Our successors also seem to have found difficulties here. See *ante*, pp. 205, 207.

† *Der Mont Blanc*, p. 234 *seq.*

in my note-book "Situation desperate." The difficulty proceeded especially from the hardness of the ice, and from the fact that we were unable to discover a good route. As I had not to cut the steps, and as we only advanced at the rate of one step a minute, I had plenty of leisure to appreciate the gravity of the situation. . . . "The minutes are like hours. The ice is white like snow, and yet hard like ice. To the right and to the left sparkling beds of bluish névé. Nowhere a way out. . . ." We advanced with deadly slowness. All of a sudden the way out showed itself. At 4440 m. the ice changed to snow beneath our feet.'

Hastings.* (1894.)—'The rock-rib afforded a pleasant change and some interesting scrambling. On reaching the foot of the ice cliffs we bore away to the right, cutting steps along the base of them, here resting on the edge of the rock wall until we reached a crevasse, which had opened by one half of the lower side travelling over the rocks, and by this opening we hoped to get out on to the top of the line of ice cliff. Into this gap blocks of blue ice had fallen, making a very steep pitch in a wall of about 25 ft. We tried it, did **not** like it, and thought we should be better elsewhere; so we traversed back to our left. Two chinks in the ice cliff we tried, but they gave no better line . . . and we were driven back to the crevasse opening. There seemed to be no more feasible way. The thought of retreat was dismissed. The pile of loosely tumbled ice blocks was frozen together, and covered in places by fresh snow. A short distance off a cave ran far back into the ice cliff, and while two of us stationed ourselves in it, the other man tried to get up the pile of frozen blocks. At the second attempt Collie, our featherweight, boldly overcame the difficulty by fixing the three ice axes into the interstices of this curiously formed wall, and using them as handholds and footholds.'

Moore.† (1865.)—'On our right . . . was the depression marking the head of the Corridor, being apparently about the same level as we were. There was our goal in full view, but between us and it was a great gulf which there was no obvious way of crossing. . . . Our position was, in fact, rather critical. Immediately over our heads the slope on which we were terminated in a great mass of broken séracs, which might come down with a run at any moment. . . . It seemed improbable that any way out of our difficulties would be found in

* *Alpine Journal*, vol. xvii. p. 548.

† *Loc. cit.* p. 358.

that quarter. But where else to look? There was no use in going to the left—to the right we *could* not go, and back we *would* not go. After careful scrutiny, Melchior thought it just possible we might find a passage through the séracs on to the higher and more level position of the glacier to the right of them, and there being obviously no chance of success in any other direction, we turned towards them. The ice here was steeper and harder than it had yet been. In spite of all Melchior's care the steps were painfully insecure, and we were glad to get a grip with one hand of the rocks alongside which we passed. . . . Melchior had steered with his usual discrimination, and was now attacking the séracs at the only point where they appeared at all practicable. Standing over the mouth of a crevasse, choked with débris, he endeavoured to lift himself on to its upper edge, which was about 15 ft. above. But to accomplish this seemed at first a task too great even for his agility, aided, as it was, by vigorous pushes *a tergo*. At last by a marvellous exercise of skill and activity he succeeded.'

If the reader will look back to the paragraph preceding these extracts, he will see that our position was less fortunate than that of any of these parties. To the right and to the left of the rock tower it is probable that the slopes are much the same from year to year. Straight above, where the séracs lie, was the route by which all our predecessors had ascended, and here the condition may easily alter from week to week.* We had the misfortune to find an *unbroken* wall of ice, separated from the highest rocks by a steep ice slope. The others had found faults in the cliff: a steep slope straight up in one case; crevasses choked with irregular blocks in the others; and rocks to hold to quite close to the difficulty, or some haven where the followers could secure themselves while the leader climbed. Had we found any such passage, however formidable, I think we should have welcomed it, and would have probably echoed Moore's words, 'To the right we *could* not go.' But necessity is the

* Though great difficulty at this point must be expected, it is not inevitable. The pitch is so steep that a fairly easy route straight up must be rare, but the frequent variations make it possible. Some parties have not alluded to it, when asked to describe their route, and Captain Farrar, who found the general conditions of the ascent exceptionally severe, writes (extract from private letter): 'We found a narrow crack in the ice wall, and squeezed through it, and then got up over some big square blocks of broken ice.'

mother of more things than invention, and after spending half an hour in reconnoitring the position thoroughly, we arrived at the unanimous conclusion that to the right we *must* go, or stay where we were for the night, at a height of over 14,000 ft. ; and the risks involved in staying there were great, considering the intense cold of the early evening. We decided, and no doubt rightly, to go on ; and the next 2 hrs. of work remain as an indelible memory with us all. At 5 P.M. we started on again. Downwards from the highest rocks, just above the tower, climbing gingerly, and we were soon upon the slippery ice, with here and there a rock foothold jutting out, but nowhere anything in the shape of handhold, and nowhere a friendly knob on to which to hitch a rope. Next, ice alone, with no rocks at all, for 2 hrs. Steep slippery ice, of a hardness unknown to us before, and with a curious quality, unique in our experience, born probably of great cold and enormous pressure—a quality of viscosity, which gave the impression of cutting into something which would not chip, but whose particles clung together like stiff tar. The axe struck the surface with a thud, and the pick had often to be wriggled out, bringing very little away. The work of making steps in this material, almost as hard as marble and tough as rubber, was most arduous.* And every step had to be a fairly ample one—some to take both feet—and everywhere a rail of handholds undercut to get a grip. Our gloves froze to these holds and to the slippery coat of ice which covered completely the stocks of the axes ; and if by any chance a bare hand touched the metal, it stuck to it as if adhering by quickly fixing glue. Fifty feet of rope was between each of us, yet we seemed but very little distance on the ice ere the last man had to leave reluctantly the last little islet of rock, on which one foot at least seemed comparatively secure. About a third of the way across, a little hollow, probably once a crevasse, showed up about 10 ft. above us, and a short zigzag back was made to lead us to it. This hollow saved us some half-dozen steps, and beyond it, several small irregularities in the surface saved some extra blows in making the remainder of the track. The intense cold, the stillness of the evening, the hard work, and more than all the mental strain of traversing such steep ice for so long—combined to

* Compare Farrar (*ante*, p. 173). ‘Short stretches of ice of the colour of plaster-of-Paris were encountered, so tough and unbrittle that the axe-head simply stuck in them without bringing anything away.’

form a situation which impresses itself very firmly on the memory: and we all knew that each would have been three times as safe without the rope. At last, at 7 P.M., the séracs on the other side were reached at a point where a shelf about 5 ft. up gave access to a shallow cave beyond. From the roof of the cave an icicle about the thickness of a man's leg at the knee came down and joined the shelf, forming a pillar. The leader put both arms round the icicle, and, not without some misgiving, slung himself on to the shelf and over it into the cave. Here, with one foot against the base of the icicle, he felt secure, and at about 7.15 we all were huddled in the cave, profoundly thankful to be in a place of safety for the nonce, but still anxious as to what might lie beyond. The last man into the cave was the first man out, and, cutting steps round the dwindling shelf, soon stepped across on to another ice tower, like a gigantic tea cup upside down. Round this more steps had to be cut, and then a six-foot jump down on to very hard ice blocks in a choked crevasse, where we all collected once again. Then up the other side of the crevasse, and joyful shout from above, for we were on the edge of the plateau 'where even a *roll* would not be likely to be attended by serious consequences.' Down the welcome slope of *névé* we sped—across a fairly level stretch and up the other side—in zigzags—scraping steps, and at 8.10 P.M.—23 hrs. and 50 mins. after leaving the hotel, we again stepped out of the shadow into bright moonlight, at the head of the Corridor. Out of this time just 2 hrs. and 40 mins. had been spent in halts: the rest of it had been pretty hard work—some of it very hard.

The Col de la Brenva on which we stood is only 1500 ft. below the summit of Mt. Blanc—the moonlight was glorious, and the air still. Had we been as fresh as we felt, we might have easily ascended to the top. But the strain being removed, the effect of the work and want of sleep (it was 36 hrs. since we had been in bed) were beginning to tell, and we had stopped to 'puff' two or three times in ascending the short slope of *névé* leading to the col. We never seriously thought of ascending further, so down the Corridor we made our way, still sufficiently awake to appreciate and enjoy a moonlight descent of Mt. Blanc.

We had hoped to find traces in the Corridor, but were disappointed. Still we made a very good route till near the Grand Plateau, when we got too much to the left, and had to cut steps down the steep slopes and among the séracs near the Rochers Rouges. Then, half asleep, we made our way across the great stretch of snow and up the other side, and at length

found ourselves on the ample track made by numerous parties descending from the Bosses. Down we went, across the Petit Plateau, and down again—a long way it seemed—till at last the rocks of the Grands Mulets came in sight. No doubt we were all pretty sleepy as well as tired. I was leading and had to keep awake to find the way ; but Bradby and Wicks both saw ghosts upon the Grand Plateau—other parties near us, and that sort of thing. When our goal was in sight I suppose my vigilance also was relinquished, for I saw a curious sight, at which I marvelled, and thought how foolish of the parents to allow it, even in daylight—children playing and running about on the glacier, among the great crevasses below the hut. I kept my eye on them, and when we got near they were great blocks of stone lying on the snow, the relative position of which naturally kept changing as we zigzagged about among the crevasses higher up.

At 10.30 P.M. our long day came to an end, and we knocked up the kindly caretakers, partook of excellent soup, and went to bed prepared to sleep if need be till the following afternoon. However, in spite of most comfortable beds, we were all awake and ready to get up at 7 A.M. next day, and at 11 we reached Pierre Pointue. Here we had hoped for a good lunch, as we had been most frugal since our truly 'Royal' meal at Courmayeur 89 hrs. previously. But we had grown fastidious, and learned with disgust that the Pierre Pointue could produce no salad. Consequently we did the two extra hours of up and down, which seemed so needless seeing that the two inns are almost on a level, and lunched admirably on salad and other delicacies at the comfortable little shanty on the Plan de l'Aiguille, and dined excellently later on among the many friends we found at Montanvers. And so to bed.

MONT BLANC BY THE BRENVA AND OTHER TRAVERSES IN 1911.

By W. R. CAESAR.

(Read before the Alpine Club, June 4, 1912.)

WHEN asked to read a Paper on the Brenva route and other climbs of last season, my natural trepidation was somewhat calmed by the reflection that the subject would enable various slides to be shown. Thanks to the kindness of



Sydney Spencer, photo.

Swan Electric Engraving Co., Ltd.

MT. BLANC, FROM COL DU GÉANT.

several members of the Club, I hope the screen will hide my own shortcomings.

Early last year—months before going out—Harry Runge and I had quite made up our minds that the weather would be fine continuously. It was so much easier to make plans. Our visionary list included the Brenva. We worked westward from the Engelhörner, but to-night I propose to start with the Brenva and to hark back if time permits.

The early history of Mont Blanc is well known to you. By 1863, France—or rather the explorers on the French side—had claimed five routes—or six, if the international Mont Maudit route is included. But the first ascent confined to Italian territory was not made until the year 1865, when the Col de la Brenva was first reached from Italy by Messrs. F. and H. Walker, A. W. Moore, and G. Mathews, with Melchior and Jakob Anderegg. They threaded the seracs of the lower Brenva glacier and ascended by the route which, with some variations, appears to have generally been adopted by subsequent parties. The expedition has not been repeated so frequently as most of the discoveries of those early days ; indeed, in some years the Brenva route has remained untrodden.

Since the above was written, I have read with the greatest possible interest Captain Farrar's Paper in the May number of the JOURNAL, in which he had unearthed and brought together all the known ascents by the Brenva. I am sure we all feel very much indebted to him for this.

In 1909, it was the intention of our party—rather a large one—to pass the night at the Rifugio Torino. Some were proposing to traverse Mont Blanc by the Mont Maudit route ; others meditated crossing the Col de la Tour Ronde and making an attempt on the Brenva route. The weather however postponed this. 1910 was—well, you remember it. Last season however the omens were favourable, and for mountaineers it was a year of fulfilment.

Harry Runge and I had been so roasted in other valleys that the proposal to try this tour without enduring the heat of Courmayeur and the trudge up to the gîte was accepted *nem. con.* Moreover, at a gîte, when sleep will not prevail, moon and stars, however romantic, are but counter-irritants, while at the Rifugio Torino there was the possibility of some hours of sleep. Let no one think I have any grudge against Courmayeur. Quite the reverse, as the curlers say, ' I like it.'

We arrived at the Rifugio from Montanvert about noon on August 4, and our guides, Abraham Müller, jr., and his brother Gottfried, were not to be deterred from going to the Col de la Tour Ronde to see if the bergschrund were likely to be a source of delay. While they were away, the weather was not quite up to the mark. Clouds were driving across Mont Blanc, and most of the route was obscured. But the wind was northerly, so we did not despair. Next morning, the 5th, we set out from the hut at 2.5 A.M., crossed the Col des Flambeaux, and soon were straggling up the gentle slopes of the Géant glacier into the bay leading to the Col de la Tour Ronde.

Before an alpine audience there is no need to dwell on the glories of the dawn. Its first gleams were now rising over the ridges of the Triolet. We turned from time to time to gaze on the perfect colour gradations, not without foreboding of cold, owing to the prevalence of green tints.

The bergschrund was reached at 3.40 A.M., and then rocks led up the left side of a narrow ice gully. Though somewhat loose in places, they afforded pleasant and not difficult climbing. At 4.25 we were at the top of the Col, and Mont Blanc was revealed in all its grandeur. The descent on the S.W. side was quite easy, and occupied only twenty minutes. We bore considerably to the right to avoid crevasses in the Brenva glacier, which we crossed to a spot at a respectful distance from the foot of the Great Couloir or Upper Brenva glacier, and a halt was called at 5 A.M.

Crossing the Col de la Tour Ronde may be the longer way round, but it seems to us to have several advantages over the Brenva glacier route, some of which I have already referred to. Moreover, it afforded a clear view of the general line of ascent. This is generally spoken of as the Brenva *ridge*, but the route that appears to have generally been adopted is largely a *face* climb. The ridge work, whether rock or ice, usually ended with the famous ice ridge. Above that—I speak subject to correction—it became principally a face climb, and earlier parties, I believe, endured much cutting on steep ice. Our party however took a rather more easterly route for part of the way.

It is, of course, not easy to estimate distance, altitude, or inclination with any degree of accuracy from alpine photographs, and it would scarcely be practicable to obtain a photograph showing the whole Brenva route in profile, so that its general inclination could be seen. The view from the

East ridge of Mont Maudit shows the middle portion. Perhaps two or three figures will assist the eye :

	ft. high
The foot of the rock buttress is about	10,800
Rocks we reached about 10 A.M., nearly the highest on the ascent, are according to the Imfeld map about	12,750
The summit of Mont Blanc is about	15,770
So that the difference in height between the foot of the rock buttress and the rocks referred to is a little under	2,000
and between the rock buttress and the summit about	5,000

Now, with a given altitude and a vertical base of known length, the third side—in this case from the summit of the mountain to the foot of the rock buttress—*must* subtend a certain angle or, in this case, almost a curve. Fortunately, I do not know the figures accurately, so I will leave all responsibility for exact calculations to mathematicians. But I believe the angle from the rock buttress to the summit is over 40°. As everyone knows, the upper part of Mont Blanc consists largely of plateaux, never very steep, and in places almost level ; so that it is pretty obvious that the *lower* part of the route must be rather steep, and it is so.

After breakfast there was a crampon competition. The first to get them on won a bottle of wine in far-away Chamonix—I forget who paid.

At 5.45 we started again, and for a short distance ascended over avalanche débris (2*) fallen from the Upper Brenva glacier.

At this hour nothing was falling. In fact, we only heard two falls during the day—a small one about 6.50 and a huge growl about 10 A.M., when we were on the upper rocks.

Nevertheless, we left the débris track so soon as possible, and cut up a very steep slope of hard snow and ice on our left, and gained the rock buttress at number 3. About 100 steps had to be cut.

Last year the buttress was divided by a narrow snow crest into two stretches of rock (4 to 5, and 6 to 7). The lower stretch is not difficult. We were on the top of it at 7.30 A.M. (5). The narrow snow ridge already mentioned now led up to the second stretch of rocks, and we paused to take off our crampons. This second stretch goes well, and is quite

* The numbers in the text refer to the illustration at p. 203 of the May number of this volume.

interesting. There is a nice chimney of about 35 metres between 6 and 7.

At the top of the buttress (8) the snow looked good, but after a few strides the leader found hard ice below a soft thin coating, so there was another little bet about getting the crampons on again. Up to here Abraham had led, but now that practically only snow and ice-work was before us, Gottfried—the gletschermann, as we call him—went ahead.

I may as well confess at once, though it opens up matters rather controversial, that we went the whole day two on a rope. It is not to be recommended on a tour of this character, but we had heard so much of the length of the expedition that we wished to lessen the chances of passing a night on the mountain. I hope the plea of extenuating circumstances will be accepted.

Now came the famous ice ridge (9). It has been climbed astride both in history and in fiction. We did not find it necessary to do so. Very remarkable it is, not only for its narrowness, but because there is a sheer drop on the right, while on the left the slopes fall away very steeply indeed. Compared with what is above and below, part of it is practically horizontal. This year, it was almost a snow arête, but in places we found ice. The snow was soft, and additional care was necessary, for the axe would at times go right down to hard ice. We were now high enough to feel the north wind. Here, too, at intervals, a small cornice overhung to the right.

The ordinary methods of progression sufficed, but I remember thinking at the time that if one of us went overboard the only chance would be for the other to perform a similar manœuvre on the other side and chance the strain on the rope. The ultimate result is a matter for speculation. Fortunately, it was not an event which was contemplated as within the region of practical politics—or even twentieth-century politics.

This attenuated arête finally clung to very steep snow and ice slopes leading to rocks, and as the inclination became greater so did the wind. These slopes were generally hard snow, but in places there was ice. At about number 10 we traversed sharp to the right to avoid crevasses, and passed under and then across the face of a rather steep wall of ice leading to a snow slope. This brought us to rocks overhanging the glacier between us and Mont Maudit.

We skirted them (11) on the left side of the rocks for a short distance; then mounted them to a cold and cramped bivouac at 10 A.M. (12). This was not far from the point 3921

on the Imfeld map. A well-jolted aneroid registered about 13,200 feet, but let me say at once that I disclaim any sort of accuracy for that particular aneroid, having regard to the life it had been leading.

If bad weather were to catch anyone on the middle portion of the ascent, and an immediate return to the rock buttress were not feasible, the next best chance, I think, would be to make for these rocks. True, there would be little shelter from wind, but last year, at any rate, they stood high enough above the slopes to escape being swept by any ordinary avalanche.

The nest of rocks on which we were perched was a grand and most impressive position. Above were the ice cliffs leading to the upper plateau. On the east side there was a practically sheer drop for a great distance deep down to the glacier separating us from Mont Maudit. To the S. and W. the slopes sank far away below, and White Silence was everywhere. As the eye travelled beyond the immediate surroundings, across the soft Italian distance, peak after peak was revealed from the distant Engadine and through the haze of the southern horizon, until the Pétéret ridge intervened. It produced a sense of complete detachment from the artificiality of advanced civilisation.

Here was one of the undefinable and unspoken replies to the question 'Why do you climb?'

Time passed all too quickly, and after forty minutes' halt it was necessary to advance. The rocks were mounted a further short distance towards 13. The ice wall above was this year the crucial point of the whole route; indeed, under certain conditions it might prove an impasse. It was hard thin ice and very steep. There seemed to be two alternatives—either to traverse to the left and cut across and up the face of the wall, or to pass slightly to the right, into a small depression or gap in the rocks, and then cut up the wall, bearing a trifle to the right. The first alternative would have necessitated a lengthy traverse and continuous step-cutting across an ice face. The second alternative also involved cutting in hard ice, but we chose it as more direct, and it seemed that once up the way would be clear. The height of the wall was about 100 feet or more, of which the first 20 to 25 ft. were perpendicular (I have dared to use that expression after considerable reflection).

Gottfried set to work cutting very good hand-holds and foot-holds large enough for the front spikes of the crampons.

Meanwhile Harry Runge stood in the narrow gap in the

rocks paying out the rope, while Abraham and I found shelter on the sunny side of the rocks, and were thus able to appreciate all the more the work of the others. After the first twenty feet or so, Gottfried bore a little to the right, where it was less steep, and then turned to the left, taking advantage of the slope. The first 50 ft. of the wall required about twenty minutes' fierce cutting. The rest of us slung our axes, and went up the whole way hand over hand as if on rocks. We emerged on to easy slopes (14) leading to the highest seracs (15), which this year presented no difficulties.

One huge cliff of blue ice would have stopped us completely had it been impossible to turn it. Last year the famous ice ridge (9) was certainly not the principal difficulty, and I fancy others besides ourselves found the ice wall more entertaining.

Mr. R. W. Lloyd's party, who made the first ascent last year, surmounted it, I understand, by means of a narrow ice couloir a little to the right of our route. I hope he will tell us about this later on. Some parties in former years, I believe, kept straight up the very steep slopes above 10, and I can well imagine they must have found the going exceedingly strenuous.

Leaving the actual Brenva Col far away on our right, we bore S.W. towards the Petits Mulets, through wind-driven snow, which whirled up and was not very pleasant. The summit was gained at 1.35 p.m. It was far too cold to linger more than a few minutes, so we ran down to the Vallot hut and spent an hour there. Then came an exhilarating scurry down to the Grands Mulets, where the various little bets were settled in mountaineering fashion. Chamonix was reached comfortably at 8.30, and Argentière at 10 p.m.

I will run quickly over the other traverses. First, the so-called traverse of the Simelistock.

This charming little dolomite lies at the N.E. end of a fine rock amphitheatre forming part of the Engelhörner group. Most of the Engelhörner allow of a go-as-you-please start from the Hotel. Moreover, heavy boots soon give way to Kletterschuhe, so it is a district eminently suitable for the first week out. The first part of the ascent is quite easy, up somewhat 'platteny' rocks, but with Kletterschuhe one could walk practically all the way to the Sattel without using the hands.

Now comes a short but very interesting climb. It has been fully described, so I will only say that we took the route up the S.W. corner, and came down the chimneys on the west side.

The rocks at the bulge (shown in the photograph) were not all quite firm, but the rest were splendid. Another day we climbed King's Peak, but did not traverse.

Now to the Mönch from the north. While we were crossing the glacier on the way up to the Guggi hut, the mountain took a deliberate shot at Runge with a goodly rock. Fortunately, he both heard and saw—and dodged in time. We got even with the enemy next day. The next incident was the arrival at the hut, about 7.30 o'clock, of two porters and a boy, just as the steam of burnt offerings was ascending to the nostrils of the gods. We feared we were in for a good deal of clatter, but to our great relief they very soon returned to the Scheideck.

In the morning a start was made at dawn, 8.50, and the summit was gained at 9 A.M. A party had crossed two days before, and their steps on the lower and steeper ice only required trimming. Higher up there was a certain amount of hacking to be done. We had a fine view on to the Silberhorn.

So we came to the Concordia, and next day to the Lötschenthal—that charming and mediaeval valley of many dialects, where a village understands not its neighbour. We heard much talk of cows and cheeses. 'The poor cows cry for food,' they said; 'next week they must already leave the Alps.' The melting of the snows was responsible for much damage along the valley, and it may truly be said that the river was all over the place.

Then came the Bietschhorn—up the N. side and down the ordinary W. arête. On gaining the N. ridge we were able to move on dry rocks nearly the whole way to the summit.

Thence we went to Argentière for the Brenva.

After that Harry Runge had to return home. I went up to Zermatt for the Zmutt and found it in excellent condition, and therefore less interesting than the descent on the Italian side.

This was the final tour; but a glorious sunset on the Furggenjoch kindled peaks and snows red with dying flames, and fired the imagination with hopes for future days, when the silent call of the mountains will once again be obeyed.

SOME HOUSE-INSCRIPTIONS FROM THE UPPER LOETSCHENTHAL.

BY WALTER LARDEN.

OF late years I have found in the deciphering of the inscriptions carved outside and inside Swiss chalets and other wooden buildings a pursuit of increasing fascination; and this last summer (1911) I sought to make my work more complete by the aid of photography.

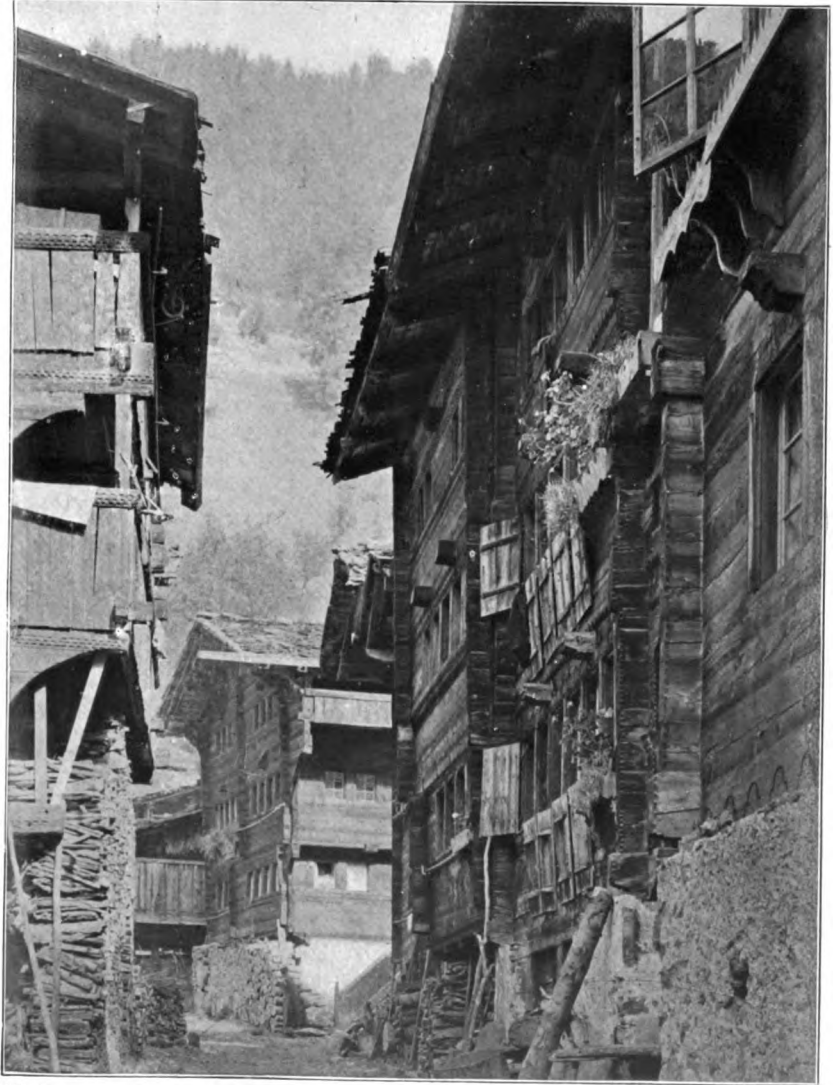
My work in both departments has resulted in a fairly large illustrated collection, which I had hoped to persuade some publisher to convert into a book. But, alas! fears that the public interested in such a subject would be but a small one have so far prevented anyone from making the venture; and all that I have been able to do has been to get a few (some thirty only) published without illustrations in one chapter of my 'Recollections of an Old Mountaineer.'

I am now availing myself of the kindness of the Editor of the ALPINE JOURNAL to put into print a selection of those collected in one district only, viz. the Loetschenthal; and to give with them reproductions of a few of the typical photographs there obtained.

There would, of course, be much to say as an introduction to the complete collection; indeed such an introduction, dealing among other things with the characters and language employed, with the types of verses found, and with the functions of the various persons (as *Zimmermeistern*, *Wandknechte*, &c.) whose names are recorded, has already been written. But for reasons of space I must, in the present article, confine myself to a very few remarks.

(1) *Carved, and painted inscriptions.*—I limited myself to carved inscriptions only. These were necessarily made while the beams or boards lay on the ground. No one would have attempted, as no one at the present day attempts, to carve up against the face of a house; still less on a beam or ceiling overhead. These carved inscriptions remain as they were originally, save that those exposed to the weather have become more and more illegible with the passage of time. When one has deciphered a carved inscription, one has the satisfaction of knowing that it is really as old as it professes to be; and further, weathered though it may be, there is usually some trace at least left of the deep carving. Painted inscriptions, on the other hand, can be and have often been renovated *in situ* later on; what one sees may not be the

Fig. 1.



W. Larden. photo.

Swan Electric Engraving Co., Ltd.

STREET IN KIPPEL.

original inscription, and mistakes (even as regards the date) may have been made by the renovator. Moreover portions of painted inscriptions may be clean wiped out so that no trace whatever is left, a fact which renders the deciphering of them quite heartbreaking.

(2) *Outside and inside inscriptions.*—In those parts of the *Bernerobersland* where I worked, the houses were on the whole much scattered, and each house belonged to one family. The inscriptions were external, and belonged to the house as a whole. Though the capital (initial) German letters were often fanciful and adorned with flourishes, they were of normal relative size, and there was little in the way of extraneous carved ornamentation. The main interest of the photographs, to my mind, lay in the fact that they gave the actual forms of the letters, and showed also the weathering and the difficulty of deciphering the words.

In the *Loetschenthal* I found that the inhabitants, for reasons indicated to me by the President of Kippel, had drawn together in villages; and the larger houses had usually two inhabited stories occupied by different families. The best inscriptions were internal; and one sometimes found fancifully carved initial capitals of relatively enormous size, as well as carved ornamentations usually of a floral type. The stories were often of different dates, and each story had its own inscriptions.

(3) *The question of dates.*—I learned to be careful not to assign to any inscription a date that was given elsewhere in the house. Especially did I avoid assuming that two stories were of the same date, or assigning to a room the date of a door, bed, or stove found in it.

(4) *Where internal inscriptions were found.*—In the *Loetschenthal*, the beams running across the ceiling almost always had inscriptions on them. These beams serve the double purpose of supporting the floor above, and of tying together the (wooden) walls of the house; they are called *Binde*, or tie-beams. Inscriptions might be found also on the ceilings, on or over the door, on beds, and on cupboards.

(5) *Characters used.*—Speaking generally, all old inscriptions (say before 1640 or so in the *Bernerobersland*, or before about 1700 in the *Loetschenthal*) would be entirely in capital Roman characters. In the *Bernerobersland*, inscriptions of later date than 1740 or so would be entirely in German characters; but in the *Loetschenthal* Roman characters were often used in relatively modern inscriptions.

(6) *The verses that occurred.*—Many of these were known far and wide, in Tirol as in Switzerland. The master-carpenters too sometimes wandered from place to place, and no doubt carried their stocks of verses with them. In Catholic *Loetschenthal* the tone was on the whole more pious than in Protestant *Bernerobersland*.

(7) *Limitations in reproduction.*—It is impossible, without going to great expense in having special type cast, to reproduce the quaint or fanciful appearance of these old records. Letters of fanciful or antique form, reversed letters, inverted letters, and the curious contractions that occurred so frequently when Roman capitals were used—all these peculiarities have to disappear; one has to be content with the types that the printers have in stock.

The IHS, that so often occurred, had usually a cross rising from the cross-bar of the H, and a (conventional) burning heart underneath; the MARIA was given in a most ingenious monogram-form; while both might have a circle round them, and there might be floral decorations as well. I cannot get all this represented in the text; but fig. 5 gives one good example.

[* * * In deciphering the inscriptions, a very difficult matter in the case of old *external* inscriptions, I had to rely on my own powers entirely; I found that the greater knowledge of the language possessed by educated Swiss or German friends did not count for much as compared with practice. In translating them also I had to rely on myself in the main; but in some cases I consulted Dr. E. Hoffmann-Krayer of Bâle, and Dr. H. Dübi of Berne, as to the probable 'point' of some verse; and I would here acknowledge my obligations to them for the trouble they so kindly took and for the useful criticisms and suggestions that they made. The priest also (the 'Herr Prior'), and the President, of Kippel took a lively interest in my work; and their knowledge of patois, and of local customs and history, was helpful to me. The friendliness of these two made my stay at Kippel much less solitary than it would otherwise have been.]

In giving my selection of inscriptions I will take the several villages in turn.

I. Kippel (see figs. 1 & 2).

(1) The following was an *outside* inscription on the basement of a house, and it was very difficult to read. I take its date to have been 1620, since this date was carved on the same

Fig. 2.



W. Larden, photo

Swan Electric Engraving Co., Ltd.

KIPPEL AND THE LÖTSCHENLÜCKE.

Fig. 3.



W. Larden, photo.

Swan Electric Engraving Co., Ltd.

story on the other side of the house. [The upper story had the later date of 1707 carved on a tie-beam.]

Most of the D's, N's, and S's were reversed.

HERE . MEIN . HAVS . FOLCK . WAS . ICH . EICH . SAG .
DAS . SELB . IN . EIWEM . HERTZEM . PRAGT .
LIEBET . GOT . OB . ALEN . DINGEN .
SO . KAN . ES . EICH . NIT . MISLINGEN .

Translation.—'Hear, O my House-folk, what I say unto you, and stamp the same in your heart. Love God above all things; so can nothing miscarry with you.'

(2) Passing over two rather short ones of 1633 and 1640 respectively, I take next an *outside* one in which there are two points of interest. The first part shows how the master-carpenters sometimes wandered far afield (Meister is certainly Zimmermeister or Baumeister); and the second part is a verse that occurred often, in various forms, in this valley. The SIG is, I find, Middle High German for *sei*; I only found it in one other inscription, viz. one of 1620 near Adelboden. The date is 1651. Reversions of letters &c. are not given.

DAS . IST . GEMACHT . IM . NAMEN . IESV . VND . MARIA . DER .
MEISTER . HANSS . STOFER . VON . LVCEREN . VND . IACOB .
ENGELBERGER . VON . VNDER . WALDEN . 1651 . IAR .

ALSO . SOLT . DV . WONNEN . IN . DINNEM . HVS .
ALS . OB . DV . MIESTEST . MORGENS . DRVS .
LVG . DAS . DIR . SIG . EIN . HVS . BEREIT .
DAS . STAND . IN . EWIGKEIT .

Translation.—'It (or this) is made in the name of Jesus and Maria. The (Zimmer)-meister was Hans Stofer of Lucerne and Jacob Engelberger of Unterwalden. In the year 1651.

Thou shalt so dwell in thy house as though thou hadst to quit it to-morrow. See that there be a house ready for thee that may endure to Eternity.'

(3) The following came from the house of my friend Eligius Rieder, the President of Kippel, and the date was 1665. In one room was an old stove with the initials, and what I took to be the arms, of Melchior Werlen, as well as the date 1666, engraved on it; it was of a stone that took a good polish. I secured a beautiful photograph of this stove.

Inside, in a lower room, on the tie-beams—

WOHNE . ALSO . IN . DISER . WOHNUNG .
 DAS . DIR . WERDE . ZVR . BELOHNUNG .
 DIE . HIMMELISCHE : WOHNUNG .
 OMNIA . VIRTUTI . POSTPONE . TVAQUE . SALVTI .
 ET . VIVES . IN . ÆVVM .

(Here, as in another, it was *tuaque* and not *tuæque*.)

In an upper room, on the tie-beams, I found—

QVIDQVID . AGIS . PRVDENTER . AGAS . ET . RESPICE . FINEM .
 TABERNACVLA . JVSTORVM . GERMINABVNT.—PROV. 14.

DEVS . CARITAS . EST . QVI . MANET . IN . CARITATE . IN .
 DEO . MANET . ET . DEVS . IN . EO .

Outside the house came—

ICH . LEB . WEIS . NIT . WIE . LANG .
 STERBEN . MVOS . ICH . VND . WEIS . NIT . WAN .
 ICH . FHAR . VND . WEIS . WOHIN .
 WAN . ICH . IN . TVGENT . FLEISSIG . BIN.¹

MELCHIOR . WERLEN . VEXILLIFER² . DESENI³ . RARONLÆ .
 ANNO . DOMINI . MDCLXV .

¹ This is an altered form of an old verse, widely known. The more usual form is—

*Ich leb', ich weis nit wie lang,
 Ich sterb', ich weis nit wan,
 Ich fahre dahin, ich weis nit wohin ;
 Mich wundert dass ich so fröhlich bin !*

² The *vexillifer*, or *Bannermann*, was the second officer in a *Zehnten*.

³ *Desenium* (which I imagine should be written *decenium*) is the Latin form of *Zehnten*, and this was a division such as is our county or parish.

Translation.—‘So dwell in this house that thou mayest be rewarded with the heavenly dwelling.’

‘Put all second to virtue and to thy salvation ; and thou shalt gain eternal life.’

‘Whatever thou doest, do prudently ; and consider the end.’

‘The dwellings of the righteous shall flourish. Prov. 14.’

‘God is love. He who dwells in love dwells in God, and God in him.’

‘I live, I know not how long. Die must I, and I know not when.’

I am on a journey ;—and I know my destination, so long as I be diligent in virtue.’ [A modification, this last, of ‘and I know not whither. I am amazed at my own light-heartedness!’]

‘Melchior Werlen, Bannermann of the *Zehnten* of Raron. In the year of our Lord 1665.’

(4) As a rule it was the two different stories of a house that were occupied by different families. But in the present case the division was vertical. The President occupied half a house from ground-floor to attic ; another man the other half. The whole house appeared to be of one date, viz. 1665. (See note (3)). In this other half also was a stove of 1666.

Inside this other half, on the tie-beams—

FIDITE . VIRTVTI . FORTVNA . VELOCIOR . VNDIS .
NON . MANET . ET . CERTAM . NESCIT . HABERE . DOMVM .

IN . OMNIBVS . OPERIBVS . TVIS . MEMORARE . NOVISSIMA¹ .
TVA . ET . IN . ETERNVM . NON . PECCABIS .

Outside the house, weatherworn and hard to read—

QVID . FACIES . FACIES . VENERIS . CVM . VENERIS . ANTE ?
NE . SEDEAS . SED . EAS . NE . PEREAS . PER . EAS² .

HOC . OPVS . FECIT . FIERI . MELCHIOR . WERLEN . VEXILLIFER
VALLIS . ILLIACENSIS³ . ET . EJVS . FILIVS .

¹ The four last things : Death, Judgment, Heaven, and Hell.

² I trust that I am not ‘imagining ill’ in the translation that I have given. I take this punning couplet to be intended as a caution to young men. [Compare No. 20.]

³ This second record may indicate that the house was not all of one date. Melchior Werlen was Bannermann of the *Zehnten* of Raron, and I cannot find out what this ‘*Vallis Illiacensis*’ was. The name suggests the *Val d’Illiers*.

Translation.—‘Put thy trust in Virtue. Fortune, swifter than the waves, abides not, nor knows how to have any fixed home.’

‘In all thy doings remember the Four Last Things, and thou shalt never sin.’

‘What shalt thou do when thou comest into the presence of loose women? Do not sit down with them, but depart; lest thou perish through them.’

(The puns can hardly be rendered into English.)

‘This work did Melchior Werlen, Bannermann of the Illiacean valley (?), and his son, cause to be carried out.’

(5) In a house, or rather in one story of it, inhabited at the present time by Andreas Murman, I found the following. As will be seen, the date was 1679. All was *inside*.

On one tie-beam there was carved—

MEISTER . HANS . GOTS . BONER ¹ . DIS . HVS . HAT . LAEN .
MACEN . FENDER ² . VND . MEIER ³ . PETER . PLAST . VND .
ANNA . REDER . SEIN . HAVS . FRW . IM . IAR . 1679.

[*Laen* is another form of *lassen*. Usually *Lan*.]

A second tie-beam was a rich find. At the window-end of it came the first couplet given below. Next to this came in order (i) the IHS with the cross and 'burning' heart, the flames being represented by flowers; (ii) MARIA in monogram-form; (iii) ĪOS more simple in form. Each sacred name was surrounded by a circle, and there were carved floral decorations. In this one instance there was colour also. I obtained beautiful photographs of all three, and am able to have the MARIA reproduced (see fig. 5). After these came in order along the beam the other three couplets given, there being carved ornamentations of circular form separating them. My photo of the IHS included part of the first couplet.

HEILIGES . KRITZ . GESEGNE . DISES . HAVS .
VND . WENDE . ALLES . VNGLICK . DRAVS .

O . IESV . CHRISTI . GOTTES . SOHN .
NIHM . VNS . AVF . IN . HIMMELS . THRON .

O . MVTTER . DER . BARMHERZIGKEIT .
STEH . VNS . BEI . IN . LETSTEN . STREIT .

IOSEPH . STEH . VNS . BEI .
HILF . VNS . ZVR . SELIGKEIT .

On the ceiling was carved—

WAS . ICH . HABE . KOMBT . VON . DIR .
WAS . ICH . BRAVCHE . GIBST . DV . MIR .
Gott . ICH . VERDANKE . DIR . IEDE . GABE .
DIE . ICH . VON . DEINE . GIETE . HABE .

TRINK . VND . IHS . Gott . NIT . VORGIS .
ALLES . Gott . ZV . LIEB .

Fig. 4.

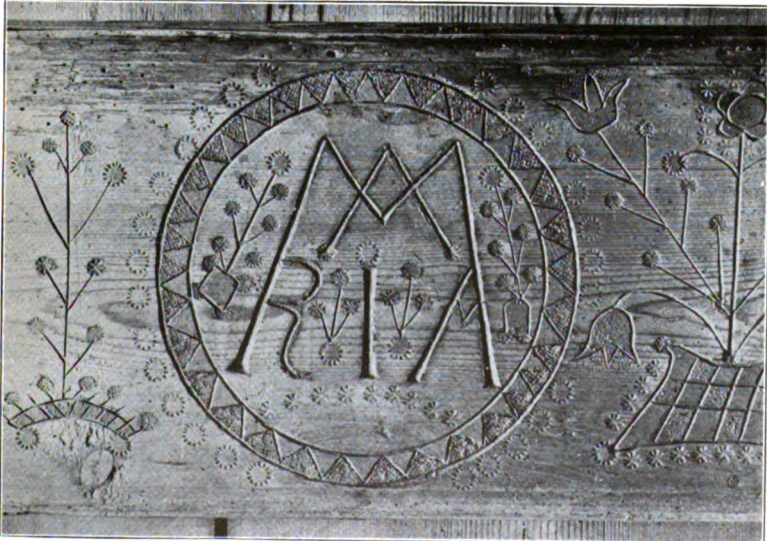


W. Larden, photo

Swan Electric Engraving Co., Ltd.

PART OF "GOTT SEI DANCK,"
from the ceiling of the "Murmanhaus."

Fig. 5.



W. Larden, photo.

Swan Electric Engraving Co., Ltd.

"MARIA,"
from a beam in a house at Kippel.

Some House-Inscriptions from the Upper Loetschenthal. 291

EIN . FROMES . HERZ . EIN . REINER . SINN .
SCHWINGT . SICH . BIS . ZV . DEM . HECHSTEN . HIN .

ALLES . ZV . EHR . VND . GLORI . GOTTES .
RVOHE . DEN . TODTEN . FRID . DEN . LEBENDIGEN .

- ¹ The name is *Gottspöner*, I was informed.
- ² The same as *Vexillifer* or *Bannermann*.
- ³ Here means a sort of Head-man.

Translation.—‘The Zimmermeister was Hans Gottspöner. This house Peter Plast, *Bannermann* and *Meier*, and his wife Anna Rieder had made in the year 1679.’

‘Holy Cross, bless this house, and turn from it all misfortune !

O Jesu Christ, Son of God, raise us to Heaven’s throne !

O Mother of Compassion, stand by us in our last agony !

Joseph, stand by us ; aid us to Blessedness !’

‘What I have, comes from Thee. What I need, Thou givest me.

‘God, I owe to Thee every gift that Thy goodness has bestowed upon me.’

‘Drink and eat, but forget not God. All for the love of God.’

‘A pious heart and a stainless mind can soar to the loftiest heights.’

‘All to the honour and glory of God. Rest to the Dead, Peace to the Living.’

[This prayer for ‘Rest to the Dead’ occurred also in another house, with date 1798 ; but the only other inscriptions there were records of names.]

(6) The *Prioratshaus*, or chief priests’-house.

Inside, on the tie-beams, I found—

ZV . GOTTES . VND . MARIA . EHR .
HATT . MANN . DIS . HAVSS . ERBAWEN .
DARANN . VILL . MIEHE . VND . ARBEIT . KEHRT .
VND . VIL . DER . LERCHEN . GEHAVWT .

DER . FRIDT . VND . GOTTES . GNADBE . WAHR .
DEN . HIRTEN . VND . DIE . SCHÆFLEIN .
GLICKSELIG . EINIG . DVRCH . ALLE . IAHR .
ACH . LESER . MERCK . DISE . WOERTLEIN . 1710

DIE . EICH . GESETZ ¹ .
WERDT . NICHT . VERLEHTZ .
VON . KEINER . AXT . VMG’HAVEN .

DAS . ALTER . MACHT .

DAS . S'BODEN . KRACHT .

NICHT . TAVGLICH . MEHR . ZVM . BAWEN .

¹ All agree that this word *might* stand either for the substantive and mean *Law*, or for the past participle of the verb, and mean *firmly planted*, or *mature*, or *granted (that)*. I take it as the substantive.

This last verse was one of the few about which I consulted one or two Swiss scholars. I did not find agreement among them. I had myself already translated it so as to give some 'point' to its being carved in a priests'-house. Finding that Dr. E. Hoffmann-Krayer (Editor of the Swiss Folk-lore periodical in Bâle) approved of my rendering, I have ventured to give it, though everyone else was against it. One authority of great weight began his translation thus: 'The firmly-planted oak was never injured —'; another authority, 'Granted that the oak——'

Translation.—'To the honour of God and Mary has this house been built. Much trouble and labour were expended over it, and many larches hewn down. (May) Peace and the true Grace of God (be upon) the shepherds; and (may) the sheep (live) in happy concord for ever. Ah! Reader, mark this prayer' (*lit.* 'little word or sentence'). 'The oak called Law' (or oaken Law) 'is not injured nor hewn down by any axe' (as real oaks are). (And this law is that) 'old age causes the ground to crack, of no more use for building on.'

[I take the idea to be that the priests must train the young aright; it is too late when a man is old. The same general sentiment occurred in No. 27.]

(7) The so-called '*Murman-haus.*' There are still many Murmans in Kippel, and this particular house now belongs to Ludwig Rieder; but it retains the above name. It is singularly rich in ornament. The date is 1777. First, the *inside* inscriptions.

On a bunk in a very small room is carved in beautiful letters :

Ich Gehn Inß Bett Willeicht In Lo d (see fig. 9),

and over the door of this same little room—

17 Alles Gott Zu Lieb 77.

In the main living room there was, on one tie-beam—

IESVS . MARIA . IOSEPH . VNTER . EVREM . SCHVTZ . STEHT .
DIES . HAVS . HOC . OPVS . FIERI . FECIT . P'LM . R'DVS . DOC-
TISSIMVS . D'NVS . I'NES . ANDREAS . MVRMAN . CVRATVS . IN .
EICHOLL .

On the other tie-beam, the MARIA being in monogram form, came—

* . MARIA . IOS̄ . DISES . GEBVW . HAT . GEMACHT . MEISTER .
ZIMERMAN . ALLEXIVS . MVRMAN . VND . ALLOVISIVS .
MVRMAN . IM . IAR . 1777 . DEN . 10 . WEINMONAT .

(' Wine-month ' is October.)

On the ceiling near the door was carved a skeleton holding a scroll on which is inscribed—

QVALIS . VITA . MORT . EST . ITA .

Near this was carved a coat-of-arms with four divisions ; each part seemed to be more or less a landscape. Also—

Ich Gehe Aus Oder Ein
So Kommt Der Tod Und Wartet Mein

a verse which, with *ist* for *kombt*, occurred not unfrequently near Adelboden and Kandersteg.

Over the door of the room—

Gelobt Sei Jesus Christus
In Alle Ewigkeit Sei Gett Gebenefeit

[Distinctly *Gett*, not *Gott*. I found the spelling *Gett* elsewhere, looking like *Hett* in one case. See fig. 3.]

On the ceiling, over the eating-table—

Trink Und Iß Gott Nicht Vergiß.
Wer Seinem Nächstten Die Ehr Abschneidit
Der Weich Von Meinem Tafel Weit

Gott Sei Danc̄ (see fig. 4)

1777 Den 17 IENER

Elsewhere on the ceiling—

Alles Gott Zu Lieb.

Outside, over the entrance door at the side of the house—

ICH . GEHE . AVS . ODER . EIN .

SO . SOLL . GOTT . MEIN . BESCHITZER . SEIN .

On the face of the house there was, among other things, a short Greek sentence. In three words, the curious forms of the letters, and the contractions, imitated by me with much care, quite baffle my classical friends. What was, in the end, made out has been here printed in ordinary Greek characters.

1777

Gott Zu Lieb.

— ———¹ Θεω λατρευε² τοκέας αγάπα τους ———³ τίμα

DOMVS . AMICA . DOMVS . OPTIMA . DIEV . TE . REGARDE .

PECHER .

LAVDATO . IDDIO

AVF . GOTT . BAV . VND . TRAV . BESTENDIG .

SO . LANG . DV . SEIN . WIRST . LEBENDIG .

GOTT . LIEBEN .

MACHT . NIE . BETRIEBEN .

An Gottes Segen Ist Alles Glegn.

At the bottom of all came some 'House-marks.' For these I must refer my readers to Herr F. G. Stebler's monograph on the Loetschberg (Albert Müller, Zürich, 1907). They were used to mark property in objects, to record alp-rights, &c.

X IIII IIIII II ΛΛΛ . 6 . ΙΗ

¹ The first word looked like Κη; the second rather like a contracted form of μετα.

² Or λατρευι.

³ Something like προσιλυζας.

Translation.—'I go to bed, perchance to death. All for the love of God; 1777. Jesus, Maria, and Joseph, under your protection stands this house. The most reverend and learned Master Johannes Andreas Murman, curate in Eicholl, had this work carried out.'

* Maria, Joseph. Master-carpenters Alexius Murman and Alloysius Murman have constructed this building on the 10th of October 1777.'

'As life is, so is Death.' (*Mort* for *Mors*; the carver's error.)

'I go out or in, but death comes and awaits me. Praised be Jesus Christ. May God be blessed to all eternity. Drink and eat, but forget not God. He who diminishes his neighbour's honour, let him depart far from my table. Thanks be to God. On the 17th of January 1777. I go out or in; so may God be my protector. 1777. All for the love of God. — — serve God, love your parents, honour the ——. O beloved house, O best of houses! God sees thee sin. Praised be God. Build and trust on God continually, so long as thou shalt have life. Loving God gives an untroubled spirit' (this last being a free translation). 'On God's blessing is all dependent.'

(8) *Outside* the Gemeinde-stadel. A *stadel* is a storehouse for unthreshed wheat, &c.

DER . TVGEND . HVNDERTFACH . GETREID .
SAMLE . DIR . FVR . EWIGKEIT .

Der Eobllichen Gemeind Kipel IHS Im Jahr 1847.

Translation.—'Collect for thyself for Eternity Virtue's hundred-fold wheat. (Built for) the honourable Gemeinde Kippel in the year 1847.'

(9) Of another, I will for reasons of space merely say that it records how in 1854 a certain Anton Escher of Simpeln bought the house and ground-rights for his daughter. The blessings conferred by the Holy Sacrament are next dwelt upon; and at the end the reader is assured that he who builds on Jesus, Maria, and Joseph, builds on firm ground. I pass over also that inscribed on the Kaplan's house, with the note that it is here recorded how the Thalschaft Loetschen (*i.e.* the Communes of the valley collectively) built the house for the priests who feed their flock and pray for them night and day.

(10) A newer house. *Outside*—

Du Engel Mir Zum Schuß Gegeben,
Begleite Mich Durchs Ganze Leben,
Du Bist Gut Und Rein ;
D möcht ich stets dir Ähnlich Sein !

Erbaut durch Joseph Seeberger und seine Gemahlin Viktoria
Ebner Im 1879 Jahr.

Maria wähle Dir zum Bild,
Fliehe unter ihrem Schild,
Niemand ruft vergebens
In dem schweren Kampf des Lebens.

[On a *Sennhütte* on the Fafleralp these last four lines, slightly modified, occur again; the date being 1880.]

Inside, on a tie-beam, Alex. Ritler and his wife Barbara Lehner and their children are recorded as building the house; but the date given is the same as that outside. There was also—

GELOBT . SEIEST . DV . HERR . IESVS . CHRIST .
DER . VNSER . GOTT . VND . VATER . IST .
IETZT . VND . AVCH . ZV . IEDER . ZEIT .
WIE . IN . ALLE . EWIGKEIT .

Translation.—‘Thou angel, assigned to me as guardian, accompany me through my life! Thou art good and pure; would that I always resembled thee!’

‘Built by Joseph Seeberger and his wife Victoria Lehner in the year 1879. Take Maria as thy pattern! Flee under her shelter. No one calls (on her) in vain in the (last) grievous struggle of Life’ (*i.e.* in the death-agonny). ‘Praised be Thou Lord Jesus Christ who art our God and Father now and at every time as to all Eternity.’

II. Blatten.

(11) On a *stadel* or *speicher* (both are storehouses, though not for the same things) I found—

ICH . HANS . IOSEPH . RIEDER . SAMBT . SEINEN¹ . BRIEDREN .
IM . 1759 . IAR .

IHS . $\widehat{\text{MAR}}$. $\widehat{\text{IOS}}$.

AN . DISEM . HOLTZ . AN . DEM . GEMACH . KAN . NICHT . SEIN .
EIN² . LOBLICHE . GEMEIND . BEDVRT³ . MIR⁴ . HABENS . GE-
HAVEN . IN . VNSEREN . GVOD.⁵

¹ Should be *meinen*.

² As *Lobliche* is a formal title (see No. 8) I read *ein* as meaning ‘the.’ I do not translate ‘a Gemeinde if it be honourable.’

³ I was told that this means ‘*unzufrieden*.’

⁴ Patois for *wir*, I take it. Certainly *mer* occurs for *wir*.

⁵ *Gut*; *i.e.* property.

Translation.—'I, Hans Joseph Rieder, with my brothers; in the year 1759. About the wood used in this building, the honourable Gemeinde cannot be displeased. (For) we hewed it down on our own property.'

(12) A house of date 1773. *Inside*, on one tie-beam, a record of names, all Ebiners. The present owner is a Tanast. On another—

IESVS . MARIA . IOSEPH . BEFEHLEN . MIR . DISES . HAVS .
VND . ALLES . VNGLVCK . SEI . DARAVS .

DENCK . LEBEN . WIL . ICH . ALSO . HEVT .
ALS . HET . EIN . END . MEIN . LEBEN . ZEIT .

IESVS . MARIA . IOSEPH . ALLES . EICH . ZV . EHR . DEN . 30 .
ABRIL .

ALLES . WAS . DV . DVOST . ZV . VOR . BETRACHT .
GEDENCK . WIE . ZV . LEST . DEIN . END . WIRD . GEMACHT .

(Names and dates given in both stories.)

Outside—

1773.

Gott Sieht Dich O Sinder.

After some familiar couplets and lines (as *Ich gehn aus oder ein, &c.*)—came

GOTT . BEHIETE . EVCH . VOR . VNGLICK : DEVS . TE . CON-
SERVET . AB . INFORTUNIO : DIEV . TE . GARDE . DE : MAL .
DIO . VI . GARDI . DI . MALE .

AN . GOTTES . SEGEN . IST . ALLES . GELEGEN .

Man muos in Allen Sachen
Mit Gott den Anfang Machen ;
So geht woll Alle Sachen .

CIO DCC LXX III. CONCORDIAM V SECTARE .

Translation.—'To Jesus, Maria, and Joseph, we * commend this house; may all misfortune keep out of it. Think thou, "I will live today as had my life's period an end now." Jesus, Maria, and Joseph, all to your honour! The 30th of April. Consider beforehand all that thou doest. Bethink thee how at last thy life must have an end.' *[Again the patois *mir* for *wir*.]

'1773. God seest thee, O Sinner! I go out or in; let God be my protector. To trust in God is to build well. All to God's

honour. God guard thee from misfortune' (in four languages). On God's blessing is all dependent. One must in all affairs make the beginning with God; so prosper all affairs. 1773. Follow Peace.

(13) The older priests'-house. *Inside—*

DISES . HAVS . BAVT . DIE . GEMEIND . BLATTEN . EVSTEN .
WEISSENRIED . VND . RIED . GANTZ . ALEIN¹ . WEIL . ES . IHR .
EVGENTHVM . THVT . SEIN .

WER . GOTT . LIEBT . OB . ALLEN . DINGEN .
DEM . KAN . UND . MAG . ES . NICHT . MISLINGEN .

Ewiges Denkmal Brüderlicher Vereinigung und der Christlichen
Aufmunterung zur Aufbauung dieses Im 1826 Gemaeüß² Hauses
nach dem Sprichwort Froher Muth macht Arbeit Gut.

Over the door inside—

Gelobt sey Jesu Christ in Alle Ewigkeit.

Outside—

1826

Die auf den Herrn Vertrauen
Sind wie der Berg Sion.

Jesuß, Maria, und Joseph behite dieses Haus vor Unglid.

Wer Wider Dieß Geredt,³
Mein Gutte Wert Verhindren⁴ (see fig. 6)
Wird Auch Wie Wenachrib
Sein Lohn Dort Finden.

Zum Glic Und Wohlstand Baut Man Ingemein
Für Seinen Priester Ganz Allein.
Mit Diesem Und Mit Allen Sachen
Muß Man Mit Gott Den Anfang Machen.

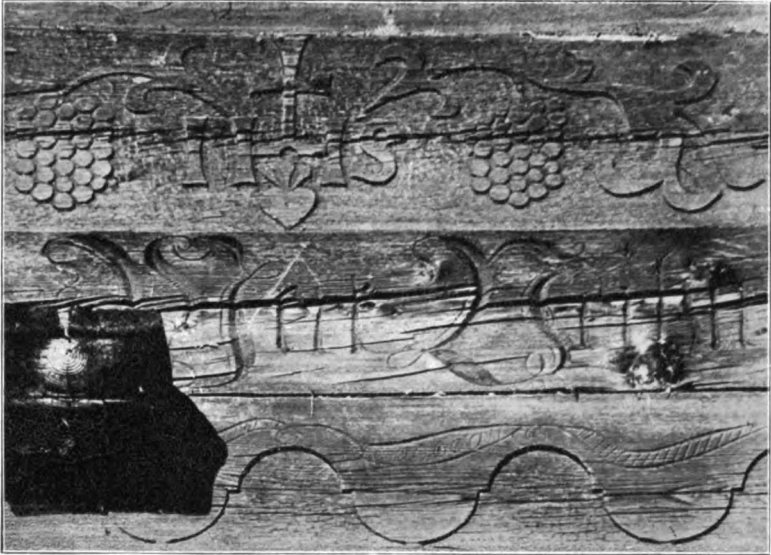
Im MDCCC XX [VI]⁵ CONCORDIAM .
SECTARE—Alles Gott zu Lieb—Jahr.

¹ Without help from the rest of the valley; especially, independently of Kippel which had been in command of Blatten ecclesiastically.

² This word was curiously written; I have given what I took it to stand for.

³ This may have been *Beredt*. *Geredt* could be a substantive.

Fig. 6.



W. Larden, photo.

Swan Electric Engraving Co., Ltd.

FROM OUTSIDE THE OLDER "PRIESTS' HOUSE" AT BLATTEN.'

Fig.7.



W. Larden, photo.

Swan Electric Engraving Co., Ltd.

TYPICAL SENNHÜTTE; ON THE WERITZ-ALP,

in patois. I have given one possible translation; my Swiss scholar friends were uncertain about it.

‘ This could be used for *Verhindert*.

‘ A hole had been recently made here; the missing numerals should be VI.

Translation.—‘The Gemeinde Blatten, Eisten, Weissenried, and Ried build this house unaided, since it is their property. He who loves God above all things, for him can and will nothing miscarry. A permanent memorial of brotherly union and of Christian stirring-up to the building of this [in 1826] Gemeinde-house according to the proverb “A cheerful mood makes labour easy.”

‘ Praised be Jesus Christ to all Eternity.’

‘ 1826. They who trust in the Lord are even as the Mount Zion.’

‘ He who speaks against this (so as to) hinder my good work—’ [or possibly ‘He who, against the above sentiments, hinders my good work]—’ will also like Senacherib find his wages there’ (i.e. will be struck dead). ‘For our happiness and well-being we build this together, unaided, for our Priests. In this as in all other matters one must make the beginning with God. In the year 182-. Follow peace. All for the love of God.’

(14) From a very long inscription on the new priests’-house (1858) I select one verse; I see that I shall not have space for all. This verse was *outside*.

Noch nie hat uns ein schwiller Tag
Kraft und Muth genommen.
Er sei so heiß er inier mag
Muß doch der Abend kommen.
Am Ende kömmt der Lohn
Hier und im Himelß Thron.

Translation.—‘Never yet has a sultry day robbed us of strength and courage. Be it ever so hot, still the evening comes at its close. In the End comes the Reward, both here and at Heaven’s Throne.’

III. Ried.

(15) I can find space for but one from this village. The date was 1728.

Outside, on the face of the house—

IALES . WAS . DVOST . ZVOVOR . BETRACHT .
GEDENCK . WIE . ZLETZ . EIN . END . WERD . GEMACHT .
ZVOVOR . GETAN . VND . NACH . BEDACHT .
HAT . MENCKEN . IN . GROS . LEID . GEBRACHT .

ALES . ZVO . LOB . VND . EHR . IESVS . MARIA . VND . IOSEPH . 1728 .
 IVNGES . BLVT . SPAR . DV . DEIN . GVOT .
 DAN . ARBEITEN . IM . ALTER . WE . TVOT .

Also outside, but on the side of the house in a balcony and in small letters, was the following. A native whom I met knew all about the event referred to.

IN . IAR . DA . MAN . ZALT . 1708 . DVO . IST . VNS . GOT . BEI .
 GESTANDEN . DVO . IST . DIE . BACHELĀ . ZV . BEDEN . SITEN .
 DEM . HAVS . AB . GANGEN .

Translation.—‘All that thou doest consider it beforehand. Be-
 think thee that at the last thy life will come to an end. Doing
 first and thinking afterwards has brought many a one to great
 sorrow. All to the praise of Jesus, Maria, and Joseph. While
 young put by money; for work in old age is distressful. In the year
 when one counted 1730, then did God stand by us. For then did
 the avalanche in the Bach-gorge go past the house to this side and
 to that.’ [It was a snow-avalanche, the native said. As regards
 the date, I have taken 0 with a reversed 3 to stand for 30. The
 house was not built in 1703; but in 1730 it was two years old.]

IV. Ferden.

There were some very old houses here, but inscriptions were rarer.

(16) In a house of date 1591. A very curious inscription! I have made sense of most of it; but the part that baffles me has baffled also my Swiss authorities and another Swiss scholar at Oxford.

Inside, on one tie-beam, was—

HOC . OPVS . FECIT . FIERI . P . H . IOHANNES . IEYZINER .
 ANNO . 1591 . DIE . VERO . DECIMO . SEXTO . SEPTEBRIS . SOLI .
 DEO . GLORIA . F¹f . VEN . GOT . VIL . DEN . IST . VeR . CIL² .

On the other tie-beam (see fig. 10)—

HcGecNERDERBITRMANDERHATMENGbIRIGETADARcSINo
 NAchT GEBVRENDRVMGEBNGOTDSHIMERIch eVMTELDARVM
 BITERGOTMITGAcM²FLISMITKALERSG⁴hTMI|DASERVTSIVERVT
 KTRNANTRI .

¹ I do not know what F is. Finis? The sign f is used to separate two sentences.

Fig. 8.



W. Larden, photo.

Swan Electric Engraving Co., Ltd.

PART OF THE INSCRIPTION SEEN IN FIG. 7.

Fig. 9.



W. Larden, photo.

Swan Electric Engraving Co., Ltd.

FROM A BEDSTEAD, "MURMANHAUS," KIPPEL.

Fig. 10.



W. Larden, photo.

Swan Electric Engraving Co., Ltd.

PART OF OLD INSCRIPTION IN A HOUSE AT FERDEN

(Date 1591)

¹ This sentence being *Wann Gott will, dann ist unser Ziel* ('end of Life'), we see that VcR stands for *Unser*. We have V used for W, and c for both S and Z.

² So GAcM stands for *ganzem*.

⁴ This letter was like a D reversed. I have seen O carved thus; but Dr. E. Hoffmann-Krayer suggests that the letter is a C (see the illustration), and that the word is SCHTMI or Stimme.

I make out the first part of the second inscription to be: ——— *Hans Gezner (i.e. Jeyziner) der Biederman, der hat Meng Biri* (patois for 'heavy lifting jobs') *gethan; dazu seine Nachbaren. Darum gebe ihnen Gott das Himmelreich zum Theil. Darum bitte* (or *bittet er*) *Gott mit ganzem Fleiss . . .*

[So far is fairly safe; though I am aware that the DARcSIN NAcHTGEBVREN looks like 'for the benefit of posterity.' About the rest I venture a guess; it may start someone on the right track. My guess is: *mit—stimme, das er ruht* (i.e. *ruhe*) *sich wie ruht Katrina unten* (Katrina being his wife, already dead). See note 4 above.]

Translation.—'This work (the very well born? Plurimum honestus?) Johannes Jeyziner caused to be carried out in the year 1591 on the 16th of September. To God alone the Glory. (Finis?) When God will, then comes the end of our life.'

'Hans Jeyziner, the worthy man, he has done a great deal of heavy work, and so have his neighbours' (who helped him). 'Therefore may God give them the kingdom of Heaven for their portion. Therefore pray' (or 'he prays') 'God with all diligence . . .?' [According to my somewhat wild guess it may run on ' . . . and with — voice, that he may rest as rests Katrina in her grave.']

(17) From *inside* a house of 1693 I take the verse—

WELCHE . ES . DE . ERSTEN . BESASEN .
 DE . ERSTEN . ES . MÛSTEN . VERLASSEN .
 DARVM . DER . ES . WRST . HABEN . VNDANKBAR SEIEST . NIT
 VND . GOT . VOR . DIE . ABGSTORNEN . BIT .

Translation.—'They who first possessed it must be the first to leave it. Therefore thou who wilt inherit it, be not unthankful; but pray to God for the dead.'

(18) The *gemeinde*-house; date 1707. *Inside* on one beam—

EXSTRVIMVSQVE . DOMOS . COELOQVE . EDVCIMVS . ARCES .
 CEV . DATA . PERPETVO . TERRA . COLEND . FORET .

CRASTINA . LVX . COGET . VITÆ . STATIONE . MOVERI .
 QVIS . NEGET . İNSANAS . NOS . FABRICASSE . DOMOS .

On another beam—

GEMEINE . LIEB . VND . AVFRICHTIKEIT .
 HABEN . MICH . ALHIER . AVS . GARBEIT .
 FART . FORDT . LIEBT . GOT . IN . EINIGKEIT .
 SO . BAVT . IHR . EIN . HAVS . DER . EWIGKEIT .

On a third beam—

ICH . DIEN . DER . GEMEIN
 BIN . DOCH . ALLEIN .
 SO . LANG . ICH . RECHT . GEMEIN .
 HAT . IEDER . GNVG . ALLEIN .

In a narrow vertical column between two windows—

DAS . GOT . SEI . GOT . DAS . GLAVB . ICH . NIT . VNGERECHT .
 IST . GOT . DARVM . STIRB . ICH .

Arranged on and round a carved shield was—

LIEB . GOT . IN . DER . STIL . . DAS . IST . SEIN . WIL .

Outside, on the side of the house—

CHRISTVS . ALEIN . . IST . DER . WAHR . EGSTEIN .

On the face of the house high up came the date 1707. Lower down came an inscription that looked hopelessly obliterated. But after one study of it (or two), I suddenly saw that it was more or less a translation of the Latin verses above. With further study I made most of it out, but it was really a difficult bit of work.

ZVNVZ¹ . WIR . BEV . AVF . [STIZEN]² .
 STOLZ . IN . DIE . LIFTEN . [WEIT]³ .
 ALS . WEIR⁴ . VNS . ZV . BESIZEN .
 EWIG . DIE . ERD . BEREIT .
 DER . MORGEN . TAG . [BEKIMERT]⁵ .
 VNS . RVCKT . DAS . LEBENS . ZIL .
 WAN . DER . BAV . AVSGEZIMERT .
 GENIES . ES . VNSER . NIT . FIL⁶ .

With the two words marked (2) and (5) I was not satisfied; I told Dr. E. Hoffmann-Krayer what sort of words the Latin appeared to demand, and he made suggestions about the two and about that marked (4).

¹ This is probably for *zunichts*. But it may stand for *zu Nutze*.

* The word looked like SPIAEN. The suggestion is STIZEN ; i.e. *stützen*, 'props' or 'pillars.' If so, we take BEV·AVF as the verb *aufbauen*. But could not *Auf spiän* stand for *auf-spannen*? In Middle High German, *spien* is the preterite of *spannen*. If so, could we not take BEV as a substantive and read 'we extend buildings upward . . .'?

* I read this as WAN. The suggestion 'WEIT' suits rhyme and sense.

* Of course this is, here, *wär*.

* So I read it. The suggestion ERSCHIMERT would suit the Latin better.

* *Nit fil unser*, 'not many of us,' is used as a singular subject to the verb *geniese*.

Translation.—'We raise houses and build up towers to the sky as though the Earth were given us to cultivate for ever. To-morrow's sun will cause us to be moved from our station of life; and who then will deny that our houses are the work of madmen? Brotherly love and uprightness have constructed me here. Fare on; love God in unity; so build ye a house for Eternity.' The next quatrain looks easier than it is. Here is one possible translation. 'I serve the Community, and yet am but one. As long as I am really common' (i.e. not run by a clique) 'everyone finds his share in me sufficient.' A superior native told me that the next piece was intended to have a double meaning. *Eüther*—'That God is God, that I believe. Not unrighteous is God, for that I answer with my life.' Or, 'That God is God, that I believe not. Unrighteous is God, therefore I perish.'

Love God in quiet; that is His will.'

'To no purpose' (or 'For our use') 'we build up pillars' (or 'stretch up buildings') 'proudly (far?) into the air, as though the Earth were ours to possess for ever. The morrow distresses us' (or 'dawns resplendently'), 'and the end of our life draws near. When the building is completed, not many of us (will live to) enjoy it.'

(19) From *inside* a house of 1728 I take one verse—

GLEICHT . WOHL . DES . MENSCHEN . LEBEN .
 NICHT . EINEM . BAVE . HIER ?
 BAVLEVTE . SIND . IA . ALLE .
 BIS . AN . DAS . ENDE . WIR .
 DOCH . GAR . VERSCHIEDEN . BAVEN .
 DER . MENSCHEN . HERZ . VND . HAND .
 DER . EINE . BAVT . AVF . FELSEN .
 DER . ANDERE . NVR . AVF . SAND .

Translation.—‘Is not man’s life here like a building? In truth we are all builders to the very end. But very variously do men’s hearts and hands build! One builds on rock and another on sand.’

V. **Miscellaneous.**

(20) From *Weissenried*, over a chamber door. It looked unintelligible, much like the second part of No. 16, as there were no divisions of any sort between lines or words, not even dots. I have broken it up. Date 1703.

IM 1703 IAR DÿSE STVBON HAT LASEN MACHON IOSAB
BELWAT VND MARIA HASLER M K B.

ZEFEIER DING SOLT DV WOL LEGEN AN
DIE NIEMAN WIEDERBRINGEN KAN.
DIE ZEIT VND ÿVNGFROVWSCHAFT ICH SAG

[. . . a line covered up; its sense can be guessed at.]

[Comparing with another of 1894 found on the Weritzalp, one can supply a line something like

‘KEHREN NIT WIEDER IN ALLE TAG.’]

Translation.—‘In the year 1703 did Joseph Bellwald and Maria Hasler have this room (or story?) constructed.’ [M.K.B. = ‘(Zimmer) Meister Kristian Bellwald’?] ‘Two things shouldst thou set store on, that no man can bring again; — Time and Virginity, I tell you . . .’ (once lost, never return).

(21) From *outside* another house in *Weissenried*, date 1791, I take two lines only—

Laß Reider Reider (i.e. *Neiden*) und Haffer Haffen
Was Gott mier gibt muß man mier lassen.

Translation.—‘Let enviers envy and haters hate; what God gives me must man let me keep.’

(22) On a *Sennhütte* in the *Telli-alp*. (A typical *Sennhütte* is shown in fig. 7.) Date 1814. I omit part.

Im Jahr 1814. Gott Gefegne Menschen und Sich In diser
Sitten vor Allem Befem Ungewiter.

ARBEIT . IM . WEINBERG . BETRACHT . DEN . LOHN .
GOTT . ES . ZALET . MIT . DER . HIMMELS . CRON .

Translation.—‘ God bless men and cattle in this hut against all dangerous bad weather. Labour in the vineyard ; consider the reward ; God pays it with the Heavenly crown.’

(23) On and in one *Sennhütte* on the *Hockenalp* there was a good deal. The date was 1849–50. I have room here for but one verse. The others contained (i) an appeal to Mary for support in the last hour, (ii) a deprecation of criticism (so common in the Berneroblerland inscriptions), and (iii) a hope that the building would be blessed to the welfare of the builder’s soul. The verse I select is from *inside*.

DER . ZVFAL . HEIST . ER . HAT . GETAN .
WIES . OFTMALS . SCHON . GESCHEHEN .
SONST . IST . IM . GANZEN . NICHTS . DARAN .
BALD . WARDES . ALLE . SÄHEN .

Translation.—I adopt Dr. E. Hoffmann-Krayer’s view as to the ‘point.’ The lines may mean ‘What we call Chance has done it ; a common occurrence. Yet there is not much in this ; as soon everyone will see.’ [*I.e.* what we call ‘Chance’ often turns out to be quite regular—following Law.]

(24) From *outside* a *Sennhütte* on the *Fafleralp*. Date 1884.

Du verwelcktes braunes Blatt auf meinem Schoos,
Was willst du mitten mir in Sommer sagen ?
Noch ist dein Leben jung, die Freude groß,
Und fröhlich siehst du jeden Morgen Tagen !
Wie lange währt’s, ein herbstlich kalter Hauch
Knickt die Blätter und die Menschen auch !
Bald wird auch dir das letzte Stündlein schlagen.

Translation.—‘ Thou brown and withered leaf upon my bosom, what is it that thou, in the midst of summer, wouldst say to me ? “ Still is thy life young ; Joy is great ; and glad thou seest each day dawn. But how long will it be before the chill breath of autumn nips men and leaves alike ? Soon for thee too will strike the last short hour of thy life.” ’

(25) From *outside* a *Sennhütte* on the *Laucheralp*, date 1890. The first two lines occurred elsewhere. In one form or another the verse is well known, occurring in Tirol also.

Dieß Haus ist mein, und doch nicht mein.
Der nach mir komt, dem wirds auch nicht sein.
Ach, Gott! wer wird der letzte sein?

Translation.—‘ This house is mine, and yet not mine. He who possesses it after me will yet not possess it. Ah, God! who will be the last?’

(26) From *outside* another *Sennhütte* on the *Laucheralp*; date 1897.

Hoffnung schlummert tief im Herzen
Wie im Liliencelch der Thau.
Hoffnung thaucht wie aus den Wolken
Nach dem Sturm des Himmels Blau.

Translation.—‘ Hope slumbers deep in the heart, as lies the dew-drop in the lily’s chalice. Hope reappears ever, as does, after storm, Heaven’s blue from behind the clouds.’

(27) From *outside* a house in Wyler of date 1905. This village had been burned down and all the houses were new. The first verse contains the advice that I read into that verse of No. 6 which begins ‘ DIE . EICH . . . ’ The last sentence occurred more than once; I found it, with advice ‘ to be ready ’ added, in Latin, on a house in Ferden of date 1670.

In der Nähe Maria baue ich Peter Bellwald zum zweiten mal.

Des Glaubens Baum bringt Frucht der Tugend
Drum pflanze ihn in zarter Jugend.

Gewiß ist der Tod; ungewiß der Tag u. die Stund, Zeit und Ort.

Translation.—‘ Near (the chapel of) Maria, I, Peter Bellwald, rebuild my house.’ ‘ The tree of Faith bears Virtue as its fruit; therefore plant it in tender youth.’

‘ Certain is Death; uncertain the Day and the Hour, the Time and the Place.’

It is possible that there were some good verses in some of the locked-up Sennhütte; though in any case these inscriptions would have no antiquarian interest, since all the huts seemed relatively modern—a hundred years old at most. Apart from this I think I can say that the above are the most interesting of the Upper Loetsenthal inscriptions; though I should have liked to have had room for more.

MR. COLLINS' TRIANGULATION OF TERAM KANGRI.

By T. G. LONGSTAFF.

IN the January number of the *Geographical Journal* (vol. xxxix. p. 71) I published a communication from Colonel Burrard on this subject. By inadvertence this did not appear in the *Alpine Journal*. Having since received through the further courtesy of the Surveyor-General, Mr. V. W. B. Collins' report, computations, triangulation sketch and photographs, I now take the opportunity of sending some further details of his remarkable mountaineering achievements, which I believe will be of interest to readers of the *Alpine Journal*.

Mr. Collins is a junior member of the Survey of India and had had no previous mountaineering experience. His achievements are all the more noteworthy, though they are only in keeping with the traditions of his Department. The long series of mountain ascents carried out by the officers of the Survey of India has been often alluded to in this Journal (cf. A. J. vol. xxiv. p. 133 and vol. xxv. p. 398).

Mr. Collins commenced operations by visiting six stations of Montgomerie's Indus Series on either side of the Indus about Leh, namely, Pachuspha 19,557 ft., Tayar 19,625 ft., Arzu 18,659 ft., Parchakanri 18,362 ft., Himis 18,719 ft., and Lasirmau 18,270 ft. No satisfactory sight of Teram Kangri being obtained from any of these he crossed the Kardong Pass 17,500 ft. to the Shyok River and attempted the ascent of Skanpuk 20,288 ft., a station of Johnson's tertiary triangulation shown as Skanpak No. 1 Stn. 20,302 ft. on the map. The G. T. S. maps of Kashmir 45 S.E. 45 N.E. and 44A S.E. on the scale of 4 miles to one inch should be consulted, or my sketch map (A. J. vol. xxv. p. 488). Mr. Collins continues:—

'Bad weather came on by the time I had reached the snow-line at 17,600 ft. and I had to camp at this spot, just under the

snout of the main glacier till the weather improved. Fortunately we were able to get wood about two miles lower down. It snowed almost continuously for three days. The fourth morning was cloudless and I left camp at 3 A.M. meaning, if possible, to climb to the summit, take some observations if the view was good and open in the direction of Teram Kangri, and return to camp by nightfall. A climb of half-an-hour took us on to the glacier and from here we began the real ascent, in long zig-zags up the centre of the main glacier. The going was very hard and tiresome; there was from three to four feet of soft snow on the surface of the glacier, and, although lightly laden, we sank in almost up to our waists at every step. After five hours' hard work we reached a point 19,600 ft. in height and were brought up short by a snow drift lying about 10 ft. deep across the whole of the glacier. For three hours we endeavoured to find a ford across this drift, at various points, but failed, and as by this time the snow was very soft I had to abandon the climb and return to camp. I revisited this hill in September and succeeded in reaching the summit and taking some observations with my theodolite. Teram Kangri was not visible, the view in that direction being quite shut out by the lofty peaks in the vicinity of Shelma, but the peak was of great value as an intermediate station between my more northerly stations on the Nubra-Shyok watershed and Montgomerie's stations along the Indus.

'On leaving Skanpuk I proceeded to Panamik, the last village in Ladakh on the Yarkand trade route. I questioned some of the older men here about the surrounding hills, endeavouring to ascertain whether they could guide me to any lofty peaks from which a good view of the Siachen glacier could be obtained. They could not, however, give me any useful information.

'Starting from Panamik on the 14th July I passed through Taksha and worked my way up the first nala to the east, locally known as the Wusak nala. I climbed several high peaks along this nala and eventually succeeded in obtaining a view of Teram Kangri from a peak about 19,700 ft. high, at the head of one of the northern tributaries of the Wusak nala. I immediately got to work with my plane table, and, after locating the Teram Kangri peaks, selected and located two other peaks to the north and north-west of me, from which I thought it very likely I should be able to see Teram Kangri again. By evening, and before I could get my theodolite up, bad weather came on. The next morning the clouds had

settled down to about 16,000 ft. and observations of any description were quite impossible. I camped at the top of the hill for six days so as to be able to take advantage of any break that might occur, but all to no purpose. On the seventh morning, as there was no sign of an improvement in the weather and everyone was half frozen and beginning to feel the strain of living at that altitude continuously, I erected a cairn on the summit of the hill and started back for Taksha, arriving there late the following night. I called this hill Wusak station.

'From Taksha I crossed the Nubra by ferry and marched up the right bank, through Kubet, Aranu, and Kimi villages to Ningstet. The weather cleared again on the 25th July and I made a start from Ningstet with the purpose of attempting to climb Shelmakanri, a beautiful snow peak, sacred to the Ladakhis and lying about 5 miles N.W. as the crow flies, from the village.*

'The first 7000 ft. of the ascent, from Ningstet to the snow line, was quite easy, and making a long day of it I was able to complete this part of it in one march. Leaving my camp at this spot I set out with a couple of Kashmiris and four of the best climbers from amongst my Ladakhi coolies and stayed out for two days trying to find a practicable route to the summit of Shelma. There was too much snow—most of it new and soft too—and as the main mass of the hill was only accessible across dreadful-looking knife ridges I had to give up all hope of ever getting an instrument to the top of the hill. However, from a knoll below the main peak and at a height of about 18,750 ft., I was able to get a fine view of Teram Kangri, my Wusak station, the third hill I had selected as a likely observation station, and many peaks to the N., E., and S.E. and so made my second station here and called it Ningstet station after the name of the nearest village. I remained at this station the whole of the following day and was able to take many observations of the surrounding peaks with my theodolite.

'I then returned to Wusak station and the weather being good was able to complete the observation work there.

'I now had horizontal and vertical angles to Teram Kangri from both Ningstet and Wusak stations, and so measuring the

* This is the Kangri Shelma of Henry Strachey's large MSS. of 1851 in the R.G.S. collection. It was located by him in 1848. It is shown on my sketch-map but not on the G.T.S. A most inaccessible looking peak.—T. G. L.

distance between these two points as a base, from my plane table and using the angles I had observed, I roughly computed the position and height of the highest peak of the Teram Kangri group. The results obtained were :

Distance Ningstet to Teram Kangri	56 miles
" Wusak to Teram Kangri	68 "
Height of Teram Kangri	26,422 ft.

thus making my values differ from Dr. Longstaff's by 12 miles in position and 1188 ft. in height ; the point when plotted according to my values falling 12 miles N.W. of the position given by Dr. Longstaff.

' I now made my way back to the Nubra and marched up the right bank—about 20 miles—to Strongstet which is the northern-most village on the right * bank of this river.

' I tried to climb the range by way of some of the small nalas to the N. of Strongstet, but in every instance found that I could not go more than a few miles up the nala owing to unscalable granite cliffs and waterfalls. I at length found a practicable way up the nala which goes back into the hills between Henachi and Strongstet villages, and after two days of scrambling over large boulders and piles of old moraine, camped at the snow-line at 18,700 ft. The main peak towered up above us and seemed quite impossible to climb. I left my camp standing here and taking a dozen coolies and all the picks and spades I had, attacked the hill from the S.W. Descending about a hundred feet on to the glacier we were able to traverse it quite easily, the snow being in good firm condition, and climbed about 400 ft. along a ridge of rocks. We now had a solid wall of ice, at an angle of about 70 degrees, from here to the summit of the hill, to negotiate ; so, roping up in threes, we began cutting our way up. Progress was very slow as the ice was extremely hard and to cut each foothold meant at least five minutes' labour. We had to cease work at about midday, as by that time the ice had begun to melt rapidly and there were cascades tumbling down the ice face in many places. We managed to regain camp late that night. The following day I started very early and by sunset had reached the summit of the hill.† I had been able to bring up with me only my instruments and sleeping bag, and for the two nights spent on the hill had to shelter in a hole in the snow. Fortunately, the weather kept good, but there was a high wind blowing all the time which it was

* Left.—T. G. L.

† Apparently 19,750 feet.—T. G. L.

almost impossible to face. The first day was spent in taking observations to my stations, and several peaks, as Teram Kangri, were in cloud the whole day. On the second morning I was able to take some observations to Teram Kangri. On completing work here I found that one of my angles at either Ningstet or Wusak was in error, as the three angles of the triangle formed by the stations Ningstet, Wusak, and Strongstet, when totalled, amounted to some degrees in excess of 180 degrees.

'I had noticed from Strongstet that the cairn I had built on Wusak station had been almost obliterated by snow, and as I was convinced that the error lay in my observation of Wusak from Ningstet I returned to Ningstet with the object of re-observing my angle there. I sent men to Wusak station at once to clear the cairn and found when I reached Ningstet station that I had not observed to the cairn on Wusak on the occasion of my first visit, but had intersected a prominent rock by mistake. The angle at Ningstet between Ningstet and Teram Kangri was corrected, so bringing the position of the peak 15 miles nearer to Ningstet and Wusak than I made it before.

'This change in the position of the peak alters the value of the height of the peak as given above, reducing it about 2000 ft. I was now quite certain that my observations at these three forward stations were all right, and so marched up towards the Sassar pass with a view of obtaining observations from some peak out in that direction so as to lengthen the base for fixing Teram Kangri as much as possible. I was not successful in finding a peak to suit me: the view in the direction of T. K. was shut out by P. K. 32 (24,690 ft.) and lofty peaks in its vicinity, from peaks which I could connect with my other stations. It was now fairly late in the season, so I determined to let Teram Kangri alone, having obtained observations to it from three places and hoping to see it from a fourth peak which I had located near Tiggur village, and to devote the remainder of the season to connecting up these three forward stations of mine with the existing triangulation, viz., Montgomerie's Indus series. In order to do this I climbed a peak, to which I had observed from all my forward stations, in the vicinity of Tiggur, lying about nine miles N.W.* of the village. I had expected to get a view of Teram Kangri from this peak and was not disappointed. I now had Teram Kangri from four

* ? N.E.—T. G. L.

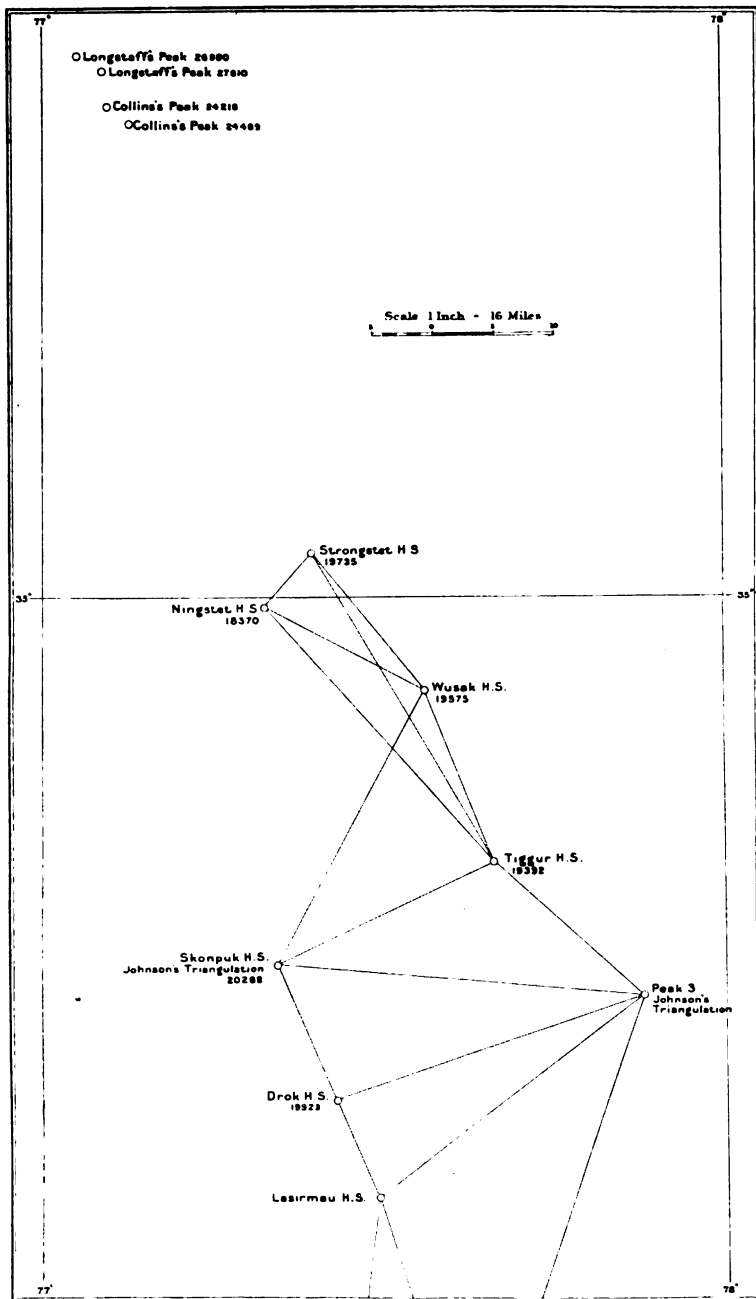
places and considered this quite sufficient for fixing its position and height without any margin for doubt.

'I then took observations at Skanpuk, Parcha-kanri and Himis of Montgomerie's triangulation, and as Mr. Wyatt, my colleague, had taken some observations at Lasirmau h.s. and at a new intermediate peak which he named Drok h.s.,* the whole of the work was based on Montgomerie's triangulation. Mr. Wyatt selected a high peak (21,780) of Johnson's tertiary triangulation as a station, but, as he was unable to climb it the angles at this station have been deduced.'

From the above it is evident that it has been a difficult problem to fix Teram Kangri. These peaks are not only remote from any previously determined stations of the Himalayan Survey, but their outlying defences for fifty miles present a series of obstacles only to be overcome by the exhibition of the greatest resolution in the face of constant disappointments to the surveyor. For it is not only necessary to see the peak required, but also to connect the station of observation with the previous triangulation. Thus eight ascents—four over 18,000 ft., three over 19,000 ft., and one over 20,000 ft.—were made without getting a sight of Teram Kangri. Three out of the only four stations from which Teram Kangri was sighted were over 19,000 ft. At Wusak h.s. 19,575 ft. Mr. Collins camped out through a week of bad weather and had to revisit the station subsequently. He passed two nights on Ningstet h.s. 18,370 ft. on the shoulder of Shelma Kangri; nevertheless the exigencies of his task compelled him to revisit this station also. He slept out for two nights on Strongstet h.s. 19,735 ft. after taking two days to cut up the final ice-slope. Finally, despite bad snow conditions which defeated him at 19,600 ft. earlier in the season, he set up his theodolite at over 20,000 on Skanpuk. Only a mountaineer can appreciate the perseverance which such a task involved.

The computations are not quite complete yet, but for the present, the highest peak of Teram Kangri is given as 24,489 ft. and the position as Lat. $35^{\circ} 34' 37''$ 31, Long. $77^{\circ} 07' 31''$ 08, about four miles S. and two miles E. of where I placed it and 3000 ft. lower. There appears to be no doubt that Mr. Collins has correctly identified the peak shown as Teram Kangri on my sketch map. The serious error in the altitude which I attributed to this peak perhaps arose from a mistake in

* Apparently 19,923 feet.—T. G. L.



TRIANGULATION OF TERAM KANGRI.

identifying the true summit from the eastern end of my base-line (cf. *Geogr. J.* vol. xxxv. p. 632).

Mr. Collins' results are, it need hardly be said, decisive and final, but it is difficult to account for the apparent great height of the peaks seen by Slingsby and myself from the Rgyong La (*Alpine Journal*, vol. xxv. p. 487 and *Geographical Journal*, vol. xxxv. p. 336 and plate p. 640) and for the remarkable corroboration obtained from Sella's photographs taken on the Sella Pass (*Alpine Journal*, vol. xxv. p. 448, and *Geographical Journal*, vol. xxxvii. p. 21 and p. 94). From the Rgyong La I could do no more than take a compass-bearing to these peaks, and it is conceivably possible, though for many reasons extremely unlikely, that the peaks which we then saw and photographed, are somewhat further to the E. and beyond the containing wall of the Siachen Glacier.

Dr. and Mrs. Workman visited the upper Siachen Glacier last summer and are again engaged upon a further exploration of it this season, so that we may shortly expect a comprehensive account of this long-neglected region.

CAUCASICA.

By DOUGLAS W. FRESHFIELD.

IN recent years there has been a lamentable falling-off in the number of English mountaineers visiting the Caucasus. As far as our countrymen go its exploration has been abandoned. Various causes have contributed to this sad neglect; first among them must be reckoned the exaggerated reports of disorder in the mountain districts, and next the counter-attractions of the Canadian Far West. If the Rockies or the Selkirks take twice as long to reach, the English traveller, when he gets there, finds himself in a country free from any political troubles or embarrassments and among people speaking his own language. The climber, however, will, when he leaves the main routes, find more difficulty in getting through the valleys, and, on the whole, less formidable peaks to conquer. If there are still any delusions abroad such as that 'there is no rock-climbing in the Caucasus,' or that 'all the good things have been done,' the sooner they are dispelled the better. The Caucasus is still worthy of Virgil's description 'saevis cautibus horrens.' It will always be a noble playground for the gymnast as well as a superb resort for the lover of mountain landscape.

In the finer portions of the range the combinations of peak and valley scenery, of snows, forests, and flowers, exceed anything to be seen elsewhere on this side of the Himalaya. The heart of the country can be reached viâ Odessa and on by steamer to the south side of the chain, or by rail to the north, in less than a week from London.

The visits of Italian and German mountaineers during the past two years to the Central Caucasus are proof, if any be wanted, that there are no longer any political hindrances in the way of travel. It seems to me, therefore, to be time to call the attention of our members to a regrettable gap in the lists of their annual performances which are now issued.

I am taking as a peg on which to hang this admonition an excellent skeleton guide-book to the western and central portions of the chain which has been issued (unfortunately only in Russian) by the Crimea-Caucasian Mountain Club, Mr. Merkulof's 'Guide to the Mountains of the Caucasus.'*

This contains much useful information for travellers. After a chapter on the equipment most suitable for the country, with a special section for mountain climbers, and some general directions, twenty-nine routes are briefly described, with distances, heights, &c. Among these are included the ascents of well-known summits, such as Elbruz, Kazbek, Dykhtau, Ushba, Koshtantau, and Ararat. Finally, a short list of maps of the Caucasus is given, the most important being that on the scale of one verst to the inch drawn from surveys of the military topographical department, which has also been reduced to the 5-verst scale. These maps are, unfortunately, only to be purchased by permission of the military authorities, but they may be inspected at the rooms of the Russian Geographical Society, and the Russian and Crimea-Caucasian Mountain Clubs, while many of the sheets are in the collection of our own Geographical Society. The map accompanying Mr. Merkulof's Guide (1 : 840,000) extends from Novo Rossisk to Vladikafkaz and Tiflis, with an inset going to the neighbourhood of Ararat, and contains much valuable information, though its scale is too small to admit of accurate mountain detail. The forested and bare regions are distinguished, distances are marked on all roads and horse-paths, and in addition to the heights given on

* *Guide to the Mountains of the Caucasus*, by V. A. Merkulof. With a special Excursion Map of the Black Sea Littoral and the Central Caucasus. St. Petersburg: M. D. Lomkovski. Price 1 rouble. 1904.

the sheet itself, tables are printed on the margin of the heights of the chief peaks and passes of the Western and Central Caucasus, and of the lower ends of the principal glaciers. The heights in some cases vary, though as a rule very slightly, from the table published by Mr. Woolley in the last number of the *Alpine Journal* (No. 195, p. 97), and it would be desirable to ascertain from which of the more recent Government publications they have been taken, the 1-verst or the revised 5-verst map. These are not always in accord.

The information given in the text is mainly of a practical nature, and is put into the most concise form. Having regard to the absence in the recent literature of Western Europe of any descriptions (other than a chapter in M. de Déchy's *Kaukasus*) of the ranges W. of the Klukhor group and the valleys radiating from the Black Sea Coast, it has seemed to me worth while to obtain the author's permission to translate and print in these pages the routes traversing the districts outside the scope of the Topographical Notes at the end of my *Exploration of the Caucasus*. This consent has been kindly given, and I trust the result may be to attract attention to a region which abounds in magnificent forest scenery and fine peaks ranging from 9,000 to 13,500 feet.*

In the central portion of the chain some fresh ascents have been made recently by German travellers, mainly in the Kazbek group and near the sources of the Terek. These are chronicled in the 'Österreichische Alpenzeitung' for 1910 and 1911. The glacier scenery in this part of the chain is fine, but the valleys are bare and sterile, and the scenery as a whole lacks distinction. The district, however, offers exceptional facilities to explorers owing to its vicinity to the Darial road. In the same periodical Mme. Kuntze chronicles some fine ascents in the range N. of the Uruk valley, sometimes called the Bogkhobashi Group (see also *Alpine Journal*, vol. xxv. p. 462-4).

* In the *Alpine Journal*, vol. xxii. pp. 507-20, will be found a very interesting account of ascents made in the Klukhor group, to the W. of the Pass of the same name, in 1904, by the late Mons. von Meck, formerly President of the Russian Mountain Club of Moscow, and Dr. Andreas Fischer, my companion in the Caucasus in 1889, news of whose untimely and much-to-be-regretted death in a snowstorm on the Aletschhorn has just reached us.

ROUTES IN THE WESTERN CAUCASUS: FROM V. A. MERKULOF'S GUIDE.*

I. KRASNAYA POLYANA—THE NIKOLAYEVSKI MINERAL SPRING—
MT. ACHISHKO.

KRASNAYA Polyana, also called from the Greek settlement, Romanovsk (1750 ft.) is 32 miles from Adler by the post road. The road runs $4\frac{1}{2}$ miles to the confluence of the river Achipse, or Puziko, with the Mzymta. At 3 miles from the town, opposite the Esthonian hamlet on the right bank, one should turn off to the left into the forest, through which a bridle-path ascends, fairly steeply after one mile, in a N.E. direction. On the flat crowning the crest of the range that divides the valleys of the Mzymta and Achipse, at a height of 2702 ft., the track forks. The right-hand branch runs nearly level for a distance of two miles, or a little more, along the E. slope of the ridge to the mineral spring of Achipse or Nikolayevski, while the other mounts up the crest of the range, for the most part gradually, but with some sharp zigzags, having a general trend to the N.W. After $6\frac{1}{2}$ miles, at a height of 6000 ft., the path emerges from the forest and divides; the right branch proceeds for about 5 versts ($3\frac{1}{2}$ miles) in a westerly direction through alpine meadows, at first along the crest of the range and then along its N. flank to the summit of the mountain Achishko, 7757 ft., with striking panoramas both from the crest and the summit of the mountain. Romanovsk, the valley of the Mzymta, and other adjacent valleys are visible, and also the main chain of the Caucasus near Chugusha with its sharply dentated crest, and farther off with the summits, Fisht, Oshten, and several other ranges. The left path, with a length of 10 versts ($6\frac{1}{2}$ miles), plunges at once into the forest and descends to Romanovsk, at first steeply down the flank of the range to the source of the river Beshenka, and then along this river. For the last verst the path runs through open country. Duration of the excursion to Achishko: on foot 10 hrs., in the saddle 6 hrs.; to the mineral spring 4 hrs. on foot, and 3 hrs. on horseback. It should be noticed

* *Guide to the Mountains of the Caucasus*, by V. A. Merkulof (issued by the Crimea-Caucasian Mountaineering Club), with special map of the Black Sea Littoral and Central Caucasus. This translation is published with the kind permission of the author and the Crimea-Caucasian Club. See Review 'Caucasica,' p. 314.

that the excursion is difficult after rain and storms because the bridges are carried away and the roads are obstructed with fallen trunks.

II. KRASNAYA POLYANA—THE MINERAL SPRING PSLUKH—THE AISHKHO—BURNOYE PASS.

From the upper Esthonian hamlet, situated 4 miles from Krasnaya Polyana, a bridle-path enters the forest and runs ($5\frac{1}{2}$ miles) along the left bank of the river Mzymta, and then, crossing it by a bridge a few yards above the mouth of the Pslukh, continues along the left bank of the latter for $3\frac{1}{2}$ miles, as far as the Aishkho glade (3288 ft.), in which a forester lives. A third of a mile beyond the bridge, near the path, stands the Pslukh mineral spring (2340 ft.). From the Aishkho glade a narrow path, overgrown in places with high grass, ascends steeply for 4 miles, running on the whole S.E. Where it emerges from the forest stands a shooting-box, whence the path proceeds along the skirts of the forest and $\frac{2}{3}$ of a mile further, at a height of 6475 ft., divides, the path to the N. Aishkho pass (a mile N.W. of the Aishkho mountain) 7875 ft., diverging to the N.N.E. and ascending steeply for a mile through alpine pastures with fine views on all sides, while the direct path along the edge of the forest again divides $\frac{2}{3}$ of a mile further on; to the left, E., a path ascends to the S. Aishkho pass ($\frac{2}{3}$ of a mile S. of the Aishkho mountain), 8302 ft., and leads also to the valley of the Little Laba, while the track to the right, entering the forest, descends to the Mzymta at the Engelmann clearing. The N. Aishkho pass is a broad saddle between slopes of no great height on the main range, here much rounded. The section of the path over the pass runs for a mile over rough ground covered with marsh. From the pass the path descends quite gently N., for the most part over muddy swampy ground, to the valley of the left source of the Little Laba, and then follows the left bank of the stream and the Little Laba to the veterinary station standing $5\frac{1}{2}$ miles from the pass and at a height of 5000 ft. on the river bank beyond the path coming down from the S. Aishkho pass to the Little Laba. From the station to Umpyr, where there is a hunting camp, there are $10\frac{1}{2}$ miles along a path with sharp ups and downs, dangerous in some places and particularly disagreeable during the first half of the distance. In the neighbourhood of Umpyr there are many wild animals and plenty of trout in the streams.

The views are remarkably beautiful. From Umpyr to Chernorechie $13\frac{1}{2}$ miles, the path is very fair with only a few steep and dangerous places. At Chernorechie, where the huntsman of the Kuban Hunt lives, there is a bridge over the river Chernaya. At a distance of $2\frac{2}{3}$ miles stands Burnoye, whence the path runs to the left to Bambak and on to Psebaiskaya, $13\frac{1}{2}$ m. The path from the source of the Little Laba as far as Burnoye runs through forest on the left bank of the river. The journey to Burnoye on foot or horseback takes 4 days, the nights being passed at the veterinary station and at Umpyr.

III. KRASNAYA POLYANA—THE PSLUKH MINERAL SPRING—
THE LAKE KARDYVACH.

From the mineral spring Pslukh (height 2340 ft. ; $9\frac{1}{2}$ miles from Romanovsk. See Exc. II) the path ascends rapidly in a S.E. direction for $3\frac{1}{2}$ miles along the crest of the range parting the valley of the Mzymta from that of the Pslukh to a height of 4430 ft. and then runs parallel to the river Mzymta, sometimes passing along the S.W. flank of the range and comes out after $6\frac{2}{3}$ miles into the extensive Engelmann clearing having a length of 1 mile, which extends along the right bank of the Mzymta (at the beginning of the clearing, 35 yds. from the bank and 10 to 14 ft. above the level of the river, and at a height of 4000 ft., stands the carbonic acid spring 'Tsarski,' noted for the excellence of its water). At the other end of the clearing a path starts off N. uniting further up with the path leading to the N. Aishkho pass. From the Engelmann clearing the path to the lake Kardyvach runs along the right bank of the Mzymta, sometimes ascending the slopes, sometimes descending to the river. After 4 miles, at the height of 3710 ft., and at the infall of a mountain torrent into the Mzymta from the left (along the valley of this stream cattle are driven $3\frac{1}{2}$ miles across the Khakhudar or Akhundara pass from the valley of the Mzymta to the Sukhum district and on that account a veterinary post stands to the N. of the pass) the path comes out on to alpine meadows studded here and there with thickets of birch. The path traverses the meadows for a distance of 4 miles. The strikingly beautiful alpine lake Kardyvach or Mzymt-Adzmych, about $\frac{2}{3}$ of a mile long and $\frac{1}{2}$ broad, lies at a height of 6030 ft. at the foot of the main range in a basin surrounded on almost all sides by lofty mountains. In the summer there are many goats on the meadows. The duration of the excursion is 2 days on horseback and 3 on foot. Excursions II. and III. may be combined, and in that

case the N. Aishkho pass must be ascended from the Engelmann clearing. Still more interesting is a combination of these two excursions with Excursion IV.

IV. PSEBAISKAYA—BURNOYE—MT. ACHESHBOKH—MT. BAMBAK
—THE PSEASHKHE PASS—KRASNAYA POLYANA.

In Psebaiskaya is the office of the Kuban Grand Ducal Hunt. There are many bears, deer, wild goats, and boars in the forests between the upper waters of the rivers Little Laba (or Labenka) Urushten (or Chernaya) and Kisha. The aurochs also occurs. Camps are erected for the chase (hunting boxes and huts), the Bambak, Chernorechie, Zubrov, Chilipse, Urushten, Mastaka and Umpyr. At Cherenorechie, beside the bridge across the Urushten, the huntsman lives. Excellent hunting roads are laid out in the neighbourhood of the camps. From Psebaiskaya (height 2145 ft.) to Chernorechie the road follows for 16 miles the left bank of the Little Laba, and at the eighth verst begins the beautiful Shakhgireyevskoye ravine with lofty precipitous and rocky walls. At Burnoye, $2\frac{2}{3}$ miles before Chernorechie, a bridle-path runs off to the right, ascending at first sharply and continuously ($2\frac{1}{2}$ hrs. ride) through the forest of the Kapustinaya dell. Ascending to the ridge, about 6000 ft. high, bounding the Urushten ravine on the left side, the path follows the crest of the ridge covered with beautiful alpine meadows, for $16\frac{1}{2}$ miles to the Bambak camp. From the crest, striking views are obtainable to the N. into the charming valley of the river Buguncha clothed with fine meadows and woods, and S. into the dark Urushten ravine, well wooded and sometimes rocky. Passing the Achkha mountain the path frequently passes from one side of the crest to the other and comes down to the saddle called the Deep Gorge (Daguakoke). Hence a still better view is afforded of the Urushten valley and of the lofty jagged ridges, partly covered with snow, which shut it in for a long distance S. Further on the path runs at some distance N. of the crest down a sharp descent, called the Rock-Ladder, and passes not far from the Chortovy Devil's Gates (Acheshbokh mountain), consisting of two lofty, almost perpendicular, rocks, which stand more than $\frac{1}{3}$ of a mile apart and are visible from a long distance. The appearance of these rocks is remarkably fine. On the W. flank of the mountain Dzyuva (or Bambak) stands the Bambak camp, at a height of 6700 ft. on the skirt of pine woods among the sources of streams descending to the Kisha. From the Bambak camp it is about 13 miles by hunting roads to the Urushten camp, situated in a lovely

glade on the right bank of the Urushten at a height of about 5820 ft. Thence to the pass, three miles more or less, the path gradually ascends through alpine meadows with trees here and there. The pass (absolute height 6573 ft.) is a fairly deep saddle (running N. to S.) between two pyramidal summits free from snow; the one to the right has a height of 8658 ft. and the other of 9282 ft. From the pass the main track runs S.S.W., skirting on the right a pyramidal mountain 7665 ft. high, which constitutes the N. extremity of a small plateau lying to the S. of the pass. The best views are obtained from this plateau. Two miles from the pass the path comes to the edge of the rocky precipice above the ravine of the river Bzyrbia, turns to the left, and then descends for $1\frac{1}{2}$ mile down a steep offshoot of this ravine on the left to the edge of the wood, where begins a better but still steep path. (The awkward descent of the side ravine may be avoided, by ascending, before reaching the edge of the precipice, a height of 700 feet in a S. and S.W. direction to the plateau above mentioned, and following the path over it down in a W. direction to the skirt of the forest where it joins the main path.) Then the crest of the Psekokho ridge is followed for $5\frac{1}{2}$ miles to the bridge over the river Puziko, whence a high-road leads to Romanovsk, $4\frac{1}{2}$ miles. The direct route from Burnoye by the bridle-path, traversing the flank of the mountain Yatyrgvata (9501 ft. high) past the Mastaka camp (6300 ft. high) to the Urushten camp, is much less picturesque. Time of the excursion, 4 to 5 days on horseback, and 5 to 6 days on foot. Guides at Krasnaya Polyana—at the Caucasian Alpine Club, and at Psebaikaya on application to the huntsman of the Kuban Hunt. On the pass is a hut of the Caucasian Alpine Club.

V. GAGRI—MT. ARABIKA—MT. MAMZDYSHKHA.

Gagri is the name of the shore of the Gagri bay between the rivers Sandripshe and Bzyb, extending for a distance of 20 miles. About 34,000 acres have been alienated for a climatological station from the Gagri crown demesne between the rivers Begerepstaya and Tsykhervaya with a sea frontage of 10 miles. The hotels and management bureau of the station lie at the mouth of the river Zhuakvara or Zhu. Three and one-third miles to the S. on the high-road, stands the village Novyya Gagri, where tradespeople and artisans dwell. To the N.E. of the health resort rises the mountain group, Arabika, consisting of separate summits placed in the form of a triangle. The

highest central summit is called Arabika or Zhuagara (8729 ft.) Both these peaks and the neighbouring elevations are of quite a white colour and bear no vegetation of any kind, but the slopes are covered with alpine meadows on which many cattle graze. To the S. of this mountain mass is another less extensive group, Mamzdyskhka, with a N.E. summit, Mamzdyskhka II. (6475 ft.) and a S.W., Mamzdyskhka I. (6135 ft.), while between them rises Mamzdyskhka III. (6150 ft.). The two groups are united by a ridge with a saddle about 5900 ft. high, which is called Chkhaashta. From Gagri the path leaving the high-road ascends about $2\frac{1}{2}$ miles along the right bank of the Gagrish, then traverses for 2 miles the S. slope of the Gagri spur and reaching the ridge of this spur at a height of 5397 feet, runs along it $2\frac{3}{4}$ miles to Chkhaashta, where there is a spring walled round with stone. On the saddle near the spring is a point of view (about 5900 ft. high), from which there is a strikingly beautiful prospect of the valleys of the Bzyb and Zhuakvara, of the summits of Arabika and Mamzdyskhka. Thence to the summit of Arabika one must follow the path for a mile N., and then, where the path descends to the source of the Zhuakvara, turn off to the right along a track trodden out by herdsmen, and make for the summit. The same route must be taken back to the spring. From the spring a path with a general direction S. runs along the W. slope of the ridge connecting the range and the Mamzdyskhka plateau. After 4 miles the path divides at the mountain Mamzdyskhka I. The path straight on descends in $6\frac{1}{2}$ miles to the bridge which carries the high-road across the Bzyb, while that to the right descends more steeply at first for a mile along the crest of the spur which runs off from Mamzdyskhka I. W., and then follows the S. slope of this spur for $2\frac{3}{4}$ miles to Novyya Gagri. Time of the excursion, either on horse or foot, 2 to 3 days. The forest rangers can give the names of guides. The route along the spurs falling westwards passes through forest; elsewhere through alpine meadows.

VI. SUKHUM—THE SANCHARSKI PASS—THE VALLEY OF ZAGDAN
—MT. CHILIK—STAROYE ZHILISHCHE—ZELENCHUKSKAYA.

At 6 miles from Sukhum, beyond Andreyevski, the road becomes a bridle-path, the so-called Sancharskaya path, made by troops in the sixties and in fairly good preservation at the

present day. At first it runs through the picturesque wooded valley of the W. Gumista, and from Doulyak ascends steeply to the Achavchar pass (4457 ft.) of the Chedym range, and thence descends into the alluvial plain on the left bank of the Bzyb to a place called Pskha (1610 ft.) where it crosses by a ford to the right bank (after rain it is impossible to cross), and then it follows the valleys of the Bzyb and its affluent the Adler, and, beyond the bridge over the river Akhi, mounts rapidly the offshoot of the main range, Aphystrakha, to the Sanchar pass (9519 ft.) which is not conspicuous on the crest and is with difficulty distinguishable from the N. side. The length of the path to the pass is 50 miles. Three places are dangerous to laden horses : (1) 180 yds. beyond Dvurechie ; (2) for some distance on the ascent to the Chedym range ; (3) $\frac{1}{3}$ of a mile on the rocky cornice before the crossing of the Bzyb. Beyond the Sanchar pass, and not far from it, in a glade with pine groves, is the office of the Sanchar mine of magnetic iron. The descent from the pass is easy, but further on, in the narrow rocky valley of the great Laba, the path is very troublesome and crosses several times from the one bank to the other. At the mouth of the river Pkhi on the right bank the path forks ; the path on the left runs along the expanding valley of the Great Laba, the valley three miles onwards being called Zagdan. At this part tall dense forest grows on both banks of the fairly wide river, in which roam many wild animals, and even the bison survives ; the path to the right ascends gently E. to the watershed (between the rivers Pkhi and Irkyz or Arkiz), while at the foot a path diverges N. and mounts rather rapidly to the Chilik pass (9930 ft.), near which, to the E., stands the highest point of the Abishikhar Akhub range, the Chilik summit (10,626 ft.). From the water-parting range the path along the valley of the river Irkyz comes out to Staroye Zhilishche and to the forestry station, beside which is a solid bridge over the Zelenchuk. The valley of the Zelenchuk at this place offers very attractive and beautiful scenery. Thence a fairly good road runs N. along the broadening valley to the Zelenchuk monastery, $16\frac{1}{2}$ miles along the left bank, and from the monastery by the right bank to Zelenchukskaya (also $16\frac{1}{2}$ miles). At the forest guardhouse and at the monastery are ruins of settlements and burial grounds. Duration of the excursion to the Sanchar pass on horseback, 3 days ; on foot, 3 to 4 days ; from the pass to Zelenchukskaya, including a visit on horseback to Zagdan and Chilik, 4 to 5 days ; on foot, 5 to 6 days. The

route runs for the most part through forest with very picturesque scenery. From the passes and ridges and from Chilik splendid panoramas are displayed. Guides and horses may be engaged in Sukhum, but not on the way.

VII. THE SUKHUM MILITARY ROAD—SUKHUM—THE KLUKHOR PASS—TEBERDINSKOYE—GEORGIYEVSKOYE—BATALPASHINSKAYA.

At $5\frac{1}{2}$ miles from Sukhum a high-road branches off from the coast road and runs for about 26 miles as far as the descent to Bagat police station on the river Kodor. Then a good bridle road along the Kodor (for carriages as far as Lata) to Chkhalta and then a made path crosses the Klukhor pass to the Klukhor barrack whence a good carriage road with sound bridges leads to Batalpashinskaya. Sixteen miles from Sukhum is a dukhan near the village Olginskoye; at 20 miles the police station near the village Tsebeldinskoye; at 32 miles the police station beside the Bagat bridge over the river Kodor. Before reaching the bridge the road is cut out of the precipitous white limestone rock at a height of 840 to 420 feet above the Kodor; this place is remarkably fine. At $36\frac{1}{2}$ miles is the spot called Lata where is an office of the Maximof timber merchants; at 50 miles, at the iron bridge over the river Chkhalta, is another office of the Maximofs. In 1900 they made a path thence in the direction of Marukh pass. At 52 miles is the refuge of the Drandski monastery beside the small bridge over the Kodor; at 56 miles the Russian hamlet Ajary, near which (to the W.) lives a forest ranger who knows all the neighbourhood. Thence an excursion can be made on the bridle-path to the Khutya mountain, from which there is a good view of the Panavski and main ranges; at 58 miles the ravine of the Kodor forks; through the ravine of the river Gvandra, on the left, runs the Sukhum military road, while through the ravine of the Seken, on the right, passes the track into Svanetia over the passes Khida and Utrir; * at 63 miles the path turns N. into the ravine of the river Klych, on the bank of which, 230 yds. above the place where it flows into the Gvandra stands the Klych barrack (3414 ft.), whence the path commences the ascent to the pass through the narrow gorge of the river Klych, obstructed sometimes even in July by avalanches at 3 miles above the barrack; at 78 miles,

* See *Exploration of the Caucasus*, vol. ii.

where the ravine bends to the N.W. a narrow track runs off to the right to the Nakhar pass (9415 ft.); at 84 miles is the Klukhor pass 9240 ft. high, a narrow passage between two rocky mountains. The views from the pass are very grand. Half a mile further is the Teberda lake inclosed on the E. and N. by an almost vertical wall of granite, in which the path is very defectively cut and is frequently obstructed by ice from above; at 93 miles, after twelve zigzags, descending from the pass at a height of 6276 feet is the Klukhor barrack or office, where the section of the path across the pass comes to an end. This part of the road winds in numerous zigzags and is quite gentle enough for animals, with a gradient of 1 in 20; but in many places it is more convenient to go by the direct path or to take the Karachayef path, which runs round the Teberda lake on the W. shore; at 100 miles is the lake Tumaly-gel, beyond which the road passes along the broad valley of the Teberda overgrown with lofty trees and fenced in by high ranges with fantastically shaped rocks on their summits; at 113 miles the road bends round the strikingly beautifully situated lake Gel-Tala, on the bank of which stands the Kuzolef country house and near it the farms of Krymshamkhalof and Kondratylen and a few huts ('Dara Medeoga' on the excursion map); at 115 miles the tar works of A. P. Uteko; at 118 miles the road crosses the left tributary of the Teberda, the river Mukha, along which runs off to the left the path to the Mukha pass. Opposite, on the right bank of the Teberda, is seen a rocky peak of fantastic form called Chortof Zamok (Devil's castle). Between the works and the river Mukha stands a crown forest which has been cut up into lots for building houses. At 119 miles the river Jemagat falls into the Teberda on the right, and along its ravine starts the path from the village Teberdinskoye to Dout; at 123 miles the road crosses by an iron bridge from the left bank to the right, to Teberdinskoye (Azhayef aul); at 131 miles, the Sentinsk monastery for men; at 133 miles the village Sentinskoye; at 145 miles is the village Georgiyevskoye (also Osetinskoye or Shoanskoye), from which it is 17 miles to Kordomiskaya, and 60 miles to Kislovodsk through Mariinskoye; at 154 miles Krasnogorskaya; at 166 miles Ust-Jegutinskaya and at 176 miles Batalpashinskaya, the administrative centre of the department. The excursion from Sukhum to Teberdinskoye takes 5 days on horseback and 8 days on foot. The route runs mostly through forest along the picturesque valleys of the Kodor and Teberda, the valley of the latter being especially beautiful. The snow

melts on the Klukhor pass very late in the year, sometimes only at the beginning of August, and the pass is not clear for long. Before this journey is undertaken inquiries should be made from the road inspectors about the state of the pass. Guides and horses may be obtained at Sukhum and in the villages Teberdinskoye and Georgiyevskoye. Khaji-Sultan-Bauchorof of Teberdinskoye, son of the founder of the aul, the famous hunter Azhaa, is well acquainted with the neighbourhood.

VII. PSEBAISKAYA—ZELENCHUKSKAYA—GEORGIYEVSKOYE.

From Psebaiskaya to Andriukovskaya it is 4 miles by the ford, but by the road more to the N. and across the bridge, 8 miles. Then the road passes by the guardhouse, 'Jentu,' of the huntsman of the Kuban Hunt along the left bank of the river Andriuk, and enters the valley of the Great Laba which it crosses by a bridge near the mouth of the river Psemen in the Laba (16 m. from Andriukovskaya). From the bridge the road runs E. along the very picturesque longitudinal valley, with the Chernya mountain raising its fine crest on the N. side and falling precipitously on the S. flank. It passes the Cossack villages Pregradnaya (30 miles), Storzhevaya (46 miles), Zelenchukskaya (54 miles), Kordoniskaya (62 miles) and comes to the Sukhum military road opposite Khumarinskaya along which the distance to Georgiyevskoye is $2\frac{2}{3}$ miles (74 miles from Andriukovskaya). The road is quite good for riding. The journey from Psebaiskaya to Georgiyevskoye, 78 or 82 miles, can be done in 2 to 3 days on horseback and 4 to 5 on foot.

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THE following additions have been made to the Library since April :

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 This contains among other articles :—
 L. Gaurier, Etudes glaciaires dans les Pyrénées françaises et espagnoles, 1900-9.
 A. Ziegler, Les grottes de Bétharram.
 F. Lary, La Pique de Baychon.
 de la Blottière, Légende de tous les cols qui vont de France en Espagne.
 Ct. R. Le Pic de Gabizo.
 P. Soubiron, L'Ariège inconnu.
Gruppo Alpinisti Senza Guide. Monografie illustrate. Alpi occidentali, N. 3. Monviso, Viso di Vallanta e Visolotto. A. Ferrari. Brescia, Geroldi, 1912. L. 1
 7½ × 5½ : pp. 20 : plates.
 — vol. 2, n. 1. Alpi Centrali, Corno del Dente. 1910
 pp. 5.
 — n. 2. Königspitze. 1910
 pp. 12.
Kletterklub “Daxensteiner,” Dresden. 26 Nov. 1905. Satzungen. 1905
 6½ × 4 : pp. 7.
 “. . . bezweckt die systematische Ausübung des Klettersports sowie die Pflege und Förderung der Touristik wie auch des Wintersports.”

Kletterlust, Dresden, 20 Aug. 1907.

Sein Zweck und Ziel ist die Ausübung und Forderung des Kletter- und Wandersport in heimigen Bergen.

Mountain Club of South Africa. Annual, no. 15, 1912. Cape Town, 1912. 1/-
9 × 5½: pp. 171: plates.

There are now four sections of the Club, Cape Town, Worcester 1909, Riversdale 1911, Graaf-Reinet 1912.

Among the articles in the above are:—

G. T. Amphlett, A week in Skye.

W. J. Wybergh, Attempt on Cathkin Peak, 12,000 ft. the highest peak in S. Africa.

W. C. West, Toverkop.

W. T. Cobern, First ascent of Hiddingh's Ravine complete.

Twelve additional routes up Table Mountain.

S. Y. Ford, Some adventures at French Hoek.

H. Lambrechts, Ascent of Thebus Kop.

T. M. Amphlett, Attempt on Cathkin Peak.

Norske Turistforening. Aarbok for 1912. Utgit av H. Horn.

9 × 6: pp. iv, 278, xxxi: plates. Kristiania, Grondahl, 1912

Among the articles are the following:—

A. Hoel, En slædetur paa Spitsbergen i 1909.

E. Damsgaard, Fra Troldeheimen til Jotunheimen.

Kurd Endell, Erstbesteigungen am Lyngenfjord.

H. Tensberg, Gjuratind.

Nuova Associazione Nazionale Femminile Alpina, Nanfa. Nanfa. Rivista Bimestrale. Anni 1-3. 1909-11

12 × 8: lithographed.

Oe.T.K.Dresden. Bericht über 1911. 1912

8½ × 5½: 2 plates, pp. 82.

— **Krems-Stein**. Jahresberichte 27, 28, 30. 1908, 1909, 1911
9 × 5½.

Russian Alpine Club. Bulletin. Published when material has accumulated, not less than thrice a year. Gratis to members. (In Russian.) 1911

S.A.C. Weissenstein. Jahres-Bericht pro 1911. Solothurn, 1912

9 × 6: pp. 27.

Ski Club of Great Britain. Vol. 1, Nos. 1-6. London, Cox, 1905-1910

9½ × 6½: pp. 108: ill.

Slov. alpsk. Drustvo. Alpsky Vestnik. Vol. 13. Prag, 1910-11

9½ × 6: pp. 128.

Société Allobroglia. Bulletin 24-26. 1910-1912

Svenska Turistföreningens Årsskrift. Stockholm, Wahlström, 1912

8½ × 5½: pp. viii, 406: plates.

Among the articles are:—

McLony, Några vinterdagar vid Stora Mjölkvattnet.

A. Wahlstedt, En vinterekspedition till Kebnekaise.

Ungarischen Karpathenverein. Jahrbuch. xxxix. Jahrgang 1912. Redigiert von Andor Marcsek und Moriz Lövy. Iglo, 1912

9 × 6: pp. iv, 207: ill.

Among the articles are the following:—

Gyula v. Komarnicki, Gratwanderung v. d. Schlagendorferspitze z. Warze.

E. Serényi, Winterturen in der Hohen Tatra.

E. Barcza, Am Batizfalver-Grat.

T. Kregczy, Die Nordwand d. Ganek.

Vereinigung "Kraxelbrüder", Dresden, 14 Oct. 1906.

Statuten. MS.

Die Vereinigung verfolgt den Zweck auf die Touristik fördernd einzuwirken, den Klettersport zu heben, sowie die Kenntnisse der heimischen Gebirgswelt zu erweitern.

This is one of the numerous similar clubs in Dresden.

New Publications.

- Abraham, George D.** Up the grandest of the Dolomites. In *Badminton Mag.* vol. 35, no. 204. July 1912
 $9\frac{1}{2} \times 7$: pp. 31-39: ill.
- The work of the alpine guide. Its dangers and tragedies. In *World's Work*, vol. 20. July 1912
 $10 \times 7\frac{1}{2}$: pp. 144-152: plates.
- How to climb safely in the high Alps. Recent alpine tragedies and their lessons. In *Pall Mall Mag.* London, vol. 50, no. 231. July 1912
 $9\frac{1}{2} \times 6\frac{1}{2}$: pp. 3-15: ill.
- Andrews, E. C.** An excursion to the Yosemite (California), of Studies in the Formation of Alpine cirques, "steps," and valley "treads." Reprinted from *Journ. and Proc. Roy. Soc. N. S. Wales*, vol. xlv. Aug. 3, 1910
 $8\frac{3}{4} \times 5\frac{1}{2}$: pp. 262-315: ill.
- Baedeker, K.** Norway, Sweden, and Denmark. With excursions to Iceland and Spitzbergen. 10th edition. Leipzig, etc., 1912. 8/-
 $6\frac{1}{2} \times 4\frac{1}{4}$: pp. lx, 478: maps, plans.
- Südbayern, Tirol, Salzburg. Ober- und Nieder-Österreich, Steiermark, Kärnten und Krain. *Handbuch für Reisende.* 35. Aufl.
 $6\frac{1}{2} \times 4$: pp. xxvi, 682: maps. Leipzig, Baedeker, 1912. M. 8
- de Bary, A.** *Les Voix de la Montagne.* Paris, Stock, 1911. Fr. 3.50
 $7\frac{1}{2} \times 4\frac{3}{4}$: pp. 256.
 Pp. 115-179 contain poems on Les Montagnes, from the first of which we take the following:—
- Les secrets des glaciers, tu voudras les connaître ;
 Tu conqueras les pics hostiles et bourrus ;
 Tu reviendras joyeux dix fois, vingt fois peut être,
 Jusqu'à ce qu'une fois tu ne reviennes plus.
- .
- Depuis les étés blonds de ma pensive enfance
 Ardemment j'ai rêvé de sommets, d'au-delà.
 Ma vie aux monts aimés ne peut être une offense,
 Et s'ils la demandaient, je dirais : "Prenez-la."
- From another poem:—
- Le ciel est si pur et l'herbe si verte,
 Les monts si gaîment portent leurs fardeaux
 De glace ; viens-t'en à la découverte,
 Piolet en main et le sac au dos.
- They are poems that members of Alpine Clubs should read with pleasure.
- Bayerisches Hochland**, Salzburg, Salzkammergut. *Praktischer Reiseführer.* 27. Aufl. Griebens Reiseführer, Bd. 66.
 8×4 : pp. 244: maps. Berlin, Goldschmidt, 1911-1912. M. 3
- Becker, Prof. Fridolin.** Glarnerland mit Walensee und Klausenstrasse. Hsg. v. Verkehrs-Ver. f. d. Kanton Glarus. Glarus, Bäschlin (1912)
 $7\frac{1}{2} \times 5$: pp. 160, viii: plates, map.
- Beraldi, Henri.** *Russell en Amérique.* Extr. du Bull. pyrénéen.
 $9\frac{1}{4} \times 6\frac{1}{2}$: pp. 25. Pau, Garet, 1912
- Berghell.** *Illustrierter Kalender für Natur- und Wanderfreunde, Kletterer und Hochtouristen.* Leipzig, Kummer, 1910
 $6\frac{1}{2} \times 4\frac{1}{4}$: pp. xxxii, 192: ill.
- *Taschenbuch für Natur- und Wanderfreunde Bergsteiger und Wintersportler.* 2. Jahrgang. Leipzig, Kummer, 1911
 $7 \times 4\frac{3}{4}$: pp. 236: ill.
- *Taschenbuch für Naturfreunde und Bergsteiger.* III. Jahrgang 1912-1913. Leipzig, Kummer, 1912
 $\frac{1}{2} \times 4$: pp. 358: plates.

Das Berner Oberland. Praktischer Reiseführer. 2. Aufl. neubearbeitete von H. Kempf. Griebens Reiseführer, Bd. 110.

6 × 4: pp. 100: maps. Berlin, Goldschmidt, 1911. M. 1.50

Blakeney, Edward H. Footsteps of autumn and other poems. Printed by the author at his private press in the year 1912 at the King's School, Ely.

8½ × 5½: pp. v, 57.

The poems in this volume are largely inspired by alpine scenes. The author is greatly influenced by the mystery shrouding all high mountains, a mystery of which

We shall frame the meaning right,
With the valley far beneath us, and our feet upon the height.

In the 'Morning in the Val d'Anniviers,' the author writes as a true mountain-lover:—

While the snow clings soft to the ridges,
And the ice-fall—splendid, forlorn,—
Gleams white where the towers in their silence
Stand flushed with the morn;

.
When the menace and might of the hills
Are lost in the nameless new glory,
I lift up my spirit in praise
To the Maker of all things—triumphant,
Eternal of days.

Perhaps the poem in the book which will most appeal to readers of the JOURNAL is the fine one on 'The Matterhorn from above the Schwarz-See':—

Around me rise the mountains; at my feet,
Its tranquil bosom veined with silver lights,
Or swept by shadows of the insistent cloud,
Lies the dark mere; from half a hundred cliffs
Where verdant meadows fall toward the vale
The cattle-bells make far-off music; down
The dark gorge plunges the wild cataract
With thunderous welcome; rank by solemn rank
The pine-trees whisper in the morning wind
Their soft enchantments; while, far up, beyond
Communion with the world, enthroned in ice,
Robed with the snow, enisled in awful calm,
And pillared in the majesty of day,
Gleams the white summit of the Matterhorn.

The volume, which is well printed in a pleasing type, was set up and printed throughout by the author himself.

Bonney, T. G.: see Suess, E., 1912.

Bordeaux, Henry. La neige sur les pas. Roman.

7½ × 4½: pp. vii, 348.

Paris, Plon-Nourrit [1911]

Bröll, Camill. Froy im Villnösstal.

7½ × 5: pp. vii, 157: ill.

Selbstverlag, Riedmann, Lana a.d.E., 1911

Buchanan, J. Y. In and around the Morteratsch Glacier: a study in the natural history of ice. Reprinted from Scot. Geogr. Mag. April 1912

9½ × 6½: pp. 20: ill.

C., A. E. Tales true and otherwise.

London, Jones & Evans, 1912. 2/6

7 × 5: pp. 142.

pp. 122-142: A day's play, a climbing story.

Camenisch, Carl. Goethe, Scheffel, und C. F. Meyer im Banne der Alpen.

2. illustr. Aufl.

Samaden, Engadin Press, 1911. M. 2.50

8 × 5½: pp. 103: ill.

- Carpenter, Ford A.** Photographing 'red snow' in natural colours. In Trans. San Diego Soc. Nat. Hist. U.S.A., vol. 1, no. 3. Nov. 27, 1911
 10½ × 7: pp. 108-111: col. plate.
 The plate represents red snow on Lambert Dome, Tuolumne Meadows, Yosemite, July 19, 1911.
- v. Coelln, Ernst.** Das Buch vom Schökel. Verfasst auf Anregung des Steir. Gebirgsver. Graz, Leykam (1911)
 8½ × 5½: pp. 158: ill.
- Coolidge, W. A. B.** A List of the Writings (not being Reviews of Books) dating from 1868 to 1912 and relating to the Alps or Switzerland of W. A. B. Coolidge. Privately printed, Grindelwald, Jakober-Peter, 1912
 9 × 6½: pp. 37.
- Coolidge, W. A. B., and others.** Alps, article in Encyclop. Brit. 11th ed. 12½ × 9½: pp. 737-754. Cambridge, University Press, 1910
- Dalbanne, J.** Le vi^e Concours International de Ski, Chamonix 1912. In L'éducation physique, xi^e année, No. 3. 15 févr. 1912
 9½ × 7: pp. 65-72: ill.
- D'Auvergne, Edmund B.** Switzerland in sunshine and snow.
 8½ × 5½: pp. viii, 307: plates. London, Werner Laurie [1912]. 12/6
- Deloncle, François.** Le Mont-Blanc et ses voies d'accès. C. R. Soc. géogr. de Toulouse. 26 Novembre, 1910
 8½ × 5½: pp. 6.
- Federer, Hch.** Berge und Menschen. Roman. Berlin, G. Grote, 1911. M. 5
 7½ × 5: pp. 654.
- Feruglio, Dr. G.** Guida turistica del Cadore Zoldano ed Agordino. 7 × 4½: pp. vii, 470: plates, map. Tolmezzo, Ciani, 1910
- Flemwell, G.** The flower-fields of Alpine Switzerland. An appreciation and a plea. Painted and written by G. Flemwell.
 8½ × 6: pp. xvi, 195: 26 col. plates. London, Hutchinson, 1911. 7/6 nett
 Delightfully written and illustrated. The chief object of the work is to suggest that alpine flowers should be cultivated in England not only in rock gardens, but in large masses in fields, to reproduce the conditions and appearance of their natural growth as nearly as possible. The author also suggests that alpine flowers eaten by English cows might improve English milk.
- Genfer See und Chamonix.** Praktischer Reiseführer. 2.Aufl. Griebens Reiseführer, Bd. 114. Berlin, Goldschmidt, 1911. M. 1.50
 6 × 4: pp. 98: maps.
- The Geographical Journal.** Vol. 39. January-June, 1912
 9½ × 6½: pp. viii, 695: maps, plates.
 Contains the following articles of interest here:—
 No. 2, February. Height of Mt. Huascarán.
 No. 3, March. J. Norman Collie, Exploration in the Rocky Mountains north of the Yellowhead Pass.
 No. 4, April. Mrs. Schäffer's discovery and survey of Lake Maligne, Canadian Rockies.
 No. 5, May. H. Palmer. Observations on Sir Sandford Glacier, 1911.
- Geyer, Georg.** Ueber die Kalkalpen zwischen dem Almtal und dem Traungebiet. S. A. Verh. k.k. geol. Reichsanstalt, 1911. Nr. 3. Wien, 1911
 10 × 7: pp. 67-86.
- Griebens Reiseführer,** Berlin, Goldschmidt: see under Switzerland; Tirol; Genfer See; Bayerisches Hochland; Berner Oberland.
- Gruber, Georg B.** Bergsteiger-Hygiene. Ein Vortrag. Heft 6 d. Schriften d. "Freiland" Verein. München, Reinhardt, 1912. Pfg. 30
 8 × 5½: pp. 59.
- Gruner, C.** Bergfahrten in den Ampezzaner und Sectener Dolomiten. Vortrag gehalten in der Sekt. Hamburg d. D.u.Oe.A.-V. (Hamburg, Pontt & v. Döhren, 1912)
 9 × 5½: pp. 28.
- v. Hahn, C.** Erster Versuch einer Erklärung kaukasischer geographischer Namen. Stuttgart, Strecker and Schröder, 1910
 9½ × 7: pp. viii, 62.

- Harper's Camping and Scouting.** (J. Wellman, J. H. Adams, E. L. Swan, G. P. Serviss, etc.) New York and London, Harper, 1911. 7/6
 $7\frac{1}{2} \times 5\frac{1}{2}$: pp. xvii, 398: ill.
 pp. 351-366: Mountaineering as a sport.
- Harraden, Beatrice.** Out of the Wreck I Rise.
 $7\frac{1}{2} \times 4\frac{1}{2}$: pp. 383: frontispiece. London, etc., Nelson (1912). 2/-
 A novel in which the hero, having got into difficulties through large monetary swindles, sees no escape except by suicide, which he commits by getting in the way of an alpine avalanche while climbing. It contains also an interesting character study in the Jewess who deals in antiquities.
- Härry, A.** Die historische Entwicklung der schweizerischen Verkehrswege mit besonderer Berücksichtigung des Transits und der Fluss-Schifffahrt. Erster Teil: Die Grundlagen des Verkehrs und die historische Entwicklung des Landesverkehrs. Nordost-schw. Verb. f. Schifffahrt Rhein-Bodensee, Nr. 12. Frauenfeld, Huber, 1911. M. 10
 10×7 : pp. xvi, 276: plates.
 Beschreibung d. Wichtigsten Gewässer, Die Entwicklung d. Transitwege bis z. Gegenwart, Die Strassen, Die Eisenbahnen, Die Alpenbahnen, Verkehrspolitik.
- Hayata, B.** The Vegetation of Mt. Fuji. With a Complete List of Plants found on the Mountain and a Botanical Map showing their Distribution.
 $8\frac{1}{2} \times 5\frac{1}{2}$: pp. 125: map, plates. Tokyo, Osaka & Kyoto, Maruya, 1911
- Heber, Sigvard.** Die neue Hochgebirgsbahn in Norwegen Kristiania-Bergen.
 $8 \times 5\frac{1}{2}$: pp. 95: maps, ill. Kristiania, Cappelen (1910). Kr. 2
- Henry, Abbé.** L'alpinisme et le clergé valdotaïn en 1911. Ex. Bull. no. 8. Sec. Flore valdotaïn. Aosta, Imprim. cathol. 1912
 $9\frac{1}{2} \times 6\frac{1}{2}$: ill. pp. 16.
 Accounts of the following clerical ascents:—
 Dufoursp., Dent d'Hérens, Breithorn, Grand Paradis, Aig. du Midi, Mont Vélan, Gr. Tête de By, Mont Gelé, Mont Morion, Tersiva, Messe à la Tête du Rhutor: etc.
- Hill and Dale.** Sketches of wild nature and country life. The open air books.
 $7\frac{1}{2} \times 4\frac{1}{2}$: pp. viii, 128. London, etc., Hodder and Stoughton (1912). 1/-
 Exmoor, A northern valley, Story of some pebble hills, etc. Very slight.
- Hoffmann, Dr. Ferdinand.** Botanische Wanderungen in den südlichen Kalkalpen. Teile I. u. 2. Wissens. Beil. z. Jahresb. d. 5. Realschule z. Berlin, 1903. 1910, Nr. 131, 161. Berlin, Weidmann, 1903, 1910
 10×8 : pp. 33, 28.
- Jackson, F. Hamilton.** Rambles in the Pyrenees and the adjacent districts, Gascony, Pays de Foix, and Roussillon. London, Murray, 1912. 21/-
 $9 \times 6\frac{1}{2}$: pp. xii, 419: map, ill.
 This work deals almost entirely with the complicated architectural interests—and they are many and great—of the district lying to the north of the Pyrenees. There are many excellent illustrations, mostly from the author's own pencil. The historical part is well done.
- Jensen, Johannes B.** Der Gletscher. Ein neuer Mythes vom ersten Menschen.
 $6\frac{1}{2} \times 4\frac{1}{2}$: pp. 289. Berlin, S. Fischer, 1912. M. 6
- Kernahan, Coulson.** Edward Whymper as I knew him. In Strand Mag. London. 1912
 $9\frac{1}{2} \times 6\frac{1}{2}$: pp. 638-645: 2 portraits.
- Kilian, W., et Reboul, P.** Morphologie des Alpes françaises. 11^e fascicule, Chânes Subalpines, Geolog. Charakterbilder hsg. v. Dr. H. Stille. 4.Hft. $12\frac{1}{2} \times 9\frac{1}{2}$: pp. 14: 7 plates. Berlin, Borntraeger, 1910. M. 7
- Krüger, Dr. P.** Eine Reise in den Kordilleren von Patagonien. Königl. Gymn. zu Marienburg, Wissens. Beil. z. Programm 1912, Nr. 42.
 10×8 : pp. 41: plates. Marienburg, Grossnick, 1912
- Lafon, J.** L'Andorre à dos de mulet. Dijon, Privat, 1911
 $9\frac{1}{2} \times 7\frac{1}{2}$: pp. 69: plates.
 Published with the Bull. C.A.F. Côte d'Or, 1911.

- Lake District. The English Lake Land.** Furness Railway.
 $7\frac{1}{2} \times 9\frac{1}{2}$: 38 photographs by G. P. Abraham. Barrow-in-Furness, 1911
 ——— The Furness Railway Guide to the English Lake District. Com-
 piled by P. J. Piggott. Cheltenham, Burrow [c. 1911]
 $7 \times 4\frac{1}{2}$: pp. 104: maps, ill.
- **Tours through Lakeland.** A Remembrance. Furness Railway. 3rd
 edition. 1912
 $7\frac{1}{2} \times 6$: 22 col. plates.
- Lancille, H. D.** The Forests. Tacoma, Williams, 1912
 10×7 : pp. 28: 23 col. and uncol. plates.
 This forms a chapter of 'Guardians of the Columbia.'
- Machatschek, Dr. Fritz.** Ueber einige neuerer geographischer Forschung in
 Tian-schan. S.A. Deut. Rundschau f. Geogr. xxxiv. Jahrg. 6. Hft.
 $9\frac{1}{2} \times 6\frac{1}{2}$: pp. 8. Wien, Hartleben, ? 1911
 ——— Vorläufige Mitteilungen über die Ergebnisse einer Studienreise in den
 Westlichen Tian-schan. S.A. Mitt. k.k. geogr. Ges. Wien, Hft. 1912
 $9 \times 6\frac{1}{2}$: pp. 107-126.
- McLeish, Donald.** The life line of the mountaineer. In Fry's Mag. London,
 vol. 3, no. 2. May 1912
 $9\frac{1}{2} \times 6\frac{1}{2}$: pp. 157-164: ill.
- Moriggl, Dr. Josef.** Von Hütte zu Hütte. Führer zu den Schutzhütten der
 deutschen und österreichischen Alpen. Unter Mitwirkung der Sektionen
 d. D.u.Oe.A.-V., und d. übrigen hüttenbesitzenden Vereine. 2. Bändchen.
 Oetztaler Gruppe—Stubai Gruppe—Sarntaler Gruppe—Sesvennagruppe
 —Ortlergruppe—Adamello—Presanellagruppe.
 6×4 : pp. xii, 204: maps. Leipzig, Hirzel, 1912. M. 3
 A description of the positions of the various huts and of the expeditions
 to be made from them. A very useful supplement to Purtscheller
 and Hess' 'Hochtourist.'
- Mort, Frederiek.** The sculpture of the Goat Fell mountain group. In Scot.
 Geogr. Mag. Edinburgh, vol. 27, no. 12. December 1911
 $9\frac{1}{2} \times 6\frac{1}{2}$: pp. 632-643: ill.
- Münzer, Kurt.** Der gefühlvolle Baedeker. Auch ein Handbuch für Reisende
 durch Deutschland, Italien, die Schweiz u. Tirol. Berlin, Vita (1912)
 $7\frac{1}{2} \times 5$: pp. 335: plates.
- Norway.** Sunlit Norway. Nature's wonderland. Published by the B. & N.
 Steamship Line and the Norwegian State Railways.
 $7 \times 4\frac{1}{2}$: pp. 205: col. plates. (London, Photogram Co.) 1912
- Palmer, Howard.** Notes on the exploration and the geography of the northern
 Selkirks, B.C. In Bull. Amer. Geogr. Soc. vol. 44, no. 4. April 1912
 $9\frac{1}{2} \times 6$: pp. 241-256: map, ill.
- (**Parker, Mrs. H. J.**) The Selkirk Mountains. A Guide for Mountain Climbers
 and Pilgrims. Information by A. O. Wheeler.
 $7\frac{1}{2} \times 5$: pp. viii, 197: maps, plates. Winnipeg, Stovel Co., 1912
- Quensel, P. D.** Geologisch-petrographische Studien in der patagonischen
 Cordillera. In Bull. Geol. Institut. Univers. of Upsala, vol. xi. 1912
 $10 \times 6\frac{1}{2}$: pp. 1-113: 4 plates, map, ill.
- Nickles, Adrien.** Ballades, Promenades, Escalades.
 $6\frac{1}{2} \times 4\frac{1}{2}$: pp. 23. Besançon, Rambaud, 1912
- Ouida.** Moths. A new impression. London, Chatto and Windus, 1911
 $7\frac{1}{2} \times 5$: pp. 412.
- Post-cards.** Die Alpen. Künstlerkarten nach Original-Aquarellen v. E. T.
 Compton.
 III. Serie: Mte. di Scerscen, Mte. Disgrazia, Ortler, P. Bernina, Königs-
 spitze, Presanella.
 IV. Serie: Guglia di Brenta, Winklerturm, Marmolata, Mte. Civetta,
 Kl. Zinne, Campanile di Val Montanaia.
 München, Andelfinger, 1912. Pfg. 60 each series

- Purtscheller u. Hess.** Der Hochtourist in den Ostalpen. 3.Bd. Dolomit-Alpen, Karnische Alpen, Südöstliche Kalkalpen. 4.Aufl. Leipzig u. Wien, Bibliogr. Institut, 1911. M. 4.50
6 × 4: pp. x, 493: maps.
This forms the final volume of the last edition of this climbers' guide to the Eastern Alps.
- Reid, H. F.** Isostasy and mountain ranges. In Bull. Amer. Geogr. Soc. vol. xlv, no. 5. May 1912
9½ × 6: pp. 354-360.
Reprinted from Proc. Amer. Phil. Soc. Philadelphia, vol. 50, 1911.
- Roux-Parassac, Emile.** Les Poèmes de l'Alpe. Paris, Falque: Aurillac, Imp. moderne, 1910, Fr.3.50
7½ × 4½: pp. 265.
A volume of pleasant poems by a writer proud of belonging by birth to the Alps.

Ce sont mes Alpes que je chante,
D'être leur enfant je suis fier.

Pour moi, rien n'égale nos cimes,
Où l'aigle a seul droit de cité,
La terreur qui gronde aux abîmes,
Des blancs sommets, la majesté.
Je suis ivre d'air et d'espace,
Et d'amour et de liberté,
C'est pourquoi Dieu voulut ma place
Sur nos monts vêtus de clarté.
Je veux gravir, monter sans cesse,
Puissé-je escalader les cieux,
Ravir au soleil la caresse
Qui laisse une flamme en mes yeux!

- Rekstad, J.** Forandringer ved norske braeer i aaret 1909-10. In Bergens Museums Aarbok 1910, Nr. 2. Bergen, Grieg, 1911
9½ × 6½: pp. 7.
- Salvaneschi, Nino.** L'esposizione di Venezia, tavolozza montanina. In Touring, Riv. mens. del T.C.I., Milano, anno xviii, n. 5. Maggio, 1912
9½ × 6½: pp. 258-262: ill.
- Schmidkunz, Walter.** Kochbuch für Bergsteiger, Touristen, Skiläufer, Wandervögel. München, Deutsch. Alpenzeitung, 1912. Pfg. 70
7½ × 4½: pp. 38.
- Slevers, Wilhelm.** Die heutige und die frühere Vergletscherung Südamerikas. Samml. wissens. Vorträge aus d. Gebiete d. naturw. u.d. Medizin, Hft. 5. 10 × 7: pp. 24: 6 plates. Leipzig, Vogel, 1911
- Simon, Hermann:** hsg. von. Lieder für den Wintersport nebst Anhang Volkslieder. Pirna a. Elbe, Simon (1909)
6 × 3½: pp. 62: ill.
- Simpson, Harold.** Rambles in Norway. London, Mills & Boon (1912). 6/-
7½ × 4½: pp. xii, 244: plates, some coloured.
- Smith, Alexander.** A summer in Skye. Illustrations in colour by John Blair. 7½ × 5: pp. xviii, 374: 18 col. plates. Edinburgh, Nimmo, 1912. 5/- nett
This book was first published in 1864. It is a charmingly written account of Skye by a poet.
- Spethmann, Hans.** Forschungen am Vatnajökull auf Island und Studien über seine Bedeutung für die Vergletscherung Nord-Deutschlands. In Zeits. Ges. f. Erdk. Berlin, 1911, no. 6. 1912
10 × 7: pp. 414-433; plates.
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7 × 5: pp. xi, 212: ill.

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London, Mills & Boon (1912). 7/6 nett
8½ × 5½: pp. x, 299: plates, some col.
A long rambling account of touring through the Tyrol at various times.
- Sturm, August.** Deutsches Liederbuch . . . Dolomitenlieder . . 3. Aufl.
7 × 4½: pp. xiii, 249. Hendel, Halle a.S. (1911). M. 3
The following may be quoted as an example of the verse in this volume:—

DIE DREI ZINNEN.

Drei Zinnen lügen ins weite Land,
Für die ich heut die Lösung fand;
Drei Weiblein sind's, die dort vereint
Ein böses Zauberwort versteint.
Die in der Mitt' ist Frau Mama,
Steht angesehen und freundlich da;
Beharrlich blickt sie in die Welt,
Breit und bequem, weil's ihr gefällt.
Die dort im Westen, hart und grau,
Ist leider 'ne geschiedne Frau,
Tut herb und spröd', doch ist's umsonst,
Sie steht nicht mehr ins unser Gunst,
Sie trägt in ihrer Bitterkeit
Den Schleier der Vergessenheit.—
Doch die im Osten ist die Best',
Ein Mädcl, das uns nimmer lässt,
Graziös und wie die Tanne schlank,
So zucker süß, so blitzblank,
Sie wendet sich im Sonnenschein
Stolz von Mama, sie steht allein,
Es wächst ja ihrer Freier Schar
Von Tag zu Tage immerdar.

- Seess, E.,** Der Antlitz der Erde. Review of, by Prof. T. G. Bonney, in Quarterly Rev. London, vol. 216, No. 431. April 1912
9 × 5½: pp. 316–535.
- Switzerland.** Griebens's Guide Books, Vol. 123. A practical guide. Second edition.
Berlin, Goldschmidt: London, Williams & Norgate, 1912–1913. 3/– nett
6 × 4: pp. 184: maps.
A good little guide following the footsteps of Baedeker.
- Telman, Konrad.** Unter der Dolomiten. Roman. 18. Aufl.
7½ × 5: pp. 431. Dresden, Reisner, 1911
- Tirol und Vorarlberg.** Praktischer Reiseführer. Griebens Reiseführer, Bd. 67.
27. Aufl., neu bearbeitet von Hanns Barth.
6 × 4: pp. 243: maps. Berlin, Goldschmidt, 1911–1912. M. 3
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7½ × 4½: pp. 100, 8: ill.
- Walter, L. Edna.** The fascination of Switzerland. Written and photographed by L. Edna Walter. London, Black, 1912
6¼ × 4¼: pp. viii, 104: 24 plates.
- Windham et Martel.** Premiers voyages à Chamouni. Lettres de Windham et de Martel 1741–1742 publiées et annotées par M. Henri Ferrand.
Lyon, Geneste, 1912
9¼ × 6: pp. 48: plate. Reprinted from Rev. Alp. Févr.–Mars 1912.
Printed from the most complete copy known of the original MS.
- Young, G. W.** A new ascent, by the northern face of the Weisshorn. In Cornhill Mag., London, no. 193, N.S. July 1912
9 × 5½: pp. 88–101.
- Zsigmondy, Emil.** Die Gefahren der Alpen. Erfahrungen und Ratschläge. Völlig neu bearbeitet und ergänzt von W. Paulcke. 5. Aufl.
8 × 5½: pp. xv, 367: plates. Wien u. Leipzig, Edlinger, 1911. M. 5

Older Works.

- A., F. F.** Der Gamskahr-Kogel in der Gastein. Nebst einem Panorama, von seiner Spitz aufgenommen und beschrieben durch F. F. A.
 $7\frac{1}{2} \times 5$: pp. 43: pan. Wien, Rohrmann, 1840
- Alkin, Arthur.** Journal of a tour through North Wales and part of Shropshire; with observations in mineralogy, and other branches of natural history.
 $7\frac{1}{2} \times 4\frac{1}{2}$: pp. xvi, 239: plate. London, Johnson, 1797
- Allegri-Barbier.** Per nozze Allegri-Barbier. (Venezia, Tip. Antonelli, 1877)
 $9\frac{1}{2} \times 6\frac{1}{2}$: pp. 16: plates.
- Allom, T.** Forty-six views of Tyrolese scenery, beautifully engraved on steel, from drawings by T. Allom, Esq. (after original sketches by Johanna v. Isser), with historical and characteristic descriptions by a companion of Hofer.
 London, Black & Armstrong [? 1836]
 $10\frac{1}{2} \times 8\frac{1}{2}$: pp. 72: 46 plates.
- (B., F. A.)** A vacation tour up the Rhine, Switzerland, and Bavaria. Condensed letters from a son to his father in Manchester.
 $6 \times 4\frac{1}{2}$: pp. 52. Manchester, Palmer & Howe; London, Trübner (1863)
- Banck, Otto.** Alpenbilder. Schilderungen aus Natur und Leben in der Alpenwelt. 2. vermehrte Aufl.
 I. Band. Vom Bodensee nach Südtirol.
 II. Band. Aus den Bayerischen Alpen und Nordtirol.
 $6\frac{1}{2} \times 4\frac{1}{2}$: pp. 277: 277. Leipzig, Schlicke, 1869
- Bassi, Dr. Ercole.** Escursioni alpine in Valtellina, Engadina, Valsassina, Val-Brembana, ecc., colla descrizione delle ascese sui pizze Legnone-Umbraill, Scalino-Tresoro, sul Corno Stella, ecc. Mantova, Mondovi, 1884
 $8\frac{1}{2} \times 5\frac{1}{2}$: pp. 247.
- Bodenstedt, Friedrich.** Eine Königsreise. 3. Aufl. Leipzig, Lehmann (1858)
 $7\frac{1}{2} \times 5$: pp. 296.
- Bradbury, John.** Three weeks from home; through France and Switzerland over the Alps to Milan. . . . What I saw and what it cost me.
 Manchester, Heywood; London, Simpkin & Marshall (1867)
 $7\frac{1}{2} \times 4\frac{1}{2}$: pp. xii, 88: ill. boards.
- Brockedon, William.** Illustrations of the Passes of the Alps . . .
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 10 parts separately paged in 2 vols. bound in one: $16\frac{1}{2} \times 10\frac{1}{2}$: 108 plates
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- Buchheister, Dr. J.** Hannibal's Zug über die Alpen. Wissensch. Vorträge hsg. v. Virchow u. v. Holtzendorff, N. F. 2. Ser. Hft. 41.
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 Stourport, printed by the editor: London, Longmans, etc., 1813
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- v. Chezy, Helmina Wittwe.** Norika. Neues ausführliches Handbuch für Alpenwanderer und Reisende durch das Hochland in Oesterreich ob der Enns. Salzburg, die Gastein, die Kammergüter, Lilienfeld, Mariazell, St. Florian und die obere Steyermark. München, Fleischmann, 1833
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- Colston, Marianne.** Journal of a tour in France, Switzerland, and Italy, during the years 1819, 20 and 21. Illustrated by fifty lithographic prints, from original drawings taken in Italy, the Alps, and the Pyrenees.
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- Devonshire, Georgiana Duchess of.** The passage of the mountain of Saint Gothard. [? London, 1797]
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- Passage of St. Gothard. In 'Dithyrambe sur l'immortalité de l'âme, suivi du passage du St.-Gothard, poème traduit de l'anglais, par Jacques Delille.' Paris, Ciguet et Michaud: London, Prosper, 1802
 $5\frac{1}{2} \times 3\frac{1}{2}$: pp. 123. Poem in French and English.
- Passage du Mont saint-Gothard. Poème par Madame la Duchesse de Devonshire. Traduit de l'anglais par M. l'abbé Delille.
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- Dubols, J.** Souvenirs de la Suisse. Dessinés d'après nature par J. Dubols. 50 vues les plus remarquables. Genève, Briquet (c. 1850)
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- Rockhill, W. Woolville.** Explorations in Mongolia and Tibet. From the Smithsonian report for 1892. Washington, Gov. Print. Office, 1893
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NEW EXPEDITIONS IN 1911.

Graian Alps.

CIMA OUEST DE VALEILLE (3362 m. = 11,027 ft.).—August 11, 1911. Messrs. R. L. G. Irving, G. H. L. Mallory, and H. E. G. Tyndale traversed this peak in the course of a climb along the main ridge between the S. Col des Sengies and the Ondezana.

Left Cogné at midnight and ascended Valeille to the level snow-field of Glacier de Valeille. Crossed this to foot of snow couloir leading up to S. Col des Sengies. Very soon after sunrise stones fall in this couloir. (I had special opportunities of judging, as when we reached the col I discovered my rucksack had been left down below, so I had to descend and reascend the whole couloir.) The rocks on the right (descending) are easy for a long way and enable a safe route to be taken.

The ridge was followed over what is *now* called the Cima Ouest de Valeille to the Pta. Scatiglion. This latter point is the Pte. de Valeille of the (1893) 'Climbers' Guide' map; the later contour map of the district (1908) has altered this to Pta. Scatiglion.

The first part of the ridge is difficult, particularly a short over-

hanging pitch of red rock near the col. Three hours after leaving the col we reached a gap almost on a level with the Ciardonei glacier. From this gap the climbing is easier up to the Pta. Scatiglion and still easier from this point to the Ondezana, which was reached a little before 2 o'clock. Descending the short S.W. ridge to the Teleccio glacier we crossed the latter to the rocks below and rather E. of the Col Monei. Cogne was reached via the Monei glacier and the Valnontey. Time about 20 hours, of which 5 (?) were spent in halts.

The topography of these peaks at the head of the Valeille is puzzling owing to the change of names in the new map. The Ondezana seems to be so obviously one isolated peak and the ridge leading to it on the east so level that I cannot account for any such name as 'East peak of the Ondezana' which I have seen referred to. The Pta. Scatiglion, though the meeting-point of several ridges, is not a prominent point and it is a pity for the map-makers the Ondezana was not put in its place.

Except at the Col des Sengies the part of the ridge we traversed would be difficult to reach from the Valeille glacier without great risk, but a delightful traverse of the Ondezana and Pta. Scatiglion could be made from the Teleccio to the Ciardonei glaciers involving no serious difficulties at all, and occupying less than 3 hours. From the latter glacier I expect it would be a long walk to reach a comfortable bed.

R. L. G. IRVING.

Pennines.

LA SENGLA, N. SUMMIT (3702 m. = 12,142 ft.) FROM THE COL DE LA REUSE D'AROLLA (OR COL D'OREN).

Leaving Arolla on June 27, 1911, at 1.50 A.M., Mr. A. Stuart Jenkins, with Jean Bournissen of Hérémece and Jean Gaudin of Evolène, reached the Col de la Reuse d'Arolla or Col d'Oren (3242 m.) at 8.30 A.M.

The sharp ridge running N.E.—S.W. was followed with a fair amount of difficulty (rock not very sound) to a first, snow-capped, minor summit (about 2 hours from col). From thence the ridge was continued in a direction N.—S. to the summit of the Sengla (2 P.M.).

The last hour's climb was over difficult slabs. The party descended by the same route, using an extra rope on two occasions to gain time. The Col de la Reuse d'Arolla was reached at 6 P.M.

Much time could be saved on this schedule as the conditions of the mountain were very bad (much snow and *verglas* on rocks). A good estimate would be : from col to summit 3½ to 4 hours, and a little less for the descent.

This climb, a little too far from Arolla, will best be made by starting from Prarayé. The Italian slope, leading in about 4 hours to the

Col de la Reuse d'Arolla, rises rather steeply from the Combe d'Oren, but seems quickly ascended and does not afford the drudgery of a long tramp over snowfields. As to the sport on the rocks, it is excellent. The N. peak of the Sengla is well worth a visit. It is the highest and most imposing mountain in the Valpellina district, and, in difficulty, can be compared to the good Arolla climbs.

[This ascent at last clears up a question that has been pending since 1866. In 'A.J.' ii. 415 Mr. G. E. Foster mentions the ascent of a small peak called *La Sciossa* on the Federal Map, in about an hour from the summit of the *Col de la Reuse d'Arolla*. Conway's 'Central Pennine Alps' (1890) says that the peak referred to is *La Sengla*, on the strength, I imagine, of this peak's being the nearest to the col in question. There is a note on the subject in 'A.J.' xix. 370 by the late Mr. Arthur Cust, a great authority on this district. This, however, seems to complicate this particular point still further. In fact, complications seem the order of the day in connexion with this frontier ridge, as will be seen by a reference to a very vigorous article by Sir Martin Conway on 'Exhausted Districts' in 'A.J.' xv. (particularly pp. 261-2) as well as to the footnote by Mr. Cust in 'A.J.' xix. 370-1. The question of Mr. Foster's ascent is also referred to but not cleared up in 'Ueber Eis und Schnee,' 2nd edit. 1898, ii. 521-2.

Mr. Cust returns to the subject in a masterly paper accompanied by a sketch map in 'A.J.' xxii. pp. 216-20 called 'The Range South of the Otemma Glacier.' He concludes that the peak ascended by Mr. Foster was the Becca Labbie (3450 m. of the Valpellina map referred to below) immediately East of the Col d'Otemma. His article is a fine instance of the fascination of intricate Alpine topography.

Mr. Stuart Jenkins's present expedition now conclusively shows that *La Sengla* certainly cannot be ascended 'in about an hour' from the Col de la Reuse d'Arolla, and we are driven to the conclusion (possible, as Mr. Foster himself admits, 'A.J.' xix. 370) that the col reached in 1866 was not the Col de la Reuse d'Arolla. Mr. Foster was probably so far correct that he may have ascended *La Sciossa* or, as it is now named, *La Sciasa*. The question can be best studied by a reference to the monograph 'In Valpellina' by SS. E. Canzio, F. Mondini, and N. Vigna in 'Boll.C.A.I.' xxxii. 1899. This is one of those elaborate and splendidly illustrated papers for which the 'Bollettino' is famous, and which makes us keenly regret that its publication takes place at apparently ever-increasing intervals. The photograph of *La Sengla* on p. 131 taken from very near the Col de la Reuse d'Arolla shows Mr. Stuart Jenkins's route, which lies straight up the great rib seen in face (about $\frac{3}{4}$ inch from the right-hand lower corner) and over the snow summit to the top of the *Sengla Nord*. What Mr. Foster probably did was to reach the gap marked Col d'Otemma

on the illustration, 'Boll.' xxxii. opp. p. 104. The nomenclature of this monograph does not agree altogether with Conway's 'Central Pennine Alps' or with Ball's 'Western Alps' (Dr. Coolidge's edition), nor with the Siegfried map (the Col d'Otemma of Siegfried is the Colle Boetta of the new nomenclature). I have however followed it and the Carta della Valpellina 1.50,000, which accompanies the monograph. From this col he may have reached either the Oulie Cecca (3550 m.) or La Becca Labbie (3450 m.), neither of which presents any difficulties, although no times are available in current literature.

The Col d'Otemma (3321 m.) referred to above lies between the Oulie Cecca and the Becca Labbie, which adjoins La Sciassa and is the most obvious col seen from the Glacier d'Otemma. As Mr. Foster lays great stress on the view probably the Oulie Cecca was the point he did actually gain. The Dufour map, which was the one he is stated to have used ('A.J.' xix. 370), puts the name La Sciassa close to the Becca Labbie and the Oulie Cecca. There can be little doubt therefore that the difficulty has arisen through Mr. Foster's calling, in the absence of names on the Dufour map, the Col d'Otemma the Col de la Reuse d'Arolla.

The authors of the monograph in the 'Bollettino' above referred to are of opinion that Mr. Foster climbed the W. Becca d'Oren from the Col de la Reuse d'Arolla, but it seems to me the more likely that he should make a mistake about the name of a col to which no name is given on the map which he had than about the name of a peak which is named and shown in its approximately proper position, and which lies very close to and may have been taken to indicate either of the two summits mentioned above.

Mr. Stuart Jenkins remarks that the authors of the monograph point out that the height 3321 m. given in Conway and Bobba-Vaccarone for the Colle dell'Oulie Cecca which is the Col d'Otemma mentioned above is probably incorrect. Calculated from the contour lines of the Siegfried map the height works out about 3200 m. They also consider that the height on the Italian map of the Becca Labbie S.W. of La Sciassa 3321 m. is incorrect and should be about 3450 m.

The following note from Mr. J. H. Clapham also throws light on the point:

'Ball, p. 451, says it [La Sengla] can "be thence climbed in an hour." I have not other books by me. If they correct this, my note does not matter. If not, it may be of some use. The height from the col is just over 1500 ft. The ridge coming down to the col is narrow, jagged, and if climbable at all a long and slow route. We tried to find a way up by a rib on the face S. of this watershed ridge. The rib runs into the ridge, above the steepest parts of the latter, perhaps 500 ft. above the col. We gained

this point, after rather difficult climbing, in $1\frac{1}{2}$ hour, going slowly. Above it the rock was certainly not easy for some distance and we came down for lack of time, as we had to get to Mauvoisin that night. . . . I doubt whether the climb up could have been done from the col under three hours, except by a quick party.'

J. P. F.]

Bernese Oberland.

JUNGFRAU (4166 m.=13,670 ft.), ascent of the N.E. Arête.—On July 30, 1911, Herr Albert Weber, A.A.-C.Z., with the young guide, H. Schlunegger of Wengen, left the Bergli hut at 1 A.M., and reached at 2.40 pt. 3560 above the Jungfrauoch. The weather was good and reliable. The baggage was cut down to a minimum, crampons being left behind.

The N.E. arête falls into three main divisions. The first part is from the Joch to pt. 3788 where the Schneehorn arête joins the N.E. arête. The remainder of the arête is divided into two nearly equal portions by a huge secondary summit, the lower portion appearing steeper and the upper portion more broken. The upper end of the arête is pt. 4060 on the so-called Hochfirn. Leaving the pt. 3560 at 3.10 A.M. an easy climb brought the party to the first great obvious step or pitch in the ridge which in less favourable years, when more snow and ice lie on the rocks than in 1911, may prove an insuperable difficulty. From the highest tooth of this step 50 ft. vertically overhead hung a rope sling, no doubt put there by the Meade-Fuhrer party when descending this arête. The only way lay obviously on the N. flank. Along the upper edge of the steep wall of black ice steps were cut for a distance of 20 metres, whilst the rocks above tended to press one outwards and made the traverse a most delicate operation. At the end of the 20 metres was a comparatively fair stand whence the ridge was regained by a very steep climb up good rocks. There followed several gendarmes with corresponding gaps. The climbing was not easy, but pt. 3788 was reached between 7 and 8 without any very great difficulties.

The second part of the ridge which now followed put the powers and determination of the party to an even greater test. The difficulties are considerably greater than before. The many deep gaps caused great delays. The ever-recurring gendarmes are in the lower 6 to 10 metres very steep and holdless. More than once the party despaired of reaching the summit before nightfall, and were on the point of retreating. But their determination to gain at least the big secondary summit and 'to have a look' drove them always forward. One particularly obstinate gendarme again forced them to a desperate traverse on the icy northern flank. At about noon they had won the secondary summit. Almost within reach appeared the rocky end pt. 4060 of the Hochfirn, but the way seemed hopeless. After eight hours' most strenuous climbing

it required great determination to go on in face of the almost certainty of having eventually to retreat. The difficulties of the retreat as well as the efforts of a competing party several hundred metres below, entangled in the séracs and crevasses of the Klein Silberhorn, were a great factor in spurring the party on. A veritable race commenced. First came some very sharp ice arêtes, then a renewal of the difficult climbing. In the third part of the arête which now followed are, in its upper portion, three great gendsarmes. The attack on the first proved most difficult and only succeeded with much trouble and risk. What followed was very impressive but not correspondingly difficult, until the last Scharte was reached. The last pitch presented an abominably smooth-looking steep face. Any traverse was out of the question, and only a direct attack could possibly succeed. Nothing could stop the party now. It went better than expected and exactly at 3 P.M. they gained pt. 4060. A quarter of an hour later saw them on the highest point and at 7.30 the Bergli Hut once more sheltered two contented men. (XVI. Jahresbericht des A.A.-C. Zurich für 1911.)

Glarus Alps.

TÖDI-SANDGIPFEL (3434 m.=11,264 ft.), by the N. Arête, August 27, 1911, Herren K. Steiner and G. Miescher, both of the A.A.-C.Z.—The N. arête is divided into a lower stepped portion with two well-marked almost perpendicular pitches about 500 feet high and an upper jagged and apparently cut off bit. The lowest perpendicular step was turned on the right, but otherwise the arête was followed throughout. From the Fridolin's Hut the gap immediately at the foot of the first great pitch was reached. From here a slight descent to the W. and a nearly horizontal traverse of about 80 metres on a scree slope (danger from stones) led to the foot of a great smooth rock buttress projecting from the face of the wall of the arête. A steep couloir lying behind this buttress was gained by a short descent on the doubled rope. The couloir was followed without great difficulty until higher up the rather slabby slope led away slightly to the right in the direction of a small gap at the foot of the second great pitch in the arête. A steep chimney, smooth and overhanging at the top, leads to the gap. The chimney is at first followed and the main arête is finally gained about 10 metres below the gap by a steep climb out to the left up very steep but relatively good rocks. From the gap mount a few metres to the E. and up a steep crack, gain the foot of the great chimney which seams the great pitch for almost its whole height. Climb this chimney—very treacherous rock—with great difficulty to the almost level ridge above the great pitch (Stoneman). The next bit of arête ends in two angular towers which mask the Sandgipfel completely. Rather to the right of the arête is a well-marked, deep cut, stepped

chimney which ends below in a slabby couloir. The foot of this chimney is gained without difficulty by a traverse on the W. flank of the arête. The lower smooth part of the chimney is overcome either direct (very hard—Kletterschuhe) or one climbs out to the left up a steep wall about 15 metres to a narrow ledge and along this a few metres to the right to a firm stone jutting out of the wall over which, well secured by the rope, one can get into the chimney. Forty metres up this, one reaches a small gap. Follow the continuation of the chimney which joins on here, always on or slightly to the W. of the edge of the arête, and so reach, with often very hard rock and ice work, the great ledge which, often interrupted, runs right across the N.W. face of the mountain.

Cross this ledge to the foot of the last, partly overhanging, great step in the arête, some 100 metres high. Reach a small gap in the arête by a rotten crack, descend about 3 metres on the other (N.E.) side, and traverse about 15 metres horizontally to the left towards a little Kanzel. From here one looks into a deep ice couloir or chimney (Eiskamin) which descends steeply on the E. of the arête and breaks off on the continuation of the above-mentioned great ledge in a smooth slab. A little crack from right to left leads into the ice-chimney which a few metres above the little Kanzel or shoulder ends vertically above an inclined slab. This slab is not directly accessible but can be reached from the right by roping down from behind a block detached from the wall. Get into the chimney by the partly over-hanging rotten crack and finally reach in exceedingly steep and tiring ice-steps the summit plateau (15 hrs. from the hut; 13 hrs. from the foot.) (XVI. Jahresbericht des A.A.-C.Z. 1911.)

BIFERTENSTOCK (3426 m.=11,237 ft.), by the E. arête, August 7, 1911, Herren W. A. Keller and A. Kübler.—Leaving the Puntaiglas Hut at 4 A.M. the summit was reached by way of the Upper Frisallücke and the S. arête at 7 A.M. Quitting the lower summit 3371 m. at 8 the E. ridge was followed to the very jagged bit between pts. 3371 and 3248. All the gendarmes were climbed—rock not always good—pt. 3248 was reached at 10. Then followed a number of fairly difficult gendarmes which were either climbed or traversed on the N. side immediately below the crest of the arête. The last pitch before the gap W. of pt. 3098 was turned partly by a long traverse on the N. face but lower down the arête itself was followed. The last great gendarme pt. 3098 was climbed direct by a crack and slabs of the N. face and up a short sharp arête. The party reached their tent S. of the Kistenstöckli at 1 P.M. (XVI. Jahresbericht des A.A.-C.Z. 1911.)

This is the first time the E. arête has been followed without making use of the so-called 'Bänder' which are well shown in the picture S.A.C. Jahrbuch XXXV. pp. 326-7. Mr. Mumm's interesting paper, 'The Bifertenstock and its neighbours,' in A.J. xxiii. 450 *seq.* also describes these Bänder.

BIFERTENSTOCK (3426 m.=11,237 ft.), by the N.W. and N. faces, July 7, 1911, Herren J. Munck and W. A. Keller.—Leaving the Fridolinshütte at 4 A.M., pt. 3063 was reached by Fynn's route (Jahresbericht A.A.-C.Z. 1906) at 9.30. They then proceeded to cut up the very difficult ice fall of the N. face. They gained the edge of the ice tongue and cutting across from left to right reached the E. edge of the ice-tongue which forms a sharp edge up which progress was rather better. The summit was reached at 4.20 P.M. after nearly six hours' continuous cutting—about 2200 steps. Very fine route but dangerous from stones. (XVI. Jahresbericht des A.A.-C.Z. für 1911.)

Arctic Norway.

IN 'A.J.' xxvi. pp. 84 *seq.*, attention was drawn to the expeditions carried out by Dr. Georg Künne and Herr Richard Pöttsch in the Tysfjord district.

Dr. Künne has now published in the 'Ö.A.Z.' 1912, pp. 197–202 and pp. 213 *seq.* full particulars of his travels, with a sketch map. Dr. Kurd Endell and Dr. Wilhelm Martin have also now published in the 'Ö.A.Z.' 1912, pp. 74–78, 93–98, 109–118, full descriptions of their explorations in the Lyngenfjord district. Attention was drawn to these in 'A.J.' xxvi. p. 85. Their paper is very well illustrated and contains also a useful sketch map.

The bibliography with which their paper concludes is, for facility of reference, printed below.

1874. Beskrivelse af Tromsø Amt. Udgivet af den geografiske Opmåling. Kristiania, 1874. S. 1–156.

1889. O. Vorweg. Aus Lyngen. Norske Turistforenings Aarbok 1889. S. 41–53. Mit Kartenskizze.

1891. O. Vorweg. Eine Erstlingsbesteigung in der Kjostindergruppe. Zeitschr. d. D.u.Ö.A.-V. 1891. S. 375–381.

1896. I. Caspari. Turistruter paa Lyngenhavoen og tilgraensende fjeldpartier i Tromsø Amt. Norske Turistforenings Aarbok. 1896. S. 39–60.

1899. I. Caspari. Nogle nye fjeldbestigninger og Fjeldovergange paa Lyngenhavoen. Norske Turistforenings Aarbok. 1899. S. 44–61.

1899. W. C. Slingsby. Mountaineering in Arctic Norway. Alpine Journal, xix. 1899. S. 414–437.

1899. G. Hastings. The Lyngen district. Alpine Journal, xix. 1899. S. 356–363 und S. 611–615.

1899. Mrs. Main (Aubrey le Blond). Lyngenfjord district. Alpine Journal, xix. 1899. S. 257–261 und Sörfjord district. S. 615–620.

1900. E. L. Strutt, C. V. Rawlence und L. C. Rawlence. Alpine Journal, xx. 1900. S. 47–48.

1907. K. S. Klingenberg. Fra Tromsø. Norske Turistforenings Aarbok. S. 99–104.

1908. Mrs. Main (Aubrey le Blond). *Mountaineering in the land of the Midnight Sun*. T. Fisher Unwin. 1908. (Well illustrated.) S. 1-308.

1908. O. D. Tauern. *Fjeldture i Tromsø Amt*. Norske Turistforenings Aarbok. 1908. S. 31-38.

1908. M. und J. Folsvik. (Turenbericht.) Norske Turistforenings Aarbok 1909. S. 209/210.

1910. Chr. B. Heimbeck. *Omkring 69°5'*. Norske Turistforenings Aarbok 1910. S. 131-137.

1911. K. Endell. (Turenbericht.) *Ö.A.-Z.*, Nr. 847. S. 362-364.

1911. W. Martin. (Turenbericht.) *Jahresbericht des Akad. Alpenvereins*, Berlin, 1911.

The only existing map is stated to be the *Kart over Tromsø Amt*, scale 1 : 200,000 which however shows none of the Glaciers.

VARIOUS EXPEDITIONS IN 1911.

Mont Blanc Group.

MONT BLANC (4810 m. = 15,782 ft.) BY THE BRENVA.—Reverting to my *résumé* in 'A. J.' xxvi. pp. 171-176, Mr. John W. S. Brady of Baltimore, U.S.A., has been good enough to send me the following particulars of his ascent of August 2, 1911, which is accordingly the thirteenth by this route.

LISBON, 2nd July 1912.

Dear CAPTAIN FARRAR,—I have just had forwarded to me a letter from Mr. Allston Burr who asked me to let you know about my Brenva expedition last year. . . . My guide was Christian Kaufmann, Canadian guide, of Grindelwald. . . . A young porter, Alexis Croux, who was ignorant of the route, accompanied us. We left Courmayeur at 10 o'clock and arrived at the gîte about four in the afternoon. We left the sleeping place at one o'clock the next morning, Wednesday, August 2, and crossed the glacier above without difficulty. Before the 'knife-edge' we met with some rather hard blue ice, but the 'knife-edge' itself was covered with deep soft snow. Above this we (that is, the guide who did the work alone) were aided by the traces of Mr. Burr's steps made the Friday before, which saved us time in finding the right direction. The slope was mixed snow and ice and as soon as convenient we took to the rocks (as much as was possible). The ice cliff was in good condition. We arrived at the summit hut about 3 o'clock P.M., and went down to les Bossons station in time to get the train for Chamonix about 8 o'clock P.M. The weather was a little doubtful soon after sunrise, and about 9 o'clock A.M. we spent an hour in a

crevasse some way above the 'knife-edge' because of a thunder-storm. After this the weather became quite good.

I am sorry not to have sent you this before but I just received Mr. Burr's letter to-day on my arrival here from South America.

Sincerely yours,

JOHN W. S. BRADY.

Pennines.

DUFOURSPITZE (4638 m. = 15,217 ft.), DESCENT OF THE E. FACE.— On September 1, 1911, Dr. Otto Stein of Düsseldorf, with the guides Heinrich and Alfred Burgener, reached the summit by the ordinary route at 9 A.M., traversed the ridge to the Grenzgipfel, and commenced at 10 A.M. the descent of the fairly difficult rocks of the E. ridge. At 4 P.M. they reached the lowest point of these rocks, and as stones, falling to the right and left in the couloirs, raked the bergschrund, they waited here till 6 P.M.

They descended the steep ice slope leading to the bergschrund with the utmost speed, using crampons, and with the aid of a spare rope attached to two heavy spikes driven into a crack in the rocks and which was finally left behind.

They crossed the bergschrund and descended the steep glacier, zigzagging a good deal to avoid the séracs.

Forced more and more in a N. direction towards the Couloir Marinelli, they reached its S. bank at 9.30 P.M., a good distance below the rocks of the Grenzgipfel, but still a good way up the ice slope.

At first they descended the couloir in good snow, but soon striking black ice and failing to find a better way amongst the séracs they decided to cut across the couloir to the rocks of the Nordend.

This took, by the light of a lantern, some five hours, and was a brilliant feat on the part of Heinrich Burgener, after the exhausting work of the day.

Just before reaching the rocks a deep ice gully had to be negotiated. This was done by sacrificing an ice-axe and letting themselves down by the rope.

They waited on the rocks till sunrise, and finally reached the Cabane Marinelli, 38 hours after leaving the Bétémps hut.

The party was hit by two or three stones in the Couloir Marinelli and again in crossing a couloir of the Nordend, but fortunately without any serious results.

Heinrich Burgener had been studying the conditions for some years past, and in view of the unusually fine weather the expedition was decided on.

(Communication through J. W. STEIN, Esq., A.C.)

[The descent of this face from below the upper bergschrund was made on July 21, 1885, by Herr Johann Strauss with the famous

guide Christian Rangetiner of Kals. They were making the ascent of the Dufourspitze from this side, when, just below the bergschrund, a short distance from the rocks of the Grenzzipfel, a stone, the size of a man's head, coming from a great height, knocked Rangetiner out of his steps, breaking an arm and two ribs. Fortunately Herr Strauss, although at first dragged down, was able to bring the party to anchor without further damage. Rangetiner was however unable, in his wounded state, to stand the exertion of ascending, and the two were compelled to make their way down to the Jägerrücken in continual danger from falling stones. Rangetiner was killed with his whole party in the following year by the giving way of a cornice on the Glocknerwand.

A fitting parallel to Dr. Stein's voluntary descent of this face is Dr. Paul Güssfeldt's descent of the even more dangerous Couloir du Lion under the leadership of the late Alexander Burgener, father of Heinrich the leader and uncle of Alfred Burgener the other guide of Dr. Stein's adventure. J. P. F.]

ALPINE ACCIDENTS IN 1912.

On March 2 **Herr Heinrich Wildung**, in making the descent of the N. face of the **Säuling** (2047 m.) near Füssen, Bavarian Alps, with five friends, slipped on some steep snow and fell some 400 metres, being killed by contact with outcropping rocks.

On March 3 **Herr Gustav Streinz**, aged 22, with some friends, attempted the ascent of the Gross Venediger from the Kürsinger-Hütte. They were compelled by bad weather to turn round before reaching the summit and had just unroped after passing the crevassed part of the **Obersulzbachkees** when Streinz who was leading suddenly disappeared into a crevasse—about 3 feet wide and only lightly snowed over. The whole party was on skis. The body was not recovered till the 7th from a depth of over 60 feet, and it was obvious from the injuries that death must have been instantaneous.

On March 25 on the **Schneeberg** near Vienna occurred another ski accident involving the loss of **ten lives** including **Herr Aemilius Hacker**, a well-known Austrian mountaineer. The weather on the 24th was bad, but the morning of the 25th broke fine. Accordingly a party of nine men and one lady under Hacker's guidance started from the Hotel to ascend the Hochschneeberg. Soon mist and a fresh snowstorm came on. After several hours' hard work the party reached the Fischerhütte, but in attempting to descend the whole party broke down a cornice and were carried down the slope, which is described as only 100 yards long and ending in a level basin, and were suffocated in the masses of snow. The lady alone was lightly covered up and was got out alive. A very sympathetic notice of Herr Hacker from the pen of Mr. Rickmers appears in the

'Mittheilungen' 1912, p. 112 *seq.* The 'Ö.A.Z.' 1912, p. 153 *seq.* also contains some interesting details of Herr Hacker's career by his friend Dr. Günter Freiherr v. Saar.

On April 28, **Dr. Semmelmann** of Munich was killed when ascending with two companions the S. face of the **Sonneck**. The unfortunate climber, who was leading his party, had already surmounted the principal difficulties and was within a few yards of the arête, the rope having been taken off. He was holding on to a big rock which gave way. He is described as a good and practised climber, having done many difficult rock climbs.

On May 5, **Herr Hans Jäger** of Offenbach, a young and capable rock climber, was killed on the **Rotenfels** near Münster-a.-St. The party was engaged in the descent, but at the actual moment Jäger was out of sight of his companions, so that the cause of the accident is not clear.

On May 16, three young climbers, **Georg, Freiherr v. Tucher, Hans, Freiherr v. Tucher, and Herr Ahrentraut**, of Munich were killed on the **Waxenstein**. They fell from near the **Mittagscharte** on the Greinauer side. Probably the wintry conditions had to do with the fall.

ALPINE NOTES.

'THE ALPINE GUIDE.'—Copies of Vol. I. of the new edition of this work, price 12s. net, and of 'Hints and Notes, Practical and Scientific, for Travellers in the Alps' (being a new edition of the General Introduction), price 3s., can be obtained from all booksellers, or from Messrs. Stanford, 12 Long Acre, W.C.

'THE ALPINE GUIDE,' THE CENTRAL ALPS. PART I.—A new edition of this portion of the 'Alpine Guide,' by the late John Ball, F.R.S., President of the Alpine Club, reconstructed and revised on behalf of the Alpine Club under the general editorship of A. V. Valentine-Richards, Fellow of Christ's College, Cambridge, is now ready, and can be obtained from all booksellers, or from Messrs. Stanford, 12 Long Acre, W.C. It includes those portions of Switzerland to the north of the Rhone and Rhine valleys.

'THE ALPINE GUIDE,' THE CENTRAL ALPS. PART II.—A new edition of this portion of 'The Alpine Guide,' by the late John Ball, F.R.S., President of the Alpine Club, reconstructed and revised on behalf of the Alpine Club under the general editorship of the Rev. George Broke, is now ready, and can be obtained from all booksellers, or from Messrs. Stanford, 12 Long Acre, W.C. It includes 'those Alpine portions of Switzerland, Italy, and Austria, which lie S. and E. of the Rhone and Rhine, S. of the Arlberg, and W. of the Adige.'

DEATH OF PFARRER GOTTFRIED STRASSER.—The death of the well-known 'Gletscherpfarrer' took place at Grindelwald on April 9. Born in Lauenen in 1854 Pfarrer Strasser became pastor of Grindelwald in 1879. He took a deep interest in all mountaineering matters and was always to the front when any trouble befell his small community. His place will be hard to fill.

DEATH OF HERR JOHANN SANTNER.—The death of this well-known climber and botanist is announced as having taken place at Bozen on April 21, in his seventy-second year. He is well known for many adventurous ascents—carried out often alone—in the vicinity of his home at Bozen. Among the first ascents made by him are those of the Grosse Furchetta, Santnerspitze, Grosser Valbonkogel, and variations on the Langkofel and Grohmannspitze. He was also the sole companion of Robert Hans Schmitt, whose name is indelibly imprinted in Alpine history, on the first ascent of the then considered inaccessible Fünffingerspitze by the famous Schmittkamin.

LE PÈRE GASPARD.—*La Montagne* for April 1912 contains a very appreciative notice by M. Emile Morel-Couprie of this famous guide, the conqueror of the Meije. Born at St. Christophe on March 29, 1834, the veteran guide, if one may judge from the picture of him which accompanies the notice, still retains much of his old vigour. Five of his sons—Maximin, Casimir, Joseph, Devouassoud, Alexandre—and his two sons-in-law—J. B. Rodier and Pierre Richard—are well-known guides. The eldest son Pierre who accompanied his father on the first ascent of the Meije was lamed by an accident cutting wood early in his career. Père Gaspard has had two wives, fifteen children and twenty-five grandchildren. He has accounted for upwards of 500 chamois, has had thirty-nine seasons as guide, and counts twenty-three first ascents to his credit among which are :

1. The Meije.
2. Pic Gaspard.
3. South face of the Ecrins.
4. Pic d'Olan from the north.
5. Central summit of the Ailefroide.
6. Pelvoux by the N. face.

THE KASBEK GROUP IN THE CAUCASUS.—Herr Oscar Schuster gives in the 'Ö.A.Z.' 1912, 145–148 some very useful information about travelling in this group. He deals with the question of literature, maps, inns, huts, &c. The information is supplementary to the Topographical notes given in Appendix B of Mr. Freshfield's 'The Exploration of the Caucasus.' Herr Schuster mentions that there is now a motor service on the 'Georgian Highroad' which does the journey between Wladikawkas and Tiflis in 10 hours.

The Kasbek district is the most easily reached and Herr Schuster's very useful information as to the present conditions is very welcome. The 1912 edition of Bädiker's 'Russland' contains useful maps of, and information about, the Caucasus.

MOUNT BLACKBURN (ALASKA), 16,140 ft.—The semi-weekly *Colonist*, of Victoria, B.C., of May 28, 1912, announces the ascent of this peak by Miss Dora Keen of Philadelphia on May 19. This is stated to be the first ascent of the great Copper River peak.

Miss Keen with her instruments and tents sailed from Seattle on April 10, and upon her arrival at Kennicott her chief of staff, John E. Barrett, superintendent of the Blackburn mine, was ready with his five men and two teams of dogs. The party encountered many storms that compelled them to remain under shelter for days at a time. On May 7 three of the party returned to Kennicott for fuel, alcohol and provisions, the supplies having become exhausted.

Miss Keen attempted to climb Mount Blackburn last August, but was obliged to turn back after she had discovered what she thought to be a feasible route. This route was followed successfully by the present expedition.

NEW RAILWAYS.—The line from Zweisimmen to Lenk was opened on June 8. The line from Ilanz to Disentis is announced to be opened on August 1.

BOOTNAILS.—The Allers pattern UHU Stollen are now made by Max Seib, Karlsruhe. I have used them for several years and find them admirable. They need attention to see the screws remain tight and they do not seem to answer for heavy men.

J. P. F.

SWISS ALPINE CLUB HUT BRITANNIA.—This hut, built on the Kleine Allalinhorn Saas Fee, will be presented to the Swiss Alpine Club on behalf of the British subscribers at the inauguration, which will take place on Saturday, August 17, 1912.

REVIEWS AND NOTICES.

The Canadian Rockies: New and Old Trails. By A. P. Coleman, Ph.D., F.R.G.S., Professor of Geology in the University of Toronto. London: T. Fisher Unwin. 1911.

Everyone who cares for Alpine literature (using that adjective in its most comprehensive sense) will give a hearty welcome to this genial and attractive volume, in which Mr. Coleman, one of the original Vice-Presidents, and the second President, of the Alpine Club of

Canada, tells the story of eight exploratory mountaineering trips, extending over a period of a quarter of a century, in the Rockies and the Selkirks. Its appearance is doubly satisfactory because, so far as we are aware, no previous account of the four earliest journeys has ever appeared before, and Mr. Coleman, though well known as the discoverer of Fortress Lake and the exposer of Mts. Brown and Hooker, has still hardly received the full meed of credit due to him as a pioneer. The present narrative of them is simply fascinating, and, belated though it is, breathes throughout the first fresh delight felt by the discoverer of a new playground.

In May 1884 Mr. Coleman started in the semi-weekly train from Winnipeg to pay his first visit to the Rockies, and he enchains the reader's attention from the opening page with a lively description of the journey (which occupied three days and two nights) across the prairie to Calgary, then a town of log cabins and about one thousand inhabitants. It was an interesting moment. Two or three months later some members of the British Association travelled by train to Hector on the Continental Divide, and two of them, Mr. R. M. Barrington, one of our own members, and Dr. Swanzy, continued the journey westward and made the first passage across the Rockies and Selkirks to the Pacific. A year earlier the first Canadian Alpine Club had been instituted by Sir Sanford Fleming and a few others on the summit of Rogers Pass, but these were all there primarily on business, as surveyors and railway-men; probably Mr. Coleman was the first traveller whom love of the mountains pure and simple (learned by him in the Alps and Norway) brought to the Rocky Mountains of Canada from the East.

After a short stay at his brother's ranche near Morley, he went on to 'Railhead,' which was then at Laggan, a few miles short of Hector, and thence climbed the nearest mountain with a Scotch engineer. 'It was only a commonplace mountain,' he says, 'about eight thousand feet high, without a name so far as I am aware,' but it was a beginning. Next day he visited Lake Louise, which had been discovered only two years before, and then descended into British Columbia with a pack-train. Mr. Coleman describes himself as a 'tenderfoot' in relation to this, one of the two principal methods of Canadian travel. In the other method, which prevails in the Eastern provinces, *viz.* canoeing, he was an expert, and in the arts of camp life and the whole business of taking care of oneself in the wilderness, he possessed ample resources, with an abundant reserve over for emergencies, which were varied and numerous.

He rafted over the Columbia and spent some time in the Selkirks, exploring the N. branch of the Spillimacheen River. On the way back he made the ascent of Castle Mountain near Silverton, and returned to civilisation full of enthusiasm for the mountains though by no means enamoured of 'packing' as a mode of travel. In the following year the railway took him to Donald, whence he drove over Rogers Pass to Revelstoke, with the double object of going up

to the Big Bend of the Columbia and seeing something of the placering then going on in that region, and of exploring the N. portion of the Selkirk range. His idea was to make the river his base of operations, and thence to go on foot up the side valleys, carrying what was needful for a few days on his back. He did explore one of the creeks to its head, and had fleeting glimpses of 'wild ice-covered peaks apparently quite equal to the fine mountains climbed and mapped by Green and Wheeler near Glacier.' But the expedition was not altogether a success, and the N. Selkirks remained 'a tantalising mystery,' as indeed one may almost say they have remained to this day. It must be remembered that on both these trips he had no fellow-traveller with him, and on the second his only companions were men whom he picked up by chance at Revelstoke or up the river. This fact no doubt supplies at least in part the answer to a question which forces itself upon the ordinary Alpine reader, namely, why he took no steps to make a nearer acquaintance with the mountains which were within easy reach of him, the fine groups which he saw from Lakes Louise and Glacier. Here, one thinks now, were opportunities close at hand that might well have satisfied the most ardent and strenuous of explorers. Mr. Coleman might perhaps have come round to this way of thinking, but about this time he fell under the spell of those reputed giants, Mt. Brown and Mt. Hooker, which lured him irresistibly for three seasons. His first attempt to reach them, in 1888, was made from the W. 'One had, it appeared, *only* to canoe seventy miles down the Columbia from Beavermouth on the railway, and then follow the old portage trail up Wood River to the pass at the foot of Mount Hooker.' He found a comrade, inexperienced, but as staunch and courageous as himself, and in an astoundingly light-hearted fashion the two set off, making light of the warnings of a sagacious Beavermouth old-timer. All went well till they were pulled up short by Surprise Rapids. After some vain attempts to get round them, and an ascent of 'Surprise Mt.' (c. 8400 ft.), they actually shot these rapids on a raft of their own manufacture, but gained nothing by this reckless adventure except the satisfaction of having accomplished it and lived to tell the story (and a thrilling story it is). However, quite undaunted, they made another start along the E. bank, and only abandoned the quest through a shortage of provisions.

This experience persuaded Mr. Coleman to abandon his predilection for water-transport and reluctantly to accept the fact that 'the cayuse must be the canoe of the mountains.' His second expedition (1892) was organized accordingly, and comprised his brother, the Morley rancher, and two other Canadians, with two Indians and an outfit of packhorses. Wishing to reach Mts. Hooker and Brown as quickly as possible, they travelled as far as the Kootenay plains by an old Indian trail, well to the E. of the lines taken later by Mr. Wilcox and his successors, and thus never came into touch with the peaks and glaciers of the main chain till they reached the

Athabasca. But before this a cruel misfortune befell the expedition. One of its members fell ill and had to be taken back to Laggan, and an invaluable fortnight was lost. Ultimately the four remaining white men, leaving the horses and the Indians, started, heavily laden, up the first likely-looking tributary coming into the Athabasca from the West, in the hope that it might be the Whirlpool river and lead them to their goal. It was not the Whirlpool, but they had the satisfaction of discovering the beautiful Fortress Lake and ascending Misty Mountain, a snowy peak of over 10,000 feet, and then were obliged to return.

Next year nearly the same party set out again, leaving the Indians behind and taking with them an expert packer, also a collapsible boat which proved extremely useful. This time they managed to overshoot the mark, passed the Whirlpool river without seeing it, and went some little distance up the Miette valley, on the Yellowhead pass route, before they found out their mistake. Finally, however, the real Whirlpool was reached. On the way up Mr. Coleman met with a serious accident, and was bitterly disappointed at the thought that after all their trouble he would not be able to climb Mt. Brown. Then came the great disillusion: the Committee's Punch Bowl on the Athabasca pass was reached, and Mts. Brown and Hooker stood revealed as imposters and frauds.

Mr. Coleman sent a short account of this expedition to the 'Geographical Journal,' but it is hardly to be wondered at that Mr. Wilcox and others should have felt some doubt as to whether he had not again gone up the wrong valley, and even now the fact that these mountains figured in all the maps for so many years with those preposterous heights assigned to them remains about the oddest of the many odd things in mountain geography.

So, rather unsatisfactorily, Mr. Coleman's pioneering in the main chain of the Rockies S. of the Yellowhead came to an end. If the actual mountaineering results were slender, this is largely due to the Brown and Hooker imposture, partly also to some pieces of pure bad fortune (Mr. Coleman was dogged by quite extraordinary ill-luck), and partly to the delays and reverses which are practically inevitable where both the country and the conditions of travel are so strange and unknown. It must be borne in mind that Mr. Coleman's operations were over before those of his successors, Wilcox, Collie, Outram and others, had even begun. The work is by no means completed; considerable gaps remain to be filled up between the peaks round the Columbia Icefield and the Athabasca Pass, and the whole region between the Athabasca and Yellowhead Passes is still quite untouched. We know nothing at all as yet of its most conspicuous peak, Mt. Geikie, but the present writer, who had a pretty good view of it from the slopes of the Yellowhead Mountain some twenty or thirty miles away, believes its N. face to be one of the finest things in the Rockies, and is prospectively envious of the party, whoever they may be, that first has an opportunity of inspecting it more

closely. The presence of the railway and of a tourist centre at FitzHugh will of course, as Mr. Coleman points out, immensely facilitate further exploration, and the cross-country journey from FitzHugh to Laggan is bound to become in the near future almost as popular a trip as the 'High Level Route' from Zermatt to Chamonix.

After a chapter on a short holiday spent in the Brazeau range in 1902, Mr. Coleman goes on to tell the story of the two first visits to Mt. Robson, made in 1907 and 1908, which have already been more briefly described in the 'Canadian Alpine Journal' by Dr. Kinney. Little was accomplished on the earlier occasion except to dissipate the suspicion, not unnaturally entertained by Mr. Coleman, that Mt. Robson, too, might be an impostor; but the 1908 expedition, though not crowned with success, had important results. It opened the new route to Mt. Robson by the Moose River and Pass, which enables horses to be taken to the N. foot of the mountain, and led directly to the brilliant triumph achieved on it by Mr. Kinney a year later. The weather encountered was abominable; indeed there is only too much reason to think that Mr. Coleman is correct in saying that Mt. Robson's peculiar position gives it, 'a remarkable climate of its own,' and a remarkably bad one. In his chapter on 'Later Ascents,' Mr. Coleman, when referring to the attempt of the English party in 1909, is unfortunately misled by the confusion into which they fell between the 'Dome' and the 'Helmet'; they did not in fact go near the 'Helmet,' but like Mr. Coleman crossed the Dome, and made their partial ascent of the E. face to the S., not the N., of the point where his party turned back. To bring this chapter up to date it may be mentioned that the guide, Konrad Kain, who accompanied Mr. Wheeler's survey party in 1911, ascended Mt. Resplendent as well as a peak on the W. side of the Grand Forks. He has thus probably inspected Mt. Robson from every side, and gave his opinion that the route from the E. taken by Mr. Coleman in 1908 and by the English 1909 party is the best one. On the other hand Dr. Collie's party in 1910 considered this route dangerous, and, had weather permitted, would have tried the mountain on the side climbed by Mr. Kinney. The book closes with a short geological history of the Rockies and a charmingly written sketch of the great ranges of North America (with which Mr. Coleman, who has climbed Orizaba, has a very extensive personal acquaintance), and of their mountaineering possibilities. There is a useful map, and the illustrations are numerous and well chosen.

PROCEEDINGS OF THE ALPINE CLUB.

A GENERAL MEETING of the Club was held in the Hall on Tuesday evening, April 2, at 8.30 P.M., Sir Edward Davidson, *President*, in the chair.

The PRESIDENT said : I will first of all call upon the Honorary Secretary and Treasurer to present to the Club the Accounts and Balance Sheet for 1911.

The Hon. Secretary presented the Accounts and Balance Sheet for 1911 and moved that they be adopted. The President seconded the motion, which was carried unanimously.

The PRESIDENT said : There is a matter to which I should like to draw the attention of the Club which does not arise altogether out of the Accounts, although it has some reference to the item of expenses in regard to 'Ball's Guide.' We have a very large stock of 'Ball's Guide,' which is worth about £640, and we are very much in the hands of members of the Club in the matter of recouping the money spent on this work. There are a great many members who have no copies of the book, and I believe that if they choose to buy copies they will find that they have a very good investment for themselves, and at the same time they will be doing something financially for the Club. I hope that those who feel inclined to do so will help us by buying copies, as they will undoubtedly get extremely good value for their money. I am only sorry that it has not been possible to re-publish the third volume (*Eastern Alps*), but we have felt that we were not justified in re-publishing this volume on account of the great expense which has been already incurred in re-publishing the first two volumes.

DR. R. P. COCKBURN then read a Paper on 'Indoor Training for Climbers,' and the various exercises were illustrated by him with the aid of apparatus devised by himself. At the outset he apologised for the non-appearance of the professional expert whom he had engaged to illustrate his exercises.

The PRESIDENT said : I have no doubt there are some members of the Club present who would like to make a few observations on these mountain exercises. Perhaps Mr. Kellas will tell us what he thinks about them, from the point of view—which he has made specially his own—viz. the attainment of high altitudes.

MR. KELLAS said : I think these exercises which have been illustrated to us to-night are excellent for the average mountaineer, but in connexion with climbing in the Himalayas, I think breathing exercises would be very useful. Above 20,000 feet one is under considerably less than half an atmosphere pressure, with the result that it is extremely difficult to oxygenate the blood properly. The normal respiration rate at sea-level (15 to 20 times per minute) is too slow to give a sufficiency of oxygen, and probably a rate of about

30 would be found much better. Respiration is, however, an involuntary process, the rate depending on many factors, and it takes some time to habituate oneself to breathing more rapidly than usual. By proper exercises, however, it might be possible to increase one's respiration rate considerably above the normal, and by breathing more quickly one climbs much more easily at high altitudes.

Mr. MUMM said : Rather than let the discussion drop from inanition, I will say a very few words, and I speak as one who has never taken much interest in physical exercises. I came here this evening filled with admiration for Dr. Cockburn's courage in undertaking to read a Paper of an entirely new character and not illustrated with lantern slides ; and I noticed that once or twice during the reading of his Paper he displayed some anxiety as to whether he was failing to interest us. Having said that, I should like to assure him that, as regards at least one member of the audience, his anxiety was entirely unfounded. I listened with immense interest to his account of the mechanism and physiology of movement. Far from being too elementary, I think it was so successful precisely because Dr. Cockburn assumed complete ignorance on the part of his audience. Coming to the later part, I was very much impressed by the ingenuity of his methods and illustrations. A few minutes before the Paper began, I was remarking that the kind of climbing which has always interested me most was that in which one relies entirely on balance, and I was greatly struck by his devices for obtaining practice in that department. I only wish I had been introduced to something of the kind when I was younger than I am now, when I might have taken advantage of them. I most sincerely congratulate Dr. Cockburn on his interesting, novel, and ingenious Paper.

Mr. CORRY said : I think that members of the Club are interested in exercise in order that they may keep generally fit and able to continue climbing to a ripe old age. I am of opinion that the limits of age for vigorous exercise may be placed higher than is usually supposed. I may mention the case of a middle-aged friend whom I found practising the long arm balance on the parallel bars. I discovered on inquiry that my friend had learnt to perform this feat at the age of sixty. I admit that the straight arm balance is as yet beyond my gymnastic powers, but I am encouraged to think that I may yet perform it.

The PRESIDENT said : If nobody else will offer some observations, as I had rather hoped they would do, I must now exercise my privilege on these occasions, and it is a very pleasant one, of proposing a very hearty vote of thanks to Dr. Cockburn for his most amusing and entertaining lecture to us this evening. I will confess at once, so far as I am concerned, that I have in my later years endeavoured to get myself more fit for the Alps with Swedish exercises, and after rolling about on the floor of my bedroom for a few mornings, I came to the conclusion that the remedy was worse than the disease. I was glad to hear from Mr. Corry that one can hope to do a straight

arm balance at sixty and still be a capable mountaineer after having reached that age. One thought which struck me while listening to the lecture was, what would a really good Swiss guide think of these exercises? It is rather remarkable that the best professional climbers are not as a rule at all good gymnasts, and in, for instance, swarming up a rope they are not 'in it,' compared with many amateurs of gymnastic proclivities. Their forte seems to be extraordinarily good footwork in traversing smooth rocks at a pretty high angle. In this respect and, indeed, in footwork generally, the very best professional guides are, in my experience, much superior to the best amateurs whom I have been privileged to see at work. I cannot help thinking that these exercises would be useful indeed for producing that strength of arm which should be part of every first-rate mountaineer's equipment, and also in obtaining that balance on snow and ice which is the instinctive possession of the best Swiss guides. We have heard with the greatest interest Dr. Cockburn's Paper, and I quite understand now, having seen him perform some of the exercises, why his lifeguardsman declined at the last moment to face the music.

Dr. COCKBURN returned thanks, and had some little discussion with Mr. Kellas in regard to breathing exercises mentioned by him and the usefulness of the exercises illustrated to people engaged in climbing at high altitudes.

A GENERAL MEETING of the Club was held in the Hall on Tuesday evening, May 7, 1912, at 8.30, Sir Edward Davidson, *President*, in the Chair.

THE PRESIDENT said: I have to announce to the Club that the Committee have elected Col. Godwin Austen, F.R.S., an Honorary Member of the Club. As the Club is aware, the election of Honorary Members rests, under the Rules, entirely in the hands of the Committee, but I am confident that they will approve the Committee's choice. Col. Godwin Austen has accepted the Honorary Membership offered to him and I feel sure that the Club will rejoice that we have enrolled his distinguished name amongst those of our Honorary Members.

I think that you would wish that the death of Pfarrer Strasser of Grindelwald should, although he was not actually a member of our Club, not be allowed to pass without an expression of deep regret and respectful appreciation from this Chair. He died last month after a very short illness at the comparatively early age of fifty-eight. He had been for over thirty years the parish minister at Grindelwald, whither he came in 1879. The attachment between himself and his flock was mutual, and he refused during that time many offers of removal to a wider sphere of duty which would have been advantageous to him from a worldly point of view; but his life was bound up in Grindelwald, where he exercised a potent influence which was all for good. He was a true parish priest, and besides being an

eloquent and forcible preacher he entered into the daily lives of his faithful flock and was well known and equally regarded by every man, woman, and child in Grindelwald. That he was esteemed and respected in a very special way by the sturdy peasant folk I know from my own experience and from constantly hearing his praises sung by those who attended his ministrations. His best memorial is engraved in the hearts of the guides of Grindelwald, and his name will go down to posterity amongst them under the simple but proud title of the 'Gletscher Pfarrer.'

I have now the very pleasant duty of proposing a most hearty vote of thanks to the Hanging Committee—or rather the Exhibitions Sub-Committee, which nominally consists of a great many members—for their labours in connexion with the arrangement of the excellent display of pictures which we see before us. Practically, however, it is to one or two of the more active members of this body that our thanks are specially due, and above all to our friend Mr. Spencer, who has supervised these exhibitions with such care in the past, and who will, I hope, for the benefit of the Club, look after them for many more years. I beg to propose a very hearty vote of thanks to the Hanging Committee, and should like especially to couple with that vote the name of Mr. Spencer.

The proposal having been duly seconded was carried with acclamation.

Mr. C. SCHUSTER: Mr. President, I should like to ask you the question of which I have given private notice, and that is, whether it would not meet the greater convenience of the majority of Members if the Committee ruled that the hour at which you take the Chair at General Meetings be altered from 8.30 to 9 P.M.

The PRESIDENT said: I do not think that strictly speaking Mr. Schuster is in order in putting this question, but I told him, when he gave me private notice about half an hour before the meeting began of his wish to raise it, that I saw no objection to the matter being informally mentioned with a view to eliciting an expression of opinion, pro or con., from any members who might desire to state their views with regard to it. Of course, it is quite clear that nothing could possibly be decided to-night or without a proper notice of motion. So far as the Committee are concerned I may say at once that the question has not been discussed or brought before them, and they would naturally not desire to express an opinion upon so important a matter without careful consideration. Speaking now, if I may, purely for myself, I would suggest that the matter is one in regard to which we should consider not simply and solely the greatest convenience of the greatest number, but also the greater inconvenience of those of our members (possibly a minority) who reside in the suburbs or come from even longer distances, if the present time of meeting were to be changed to a later hour.

After some further discussion amongst members the question was dropped.

Mr. E. A. BROOME then read a paper on 'The Nord End from Macugnaga,' which was illustrated by lantern slides.

The PRESIDENT said : I have no doubt that as this extremely fine climb has now been accomplished by several members of the Club we shall have a very interesting discussion upon it. I see Capt. Farrar is here, and I believe he has rather looked upon this expedition as being specially his own, and, I fancy, felt some astonishment at the wholesale invasion of his domain, referred to by Mr. Broome, which took place during last summer, but I will leave him to express his own opinion about it. I think that the ascent of the Nord End which was made by Capt. Farrar in 1898, with his and my old friend Daniel Maquignaz, was the third to be made from the Italian side.

Capt. J. P. FARRAR said : There is always a certain amount of refreshing imagination about the Junior Vice-President's papers, but this time he omits to give us one of those 'unique' tales for which he is famous. The climb in question takes me back to the year 1898 when the weather conditions were very similar to those which obtained last year, so much so that I remember we climbed ourselves quite stale. We did the Nord End that year late in the season under good conditions, and after a week's rest, but I have always looked upon it as very severe climb. It seems to me that it will be rather difficult to find work for our Junior Vice-President, as he has already graced with his presence all the most difficult and arduous climbs in the Alps. Lest we have to lock him out from them altogether for want of work, I should like to suggest as worth his notice an even more arduous climb than the one at present under discussion, I mean the Bartolomä face of the Watzmann. This has been ascended during the last thirty years about thirty-four times, and out of these expeditions I believe no less than twenty-six reached the top only after an involuntary bivouac. It is said to be the highest continuous face (1800-1900 m.) which has been climbed in the whole Alps.

Mr. ROLLESTON said : Our party found a way from the Riffel to the Marinelli Hut by the Jägerjoch without any ascending on the Italian side. This hut was reached about mid-day. It was a great pleasure to be with Mr. Broome and Professor Corning on the Nord End. The climb is long but not very difficult and is interesting all the way. Of course, the conditions last year were exceptional.

Dr. WILLIAMSON said : I have little to add to my friend Broome's admirable paper. Thanks to the exceptional weather of last summer and to the fact that I was the fortunate companion of two first-class guides, we were able to accomplish the two finest expeditions of my life. One of these was the first passage of the Gletscherjoch and the other was the Nord End from Macugnaga. Owing to the exigencies of the Gletscherjoch (which I may mention in passing was certainly the most difficult expedition that I have ever taken part in), I was unable to accompany Mr. Oliver on the Nord End, but successfully accomplished the expedition a week later. We

approached the climb with a considerable amount of respect and engaged a porter so as to free the leader from weight-carrying. We stayed a night at the Albergo Belvedere near Macugnaga and I can confidently recommend this inn. The only slight risk from stone falls was probably in crossing the couloir before reaching the arête. The recollections of the impressive rock scenery during the climb will always remain among one's most cherished memories. On the top I asked Jean Maître for a piece of the chicken which, with his customary forethought, he had ere leaving Macugnaga placed in the rucksack. He shook his head. 'Ah, Monsieur, il n'y a qu'un os qui reste.' I looked and saw that it was but a (g)nawed end.

Mr. E. G. OLIVER said : I am afraid I cannot add much of interest to the admirable paper we have just heard from Mr. Broome. Eaton and I did the climb last season, about three weeks before Mr. Broome's expedition, and I spent on it one of the most enjoyable days of my life. We crossed a couloir soon after leaving the hut which would probably be stone-swept later in the day, but of which the traverse took no more than ten minutes at the outside. Otherwise the climb seemed to me quite as safe as most big expeditions, and it deserves to be done more frequently. About 1½ hrs. from the top we found two ice axes and some gloves, which must have belonged to Signor Castelnuovo's unfortunate party who were lost in attempting the ascent in 1909. We sent these relics to the Italian Alpine Club with a view to their being restored to the relatives if possible. My experience of the hotels in Macugnaga differs from that of Mr. Broome. I stayed at the Monte Moro three years since and found it excellent, but the Monte Rosa, which we were compelled to patronise last year—the Monte Moro being full—seemed to me far from good and the charges for provisions I certainly considered unduly high.

The PRESIDENT said : I had hoped that some others of the veterans of the Club might have had some experiences to relate to us, perhaps even of unsuccessful attempts on the Nord End, as I do not think we ought to let Dr. Williamson and Capt. Farrar have it all to themselves. However, if nobody else will take the floor, I should like to propose a most hearty vote of thanks to Mr. Broome for his admirable discourse, illustrated by those beautiful photographs which have added so much to its attractiveness. I was very much struck at the skilful manner in which the Vice-President introduced various Biblical passages into his observations, and I should like to congratulate him heartily on his knowledge of Holy Writ and upon the very apt way in which he has 'quoted Scripture for his own purpose.' Personally I am very sorry that I cannot contribute experiences of my own with regard to the Italian ascent of the Nord End itself, but of the Jägerjoch, which passes immediately under its N.E. buttress, I made in 1876 the second passage, and the first from Switzerland to Italy. We descended by what I think must usually be a somewhat dangerous route from falling stones, though at the

time we did not see any stones fall. However, I do not think, although, or possibly because, the late Ferdinand Imseng led us, that we chose a very good route.

With regard to what Capt. Farrar said, it seemed to me that his genial vein of chaff was directed towards the Aiguille de l'Eboulement rather than to the Nord End from Macugnaga. He also mentioned the Bartolomä face of the Watzmann, and I think this is an expedition to which the Vice-President might with advantage turn his attention. Should he attempt it early in the season I shall be much surprised if he finds it as long as the Nord End from Macugnaga. The Vice-President must remember that it behoves him not to rest upon his laurels and that we expect him to continue to do his duty in the future to the Club as its Vice-President, as he has so manfully done it in the past.

Gentlemen, I am sure you will wish me not to detain you longer as you must all be anxious to pass a most hearty vote of thanks to the Vice-President for his admirable paper.

Mr. BROOME replied briefly and thanked the Club for their appreciation.

A GENERAL MEETING of the Club was held in the Hall, on Tuesday evening, June 4, at 8.30, Sir Edward Davidson, *President*, in the chair.

The PRESIDENT said: Gentlemen, I have in the first place to announce to you that his Majesty the King of the Belgians has been graciously pleased to accept the Honorary Membership of our Club. As you all know, the King of the Belgians is not only very much interested in mountaineering, but he is himself a practical mountaineer of large experience who has made numerous and difficult ascents in the Dolomites and elsewhere, and is personally devoted to our noble sport. It is for this latter reason more especially that we respectfully and enthusiastically welcome our most recent Honorary Member, although it is, of course, on every ground, a matter for great congratulation to our Club that his Majesty should be willing to associate his name thus intimately with it, and that we should be privileged to number amongst our Honorary Members a reigning Sovereign of one of the principal Royal Houses of Europe. For myself, I may perhaps be allowed to add that it will always be a source of equal pleasure and pride to me that this last auspicious addition to our list of Honorary Members should have taken place during my Presidential term of office.

There is one incident which has occurred since we last met, which I think we should not allow to pass without some few words expressive of our very sincere regret, I mean the death of Herr Johann Santner of Botzen, one of the most distinguished and remarkable explorers of the Dolomite Alps that has lived. He will be known to many of you as the man who made the first ascent, in the year 1880, of the then unnamed buttress of the Schlern which has since been

christened and is now always known as the Santnerspitze. This precipitous pinnacle affords (*experto crede*) a climb of no slight difficulty, and to have found the way up it alone and unaided, as Herr Santner did, was in itself a feat of great skill and equal daring. In the year 1890 he made the first ascent of the Fünffingerspitze (by the celebrated Schmitt-Kamin) with the late R. H. Schmitt. He also made many other ascents in the Dolomites, and is well known as one of those who were principally concerned in opening up and exploring the Rosengarten district. I am sure that all true mountaineers will extremely regret his death which took place at Botzen on the 21st of last month in the seventy-third year of his age.

Mr. W. R. CÆSAR then read a paper on 'Mont Blanc by the Brenva and other traverses in 1911,' which was illustrated by lantern slides.

The PRESIDENT said: I have no doubt there are many members who would like to say a word or two on the subject of the extremely interesting paper which has been read here to-night. I know there are several members who have accomplished the ascent of Mont Blanc from the Brenva glacier. I see Mr. Lloyd, who is one of them, here, and need hardly tell him that we should all be much pleased to hear what he has to say about the expedition.

Mr. R. W. LLOYD said: I am sure we have all enjoyed Mr. Cæsar's very interesting paper and admirable description of his climb. The route taken by my party was a new variation from the usual route, as we went up by the couloir until almost under the rocks (No. 13 on plate*), and then cut diagonally up the face of the ridge passing close under the nose of the hanging glacier, then turned sharp to the right until almost under the crest of the arête, when we cut our way on to it. We did not touch any rocks on the Brenva arête until we reached the point 13. From here we went to the right up a difficult steep and overhanging couloir, and thence we made our way easily through the séracs to the main arête. The whole Brenva arête is exceedingly steep. I have only once been over steeper ice, and that was with Captain Farrar and there was very little of it. I congratulate Mr. Cæsar on his very successful climb. I greatly enjoyed the climb and am sure Mr. Cæsar did so also.

The PRESIDENT said: Although Capt. Farrar has already written an exhaustive monograph on the various ascents of Mont Blanc by this route, I am sure we should all like to hear *viva voce* what he has to say about the expedition.

Capt. FARRAR said: I think I have really written myself dry on the subject of the Brenva route. I have corresponded with a good many friends and I think I have told you all I know. In 1893 we followed, I think, the original route and we took to the ridge much

* This plate is to be found at page 203 of the May 1912 number of the *Alpine Journal*.

lower down. The only other route which is radically different is Herr Gruber's route which lies up the great couloir of the Brenva face on the right hand (ascending). Mr. Cæsar has given us a very interesting account of what is, in my opinion, one of the greatest ice climbs in the Alps.

The PRESIDENT said: I think that at least one member of Dr. Wilson's party is here to-night, and I am quite sure that we should like to hear what he may have to tell us.

Mr. J. H. WICKS said: I was one of the members of Dr. Wilson's party; we attempted to follow Moore's route to the Col de la Brenva, avoiding the trouble they met with in the icefall on the Brenva glacier. We passed their sleeping place about 1 A.M. and keeping higher up crossed the Brenva glacier above its ice fall and struck the rock rib at the same place as Capt. Farrar did, which is much lower than Mr. Cæsar's route. I should think we met with more and much harder ice than existed last year. The rocks on the upper part of the ridge (Nos. 11 to 13 on the photograph) were covered with ice which had snow on the top of it. Our main difficulty was from the point 13. We traversed the side of a hard viscous ice cliff leading to the actual head of the great ice trough which descends to the Brenva glacier.

There was one thing I should like to allude to in Mr. Cæsar's paper, viz., the frequent putting on and taking off of their crampons. On our expedition I wore them for the first or second time, but we put them on at about 1 A.M. and did not take them off until 10 or 11 P.M. when we reached the Grands Mulets. Having no guide or porter to carry them perhaps caused us to wear them longer than we otherwise should, but on iced rocks at all events we found them to be a real advantage.

Mr. BROOME said: Though asked to say something to-night, I might almost plead the record excuse of having been in the Swiss Alps this morning, and in the Alpine Club this evening. The paper has been most interesting and it takes me back over half a century or more to my pre-climbing days when, like most schoolboys, I had to study Cæsar's 'De Bello Gallico.' I offer my congratulations to the present Cæsar who has been worthily carrying on the fight, and conquering in the footsteps (more or less) of his great ancestor. At any rate Mont Blanc is in Savoy, now part of the great Gallic country. The debate too has been of exceptional interest, though I could wish Mr. A. E. W. Mason had been present to tell us something more about his climbers' weird and wonderful adventures on this Brenva face (laughter). Speaking for myself, I can only regret that, like Mason's men, I was vanquished, though I had four shots at it; sleeping out three times at the high and uncomfortable gîte, and once on the Col du Géant. My failures, however, do not cause envy and jealousy, and I join in warmly congratulating Mr. Cæsar and the other members who have been successful and added to our pleasure to-night.

Mr. G. W. YOUNG said : I should like to ask whether Mr. Cæsar's party found that the route they followed was at all exposed this season to the risk of avalanches falling from the séracs on the higher part ; as I had been informed by two of the leading Alpine guides that they would be extremely reluctant to attempt the route in view of the conditions maintaining last year.

The PRESIDENT said : I have very great pleasure in proposing a hearty vote of thanks to Mr. Cæsar for the admirable paper he has read to us to-night, and for the excellent views illustrative of it which have been thrown on the screen. It has certainly been a very interesting discourse and it has been made, if possible, more interesting still by the fact that Captain Farrar's monograph in the May number of the *Alpine Journal*, which was published a few days ago, has placed at the disposal of the members of the Club who have been present to-night a great deal of additional information which he has gathered together in regard to this route up Mont Blanc.

I remember talking to the late Mr. Horace Walker more than once about the great climb he made with his father, Mr. Frank Walker, who was then fifty-nine years of age, in 1865. My impression is very strong, but I say it with bated breath before Capt. Farrar, that the party struck the frontier ridge close to the head of the Corridor and, therefore, not far from the true Col de la Brenva.

I have also some recollection that Melchior Anderegg told me, when I was with him long ago, that he had a great deal of difficulty in cutting through an overhanging cornice of icicles which masked the approach to the head of the Corridor. There is, I think, some mention of it in the late Mr. Moore's paper which possibly some members of the Club who are present may recall more definitely. I cannot help thinking from what I have heard to-night that the lower part of the old route by the buttress was safer than the new route which has been followed by Mr. Cæsar and Mr. Lloyd.

I also recollect having a long talk with Mr. Gruber about his ascent (the third) which was more to the right (ascending) than that described to-night, and I remember he told me it was attended with considerable difficulty and much risk, as his party were, for some time, while in ice steps, in very great apparent danger from the séracs above them, which threatened their route and from which, had they fallen, there would in the circumstances have been no escape. With regard to the other 'traverses' mentioned by Mr. Cæsar, I would just like to say that I was very much struck by the extreme speed in which that of the Mönch, ascending from the N., was accomplished. This, no doubt, was partly to be accounted for by the comparatively early period of the season (the end of July) at which it was accomplished.

I have myself made three attempts on the Mönch from the N. Twice we were driven back by bad weather, and on the third occasion, towards the end of September, we only got to the top shortly before 4 o'clock in the afternoon. I had two extremely fine ice men with

me in Christian Klucker and Ulrich Almer, and it was fortunate that this was so, as step-cutting was continuous almost from the moment when we put on the rope. Unless in a very exceptional year it is certainly not a September climb.

I am sure we are all very much obliged to Mr. Cæsar for his excellent paper, and I have much pleasure in moving a hearty vote of thanks to him.

Mr. CÆSAR said : Mr. President and Gentlemen, I am very much obliged to you, Sir, for your kind words of appreciation, and to all for your kind reception of this Paper.

Turning to the points that have been referred to. We crossed the Mönch on July 28 and crampons enabled rapid progress to be made on the upper slopes. Moreover I think I mentioned that a party had been over a few days before, and on the lower and steeper portion their steps were quite useful after some trimming.

As regards Mr. Lloyd's route on the lower portion of the Brenva, I am sure some risk must have been incurred in going up the big couloir. When we were there the whole of the bottom of it was full of snow and ice débris that had come down and spread out in fan shape at the foot. We did not ascend the couloir but crossed this débris, I should say about three-quarters of the way up, where it would have been possible to run if necessary, and we then cut up the steep slope to our left.

Then in reference to Mr. Young's question as to danger among the séracs and possible injury from falling stones, I thought the only place last year where one might be struck would be in the couloir right down below near point 2, though even there, risk seemed slight as it was crossed early in the day. Higher up the séracs did not appear to be in a condition to cause danger last year. I do not know whether there was risk of falling stones on Capt. Farrar's route, but from what we saw of it higher up, I am sure he must have had a very fierce time indeed even for him.

The only other point that occurs to me is that the Col de la Tour Ronde route obviates the necessity of crossing any séracs in the early part of the day.



Wehrli, A. G., Zurich, photo.

Swan Electric Engraving Co., Ltd.

THE SOUTH FACE OF MONTE ROSA,
FROM THE PIZZO BIANCO.

THE
ALPINE JOURNAL.

NOVEMBER 1912.

(No. 198.)

THE NORD END FROM MACUGNAGA.

By EDWARD A. BROOME.

(Read before the Alpine Club, May 7, 1912.)

‘ No foole like to the old foole.’

THIS though written centuries ago still remains true, and I find it difficult to decide which is the more foolish—for a sexagenarian to have undertaken one of the longest and most sensational expeditions in the Alps, or to have taken upon himself to read a descriptive paper afterwards. At any rate both expeditions were, or are, made in the very best of good company ; and if the climb was thought out and sought out beforehand, its sequel was unsought, and indeed at first declined for excellent reasons. So the blame, if any, must be put on our good Honorary Secretary, a courteous autocrat who, like his historical namesake, ‘conceals the iron hand in the velvet glove.’ However, when once the Government has taken its stand, and the strike notice is withdrawn, I for one always enjoy the return to work, especially when that work is reading a paper here. The audience, if critical, is charitable, and I have the additional consolation of knowing that, although other peaks in the Monte Rosa group have often filled up a pleasant evening, the Nord End from the Macugnaga side, though by no means a new climb, has never done so

I have always had the greatest affection for this fine range. The Dufour Spitze was my very first big Swiss peak (1885),

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and since then I have been up every summit in the group over 14,000 feet, some of them several times, perhaps the best expedition (1904)* being a long traverse of the Nord End and the Dufour Spitze; beginning with the former by its steep rock ridge, due S. of and immediately opposite the Stockhorn; up the N.W. arête to the top; down to and along the Silber-sattel; thence a new and somewhat sensational scramble straight up the steep N. face of the Allerhöchste Spitze to the actual summit; and finishing down the delightful S. rib of rocks to the foot of the Grenz-sattel.

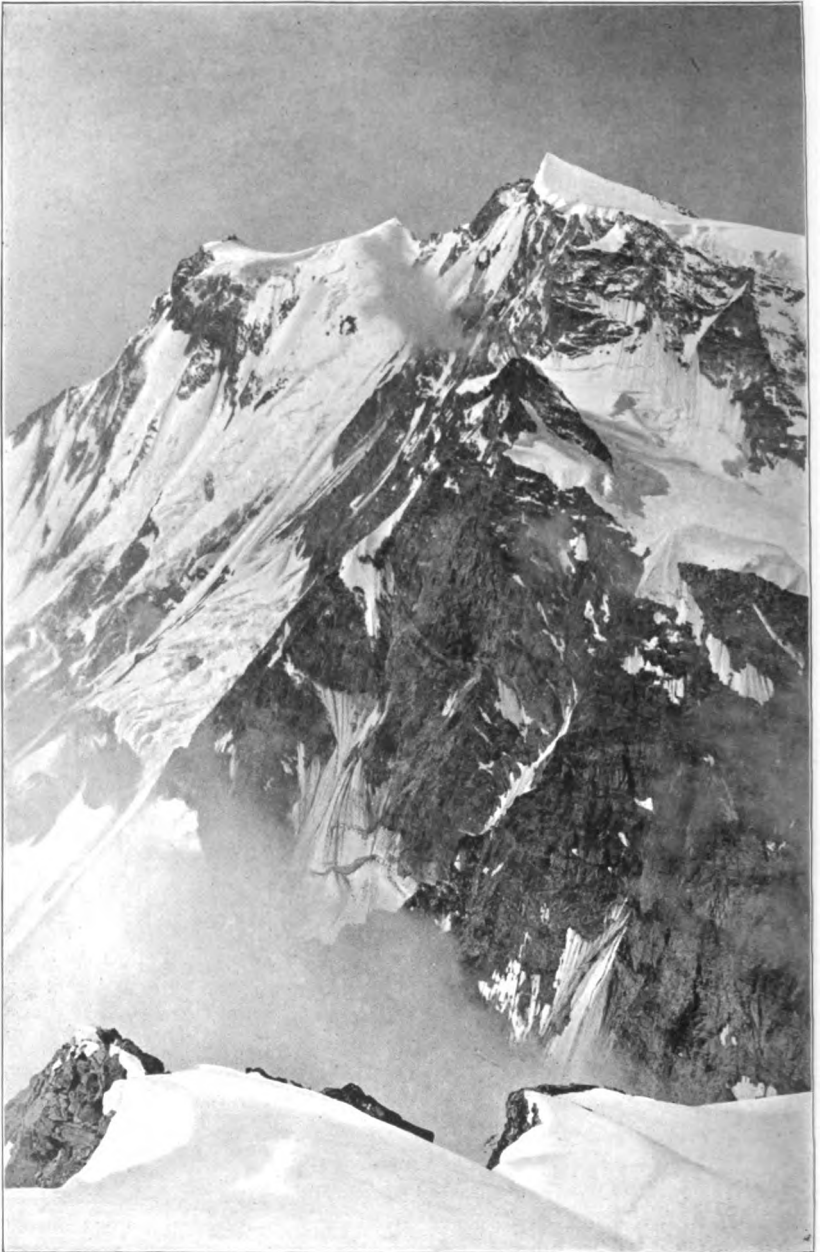
Macugnaga is almost perfectly situated, most convenient to reach, very comfortable for a stay either long or short, and is not nearly as much known or visited by climbers as it deserves to be. It is indeed an extraordinary fact—the big climbs from here are so little known and have been so seldom made that there exist Valais guides of quite the first rank who have never been in this valley, and never even seen it except from the sentinel summits overlooking it. Notwithstanding the numerous passes leading from Zermatt, it is quite a case of 'thou art so near and yet so far!' Yet, near or far, the churches are numerous, the people pious, the views unique, and the climbing magnificent and unsurpassable.

Macugnaga is however, more visited from the Saas valley, and usually *via* the deservedly popular Monte Moro pass; from the summit of which, as well as from the village itself, the stupendous E. wall of Monte Rosa, with its highest peaks as centre and the Punta Gnifetti and Nord End as flanking bastions, forms the grandest amphitheatre in the Alps. When first I saw it all shining out resplendent above an ebbing sea of mist, I could only recall and indeed recite, 'And I saw heaven opened, and behold a Great White Throne.' I have never beheld anything quite like it, before or since!

The hotels are now a great and a delightful contrast to the uncomfortable and insanitary inns of twenty-five years ago. The Monte Moro is one of the best in the High Alps, and the Monte Rosa and Belvedere are fairly good also, most of the regular visitors to all three being Italians, for whose benefit a good motor road has recently been finished.

My former visits to Macugnaga, some half-dozen in number, had been by as many different passes, all, however, over Conway's so-called Weissgrat—that is, N. or N.E. of the main mass; and more or less with an eye to possibly getting back over the

* *A. J.* vol. xxii. p. 572.



Alfred Holmes, photo.

Swan Electric Engraving Co., Ltd.

NORD-END,
FROM CIMA DI JAZZI.

big mountain itself. There had always been some obstacle in the way—weather conditions, mountain conditions, guide's exorbitant conditions, my own lack of condition, or something. The more, too, I looked at the Dufour Spitze climb, and for that matter the more I heard and read of the history of former expeditions up that side, the more I disliked the idea of crossing the Marinelli Couloir and then toiling for a long day up the avalanchy snowfields and braving the overhanging séracs and icefalls above and beyond it. The superstructure of this route, and its accident records (fatal and otherwise), seemed to make the odds against climbers somewhat too long!

On the other hand, the Nord End climb altogether avoided the wicked avalanche funnel; seemed to be fairly free from things coming down over which one had no control; consisted entirely of steep rocks, which I for one much prefer to snowfields, gentle or steep; and in fact seemed to have everything in its favour except its interminable length. Moreover, I never heard of any accident on this last route, with the one exception of the Castelnovo catastrophe in 1909*; and that appears to have been caused by a violent storm, and not by any kind of fall. To put it epigrammatically, Mont 'Rose was not without its thorn'; so the Nord 'End must justify the means'!

At any rate, the latter could never go better than in this last wonderful summer. Several friends had done it and returned to Zermatt with cheerful countenances; and indeed the only 'Face' that got to look blacker and blacker was that of the Matterhorn!

So after a capital three weeks' or month's work round Zermatt, my son-in-law and climbing companion, Professor Corning, and I packed up our rucksacks, and on August 29 crossed the New Weissthorn to Macugnaga with the two excellent young guides Niklaus Brantschen and Heinrich Fux. The former had been with us all the season and was keen on trying the Nord End, while Fux had done it once before with our friend Dr. O. K. Williamson (as second guide to Jean Maitre), and wanted to repeat it. The heat coming down the pass and in the valley was intolerable and felt like a coming storm, but the village (4950 ft.) always cools down in the evening.

Next day the barometer and our hopes alike fell, and in the afternoon down came the deluge also, making a start quite impossible. Dr. Rolleston, whom we intended to meet at the

* *A. J.* vol. xxiv. p. 674.

Marinelli, had crossed the Jägerjoch, traversed across and down to the hut and slept there, but now had to walk down the following morning to breakfast with us, and reported new snow aloft. We all, however, had good hopes of the weather taking up again; but the iced rocks must have time, so we spent a couple of reposeful days, finding our *convives* companionable, the hotel comfortable (at any rate they didn't burn us out), and the cuisine, Capri, and Chianti capital. My climbing companions filled up their spare time exploring the interesting churches; but I pursued my ecclesiastical studies on somewhat different lines, and cultivated a pious acquaintance with an Irish Dean at the 'Belvedere,' who daily received 'The Times,' quite a spiritual solace during that exciting international and railway crisis!

Friday morning, September 1, saw us all *en route* for the Capanna Marinelli—Rolleston with Josef Lochmatter and Schanton; Corning and I with our two men and a porter. The Macugnaga guides were rather doubtful about our success; but the weather seemed more settled again, and our time was getting short. My archæologists insisted on taking me some little distance round to see the ancient church, which I fear was not fully appreciated; also the patriarchal gnarled linden tree twenty-seven feet in girth, with its shady stone seat, which was delightful! It is a lovely walk thence through woods and over the beautiful Belvedere oasis clothed with pine and larch; and we lunched at the little inn, thereby economising our provisions. Then on along the level moraine and across the glacier to the foot of and up the three broad buttresses of steep rocks to the hut, four and a half to five hours' easy going from the Monte Moro Hotel. The shanty is small but weather-tight, is grandly situate, and should always be the sleeping-place for the climb, as there is certainly no safe gîte higher up.

You will perhaps expect me to touch briefly on the previous climbing history of the Nord End from Macugnaga; if so, this is the best place. The first ascent was as far back as 1876, by Signor Luigi Brioschi, with the brothers Ferdinand and Abram Imseng, *via* what I shall call the right-hand route. Ferdinand is the hero indissolubly connected with the conquest of all this E. wall. He led Pendlebury and Taylor four years earlier (1872) on the first ascent of the Dufour Spitze from this side,* made the first ascent of our Nord End (1876), and was killed with Marinelli and an Italian guide while attempting the

* *A.J.* vol. vi. p. 232.



Sydney Spencer, photo.

Scott Electric Engraving Co., Ltd.

MONTE ROSA, FROM THE MONTE MORO PASS.
(WINTER.)

Dufour a second time in 1881. His death (he is buried in Macugnaga churchyard)

'but binds him to his native mountains more.'

The second Nord End ascent (1893) was made by Signor Restelli with Mathias Zurbriggen and Luigi Burgener. They preferred to pioneer another, a left-hand route, in my opinion much more dangerous and exposed. They found it all this, also very long and difficult, and were obliged to bivouac close to the summit, after sixteen hours' hard work.

Captain Farrar made the third (1898), led by that good judge Daniel Maquingaz, who, when their porter to the hut pointed out the left-hand route, positively and absolutely declined to have anything whatever to do with it. So they went right, left the cabane 4.15 A.M. and arrived at the Nord End summit 3.5 P.M. After such a restful day they naturally needed some exercise, so went on over the Silber-sattel to the Dufour Spitze (6.5) and Betemps Hut (8.30).

Number four climb (1900) was made by two Italian gentlemen, Signori Facetti and Ongania, in two parties, each with a guide and porter. It is believed they also followed the right-hand route, whence they reached the N.W. arête a little to the right of the summit, and went on down without quite touching it.

The fifth ascent (1901) was a very weird and dangerous one, made by Herren Reichert, Dorn, and Bridlinger. After two hours on the rocks above the hut, they took to the Marinelli Couloir itself (*query*, did their accident insurance policies cover this?), mounted in it for two hours, proceeding by ice-ridges and extremely steep rocks, and finished up the nearly perpendicular glacier coming down from the Silber-sattel. They reached the summit about 9.30 P.M., and of course had to sleep out; the only wonder being that they were not 'sleeping their last sleep' out!

Number six (1906). Dr. Julius Kugy, being with M. Zurbriggen and Josef Croux, naturally went by the former's left-hand route. A long description of the expedition was published, the most interesting portion being 'the tour much exceeded my expectations in grandeur and beauty, but is dangerous to a high degree from stones.'

The seventh climb (also in 1906, and not completed) was made without guides by Signori Antonio Castelnuovo and two others; but I do not know if they were the same two who were lost with him in 1909, and whose bodies have never yet

been found. They were forced (1906) to turn round some short distance under the summit by a violent wind, and had to descend the same way. This was truly a grievous misfortune; for had they completed their expedition then, there would have been no tragedy later. The names of the 1909 party were A. Castelnuovo, G. Bompadre, and P. Sommaruga.

The eighth and last I could hear of up to this last year was in 1909 by Signor Lampugnani with one or two companions, guideless; by which route I know not. There seem therefore to have been some eight ascents up to 1911, when there was quite what Farrar terms an 'English invasion.' At any rate (*sub rosa*) the numerous Super Rosa climbing notes in the 'A. J.' seemed to me almost as superfluous as my paper!

This little historical *résumé* shows that there are practically two distinct routes from the Capanna to the summit—the Imseng-Brioschi or right-hand, and the Zurbriggen-Restelli or left-hand route. Of these there can be little doubt that the right-hand is more direct, affords better climbing, crosses fewer of the steep couloirs, and is consequently less exposed to stone-falls. After an hour or two up a broken rock face—so broken up that if a few stones did fall there would be ample cover—you proceed by a moderately well-defined and somewhat bent rock rib, which you strike at its bottom, and which lands you many hours later on the top. The left-hand route, on the other hand, is mostly up very complicated and intricate rock terraces, the face being broken up into a series of minor, often disjointed, arêtes with avalanche troughs between them; the art consisting in making the least exposed connections.

To come back to the Marinelli hut and our own expedition. While we were preparing for dinner our porter startled us by pointing out three little black specks getting down off the steep rocks at the foot of the Grenzgipfel and disappearing into the big bergschrund just below them. This naturally caused some excitement, as no complete traverse over the Dufour Spitze from that side had ever been even attempted, and seemed almost like courting disaster! However, we could do nothing (except write a lengthy note in the hut book), and, though we repeatedly looked again, saw no more that evening; so we ate our dinner and made ourselves comfortable for the night. In early morning again we watched three twinkling lanterns slowly descending, and from their altered position it seemed that the men must have been on foot all night, and indeed worked through the icefall and névé above the upper part of Marinelli Couloir to a high patch of rocks on our (N.) side.



Sir A. B. W. Kennedy, photo

Swan Electric Engineering Co., Ltd.

THE "GREAT WHITE THRONE."

This and other causes made our start a late one, and we did not get off till 4.10 A.M.

I never can recall all the details of a climb, but my companions have kindly helped me out with their recollections; and I have, so to speak, struck an average of all three. We were of course bound for what I have called the right-hand route, and the first part of the climb (rope unnecessary) consisted for a couple of hours or more of easy, ill-defined, broken rocks and moraine as already named, but always bearing up right to the rock arête to which I have also referred. This prominent rib is unmistakable, not only from its practical continuity, but also because it is always just above the S. side of another deep-cut avalanche trough, which starts just N. of our summit and terminates in the Nord End glacier. This trough, though smaller, is almost as well defined as the Marinelli itself, and (like the Marinelli) is not crossed on this climb. We got on to the ridge by its south or left-hand foot, roped, and worked for some time on it a little to the left of and just below its crest, on the side farthest away from the couloir.

After another hour or so we got up on to the actual crest itself and hardly again left it, climbing at first in two parties of three and four. Rolleston, however, whose herculean frame seems on such occasions to have incorporated the engines of a 100 h.p. F.I.A.T., soon left us behind, and we subdivided our party of four into two twos, Dolomite fashion. This alteration saved some little time, and we progressed steadily. The climbing on the arête, and particularly along its crest, was good, and the rocks almost invariably solid—nowhere outrageously difficult and certainly nowhere easy; but then we made a point of keeping to the ridge, avoiding any traversing underneath it, and only crossing such minor couloirs as were absolutely necessary.

At one point, however, about halfway up our friendly backbone, and just below where it has a sort of spinal curvature, this became impossible; for it was here intersected by a tributary couloir, across which we hurried, and beneath which our guides thought must somewhere be the icy tomb of the intrepid Italians. Either just before or just after this there was a tremendous fall of stones down the bigger trough on our right. A few of them cannoned up and on to the ridge somewhere between Rolleston and us, causing some little anxiety; but a few *jodels* quickly reassured both parties. On our other side huge avalanches hurtled down the Marinelli (one of them breaking right over the Imseng rocks) and never ceased all

day, confirming my view that the Dufour Spitze climb is almost without the pale.

Still, even at home one is not always free from this danger. Abroad I have had to cross some notorious avalanche tracks on some famous mountains—*e.g.* the Dom, Verte, Jorasses, Péteret, Ecrins, Scerscen, and Diamantidi. These and others were passed without incident; but, *per contra*, only this year, during the great snowstorm of January 18, and in my own obscure offices in England, I had to bolt, barely escaping burial under many tons of snow, ice, bricks, glass, and debris that slid off a lofty building, smashed a wall, and crashed through a skylight right over my head. No jury could have called this 'foolhardiness'; but a coroner, familiar with Alpine adventure, might have summed up 'death by anti-climax.'

Well, the higher we got the steeper grew the rocks, the hardest passage of all being very near the top. Our old friend the arête, behaving handsomely to the last, landed us, to our great delight, right on the actual summit. We were lucky in finding no *verglas* till within about an hour of this point, being much better fortune than we expected, and the weather overhead, as usual last year, was perfect.

This, too, was fortunate for our noctambulists, who had crossed us more or less within shouting distance, and proved to be the enterprising Heinrich Burgener and his brother Siegfried, with a climber who we afterwards learnt was Dr. Otto Stein of Dusseldorf.* Their indiscreet expedition was the invention of Heinrich, but he will never repeat it; to give him his due, he is not the sort to vacillate between

'The lust of lucre and the dread of death.'

The party had toiled all night and caught nothing (fortunately), crossed the Marinelli Couloir very high up during the darkness to the topmost rocks of Reichert's weird route, and then descended near the couloir to the Capanna Marinelli, taking a long rest there.

Our own climb was quite long enough, and I should describe its outstanding features as continuous hard work on good sound rocks, continuous roars of avoidable avalanches, and continuous sporting enjoyment. We reached our summit at 2.10 P.M., just ten hours from the start, and one and a

* *A. J.* vol. xxvi. p. 349.

half hour may be deducted for meals. The 'god outside the machine' had attained the Olympian heights one and three-quarter hour earlier, and was now only visible far away down near the Felsen.

We left again at three o'clock, and our descent was without special adventure. The easier and quicker way down by the southern rocks above the Silber-sattel, and thence by steep snowslopes which lower down join the ordinary Mont Rose route, was now barred to us by the wide bergschrunds of this long hot summer. There was nothing for it but to wade through the soft snow of the N.W. buttress for a quarter of an hour or so, and then take to the conspicuous steep rock-rib facing due W. Following Rolleston's and Lochmatter's tracks, we must have descended somewhat too low, and certainly did not hit off the right route; for it was found necessary to ascend the rocks again a little before going down them, mostly by the ridge, but partly also by a very smooth and slippery chimney which had not, I think, been my way on a former climb. We considered at the time this bit required more care than anything on the ascent; but perhaps it was only one of those mental delusions which at this stage sometimes come over tired people. Anyhow a hitched double rope came in very useful and saved time. Once on the easy névé we got on rapidly, and were soon at the Betemps Hut (six o'clock), finding that our friend Rolleston had arrived there about 3.15. We were glad of a comfortable tea and a short rest, and not sorry to get across the glacier before dark.

The moon rose brilliantly as we toiled up the long grind under the Gorner Grat, but later proved to be a source of exasperation, as she kept dodging us behind the various summits of first the Breithorn and then the Riffelhorn, her frequent total eclipses causing much stumbling and many unnecessary ejaculations. Indeed, Corning was afterwards heard to relate that I called her lunar majesty a 'verdammter Schweinhund,' whatever that may mean! Airy fantasies may once again have been begotten by tired brains; and my relative, whose linguistic and patois-istic knowledge is quite exceptional, possibly put his own poetic thoughts into my mouth!

We reached the Riffelhaus at 8.30, comfortably but not unduly fatigued after a glorious climb, slept soundly, and descended to Zermatt next morning by Gorner Grat electric express.

FINIS CORONAT OPUS.

HIMALAYAN EXPEDITIONS, KAGHAN VALLEY.

IN June and July last year my nephew, Captain O. Erik Todd, of the 5th Gurkhas, wrote three interesting letters to me from high camps in Kaghan, describing ascents made, or attempted, by himself and some Gurkhas in a portion of the Himalaya, which Major the Hon. C. G. Bruce terms, and rightly so, his 'own particular playground.' Bruce himself was to have led the party, but was prevented from doing so by an accident.

Feeling sure that extracts from these letters will interest the Club, and will satisfy those who recently helped to elect Todd as a fellow-member that he is well upholding our best traditions, I have no hesitation in sending the following accounts to the ALPINE JOURNAL. This I would have done before, but for the fact that it was necessary to write to Abbottabad and to receive a reply in connexion with the spelling of certain proper names.

WM. CECIL SLINGSBY.

BASUL, KAGHAN VALLEY, *July 14th, 1911.*

'Naturally the one real Kaghan giant, Mali Ka Parbat by name, very rough and wicked-looking,'* and 'square and solid as a Norman keep,'† was the first to attract us, on June 22. Mali is 17,846 ft. in height. Dangerous snow conditions and traces of recent avalanches caused us to retreat from a col above the S.W. face at a height of 15,000 ft. On June 24 we made another attempt, by a steep snow gully on the E. face. A third attack was made on June 30 from the N.W. from the Duddur camp. Again, owing to adverse climatic conditions, we were forced back on reaching a col at a height of 15,200 ft.

Though fortune had not smiled on us, I felt satisfied, as a result of much careful reconnoitring, that, under good conditions, a strong party should be pretty certain of success.

The mountains viewed from Duddur are extremely grand, and several peaks of over 16,000 ft., including the Duddur mountain itself, surround this valley; and I am convinced that Duddur should make a magnificent climbing centre.

From Battakundi as my base, I made several ascents. The

* *Twenty Years in the Himalaya*, by Major The Hon. C. G. Bruce, pp. 120, 126.

† *Five Months in the Himalaya*, by A. L. Mumm, p. 246.

first, Dubooka, was an easy mountain with steep snow at the bottom. We built cairns on four summits of 16,000 to 16,196 ft. in height and traversed the whole mountain ridge *without a rope*. Tell it not in Gath! The fact was this: We made an early start from our camp in the Dubooka nullah at 3.30 A.M., and after a time we heard stones falling, and looking up saw an ibex. With glasses I counted seven, one with a really good head. I sent one Gurkha back for my rifle, and of course he happened to be the man who was carrying the rope. As I knew he could not be back for at least five hours, I thought it was a pity to spoil a day, one of good weather too; and success smiled upon us.

The second and third days we spent ibex shooting, but with little profit for the larder. On the latter day, when we were over 14,000 ft. I determined to cross a big glacier at the foot of Dubooka. Such cliffs—about 1000 ft. in height and a mile long! The question was, Could we find a way off the snout of the glacier, a wall of ice about 100 ft. in height? We made three vain attempts, and then were forced to trek back over the glacier. Eventually we struck a steep rock face and had a magnificent climb down it. We had to drive in pitons and also to double the rope over a rock, but eventually we reached the snowfield at the base.

Opposite Dubooka was an aggressive-looking mountain which had the insolence to look higher than Dubooka himself, and I am certain that it is. The rock—all rock in fact—looked very rotten, so, with sorrow, I left it a virgin peak, but not for long.

This mountain is not named on the map. However, we will call it Ruree, as it heads the Ruree nullah.

I determined to make a pass over the Dubooka Kotal, under Ruree and to land up at a place called Burawai.

This is what happened. We made the pass and saw that the descent to Burawai was easy. I said in Gurkhali to the Gurkha who was looking up at Ruree: 'What about it?' He replied 'Achha' = 'Right Ho.' So we set *about it*. It was a first-rate climb, nearly all rock. We went up an almost razor-edged arête and took about two and a quarter hours to ascend. There was one short hand traverse of about five yards which the Gurkha did not like, but he had to cross it as there was no alternative.

About 30 or 40 ft. from the summit was a difficult place where there were great slabs of almost vertical rock. These had to be surmounted. Just then snow began to fall and we heard

growls of distant thunder. Suddenly I heard a noise like a swarm of bees in my right-hand coat-pocket. I found nothing in it but some half-dissolved peppermint bull's-eyes. The noise was transferred to my left-hand pocket—only a handkerchief full of raisins—the buzzing stopped—I looked at the Gurkha, who was smiting his pocket violently—the same thing—half-dissolved bull's-eyes. Then I saw him put his hand on his cap as if he had got a bee there, and almost immediately I felt something like an electric shock on my head, and I believe my hair stood on end. At the same time I heard a crackling noise, exactly like what one hears through the receiver of a wireless telegraph instrument. Evidently the air was charged with electricity; but why those bull's-eyes should have been fused I don't know. Do you?

I have always carried these delectable lozenges in the same pocket when mountaineering, and they have invariably remained quite dry except on this one occasion when they were dissolved and only some treacly stuff was left. The raisins were turned a bit sticky.

But to return to the climb. In every respect it was an excellent and most enjoyable one—in fact, the best day's climbing I have had so far, in India. We were going from 3.45 A.M. to 6 P.M., during which we made a new pass and a very good first ascent.

I am after ibex now and had a quiet eleven miles' walk up the road to-day, but start for Burawai Mountain at 3.30 to-morrow morning. The bungalow in which I am writing is loopholed for rifles, as the Kohistanis often come here to loot, and Kohistan is barely two miles away. If one crosses the border one may very likely be shot at by these wild people. I am all right, and have three dogs with me here—an Irish setter, a retriever, and a spaniel—but I leave them behind when I go climbing.

BASUL, 15th July, 1911.

Back here again. I saw two ibex near the summit of a nice little white hill, 15,300 ft.; so climbed and found it a most excellent rock climb. We built a cairn on the top, traversed the whole mountain ridge and had a good thousand-foot glissade on the descent. Of course the ibex had bolted.

BASUL, 16th July, 1911.

I had a nice climb after ibex yesterday, and got a most glorious view of Nanga Parbat—the above is a rough sketch.

I was standing on a mountain of about 15,500 ft., and looking over two other ranges of some 15,000 ft. Above these was a broad belt of cloud out of which Nanga Parbat rose in stern majesty, absolutely dwarfing every other range. In the distance, farther N., I could see some other very high peaks—I don't know which they were until I see a map. As I was practically standing on the most northern point of British India they ought to be easy to make out.

I had made a very early start and remained on the top for nearly two hours pretending to look through my glasses for ibex, but actually I was riveted to the spot, looking alone at that giant mountain. In addition to its grandeur, Nanga Parbat had a special interest for me, because when I was a schoolboy I had the good fortune to scramble on the chalk cliffs at Dover, led by Mr. Mummery, that magnificent climber, who lost his life on this cruel mountain along with two Gurkhas in my regiment.

MAHANDRI, 31st July, 1911.

We made our last effort yesterday, and it was a great effort, starting at 5.15 A.M. and returning to camp at 10.15 P.M. I wanted to climb one of the highest of the Rajee Bogee peaks, over 16,000 ft. We were camped at Badal Graun at 6600, so had a long pull ahead of us. On the N.N.E. of this peak of Rajee Bogee is the Suki Sangal snowfield, from which an ascent can easily be made. On the other hand, the south face which we actually tackled was difficult and was composed of very rotten and dangerous rock. In fact the whole mountain on that side was bad.

The two Gurkhas and I made for the central rib, the weather then being very good. After about two hours of hard going signs of a change became evident. When about 800 feet from the summit snow began to fall and rocks hurtled down. The only thing to be done was to push on and reach the summit.

One large rock nearly hit one of my Gurkhas, and a large avalanche came down close to us.

We reached the crest of the mountain in thick mist, snow and hail, and it was dreadfully cold; so cold in fact that, though the summit of this maiden peak was only at the most 150 ft. above us and perfectly easy to reach, we left it severely alone and started on the snowfield. We were now in Kashmir and were confronted by a ridge at right angles to the main Rajee Bogee line of peaks. This ridge eventually reaches Shikara—

ascended by Major Bruce and his party. The thick mist refused to lift, and we had to find another way down as our line of ascent was now practically impossible.

With much difficulty we found our way down, having many awkward bits of rock climbing. Amongst other troublesome places were two waterfalls which we descended. At about 8 P.M. we reached a steep snow slope and our difficulties were at an end. After a long standing glissade we reached a river which turned out to be the Shikara. The main difficulty had been that, owing to the thick mist, it was impossible to locate our position, and you can easily imagine our joy when we found that we were in the Shikara nullah, where we wished to be, and which led us directly down to our camp.

OSWALD ERIK TODD.

THE MOUNTAINS OF THE YELLOWHEAD PASS.

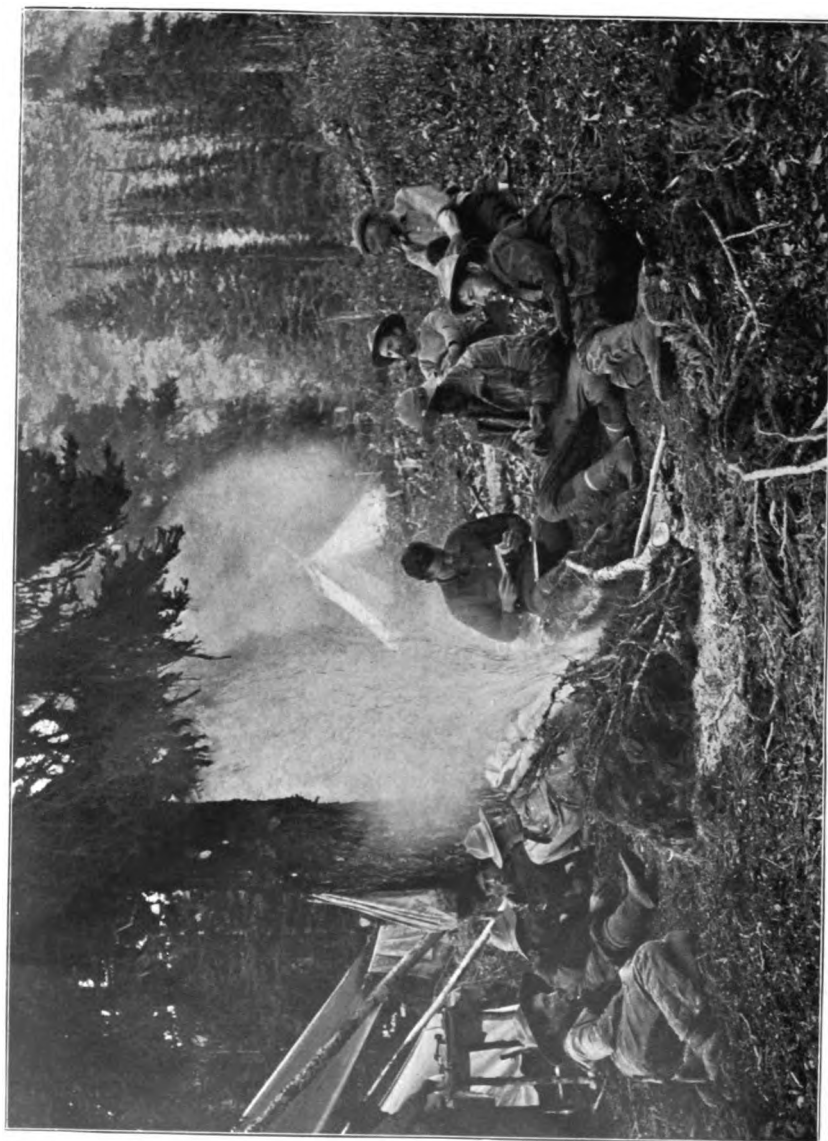
BY A. O. WHEELER.

THE Expedition of the Alpine Club of Canada, made during the months of July, August, and September 1911, was for the purpose of ascertaining the character of the mountain areas opened up by the Grand Trunk Pacific Railway in the region of the Yellowhead Pass.

Mt. Robson was the keynote of the expedition, and an eighty-five-mile circuit was made around it, mapping the country by photographic methods as the party proceeded.

Mountaineering was not the primary object, and no very arduous ascents were made, the time at our disposal in this climatically uncertain district being preferably devoted to obtaining material for mapping purposes. Notwithstanding, thirty peaks were climbed, ranging in altitude from 7000 to 11,000 ft. above sea level.

The general line of travel was as follows: From the site of Henry House, up the valleys of the Athabaska and Miette Rivers to the Continental Divide at the Yellowhead Pass; thence, down the valley of Yellowhead Lake and Fraser River, seventeen miles to the junction of Moose River with the Fraser. At this point the actual circuit of the great massif began. Following the Moose River to the summit of Moose Pass, the Continental Divide was again crossed and the valley of the stream on the opposite side of the pass



Byron Harmon, photo.

Swan Electric Engraving Co., Ltd.

MR. A. O. WHEELER'S 1911 EXPEDITION.

Reading from left to right : No. 2, Rev. G. B. Kinney ; No. 4, Curley Phillips (the conqueror of Mt. Robson) ; No. 6, Konrad Kain (guide from the Rax Alpe, near Vienna) ; No. 7, Mr. Riley, of the Smithsonian Institute, Washington ; No. 9 Mr. A. O. Wheeler, the leader of the Expedition.

descended to the Smoky River Valley. This valley was now ascended to the Robson Pass, where the Continental Divide was crossed for the third time, and the valley of the Grand Fork of the Fraser River, or Grand Fork River, as it is frequently called, followed to the Fraser Valley, which was ascended to the junction of Moose River Valley.

; Again starting from the site of Henry House, the survey was carried up the Athabaska River Valley and through a pass (Bighorn Pass) in the hills on the E. side to the valley of Maligne Lake, of which, with the enclosing mountains, a survey was made.

A relative idea of the height to which the mountains rise above the respective valleys may be obtained from the following altitudes: Site of Henry House, approx. 3330 ft.; Yellowhead Pass, 3727 ft.; Fraser Valley, at junction of Moose River, 3420 ft.; Moose Pass, 6700 ft.; Robson Pass, 5550 ft.; Fraser Valley at junction of Grand Fork River, 3000 ft.; Bighorn Pass, 7300 ft.; Maligne Lake, 5525 ft..

The altitudes here given are in feet above sea level and are based on the levels of the Grand Trunk Pacific Railway survey. They are carried from bench-marks along the line of the survey, and are the means of a series of trigonometrical levels obtained from transit readings back and forth between the stations established. In all cases, where possible, reciprocal readings have been taken, but in some cases, such as Mts. Robson, Bighorn Resplendent, etc., this could not be done, and the altitudes given for these are the mean results of a series of readings on their highest points. They are, therefore, not definitely established, but cannot be far from the truth. The base for the triangulation was obtained from land-survey corners established by the Dominion Government and the Provincial Government of British Columbia.

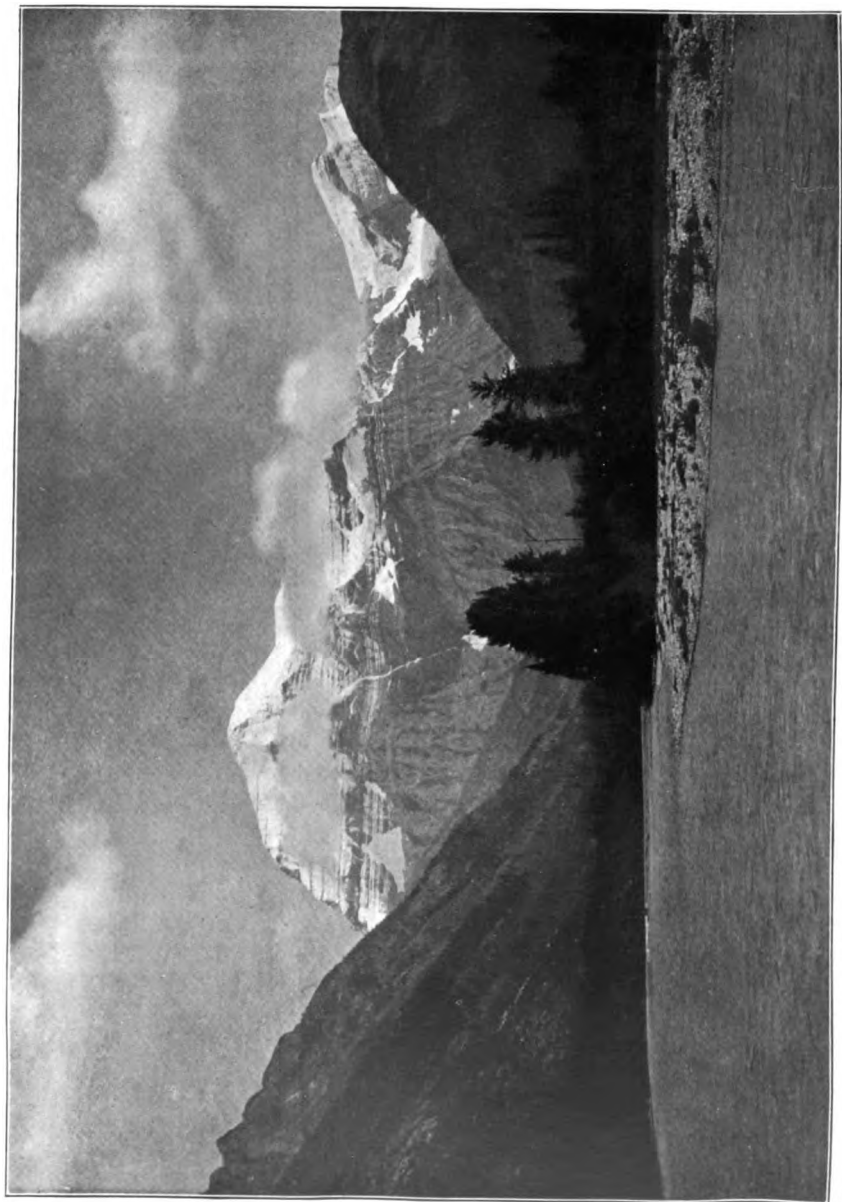
The expedition was made possible for the Alpine Club of Canada through the co-operation of the Grand Trunk Pacific Railway and of the Provincial Governments of British Columbia and Alberta and of the Dominion Government. The party originally consisted of the writer in charge, Konrad Kain, the Club's professional mountain guide, Byron Harmon, of Banff, the well-known mountain photographer, a cook and two packers. Later George B. Kinney was added as an assistant. The transport was in charge of Donald Phillips, the plucky young Canadian who made his initial mountain climb on Mt. Robson at the time the first, and as yet only, ascent of Mt. Robson was made.

Correspondence with Dr. Charles Walcott, Secretary of the Smithsonian Institution of Washington, enabled the scope of the expedition to be enlarged, and a party of four was sent out by that Institution to collaborate with the Alpine Club of Canada and deal with the zoology and botany of the region surveyed. The party was in charge of Mr. Ned Hollister, Assistant Curator of Mammals of the United States National Museum. Mr. Hollister looked after the mammals, and Mr. J. H. Riley, also of the Museum, collected birds. To Charles Walcott, jun., and H. H. Blagden was assigned the collection of big-game specimens. A most satisfactory collection was made, over 900 specimens being obtained. In addition to their other duties, Messrs. Hollister and Riley made a fine collection of plants, comprising some 200 species. Several species and sub-species of mammals, birds, and plants, new to the United States National Museum, were collected. Full reports of the above work will appear in the 1912 issue of the 'Canadian Alpine Journal.'

The party left Edmonton on July 1, and followed the line of travel of the early fur traders to the junction of the Athabaska and Miette Rivers. Details of the old travelled trails from Edmonton to the Athabaska, up the Athabaska and down the Fraser, will be found in the records of the fur traders, David Thompson, Alexander Henry, Gabriel Franchère, John McLeod, Sir George Simpson, and others. A delightful description is given in an article written by Sir Sandford Fleming for the 'Canadian Alpine Journal' (Vol. i. No. 1). The same publication in later numbers also contains accounts of the several expeditions to this region by Dr. A. P. Coleman and by Messrs. Mumm, Hastings, Amery, and Dr. Norman Collie of the Alpine Club, England. Last of all, 'The New Garden of Canada,' by F. A. Talbot, gives a minute and amusing, as well as instructive, account of the tribulations of a tenderfoot who travelled over a part of the trail in 1910.

In our case the old landmark of the trail had ceased to exist, and the iron horse carried us to Fiddle Creek near the gap through which the mountains are entered. Here we were joined by our packers, and the balance of the journey to the Yellowhead Pass was over the newly constructed waggon road, made to carry the supplies necessary to build the railway.

At Fiddle Creek, the Rivière de Violon of the voyageurs, about one and a half mile S. from the railway, on the E. side of the stream, the Grand Trunk Pacific Railway Company is about to build a magnificent hotel to accommodate visitors



Byron Harmon, photo

MT. ROBSON FROM THE FRASER VALLEY.

Sisco Electric Engraving Co., Ltd.

to the fine alpine region of the Yellowhead Pass. It is the first of a number of similar hotels through the mountain section of the railway. Situated on a high terrace surrounded by grey limestone peaks of strata twisted and contorted in every conceivable manner—so much so that one has been named Folding Mountain—the hotel will command a glorious view of snow-clad peaks, grassy hills, dark green forest, rushing torrent and shining lake. Beautiful park lands, brilliant with alpine bloom, are at its front, and eight miles up the creek are sulphur hot springs, said to rival those of Banff, from which the water can be piped to the hotel for public use.

'Swift's' prior to the advent of the railway was known to the men of the trail as a landmark and a stopping-place where one must bivouac, if only to gather the past history and latest news of the country. Swift is an old prospector and miner who settled at this spot fifteen or twenty years ago, married a half-breed, and has a well-grown family. He is a genius and has been a fairy godfather to all parties such as ours.

Directly across the river, on the S. side, rises the Colin range, to over 9000 ft. in altitude. It is a very striking-looking pile owing to its sharp pointed peaks and the knife-like edges presented by the limestone ridges. A peculiar feature is noticed in the rock fractures. Whole masses seem to have slipped away, leaving steeply sloping smooth surfaces. These surfaces are traversed horizontally by cracks in which large-sized spruce trees have grown, presenting the appearance of isolated trees of considerable size, clinging to the face of the almost precipitous bare rock. Here also is seen a very fine example of a triple hanging valley.

A little S. of W. lies Pyramid Peak (9104 ft.). It had been in full view the whole of our last day's march, and its N. face showed a pure white pyramid, rising supreme from among its fellows. It was the first ascent made by the party. The summit was reached by Konrad and Kinney, who built a cairn that was subsequently useful for the purposes of the survey. The view from the summit is superb, covering the Athabaska valley for many miles, both up and down, and showing, as on a map, the network of channels in which the winding river flows, creating numerous islands clad with dark spruce timber. Of particular interest was the view to the S. and S.W., where numerous fine snow-capped peaks could be seen, appearing and disappearing among the drifting masses of clouds.

Seven miles from Swift's the Miette River flows from the

W. into the Athabaska. The course of the river is here nearly due N., and, looking southward up its broad valley, groups of magnificent peaks were seen. One fine wedge-shaped peak in particular rose supreme. I have called this peak Mt. Fitzhugh, as it is in full view from what will some day be a large and thriving city of that name. Mt. Fitzhugh is snow-clad the year round and rises to a height of 11,188 ft. above the sea. Around its base can be seen the snowfield supplying a fine glacier, which was, however, hidden at our low altitude by intervening hills. Another peak, rising conspicuously on the opposite side of the Athabaska, a little farther up, I named Mt. Mostyn as a tribute to Lady Rivers-Wilson, wife of the popular president of the Grand Trunk Railway. It is a huge rock mass, snow-crowned and bearing a large glacier on its eastern flank. The view up the valley of the Athabaska from Fitzhugh is very imposing and opened up vistas of deep gorge-like tributary valleys, leading westward to ragged peaks and towers of rock, capped by snow. They suggested great possibilities and looked very fascinating to the mountaineer. We knew from McEvoy's map that Mt. Geikie lay somewhere within the group, and Mumm had said that the N. face of Mt. Geikie was composed of the most tremendous precipices he had ever seen, so we looked keenly for a glimpse, but the peak cannot be seen from the waggon road. Moreover, the clouds were down low, and kept swirling around and about these big fellows in a most tantalising manner.

The Grand Trunk Pacific Railway follows the Miette River to the Yellowhead Pass. As the pass is approached the Yellowhead Mountain stands out conspicuously. It is of striking structure and, although not similar in form, rises like, and reminds one of, Castle Mountain in the approach from Banff up the Bow River Valley to the Main Divide.

Directly S. of Yellowhead Pass summit and four miles distant is a blunt cone-shaped peak with castellated sides. The height is 9742 ft., and it carries snow on its crest all the year round. For some reason it seems to have acquired the name of Mt. Pelée, although I can find no authority for it. On the map of their route accompanying their book, 'The Northwest Passage by Land,' Viscount Milton and Dr. Cheadle have shown the mountain as 'Mt. Fitzwilliam' after Lord Milton's family name. Together with Yellowhead Mountain it produces an excellent and very striking effect as the pass is approached from the E.

The altitude of the railway bed at the summit of the Yellowhead Pass is 3720 ft. above sea level. Here the Miette River

furnishes one of those examples seen occasionally in the Canadian Rockies—viz. a mountain torrent breaking in on a height of land, travelling along it for some distance, and then sending its waters both ways. The old channel beds that carried the water westerly to the Pacific are still to be seen. The Railway Company has found it necessary to protect its property by building a line of cribwork that will for all time confine the stream to the Atlantic slope.

Yellowhead Lake lies two and a half miles from the summit on the western side. It is a very charming little sheet of water, four miles long, with a greatest width of half a mile. There are several narrows, and the irregularities of its form are by no means the least part of its charm. For the most part it is surrounded by green forest and is distinctly one of the most beautiful lakes in the district. In colour the waters are creamy sap green. A mile below Yellowhead Lake the Fraser River comes in from the S., and its valley forms a continuation of that in which the Yellowhead Pass and Lake are situated, with a general westerly direction.

Seventeen miles below the pass, the Moose River joins the Fraser from the N. Here was a camp known in railway parlance as 'Mile 17,' otherwise 'Moose City.' It proved to be for us a den of thieves. Some of our supplies and clothing were stolen while we were looking at them, and our camp cooking stove was extracted almost while the cook sat upon it. The thief staked it at a game of poker the same evening, but beyond that we were unable to trace it.

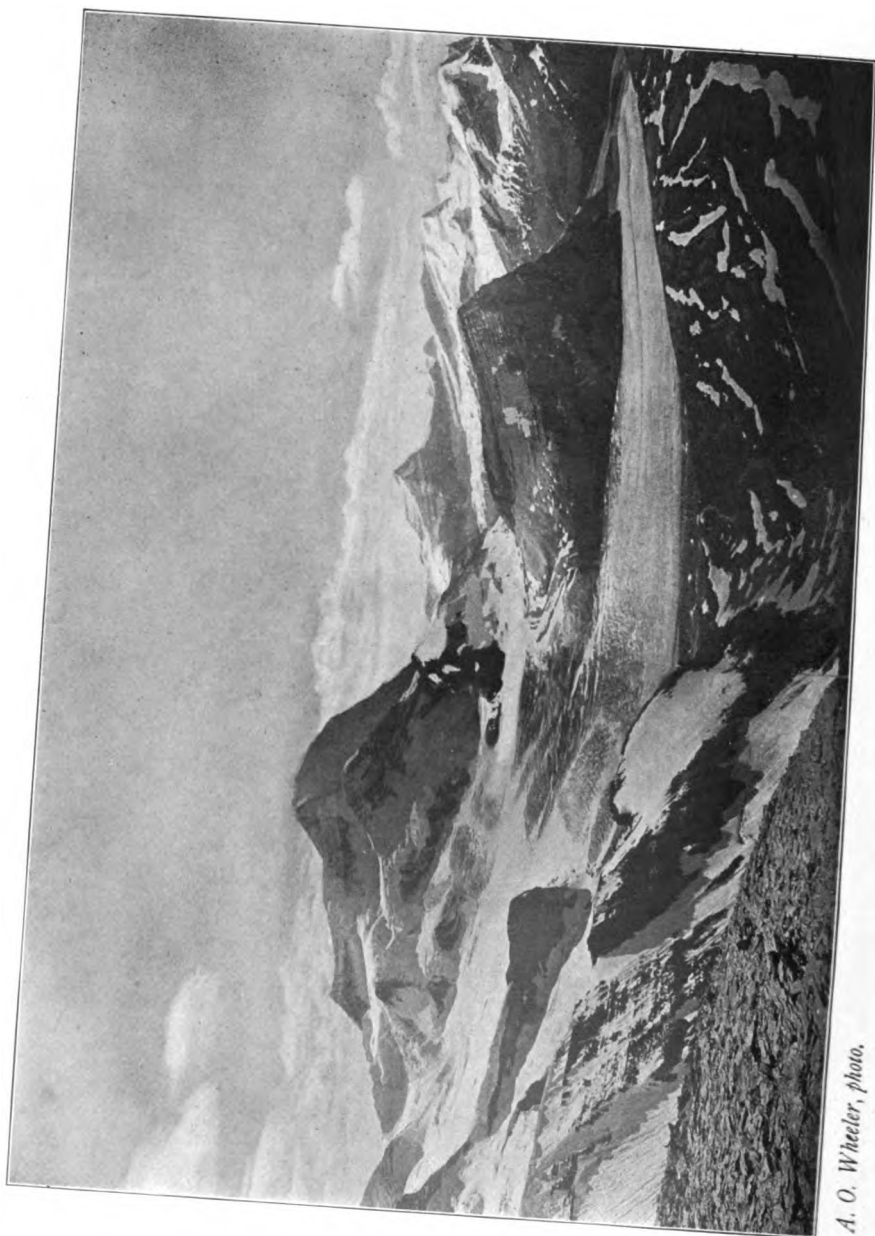
The canyon of Moose River opens directly on the railway and would be an interesting place to hold passenger trains for a few minutes to give the travelling public an opportunity to see the sight. The canyon is short, not more than two hundred yards in length. It is 150 ft. deep and the river drops that depth in the distance given. There are two falls, both near the head of the canyon; the upper drops 50 ft., and the lower 20 ft. There is a circular pocket below the upper fall which is filled with spray; there is also a V-shaped draw on the right side, into which the spray and mist from the falls eddy and circle. Here is the home of the rainbow on a sunny day. I saw not less than half a dozen spring into existence in this chamber at various points of view. 'Rainbow Falls and Canyon' would be an attractive and appropriate name; the more appropriate that the mountains directly W. of Moose River are known as the Rainbow Mountains. The Moose River flows from the heart of this range, of which Mt. Robson is the king pin. They are formed of rocks showing

brilliant colours of crimson, red, and yellow, and these, mingled with the blues and greens of Nature's everyday garb, present from distant points a highly prismatic effect that has given rise to the name.

At the present time the quickest available route to Mt. Robson is by the valley of the Moose River. It can also be reached by way of the Stony River Valley; but the latter route, though possibly a better one, has not been travelled so frequently. Up the Moose Valley there is more of a track than a trail, and generally speaking the going is bad. It is, however, strikingly picturesque. At intervals the milky green torrent was seen rushing between walls of spruce, pine, and fir. Everything looked bright and fresh, for here, although July, it was little more than spring, and the early flowers were in bloom. On either hand the valley is bounded by low peaks more or less capped by snow, the dark grey of the rock, frequently broken by great bands of iron red, and the white snow they bear fitting into the picture most harmoniously. Often muskegs of stunted spruce and moss hummocks were met with through which the horses floundered as best they could.

The W. branch of Moose River joins the main stream some eight miles from the mouth. The trail follows this branch and soon comes to fine twin falls, of which the roar is heard for a considerable distance. Almost in sight from the trail, the stream drops over a ledge for forty feet, being divided into two falls by a great boss of rock in the centre that has withstood the ceaseless wash of the rushing water. The fall is a grand one, and sends up a dense cloud of mist. We camped three miles from the falls, on the S.W. bank, directly opposite a low ridge across which the route lies to the main branch of the Moose Pass. The valley of W. Moose River has a more westerly trend, its erosion being due to the glaciers lying at its head below Mt. Resplendent and the Lynx Mountains. In full view, a few miles away, was seen a splendid icefall with a far-reaching névé above it, which appeared to be divided into several component parts by narrow rock ridges.

The business of the expedition now began in earnest. The mammal man, Ned Hollister, went off to set his traps; the bird man, J. H. Riley, was already popping away with his gun, and the hunters were getting ready to tramp the numerous side valleys up near the crags in search of game. The topographic party got a flying camp outfit together and started up the W. branch to explore the valley at its head and the big glacier and snowfield that could be seen so clearly and



A. O. Wheeler, photo.

THE EAST FACE OF MT. ROBSON, WITH THE ROBSON GLACIER
(taken from Lynx Centre Station)

Sivan Electric Engraving Co., Ltd.

looked so attractive. The glacier at the head of the W. branch was named Reef Glacier by Dr. A. P. Coleman on one of his expeditions to Mt. Robson. It is so called on account of the rock ridges, or *nunataks*, referred to, which appear like reefs rising from the snowfield. This is the glacier and snowfield described by A. L. Mumm in his delightful paper written for the 'Canadian Alpine Journal' (Vol. II. No. 2, pp. 6, 7) as having been visited by the British party on its 1909 expedition to Mt. Robson, the one from which they had the memorable midnight tramp to reach their camp. The icefall is much broken by crevasses and is enclosed by well defined lateral moraines, whose unoccupied terminal curves show clearly the very marked recession of the ice. It is not necessary to ascend the icefall, a snow-filled couloir on the W. side and a splendid ledge along the cliffs give easy access to the névé. Our objective point was a high conical peak at the S.W. corner of the névé from which a somewhat precipitous rock wall extended northerly and formed the boundary of the snowfield. The highest point of the snowfield is near its southern extremity, not far above the icefall, and without warning we found we had stepped from the Province of British Columbia to that of Alberta—we had crossed the Continental Divide.

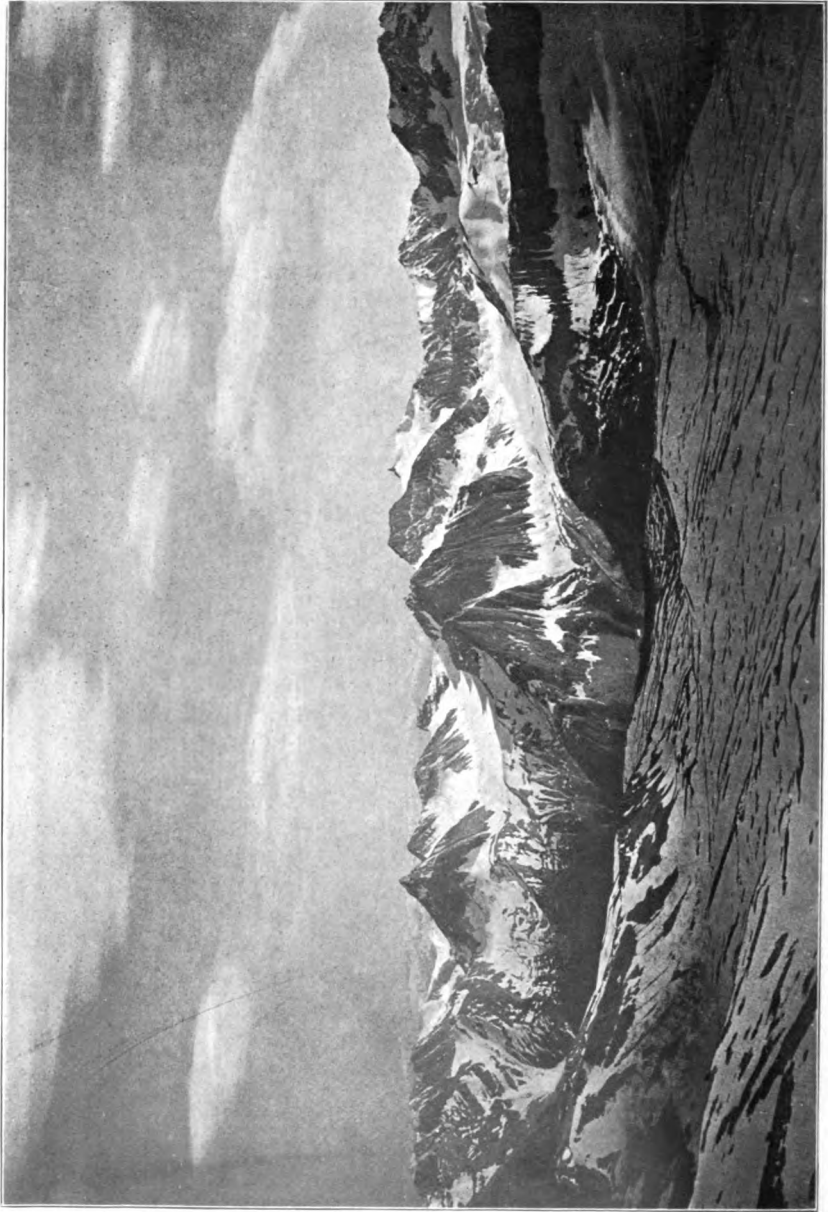
The rock wall rose very steeply for 1500 ft. and gave some good climbing. An avalanche fell from above and poured from an overhanging ledge close by like a waterfall. As we topped the crest the whole wonderful panorama came into view. At our feet flowed the Robson Glacier, a great river of ice, every crevasse, every moraine, every icefall, clearly portrayed. Across, directly opposite, rose the massif, its outline clear from base to summit for fully 7000 ft. Up the sides was piled mass on mass of snow, falling in great waves to the glacier below—all of an intense whiteness. We easily recognised 'The Dome,' 'The Helmet,' 'Rearguard,' names familiar through Coleman. Above the snow masses rose almost perpendicular rock to the great S.E. ridge, and beyond the ridge the steep arête that leads to the extreme summit. It was a perfect day, the air so thin and clear that we could easily define the tremendous overhanging cornice with which the crest was lined. From where we stood the distance is four miles, but it seemed less than a mile away. The Helmet, 11,160 ft. in altitude, and Rearguard, 9000 ft., seemed quite insignificant beside this towering rock monolith. We tried to trace the route of Hastings, Mumm, Amery, and Inderbinen of two years ago, and thought we succeeded, but

it looked so absolutely impossible from our point of view that we could not be sure.

To the S. rose Mt. Resplendent, named, and well named, by Coleman. Its altitude is 11,173 ft. On this side it is clad from top to bottom in pure white snow, and presents with the sun shining upon it a spectacle of such wonderful brilliance that the aptness of the name became immediately apparent. It rose in great snow masses and ice walls sheer to the summit, and showed several of the largest and widest bergschrunds I have seen in the Rockies. Enormous cornices overhung on the N. and E. sides. Later, the mountain was ascended by Konrad and Harmon. It proved to be altogether a snow and ice climb, and Konrad reported having seen some of the greatest ice cracks he had met with throughout the course of his professional experience. The crest of the mountain he described as an immense cornice reaching far out into space over the depths below.

To the S.E. the mighty precipices of Lynx Mountain frowned down upon us. It was the peak for which we had started, but its summit was more than 900 ft. above us and out of the question for the day. I may say with truth it was the most stupendous alpine scene I had ever gazed upon. To the right of Robson, in the N.W., stood a sharp conical peak. It has been referred to by Coleman as 'The White Horn' and by Kinney as 'Mt. Turner.' It looked a splendid and difficult climb, and from this point of view is of symmetrical and striking form, although it did not appear white at the time we saw it. I make the altitude of this mountain 11,100 ft.

Twenty miles northward could be seen, out-topping all else, a huge mass clad from summit to base in everlasting snow. With the sun shining on it, it showed a beautiful pure white, but most often looked a ghostly wraith appearing dimly through the mists. They said it rivalled Robson in height, but I find its altitude works out at 10,893 ft.; this, however, is not absolute. It is easily distinguished by its all-white appearance, and by a peculiar little horn that projects horizontally from its eastern highest corner. All round the immediate circle of vision were seen huge rocky peaks well set with snow and ice, that would afford excellent work for mountaineers. On one, in the centre of the circle looking northwards, a cairn was discovered by means of the transit telescope. I presume it had been set there by the English party two years ago, or the year before that. Our station was on the Continental Divide and its altitude 9542 ft. I named it 'Lynx Centre.' The line of the watershed crossing



Swan Electric Engraving Co., Ltd.

PEAKS ON THE SOUTH SIDE OF RESPLENDENT VALLEY

(from Reef Glacier Station)

A. O. Wheeler, photo.

the Reef Névé ascends a low conical peak directly below Lynx Mountain, then climbs to the summit and, following the N. ridge on which we were, descends to the Robson Pass. The altitude of Lynx Mountain, the highest point of the Lynx range, is computed at 10,471 ft. Seen from our camp on the W. branch it showed a fine cone, but now stood out a huge black mass capped by snow. Especially striking is the great cornice with which it was surmounted.

It was on a low peak at the extremity of the E. ridge of Lynx Mountain, known to us as Reef Glacier Station (9162 ft.) that I had a most narrow escape of losing my life. Konrad and I were ascending to occupy the station with camera and transit. We had come to a slope of ice, covered by new snow; Konrad was leading and I was following in his footsteps. Suddenly the footsteps broke away and I slid down the slope to where it ended abruptly. I could hear the adze part of the ice axe grate as it scraped swiftly down the ice, and I had made up my mind that it was the end, when I suddenly stopped. The ice axe had caught. There was not, however, much to spare, for the lower half of my body was over the edge and the visible rocks lay far below. I suppose there was an exclamation, for Konrad, with a look of horror in his eyes, came bounding down the slope as though it had been level, and grasping me by the shoulder said 'I've got you'; and then he began to go himself. Fortunately the ice axe held, and we were soon on our feet, but it took some little time to pull oneself together after so close a call.

While at Reef Glacier Station we saw to the S. across Resplendent Valley one particular peak that rose from the centre of a snow massif like a huge rock-finger pointing heavenward. On seeing it Konrad exclaimed 'Ach! That is my peak,' and thereafter we knew it as 'The Finger of Kain.'

The source of the W. branch of the Moose River is found in glaciers lining the side of a magnificent valley. Directly at its head stand the S.E. faces of Mt. Resplendent and Lynx Mountain, together with two intervening peaks which, though of low stature in the snow-filled basin of the Robson amphitheatre, now stood out boldly, showing tremendous black precipices. The valley is exceptionally fine in every way, and particularly the amphitheatre at its head. It contains wonderful stretches of green rolling alplands, high up above timber line. From a vantage spot on these I counted a circle of twenty-five peaks, all good climbs, and that did not include a number of minor ones. From a station we occupied at the S.E. corner of the circle named 'Resplendent Valley South,'

I also counted seven icefalls descending into the amphitheatre. It is without doubt one of the finest cirques I have ever seen. Owing to its exceptional alpine qualities and the fact that it is dominated at its head by Mt. Resplendent, rising on this side in almost sheer black precipices to 6000 ft. above the valley floor, I named it 'Resplendent Valley,' and feel sure that subsequent and more detailed investigation will well justify the term. From the alplands to the shingle flats below the steep sides are clad with a fine growth of forest, giving a delightfully picturesque setting to the whole scene. The valley is of wide extent, and the numerous icefalls, moraines, alps, and névés will require much exploration before their interesting features become fully known. The floor sweeps outward in broad shingle flats intersected by a tissue of glacial streams that shine like a silver network when seen from the heights above. Many timbered islands and points of spruce break the monotony of the flats and add to the fascination of the surroundings. Between the peaks deep pockets and recesses contain each its own little glacier and bit of alpland, and in some cases have fine waterfalls where their streams drop to the level of the main valley.

From a peak at the S.W. corner, between Resplendent Valley and that of Moose River, a magnificent view was had of nearly the entire structure of the two valleys, which lay before us in all the beauty of a perfect day. Southward, directly below, was a deep valley which rose by comparatively easy gradients to alpland and an excellent rock pass to the Fraser Valley, opening to it about two miles below Moose Lake. On the Fraser Valley side brilliant red rocks are seen near its crest, and for this reason it has been christened the Red Pass. Later, it was examined from the Fraser side, and there seems to be no reason why a good pony trail cannot be built over it to give access to Resplendent Valley in one day from the railway. Across the deep valley of Red Pass stood a ridge of rock, where the strata were very nearly vertical, and the snow-filled couloirs so peculiarly shaped as to give the intervening rock the appearance of razor-blades. The culminating crest of the ridge was on that account called 'Razor Peak.'

Camp was now moved some six miles, crossing over from the W. branch of the main stream of the Moose River, and pitched near a little spring lakelet, of which there seemed to be many scattered up and down the valley. Directly across from our camp rose a fine-looking peak, that reminded me on a smaller scale of one on the Blaeberry River, near its junction with the Columbia, named Mt. Laussedat. It is so called after Colonel

Ami Laussedat, a French scientist who first brought to public notice the method of making topographic surveys by means of photography. I therefore named the peak 'The Colonel,' and it was arranged to climb it and make it a photographic station. To reach the peak it was necessary to cross the river and ascend a grassy couloir to the rocks. The ground here was literally covered with bloom: purple asters, wild geraniums, Indian paint brush of all shades from yellow to scarlet, yellow columbine, forget-me-not, heath and heather, pink and white, and numbers of other kinds of which I do not know the names. The Colonel is a very commanding peak and the view from its summit will repay the climb, which is nowhere difficult. The line of the Great Divide could be traced coming from the direction of Yellowhead Mountain; it passed close below us. Eastward about eight to ten miles could be seen a wide valley trending S.E. It is probably some tributary of the Snaring or Stony River. Mt. Robson was visible in the haze, swathed in clouds. To the N. showed the great snow mass previously referred to. To the S. another snow mass appeared, and far off on the Athabaska the black precipices of Mt. Geikie, Yellowhead Mountain, and Mt. Pelée could also be seen. It was a wondrous sight—seas of peaks does not express it—oceans of peaks rising high in every direction. The immensity of the view is astounding—the immeasurable chaos of it all! It will be years before it can be sorted out and set in order. Talk about lakes! We counted twenty-one of all sizes, and many of very beautiful colours: one directly below us to the N. is a glorious blue; another, westward across the Moose River, nestling in a hanging valley, is similar in colour to Emerald Lake seen from Burgess Pass. They are everywhere in this region—gems of turquoise, aquamarine, sapphire, cerulean blue, ultramarine, topaz—I cannot find names to fit all their colours. From the summit of the peaks they sparkle like rare jewels in a setting of deep green velvet, or are seen hemmed in by bold rocky steps with snow and ice along their margins. The N. and E. faces of The Colonel are covered by snow, and the summit and W. ridges crested with wide overhanging cornices. It is a splendid landmark. The rock is in places broken into great slaty slabs, frequently many feet in length and resembling boards, they are so long and regular. In climbing over them much care is required owing to their slippery surfaces. The altitude of The Colonel is 9166 ft.

Camp was now moved ten miles farther up the valley to a beautiful park-like spot not far from the entrance to the Moose Pass. It is at the junction of three valleys, all of which are of

very deep interest. The main valley turns N.E. and leads to the glaciers and snowfields forming the extreme source of Moose River. Directly N. is the valley of Moose Pass, and to the W. lies a very attractive one which is known to us as 'Terraced Glacier Valley,' owing to a fine glacier at its head which rises in three distinct terraces to the Reef Névé and forms one of its outlets on this side. All three will furnish splendid fields of exploration and many fine climbs of peaks that are as yet untouched, midst whose recesses are hidden wonderful alpine valleys. Camping expeditions may be made from such a centre to very great advantage. Directly E. is a high peak, which, owing to the rock strata of which it is composed having been tilted at an almost vertical angle, has been named 'Mt. Upright.' It is a long, ridge-shaped mass, and is prominently in view from The Colonel. Its altitude is probably 9600 ft., and it is one of the peaks of the Continental Divide. It was reached by a climb up the hill on the E. side of the river to an attractive-looking hanging valley directly opposite. The valley contained a gem of a lake of turquoise blue, surrounded by green alplands and a rock slide on one side. The water ran away from the lake in a fine cascading stream with some small falls. In the valley near by a caribou cow and calf were grazing, and a flock of ptarmigan flew screaming as we approached. Our station, though not the summit, afforded a splendid view of Terraced Glacier Valley and also of the Moose Pass.

The altitude of Moose Pass is 6700 ft. It is very nearly at timber line, and only a few clumps of stunted and scrubby spruce are seen scattered on the hill slopes. The approach is through thick timber, opening to vistas of grassy alps like avenues between the trees. On the W. rise bold rugged cliffs to over 2000 ft. and on the E. steep open grassy slopes. Passing two small blue lakes, the summit is found at the north extremity overlooking 'Pipestone Creek,' so called because the Indians who visit here are said to get a suitable stone to make into pipes along its borders. There is already a Pipestone Creek, a tributary of the Bow River, near Laggan, so I re-christened this one 'Calumet Creek.' It heads in an amphitheatre surrounded by glaciers; there are five or six of them.* The Moose Pass opens into Calumet Valley at the foot of the amphitheatre. There are a number of high tributary

* Over one of these glaciers is a pass with magnificent glacier scenery on the far side, leading to the head of the Stony River Valley. Mr. Mumm and Inderbinen reached this pass from the Stony River side in 1911. The Calumet Creek side appeared quite easy.



A. O. Wheeler, photo.

Swan Electric Engraving Co., Ltd.

THE HEAD OF RESPLENDENT VALLEY, AND EAST FACE OF MT. RESPLENDENT
(taken from Resplendent South Station).

valleys coming into it. They all contain park-like alplands and are the home of the caribou and bear. Several herds were seen of the former, and our hunters secured a splendid grizzly and a number of caribou. The collectors were delighted at getting these fine specimens. They were, moreover, doing well among the smaller fry, and the returns from the traps and the guns kept both Hollister and Riley busy at skinning, curing, and packing away specimens from morning until night. At the opening of Moose Pass on the W. side is a conical rock peak, easy of ascent. It is very central and commands a glorious view, disclosing new glaciers, new peaks, and new valleys in every direction. It is recorded as 'Moose Pass Station,' altitude 8817 ft. After crossing the Pass, the Continental Divide climbs this peak and twists back S. again to cross the Reef Névé and climb Lynx Mountain. The course of the Divide here is very intricate and it zigzags back and forth in a truly wonderful manner; each fold contains a snowfield and glacier, sending their streams alternately flowing E. and W. Our Moose Pass camp was just below the line of big timber: It was one of the most fascinating spots I have ever been at. The trees are spruce, the kind that sends wide outspreading branches so satisfactorily on a wet day, when you sit under them with a jolly blazing fire in front and keep quite dry, and the carpet was pink and white heather.

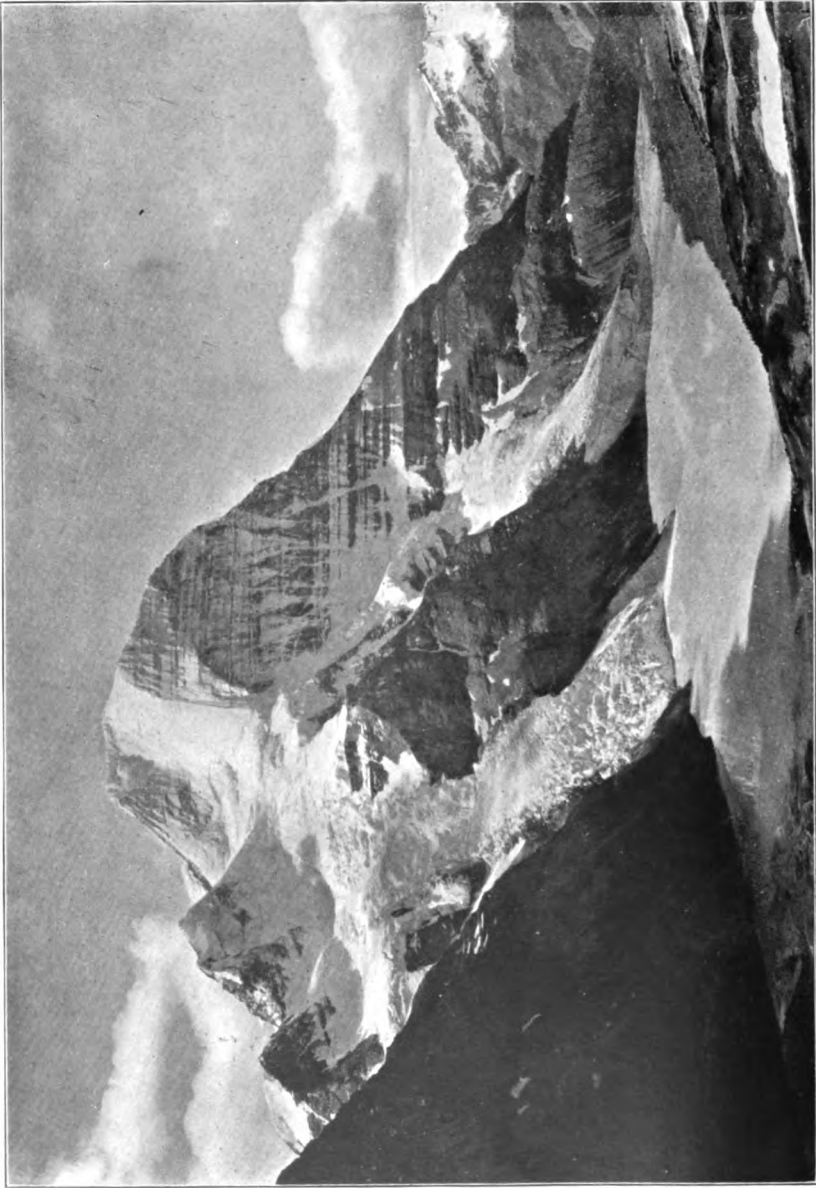
Opposite our camp on the N. side of Calumet Creek is a most interesting snow-filled basin. It contains three distinct glaciers, separated by rock ridges of very peculiar and striking form. This amphitheatre as well as the one at the head of the Creek, will be of exceptional interest to explorers. On the opposite side of the valley, directly below Moose Pass Station, a large snowfield on the W. side of Moose Pass sends down a fine glacier terminating in a delightful alpine valley that encloses a clear bright green lakelet. The camp near the Moose Pass was about forty miles from the railway by the existing trail. It was next moved down Calumet Creek to a point a mile or more above the junction with Big Smoky River. The upper reaches of the Calumet Valley are open and park-like. Then comes a wide shingle flat with many streams glittering silver in the sunlight, and after that thick woods. There are two blazed tracks through the woods: one keeps low down on an easy grade for horses; the other, the Yates trail, leads high up to the crest of a large ridge which stretches far out into the valley from the S. side.

Across the Big Smoky, nearly opposite the opening of Calumet Valley, is another valley that leads to a fine snow-filled

amphitheatre, at the head of which rises a prominent peak. It was occupied as a station and named 'Mt. Gendarme' owing to a peculiar isolated rock pillar that rises from its eastern arête. From the crest could be seen, apparently not far away, but in reality twenty miles, the absolutely pure white face of the big mountain referred to—the one that seems to poke an inquiring nose eastward. I have computed the height of the mountain as 10,898 ft. Directly in front of it rose a black rock mass that looked as though it might have been a cone, but had the top sawed off. This is the peak climbed during the last summer by Dr. Norman Collie and A. L. Mumm, and named by them 'Mt. Bess.' On the crest or sawed-off portion is a snow plateau which Mumm says is nearly level, and must be fully a quarter of a mile across. The altitude of the peak is computed at 10,468 ft.*

Immediately below Mt. Gendarme lay a delightful-looking valley with a semicircle of tremendous glaciers at its head. They rose in great icefalls, mounds, and snow-slopes, sheer to the summits of the peaks, even climbing in almost perpendicular façades to the very summit of the peak named 'Whitehorn' by Coleman. Snow arms reached out in every direction and presented a scene of dazzling whiteness, reminding me forcibly of the Selkirks, looking southward from the summit of Mt. Dawson. The mass culminated in a distant high peak of which the side towards us was wrapped in snow. I named it Mt. Longstaff after the well-known mountaineer and explorer, Dr. T. G. Longstaff. The altitude is 10,530 ft. The amphitheatre, on the N. side of which lies Mt. Gendarme, contains a snowfield about two miles long by one and a-half broad, with a most interesting glacier flowing down the valley by which it is approached. The lower levels are covered by a veneer of stones, so thickly as completely to hide the ice. It is strewn with glacier tables in many positions of uprightness. Huge blocks of rock weighing as much as twenty tons and more are set all over it on ice pedestals. Sand cones are very frequent and perfect in their pyramidal form. The most striking feature, however, is a vertical ice wall or cliff, where the dry glacier leaves its *névé*, rising to a height of 400 ft. Great chunks keep breaking off

* There is a great snow *cap*, 2-300 ft. deep, on Mount Bess, which may have been lost to Mr. Wheeler's view against the big white mountain behind it. The difference in height between the two peaks is probably less than 200 ft.—A. L. M.



Byron Harman, photo.

N.F.

THE FACE OF MT. ROBSON, WITH BERG LAKE

(from the shoulder of Mumm's Peak).

Swan Electric Engraving Co., Ltd.

at the edge of the cliff and sprinkle the ice floor below with thousands of pieces, giving it a most bizarre effect. Over this ice wall, towards the S. side, two much broken ice-falls sweep from top to bottom in very striking cascades. I named it 'The Mural Glacier.' Above is the gently sloping snowfield bounded by towering precipitous cliffs, rising thousands of feet to the serrated ridge that forms the backbone of Canada, for along the ridge lies the Continental Divide. A gap in the rock circle, 300 ft. above the snow-field, permits of a mountaineer's pass to the valley of the Grand Fork, almost opposite Berg Lake.

Meanwhile camp had been moved up the Smoky Valley, across Robson Pass, and down the Grand Fork Valley to about a mile below Berg Lake. Some days later we climbed the peak on which the cairn stood. It had been placed there in 1910 by Dr. J. N. Collie and A. L. Mumm, accompanied by the well-known Swiss guide, Moritz Inderbinen. The peak is 9740 ft. in altitude and has been christened 'Mumm's Peak.' From the summit the scene beggars description. We looked at the N.E. face of the Mt. Robson massif. It rose supreme in the centre of the view. If one is lucky the hoary crest is free from clouds, which is not often the case. On this side tremendous rock walls seem to fall sheer thousands of feet to the valley—far too steep for snow to lie. On the N. shoulder rests a mighty ice-field, crevassed and broken in every direction. From its centre a rugged ridge protrudes, of which the culminating apex has been named by Coleman 'The Helmet,' from the resemblance to the old Roman headpiece when seen from the valley below. The altitude is 11,160 ft. The ridge ends in a semi-detached rock mass, aptly named by Coleman 'Rearguard' (altitude 9000 ft.). From the elevated ice-field, fed by avalanching snows from the sides of Robson, a gigantic ice cascade tumbles down rock precipices and buries its nose in the waters of Berg Lake. At frequent intervals great chunks of ice break off with a report like cannon, and, bounding and rattling down the steep incline, plunge into the clear water of the lake. I have seen one of these enormous ice blocks send a spout of water fully twenty feet into the air, while the waves caused by the upheaval wash to the farther shore. The incessant ice-falls soon fill the lake with floating blocks which drift hither and thither as the wind directs. Imagine a lake a mile and a-half long by three-quarters of a mile wide, of perfect turquoise-blue, filling the whole width of the valley floor, its

surface dotted thickly with miniature icebergs, showing snow white against it. The altitude of the lake is 5506 ft. The ice cascade falls 5000 ft. from where it originates between the main massif of Mt. Robson and the Helmet. Two old, well-formed lateral moraines protrude into the lake and indicate a period when its bed was filled by ice. Dr. Coleman has named the overhanging ice-fall 'The Blue Glacier.' The term is not strong enough: 'Tumbling Glacier,' though not so euphonious, is a better name to express the activity of such a unique feature.

In line with the Helmet-Rearguard ridge, and a short distance from it, is a similar rock mass to Rearguard, of nearly the same elevation (9154 ft.). Between the two, leading from the wonderful snow-filled cirque, seen in its entirety from our station on the Lynx Range, flows the Robson Glacier. It describes a circular sweep around Rearguard, and, though much crevassed in its upper reaches, is generally easy to travel over. The total length is five miles, with a width of three-quarters of a mile, where the ice-flow is well defined. The mass on the E. side is named Ptarmigan Mountain by Coleman, from the fact that the alplands on the W. slopes are swarming with that species of grouse, a fact we fully verified. In the valley below its precipitous N. face lies Lake Adolphus, a blue gem of a lake three-quarters of a mile long and half a mile wide (5523 ft.). It is delightfully picturesque, nestling snugly in a setting of green spruce. Between the two lakes lies Robson Pass, altitude 5547 ft. The pass is a shingle flat, rising gently to the ice-fall of the Robson Glacier, by the outflow from which it has been formed. The western side is extensively covered by a growth of stunted spruce and scrub, and though the timber is small it represents hundreds of years of growth. The most advanced portion of the glacier is at the western side, and there are two main outflows, each a glacial torrent, the largest part of which goes to Berg Lake. Between the two a low eminence of hard rock, which has so far resisted the action of the ice resting on it, and has been piled up with morainal débris, rises a hundred feet above the pass. The western stream carries most of the volume of the run off, but when the hot sun causes the melting of the ice to be great the eastern stream also carries a considerable quantity of water, and it is this eastern stream that is of particular interest.

It has been said that the line of the Continental watershed passes down the ice and divides the glacier between the E. and W. slopes of the Rockies. I did not find this to be the

case. The Divide, after leaving Lynx Mountain, follows the ridge over Ptarmigan Mountain and descends its N.W. spur to within a few hundred feet of the low rock eminence referred to. It now crosses the shingle flat and climbs Mumm's Peak; thence following the line of the ridge surrounding the Mural Glacier and Snowfield. The eastern stream from the Robson Glacier passes through the narrow gap between the low rock eminence and the spur of Ptarmigan Mountain, and the rush of water has cut in on the height of land, following along its crest for a little and sending several channels flowing to Lake Adolphus. These channels vary in volume and number according to the stage of flow from the Glacier.

It was a glorious day when we made the ascent of Ptarmigan Mountain. The altitude of the highest peak is 9320 ft. The entire amphitheatre of Robson Glacier lay before us. The massif was clear from base to summit, and the scene was a creation of pure crystal white. Konrad picked out what he claimed to be the proper route of ascent and made the prophecy that the time would come when Robson would be climbed in eight hours from a camp at the summit of the pass. Not going quite so far as this, it is not unlikely that it will be done in one day from the farthest-up point of the alps below Ptarmigan Mountain. Midway between the Helmet ridge and the head of the amphitheatre is a great rounded shoulder, jutting out from the east wall of the mountain. It is completely covered by snow, and presents great yawning crevasses, ice cliffs, and steep slopes leading up to the bergschrund at the base of the S.E. precipices. This snow-covered mound has been named 'The Dome.' The route selected by Konrad lay up the glacier to the foot of it; then up a steep rock rib protruding from the superincumbent snow on the N. face of the Dome to the slopes leading to the bergschrund. This crossed, he asserts that climbable ledges will be found to the long horizontal arête, extending S.E. from the mountain. The arête reached, the ascent will be up the long snow slope leading directly to the summit. This is, practically, the route attempted by Hastings, Mumm, and Amery in 1909 under the guidance of Moritz Inderbinen, which would likely have proved successful but for the delay caused through starting from a base camp at the pass. (For an account of this attempt, see 'Canadian Alpine Journal,' Vol. II. No. 2, pp. 1-20.) I should like to have made an attempt to verify Konrad's statement, and my assistants would have been nothing loth; but previous experiments had shown that the uncertainty of weather conditions might have

resulted in loss of valuable time for mapping topography, and we had none to spare.

A word about Mt. Robson. The massif, including its glaciers and glacial lakes, covers an area of more than thirty square miles. Of recent years an altitude of 13,700 ft. above sea level has been assigned to it. I regret to say that I am compelled from my trigonometrical observations to lower the height. I compute its elevation at 13,068 ft. This altitude is deduced from transit readings of the angles of elevation at three widely separated bench-marks established by the engineers of the Grand Trunk Pacific Railway along the road bed, and is carried from summit to summit to the crest of Mt. Robson. In the case of one bench-mark the reading is directly on the summit. This deduction is not absolute. It is impossible to arrive at an absolute deduction where no distinct signal, such as the top of a rock cairn, has been sighted upon, and there is none such on Robson. The result obtained is the mean of four readings on the summit from various other summits around it, of which the altitude has been established through sighting on rock cairns erected on them. In all, six such sights were obtained, but I have discarded two as uncertain, and the tendency being to still lower the altitude. I think the figures given will eventually be found to be not very far from the truth.

Before leaving the Robson Pass I must mention that while camped there Konrad and Harmon started off one cloudy morning to get some pictures of the crevasses and snow formation in the Robson amphitheatre, while Kinney and I made some investigations of the glacier forefoot and marked some rocks at measured distances from the ice for future reference as to advance or retreat. A memorandum of the measurements is here given. Harmon got some fine crevasse and sérac pictures, and, to crown all, they made the ascent of Mt. Resplendent (11,173 ft.). They report this snow-crowned mountain as wonderfully crevassed. The piled-up snow on the N. and N.W. faces is traversed by gaping chasms, set with icy teeth. Near the summit is a great crack, then filled with snow, which might be a very dangerous obstacle. The crest itself is hung with enormous cornices reaching out a great distance. The views, particularly of Resplendent and the Fraser Valleys, were superb. Konrad from this point of vantage confirmed his previous selection of a route up Robson. He states that the horizontal S.E. arête is quite possible, and that, once it is reached, there would be little

further difficulty, as the slope to the summit does not exceed 45°, and the obvious route is along the edge of a great snow mass clinging to the S.E. face of the mountain. He again says it can be done from a camp below Mumm's Peak in eight hours, once the route has been established. But then Konrad is a wonder.

The Grand Fork River, having left Berg Lake, and cut through the boulder wash from the glaciers referred to, flows quietly in many channels over a shingle flat for a mile below the lake. It then enters a narrow rock canyon, and soon becomes a cascade, careering wildly down its bed and showing a great swirl of white water. In half a mile there are five leaps of from 10 to 50 ft., and the stream drops 200 ft. Then comes a line of cliffs extending part way across the valley. Over this the river makes a grand and spectacular leap to a rock floor below, where it turns sharply to the left and pours madly through an extremely narrow box canyon which it has carved in the bed rock. The fall is magnificent and I know no other of quite the same type. The total drop is 145 ft. by aneroid barometer measurement. At a distance of 60 ft. from the crest, the full volume of the water strikes a ledge and bounds outwards for 30 ft., creating a splendid rocket which gives the idea of a giant leap. There is such a feeling of majesty and power inspired by the spectacle that I christened it 'The Emperor Falls' and the rocket 'The Emperor's Leap.' The river now races through a narrow rip in the rock, 6 to 10 ft. wide, churning and swirling and leaping in the wildest manner. This is a distinctly new channel as geological time counts. Close alongside is a deep gorge where the river formerly flowed. There was then no big fall, for the gorge opens from the shingle flats, and descends by a steady grade. It is deep and trees hundreds of years old are growing at the bottom. The present bed and the old one come together about a mile below the falls, where there is another line of cliffs across the valley. Here is a second big fall of 150 ft. It suggests the name of the 'Fall of the Pool.' Two-thirds of the way down is a tiny pool in the rock into which the water leaps; the lower part is more broken. The river then proceeds on its way still in a deep rock canyon, to the last line of cliffs, down which it leaps in a great curve of white foam. 'The White Fall' would be an appropriate name.

Directly E. of the 'White Horn' is an exceptionally fine icefall descending very steeply from a wide snowfield. Its forefront

is of peculiar formation, is much broken and crevassed, and comes to a sharp point between the walls of a deep rock canyon. Its stream has formed a shingle flat which barometer measurements showed to be 1600 ft. below the level of Berg Lake. The shingle flat and the gorge beyond which it lies are at the head of 'The Valley of a Thousand Falls,' a name given by Kinney in one of his explorations. From a height the valley has an austere look. It is bounded by bare cliffs surrounded by flowing and hanging glaciers from which water streams on a hot day creating falls in every direction. Beyond the canyon rise tier on tier the awe-inspiring precipices of Whitehorn, and over against them to the W. a tumbling glacier which showed a fine bunch of séracs, and was continually avalanching fragments from them to the valley below. From the shingle flat at the head of the Valley of a Thousand Falls the drop to the morainal delta of the glacial lake in Grand Fork Valley is 450 ft. by aneroid, or altogether 2060 ft. from the western end of Berg Lake flat, and the stream again cascades down the incline, though in a milder manner. The scene from the delta is grandly picturesque. The valley on all sides except the S. is walled in by rock cliffs and extremely steep slopes. To the W. a fine waterfall comes down the mountain side in a number of white leaps. All around smaller falls from the melting snows are seen on a sunny day breaking over the cliffs of Mts. Robson and the 'White Horn' and falling like long white streamers down their sides. The lake is one of those beautiful glacier-fed lakes of glorious blue, surrounded on the E. by a splendid fringe of dark green spruce, and hemmed in on the W. by nearly sheer rock cliffs. The eastern shore line is delightfully irregular. A prominent point protrudes in the centre, and there are several small bays. It is four-fifths of a mile long by two-fifths wide, and lies at an altitude of 9260 ft.

We climbed a peak to the west, directly behind the big fall. The station is recorded as 'Little Grizzly' (8953 ft.). From it you get a comprehensive bird's-eye view and can see how things really are. Directly opposite, across the valley, could be seen the W. and S.W. faces of Mt. Robson. It rose very steeply on this side. Three distinct lines of cliff could be counted, traversing the lower half, with a slight inclination from the vertical, and between were slopes of varying steepness, some of the lower ones bearing quite large patches of spruce forest. When it is remembered that a line drawn through the centre of Mt. Robson at its base would extend



A. O. Wheeler, photo.

Swan Electric Engraving Co., Ltd.

WEST AND SOUTH FACES OF MT. ROBSON, AND SOUTH FACE OF MT. RESPLENDENT
(from Little Grizzly Station).

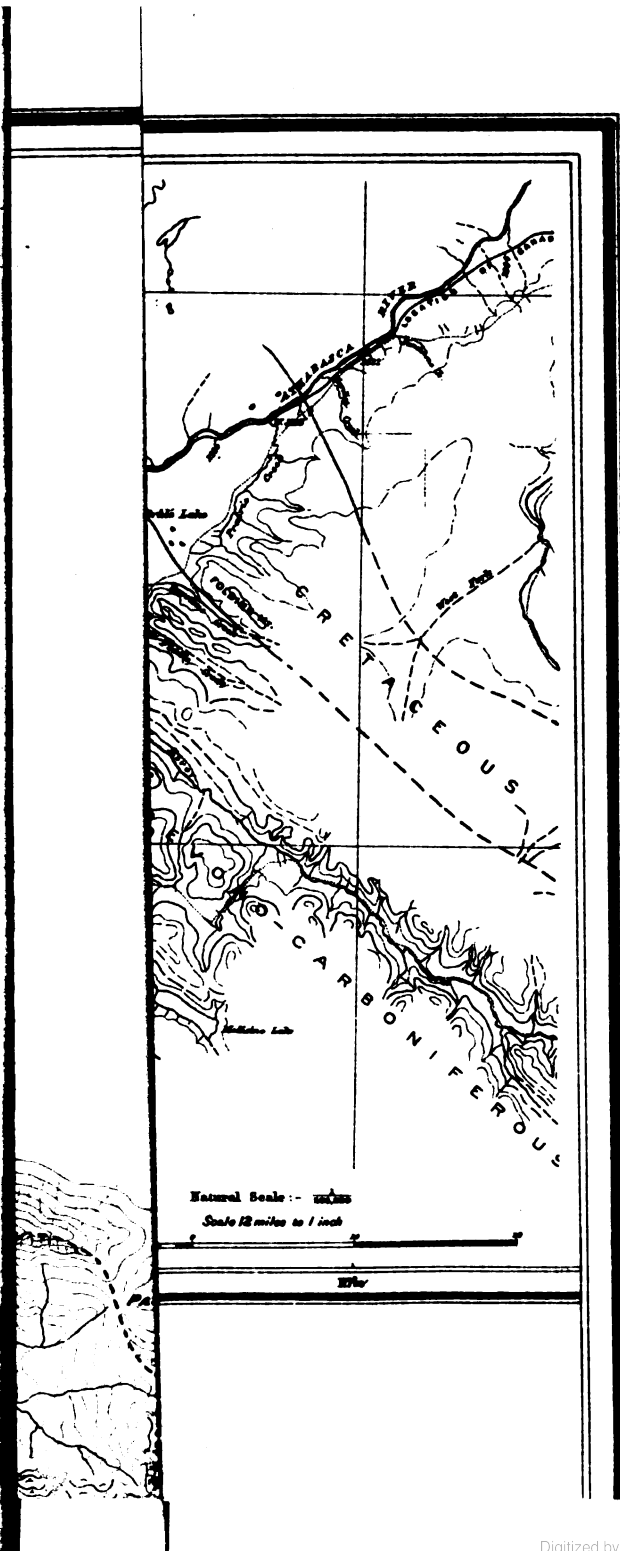
The lake on extreme left is Berg Lake, at the N. foot of Mt. Robson. The lake in centre of foreground is Lake Kinney. The first and only ascent of Mt. Robson, by Messrs. Kinney and Phillips, was made by gaining the upper scree slopes of the W. face and then, from somewhere near the big snowfield, striking straight up towards the summit, over good but steep snow

for more than three miles, and that in this distance it only rises a little over one and three-quarter miles, it will be seen that there is plenty of room on the ledges between the lines of cliffs. Above the uppermost line is the great shale slope frequently referred to by Kinney and Phillips in their accounts of the ascent made by them in 1909. (See 'Canadian Alpine Journal,' Vol. II: No. 2, pp. 21-44.) From bottom to top the this tremendous shale slope measures 1870 ft. Above, rock face becomes very steep, but not too steep to prevent snow lying most of the year. Near the crest could be seen through our field glasses a remarkable feature, a series of snow séracs, fantastically shaped snow pillars, formed through the alternating action of fierce winds and hot sun. Even in the great distance it could be seen that these massive and very striking creations owed their peculiar and eerie shapes to the storms of driving snow that had swept over the mountain. Along the crest appeared enormous cornices reaching far out over the depths below on the N. side. Kinney and Phillips's route of ascent was pointed out, and it was more than ever borne in upon us, not the wonder of their having made the ascent, but the wonder of their ever having made the descent without accident. The route is certainly not one that would be adopted by any experienced mountaineer, and will never become a favourite, if, indeed, it is ever tried again. A careful inspection of it brought home the fact that the first route attempted by Dr. Coleman, the route of the English party of 1909, and that selected by Konrad through his knowledge of mountain conditions, is the proper one for a safe and rapid ascent.

On the opposite side of the Valley, directly across from Mt. Robson, rose the fine peak which on his sketch map Dr. Coleman shows as the 'White Horn'; Mumm speaks of it as 'The Horn,' while Kinney refers to it as 'Mt. Turner.' It does not convey the impression of a horn, and it is not very white except on the N. side. The massif is surrounded on all sides except that of the Grand Fork Valley by glaciers, and rises in steep precipices broken by ledges. Cliff glaciers line the sides and the peak is crested with snow. The whole N. face is clad with snow and from that side it shows a pure white peak. Behind, to the S.W., lay another long and splendid valley, that of Swift Current Creek. It showed a long array of peaks with glaciers filling the hanging valleys that lined both sides and led back farther than could be seen from our point of view. These beautiful valleys!

Their name is 'Legion,' and each new discovery is more beautiful than the one before. All around were peaks, snow fields and icefalls, many easy to reach by a one-day climb from the delta basin of Lake Kinney. Directly across lay the valley of the Little Fork, a tributary of the Grand Fork. It looked intensely attractive for mountaineers and Nature lovers, and showed an easy pass at its head, where lay some fine rolling alplands, leading to the Fraser Valley. On the N. side, straight from its floor, rose in tremendous precipices and unscalable cliffs the walls of Mt. Robson. They were, however, intersected by deep narrow gorges whose sides jutted out in towering shoulders like buttresses. High up above the cliffs, the face of the massif was hung with wide beds of snow, hundreds of feet thick, which were constantly sending down avalanches to the Little Fork Valley. There would be a crack, a roar like near-by thunder, and an immense mass would break away, pouring from ledge to ledge like a giant waterfall, and so come down the gorges. Their paths could be followed from near the top to the very base of the mountain. It was a wondrous sight. To the E. lay Mt. Resplendent, on this side, as on the Resplendent Valley side, showing great precipices. At the base was a most interesting looking glacier with a fine icefall. Between Robson and Resplendent showed an apparently climbable pass to the snow-filled basin of Robson Glacier. The height of this pass is 9700 ft. It would give a rock climb on the Little Fork side, and then all snow and ice to the Robson Pass. It could not, however, be undertaken without professional mountain guides except by skilled mountaineers. Above the pass rises the square-cut vertical end of the long arête extending S.E. from Mt. Robson. The valley was prospected by Dr. Coleman with a view to making an ascent of the mountain from this direction. The idea was rejected, but, even so, I do not think it is impossible, and I look to see the day when a popular route of ascent will be from the Little Fork Valley.

The Grand Fork River flows for a distance of some six or seven miles after leaving the lake, before it joins the Fraser. Its valley is enclosed by high rounded hills (6850 ft.) on the E. side and a rock ridge (7300 ft.) on the W. A pony trail up the Grand Fork Valley to Berg Lake should be constructed as soon as possible. From the hills and ridge before mentioned, magnificent views are had of the broad Fraser Valley, sweeping westward to Tête Jaune Cache, situated at the junction of the McLennan River with the Fraser. The



latter could be seen winding in silver folds, and not far below it was joined by the Grand Fork, which spread itself out in many channels at the point of confluence. But what interested us most was a range of high mountains which lay W. beyond the McLennan River and was probably thirty to fifty miles distant. The range showed some bold, striking peaks and some very fascinating snowfields. These mountains were assumed to be of a goodly altitude, for the reason that the tops of the higher ones were continually in the clouds. It seemed to be one of the groups of high peaks scattered over the district, of which there may be said to be five principal ones. This particular group must be adjacent to the Caribou mountains, and as far as any report of it goes it is unbroken ground. The Canoe River, a tributary of the Columbia and the North Thompson River, a tributary of the Fraser, which it joins many hundred miles distant, both main highways of the Indians and early fur-traders, head in the range.

We had thus made the first complete circuit of Mt. Robson. Travel was by the Moose River and Pass, Calumet Creek, Smoky River, Robson Pass, Grand Fork, and main Fraser Rivers. The total distance is eighty-five miles. A pack train had been taken all the way except over the part between the shingle flats below Berg Lake and the S. end of Kinney Lake—a distance of three miles. It was necessary to send the pack train round by the Moose River route, a matter of five days travel, in order to make the connection again. So it will readily be seen how important it is that this broken link in the chain be taken up. We now proceeded to the crossing of the Athabaska near the site of Henry House, and the remainder of the season during which it was possible to work was spent in carrying on surveys in the Maligne Lake district.

Of the region as a whole, from the entrance to the high mountains at the gap at Brulé Lake to the exit below Tête Jaune Cache, it may briefly be said that it is one of tremendous possibilities to all who may be interested in the various phases of recreation and study presented by snow-clad mountain ranges: to the mountaineer, the artist, the Nature lover, the hunter, the scientist and the every-day tourist who travels to such parts to enjoy their unusual scenic splendours and to derive rest, health and pleasure while doing so; also to the still large number who select such routes to obtain a glimpse while passing from continent to continent. Although there are no great peaks to climb immediately along the line of railway, and the low altitude of the pass and railway bed

necessitates a laborious and irritating climb to timber line over slopes covered by fallen tree trunks, yet there are five distinct groups of great peaks within easy reach : the Robson Group, the group lying W. of Tête Jaune Cache which has yet to be explored, the group of which Mt. Geikie is a centre, lying W. of the Athabaska and S. of the Whirlpool River, the group surrounding the Athabaska Pass, and the group which focusses around Maligne Lake. There are already a number of excellent outfitters and guides in the district, and as soon as the Transcontinental road is in operation from coast to coast trails to the various centres named will give ready access.

MEASUREMENTS TO FOREFOOT OF ROBSON GLACIER.

IN front of the forefoot of the Robson Glacier is an isolated point of rock covered to a large extent by the terminal moraine. It rises from 90 to 100 ft. above the shingle flat of the Pass and appears to have been at one time a continuation of the rocky timbered ridge down which the Continental Divide descends from Ptarmigan Mountain. The outflow from the eastern lobe of the glacier seems to have cut through and isolated the point from the main ridge, piling morainal débris all over it, and depositing boulders on both sides. At the N. base is a small grove of spruce, probably part of the timber on the main ridge when joined. The trees here are several hundred years old.

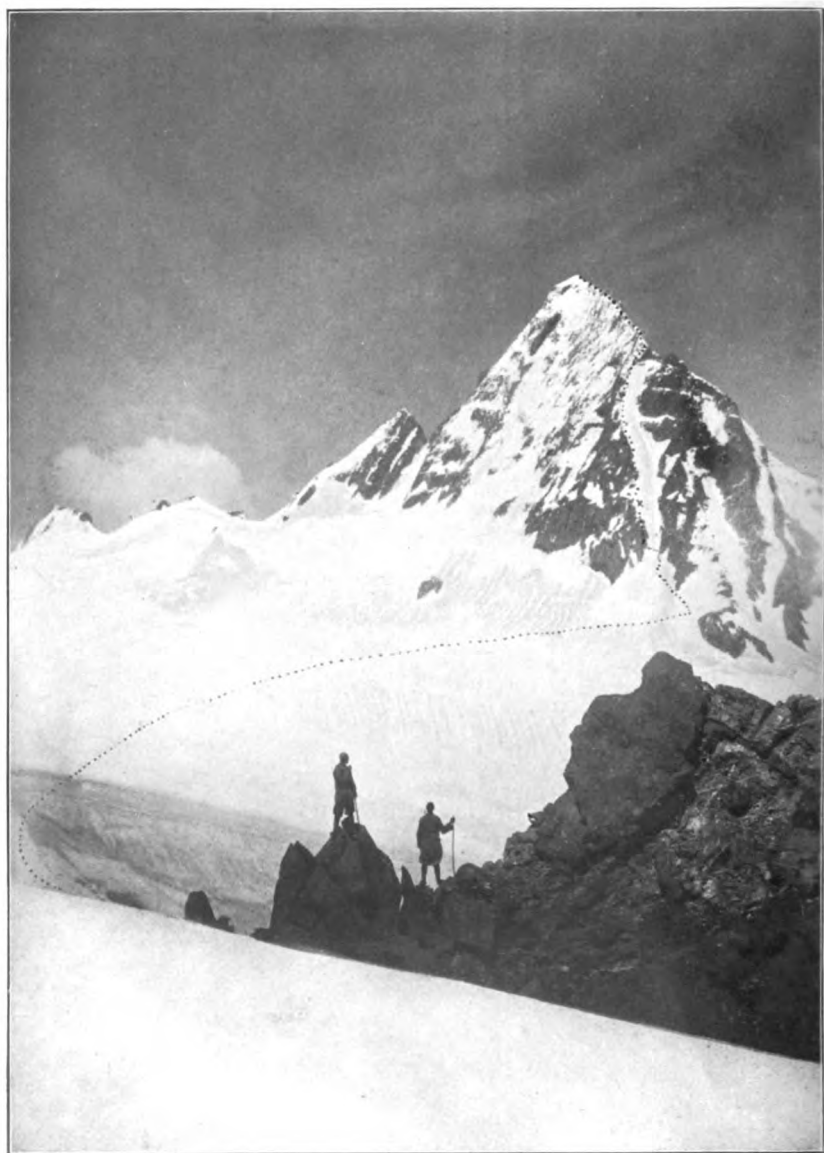
MEASUREMENTS E. OF ISOLATED POINT OF ROCK.

E. edge of white crystalline rock over which water flows is distant from end of ice	. . .	86 ft.
W. edge of white crystalline rock over which water flows is distant from end of ice	. . .	137 ft.
From nearest ice to arrow on rock marked	. . .	338.6 ft.

Rock is $14\frac{1}{2}$ ft. by 7 ft., by 7 ft. high, of dark blue crystalline limestone.

Rock marked :

A. C. C.	TO ICE
AUG. 10	338.6 ft.
1911	

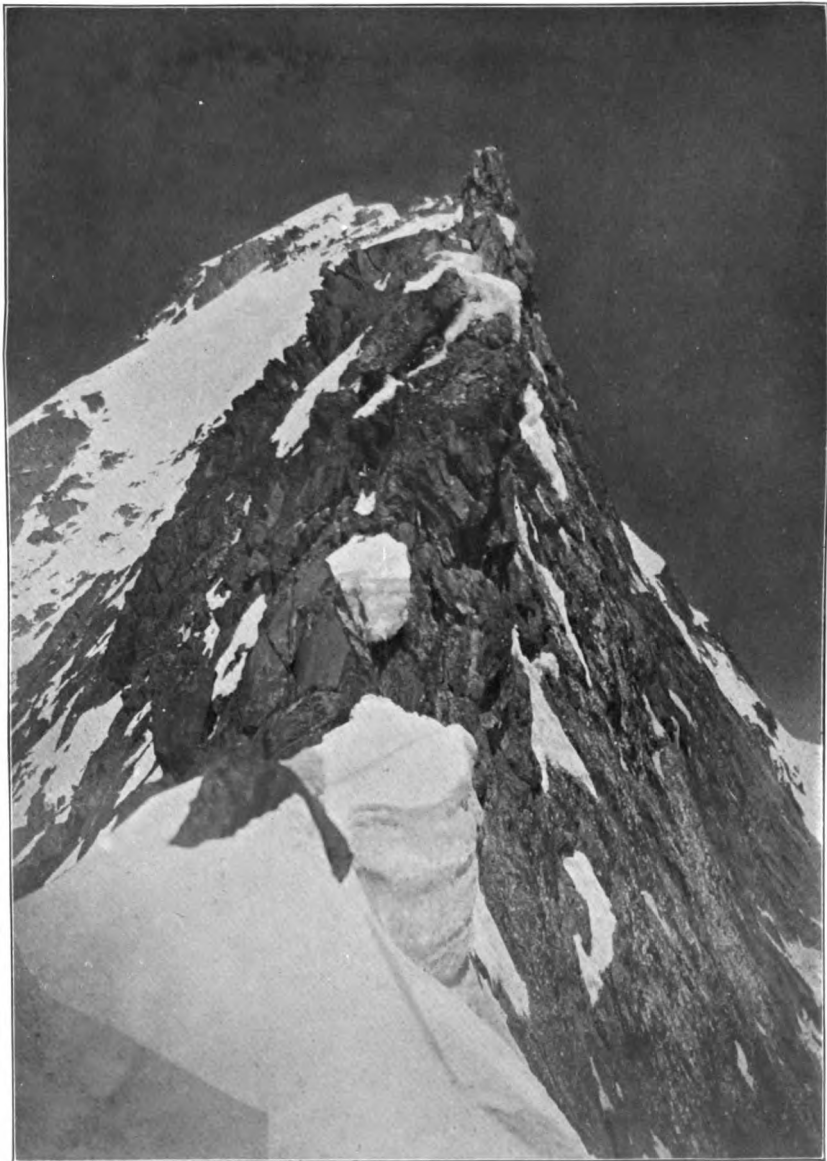


E. F. Neve.

Swan Electric Engraving Co., Ltd.

KOLAHOI PEAK,

Showing route to the top and the position of the shelter tent (marked x).



E. F. Neve.

Swan Electric Engraving Co., Ltd.

KOLAHOI PEAK.

The last 300 ft. and the chief "gendarme," with the corniced summit to the left.

Main stream from ice flows just to east of and immediately below it.

The rock is in line with a square block of rock on the E. moraine of a whitish crystalline formation (size, $16\frac{1}{2}$ ft. face by 13.7 ft. high by 13.4 ft. thick) and the first high point of the old moraine to W. where a pile of stones has been put together.

MEASUREMENTS W. OF ISOLATED POINT OF ROCK.

Marked a vertical slab of blue slaty limestone which forms the W. wall of the isolated point of rock. Slab shows striation and is quite smooth.

It was marked :

A. C. C.	TO ICE
AUG. 10	175 ft.
1911	ALONG WALL

In both markings an arrowhead was put at the point of measurement. The measurement in this case was made along the wall to where the ice of the glacier overhangs it. Here there was an irregular ice cave and the torrent poured from below it, immediately beside the rock wall—a whitish crystalline rock.

Magnetic bearing from this arrow to the most advanced ice is S. 30° W.

Just beyond where the rock slab was marked is a dry bed of the main torrent which sweeps outward around the old moraine farthest from the ice. This bed is not now in use, and the main stream, after leaving the cave, flowed to Berg Lake directly along the foot of the ice, in a position more westerly and much nearer the glacier. Three years ago the first-mentioned bed was in use.

THE ASCENT OF MT. KOLAHOI.

By DR. ERNEST F. NEVE.

IT was a brilliant June morning when we left our camp on the Kolahoi névé, at an altitude of 15,300 ft., and with twelve porters lightly laden we crossed the mile of snowfield intervening between us and our climb. Facing us was the pyramidal peak, rising very steeply 2500 ft. Following

our former route we ascended at first to the right of the eastern couloir, and then, traversing, we continued the ascent on the left side, scrambling up steep rocks until we reached a point (16,200 ft.) where the snow of the couloir overflows its right bank and a tongue was resting on a rocky ledge. Here we proceeded to cut a small platform in the snow and underlying ice and pitched our Whympet tent. The porters were then dismissed, with the exception of one. The climbing party consisted of Lieutenant Mason, R.E., Asdu, Abdullah, and myself. Asdu accompanied Captain Corry last year when he and Lieutenant Squires so nearly reached the top.

Starting next morning before dawn, while the stars were still shining, we ascended steadily a steep rocky rib, occasionally cutting steps up the couloir, and after five hours we reached the point above the top of the couloir where our ridge joined the main eastern arête. At this stage it is necessary to creep round a rocky face with a north-eastern aspect, and from a snow cornice to ascend a little gully some 20 ft. high, which leads on to the arête edge.

The rest of the ascent is almost pure arête climbing. We kept along the edge on the skyline. The distance is apparently only about 300 yards; and the summit is perhaps 300 or 400 ft. above us. And yet, this part of the climb took us four and a half hours to the top and five hours coming back. This is due to the need for caution. Sometimes we were walking on the junction of snow cornice with jagged arête edge. At others we were creeping along a few feet below the skyline, but able to peer over and see the crevasses of the glacier 5000 ft. below. In places there are windows with rocky frame through which we look down into space. On our left, patches of snow and tiers of rocks drop away steeply at various angles between 45° and 70° to the snowfield. The climb is impressive and awe-inspiring; and yet it is not really dangerous, for there is secure hand and foot hold. And a party, three of whom are constantly moored while one moves forward, gives a feeling of confidence and safety.

Two gendarmes on the arête looked as if they might drive us off the route and compel a traverse to the left. But on closer inspection these were found to be climbable. One of them, the first, partly overhangs the precipitous face of the peak, and in descending it was pleasanter not to look down.

We reached the summit at two o'clock. The last 60 ft. was on snow. About 40 ft. from the top there is what looks like a fractured column of basalt, with, close to it, a small outcrop

of rock with Captain Corry's little heap of stones. To the left, at the foot of the last slope, there are also a few rocks. The summit itself is snowcapped and heavily corniced to the N. and W. and less so to the E.

Owing to its isolation and the pointed shape of the peak, the view on all sides is very striking. We look right over the top of the intervening ridges to the extended snowy line of the Pir Panjal Range, the chief points of which, the Brahma, Tatticooti, and Sunset Peaks, are clearly visible. To the N. range upon range stands up with peculiar sharpness. The dazzling white Nanga Parbat ridge at once catches the eye, and forms indeed the extreme boundary to the N. The snowy plateau of Nun Kun to the E. is plainly visible, with, rising from it, the great peak hitherto unclimbed. Quite near, and facing us to the N.E., is the group of Amarnath peaks picturesquely enclosing a snowy amphitheatre.

Heavy clouds were piling up ; so we felt it unwise to delay our descent. This was indeed rather more difficult than the ascent. Fortunately we had quitted the main arête before we were overtaken by night. And the light of the moon, which was nearly full, enabled us to make our way down to our little shelter tent. The climb had taken about sixteen hours. It would be possible to do it, under favourable conditions, in two or three hours less than this, but the risk would rise in direct proportion.

THREE WEEKS OF THE 1911 SEASON.

By J. H. CLAPHAM.

THEY all ought to cherish its memory—those who made great new ascents, those who sat about the knees of the giants or found their steeper shoulders unexpectedly kind, and those who went shouting from valley to valley able to reckon with a growing certainty that cloud would never drive them back, but that a way would be found over peak or pass into a fresh land. A fresh land after a real climb at least every second night is the wanderer's dream, and in 1911 he often dreamed true.

On a Sunday afternoon (July 30) three of us left the men of Turtmann, heavy with their Sunday drinking in the shade, to the fumes of the Rhone valley. The Rhone valley was

hotter than the plains of Egypt, so at least a gnarled peasant down there said, who boasted that he had been an Egyptian military policeman in Arabi's day, and that therefore he knew. Very slowly, with the sulky persistence of the untrained, we rose through the steep forest of the Turtmannthal, took our first ritual wayside bathe in an inadequate stream at seven in the evening, and walked into the hotel at Gruben in our slippers. One of us, though broken in to rock, had never stepped on a glacier, so it was decided that a day should go in introductions. That meant two nights in the Turtmannthal, but to make the balance even we did not again spend two nights in the same place until we had climbed a couple of peaks at the head of the Val d'Isère. On the third day we crossed the Bruneggjoch—a better route than the books say—to Herbriggen and Randa, and discovered what the fine season had made out of icefalls of no reputation. We found our own way off the ice and, when all but hung up in the plunging gullies on the wall between the snow-line and Herbriggen, I went near to repenting of a rather vain-glorious ignorance of the civilised valley of St. Nicholas that I have nursed for ten years. Next day, after extracting the fourth member of the party from the train at Randa, we shopped and teaed and met friends, yet would not sleep, in Zermatt. Lounging up towards the Staffel Alp we were caught by the one real storm of the season, a storm that wavered along the Saasgrat and hid the peaks in turn. Even then there was a hay chalet near, where we lay to gossip, and when the rain was over and gone there was a walk through the scented forest to dinner.

That night Werner, the newly joined number four, preached for the first of many times a discourse on two old texts of his. They are very simple, and for all I know they may be a stale orthodoxy to the wise, but we had never tried to live them out till 1911. The first is easy of practice and it just says: Stay on your peak or your pass as long as ever you can. The second is in part as old as Whymper's 'Scrambles,' and it says: Go to your hut or your bivouac early, and if you have an off day start that also early, so that when you idle you may idle high. For two days the precepts were well observed, and they never were wantonly denied to the end.

I wished to revisit the Col de Valpelline and to take the Tête de Valpelline on the way, thinking that it must be a noble view-point. It is, and, though we came rather late to its crest, we spent nearly two hours there close to the sun looking across at the Dent d'Hérens and the great boundary ridge of



C. F. Bennett, photo.

Swan Electric Engraving Co., Ltd.

DENT D'HÉRENS
FROM TÊTE DE VALPELLINE.

the Val Tournanche or trying to recall the names of those rust-red, iron-grey, or banded yellow peaks of the Upper Valpelline which make one of the finest schemes of rock colouring that I know. Then down, led on by hopes of refinding after seven years a sunny bathing-pool above Prarayé, fed by water—warmed on the alp—that slides into it unbroken down a long steep slab. A swift glissade between the upper and lower basins of the Za-de-Zan helped us to reach the pool before the sun had left it, for the Valpelline stretches out on a clean-cut line into the west; and we rioted naked in the pastures.

How early the start was in the morning I do not quite remember. Not very early, but anyhow we were drinking milk at noon by the Grande Place d'Oren 1000 ft. or so above Prarayé, and we spent the afternoon trying to invent Cumberland gully climbs—with very fair success—on the flanks of the Becca Vannetta. Before this we had found a cave, a double cave, for the night. There was no great call to bivouac, but we wanted to try sleeping out with no paraphernalia of porters and blankets. In the lower story of the cave were some sheep's bones and, it was said, some moss or other herbage. The upper story was a rock cleft with an overhang into which two men might wedge. To the older and tougher pair went the cleft, and yet those who were given the herbage and the bones said that they never slept. For my part I slept an hour or two before midnight, until the chill struck up from the rock through my spare shirts and things. Then I got out and lit my pipe, and from the darkness of a moonlight shadow watched the swing of the constellations, while below me Werner, who had also given up the cleft, appeared to be cuddling the ashes of the fire on which we had cooked our supper.

Whether it was a broken night or bad climbing I cannot say, but we were beaten next morning in an attempt at La Sengla from the Col d'Oren. No, not absolutely beaten; but we started so late and got so slowly up the rotten and difficult rocks that either the summit or our plan of sleeping at Mauvoisin had to be left. I knew that the hour which Ball gives for the climb must be wrong, but I supposed that with clean rock three or four hours would take us up and down. Now I doubt whether less than five or six would ever suffice, and as we were climbing that day it would have been seven or eight.* We decided against the summit. We had not much reserve food, and did not know what chance there was of picking up

* See Capt. Farrar's note in the August number of the JOURNAL.

enough for four at Chanrion. Then too we wanted to cross the Combin on Monday.

We might have taken our Sunday morning's rest somewhere higher than Mauvoisin had the next move been certain. My own idea was a bivouac above Chermontane or a midnight halt somewhere near the foot of the S.E. ridge of the Combin. We were to attack the ridge in light marching order, come back on our tracks and sleep at By. But I was outvoted or over-persuaded, and in the end we slept conventionally enough in the Panossière hut, after a killing ascent from Mauvoisin towards the Col des Otanes, through an alder-choked gully that recalled the lower slopes of the seaboard mountains of Norway—a gully with which no decent mountaineer should ever have got himself mixed up. It was my fault.

That night thunder broke over the Combin and we were glad that we were not being hunted out of a chilly bivouac at 10,000 ft. At two in the morning the air was still warm, the Corbassière ice hatefully slippery, and the face of the sky sullen. Dawn came yellow beneath the cloud above the little black peaks in the far N.E., like a bilious eye under a heavy lid. We did not mean to go back, and by this time we were in touch with the routes to Bourg St. Pierre and the Valsorey hut. If the day held we meant to see all we could of the mountain—for which two of us had often slept, but none had ever climbed—by combining the approach up the glacier from the N. with an ascent of the W. ridge and some sort of descent on the S. face. The day did hold. A little snow storm was blurring Mont Blanc and a very few flakes fell on us as we turned up the rocks shortly after seven; but the weather got no worse, and by ten we were on the Combin de Valsorey, having left our sacks some 750 ft. below at a point from which we could see a way down to the upper basin of the Sonadon glacier. Forty minutes in a hot cloud that had lately closed about the peak brought us to the Graffeneire. To the north and the east the masses of cumulus, dun and purple and brazen, laboured upwards one behind another scores of thousands of feet; but through the rifts we saw far into the south, and that is the view I love.

The southern face was easy enough, though icy in places, and no stones fell. By 3.20 we were boiling tea on the Col du Sonadon, once more in hot cloud, feeling that our day's work was nearly done. But the col is a full 5000 ft. above By and we took a wrong turning. As we went down the first slopes of the Mont Durand glacier the seniors felt sure that

they had sighted, once when the cloud broke, a rock ridge on the frontier line to our right whose E. end we must turn, so Siegfried said, to get to the Col de By. Hickman, who had seen his first glacier a week earlier, suggested with a decent modesty that it was not far enough down. This was treated as a voice of one advising from the perambulator, with the result that I had some stiff cutting across the top of an icefall, a descent last down a steep greasy buttress made of the beastliest of all the schists—the schist which seems to be stratified out of dirty burnt cardboard—and a second descent face in to a wet snow trough beside the lower part of the fall.

At the bottom we turned right and came to a most attractive little col, perhaps 20 yards wide, with two great topheavy rocks like toadstools standing sentinel on either side. There was the basin of By, dusty and sombre under the evening clouds that were now just above us; there was a bit of corrie glacier or snowfield at our feet, but we were certainly not on the Col de By. It must have been the Col d'Amianthe. The snowfield gave 500–600 ft. of superb glissade; the schisty slopes below it are easy going, the pastures easier still, and if the party had not got broken up, and if one had not gone lame, and if another—and he the heaviest—had not turned a complete somersault in jumping down very steep turf we might have been at By by 7.0. Actually it was 7.30. ❄️❄️

The woman at By, who is related to the Ruffiers of Courmayeur, proposes to build a little inn. She is a gifted and delightful host, and if she builds an inn it will succeed. I am the more thankful to have seen that wonderful basin again, the greatest and richest that I know, while she was still only intending. It lies there an immense irregular amphitheatre, miles across from the last spurs of the Mont Vélan to the harsh crags of the Mont Clapier, its eastern floor cut by the vale of the White Water, with a score of 'granges' and I suppose thousands of kine, looking out over the valley of Aosta at the Grivola and the southern sun. Nowhere can you talk cow more easily, and the cow-talk is particularly interesting because of the big private herds and private alps that are common on the Italian side. We slept that night, two by two, in the box beds of the woman's retainers. I can still see one of us lying late with open mouth and damaged face where the sunlight fell through the door on the hens, the children, the grown-ups, and himself. In our box the night's rest had been but moderate; yet I do not want to find anything more genteel when I return to By. My heart is up there among the

cows, though I had not Hickman's luck. Him the twelve-year-old daughter of the woman loved because of his ruddy countenance and his ingratiating address. 'Il est beau,' she said judicially, and I believe she was stitching on buttons or darning socks for him to the last.

You cannot work the Val d'Aosta all on foot, though Werner and I did once carry our packs five miles down its main road on an August day. We took a cart at Valpelline, and drove through the vineyards and the chestnuts and the market-women on mules into Aosta on the Tuesday night, and out again by the 5 o'clock diligence on the Wednesday morning. Some walked up the Val Grisanche and some up the Val de Rhêmes, all aiming at Fornet. Naturally the Val Grisanche people got there first. I was glad that I was of that section, because the uppers of my boots began to come away from the soles and Val Grisanche is a more likely place for cobblers. At the church-village a superior postmaster, leaning against his door-post in his shirt sleeves, said there was a cobbler up valley and a cobbler down valley, but no cobbler at Eglise. So we pressed on in a great heat to Fornet. There an excellent man known to many wanderers keeps beds, three of his own and more of his friends' at a pinch. He has an old mother who is a dear. She calls him 'the lad,' and she is a jealous guardian of his beds, a cautious retailer of his soft sugar. While he found the cobbler we bathed and made tea in the forest. The Val de Rhêmes people who came later, heated from the Col de Torrent, insisted on bathing in the village trough.

In that country the mountains run small; so, though we started late and never hurried, we had no difficulty in climbing the Granta Parei on the way to Val d'Isère next day. But in the honest memories of the day the peak is clouded with a great sorrow. There is much yellow marble in the rocks about the head of the Val de Rhêmes, especially in the Sassièren glen. Long ago Werner and I had found there a water-worn marble bathing trough, in which you could lie and be jostled downstream by a strong current. We had often talked of it. I dare say it had got longer and smoother and more obviously marbly with the years. Ever since Randa we had promised the others that bathe: it was one of the things that had decided our route. But we never found the place, though we searched until the going down of the sun. So we came late to Val d'Isère, and slept in the hay because of motorists and Alpine Chasseurs on manœuvres. It was good hay with rugs, and we slept ten hours. There was more cobbling to be done after

breakfast before we could move on, and this left time for gossip. Two friendly non-commissioned officers lent us shaving tackle for use by the village watercourse, discussed the armies of the Powers, and asked what the English fleet would do in case——. After that an old gentleman from Grenoble took me aside to tell me what he really thought of the government of the Third Republic.

Later we loaded up and strolled down the road to Tignes. The inn of Tignes has a bad reputation, and when I was last there deserved it. But let no one who visits the Val d'Isère fail to trade at the shop of Tignes. He must be quick, for the old lady who keeps it is ageing. When we got there she was filling up the wine-bottles of thirsty soldiers and selling them sugar 'for four sous.' So we sat about on casks and cases to watch the by-play. Then our turn came. She gave us seven good reasons why we should have more cheese, more wine, and more figs than ever we had intended. She tried to sell us lace, and when I weakly affected poverty to escape the clash of her tongue she looked me in the eye and said: 'My friend, people who are poor don't come all the way to this country. *We* are poor, but *you*——.' We ran away from her scorn, our sacks bulged out with her wares.

Just as day was failing and the night wind blowing cold from the ice we came to the Grange Martin, high up on the pastures of Mont Pourri. Father Martin was sulky and perhaps a little drunken. He growled about the damage done to his hay by sleeping tourists and the stinginess of a recent party. While I was picking out a likeness, beneath the drink, between him and a clerical friend of mine Werner was stroking him down with persuasive colloquial French. But I claim to have sealed the alliance with a gift of peppermint drops to Baby Martin. After that we had a pleasant evening enough. Before the day came we were cooking, and before we had done cooking a cheeseman from a neighbouring chalet burst in with a yell to wake the mixed population in Martin's bunks. Martin seemed content with six francs and a little assistance in rounding up his goats and calves; and we got away—

'When dusk shrunk cold and light trod shy
And dawn's grey eyes were troubled grey,'

to traverse the ridge of Mont Pourri with the help of recent articles in this JOURNAL. Therefore I am free to avoid technical talk.

The doctrine of summit halts was fortified that day by my

reluctance to start down-hill—because I had pulled a big stone on to the toes of my right foot on the ascent—and by Hickman's rather serious indisposition, which came to a head by the cairn. We stayed there well over two hours. Years ago, walking up the Val d'Isère, I wondered why the church spire of the village of Gurra was not knocked down by ice falling from the Gurra glacier, so near did they seem to one another from below. From above as I—brooding sleepily with reason in abeyance—looked down the long sluggish flow of the glacier, the permanence of the spire was more incredible than ever; for it stuck up lonely in the line of sight between the broken end of the ice and the slopes across the valley. Now I can invent an explanation, but I still like to think that there isn't one or that the spire is kept there by the grace of Our Lady of the Snows.

At 2 P.M. we moved on and only left the rocks of that great hog-backed ridge at 4.15. We had been on it since about 9.30. Its charm is that you can keep absolutely to the crest all the way, except for a few yards at the very end, where you must avoid some slanting needles of grey-green rock by a rotten traverse under them on the Val d'Isère side. The névé was of course much cut about with crevasses and worn, like every névé in 1911, into ridge and furrow by the long drought. To a tired man with broken feet this ridge and furrow, as it hardens towards nightfall, is provocative. But very steep alp is worse, and of that there is a great slope in the Thuria glen below the moraines. Daylight held until we found the highest tracks and there divided. Werner was to push on and get Hickman to bed as soon as might be; Bennett was to accompany my testy blunderings down-hill, through forest and unknown sleeping villages, through water meadows where the track vanished and corn fields where the crickets sang, down into the steaming gorge of the Isère and up again to a cluster of lights that we thought must be Ste. Foy. I longed to go to bed among the stooks, and when we actually got to the bridge I felt sure that the others could not have had our luck in path-finding. They must be sleeping out. But by a different route they had got in about ten minutes before us. And as we stumbled into the bar of the Hôtel du Mont Iseran, where the soldiers were drinking, Werner was making it clear to the pleasant women with big earrings who keep that excellent little house that, however full it might be of Chasseurs, we must have at least one bed. There was just one, in the room of a *sous-officier* who courteously let our sick man fill it. The rest



C. F. Bennett, photo.

Swan Electric Engraving Co., Ltd

MT. POURRI,
FROM LA CRAU, ABOVE ST^E FOY.



C. F. Bennett, photo.

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GRANDES MURAILLES,
FROM SUMMIT OF TÊTE DE VALPELLINE.

of us went to the hay again in a glorious loft with no walls, from which on the Sunday morning you could see, framed between the eaves and the floor, Mont Pourri from his crest to the cornfields about his feet and all those bewildering villages.

That Sunday was our only slipper-day. On Monday the official view was that I could only walk up-hill. So we got away at 7.15 to idle in the Ste. Foy glen, find a chalet for the night, and cross the Rutor next day. By noon we had lunched and bathed and become more enterprising. Much remained to do and only the balance of that week for the doing. In the end we hunted up a little col that we called the Col de Belle Combe, after the glen on the Italian side into which it leads, and pounded down to La Thuile at night. It is a useful and beautiful route for anyone who does not care to use the Little St. Bernard. Catching another 5 o'clock diligence, we breakfasted and lunched in Courmayeur, where we met Jones and Young just down from the ridge of the Jorasses. We were very respectful, but not very jealous. They were much greater men than we, but we fancied that they could not be much happier. Yet I hope they were. It is good to think of great hoards of the joy of the mountains piling up against the day when the clouds return after the rain.

I think we had completed the plan for the next two days before starting up the Géant zig-zags that afternoon. There was to be one day on the Midi for the view and one on the Moine ridge of the Verte for the climb—both new peaks to all of us as it happened—and on the third night we were to sleep at the Montanvert. It was assumed that the first day would be so short that we could rest on the turf above the Egralets rocks in the afternoon. This we did not do, nor did we get to the Montanvert on the third night. The Midi served its purpose so wonderfully well that we spent our full two hours on top, with a circle of friendly old climbs, from the Blaitière and the Charmoz to the Mont Dolent and the Jorasses behind us, and the best of them all, the descent from Mont Blanc by the Col du Mont Maudit, in front. Then the séracs of the Géant took an unconscionable time. The Couvercle hut, of course, was full, and every bunk taken; but the President of the Chamonix section of the C.A.F., who happened to be there, found for us one mattress which, laid crossways, kept our four hip bones from the planks.

Because it was late and I was idle the glacier of the Verte had been prospected only perfunctorily and in a failing light. At 2.30 next morning we were working leisurely up its centre,

where the ice gave back faint blues and silvery greys under the moon, whereas we should have followed a band of dead-white snow which, even in 1911, ran unbroken beneath the cliffs of the Moine to the moraines at the summit of the Couvercle rocks. But we only learnt this from aloft. For the rocks we were relying mainly on a hint from Young—climb the face, on buttresses if you can, to the nick behind the Cardinal and then follow the ridge conscientiously. My party said that I took too many buttresses and wasted time on the way up to the nick. I think they were right; but the buttress climbing was splendid; there was a weight of authority behind me and I remain impenitent. It was not much after 7.30 when first we saw over to the Dru. The rocks were in perfect condition, and we talked of reaching the summit between 10 and 11. But we were determined not to sacrifice climbing to speed, so time was spent in trying ridge routes that would not go and, as the hours tailed out, we certainly went slowly. For a great part of the way it is easy to keep below the ridge on the S. side, along the line of a bed of rock softer than that which has endured to make the crest. This seems to be the guides' route, and has some little cairns. We used it a great deal on the way down, but going up we only found it late and only used it when we were obliged. It avoids a quantity of excellent, though not really difficult, rock-climbing, especially the ascent of the face of a great triangular notch in the ridge very conspicuous from Trélaporte and the Charmoz; it introduces a slight risk of stones; and it rules out many glorious views. For the last few hundred feet the crest is mostly snow; in 1911 a flimsy-looking comb, fretted in places into lace-work of ice or fringed with jabbing icicles, under a whole system of which I remember crawling at one point. We were elaborately discreet, because one of the two parties that had left notes of the climb in the Couvercle book for 1911 had spoken of these snow ridges in the most terrifying mountaineering French. Really they were quite safe, but you could not hurry. On the descent I timed this bit, and found that it took us almost an hour.

As it was nearly 1 o'clock when we came out on to the final snow cap, and as we wanted to recross the snowy part of the ridge without too much delay, the long halt and a good meal were postponed until we were back on the rocks. Had we dawdled there less and not wasted half an hour at the foot of the rocks between six and seven, we might have slept at the Montanvert after all. As it was we raced the darkness down the furrowed slopes of névé under the Moine that we had



C. F. Bennett, photo.

Swan Electric Engraving Co., Ltd.

AIGUILLE VERTE, FROM AIG. DE BLAITIÈRE.

marked from above. My foot protested. I fell repeatedly over the ridges and all tempers ran short. Happily the Couverele held only one visitor, a member of this Club, and though we went short of supper, each had a mattress and blankets 'at discretion.' Next morning we started at 7.15 in search of a better breakfast than meat lozenges, water, and the crusts left by other parties. Five gluttonous hours at the Montanvert in the height of the day were corrupting; but we managed to cross the Mer de Glace and make our way through the woods to Lognan in the late afternoon.

At Lognan we fell to idler levels and threw up in advance all thought of a peak on the Saturday, our last climbing day. We slouched up to the Col du Chardonnet and made merry there for two hours and a-half. Coming down on the Saleinaz side we were glad that there was no call to hurry; because an unexpected *Schrund* had to be turned on steep and slaty rocks. Passing through the Fenêtre de Saleinaz we were puzzled to find the air on the Trient plateau full of the scent of burning wood, even the sky filmed over with what seemed to be smoke. Not until we got down did we learn to connect this odd appearance with the forest fires of that abnormal summer. Below the Col d'Arpette was a moraine lake with ice floes, and there we bathed. Some of us had never bathed with floes and wanted an experience. Those who had, I fancy, wanted to remind themselves whether it was as glorious an experience as certain of our own poets have said. I thought not quite, but then I lack fire. Werner disagrees with me, and he is by far the stronger swimmer. The long descent from the Col d'Orny is so dusty that we went into the Lac de Champex also that night. It was exactly three weeks since we came into the Rhone valley, and it is thirteen months ago as I finish writing this. For the first time in twelve years I have not seen dawn on the snow nor heard the fall of water from the ice. They say it has been a bad season. Bad indeed: in it I have lost a friend and the Club one of the great names of 1911.

THE FIRST ASCENT OF ADAI KHOKH.

BY DOUGLAS W. FRESHFIELD.

IN the 'Rivista Mensile' of the Italian Club (April 1911 and 1912) Dr. Ronchetti, who contributed a paper to our pages (*ALPINE JOURNAL*, vol. xxiv. p. 218), has recorded an ascent of Kazbek and further explorations of the basin of the Zea Glacier. In the course of his narrative he mentions that he noticed what he deemed a possible route from the névé of the Zea up the loftiest peak of the Adai Khokh group, known hitherto in this country as Adai Khokh, but recently renamed in Russia Uilpata Tau. Dr. Ronchetti suggests that this route corresponds fairly in its details with the climb described by M. de Déchy in his 'Kaukasus' (1905), as taken by himself and his guides in 1884. It may be remembered that at the time, writing in these pages (*ALPINE JOURNAL*, vol. xii. p. 317 : 1885) and for some years afterwards, until, in fact, the Russian surveyors determined the altitudes of the various summits of the group, M. de Déchy identified the peak he had climbed with that conspicuous from the upper Rion and the Mamison Pass, which was then believed to be the loftiest in the neighbourhood and is now known as Khamkhaki Khokh.

When, however, at a later date it had been ascertained that this conspicuous peak was inferior to several of the more modest summits in the heart of the group, M. de Déchy claimed that he had gained that which the triangulation had proved to be the loftiest. One of the chief grounds of his claim, as I understand, was that he felt confident that there was no neighbouring peak loftier than his own.

Dr. Ronchetti has traced for me on one of his photographs the possible line of ascent he refers to in his text. It lies up the south-eastern face and then along the S. or S.E. ridge of Adai Khokh. He further informs me that in identifying it with that described by M. de Déchy he had gone on the narrative contained in Déchy's 'Kaukasus' and had not referred to the more detailed contemporary account in Déchy's article in the *ALPINE JOURNAL*. This contains the following sentences, which do not appear in the later work : 'Our ascent of Adai Khokh was effected by the N.E. ridge, which culminates in the summit we first attained. From this first peak we climbed in a southerly direction to the highest peak.' It seems to me, therefore, impossible to

connect Dr. Ronchetti's hypothetical route with M. de Déchy's climb. It may be added that M. de Déchy describes the ridge he climbed as very formidable and more difficult than that of the Weisshorn, while Mr. Holder's party found the S. ridge perfectly easy.*

In this state of the case I appealed to M. de Déchy for further information. In doing so I pointed out that in the photographs taken by Dr. Ronchetti there was some indication of the mountain having a more or less pronounced eastern ridge, or buttress, projecting into the *Zea névé* and not forming part of the watershed between that glacier and the Karagom; and that S. Sella's view from Shada showed that the summit-ridge had two points lying approximately E. and W. of each other.

In his reply M. de Déchy states that his line of ascent did not overlook the Karagom Glacier, and that he may not have been exact as to the relative bearings of the two points on the summit-ridge. He also calls my attention to the words 'durch eine Lücke der sich vor uns erhebenden wildzerissenen Gebirgskämme' which occur in his 'Kaukasus' in the description of the view towards the Mingrelian lowlands, which he had from the summit he climbed. These words, he assures me, are copied from his original notes. The unlucky omission of this, or any similar phrase, in the earlier account published long ago in these pages (vol. xii.) confirmed those who were acquainted with the local orography in accepting M. de Déchy's former identification of his peak with Khamkhaki Khokh. For from the true Adai Khokh no general view of the nearer southern valleys can be obtainable. That peak, like the Finsteraarhorn, is ringed by a circle of lofty summits and is wholly invisible from the upper Rion Valley. It seems to me, therefore, that

* Mr. Holder's account of his and Mr. Cockin's ascent of the highest peak of the Adai Khokh group from the Karagom Glacier will be found in the *Alpine Journal*, vol. xv. pp. 317 and 513. In the earlier record it is called Skatikom Khokh, a name properly applied to another summit. Caucasian nomenclature has been complicated rather than improved by successive travellers. There is a good map and a bibliography up to 1892 of the Adai Khokh group in the *Alpine Journal*, vol. xiii. p. 31. The 'Double-peak,' 14,812 ft., was accidentally passed over in the Appendix to my 'Central Caucasus.' Copies of this Appendix can be procured separately from the Secretary of the Club at Savile Row, price 2s. 6d.

M. de Déchy may be held to have shown that the incidents of his climb, as now elucidated, on the whole fit better with Adai Khokh than with any of the neighbouring and lower peaks.

It is to be hoped that some strong party will before long camp on the upper Zea Glacier, climb the two still maiden peaks between Adai Khokh and Khamkhaki Khokh and attempt to traverse Adai Khokh by a combination of M. de Déchy's and Mr. Holder's routes. There is much besides in this noble group that awaits the explorer. I may add that in Dr. Ronchetti's photographs the N. side of our 1889 pass, now called the 'Freshfield Pass,' looks very awkward, and any party who may wish to repeat it will be well advised not to take it—as early in the season we did—from the South.

Dr. Ronchetti's article is illustrated by a very instructive panorama of the Zea summits, and details of the eastern face of Adai Khokh may be studied in the telephotographic view on p. 39 of vol. i. of Déchy's 'Kaukasus.'

THE EAST OR MACUGNAGA FACE OF THE NORDEND.

By J. P. FARRAR.

It may be interesting to record here all the ascents of this face so far as I can trace them. The article in 'Bollettino del C.A.I.' vol. xxvii. 1894, 'Il Nordend,' should be studied, as it is accompanied by a sketch map of the routes, while the frontispiece to the volume is one of the finest pictures of this almost unrivalled face which I have seen.

1. July, 1876.

Signor Luigi Brioschi. Guides, Ferdinand Imseng, Abram Imseng.—They camped at x shown in 'Bollettino,' xxvii. p. 51, following the *right*-hand route. Left Macugnaga 2 A.M., arr. bivouac 7 P.M. Left bivouac 2 A.M., reached summit 7 P.M. They always kept to the right. No original account of this great expedition appears to have been published.

2. September 11, 1893.

Signor Carlo Restelli. Guides, Mattias Zurbriggen, Luigi Burgener.—This expedition is fully described in the 'Boll.' above referred to. They left the Marinelli hut 2.30 A.M., arr. summit 6 P.M. Forced to bivouac on the way down. Their line is the *left*-hand route in the sketch, and this line was invariably followed by Zurbriggen in his later ascents. It appears, however, much the more exposed to stones.

3. September 9, 1898.

J. P. Farrar. Guide, Daniel Maquignaz. Porter, G. B. Pélissier.—Note of ascent attached. We followed approximately the right-hand line.

After leaving the avalanche bank at the foot of the face proper, the way lies for some hours up a broken rock face, so much broken up that even if stones did fall there would be ample cover. Higher up the arêtes become more defined, though there is no real main arête except the N. arête leading from the Jägerjoch (far away on the right).

Left Marinelli hut 4.15. At first to right of arête above the Marinelli couloir, then gained broad snow ridge (avalanche bank) leading to rocks forming the base of the mountain. Crossed Bergschrund rather to right of highest point of avalanche bank. Reached rocks 6.15. Straight up over steep at times, but easy rocks, rather to left, overlooking a flat slope of shaly rocks. Breakfast 7-7.35. Followed the granite till 8. It ends in a big grey-faced rock.* Then rock changes to rotten reddish. Pass a sleeping place 8.10, then up a stone couloir immediately behind it. Aim for left of big overhanging red wall. Just under this forced away to left over easy Geröll, then up to right and over steep slabby rocks to foot of red wall (foot slabs put on rope 9.5, slabs bad, top of slabs 9.25). They lead to a snow ridge abutting against main mountain mass. Cut up this (ice) to the right to gain its crest (stones fell either side). Now much higher than Jägerhorn. Follow crest to rocks again 9.45. Rested till 10.5. Follow then ridge bearing generally to left till this ridge runs out in a short snow arête against the left foot of a big broken red ridge to right 11.5. Crest of this up slabs 11.30 (steep). This arête at first fine, well stepped, then forced off it on to its right ice slope for a couple of steps, then over rocks, finally cut up ice-slope to foot of arête, bearing away to right 12.50. Rested till 1.10. Leave the snow arête and take to rocks on left. Became gradually steeper and more difficult (arête above-mentioned abuts against impossible cliffs). About 1 hour step-cutting. At 2.15 quit arête, crossing a small couloir (twelve steps) to right to main mass of mountain, at top of which loomed a big red summit. Up these rocks to right to a short snow ridge 2.40, which led at 2.45 to main ridge close to summit. This is a big broad ridge running N.E. to Jägerjoch. Dep. 2.50. Summit of Nordend 3.5; cards 'Schuster Felix, Friedmann and Krafft.' Dep. 3.25. Cut all way to Silbersattel 4.45-4.50. Took to rocks of N. face of Grenz Gipfel immediately to right of a slope of snow running up just to right of main watershed ridge to some white rocks. Struck arête close to Grenz Gipfel 5.30-5.40. (Grenz Gipfel is

* See Forbes, *Travels through the Alps of Savoy* (new edition 1900, by Dr. Coolidge), p. 348: 'The rocks are a fine-grained gneiss and a beautiful silvery mica slate.'

apparently a grey one.) We went to highest point on the E., but not to the grey point. 5.50 Ost Gipfel (note of Henry Speyer and a bit of old wood initialled, illegible). Top Dufour 6.4, dep. 6.12. Sattel 6.47, rocks 7.42, Bêtémps 8.30.

4. August 14, 1900.

Signor A. Facetti. Guide, Antoine Maquignaz. Porter, B. Maquignaz.

Signor G. Ongania. Guide, Corsi (the survivor of the Imseng-Marinelli accident). Porter, M. Zurbrücken.

Cf. R.M. 1901, p. 241.

This joint party left the hut 2.50 A.M. intending to follow Brioschi's—viz. the right-hand—route. They gained the base rocks of the Nordend at 5.* 'At this point there commenced a magnificent scramble over the rocky rib composed of enormous superimposed boulders. . . . The difficulties are not extreme, but continuous, and the vertical boulders are not provided with a superfluity of good holds and require all our care. . . . Midday brought us to a little platform which apparently forms the terminus of the rock rib. We are a little higher than the famous snowy Y† so obvious from Macugnaga. . . . The good rock buttress changed into a knife-edged ice-crest marked at intervals by a treacherous snow-crust . . . and so sharp was the edge of the crest that the bit forming the bank of the right branch of the Y had to be traversed mostly à cheval . . . the lateral gullies being of an appalling steepness.' Continuous step-cutting fell to Antoine Maquignaz. There followed what the author terms the 'Lenzuolo,' or very steep icefield or small glacier above the Y.

'About 5 P.M. we attain, crawling between two enormous boulders overhanging the abyss, the spot where the névé of the "Lenzuolo" joins the snows of the other slope by means of an icy crest shaped like the back of a mule . . . with the usual treacherous snow crust, and required continuous care and hard step-cutting.

'At 6 we attain the base of an extremely steep gully which appears to lead to the (summit) ridge, . . . but a volley of stones greeting our arrival at the base of the gully sent this idea of mounting in it far out of our heads. Accordingly there remained no other way but to gain the edge of the N. bank of the gully and by it to join

* Major Strutt has again supplemented my scanty knowledge of Italian by making a free translation of the whole article from which these extracts were taken.

† This is a small snowfield on the face of the shape of the letter Y. It is marked on the sketch, p. 57, *Boll.* xxvii. It is frequently referred to in accounts of this ascent, but ought not to be touched on either of the routes so far made up this face. Cf. also Sir Martin Conway's paper *A.J.* xi. 193 seq., 'The Passes across the Weissthör Ridge.' On the panorama accompanying this valuable topographical study the route marked up the Nordend is approximately Brioschi's except that the lower part is shown too much to the right. The Y snowfield is seen about one inch directly under the summit.

the summit ridge. . . . But it is formed of a rock wall rather overhanging than perpendicular, almost destitute of holds, and covered with a sheet of hardest ice. The two Maquignaz are simply marvellous in the keen struggle to make height bit by bit. . . . This was without doubt the most critical moment of the whole day, but fortunately the end of the struggle. Having overcome some tens of metres, the holds became first more frequent, then free from ice, then better; the edge of the gully is attained; finally a last slope of fairly good soft snow; and behold us at length on the summit ridge, but a few paces from the actual top! It was 7.20 P.M.'

The party finally reached the Bétemps hut at 2 A.M. Signor Facetti lays great stress on the 'long and continuous difficulties' of the ascent.

5. August 17, 1901.

Dr. Fritz Reichert, Herren Dorn and Brindlinger.—Left hut 1 A.M. At 3.10 they took to the Marinelli couloir itself and mounted in that for two hours close to the rocks of the Nordend, then climbed to the crest of the ice ridge on right. This got extremely steep (rocks) and greatly delayed them. At 4 P.M., at a height of 4200 m., they got to the snow slope, which went at first well, but then turned to hard ice, 55°. Cut steps for 4½ hours. At 9 P.M. reached the S.W. arête of Nordend N.E. of the Silbersattel. Reached summit 9.30 P.M. Attempted to descend, but forced to bivouac on the rocks of the face of Grenz Gipfel. Herr Dorn amused himself by making a night ascent of the Dufourspitze. Bivouac midnight to 4 A.M. Thus their line lies even more to the left than Zurbriggen's route and is nearer to the Marinelli couloir.

6. August, 1905.

Dr. Graziadio Bolaffio of Triest. Guides, Mattias Zurbriggen, Cyprien Savoie.—Dr. Kugy was kind enough to tell me of this ascent. It followed the same line as his own detailed below.

7. August 7, 1906.

Dr. Julius Kugy. Guides, Mattias Zurbriggen, Joseph Croux.—Camped high up about 3800 m. in the rocks left under the foot of the Y. Followed Restelli's route. Left camp 5 A.M., top about 2.30 P.M. Mountain in good order, little ice on rocks. The ice ridge at the end of the great rock buttress between the Y and the hanging glacier to the left, and which leads to the summit wall, cost two hours' very careful cutting. Position very exposed.

'While climbing the great rock buttress we kept on the lower middle parts more to the left than the earlier climbers by this route. Zurbriggen's line of ascent is always to the left of the Y, whereas the Val Tournanche guides cut across the lower part of the Y,

climb up on the farther side, but then have to return in a great curve.* . . .

‘The tour much exceeded my expectations in grandeur and beauty, but is dangerous to a high degree from stones.’

‘The view from the great final wall down into the ghastly ice gully of the Marinelli couloir is doubtless one of the great sights of the Alps.’

‘I should call the Nordend my second greatest expedition.’

Cf. ‘Ö.A.Z.’ 1907, p. 10, and my friend Dr. Kugy’s letter to me.

8. September 7, 1906.

Professor Giuseppe Lampugnani. Guide, Mattias Zurbruggen.—The following is an extract (translated) from my very amiable friend’s letter of April 1912:

‘My ascent was easy in point of view of orientation, as I was accompanied by Mattias Zurbruggen, who had already made two ascents this same year,† one with Bolaffio and the other with Kugy. We followed Restelli’s route, . . . but at the foot of the great ice arête we were able to make a very useful variation which spared us the long axe-work along the crest of the shoulder. At the foot of the arête we took to and cut up the extremely steep couloir on our left which discharges into the Marinelli couloir, gaining thus the rocks of the wall (paroi). These rocks are not difficult, but I was not able to appreciate very closely the technical difficulties, as I was that year very highly trained. I think in any case that the Nordend does not present any enormous difficulties, but it is continuously trying and long. Its very great importance is derived from the continual danger of avalanches of stones, and of atmospheric changes, which at that altitude must be terrible. . . .

‘I am aware that several ascents were made last summer. The mountain, however, in such admirable conditions as then reigned lost much of its aristocracy.

‘My ascent was made on September 7, 1906. We left the hut 1.30 A.M., passed Kugy’s bivouac at 4, just as the moon went down, and reached the summit about 11.30 (halts came to about two hours). The rocks dry, little ice but black, many stone avalanches.’

See also ‘R.M.’ 1907, p. 116.

* No doubt Dr. Kugy refers to the fourth ascent detailed above, but it will have been seen that the great Val Tournanche master, Daniel Maquignaz, chose quite independently the much safer right-hand route of Imseng and Brioschi, although Luigi Delponte, brother of Mattias, who brought up our provisions to the hut, pointed out and strongly recommended the left-hand route followed by his brother on the second ascent. Daniel, however, flatly declined to have anything to do with it, and during the whole of the day of our ascent we were never threatened by falling stones or ice. The day was, however, perfect, no wind, and no snow on the lower rocks. Nothing fell all day in the Marinelli couloir, which was, however, far away on our left. It is, however, well to arrive at the top of the avalanche bank referred to about daybreak.

† It will have been seen that Dr. Bolaffio’s ascent was the previous year.

9. 1906.

Signor Antonio Castelnuovo and two others.—They were forced to turn round a few metres under the summit on account of violent wind, and descended the same way. See 'R.M.' 1907, pp. 112 and 168.

No particulars have ever appeared, I believe, and I do not know whether the two others were Signori G. Bompadre and P. Sommaruga, who were killed with Signor Castelnuovo in 1909 in attempting to repeat this same ascent. This accident was fully described in 'A.J.' xxiv. 673–674. It is very doubtful whether in 1906 the party attained anything like the altitude they imagined, as they would never have ventured on the terribly arduous descent had they been 'a few metres under the summit.'

It will be remembered that the bodies of the unfortunate travellers were never found, although the face was thoroughly explored from above and from below by search-parties of guides. Some of their effects were, however, found by Mr. Oliver's party in 1911, as described in 'A.J.' xxv. 751.

10. 1910.

Signor Oberto of Macugnaga with Macugnaga guides. No particulars are available.

11. August 11, 1911.

J. E. C. Eaton, E. G. Oliver. Guides, Jachini Battista of Macugnaga, Julius zum Taugwald, Heinrich Burgener, Ferdinand Furrer.—For details see 'A.J.' xxv. 751.

12. August 18, 1911.

Dr. O. K. Williamson. Guides, Jean Maître, Heinrich Fux, and a porter.

'Started 2.38 A.M. Ascended (obliquely to the left) to a snow ridge on the true left of the Marinelli couloir. We then traversed to the right across a couloir which is somewhat dangerous from falling stones and so reached the E. arête in 2 hrs. 25 mins. from the start. We followed this as far as its junction with the main N. arête. The climbing was at first on loose red rocks which after a time steepened. A short ice arête was climbed, then rocks alternating with snow. The ridge then became narrow, the rock grey and firmer than below, then more level. The ridge then became steeper and less well defined. On its true left here is a couloir bounded on its other (N.) side by a steep, apparently inaccessible, wall of rock. The crest of the arête was turned by the rocks at the side of this couloir and this was the most difficult part of the whole climb. The party regained the actual crest at the point where the slope eased off. Easy loose rocks then brought them to the main N. arête 5 hrs. 50 mins. from point where arête had been first struck. 55 mins. later the summit was reached (1.55 P.M.). The Bêtemps hut was reached in 3 hours via the Silbersattel, and the Riffelhaus in 2 hours from there (8.45 P.M.).

The conditions were very favourable except on N. arête where there was some ice. Many and long halts for photography.

The times given above are actual times of walking.

Summary of times (approximate) :

Ascent (from hut)	= 9 hrs. 10 mins.
Descent	= 4 hrs. 50 mins.
Halts	= 4 hrs. 0 mins.

Total = 18 hrs. 0 mins.

13. September 2, 1911.

L. W. Rolleston. Guide, Josef Lochmatter ; Porter, Albert Chanton.

E. A. Broome, H. K. Corning. Guides, Heinrich Fux and Brantschen—See Mr. Broome's paper in the present issue of the Journal.

The quite abnormal conditions of the splendid 1911 summer have unduly depressed the former reputation of this great expedition. I do not, however, hesitate to repeat my previous description of it—viz. :

'In any case the ascent, even under good conditions, is very long and makes great demands on the endurance of the party, although the technical difficulties when the mountain is in good condition are not so serious as might be expected.

'It cannot be too strongly urged that an expedition of this magnitude imperatively demands that the rocks shall be dry (for it is for the greater part of the way a rock climb), the weather perfect, and the climbers thoroughly experienced and in first-rate condition.'

THE BRENVA ROUTE UP MONT BLANC.

MR. COOLIDGE'S ASCENT IN 1870.

DR. WILSON has received from Mr. Coolidge ('to be used as desired') the following interesting account of his ascent of Mont Blanc by the Brenva route on July 15, 1870. It is clear that Miss Brevoort's remark that the party came into sight at the top of the Corridor must not be taken literally—as Mr. Coolidge states, both here and in his note in the 'Alpine Journal' (vol. v. p. 135), that they kept to the left of the Col de la Brenva, and joined the usual Corridor route up Mont Blanc near the Petits Mulets. To anyone familiar with the locality it is easy to follow his general route, though the crossing of numerous stone-raked

couloirs is not obvious: possibly they were below the ice-arête. The dangerous-looking 'traversieren' higher up was probably a traverse to reach the rock rib, and it is clear that difficulties were experienced just above the highest rocks, for 'at 2.30 they were lost in the shadow of a rock, round which they went,' and were not seen again till about 4.15, when they were somewhere near the head of the Corridor. Mr. Coolidge's communication runs as follows:

'I only published a short note in "A.J." p. 135, of my Brenva Expedition of July 15, 1870, and my personal recollections are very vague, save on four points, viz. the great difficulty of crossing the Brenva glacier from our bivouac to the foot of the ascent; our going up (but not astraddle) the famous snow arête, shown in the 'A.J.' ii. illustration; the crossing of many stone-raked couloirs, and the fact that very high up we bore left, not touching the Col de la Brenva, but joining the usual Corridor route at about the Petits Mulets rocks. But I have lately turned up a letter from my aunt, Miss Brevoort, to my mother, dated July 16, 1870. She first states that she saw my party arrive at the top of the Corridor at 4.30 P.M. She adds these further particulars. Bertolini, the landlord of the H. Royal (whom we had known since 1865, when we crossed the Col du Géant) told her that about half an hour from Courmayeur there was a spot on a hill, on the edge of a pine and larch wood, whence the whole Brenva route could be well seen. He said that in 1865 he and others had thence watched the progress of Moore's party. So my aunt hobbled up thither (she had hurt her foot in Dauphiné), with Bertolini and Julien Grange, a Courmayeur guide who had been our local guide up the Grandes Jorasses in 1869. Bertolini had a fine telescope mounted on a stand, which helped them much. I now copy the letter.

"At last, about 10, Mr. Bertolini for the first time sighted our travellers. They had then only just crossed the branch of the glacier which separated their sleeping place from a ridge of rocks which divides the glacier into two great rivers as it were. According to Mr. Moore's account they had reached this point 2 hrs. earlier, a proof of the excited (sic) state of the glacier this year, for had it been no worse (and that was bad enough) than it was when they did the pass, I am certain that Christian [Almer] could find his way thro' quicker if possible than even Melchior. At all events there they were climbing the rocks rapidly, altho' very difficult. Christian first (he led to the top, hacking away at the ice—we could see the splinters flying) then Ulrich [Almer], who once in a great while lent Will a hand, then clumsy old [Christian] Gertsch, carrying the provisions. The day was perfect. When we began to be able to see we watched them for the next 4½ hours unceasingly. We saw them over that terrible ice arête, but they did not go astraddle over it as did the others. The ice seemed terribly hard, judging from C.'s blows. They went beautifully. We saw them stop and drink once, but never whilst in sight sit down or eat. After the arête came steep

slopes of ice and snow, and the sun by this time (nearly 1) was baking. Still they pushed on unflaggingly. You may imagine how good was our glass when I tell you that we could distinguish their axes, and even the tin wine bottle Christian carried slung around him. After these slopes came much dangerous-looking 'traversieren.' Grange assured me that I had done much worse things on the Grandes Jorasses without thinking of it; but at a distance it looks awful for lookers-on, and at last, at 2.30, they were lost in the shadow of a rock, round which they went, and we did not see them again until a little after 4 (I think 4.15). Grange knew that they must come out into sight at the top of the Corridor for 20 or 30 minutes. So he arranged the glass to catch them whenever they should appear, and sat there dozing and gazing alternately, whilst we went into the shade. At last, at the time I said, Grange called out 'Je les vois,' and I rushed to the glass. They had just come into sight and crossed, as if on the stage, a great spot of sunshine, and then were lost in the deep shade on the left after about 15 minutes. They were walking at a good pace, and did not show any signs of fatigue, altho' they had now been *en route* for nearly 14 hours, and such a route and such an ardent sun. After that, as there was no chance of seeing them again from our hill, we came back to the hotel well satisfied, as the dangers of the Brenva were over for them and the pass made." I merely say :

"On Friday we left at 2.45 A.M., crossed the glacier in 4 hours, climbed steep rocks, and couloirs and slopes of snow and reached the top of Mont Blanc at 5.35 P.M. The Corridor was first attained and then the top, but we cut right up to the top, thus making the first ascent of Mont Blanc direct from the Gl. de la Brenva. We only got as far as the Grands Mulets that night at 9.10 P.M."

THE HEIGHTS OF CERTAIN POINTS ON THE BRENVA ROUTE.

SOME correspondence, evoked by the remarkable discrepancies in the various published accounts, has taken place between the undersigned upon this subject. As the Brenva route has been so fully dealt with in the present volume of the ALPINE JOURNAL, it may be useful to record the conclusions arrived at, after much comparison of the available data.

Two heights are given in the Imfeld-Barbey Map—and two—not very dissimilar—on the Mieulet Map. So far as is known no survey of the Italian side was made for either map, and the heights are presumably drawn from pre-existing Italian sources.

Imfeld, 3330—Mieulet, 3345—appears to indicate the lowest point, or snout of the great buttress which terminates above in the famous 'ice-arête.' The earlier ascents were made by the crest of this buttress, which was gained at a snow saddle about 150 mètres higher

than the snout, and which is shown vertically below Mont Blanc de Courmayeur on the plate facing p. 203. Later parties have left the glacier further N. and climbed by a subsidiary ridge (3 to 8 on plate facing p. 203) to the arête.

Imfeld, 3921—Mieulet, 3954—are difficult to locate. We believe them to refer to some point on the E., or Brenva, face of Mont Blanc off the route, and to its S.

One of us (J. P. F.) took readings with a Hottinger aneroid in 1893. The instrument is that used by the Swiss Federal Surveyors, and is probably quite reliable for indicating *differences of altitude over a short period of time*. The party struck the main frontier ridge of Mont Blanc about 50 or 60 mètres below the Rochers Rouges Hut, the height of which is 4508 m. (Imfeld). They struck the ridge, that is, at about 4450 m. The readings show a difference of 419m. between the snow saddle where the ascent of the buttress commenced and the ice-arête, and of 552 m. between the ice-arête and the point where the frontier ridge was struck. This would give a height of 3479 m. to the snow saddle, and 3898 m. to the ice-arête.

The altitude of the highest rocks on the route (13 on plate facing p. 203) must be guessed. Most writers have placed them at nearly the same level as the Col de la Brenva (4333 m. Imfeld). They are probably some 30 mètres lower, but certainly over 14,000 feet. It will be noted that this figure does not agree with Mr. Caesar's estimate (*ante*, p. 279).

To sum up the altitudes arrived at are as follows :

Snout of Buttress	3330 m.=10,922 ft. (Imfeld).
Snow Saddle on Buttress	3479 m.=11,411 ft. (Aneroid)
Top of Lateral Rib (No. 8, p. 203)	12,650 ft. (estimated)
Ice-arête . . . (No. 9, p. 203)	3898 m.=12,785 ft. (Aneroid)
Highest Rocks . (No. 13, p. 203)	14,100 ft. (estimated)
Col de la Brenva	4333 m.=14,212 ft. (Imfeld)
Rochers Rouges Hut	4508 m.=14,787 ft. (Imfeld)
Summit of Mont Blanc	4810 m.=15,776 ft. (Imfeld)

J. P. FARRAR.
C. WILSON.

THE DESCENT OF THE BRENVA FACE OF
MONT BLANC.

By R. W. LLOYD.

OUR successful ascent of this face in the summer of 1911 spurred us to attempt its descent this year. This descent was one of the quickly vanishing Alpine problems, untouched save for the partial descent of Messrs. Mummery, Collie, and Hastings referred to in 'A.J.' xxvi.

174. Our party consisted of the guides Josef Pollinger and Franz Imboden and myself.

On arriving at Chamonix, as soon as the weather allowed we went to the Col d'Entrèves thoroughly to reconnoitre our ground. From careful inspection we could see that there would be difficulty in getting through the upper séracs (No. 1 of the illustration), and that the snow as it steepened would soon turn to ice. The descent must hence be attempted at the earliest possible moment to have a chance of success.

For some days the weather was bad and we could do nothing. Finally, in beautiful weather, we went up to the hut on the Aiguille du Goûter. Next morning, on reaching the Dôme du Goûter we were compelled by a violent snowstorm hurriedly to retrace our steps and return to Chamonix. For some days the weather continued hopeless, but on July 10 we were able to start for the Grands Mulets, reached in five hours from Chamonix.

The morning of July 11 was beautifully fine, so we left the Grands Mulets at 1 A.M. and reached the summit of Mt. Blanc at 7.10. It was quite warm and pleasant at the top. After a quarter of an hour's rest we descended to the upper snow fields of the Brenva Face, and thence in very soft snow to the séracs, and after some trouble in finding our way through them we at last stood on the top of the great ice wall and saw our route descending steeply below us. By hitching our 200 ft. light rope round a sérac we managed to scramble down the smooth and almost vertical ice-face, and so reached the top of the so-called Brenva Face. A reference to the illustration shows that this face, above the famous ice-arête, widens out into a broad and very steep ice-slope, one of the difficulties of the expedition, usually requiring long step cutting.

The right-hand or N. edge of this steep ice-slope falls away in a very steep rock cliff, the crest of which barely emerges from the ice. This has sometimes led to the ascent being called an *arête* climb.

On reaching the foot of the wall of séracs, we found we were unable to turn the great ice-wall to the left owing to its excessive steepness. We were forced, therefore, to go straight down, bearing to the right so as to get round the ends of several great bands of ice which ran across the slope. To do this we had to cross the ice couloir (No. 2) parallel to the foot of the rocky spur which bisects the face and is really the foot-wall of the N. side of the séracs. We intended to descend by a steep band of snow on the far side. Accordingly, after advancing a short distance, we again hitched our rope round a small projecting piece of rock and in a short time reached the edge of the ice-couloir.

Imboden cut across the couloir and made himself safe on the other side on the band of snow. I was starting to join him when, to our horror, some bits of ice came humming down from the rock-spur high up on the right of the couloir. Fortunately, the largest piece,



R. W. Lloyd, photo.

Swan Electric Engraving Co., Ltd.

THE BRENVA FACE OF MT. BLANC
(Mr. R. W. Lloyd's descent).

about the size of a croquet-ball, only struck Imboden's sack. Smaller pieces, however, struck him on the side, and he seemed literally to crumple up in a fainting condition. Joseph and I held on to his rope and steadied him, and his being in good snow enabled him to hang on to his axe and recover his balance.

As soon as the fall ceased I hurried over to him, just escaping a fresh fall, and was immediately joined by Josef, both of us fortunately untouched. We got Imboden a few yards away from the most dangerous place and gave him brandy. He was obviously a good deal hurt and shaken. We dared not delay on account of the sun's effect on the very steep snow, so I shouldered his sack, and Josef led down the snow to the lower part of the couloir, where it widened out and was much less steep. Here we crossed again (No. 3), recovering our spare rope, which had slipped from us at the time of the accident, and passing to the left under a great band of ice made for the N. or left-hand (descending) edge of the face (No. 4). We then found that the ice had forced us a bit too low, so had to go up a little round the bergschrund, whence, after descending some easy steep snow, we reached the edge of the face (No. 5). It was still too steep to stop, so we went on to our breakfast-place of last year (No. 6) at the upper end of the celebrated narrow arête, where we were able at last to attend to Imboden, who was complaining of his injuries. After taking some meat-jelly and some stimulant he was able to go on. After some discussion we decided to descend the steep N. snow-flank (No. 7) of the famous narrow arête by the route we had ascended last year, and which now looked much steeper and more difficult. This seemed a much shorter route than going all along the arête and down the rocks as is usual in ascending, in spite of its steepness and the ice-fall at the bottom, and it was, of course, most important to get Imboden down as soon as possible. To have followed the arête—no longer narrow as last year, but a rounded mass of snow, corniced in places on the left and exceedingly steep on the right—would have been dangerous, as the sun had been on it for hours. Moreover, we thought it was more than Imboden could do, with a descent down snow-covered rocks to follow, since he could only use one hand properly.

We accordingly started down the steep snow-flank, which had not suffered much from the sun. It was necessary to traverse for some distance to the left, owing to a long narrow crevasse, and to get down some exceedingly steep snow on the left-hand corner across the crevasse. It looked very bad, as we had to descend sideways, bearing, after crossing the crevasse, slightly to the left and then to the right, making steps for the feet and one hand, and with the other driving in the axe-point as deeply as possible. It was just like going down an almost perpendicular ladder without the advantage of having rungs to hold on by. What with the exertion, the heat, and the sack, I found it rather hard work, and Imboden showed obvious signs of exhaustion.

About two-thirds of the way down there was a band of almost perpendicular ice (No. 8) with an exceedingly thin covering of snow. To cut down this would have taken a long time, and, as Imboden was very exhausted, Joseph drove in a long barbed piton. To this he fixed our 200 ft. spare rope, which was just long enough to take us over the difficulty. We traversed to the extreme right, but had to work back again and down some more very steep snow, when we managed to find an easy place over the bergschrund (No. 9); and, hurrying as far as we were able under the ice-fall and over the débris, at 1 o'clock stood safely on the glacier (No. 10), having taken two hours to get off the arête. We congratulated each other on having made the first descent of the Brenva in comparative safety.

After a short rest, and Josef having kindly lightened my sack, we started up the steep snow, continually sinking to our waists, and in an hour reached the small col on the Brenva Glacier, whence we descended the steep snow to the glacier below the séracs, and at 7.15 P.M. arrived at Courmayeur quite tired out.

There was much less snow on the face this year than last; in many places the covering was quite thin. The final descent of the flank of the arête *was much steeper than last year*; and where last year we had beautiful snow in which to cut good steps we now had barely enough to hold us safely, and sometimes, as in the place where we used our spare rope, ice. Curiously enough, I found on looking at my diary that we made the ascent on July 11, 1911, and descended on the same day this year.

A NOTE ON THE GARHWAL HIMALAYA, 1912.

By C. F. MEADE.

THE party consisted of Pierre Blanc, Franz Lochmatter, Justin Blanc, Jean Perren and myself.

May 26.—We left camp at Mana village and camped at Khati under the foot of the Ghastole glacier.

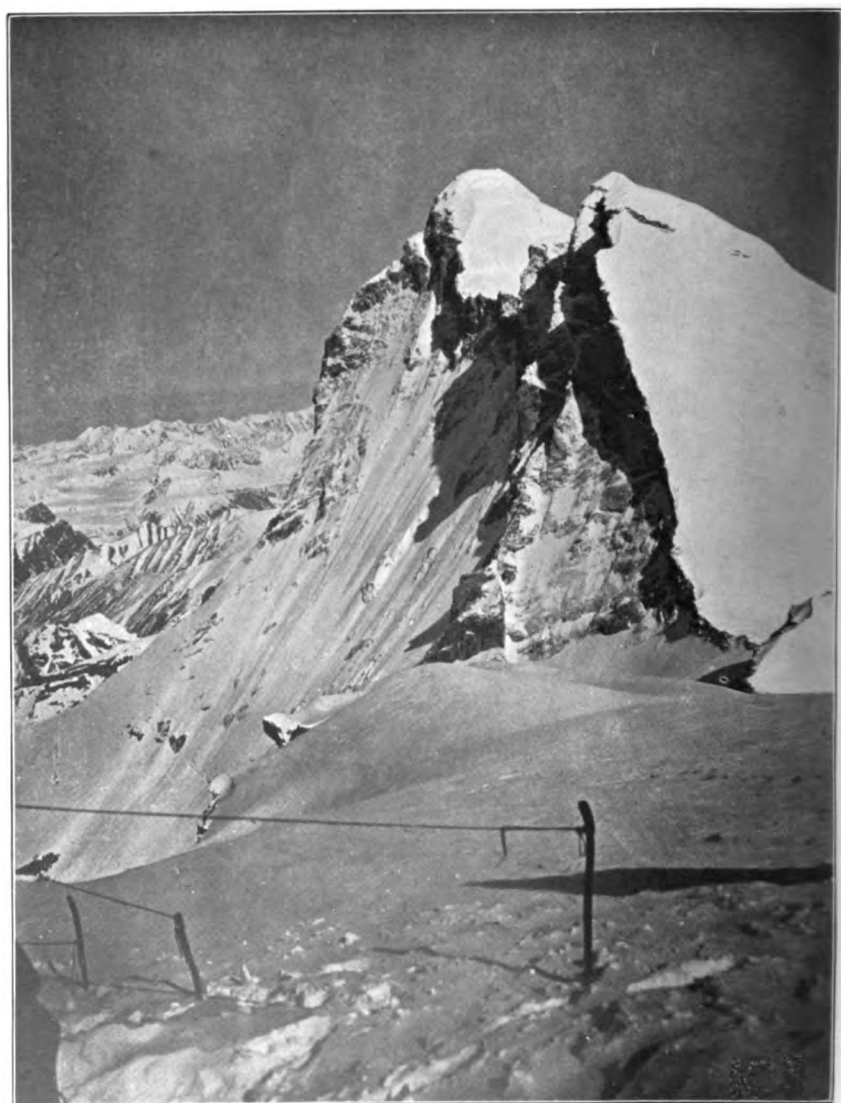
May 27.—The Bhotia coolies were sent ahead with the guides to fix a site for a main base camp on the moraine at the snout of the glacier. They made two journeys with loads.

May 28.—We all moved up to Main Base Camp.

May 29.—Leaving Main Base Camp at 6 A.M. we marched up the glacier under a blazing sun and camped half-way up it.

May 30.—Most of the party felt unwell. I attributed this to the power of the sun. Pierre descended to fetch drugs from Main Base Camp.

May 31 was another sunny day. We moved our camp to the foot of Slingsby's Pass at the head of the glacier and underneath



C. F. Meade, photo.

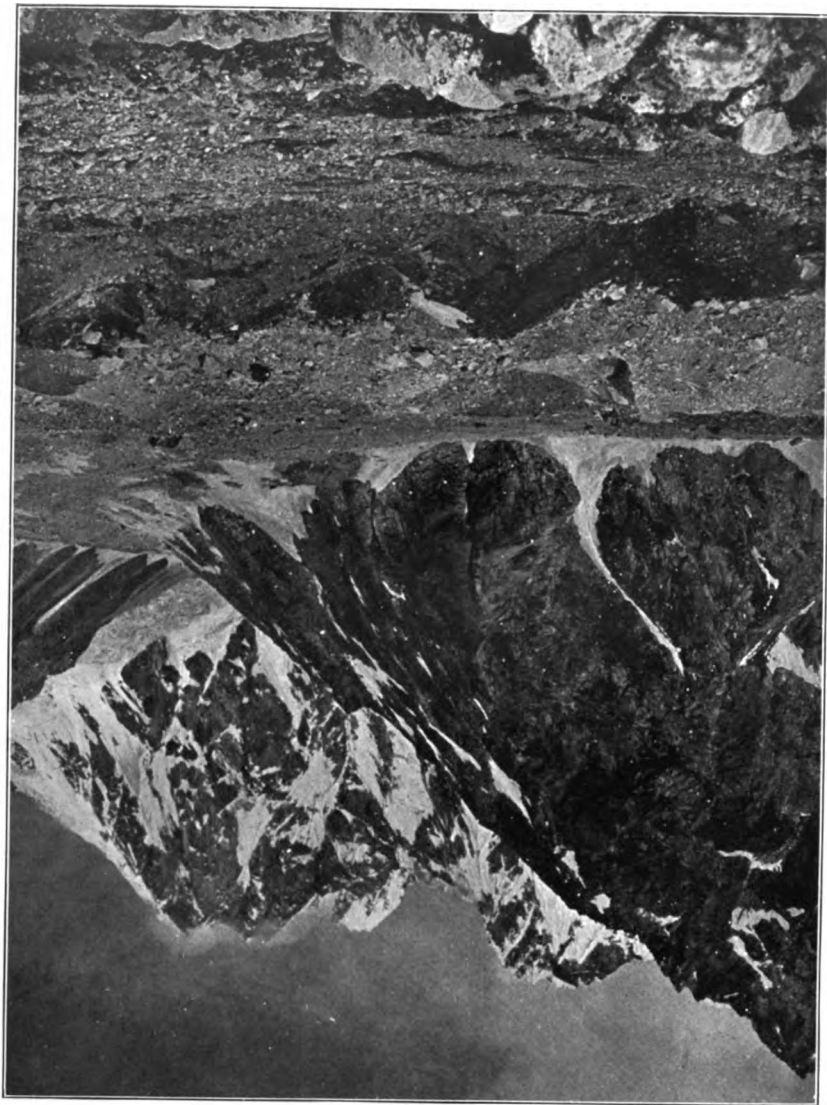
Swan Electric Engraving Co., Ltd

**KAMET'S 24,200 ft. NEIGHBOUR,
From highest Camp.**

SATOPANT PEAKS,
Near head of Bhagat Karak Glacier.

Swan Electric Engraving Co., Ltd.

C. F. Meade, photo.



Kamet. We estimated the height of this camp to be over 18,000 ft. It snowed all night and the minimum Fahrenheit thermometer in the pocket inside my tent registered 12 degrees of frost.

June 1.—The weather being hopeless we returned in one march to Main Base Camp. After resting there we made another start on:—

June 4 at 1.20 A.M. with twenty Bhotias and marched to Upper Base Camp in one day of six hours.

June 5.—Starting at 5 A.M. we ascended Slingsby's Pass in about 3½ hours. From the pass we ascended soft snow slopes in the direction of Kamet, from which we appeared to be separated by only one rock tower. We camped on these snow slopes at a height of probably more than 21,000 ft.

June 6.—With the slopes in such soft condition as they were we realised that the top of Kamet could not be reached; however we continued to advance through soft snow up the slopes leading to the rock tower. Reaching a point on its N.W. ridge we waited in the hope that the clouds would lift and reveal the topography. After half an hour the weather still seemed hopeless and we returned to Upper Base Camp. We guessed our highest point to have been more than 22,000 ft. But in our subsequent explorations on the Niti side of Kamet we discovered that the rock tower is in reality a triangulated peak of 24,170 ft. From the Niti side we were afterwards able to see quite plainly the point we had reached, and we became certain that it was less than one thousand feet below the top of the 24,170-ft. peak. The highest point reached was therefore probably not 22,000 ft. but more than 23,000 ft. At our high camp my minimum thermometer had registered 52 degrees of frost inside the tent during the night.

From Upper Base Camp we descended to Main Base Camp on June 7, and on the following day returned to our camp near Mana village. Here we rested some days.

The third attempt on Kamet took place after the departure of Franz Lochmatter and his nephew, who had engagements in Europe and whom I was most sorry to lose. Reaching Upper Base Camp on June 19 we climbed Slingsby's Pass on the following day in three hours and three-quarters. From the top of the pass we ascended snow slopes in bad condition to the point where we had camped and left a tent in our previous attempt. The slope below this camp required very little more snow to make it dangerous. The amount required fell during the night. On June 21 further progress being out of the question we descended the now dangerous slope in thick mist with the six Bhotias that we had brought with us. As a precaution we fixed a balustrade of rope to an axe driven in at the top of the slope. The descent was then continued down the rock gullies of Slingsby's Pass to Upper Base Camp. In the next two days we returned to Mana.

On June 28 we explored the ice valley from which the Kulhia Ganga flows, and discovered a conspicuous pass at its head. The

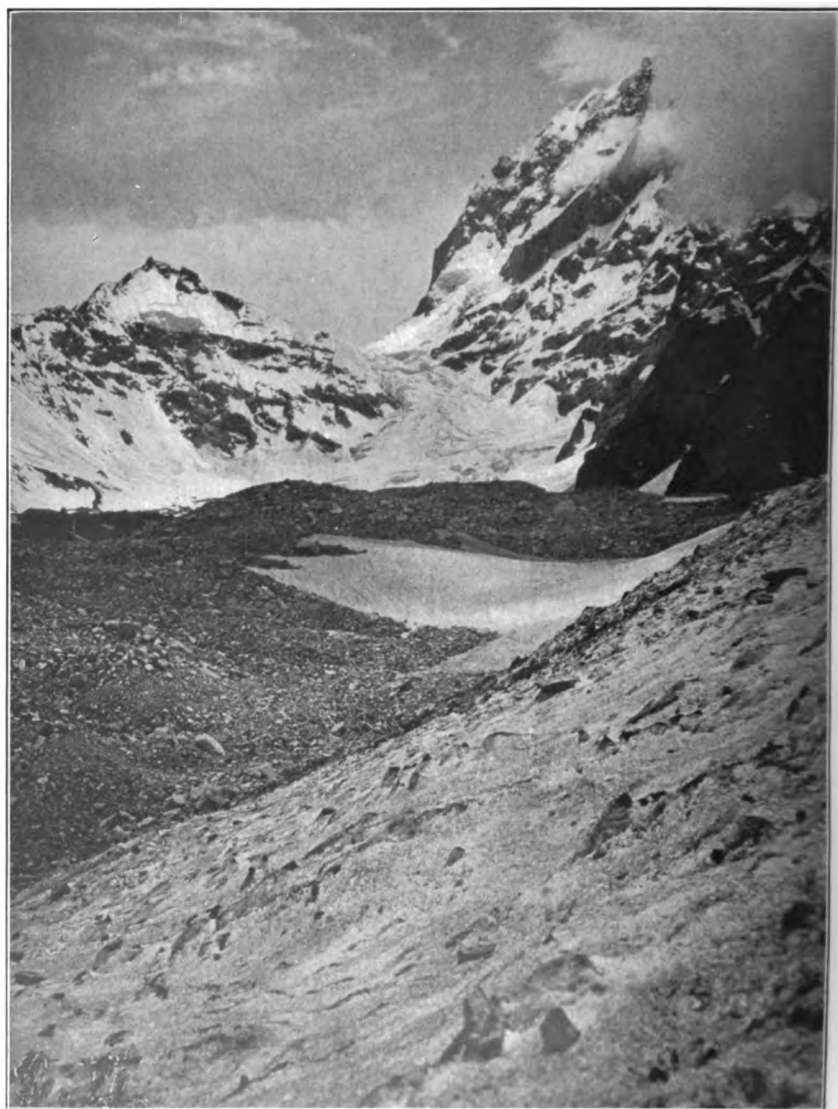
Kulhia glacier is wrongly depicted in the Survey map as coming from the S.E., whereas it comes from the N.E. We reached the pass in seven hours' fast walking from Mana, an additional three-quarters of an hour being spent in halts. We thought that the pass must be about 16,000 ft. and found that it leads over into the valley of the Bhyundar Khanta (Smyth's Pass). It is very easy.

Later on we spent ten days in exploring the ice valleys of Satopant and Bhagat Karak. We discovered glacier passes at the heads of these two valleys and crossed the passes sufficiently far to justify us in assuming that there were no difficulties on the far sides. The Satopant Pass leads into a valley in the Kedarnath cluster of valleys and the Bhagat Karak Pass gives access to the Gangotri glacier and Gangotri. These two passes therefore link up Badrinath with Kedarnath and Gangotri. And at these three places are the three sacred sources of the Ganges. Unfortunately these passes are too formidable to be crossed by the pilgrims who visit Badrinath, Kedarnath and Gangotri. The ridge separating the upper Satopant valley from the upper Bhagat Karak valley seems to be inaccurately mapped. The Gangotri glacier does not rise between the upper courses of the Satopant and Bhagat Karak glaciers, but flows from the E. base of Badrinath Peaks. The huge snow mountain so conspicuous from the upper reaches of the Bhagat Karak glacier is the same mountain that is equally conspicuous from the head of the Satopant glacier. It is the highest summit of Badrinath Peaks and is over 23,000 ft. Most of the mountains surrounding the Satopant and Bhagat Karak valleys are ice peaks with superb shapes, and seemed to be utterly inaccessible.

The monsoon broke at Badrinath and Mana on July 16. On the 17th we left Mana with fifteen Bhotias and camped on the right bank of the Kulhia glacier. Next day we crossed the pass we had discovered on June 28, and camped above the Thiapap glacier at about 14,000 ft. Then ensued four days and three nights of continuous rain. Snow fell as low as 15,000 ft. When at last the weather had improved a little we moved camp down to the right bank of the Thiapap glacier. From here we crossed the Bhyundar Khanta (Smyth's Pass), which took us over on to the E. side of the Kamet watershed.

On this side of the Kamet group we spent a few weeks in the rains. On the Niti side they generally take the form of mist. The time was spent in exploring and photographing on and around the Raikana glacier and its two great tributary glaciers. Justin Blanc with two of our Bhotias visited the easy pass mentioned by Longstaff. It leads into Tibet without difficulty. He also discovered an easy pass into the valley N. of the Raikana valley which is parallel to it. Another equally unimportant pass was discovered by Pierre with two Bhotias. I also ascended various points for photography with two Bhotias.

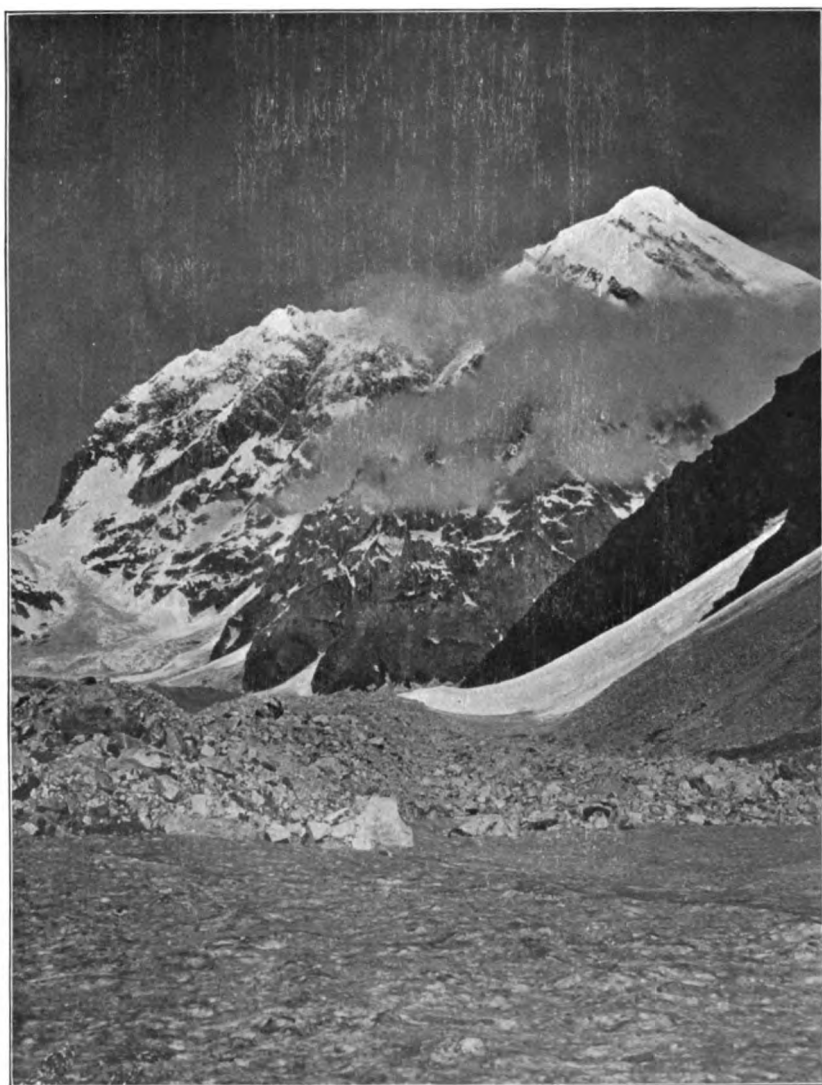
For four of the passes that we discovered the names Satopant,



C. F. Meade, photo.

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SATOPANT PASS,
And shoulder of Badrinath



C. F. Meade. photo.

Swan Electric Engraving Co., Ltd.

**SATOPANT PASS and BADRINATH PEAK,
From the Satopant Glacier.**

Bhagat Karak, Kulhia and Raikana seem obviously appropriate. For the great tributary glacier which flows down between the Kamet and Raikana glaciers I suggest the name Strachey. It was explored by Pierre Blanc and flows from the foot of the 24,170-ft. peak triangulated by Strachey.

Throughout the season we all of us felt the altitude more or less when above 18,000 ft. Above 20,000 ft. all suffered. During all the summer that I was employing the Bhotias I never had any reason to complain of them. We were all delighted to have them with us. They were very intelligent and always willing and cheerful. I supplied them with thick clothes and boots, which they took to at once and very kindly. They are perfect cragsmen and would very soon pick up the rudiments of snowcraft. Their powers of endurance are remarkable and they did very well at high altitudes, but the question of how to feed Hindu coolies at high altitudes where they are unable to cook for themselves is a difficult one.

We left Niti on August 13 and sailed from Bombay on September 7. I should like to record that the kind assistance lavished on us by Pandit Bidya Datt Dimri, European panda at Badrinath, was quite invaluable.

I should add that in 1910 we had our first view of Kamet during a flying visit to British Garhwal. We then discovered from the pass at the head of the Khaiam glacier that the upper course of the Ghastole glacier lay between us and Kamet. This glacier is about twice the length given it by the maps and is not straight but describes a right angle in its descent to Ghastole. Thus it provides a highway to the western base of Kamet. In the same year we also ascended a triangulated peak of 20,600 ft. It is a lower summit on the same ridge as the 21,000-ft. Balbala. I suggest for it the name of Balbala West. It can be seen for a long way down the valley of the Mana Pass.

DIARY OF EXPEDITIONS IN THE HIMALAYA MADE BY
MAJOR THE HON. C. G. BRUCE, CAPTAIN O. E. TODD,
HEINRICH FUHRER (GUIDE OF MEYRINGEN), AND
OTHERS.

[The district described lies due N. of Simla, on the main chain of the Himalaya, roughly half way between Kashmir and Kumaon. See Sheets 46 and 47 of the Indian Atlas, 4 miles to an inch. It has not previously been visited by climbers. Major Bruce writes: 'The average traveller in Lahoul sees nothing of it; the

main routes are bare and dusty and Tibetan. Once back in the mountains it is splendid, and not too huge,' &c.]

KULU AND LAHOUL. May 20—August 19, 1912.

May 16 : Arrived at Manali, Kulu, from Simla.

May 20 : Arrived at Dundi Camp, Solang Valley.

May 21 : Practise climb. Self, Fuhrer, and Gurkhas up to 14,500.

May 23 : Pindri Peaks from Dundi, 5 A.M. to 2 P.M., approximate height 16,000 ft. Self only and F.

May 24 : Col E. of Blaitière. (See below, June 24, 25.) Self, F. and Lalbahadur, 1.30 A.M. to 11 P.M. ; approximate height 17,500 ft. ; glacier and snow work ; conditions bad ; return to Dundi Camp.

May 26 : Explored Upper Solang, called Beas Kund. Ascended pass at the head of the Solang Valley and climbed peak N. of pass. Climb to pass difficult and laborious, condition of snow bad ; from pass to peak easy, good going on perfect snow, 1.30 A.M. to 11 P.M. Approximate height 18,000 ft. ; the peak is situated at junction of Kulu, Bara Bhagal, and Lahoul watersheds. Self, F. and Lalbahadur.

May 27 to 29 : Weather bad.

May 30 : Return to Manali.

June 2 : Left for Koksar in Lahoul.

June 3 : Crossed Rohtang Pass, 13,500 ft., to Koksar.

June 4, 5, 6 : Explored Gaphan, and on the 6th climbed to Gaphan main N.E. ridge, approximately 18,000 ft., 1.30 A.M. to 10 P.M. Snow conditions pretty bad ; very steep in parts ; gorgeous weather for once ; a laborious climb. Self, F., Lalbahadur.

June 7 : Left for Hamta Pass.

June 8 : Crossed Hamta ; snowed all day ; camped Chitra (?).

June 9 : Fuhrer and Lalbahadur stayed at Chitra. I returned to Manali ; accident on road.

Since our arrival at Manali, May 16, fresh snow fell high up almost every day, and generally clouds came up by 10 to 11 A.M.

June 10, 11 : F. and Lalbahadur explored main ridge to examine Deotiba group ; climbed two peaks approximately 17,500 and 18,000 ft.

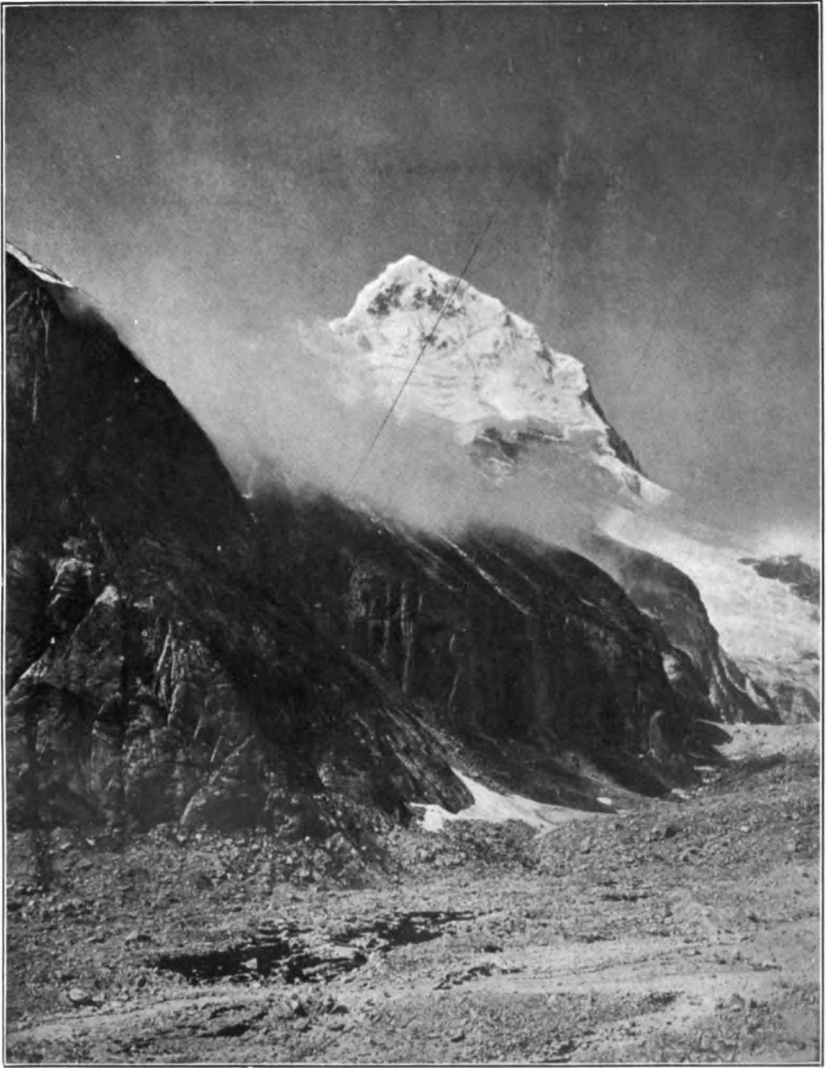
June 12 : Manali Dak Bungalow.

June 14 : Fuhrer and Lalbahadur up Manali Valley. Week spent exploring ridge dividing Solang, Manali, and Bara Bhagal. Two points reached, approximately 18,000 ft.

June 19 : Return Manali Dak Bungalow.

June 20 : Refit and returned to Manali Valley.

June 23 : Successful ascent of Solang Weisshorn, approximately 19,800 ft. Start 1 A.M.



C. F. Meade, photo.

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NILAKANTA,
From Satopant Glacier, above Kunaling Camp.

June 24, 25 : Ascent of two peaks ; no local name ; called by Fuhrer Solang Blaitière (marked Gov. map 19,000 ft.) and Solang Charmoz. All these three climbs were very severe, the rock work in the two last being of the highest order. Snow conditions good. Lalbahadur and Fuhrer.

June 26 : Return to Manali.

June 29 : Depart for Lahoul.

June 30 : Koksar.

July 1, 2, 3 : Second attack on Gaphan ; on 3rd Lalbahadur and F. reached to within twenty minutes of the top, when they were caught in a 'tourmente' and obliged to descend. Ridge from point reached on 1st attempt steep and winding ; much bad snow and heavily corniced. From point finally reached, no cornice, but narrow and exposed snow arête without difficulty in good weather ; point reached 19,000 ft.

July 5, 6 : Whole party to Sonapani Valley. I get along with my arm in a sling ; I had previously crossed the Rohtang in the same uncomfortable condition. F. and Lalbahadur explored the Sonapani Glacier. Had some interesting ice work in magnificent surroundings.

July 7 : To Sissu.

July 8 : Observation-point above Sissu about 15,000 ft. with Fuhrer.

July 9 : Fuhrer, Jitman, and Lalbahadur attempt to find a way through the ice-falls leading to the Gondla Massif S. of Sissu. Peak marked 20,300 on Gov. map.

July 10, 11 : Sissu Schreckhorn (so-called by Fuhrer), which is a peak in the Gaphan Ridge. Magnificent climb. Traverse of peak ; ice, snow, and rock work of high order ; approximately 19,000 ft., probably rather less.

July 12 : Arrival of Capt. Todd.

July 14, 15 : Attempt to reach Gondla Peak *via* unnamed nullah S. of Sissa. Horrid climb amidst quite rotten rocks ; impossible to reach Gondla Col ; could make no impression.

July 16 : To Nyelang.

Capt. T. and Self arrived Gondla at 5 P.M. and left at 6 P.M. after lunching ; tried to race over the Tilbu-ri or Rangka La, 14,800 ft., before dark ; got into bad weather and did not get off till 2 A.M. *Very young performance.* Arm in sling still.

July 18, 19 : Marched to Patseo.

July 21 : Exploration of Maiwa Nundinoo north of Patseo.

July 22 : Camped under mountain at 15,900 ft.

July 23 : F., Capt. T. and Rifleman Chandra Sing ; ascent of Maiwa Nundinoo, approximately 19,300 ft. In my opinion most difficult piece of climbing done in the Himalaya since Mummery's climbs on the N.W. face of Nanga Parbat. Many and difficult gendarmes ; all the rock

- work difficult and some ice. Final ridge a very narrow snow arête. F. is to be greatly congratulated. 3.30 A.M. to 5.45 P.M. During this climb I moved the camp to the north to near the foot of Kundini.—Camp, 17,000 ft.
- July 25 : Ascent of Kundini ; height approximately 20,300 ft. ; a very fine climb ; snow, rock, and ice ; an all-round mountain ; return by night to Patseo. Fuhrer and Capt. T.
- July 28 : Moved camp up the Kakti Valley (Kakti R. joins Bhaga River four miles above Patseo from the north).
- July 29 : Fuhrer and Self (arm out of sling) to observation-point above first Kakti Camp, approximately 17,600 ft.
- July 30 : Climbed Little Kakti Peak ; topographically very interesting ; approximately 19,200 ft. Self, Todd, Fuhrer. 3 A.M. to 11.30 A.M. from lower camp ; at 12 noon established Soft Stone Camp, 17,600 ft., on Little Kakti Glacier.
- July 31 : Crossed northern watershed and climbed unmarked and unnamed peak, approximately 19,800 ft. ; interesting glacier expedition, and final snow arête ; fine view over the Ningti plains and towards Zanskar. T., F. and Self.
- August 1, 2, 3 : Bad weather : snow and sleet.
- August 4 : Todd and Fuhrer climbed magnificent snow peak called by us the 'Giant' or Todd's Giant. Weather very threatening and cold ; fine rock arête and steep snow ; a very laborious climb, beginning at the camp itself almost. Height 20,500 approximately ; 6.30 A.M. to 4.30 P.M.
- August 6 : Ascent of Kakti Peak at the head of main Kakti valley and glacier. Whole party on two ropes. F., T., Self, and three Gurkhas. Interesting glacier and snow expedition. Wonderful view over Lahoul, Zaskar, and towards Thibet. Height 20,000 ft. approximately ; probably right.
- August 7 : To Patseo.
- August 9 : Up Patseo Nullah.
- August 10 : F. and Todd ascend aiguille on ridge beyond Point X¹ ; 2.30 A.M. to 1 P.M. Much moraine, but firm rock ridge with steep and interesting climbing ; approximate height 19,500 ft.
- August 11, 12 : Bad weather.
- August 13 : Moved camp up to foot of Todd's aiguille ; camped at 16,000 ft.
- August 14 : Ascent of higher aiguille beyond Todd's ; rough and rotten climb ; final arête good and interesting rocks. Wonderful view from summit ; both the Chandra and Bhaga Rivers are seen. Gorgeous view of group to the S., unnamed and unmeasured. Height of our point 20,000 ft. as near as can be. Final climb.

HIMALAYAN EXPLORATION IN 1912.**FURTHER EXPLORATION OF THE SIACHEN GLACIER.**

MRS. BULLOCK WORKMAN'S expedition to the Siachen or Rose glacier, the largest and longest in Asia, has been carried out with complete success. During nine days of July she, with Dr. Hunter Workman and three Italian guides, made the first ascent of four important snow cols at the two sources of this glacier, at heights varying from 19,500 ft. to 21,000 ft., which constitutes a record in glacial exploration. On two of these ascents Mrs. Bullock Workman established the relation of the North-East Karakoram water-parting with Kashgar; on the two others she discovered two passes to the large unknown Kondus glacier. A fifth important climb made during the nine days by the same party was to the great Silver Throne plateau lying at over 21,000 ft. directly east of the main peak of this massif.

From the north-eastern Siachen col a pass to Kashgar was found, and a new group of high peaks discovered beyond the east Siachen boundary on the Kashgar side. The highest of these is probably over 25,000 ft. A sixth ascent of a high peak towering to the north-east of the Bilapho Pass, * which is crossed in reaching the Siachen, was made by Mrs. Bullock Workman and guides on July 11. On the last 800 ft. of this peak the angle was fifty degrees, and each step had to be cut in a surface of black ice. The expedition, the results of which are to be published later, will place the hitherto unexplored Siachen in the unique position of being the most thoroughly examined and scientifically worked up of all the Himalayan glaciers.

On the crossing of the Bilapho Pass, about 18,000 ft. high, Mrs. Bullock Workman and an Italian porter named Chenez, who had been with her on four Himalayan expeditions, left the caravan in order that Dr. Hunter Workman might take a photograph of them from a picturesque standpoint. After the picture was taken, Chenez, who was carrying the rope and his rucksack, strode ahead, taking another route to join the caravan. Mrs. Bullock Workman followed him at about three steps when, suddenly, without warning, he disappeared from view, carrying with him the rope and thus preventing his own immediate rescue. Mrs. Workman was left standing appalled on the brink of a blue hole in the ice. She called to the others, who hurried to the spot. The head guide had gone an hour in advance to look up a route and had with him the extra rope. The remaining guide called down into the crevasse and a faint reply came from Chenez far below that he was still alive. Six men started at once after the guide who had the remaining rope, and in one hour he returned. After one and a half hours in the frigid crevasse,

* Saltoro Pass.

buried at 80 ft. in the glacier, the porter was brought out on the rope, conscious, but without pulse and nearly frozen. He was carried down to a camp, where everything possible was done to rescue him, but he never recovered and died the same night from shock.—From the *Morning Post*.

In connexion with this report Dr. Longstaff's paper and map in 'A.J.' xxv. p. 485–488, should be studied. It would appear probable that the 'new group of high peaks discovered beyond the eastern Siachen boundary' are those mentioned by Dr. Longstaff on p. 313 of the present volume, and that these peaks are the true Teram Kangri. A picture of these peaks appears in 'A.J.' xxv. p. 485. See also 'Geographical Journal,' vol. xxxv. p. 636, plate p. 640, and vol. xxxvii. p. 94.

Mrs. Fanny Bullock Workman has under date Bombay, October 28, kindly furnished the following note :

On my 1912 Karakoram Expedition the following exploration and ascents were carried out by Dr. Hunter Workman, myself, and three Italian guides. The 48-mile long Siachen or Rose glacier and its large affluents were first explored in entirety. First ascents were made to the following points, viz. to N. Siachen apex or col, which forms the water-parting between this part of Eastern Karakoram and Chinese Turkestan, height about 21,000 ft. To E. Siachen col, height 19,300 ft., from which a group of very high peaks on the Kashgar side was discovered. To ridge on E. Siachen, 19,800 ft. Two cols at W. Siachen source were ascended, heights 19,700 and 18,705 ft., and from latter a new passage to great Kondus glacier found. Another ascent was to large snow plateau, 21,000 ft., lying above W. Siachen source. On July 11 I ascended with three guides a difficult snow peak N.E. of the Bilaphon La, height 21,000 ft.

All our camps for five weeks were at heights of from 16,700 to 19,000 ft. On August 21 we made the first traverse from Rose to Kondus glacier with caravan of 66, and descended the Kondus to Kondus valley.

The Siachen glacier and its affluents were completely surveyed by Mr. C. Grant Peterkin, assisted by Sarjan Singh, plane table, loaned me by Col. S. G. Burrard, R.E., Surveyor-general of India.

PROPOSED SCIENTIFIC EXPEDITION TO THE KARAKORAM.

IMPORTANT SCHEME OF RESEARCH.

DR. FILIPPO DE FILIPPI has submitted to the Council of the Royal Geographical Society a plan for a scientific expedition which he has projected to the Western Himalaya and Karakoram, and for which he has already obtained a large proportion of the funds that will be



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THE GREAT NORTHERN WATERFALLS

W. H. Conner, photo.

necessary. The Council has expressed its approval of Dr. de Filippi's plan.

Dr. de Filippi's name is well known in connexion with the great expeditions which have been so successfully accomplished by the Duke of the Abruzzi to Mount St. Elias in Alaska, and to the Karakoram Mountains. The expedition now proposed, if carried out on the plan which he has drawn up, will probably be the most important from the scientific point of view that has ever entered the Himalayas. The problems under investigation concern topography, geology, gravity, magnetism, and the various forms of radiation (thermal, photochemical, photoelectrical, light polarization, &c.), atmospheric electricity (potential gradient, electric conductivity, induced radioactivity, penetrating radiation and ionization of the air). To these subjects would be added studies in meteorology, with the special view of investigating the higher atmosphere with kites carrying self-registering instruments sent up from stations of high altitude. The special physical characteristics of the Himalaya-Karakoram region, added to the comparative facility with which high altitudes can be reached in it, to the dryness of the atmosphere, &c., afford unique opportunities for these researches.

It is proposed to carry on the investigations from Kashmir, over the Himalaya range, and through Baltistan and Ladakh into Chinese Turkestan. Dr. de Filippi intends to take advantage of the occasion afforded by the expedition to explore and map the still unknown portion of the Karakoram between the Siachen glacier and the Karakoram Pass. It would be a matter of the greatest interest in this district to look for a continuation of the great sedimentary (limestone) formation discovered by the Duke of the Abruzzi in the Baltoro basin and by Dr. Longstaff at the head of the Siachen glacier. The plan entails wintering in Baltistan or in Ladakh, and the expedition would extend over a period of something more than a year.

The amount necessary to cover the expenses of such an enterprise is about £10,000. Of this sum £8000 has already been contributed (£4800 in Italy). It is hoped that the amount necessary to complete the sum may be subscribed.

THE ALPINE CLUB ANNUAL PHOTOGRAPHIC EXHIBITION.

THE Annual Photographic Exhibition, held at the Alpine Club in May last, was marked by an unaccountable diminution in the number of exhibits. The falling off was all the more extraordinary seeing that the preceding summer season was probably one of the finest on record. However it was, to a great extent, compensated by the uniform quality of the work shown. We should have preferred a little more variety in tones of the printing, the prevailing tint being a cold grey, which somehow conveyed an impression of

monotony and chill, which is not characteristic of snow scenes bathed in sunshine. The tint known as the 'warm black' is infinitely more effective for such subjects.

Of the distant regions, the Himalayas were well represented by a superb panoramic view by Signor Sella of the Baltoro Glacier, with the great peaks of K. 2 and Mustagh Ata soaring in the background. This was printed in a very happily chosen shade of green. Mr. Meade's very beautiful cloud study entitled 'A 24,000 Feet Satellite of Kamet,' was decidedly one of the most successful exhibits in the room.

Mr. Kellas showed six pictures of the Sikkim and Garhwal districts, amongst them two magnificent panoramas in these wonderful ranges being especially remarkable, 'The East Face of Kangchenjunga' and 'The Panorama of the Tent Peak and its Glaciers.'

Mr. A. L. Mumm, who has rapidly taken a place in the front rank of Alpine photographers, contributed a number of delightful pictures of the Canadian Rockies in the regions of the Smoky and Stoney Rivers. The trio of views of the Falls of the Smoky River was quite charming.

Two enlargements, 'The Tasman Glacier' and 'Mount Cook,' by Mr. P. Murphy, served to represent New Zealand, and Miss Sophie Nicholls in a very artistic picture chose a subject quite new to the exhibitions, 'The Lebanons from above the Plains of Baalseh.'

The Caucasus appears to be absolutely neglected nowadays. Surely some of our younger members might be tempted to turn their attention to what is probably the most beautiful mountain district in the world.

In dealing with pictures of the Alps space will obviously not suffice to go through all the exhibits in detail, and we shall accordingly draw attention to the most noteworthy. We are probably voicing the opinion of the majority in placing Mr. Henry Speyer's 'Mont Blanc from the Summit of the Pointe Percée' as the finest thing in the room. In this beautiful and perfectly composed picture of the great snowy range, rising beyond the great Sallenches basin, slightly veiled in thin mist, distance and depth were conveyed to the mind with quite extraordinary truth. 'Threatening Clouds from the Strahlhorn' was another very fine example of Mr. Speyer's work.

Dr. Atkin Swan is probably the most successful tele-photographer who has as yet made his appearance at these exhibitions. The huge enlargement of 'The Weisshorn,' demonstrated how very perfect technically the original negative must have been. It was a fine picture too, although hardly as successful pictorially as the one of the Aiguilles de Dru, which Dr. Swan showed last year. Dr. Swan also showed three other exhibits, all well worth study.

Mr. Will Cadby has a distinct individuality, a very rare quality amongst photographers. His three winter snow studies were most charming, and might almost have been mistaken for very delicately drawn pencil sketches.



C. F. Meade, photo.

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24,000 FT. SATTELITE OF KAMET.

Mr. Woolley only sent one contribution, but that was superlatively beautiful, 'The Rosengarten Spitze,' printed in just the right tone of brown.

From Sir Alexander Kennedy we had, amongst others, two most artistic productions in the 'Pics de Belledonne' and 'The Mont Aiguille and Grand Veymond,' and we are very grateful to him for taking us away from hackneyed districts.

We were very glad to see Mr. G. P. Baker once more amongst the exhibitors, with a very finely composed 'Dent Blanche from above Haudères,' and a pretty little picture of the 'Dent de Satarma,' in which the coming generation is apparently receiving a lesson in climbing.

Mr. Walter Larden's two frames of inscriptions on chalets in the Loetschental were most interesting. We should like to have seen more of this decidedly novel type of subject.

Dr. Tempest Anderson for once forsook his favourite volcanoes, showing two magnificent ice studies, 'The Géant Icefall,' and 'On the Mer de Glace'; also 'Glaciated Rocks on the Grimsel,' interesting to the geologist.

A melancholy interest was attached to three beautiful enlargements, 'Raron,' 'Visp,' and 'Washing Day at Breuil,' taken by the late Mr. Edward Whymper, which were kindly lent by Dr. Dübi.

Mr. Quincey sent six imposing enlargements, including two excellent telephotographs from the Bachsee, of which one of the Finsteraarhorn made a really artistic picture.

'The Schrund on the Grand Paradis,' by Mr. W. H. Gover, was amongst the best things at the exhibition, and we do not remember to have seen a finer representation of this kind of subject. Miss Edna Walter, with 'A Glacier Table and Cones on the Unteraar Glacier,' and 'The Grimsel and Marjensee,' has never shown to greater advantage.

Mr. R. S. Morrish, with a very beautiful 'Matterhorn and its Mirror Breuil'; Dr. Hugh Roger-Smith, with 'The Dents des Bouquetins,' and the 'Aiguille de la Za'; and Dr. Thurston Holland, with 'The Road to Chamonix,' 'Spiez,' and 'Val Tournanche,' all showed work of the highest quality.

Dr. O. K. Williamson sent only one, a marvellously beautiful picture of that great snow-wall, 'The Gletscherhorn and Ebnefluh from the Lauithor.'

Mr. Driver Holloway, a very promising newcomer to these exhibitions, showed three first-rate enlargements, all views taken from the Aiguille de Blaitière.

Mr. W. J. Wyatt's 'Grands Charmoz from the Grépon' and 'Sunrise on the Dent du Midi,' and Mr. R. L. G. Irving's 'Péteret and Brenva Ridges' and 'Grand Paradis from the S. ridge of the Herbetet,' were entirely successful examples of photographic art. Two other charming views of the Péteret Ridge were the work of Mr. Geoffrey Bartrum and Mr. Nettleton.

Pictures of the Tirol were not very numerous, but full justice was done to this picturesque district by Miss Beatrice Taylor in a pretty little picture, 'The Zahnkofel'; and equally attractive were Mr. Pryor's 'Croda da Lago,' Mr. Morrish's 'The Rosetta' and 'A Cloudy Morning on Monte Cristallo,' and Mr. J. E. Dawson's very pretty 'Distant View of Vent, Oetzthal.' The latter gentleman also showed an interesting figure study in 'The Service at Hohe Stiege Saas Fee.' Other excellent exhibits of this kind were 'Salting the Sheep at Arolla,' a charming little picture by Miss Venables; 'Cattle on the Resti Alp,' by Mr. Fuller England; 'Peasants at Kippel,' by Mr. J. W. Brown; 'Milking time near Riederfurka,' by Miss Margaret King; 'A Market Woman in the Mastallone Valley,' by the Rev. A. E. Murray—all of which depicted various incidents of life in the High Alps in a delightfully characteristic manner.

There were a few pictures of skating rinks, which are, we venture to think, somewhat unsuitable for Alpine Club exhibitions.

Mr. J. Kenyon Parker, and Mr. E. G. Oliver each contributed several interesting views in the Zermatt district, especially as regards such climbs as the Zmutt Arête and the Nordend from Macugnaga, both of which were accomplished by several parties last year.

Excellent work was also shown by Miss Tiarks, Mr. Witherby, Mr. Benson Lawford, Rev. F. C. Bainbridge Bell, Mr. A. E. Hassé, and Mr. Douglas Murray.

European mountain districts outside the Alps received very scant attention, being solely represented by a pretty little picture 'Delvino, South Albania,' sent by Mr. MacRury, and 'Doe Crag-Coniston,' taken by Mr. A. Craig. Norway, the Pyrenees, Wales and Scotland were absolutely unrepresented—a most unsatisfactory state of things.

There was quite an imposing array of autochromes by Miss Nicholls, Dr. Roger-Smith, Mr. Spencer, and Miss Hardcastle. Those taken by the last-named lady, and the three sunset effects by Dr. Roger-Smith were beyond question the best of the collection.

ALPINE CLUB LIBRARY.

The following additions have been made to the library since June :—

Club Publications.

C.A.F. Provence. Bulletin, année 1912.

Marseille, 1912

8½ × 5½: pp. 87.

Contains :—

R. Gombault, L'Hubac des Béguines et le Baou de St. Cassien.
Chronique du Ski-Club de Provence.



H. W. Culler, photo

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ROSENGARTEN-SPIITZE, FROM THE GRASLEITEN PASS.

- C.A.I. Milano.** Dal Cervino al Rosa. Programma della grande escursione alpina nazionale. 1912
 $8\frac{1}{2} \times 5\frac{1}{2}$: pp. 14.
- D.U.Oe.-V. Bergverein Tsingtau.** Jahresberichte 1905-1909. 1912
 $8\frac{1}{2} \times 5\frac{1}{2}$.
 Sitzungen in Jahresbericht für 1905.
- Innsbruck, Nachtrag zum Bibliotheks-Katalog . . . zusammengestellt v. Th. Seeger. 1908
 9×6 : pp. 23.
- — Bibliotheks-Katalog . . . verfasst v. Th. Bargehr. 1912
 $8\frac{1}{2} \times 5\frac{1}{2}$: pp. 65.
- Nördlingen. Statuten. 1895
 $8 \times 5\frac{1}{2}$: pp. 8.
- Bericht f. 1907/11. 1912
 $9 \times 6\frac{1}{2}$: pp. 27.
- Edelweiss.** Sitzungen d. Club Edelweiss, Dresden. 1 Aug. 1908.
 Fol.: pp. 2, typed.
- Nederlandsche Alpen-Vereeniging.** Mededeelingen 1911-1912. Rotterdam, 1911-12
 9×6 : pp. 135, 127: ill.
 Contains among other articles:—
 Van Heemstra, In het rijk van den Meije.
 de Jong, De Koschutnikurturm in de Karawanken.
 Andrae, Cogne.
 Dentz, Per ski op Wildhorn en Wildstrubel.
- Jaarboek voor 1911. Penninische Alpen. Redacteur Ph. C. Visser
 Gzn. Rotterdam, 1911
 $9\frac{1}{2} \times 6\frac{1}{2}$: pp. 266: plates.
 Contains:—
 Ph. Visser, Penninische Alpen.
 I. de Bruyn, De Hohthälligrat.
 A. W. v. Eeghen, De Zuidzijde v. d. Matterhorn.
 G. J. Lugard, Täschhorn over d. Teufelsgrat.
 R. C. v. d. Linden, Dufourspitze en Schneegeetöber.
 I. de Bruyn, Mte. Rosa via Grenzgletscher.
 J. J. Hooft, Saas Fee.
 D. H. Koetser, Allalinhorn en Egginergrat.
 H. J. Knottenbelt, Grand Cornier en Mt. Collon.
 v. Heemstra, Lo Besso v. d. Zinal-Rothhorn.
 J. J. Hooft, Petite Dent de Veisivi.
 M. Damsté-Muller, Aig. de la Za, Dent Blanche.
 P. v. Meurs, Van Arolla naar Zermatt.
 Andrae, Alexander Burgener.
 Literatur en Kaarten.
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ALPINE ACCIDENTS IN 1912.

ON August 1 **Herr Möllmann** of Hamburg, aged twenty-seven, made the traverse of **Piz Bernina** with the guide **Franz Fux** of St. Niklaus and his cousin **Severin Fux**. Owing to snow and fog during the last three hours the party only reached the summit at 7 P.M. They attempted the descent through the Labyrinth, but were compelled by a heavy snow-storm to bivouac at a height of about 2500 metres. They continued their journey next morning at six, but Herr Möllmann was too exhausted to proceed far and unfortunately died of exposure at eleven.

On August 12 **Herr Franz Obexer**, President of the Akad. A.C. Zürich, was killed on the **Pferscher Tribulaun**. He and a fellow-student named Leitner had reached the chimney close to the top, in which is a fixed rope, but wishing apparently to make a new route they followed a ledge further E. until they gained the foot of a sharp arête leading direct to the summit.

Obexer had climbed the arête for about half a rope's length when he drew in the rope, apparently with the intention of descending by means of a doubled rope. Either the rope slipped off the belay or else he let go, for suddenly Leitner saw the body of his unfortunate comrade flying through the air until it disappeared down the overhanging precipice.

The weather was misty and very cold and the following day snow set in and lasted several days.

The body fell into the enormous gully which stretches down from the gap between the main and E. peaks some 1000 metres to the scree at the foot of the precipices of the S. face. This gully is so very dangerous from continued stone-falls that up to the present attempts to recover the body have had to be abandoned owing to the great risk.

The powers and experience of the unfortunate climber were not such, especially under bad conditions, as to allow him with safety to make experiments.

About August 15 **Herren Karl Tobler** and **Louis Ischer**, both of Berne, were killed on the **Blümlisalp**, apparently by the breaking of a cornice on the arête. Their bodies were found on the 20th, high up on the snow plateau half-way up the S. precipices (*c/.* illustration 'A.J.' xxv. p. 170). The skulls were badly fractured in both cases.

On August 17, two Turin tourists, **Si. Federico Bravo** and **G. Cornaglia**, undertook the ascent of the **Punta d'Arnas** from the Rifugio Gastaldi with the guide **Demenico Castagneri**. About 30 metres under the summit they started to cross a steep snow couloir. The snow gave way under the feet of the leader, Castagneri, and the party were carried down about 400 metres. Bravo came to himself and went down for help, but the rescuers found the two others dead.

On August 21 the well-known Ortler guide **Josef Angerer** of Gomagoi was killed by falling into a crevasse on the **Ortler plateau**.

Three Dresden climbers started on August 20 to ascend the Ortler by the Marltgrat. Owing to extremely unfavourable conditions and a violent snow-storm they were compelled to bivouac. They continued the ascent next morning. This was observed from Sulden and it was decided to despatch two guides with provisions to their encounter. The climbers were already on the lower part of the Ortler plateau, where they met the guides, who were not roped.

They all descended together, the three tourists continuing roped while the two guides went ahead unroped. Suddenly Angerer broke through into an enormous crevasse. One of the tourists who was walking alongside was only saved by being roped. The other guide and one tourist immediately hurried to the Payer hut to fetch help, but although a guide, Jakob Thöny, was let down 80 metres into the crevasse no trace of the unfortunate man could be found and the body was not recovered till several days later.

On August 27 **J. Dengg, junr.**, aged eighteen, son of the well-known guide Dengg of Partenkirchen, crossed with a companion the Zunderngrat (Wettersteingebirge). Towards evening thick weather came on, and they lost themselves on the **Grosser Hundstallkopf**, and were forced to bivouac. Next day they attempted to descend the ridge covered with fresh snow, but at 3 P.M. young Dengg was unable to go any further. His companion went for help but the elder Dengg only arrived to find his son unconscious, and very soon afterwards the young man expired.

Many other accidents are reported, but where the details are not known or where they offer no mountaineering interest or instruction they are not here repeated.

THE ACCIDENT ON THE MONT ROUGE DE PÉTÉRÉT.

DR. PAUL PREUSS, the sole survivor of the party, has been good enough to furnish the following account of the sad disaster on the Mont Rouge de Pétérét in which Mr. and Mrs. H. O. Jones and the guide Julius Truffer lost their lives.

‘So many fantastic and incorrect accounts of this accident have appeared in the ordinary newspapers, and in some cases also in Alpine papers, that I feel impelled, in answer to a request from the editor, to give a detailed account of the accident and a criticism of its causes, painful though it is to me to revive these mournful memories.

‘H. O. Jones, his young wife (they had been married but a fortnight), and his guide J. Truffer, together with G. W. Young and his guide J. Knubel, went to the Gamba hut at the foot of the Innominata, to stay there for several days. On August 11 the party (Mrs. Jones excepted) made the first ascent of the N. peak of the Dames Anglaises. On August 12 I came to the hut alone. The weather was then unfavourable, and Young and Knubel went down to Courmayeur on August 13. On August 15, the first fine day, it was decided, as fresh snow had fallen down to the 3000-metre level, to ascend the Mont Rouge de Pétérét by the N. ridge. This peak is a minor summit of the Pétérét ridge and has a height of 2951 metres; there was no snow on it. It had not yet been ascended from this side, but no particular difficulties were expected.

‘Jones, his wife, and Truffer put on the rope as soon as they reached the Fresnoy Glacier. The actual climbing did not begin until

the depression between the Mont Rouge and the Aiguille Noire was reached. Jones asked me to go ahead by myself, to reconnoitre the best route. The rocks are rather complicated. His object was to save his wife any unnecessary work; she was rather untrained. It did not seem probable that any serious difficulties would be encountered. The guide led and Mrs. Jones went next. Jones went last on the rope, so as to help his wife from below; he carried the slack of the rope (about 15 metres) which connected him with his wife loosely coiled around his arm. Unfortunately he rejected my advice, that his wife, being the weakest member of the party, should go last; he referred to the possibility of having to do traverses. The climbing is approximately of the same order of difficulty as the Daumenschartenweg on the Fünffingerspitze. The roped party progressed very slowly, so that I was able to cover much ground and reconnoitre it thoroughly. At first we kept substantially to the crest of the ridge; then, in order to avoid an obstacle, we went out a little on the Fresnay side. I was on easy ground, about 6 metres above the guide, when the latter was just about to leave a short chimney, by going to the left. Mrs. Jones was about 2 metres below, at the bottom of the chimney, in a good position (about 15 metres of loose rope lying on the ground in between). Jones was immediately below his wife. A handhold, about the size of half a brick, came away when the guide (who hitherto, as far as I could observe, had climbed quite carefully) trusted his weight to it; he fell over backwards, and the others were carried away. No sound was uttered. All three fell down the wall (which overhangs below) and on to the Fresnay glacier, which is about 300 metres below. The catching of the rope, hanging, and similar nonsense, which appeared in some newspapers, did not occur. The next day we brought the bodies down to Courmayeur without particular difficulty.

‘The breaking out of a handhold was the primary cause of the accident, a subsidiary cause being perhaps the defective technique of not distributing one’s weight properly, and of trusting one’s whole weight to a single hold. Still I feel inclined to consider the fall of the leader, caused by a mishap, as an unfortunate accident which might perhaps happen to anybody. But I consider the real reason why this accident resulted in a catastrophe involving the death of three victims to be the wrong order of roping, which reduced the possibilities of the rope as a safeguard. The general principles relating to the use of the rope, in my opinion, include among others the following: the weakest member of a party of three climbing up rocks should go last; the length of the rope between him and the second should be smaller than that between the latter and the leader, so that the weakest can be placed in the middle in cases of traverses, without any need for altering all the tying; no roped member of such a party should be allowed to climb below the weakest member.’

THE ACCIDENT ON THE ALETSCHHORN.

DEATH OF DR. ANDREAS FISCHER.

AT 4 A.M. on July 20, Dr. Andreas Fischer, Dr. Ernst Jenny and the guide Ulrich Almer left the Concordia Hut to ascend the Aletschhorn by the rib of rocks leading to the Aletschjoch. On the Col the party was surprised by thick mist. The summit was, however, gained in safety. The descent was commenced by the S. side to the Aletsch Hut. The wind, however, soon became a hurricane, and masses of driving snow made progress almost impossible. Several couloirs had to be crossed, which became a matter of great danger, as steps were no sooner made than they were filled with masses of snow. The violence of the storm increased to such an extent that the party decided to regain the summit and to attempt the descent by the Mittel Aletsch Glacier, which route is under ordinary conditions little more than a walk, and which they expected would be more sheltered. With great exertion they regained the summit, but on the descent got too much to the right into crevassed country, and were forced to remount to the Aletschjoch. The storm now increased to such a degree that they gave up any idea of forcing the descent lest their strength should give out entirely. They dug a shoulder-deep hole in the snow on the S.E. side of the Aletschjoch to get, if possible, some shelter. The hurricane of snow, accompanied by thunder and lightning, however, never relaxed for an instant, so that they were soon buried up to their heads. All that night the storm raged to such a frightful degree that it looked as though they must be buried in the snow. The moment it was light they made a fresh attempt to descend by the steep N.E. slopes of the Mittel Aletsch Glacier—sinking up to their waists in snow. Dr. Fischer suddenly collapsed and fell out of his steps down the slope. He was held up by the rope, but it was nearly half an hour before he could be rescued from his perilous position, and he expired almost immediately afterwards. The autopsy showed that his neck was broken.

The other two struggled downwards, but only gained the junction of the Mittel Aletsch with the Gross Aletsch Glacier at nightfall. Almer had been compelled to discard his spectacles owing to the mist, and his eyes were so affected that he considered it unsafe to attempt to cross the Glacier, and remained where he was, only reaching the Belalp Hotel at 9.30 A.M. on the 22nd. Dr. Jenny, however, reached the Ricder Furka Hotel at 11 P.M. the same night (21st). Dr. Jenny suffered from frostbite of the right hand and face, but was able to leave the hotel on the 25th. Two days' careful treatment in a dark room restored Ulrich Almer to his normal health. Dr. Fischer's body was finally recovered by a search-party of guides.

Thus died on the mountains he loved so well a very remarkable man. Son of the guide Johann Fischer, who, in 1874, was killed on the Brouillard Glacier with Mr. Garth Marshall, Ulrich Almer alone escaping; brother of Johann Fischer who, again with our own people, Donkin and Fox, was killed in 1888 on Dych Tau, Andreas Fischer was born at Brienzwiler near Meiringen in 1865. Dr. Coolidge has kindly informed me that Fischer obtained his Führer Patent on June 23, 1891, but already in 1889 the young man accompanied the late Mr. C. T. Dent and Mr. Freshfield to the Caucasus, and he was one of the search party who found the last bivouac of the unfortunate party of the previous year. The history of the search expedition has been well written by the late Mr. C. T. Dent in 'A.J.' xv., 26-39.

Fischer, however, was not content to rely on the precarious profession of a guide. He acquired successively his certificates of master of primary and secondary schools, and in the latter capacity was for some years stationed at Grindelwald. By dint of very hard work and much self-denial he was able in 1899 to take his doctor of philosophy degree of the University of Berne. For some years he had been, up to the time of his death, teacher of languages at the Upper 'Realschule' in Bâle. He wrote English practically like an Englishman, and spoke it exceedingly well. But his greatest delight was to get away to the mountains. His interest in them never flagged, and scarcely a season passed but he spent most of his hard-earned holiday among them—usually accompanied by one of the Almers.

Little more need be said about the accident. They battled like men but the mountain won.

[From published reports supplemented by private information kindly supplied by Canon Sloman and others.] J. P. F.

THE ACCIDENT ON THE PIC DU MIDI D'OSSAU.

HUGH ROSE POPE, of Eton and New College, was killed on October 7 while ascending a couloir on to the north ridge of the Pic du Midi d'Ossau, above Pau. His body was recovered on October 16 by a party of friends and Swiss guides. A man of fine intellectual promise, of great charm of character and manner, and an all-round athlete—he represented Oxford at lawn tennis this season—his interest centred in mountaineering, and he was a leader in a remarkable group of Eton and Oxford friends whose association lately produced the 'Oxford Mountaineering Essays.' Endowed with phenomenal height, strength, and reach, his style in climbing was practically perfect in its grace, security, and finish. Those who had an opportunity of judging considered him the greatest rock-climber of his time, and he showed promise of being an unrivalled

mountaineer. One of the best of Swiss guides said of him 'Mr. Pope could not fall on difficult rock or ice,' and his ascent, with two friends, of the Dent Blanche by a new ridge from the W., this season, must take rank with the few great guideless first ascents made in the Alps. Only an unaccountable combination of circumstances could have caused his fall on a passage where, with a companion of anything like equal skill and caution, no rope would have been used. He knew the risk and the charm of solitary wandering, and wrote of it with singular felicity. In the case of few men could the dangerous practice be considered less blameworthy. The presence of a friend as witness of the unexplained accident that brought about his death could only have hastened by a few days the gathering of friends and contemporaries who brought him to rest at Orthez, within sight of the mountains. Mountaineering has lost by his premature death the man most signally qualified by an ideal combination of qualities to carry on and exalt its highest traditions in the coming years.

G. W. Y.

NEW EXPEDITIONS IN 1911 AND 1912.

Graian Alps.

PUNTA FENILIA (3054 m. = 10,020 ft.).—August 10, 1912. Mr. G. Yeld with Benjamin and Augustin Pession of Val Tournanche ascended this peak from the Valnontey by the Grangetta glen in 5 hours from Cogne. The ascent is steep but not difficult. The view of the Cogne basin from the summit is very fine. The party did not ascend wholly by the W. arête which is so conspicuous from the Cogne meadows, though they climbed portions of it. The N.W. face consists mainly of great slabs. They descended on the Valeille side and kept to the E. of the P. di Vigiusa of the new map, and then turning W. eventually struck a path above Silvenoire. Cogne was reached in 3 hrs. 25 mins., halts included.

PUNTA NERA (of the Eaux Rouges Valley) (3064 m. = 10,053 ft.).—August 12, 1912. The same party climbed this peak, which is very conspicuous from the road between Cretaz and Cogne, in about 4 hrs. 30 mins. from the Chavanis pastures by a rather roundabout route. There are four very conspicuous gendarmes on the W. side of the peak which make a brave show from Cogne. The most westerly of these (which seemed to the party to be the highest, though the new map gives that pre-eminence to one of the others)

was first climbed. The party then proceeded along the ridge towards the peak, but the last gendarme, which very much resembles a teacaddy in appearance, was found to be undercut, so the party had to descend and traverse one or two gullies to reach the apparent col at the foot of the actual peak. They then ascended over the big red rock, which rises immediately above the col, to the summit by the N. ridge. The view is exceptionally fine. The descent was made first by the easy S. face and then by the S.W. ridge and the big band of snow which was one of the chief features of the mountain this year when seen from Cogne. A good glissade was here enjoyed. The King's path in the Eaux Rouges valley was then gained (in 42 mins. from the summit) and followed till it eventually joined the track from the Bardoney chalets. Cogne was reached in 4 hrs. 4 mins. from the top, halts included. The only previous ascent recorded was made by S. Cloza on July 19, 1880, by the E. face and N. ridge. (See Dr. Agostino Ferrari's 'Statistica delle Prime Ascensioni,' in 'Boll. C.A.I.' vol. 39, pp. 136-7.)

PICCOLA UJA DI CIARDONEY (3312 m. = 10,866 ft.).—August 14, 1912. The same party having reached the Colle di Ciardoney from Cogne by way of the S. Colle di Sengie and the Ciardoney glacier ascended this peak by the W. arête, the route followed by Mr. F. W. Oliver on September 4, 1895.* On their way back the party left the W. arête when some distance from the summit and went down direct to the Ciardoney glacier. The view from the summit was very extensive and included the Viso and the Maritime Alps, whilst the travellers looked down into both parts of the little known Val Soera, which are separated by the ridge running south from the Piccola Uja. This ridge has for its highest point the Punta di Val Soera, first ascended by Messrs. Irving and Tyndale on August 14, 1912.

The party returned to Cogne by the S. Colle di Sengie and the Valeille.

PUNTA DI VALETTA, North Peak (3318 m. = 10,886 ft.).—August 16, 1912. The same party ascended this peak *viâ* the Valetta Alp and the Comba della Valetta. They traversed the Valetta glacier which was very white and clean to the foot of the peak, and reached the top by the rocks and snow of the W. face. The times taken were unnecessarily long. Probably most parties would make the ascent in about 5½ hrs. The descent was made by the same route. It should be said that the whole way from the Valnontey to the glacier is very steep.

PUNTA DEL TUF (3392 m. = 11,129 ft.).—August 18, 1912. The same party ascended this peak from the King's Camp at Lauzon

* A. J. xvii. p. 575.

in about 3 hrs. 40 mins. walking. They varied their route of last year by taking the E. ridge the whole way. There was much fresh snow. They descended the N. ridge almost in its entirety to the S. Passo del Tuf and thence went straight down to Lauzon.

RIDGE FROM PTA. SCALETTA (3004 m. = 9853 ft.) TO PTA. NERA (3064 m. = 10,050 ft.).—R. L. G. Irving and H. E. G. Tyndale, August 10, 1912. Leaving a camp near the Brouillot huts (3 hrs. from Cogne), we ascended the Bassa di Peratza. After halting there while a heavy snowstorm expended its first fury, we went over the Cima di Peratza to the Testa di Nouva. The direct descent to the Col de l'Arietta was too risky, but we found a rather unsatisfactory way down the N.W. face and made a short traverse to the col, the local name for which is not Arietta but Nouva. From there an easy climb over a nameless peak led to the base of the Scaletta. This gave us an interesting ascent, easier than it had looked from a distance. The descent by the S. face was easy, but the ridge we followed to the Col Miserin had several sensational little bits on it. From the Col Miserin we ascended a peak which might be called the Cima del Lago di Miserin (? 3020 m.) from the summit of which the ridge branches off towards the Lavina. We followed the N. ridge which has several small towers on it to the gap to the S. of Pta. Nera. An easy descent from the gap took us down to the Lago di Miserin. Most of the ridge from the Testa di Nouva seems to be new, excepting of course the Scaletta.

We took about 5 hours for the whole ridge; the climbing is interesting and the views into the upper Val Campiglia and the Combe containing the Lago di Miserin are exceptionally fine.

PTA. LAVINETTA (2983 m. = 9784 ft.) AND TORRE DI LAVINA (3308 m. = 10,850 ft.) BY THE S.W. RIDGE. The same party.—August 11, 1912, we ascended the Bardoney Glen to the final hollow below the Col Bardoney. Instead of going to the actual col we went up a snow gully to an obvious jag in the ridge, a short distance N.E. of the col and slightly higher. The ridge was found to bear many towers. It took only half an hour to reach the Lavinetta, but another 4 hours from there to the S. summit of the Lavina. Generally we traversed when necessary on the N.W. side of the ridge, but in one place, about an hour from the summit, we got on to a grassy ledge running across the S.E. wall, and had a hard climb up a steep crack before regaining the ridge. There is more than a mile of ridge, and no considerable stretch of it is easy. We were glad to find no difficulties on the descent by the N. ridge and the ridge that leads from it to the Col des Eaux Rouges.

TOUR DE GRAUSON (3237 m. = 10,617 ft.). TRAVERSE OF 3 PEAKS. The same party.—August 16, 1912. The highest (E.) peak, first climbed by Mr. Yeld in 1909, was reached by a good

route up the N. face. The ridge descending towards the central peak is formed by a great dyke of dark rock. The descent of this resembles that of the E. ridge of the inaccessible pinnacle in Skye, but the edge is smoother. From the gap between the E. and central peaks we reached the base of a tooth which completely baffled us. We had to descend some way on the S. side before we could climb back to the ridge, close to the top of the central peak. The lowest (W.) peak is easily reached from the latter. The descent on the W. side is made down a steep short gully full of loose rocks to a great hollow, the rim of which we crossed to the S.E. face of the Pta. Garin and reached its summit from this point without any difficulty at all.

PTA. DI VALSOERA (3191 m. = 10,466 ft.). The same party.—August 13, 1912. Reached from Cogne *via* the Valeille, the S. Colle des Sengie, the Colle delle Uje, a small glacier, and the N.W. ridge. The ascent is short but quite of the Chamonix Aiguille type. The S.E. ridge affords a simple descent.

If combined with the ascent of the Gr. Uja di Ciardoney it provides a most interesting but long day from Cogne. Those who are fortunate enough to be on the Glacier di Ciardoney on a sunny morning will not regret a very early start.

PTA. DI FORZO (3303 m. = 10,834 ft.) BY THE W. RIDGE. The same party with G. H. Bullock.—August 8, 1912. The Valeille was ascended to the Valeille huts. [You can trust the map for the existence of these huts, which are all but invisible from the king's path. They can be tracked down among the surrounding boulders by following one of several converging lines of filth.] It is best to avoid a small track on the E. side of the Valeille stream and follow the king's path to the second of two branch paths which descend to a bridge near the huts.

A broad steep shoulder next to the great W. buttress of the Forzo was ascended in a south-easterly direction to the hollow below the S. end of the Arolla glacier. Above this a short rock wall, steep shale, and one or two large smooth slabs were climbed close to the steep end of the glacier and the W. ridge of the Forzo struck near point 3063 m. in the $\frac{50.500}{100}$ map.

The route along the ridge gave good climbing, free from serious difficulty in spite of heavy rain and snow. We descended to the Po. Muraille Rouge, the height of which should probably be nearer 3200 m. than 3105 m. We went round the base of the Arolla peaks, breaking through an excessively sodden snow bridge on the way, to the N. end of the glacier. The proper Cle. di Arolla is about a quarter of a mile further N., but we went to a well-marked notch and descended from it to the Val Bardoney. The first 30 feet on the other side was on steep sloping ledges and the notch is evidently a bad alternative to the Cle. di Arolla which has a king's path descending from it.

Dauphiné.

THE E. ARÊTE OF THE MELJE REACHED BETWEEN THE FIRST AND SECOND TOWERS—FROM THE ETANÇONS VALLEY.—On July 28, 1912, Herren Guido and Max Mayer with the Dolomite guides Angelo Dibona and Luigi Rizzi, completed this often-mooted ascent. It will be remembered that Dr. Emil Zsigmondy lost his life in 1885 in an attempt to climb this wall, and a further fatal accident was reported in 'A.J.' xxvi. p. 77 to M. de Rufz. These attempts were made from the great snowband which divides the face longitudinally into two portions. The present party climbed the whole face. The lower part was overcome by gaining the great snow gully in the line of the Grand Pic and then traversing to the right into the great couloir descending from the Brèche Zsigmondy. This was quitted about 200 metres up on its E. side, and then up a sort of staircase of snow fields and terraces the W. or highest end of the great snowband was reached. From here the upper part of the face was climbed nearly in a direct line, the summit ridge being gained between the first and second tower. A detailed note of the expedition is given in 'Mittheilungen,' 1912, p. 246. The actual time taken in the ascent was 12 hours. The descent to the Rocher de l'Aigle down the icy N. face was done in the dark. The lower part of the S. wall is stated to offer, with few exceptions, no great technical rock-difficulties, but requires considerable work in ice. The upper portion, however, will bear favourable comparison with the most difficult Dolomite climbs, and of course the much greater altitude is an important factor.

Pennines.

DENT BLANCHE (4364 m. = 14,318 ft.). ASCENT BY THE W. FACE AND TRAVERSE.—August 17, 1912, G. Mallory, H. E. L. Porter and H. R. Pope. The W. face of the Dent Blanche in its lower part may be conceived as forming two sections. Firstly (from S. to N.) a flat face, and secondly a shallow basin. The dividing line is a dark bluff of rocks, so that the basin lies between the dark bluff and the W. arête. This basin is the delta of a big couloir, the dark bluff being the containing wall of the delta.

This dark bluff was our objective. The narrow glacier which approaches it presented no considerable difficulty. Our course (lantern) started near the N. and continually approached the S. bank. At 5 A.M., something less than 3½ hrs. after leaving Alpe Bricolla, we were near the foot of the rocks, and halted half an hour for the light. We proceeded up the dark bluff, which turned out to be red, and continued roughly in a straight line till we joined the S. arête, 10 minutes below the summit (10.30 A.M.). The lower rocks were very steep, but a series of chimneys somewhat upon the left-hand side took us up in the most delectable fashion without

any serious difficulty (Pope leading). After this lower section we kept to a definite though not prominent rib; it was in no wise difficult to climb.

The conditions in general were not good; the mountain had not been climbed for nearly three weeks, and a Zermatt party which we observed on the S. arête turned back at the first gendarme. They were, however, for this climb, excellent. The steep lower rocks were entirely free of ice and snow, and higher up the snow was very good. Nothing fell in the shallow couloirs on either side of us. In descending we doubled 160 ft. of spare rope to avoid the big gendarme, and then traversed back to the arête without difficulty.

G. MALLORY.

Bernese Oberland.

TRAVERSE of Strahlhörner and Strahlgrat to point 3330 on Federal map.—On August 6, 1912, Miss Maye Bruce and Canon A. Sloman with Johann Elsig, guide, left the Eggishorn Hotel 5 A.M. diverging from the path near the eastern extremity of the Märjelen Sea 6 A.M. They mounted diagonally at first N.W. and then N., reaching the first summit, 3030 on map, at 8.10 A.M. They then traversed successively the points marked 3053, 3080, 3061, 3104, 3279, arriving at the highest point, marked 3330, about 9.30 A.M. It is possible to keep on the arête the whole way, and the rocks are good. There is no sensational difficulty, but it is an interesting scramble. A snow-storm, which caught the party on the ridge, near the last summit, made it unsafe in the guide's opinion to descend directly on to the small snowfield which lies immediately to the S. of point 3330, so they returned by the same route, regaining the hotel at 3 P.M.

For a short expedition it can be recommended.

A. SLOMAN.

METTENBERG (3017 m.=9895 ft.) BY THE N. ARÊTE.—August 19, 1912. Dr. Rudolf Beck and Dr. Alfred Leuchtag, with the guides Emil Steuri of Grindelwald and Josef Maria Biner of St. Niklaus, left the top of the Milchbachloch at 7 A.M. Seen from here the N. end gendarme of the N. arête looks like a sharp slender tower, whereas seen from the E. from the Unter Wechsel it looks broad and massive. It is crowned by a big cairn built by the guides Emil and Fritz Steuri a few years ago.

From the Unter Wechsel they followed a slightly marked goat track and took to the rocks on the E. face below the above-mentioned tower, about 1900 m. Up steep, and in places difficult, rocks they reached the crest of the N. arête in the gap a few minutes S. of the tower, the ascent so far having been in the N.E. flank. They ascended the tower, and at 11 began the ascent of the arête. The

arête was followed without excessive difficulty to the gap S. of Point 2419, but was dangerous through very rotten rock. The rocks—previously Kalk, now changed to crystalline primitive rock. There followed magnificent climbing up the arête. At 3.25 they reached the point where the arête turns E., from where, up snow-slopes, they reached the summit at 4.12. Time required from Grindelwald, about 12 hours—route much more interesting than the ordinary one ('Alpina,' 1912, p. 175).

Bregaglia Group.

PIZ BADILE (3311 m. = 10,863 ft., *S. map*; 3307 m. *Lurani and I. maps*). By the N. face (*sic*), Signori Gaetano Scotti, Angelo and Romano Calegari, July 30–31, August 3, 1911.*

[The N. face of Piz Badile—as seen from Soglio—is really composed of two distinct faces, N.E. and N.W., separated from each other by the N. or Sassfura buttress. The route described below commences on the N.E. or Bondasca face, but soon takes to the buttress, up which, with frequent short digressions to the W. and occasional ones to the E. face, it proceeds to the summit.]

July 29.—Party explored route from a bivouac near the Sassfura huts.

July 30.—5.15 A.M. left bivouac; by débris to the small Cengalo glacier, up this quickly to the first rocks of the mountain, where boots, axes, and all superfluous luggage deposited. *Kletterschuhe* put on (6.30 A.M.). Up the repulsively smooth and at first rotten rocks of the N.E. face between the precipitous N. ice couloir of the Colle del Cengalo and the mountain's immense N. buttress, then W. by tiny ledges ('pitons' fixed) towards a notch in said buttress, attained finally by perilous and delicate gymnastics. Then up the buttress till forced on to its W. slope, whence a disintegrated crevice leads back to the knife-edged crest. Along this till *too* steep, then a short descent again on W. side over smooth, holdless slabs (pitons). Now up a vertical crack, avoiding conspicuous gully of black ice, till a most difficult slab gives access to narrow gravelly ledge. (Halt 11–11.30 A.M.) Further progress appears hopeless, nevertheless attempt is made; rocks smooth as glass, exposure indescribable, party crawls upwards by minute irregularities. Nowhere can the leader secure himself or his followers. Small gap in crest attained only to be forced back at once on to W. slope, whence (rope and piton) crevice is reached by most difficult traverses. Up this crevice, rather easier, but rotten rocks, to 'little platform.' Next vertical and perfectly smooth step is scaled by a human pyramid, aided by pitons and fixed ropes; exertion and difficulties intense. Following bit overhangs, but is turned immediately

* Courteously communicated by the late Dr. R. Balabio.

below 'overhang' by more pitons; crest then regained. Further ascent apparently quite impossible, weather getting bad, descent commenced. Party nearly overwhelmed by loose boulders while descending aforementioned crevice, last man holds firm; weather and conditions become so bad that all give themselves up for lost. Appalling thunderstorm, yet more pitons, spare ropes, and 'little platform' overhanging abyss safely attained (7 P.M.). 11 hours' halt, rain, snow; finally icy gale and weather clearing.

July 31.—Weather fine, 6 A.M., left platform, descent recommenced; rope rings, pitons, sometimes *three* spare ropes employed, but work always appears overwhelmingly hard. Axes regained, 1.15 P.M. Left Promontogno for Chiavenna, 6 P.M.

August 3.—Party left Badile Club hut, 5 A.M. Summit of Piz Badile attained by ordinary S. route, 7.30 A.M. Descent of N. face commenced 8 A.M., close to *true* top of mountain. Great tooth here turned by safe ledge; party then embarked once more on N. buttress. Weather perfect, clouds hang thinly on N. face; view below fearfully impressive. Axes, boots, etc., discarded, descent of buttress commenced with utmost care and slowness. Crest followed till interrupted by perpendicular tooth, this is turned by microscopic ledge on its W. slope; work of the most difficult and exposed character. Ledge dies away in the face, but crack barely wide enough for the toe leads back to crest. Weather getting colder, hands of party partly flayed. Narrow ice-filled slit in the E. slope now visible; down this slit, rocks dangerously brittle, till another crevice running parallel with the buttress can be reached; down this till it splays out abruptly, then back on to crest over excessively hard boss. Down the gigantic slabs of the buttress, till, turning on to N.W. slope, familiar terrain traversed on July 30 becomes visible below (3 P.M.). One of the party is boldly lowered till the previously untraversed bit is completed—the entire N. buttress had then been accomplished (3.50 P.M.). Now immediately up again towards the summit, difficulties immense, enthusiasm spurs on party, top regained, 6.50 P.M. Descent by S. route, Badile Club hut attained, 9 P.M.

E. L. S.

[The methods employed in this truly extraordinary expedition recall Cav. Guido Rey's exploits on the Furggen ridge of the Matterhorn. The N. face of Piz Badile will always rank among the most terrible and forbidding objects in the Alps; one glance at its 4000 ft. of 'awful precipice' will confirm the desperate nature of the work undertaken; one can only marvel at its safe accomplishment; Fortune must indeed have befriended the undaunted Italians.

See the remarkable article in 'R.M.' 1912, pp. 195–202, with a photograph on which the route is outlined.

Christian Klucker *alone* once ventured for some 500–600 ft. on this face, but no previous serious attempt has ever been made.]

CIMA DI CANTUN (3360 m. = 11,023 ft. ; *S. map*), BY THE N. FACE Herren C. Godet and H. Rütter, August 18, 1912.* From the Albigna Club hut straight to the face of the very steep snow and ice wall constituting the N. face. Bergschrund easily crossed, then heavy step-cutting till N.W. arête attained at a small depression just W. of the summit, which was then easily attained (3 hrs. 20 mins. for the ascent of the *face* alone).

Arctic Norway.

STRANDAATIND (862 m.) 'The headland which divides the North and South Folden fjords may vie with the Aiguilles of Mont Blanc in the fantastic singularity of its forms. I have nowhere seen summits more perfectly acuminated.'

This description, and a somewhat flamboyant but unexaggerated sketch, by Prof. Forbes, p. 58, in his mountain classic, *Norway and its Glaciers*, of a grand mountain rising with a beautiful sweep straight out of the blue waves of the Vest Fjord, ought to have attracted many mountaineers to attempt its ascent. A few men have responded to the call, but the only man who met with much success was our late Danish fellow member, Hr. Carl Hall, who climbed the lower summit of Strandaatind, and the Troldtind, a grand peak visible from the pier at Kjærringö.

STRANDAATIND. July 30, 1912.—C. W. Rubenson, Ferdinand Schjelderup, Harald Jentoft and W. C. Slingsby, set off to attempt the ascent of the highest peak by traversing the lower. Slingsby, fearing that the expedition by this route would be too severe a training walk for him, left the party at a gap on the first summit. The others went on, and found Hall's cairns on the lower peak and on the gap between the two peaks. Here the route was blocked by a 60-ft. slab. This exceptionally difficult place, which had defeated Hall's excellent guides, was conquered by Rubenson—the most difficult place that this remarkably good rock-climber had ever attempted. Other stiff places were dealt with successfully, the summit was reached, and the party returned from their 'training walk' after an absence of 26 hrs.

STRANDAATIND, BY THE N.W. ARÊTE. August 10, 1912.—The same party. This expedition was made principally for the sake of the writer, who contested that this was the true and natural line of ascent. The route, though shorter than the other, proved to be an exceedingly difficult one which tested to the utmost degree the grand climbing powers of the three Norskmen. Suffice it to say that it was of the best aiguille character, and that the one Englishman of the party was indeed a proud man when he took a photograph of his companions on the summit. Further description must be left for the present.

* *Alpina*, 1912, p. 176.

OSANTIND (1115 m.) August 3, 1912.—The same party of four, starting from their camp at Sjunkfjord followed a pretty forest valley and then climbed up roches moutonnées to the pass of Drogvasskar. Here they turned N. over the naked gneiss rocks, which are a predominating feature of South Folden, and then had an interesting climb up a steep and narrow ridge to a sharp and jagged summit which overhung a glacier some 1500 ft. below.

The view of snowy Swedish mountains, E.; the huge glaciers of Svartisen, S.; the grand array of gabbro pinnacles in Lofoten, 80 miles in length, W.; the grim monoliths of Skeistind, Husbyviktind and other monsters rising straight out of the blue fjords, N.—Ah! go and see them!

SKEISTIND (975 m.) August 5, 1912.—The same party, after a two hours' row, landed at the only place for several miles where it was possible to force a way through brushwood and up to the long buttress of naked gneiss to the actual foot of the truncated pyramid itself. Schjelderup led grandly up the one gully which furrows the W. side, but after two hours' climbing this route was wisely abandoned, as being too risky on account of the loose schistose nature of the rock. Unexpectedly, a ledge, invisible from below, was found which led to the N. Here, Jentoft, using rubber shoes, led the party up an exceedingly difficult ridge and face climb to the very top. Though report said that a native had climbed the peak before, and quite alone, no cairn or other traces were found. The descent was very difficult and in two places recourse was had to the abseilen process.

A storm of wind coming suddenly upon the party in the middle of the fjord made a direct return to camp impossible. Hereby hangs a tale to be told another time. Schjelderup recently received a letter from Thor Normann, the reputed first ascender of the mountain, in which he says: 'With respect to my expedition up on Sjeistinden, I will tell you about it. It was in the summer of 1898. We were a party of five who attempted it. We began from the S.W., but we could not come up there. I tried it alone from the W., and came up there. The reason why I did not build a cairn on the top was because I was afraid of the descent, as I was alone.'

It is clear that he succeeded where we turned back. Indeed, on such loose rocks it would be safer for one man than for four. All honour to the bold Norskman, who is so well-named Thor Normann.

HUSBYVIKTIND (806 m.) August 7, 1912.—No ascent. The same party started from Rörstad to prove, if possible, that this bold peak is accessible or, as they expected, the reverse. They had a long and an exceptionally interesting day with a considerable amount of really difficult climbing, and in the end proved conclusively, and indeed were almost glad to prove it, that there is in Norway one grand peak which is absolutely unassailable and

invincible. Surely no Swiss mountain railway engineers will tackle it, nor yet an æroplanist?

This grand and very long expedition deserves a more minute description.

WM. CECIL SLINGSBY.

Northern Selkirks, Canada.

MT. SIR SANDFORD (11,634 ft.), which has successfully resisted several assaults and is the highest peak in the Selkirks, was at last ascended on June 24, 1912, by Mr. Howard Palmer and Professor E. W. D. Holway, with the guides Rudolf Aemmer and E. Feuz, junr. Following their old route up the N. face they succeeded in finding a fairly easy but not altogether safe passage through the ice-cliffs to the upper snow-slopes. They struck the summit ridge to the W. of and about 200 ft. below the highest point. From there the work was very sensational owing to double-cornices in bad condition, complicated by a right-angle twist in the ridge where a huge cornice was encountered. With considerable difficulty and not without risk they eventually forced their way to the summit, a success thoroughly deserved by their previous seasons of arduous pioneer work.

The same party afterwards climbed Mt. Adamant (10,980 ft.), which turned out to be a very long and continuously difficult ascent.

T. G. L.

Natal.

ASCENT OF CATHKIN PEAK IN THE DRAKENSBERG, NATAL.—The ascent of Cathkin Peak (otherwise called Champagne Castle), said to be hitherto unscalded, has been successfully accomplished by a mountaineering party consisting of Mr. W. C. West, Hon. Secretary of the Mountain Club, Mr. G. T. Amphlett, the Rev. Father Kelly (of Bloemfontein), and Mr. T. Casement (of Witziesshoek). The route taken was by the first gully E. of Cathkin Peak, on the S. side of the peak. The ascent and descent from the camp in Monk's Ravine, on the S. of Cathkin Peak, took twelve hours, the party arriving in camp at 8 P.M. The altitude given on various maps at 12,000 ft. is stated to be incorrect, as an aneroid reading showed 10,500 ft. Much snow and ice was encountered in the gully. The expedition was arranged under the auspices of Mr. J. P. S. Woods, of Hartsease, Gourton, Natal.

As Cathkin Peak is believed to be the highest peak of the Drakensberg, the inference is that the heights of Mont aux Sources and Giant's Castle are also over-estimated. Cf. also 'A.J.' xxii. 362 seq. 'Notes on the section of the Drakensberg Mountains from Giant's Castle to Cathkin Peak,' by Stewart Gore Browne, R.F.A.

VARIOUS EXPEDITIONS IN 1912 (AND 1899).

MONT BLANC DISTRICT.

MONT BLANC (4810 m. = 15,782 ft.) BY THE BRENVA.—Reverting to my *résumé* in 'A.J.' xxvi. 171-176, I have since ascertained from a letter addressed by Jean Maître to Dr. O. K. Williamson that in 1899 the late Mr. F. G. Leatham made the ascent by the Brenva with the guides Jean Maître and Pierre Maurys. This is accordingly the seventh ascent, and the subsequent ones need renumbering. The party appear to have crossed the Col de la Brenva without continuing to the summit of Mont Blanc. They turned the upper séracs on the right-hand side. They left the gîte on the Glacier de la Brenva at 3 A.M. and reached the Col de la Brenva at 6 P.M. They had very bad weather and found much difficulty with the séracs.

V. P. F.

Pennines.

THE DOVES (OR DOUVES) BLANCHES.—The long S.W. arête, which ranks as perhaps the longest and most difficult of the regular Arolla courses, was traversed on August 15, 1912, by a guideless party climbing in the following order on two ropes, (1) G. Mallory, G. Harford; (2) H. R. Pope, Mabel Capper, H. E. L. Porter. The arête was strictly followed with but two serious exceptions. One steep step, with an overhanging boss of rock guarding it, proved inaccessible after half an hour's resolute attack; and an earlier attractive tower was passed on the right simply for lack of time. But the first big gendarme, a conspicuous object from the route to the Bertol Hut, was, it is believed, climbed for the first time, no signs of the presence of previous climbers being found, though cairns and boot scratches were elsewhere in evidence. The leader first effected a somewhat delicate slab traverse and with indefinite holds to the right, and then climbed a steep slab by means of very small hand and foot holds in the rough surface of the slab, 60 ft. of rope being required. The times occupied in the several sections were considerable, the party including a veteran, Canon G. Harford, whose principal climbing in the Alps was done in 1883 and 1884, and a lady, Miss Capper, who only began last year. From the Hôtel Mont Collon to the point on the arête where climbing proper began took 3 hrs., the ridge being reached by the N.W. face. After half an hour for breakfast the traversing of the arête occupied 2 hrs., including half an hour for lunch, and half an hour for the ineffective attempt on the inaccessible step. The descent was made in 3 hrs. by the W. face, traversing in a N.E. direction over easy snow slopes to the lower part of the Za glacier. (Total time from the hotel and back, 14½ hrs.) It may be added that the middle part, with its sharp central edge and huge smooth swelling sides, aptly fitted the sobriquet conferred upon it in Larden's book, of the 'Inverted Boat.'

Two days later the expedition was in the main repeated by Dr. O. L. V. de Wesselow and Miss V. D. de Wesselow, with Antoine and Jean Rieder. But they got on to the arête by its S.E. face from the Plan de Bertol, and the climb had an unfortunate termination, the leading guide spraining his ankle some distance from the top. The rest of the party, however, managed to get him on to a point whence they could reach the snow on the E. side, and drew him down to the Plan de Bertol, whence he was fetched by other guides. Naturally this prolonged the day considerably, the climbers not returning till long after dark. Fortunately the mischance was rightly diagnosed by telescope from the hotel; so no undue anxiety was felt.

ALPINE NOTES.

'THE ALPINE GUIDE.'—Copies of Vol. I. of the new edition of this work, price 12s. net, and of 'Hints and Notes, Practical and Scientific, for Travellers in the Alps' (being a new edition of the General Introduction), price 3s., can be obtained from all booksellers, or from Messrs. Stanford, 12 Long Acre, W.C.

'THE ALPINE GUIDE,' THE CENTRAL ALPS. PART I.—A new edition of this portion of 'The Alpine Guide,' by the late John Ball, F.R.S., President of the Alpine Club, reconstructed and revised on behalf of the Alpine Club under the general editorship of A. V. Valentine-Richards, Fellow of Christ's College, Cambridge, is now ready, and can be obtained from all booksellers, or from Messrs. Stanford, 12 Long Acre, W.C. It includes those portions of Switzerland to the N. of the Rhône and Rhine valleys.

'THE ALPINE GUIDE,' THE CENTRAL ALPS. PART II.—A new edition of this portion of 'The Alpine Guide,' by the late John Ball, F.R.S., President of the Alpine Club, reconstructed and revised on behalf of the Alpine Club under the general editorship of the Rev. George Broke, is now ready, and can be obtained from all booksellers, or from Messrs. Stanford, 12 Long Acre, W.C. It includes 'those Alpine portions of Switzerland, Italy, and Austria, which lie S. and E. of the Rhône and Rhine, S. of the Arlberg, and W. of the Adige.'

THE ALPINE CLUB OBITUARY.—W. I. Beaumont (1907), A. L. Clover (1900), C. T. Dent (1872), Professor F. A. Forel (Honorary Member), R. Gaskell (1875), H. O. Jones (1910), Conte Francesco Lurani (1892), Rev. H. A. Morgan (1863), J. M. Archer Thomson (1900), J. W. Hook Thorp (1888), R. Walters (Original Member), Rt. Hon. Sir Alfred Wills (1858), Herbert Wilson (1883).

RIFFELHORN.—Mr. George H. Morse sends the following very interesting note:—In 'Conway's Guide to the Eastern Pennine Alps,' page 75, he records that this peak was 'first ascended by some

Englishmen in 1842, see "Forbes' Travels," page 314.' Professor Forbes states that some English students of Hofwyl found a circuitous route on the Eastern side in 1842, and that his guide Damatter had learned the way, so he later on followed in their footsteps to take some bearings from the summit.

I have lately been shown an original letter, by Mr. Edric Barwell, the son of one of those students, and as readers of the ALPINE JOURNAL may be interested in the account, I have permission to offer it to you for reproduction in the JOURNAL.

The letter is dated Lugano, August 18. The Italian postmark is Domo-dossola, 22 Agos; the London postmark is August 30, 1842, and its destination mark is Norwich, August 31, 1842.

It commences:—

' My dear Parents, I have been to the Post Office at Como . . . A distinct description of our route I will give you when I arrive at Hofwyl, but I must now tell you an achievement of ours.

' Not far from the Monte Rosa is a mountain lying a little to the N.W., it stands on Keller's map between Zermatt and the Cima de Jagui, it is not named on his map; it bears, however, the name of Riffle Horn. It consists of a mountain easy to ascend to within 1500 or 2000 feet of the top, which last part is composed of rock, perpendicular and extremely ragged, and was considered inaccessible (or to coin a word unclimbable), as many unsuccessful attempts have been made. Now on the mountains lived a goat-herd who had become perfectly wild. He was accustomed to wander about the hills and to kill sheep and other animals and eat them raw. Many endeavours were made to catch him, but they did not succeed. No one could ever find where he hid in the winter. Well, one morning two monuments of stones were observed on the summit of the Rifflehorn; it had been ascended, but the goat-herd was never seen again. A neighbouring hill was ascended, and a skeleton was observed by means of telescopes on the top. Several guides and chamois hunters have since attempted the ascent, but in vain. When we had ascended the first part, the view of the Monte Rosa was splendid, but a perfect panorama was prevented by this peak. Our guide assured us we could not scale it, but, notwithstanding, the two Smiths and I began, and we succeeded, with incredible exertions, to ascend to the last perpendicular face of the rock, sometimes hanging by our hands or being pushed or drawn up by the other hanging over the glacier of the Monte Rosa. Here V. Smith asked us to stop, he would try to ascend, and we should stop to shout to tell him where to place his feet in his descent. At length a shout announced his arrival on the top, where he fixed a journey pole with a handkerchief as signal of his triumph. He descended to where we were and advised we should go down to tell them of our safety before we ascended again all three; this we did. Lushington accompanied us in our second. We reached the top in safety, wrote our names

on a piece of paper, secured the staff more firmly, and added some stones to the pile. Our feelings were singular; we stood on a point of the earth never before trodden but by one man, who there found his grave. One loud shout announced our success, to which the echoes replied with unaccustomed voice. The scene which spread itself before us is more easily imagined than described. We saw the Oberland of Berne; on every side was ice and snow piled to the heavens. We descended with difficulty, but in safety; so much for our mountaineering.

'The Lake of Como pleases me most of the Italian lakes at present. . . .

' I remain,
' Your affectionate son,
' J. BARWELL.'

Perhaps the most curious part of this story is about the wild goat-herd, and I wonder if any of the older members of the Club have ever heard at Zermatt the tradition of a skeleton being seen on the top.

Mr. John Barwell was born in Norwich in 1825, and was at school at Hofwyl. He died only the other day, February 9, 1912. His companions were Mr. Valentine Smith and his brother, and Mr. Lushington. The two Smiths were afterwards owners of the Thames Bank Distillery in London. Mr. Lushington was a son of Dr. Lushington, for some time a judge in the Admiralty Court, and a brother of Mr. Vernon Lushington, who died quite recently.

As the Rifelhorn has become such a popular playground at Zermatt, this account of its first ascent is, I think, worthy of record.

GEORGE H. MORSE.

NORWICH,
11th April 1912.

NEW HUTS OF THE S.A.C.—The following were opened during 1912 :—

The Liedernenhütte in the Kaiserstock district on the Lake of Lucerne.

The Campo Tencia Hut, canton Tessin.

The Britannia Hut on the Hinter Allalin near Saas. This hut, as is well known, was presented to the S.A.C. by its British members and others. An illustration of this splendid hut appears in 'Alpina,' 1912, p. 200.

After much negotiation the S.A.C. has at last succeeded in getting its plans passed by the communal and cantonal authorities for the construction of the Refuge Solvay. It is to be built near the old or upper hut on the Matterhorn, and is intended to serve simply as a refuge in bad weather, but not as a sleeping-place under ordinary conditions. The fund left by the late M. Solvay amounts to 22,000 francs. The Refuge is to be ready for next season.

NEW RAILWAYS.—The Bevers-Schuls section of the Rhaetian Railway, some 50 kilometres long, will be opened in the spring. This will facilitate access to the Lower Engadine.

NEW GUIDEBOOK TO THE ALPS OF GLARUS.—A second edition of Professor Dr. Näf Blumer's 'Clubführer durch die Glarner Alpen' appeared during the summer. It covers the whole of the Tödi district and neighbourhood. The sketches are a great feature. The marked routes do very much to elucidate, indeed to render almost superfluous, the printed text. Some of the illustrations are very striking, particularly the one on p. 198 showing Mr. Val A. Fynn's route up the stupendous W. wall of the Bifertenstock—the greatest climb in that district. The routes up the Hinter and Vorder Selbsanft, illustrated on pages 201 and 203, as well as those up the Tödi on p. 254, also deserve attention.

VAL TALAGONA.—In 'A.J.' xxv. 560 reference was made to this valley, one of the least known and most interesting of the Dolomites of Cadore. The 'Rivista del C.A.I.' vol. xxxi. pp. 259–270 contains a further article on this group, with much new topographical information and a sketch map.

REVIEWS.

Oxford Mountaineering Essays. Edited by ARNOLD H. M. LUNN. London: Edwin Arnold. 1912. pp. xi and 236. 5s. net.

THIS volume is a collection of essays by nine young Oxford men, eight named and one (for he tells of things that are forbidden) anonymous. They are all fresh from the schools and frankly and refreshingly very young and very solemn, as befits young men who have something to say, and are a little shy lest you shouldn't want to hear it. They are 'concerned with the message the hills hold for Youth, a message which Youth therefore may be pardoned for attempting to explain.' Cambridge discovered the Alps for us. Oxford first photographed them for us, and has had the larger share in cataloguing them. Cambridge again, once and for all, with the pen of Mr. Leslie Stephen wrote the first and last word of literature on Alpine travel. Lastly Cambridge taught the heterodox that College walls and roofs might serve a useful purpose for the aspiring mountaineer. It was time for Oxford to take up the challenge thrown down by a recent President of the Alpine Club and to proceed with the ancient rivalry. We must not quarrel if she speaks, with the lips of youth, in a manneristic strain. These gentlemen have no new ascents to record, though the names of some of the writers are familiar enough to modern climbers. We are to learn from them things possibly more important to the sport than the way to turn a particular difficulty or the technique of ice-axe and elbow.

We want to know what depth of root there is in the love for the mountains which has meant so much to so many of us these last fifty years. These writers certainly have that sacred emotion, and are sincerely anxious to communicate it. They are very articulate and in no way ashamed of their enthusiasm. Perhaps as most mountaineers like to have something to be ashamed of, they will be suspected of affectation. And to this charge they have themselves lent a certain colour by the arrangement of their book. Most of the mountaineering doctrine which they preach is so orthodox, that it was a pity to start off with the string of heresies and paradoxes contained in the first essay on Fauvism, Cézanne and Mr. C. J. Holmes. Then we come to Mr. Julian Huxley, who tells us how he found the Alps to be not eternal but transitory and in telling us raises all the romance that lies in modern methods of teaching geography ; to Mr. Norman Young with a delightful essay—academic as is right for a book by Oxford men—on ‘The Mountains in Greek Poetry’ ; to Mr. H. K. Lunn, who suggests as well as any recent writer the strange physical delight in physical travel—we should have liked his essay better without Cynara ; to Mr. Tyndale, Mr. N. T. Huxley, and Mr. Arnold Lunn, with perhaps the best paper in the volume, telling of many strange incidents on the lesser Alpine summits and ridges, and an apprenticeship to the craft which should fit him for great adventures. All are full of the true spirit, and in their hands the ice-axe and the rope will lead to a lifetime of delight among the mountains which they love. So we might close the book in joy. It is a source of melancholy, a reminder of the sternness which is even in the games of youth, that the same number of this JOURNAL which contains this notice of their book should chronicle also the death among the mountains of one of the most promising of their company. Here in an essay on ‘British Hills’ Mr. Pope wrote of how he saw the mountains and what he sought among them. ‘It is of the nature of mysteries that they cannot be interpreted to those who do not know.’

Nella Catena del Monte Bianco. A history and description of some of the principal Summits. With 25 full-page illustrations, 31 smaller, 3 panoramas and 2 sketches ; pp. 251. By AGOSTINO FERRARI. Turin : 1912.

WE have read this splendid monograph with the greatest pleasure and interest. We quote at full length the list of the summits dealt with : Aiguille de Trélatête, Grandes Jorasses, Aiguille d’Argentière, Aiguille de Bionnassay, Aiguille de Leschaux, Mont Dolent, Aiguilles des Glaciers, ‘the quickest way up Mont Blanc from the Italian side,’ Col de la Tour Ronde,* Tour Ronde, Col de Rochefort, Dent du Géant, Mont Blanc du Tacul, Col du Midi, Aiguille du Moine, and Aiguille de Triolet. There follows a short but important *résumé* of some of the latest expeditions accomplished among these peaks

* Now called Col du Trident, c. 3650 m. (*loc. cit.* p. 249).

of the Chain, nearly all of which, it will be noticed, are situated on or about the frontier ridges.

Signor Ferrari has adopted the excellent plan of giving, at the head of each article, a topographical description of the peak, the *raison d'être* (where known) of its name, the altitudes assigned to it by the various maps, quoting the Barbey map (1910) as the final authority. Then follows a history of the different routes; lastly the author gives an admirable and often most picturesque account of his own ascent of the peak in question. No one realises better than ourselves the labour and time required for a monograph of this size and description, yet we cannot help wishing that Signor Ferrari had been able to bring the historical part *thoroughly* up to date. The great expeditions of 1911 remain for the most part undealt with save in the briefest and most incomplete form in the appendix; a full description by so sympathetic and able an authority would have still further enhanced the great value of the work. Some of the 'new' ascents, so briefly quoted, date back as far as 1901 and 1902. Of Signor Ferrari's own exploits, those of the Aiguilles de Bionnassay, des Glaciers, and Mont Blanc du Tacul appeal to one most; both the latter routes were new. The author has also given a short but most interesting description of several combined expeditions and *tours de force* that have been effected, notably the traverse in one day of Mont Blanc from the Col de Miage to the Col du Midi; there is a humorous reference to the iron legs of the well-known mountaineers who accomplished this feat of which '*Il solo pensiero mi affatica*' (pp. 57-8).

The print is excellent and the illustrations by various distinguished photographers are worthy of the text; the telephotographic panorama of the S. slope of the Main Chain taken from Monte Nix, by the Staff of the third regiment of Sappers, is especially magnificent; we presume that the date of this panorama is September 1911. The sketch of the different routes up the S. face of Mont Blanc is also of surpassing interest; we deeply regret that the compilers have not been able to give us a similar design for the S.E. and E. face routes. In conclusion, we thank Signor Ferrari for his brilliant work and for the immense trouble that he must have taken, even granting, as he aptly puts it, '*Vi parlerò ora colla passione dell' innamorato.*'

The Yorkshire Ramblers' Club Journal. Edited by WM. ANDERTON BRIGG. Vol. iii. No. 11. (Published by the Yorkshire Ramblers' Club, 10 Park Street, Leeds.)

ANOTHER interesting number maintains the reputation of this well-known Journal. The subject matter is, as usual, very varied, and extends from such peaks as the Zinal Rothhorn and the heights of 'Romance and Effort' (by Mr. G. Winthrop Young) to the 'Cave of the Dragon' (in Majorca) and the Swinsto Cave where the pot-holer finds his subterranean joys. We briefly illustrate them by a

quotation : ' At this point the passage was 3 ft. high and the water 20 in. deep. We could still see the tunnel stretching straight ahead and the roof keeping at about the same level, but as we had then been some two hours underground, and had been wet through the whole time, the water having been in places above our waists, we hurried back to the main chamber and reached the open air as quickly as possible. The climb up the ladder was complicated by the acetylene lamp being put out by the fallen water, the only lighted candle getting knocked over into the stream and the matches being soaked with water.'

The article on ' Authorised Guides,' by Mr. E. Kitson Clark, deserves a wide publicity. His scheme is thus explained by the author : ' The nature of my scheme is sufficiently described by the title of the paper. It is meant to meet the difficulties which the commander of a defensive force would have in a country he can only know from a map, by providing him with guides who are not only men of honour but also furnished with intelligence and a special knowledge of the country. . . . The guide we want must have all this knowledge of the country, and with it, all the gipsy's intimate acquaintance with its contents. The Rambler is the man to solve the proposition, and especially a Yorkshire Rambler, for being a member of a recognised Association he can, in time of war, be found at once and given a definite job to carry out.' ' The Summit of the Rothhorn from the E.,' by Eric Greenwood, and ' Gaping Ghyll,' by C. Hastings, are the most striking of the Illustrations, though the smaller pictures of Rock-climbing at Ilkley and elsewhere are decidedly attractive.

The Selkirk Mountains : A Guide for Mountain Climbers and Pilgrims. By ARTHUR O. WHEELER and ELIZABETH PARKER. Stovel Company, Winnipeg. 1911.

MR. COLEMAN'S climbing reminiscences, which were noticed in the last number of the JOURNAL, carry us back thirty years to the very beginnings of mountaineering in the Rockies and the Selkirks. The present volume is at the opposite end of the scale. It is extremely up to date, and the mere appearance of a work of this character is a noteworthy event in mountaineering history, for, so far as we are aware, there is nothing else of a similar kind in existence dealing with any mountain-range outside Europe. Externally the book closely resembles Edward Whymper's ' Guides to Zermatt and Chamonix,' and the general treatment and arrangement follow the same admirable model. In the introductory sections the authors explain their respective shares in the production, and Mrs. Parker then allows herself a whole-hearted rhapsody on the Selkirk mountains and Canadian travel generally. After this they settle down to business, and give us a brief sketch of the early exploration of the Rockies, and a somewhat fuller one of that of the Selkirks, together with a concise summary of the climbing accomplished in the latter range from 1895 to 1911. Then follows the ' Guide for Climbers

and Pilgrims' in the strict sense, which occupies about two-thirds of the book and includes Mr. Wheeler's monograph on the Caves of Cheops in a condensed form. Finally there are subsidiary chapters on the Geology, Fauna and Flora of the Selkirks, Equipment, &c., and one, all too short, on the birth and progress of the Alpine Club of Canada, in which Mrs. Parker again lets herself go with refreshing and infectious enthusiasm.

The greater part of the 'Climbers' Guide' portion is, as might be expected, taken up with the peaks, passes, glaciers, &c., reached from Glacier House. These are arranged alphabetically, and very full information is given with reference to each under the following headings, or some of them: Name, Location, Altitude, First Ascent, Distance, and Time required, Route and View. The 'Name' heading, which tells us who gave the name, and why, provides much instructive and amusing information.

Very few centres even in the Alps command so great a variety of expeditions as Glacier House; for the mountain pilgrim there are walks of all kinds and lengths, and the climber who does not aspire to do something new will find a goodly number of peaks that can be reached from the hotel itself or by sleeping out for a single night—more than enough, probably, to keep him occupied for a whole season. Those, however, whose interest in a 'Climbers' Guide' centres in the words 'No information,' will have to go farther afield. Southwards they will find on the extreme limit of the region mapped by Mr. Wheeler a few virgin summits for which several days' travel and a camp outfit are required, and Mt. Topham ('three fine days. All supplies must be carried on the shoulders'). Or, N. of the C.P.R., they may see if they can get to Mt. Sorcerer (11,000 ft.) and the other 'fine snowclad and rock peaks' beyond the Hermit Range on the far side of Mountain Creek; but they are warned that 'there is no known trail up Mountain Creek or its tributaries. Or if there be, it is unfit for travel (1911).'

Even more interesting in some respects than the Glacier House chapter are those dealing with the outlying regions, the Dogtooth and Spillimacheen ranges, the Columbia valley above Golden, and the country around Revelstoke. Probably the information here given with regard to the latter districts could be obtained nowhere else than in this book, and it should prove highly stimulating to seekers after novelty.

Of the book as a whole it is only necessary to say that it is worthy of its authors. Mr. Wheeler's services to Canadian mountaineering are too familiar to need recapitulation, but Mrs. Parker's share in creating the movement that led to the formation of the Alpine Club of Canada (*very* modestly hinted at in the chapter above referred to) is not so well known here as it deserves to be. It is most fitting and appropriate that they should have again worked together in producing the first of Canada's 'Climbers' Guides,' and we cordially congratulate them on the result of their collaboration.

PROCEEDINGS OF THE ALPINE CLUB.

A GENERAL MEETING of the Club was held in the Hall, 23 Savile Row, W., on Tuesday evening, November 5, 1912, Sir Edward Davidson, *President*, in the Chair.

The PRESIDENT said: Gentlemen, After a season in which the conditions of weather and otherwise for high mountaineering have constituted a record at least as exceptionally bad as that of 1911 was exceptionally propitious, we meet for the first time to-night under the shadow of great and unparalleled losses to our Club to which, painful as it is to me to have to make it, I am sure that we shall all of us feel that something more than a mere passing reference is due from this chair.

First and foremost we have lost the *doyen* of our Club, and I may almost say of mountaineering, by the death of our dear and revered old friend SIR ALFRED WILLS.

He has gone tranquilly and serenely to his last rest after a life prolonged far beyond the usual span allotted to mankind, but nevertheless the blow is a specially severe one to this Club and to all who possessed the inestimable privilege of his friendship.

He was an original member of the Club—of which he was elected President no less than 48 years ago—and in one way or another he kept up his connexion with, and interest in, the Alps almost to the day of his death.

His first visit to Switzerland took place in 1846, when he was 18 years old, and he made his first glacier expedition—to the Jardin, then deemed a considerable feat—in 1848.

What has been called the golden age of mountaineering is generally held to have begun with his famous ascent of the Wetterhorn in 1854, while only a few days before his death he was engaged in going over with map and notes his descent of the Saleinaz Glacier and trying to trace the exact line of his route in August 1857, some 55 years ago, when he and his companions were benighted on the glacier-side.

At a moment when he scarcely possessed sufficient vigour to interest himself in other matters his old love of the mountains came to his aid and gave him strength to enjoy in retrospect their pure delights once more.

His alpine life is part of the early history of the Club, and is to be found in the pages of 'Peaks, Passes and Glaciers,' in the volumes of the ALPINE JOURNAL, and in those two charming alpine classics 'Wanderings among the High Alps' and 'The Eagle's Nest in the Valley of Sixt.' It is impossible to attempt even a meagre outline of it here and now.

In his earlier days he visited the Oberland and Zermatt districts—his famous description of the first passage of the Adler Pass is well known; and his portrait (rather an indifferent one) occupies a pro-

minent place in the engraving of the 'Club House at Zermatt in 1864,' which appears in Whymper's 'Scrambles.'

In 1859 he built the Eagle's Nest, that romantically placed and lovely mountain chalet in the valley of Sixt, at which many of us have enjoyed his charming hospitality. From 1860 onwards he hardly ever missed spending the greater part of his vacation there, and thenceforward his energies were more than ever centred in the great range of Mont Blanc and the surrounding districts, for which he had a special predilection.

His favourite guide was the celebrated Auguste Balmat, to whom he was greatly devoted, and who, after a long illness, died in his presence at 'Le Nid d'Aigle.'

He always retained his active interest in the Club and in its doings, and never omitted to attend the annual dinners until within the last few years increasing deafness made such gatherings distressing to him.

He was an admirable after-dinner speaker, and in the days when the Club possessed in Leslie Stephen, Craufurd Grove, and Charles Edward Mathews a brilliant trio of orators, hardly to be equalled in their several styles elsewhere, Wills was at least well able to hold his own. Many of those present here to-night will remember that at the dinner in Lincoln's Inn Hall on the celebration of the 50th anniversary of the foundation of the Club Wills returned thanks for the toast of the original members. His speech on that occasion will long linger in the ears of those who were privileged to hear it. The noble features, the dignified presence, the beautiful voice which in old age had apparently resumed for this occasion the melodious tones of youth, the grace and transparent sincerity of its language, and the lambent play of gentle wit and genial humour combined to produce an impression on his hearers which was worthy of the speaker and which will—at any rate as far as he who now speaks is concerned—never be effaced. It was a grand last message to the Club which he so loved and to whom—though they then knew it not—it was fated that he would never speak again.

In private life he was the most considerate of hosts and charming of companions, whose conversation delighted young and old alike. His sympathetic and affectionate nature rendered him adored by all children and beloved by all his dependants.

His generosity was as boundless as his charity was unostentatious, and recognised no distinction of race or creed.

In all ways he was a great and noble gentleman.

After graduating at the London University, where he obtained the highest honours both in classics and mathematics and otherwise greatly distinguished himself, he was called to the Bar in 1851 at the age of 23. He did not possess the showy arts and artifices of a Stryver or a Buzfuz, from the employment of which his refined and possibly over-sensitive nature would in any case have recoiled. He was, however, a learned and accurate lawyer, and,

as he came to be known, progress was steady and continuous until he had built up one of the soundest and most solid junior practices in the Temple.

Then came, in 1871, at the most critical moment of his professional career, a complete breakdown in health brought on by overwork and anxiety and aggravated by a persistent attack of that dire scourge 'insomnia,' from which he suffered severely at intervals all through his life. He was peremptorily ordered to give up all work, and in October he took a voyage to Ceylon and Singapore, returning thence in May 1872 to his chalet of Eagle's Nest, where he gradually recovered.

On returning to the Bar after a whole year's absence he sought, and on the recommendation of Lord Chancellor Selborne obtained, the honour of a silk gown, and in these somewhat altered circumstances again attained a great measure of success.

His practice was select and of the highest class, principally in commercial cases and in appeals to the House of Lords and the Judicial Committee of the Privy Council. He also had a large 'opinion' business, and his services as an arbitrator were much in request.

No surprise was therefore felt when in 1884 he was raised to the Judicial Bench—the only criticism that was heard being that the appointment had been too long deferred.

For nearly 22 years he continued to administer even-handed justice to all manner of men until, towards the end of 1905, being then the Senior Puisne Judge of the King's Bench Division, he retired on a pension. He was immediately sworn of the Privy Council, and sat some few times on the Judicial Committee of that body, to which his knowledge of jurisprudence and of French Canadian Law would have made him a most valuable addition had not ever-increasing deafness and a longing for complete rest led him soon afterwards to withdraw altogether from public life.

Of him it may be said with the most complete truth in the apposite words of his favourite poet :—

Quis desiderio sit pudor aut modus
 Tam cari capitis ?
 Cui Pudor, et Justitiæ soror
 Incorrupta Fides, nudaque Veritas,
 Quando ullum inveniet parem ?
 Multis ille bonis flebilis occidit :

and by none is he more sincerely mourned than by his colleagues and friends of the Alpine Club.

On August 26 we sustained a second and equally grievous loss, which was all the more overwhelming in that it was utterly unexpected by most of us, by the death in his 62nd year from acute

blood-poisoning of yet another of our past Presidents, CLINTON DENT.

These calamities are not to be appraised by geometric scale; but I cannot myself imagine a greater loss either to the Club in its corporate capacity or to the individual members of it, to whom he was so well known and by whom he was so greatly esteemed, than that of him who has so prematurely passed away.

He was closely identified with the management of our Club almost from the date of his election to it 40 years ago in 1872, for he was elected to the Committee in 1874, was Hon. Secretary from 1878 to 1880, and then an extra member of Committee until in 1884 he became Vice-President and in 1887 President. His interest in the Club did not cease when he vacated the presidential chair, but he subsequently served several times as an extra member of Committee, on the last occasion, at my special request, consenting to do so, though he was overwhelmed with other work at the time, during the first year of my Presidency.

What he gave to the Club was no mere ornamental or perfunctory service, and what he undertook to do he performed with all his might. He had a singularly even-balanced mind, free from prejudice and prone to hear both sides of a question before coming to a conclusion, which, formed as it was with deliberation, was not readily changed or abandoned. His sagacity and caution in counsel thus gave a peculiar value to his opinions and advice.

For all this constant but unobtrusive service the Club owes him as real a debt as for those brilliant gifts of speech and that literary skill which were ever at their disposal on proper occasion and with which he never failed to interest, amuse, and delight his willing audience.

It is pleasant to recall that almost on the last occasion when he addressed us in this Hall it was to pay in simple but eloquent terms a generous tribute to the memory of that great guide whom he may almost be said to have discovered, and who was for many years his constant and favourite companion amongst the mountains, Alexander Burgener.

As a practical mountaineer it is hardly necessary for me to say to this Club that Dent in his day stood in the very first rank. He had learned the craft from the great master to whom I have just adverted, and had travelled with many others of the more eminent guides of the day. He was enterprising without being foolhardy and brilliant without being reckless.

The final conquest of the Higher Aiguille du Dru in 1878, which after many unsuccessful attempts he accomplished in company with that admirable mountaineer Mr. Walker Hartley, under the leadership of the invincible Burgener, was a fine example of patient and persistent effort brought safely to a triumphant conclusion.

This great rock pinnacle will ever be coupled, and rightly, with his name; but he had also, without specially searching for novelty

merely for novelty's own sake, made many other first ascents of great importance—such as that of the Rothhorn from Zermatt, of the Bietschhorn from the E., and of the Südlenzspitze and the Portjengrat (1871).

Subsequently he visited the Caucasus on several occasions, and not only ascended many peaks in that region but carried out explorations of great value. In 1888, had he not been prostrated by illness at the time, he would have taken part in the ill-starred expedition on Koshtantau which resulted in the deaths of his and our comrades W. F. Donkin and Harry Fox, and of their guides Kaspar Streich and Johann Fischer of Meyringen.

One cannot help wondering whether, had Dent with his wide experience and cautious sagacity been of the party, this melancholy catastrophe might not have been avoided. Who can tell?

In 1889 he undertook the sad duty of searching for the remains of his friends who had perished in the preceding year, and established beyond a doubt the causes of the sad disaster.

Dent was a many-sided man of multifarious interests who had distinguished himself in numerous directions, and who would probably have attained to eminence in whatsoever path in life he had elected to pursue. His range of knowledge was cosmopolitan, and nothing that was of interest to mankind was alien to him. He was fond of all manly sports and had attained to considerable proficiency in many.

He possessed a very distinct literary bent, and not only was he a prolific and weighty contributor to the literature of his profession, but in the too scanty leisure of his busy life he yet found time to produce many charming articles and papers on alpine and kindred subjects, some of which he afterwards collected and published in that delightful and most aptly-named volume, 'Above the Snow Line.'

He also edited and himself in great part wrote the Badminton Library volume on 'Mountaineering,' which may be fairly called the standard English work upon the subject.

Of art and things artistic he was an excellent judge, and his ample private means enabled him to indulge in this regard a taste that was always cultured and correct. As a photographer he was in technique equalled by but few, while in artistic flair he was surpassed by none.

Of music and the drama he was also a devotee, and was himself in his younger days an amateur actor of merit.

In the calling of his choice he had attained great eminence, and at the time of his death held, amongst other appointments, those of Senior Surgeon to St. George's Hospital, Chief Surgeon to the Metropolitan Police, and Senior Vice-President of the Royal College of Surgeons. He stood on the verge of the highest honour that the great profession to which he was so proud to belong can confer—the Presidency of the Royal College of Surgeons.

It is indeed sad that he did not live to succeed to the distinguished position which he had so well deserved and which he would have so dearly prized.

He gave of his best without stint to this Club, who will ever hold his memory in grateful recognition and regard.

We have also to mourn the death through a most lamentable disaster which occurred on August 13 last on the W. face of Mont Rouge de Pétéret, of Humphrey Owen Jones, of his young wife, and of their guide, Julius Truffer, of St. Niklaus.

This tragic occurrence, which took place during the earlier days of a happy honeymoon, profoundly moved public pity and sympathy, and has eclipsed the gaiety alike of mountaineering, scientific, and academic circles, in all of which a void has been made which cannot easily be filled.

The actual causes of the disaster are somewhat obscure; it clearly occurred on comparatively easy ground and on an excursion of no great length or difficulty.

In justice to our noble craft it may, I think, be safely said without imputing the slightest blame to any member of the party, that this disaster cannot fairly be ascribed—as it has been in some quarters—to dangers which are inherent and inevitable in a reckless and unjustifiable pursuit.

H. O. Jones was a comparatively young member of the Alpine Club, to which he was elected in 1910, but he had for long been known as a most brilliant and enthusiastic cragsman, and had in recent years borne a great part in the accomplishment of many first ascents of altogether exceptional difficulty in the range of Mont Blanc, which he had made his special and his favourite hunting-ground.

There seems now to be an almost prophetic tone in the glowing and enthusiastic words with which his last utterance to the Club, describing two of the most magnificent of these expeditions, concluded.

‘ Thus ended the most memorable and most successful season (1911) I have ever had or indeed am ever likely to have in the Alps—a season in which weather conditions, comrades, and luck were all that could be desired—a season which has provided pleasant memories to carry one through the years to come.

‘ It is surely not possible that two such can fall to the lot of mortal man.’

He will be long and sincerely mourned by his comrades of the Alpine Club, and his loss to science, in which at an unusually early age he had attained the highest possible distinction, is irreparable.

‘ Flere et meminisse relictum est.’

There has also passed away from us Mr. ROBERT WALTERS, an original member of the Club. He died at the age of 80, but of late years he has not been much at the Club, though so shortly ago as

1910 he attended our Annual Dinner and he was then apparently in the best of health. It is sad to reflect that owing to the death of Sir Alfred Wills and Mr. Walters we are left with only one original Member, who in one sense differs from them in that he retired from the Club some years ago and subsequently rejoined it. I refer to the Rev. Llewelyn Davies, who was the first man to reach the summits both of the Dom and of the Täschhorn, and is the only original Member of the Club now living.

Mr. Walters served on the Committee in 1858, and in those early days was a very good mountaineer. I think it ought to be specially remembered that it was he who made the courageous and successful attempt, in company with the late Mr. Hinchliff, one of our former Presidents, to break down that abominable system which prevailed at Chamonix in his time by which it was made compulsory upon travellers who wished to make the ascent of Mont Blanc to take a certain prescribed number of guides and porters with them. From that time this system has gradually died out, and it may now be said to be practically on its last legs.

We have also lost PROFESSOR FOREL, one of our Honorary Members and a man of great distinction. He was a well-known authority on seismic phenomena, was 'Président de la Commission Internationale des Glaciers,' and wrote a very important monograph on the Lake of Geneva. He died at Morges at the age of 81. He was elected to the Club in 1895, and he was also a Fellow of the Royal Society of Edinburgh.

The Rev. H. A. MORGAN is also included in our list. He was well known, of course, as the Master of Jesus College, Cambridge, and was much respected and beloved in the University. Of late years, owing to infirmity, chiefly severe deafness, he had withdrawn from public life, but up to the end he took a most intelligent interest in and still assisted, in great part through others, in the work of the College. He became a Member of the Club in 1863, having in the previous year been, with his friend Leslie Stephen, one of the party which made the first passages of those two stupendous Oberland ice-passes the Jungfrau Joch and the Viescher Joch.

I much regret to have to announce the death of Mr. J. M. A. THOMSON, who was the pioneer and recognised chief of the Welsh rock-climbing fraternity, though owing to his modest and retiring nature his name was perhaps not so well known to the public as were those of some of his more assertive followers and pupils. He was elected a Member of the Club in 1900, and his death took place last summer in very distressing circumstances. He was not merely what some people are apt to term a good gymnastic rock-climber, but he was a fine mountaineer. His knowledge of snow and ice craft which he had acquired during many summers spent under good auspices in the Alps was both sound and extensive.

Mr. HERBERT WILSON, who was, as you know, the brother of one of our best-known Members, Dr. Claude Wilson, has also, I regret to say, passed from us. He was elected in 1883. In 1885 he made some fine expeditions in Norway, including the first ascent of Knuts-hullet, doing most of the leading. He climbed for a considerable number of years, but of late has not been to the mountains, nor has he been much at the Club in recent years. He was a fine rider, a good man to hounds, played polo and golf and shot well, and was a really good all-round sportsman. He died as the result of an unfortunate gun accident on June 29 whilst out shooting.

Mr. R. GASKELL has also left us. He was elected a Member of the Club in 1875, and served on the Committee in 1885. At a time when few Members of this Club went to the Eastern Alps, Gaskell continually visited them and had a complete knowledge of them. His travelling companion on most of these occasions was the late Sir Maurice Holzmann, and he had the distinction of being able to walk up hill at an even quicker pace than that extraordinarily fast walker, though down hill the latter always maintained that he had a good deal the best of it. I was only permitted to see them walking together on one occasion, and I was then rather too long a way behind them myself to make out precisely who was in front. Gaskell, who for some years past, owing to ill-health, has not been seen at the Club, will be greatly regretted by a large circle of friends.

Mr. AUSTIN CLOVER's death has occurred at an early age last summer. He was a very fine walker and, at one time, a mountaineer of great promise, as befitted the nephew of the late Mrs. Edward Jackson. In the season before he was elected to the Club (1900) he made an unusually large number of very difficult ascents with Josef Pollinger, who still speaks of his powers of pace and endurance with respect.

Mr. J. W. HOOK THORP died on September 25, aged 61. Mr. Thorp was a fine mountaineer, but he was probably best known to the general public as an ex-President of the Rugby Football Union, having served the office of President of that Union in the years 1888-1889. I think he did as much or more than any man—and I have been confirmed in my view by one of our Members who is specially well qualified to express an opinion on the subject—to rescue Rugby Football from the slough of professionalism into which it had fallen, and he was much esteemed and respected by his colleagues on the Board of the Rugby Football Union.

Another death which I am sorry to have to report is that of W. I. BEAUMONT, a young Member of the Club who was elected in 1897. He was drowned in Scotland in May of this year.

Gentlemen, before I sit down I should like with your permission to read you a letter I have received from the senior ex-President,

Dr. Bonney. He would have been present to-night to pay a tribute of respect to his colleagues who have passed away, but it was impossible for him to be here owing to an imperative official engagement at Cambridge for this evening. He writes as follows :—

‘ MY DEAR PRESIDENT,

‘ Had it been possible I would have been with you at the next Meeting of the Club to express my own deep regret at the loss we have all sustained by the deaths of two of your predecessors. For that of Sir Alfred Wills we were prepared, as he had passed by more than three years the limit of fourscore ; nevertheless all who knew him will miss that kindly presence and genial nature. He was a man of unusual ability, winning in early life distinctions in mathematics, classics, and law, in the last of which he afterwards rose so high ; but we think of him chiefly as a pioneer in the Alps. While he enjoyed struggles with difficulties on peak or glacier, he loved the beauty of mountain scenery, in lake, in alp, and in pine wood, no less than, to quote his own words, “ per nives sempiternas et rupes tremendas.” These he could describe with much charm of style as we all know from his “ Wanderings among the High Alps ” and “ The Eagle’s Nest.” To not a few of our Alpine Club he can be little more than a name, but those who had the privilege of his friendship will feel life the poorer for his departure.

‘ In some respects we feel more keenly the loss of Clinton Dent, for we had hoped that not a few years of active life still lay before him. I can hardly yet realise that I shall never again feel the hearty grasp of his hand, hear his clear, kindly voice, and listen to his witty phrases. His humorous after-dinner speeches will not readily be forgotten, but those who knew him will regret, so long as memory lasts, a man not only distinguished in his profession and of no small literary power, but also one whose jests never wounded and who was one of the kindest and truest of friends.

‘ May I add a word on the third loss to the Club. That catastrophe which swept H. O. Jones and his wife to almost instantaneous death, robbed us of one of our most successful and distinguished members. My acquaintance with him was but three years old, but he quickly won my regard from his frank and genial manner and his attractive disposition. His scientific distinction was great ; in fact the Alps have not dealt Cambridge so heavy a blow since F. M. Balfour perished on the same mountain.

‘ Believe me,

‘ Yours very truly,

(signed) ‘ T. G. BONNEY.’

Mr. FRESHFIELD said : I rise in obedience to a request from the President, and I do so the more readily since I believe that I am the senior ex-President here to-night. . . . But after the adequate and eloquent tribute which Sir Edward Davidson has paid to those who

have been lost to us since we last met, I feel it is superfluous for me to speak at any length.

On an occasion like the present the speaker must be more or less in a dilemma. On the one hand he fears to fall into the bathos of commonplace, of those phrases, appropriate perhaps in themselves, which yet have grown trite by use; on the other he realises a danger lest in speaking of a personal loss he should speak too much from the point of view of personal feeling: and I feel as if in a sense I had known Mr. Justice Wills too little and Clinton Dent too well to be the most fitting person to add a tribute to their memories.

I took down from my bookshelf the other day a copy of Sir Alfred Wills's 'Wanderings in the High Alps,' which must have been given to me in the year the book was published, 1856. The illustrations in it had for me that familiarity which only childhood's impressions retain. On turning to the narrative I was called back to the fifties, to the time when Herr Imseng, the good old Curé of Saas, kept the homely Inn in the village, to the days when Saas-Fee was a pastoral oasis disfigured by no gigantic barracks, and when there were no free lodging-houses higher up for 'Visitors to the Glaciers.'

I believe the first time I saw Wills was in 1860, when he was at Chamonix and climbing Mont Blanc. I was then a boy at school. I joined the Club in the year Wills was elected President. He belonged, therefore, to the generation before mine, to that of our founders. Wills was pre-eminently a founder, for his account of his ascent of the Wetterhorn gave, as it were, the signal for the commencement in this country of alpine climbing, for the outbreak, as the critics of the time put it, of the 'cacoëthes scandendi.' It is true something had been done before by Professor Forbes, who was the master both of Wills and Adams Reilly; but if Forbes laid the train it was Wills who set the match to it. Wills played the same part with regard to alpine climbing that Albert Smith did towards Swiss travel. The one helped to create the Alpine Club, the other Cook's Tourists.

Wills himself was a born mountaineer, and he had no need to train himself for the mountains as our juniors are taught to nowadays, by an assiduous course of domestic acrobaticism. Many have been the tales told by visitors to his chalet near Sixt, 'The Eagle's Nest,' of how they were taken out for walks on the ledges of the Buet—afternoon strolls they were called by their host, but to some of the guests they were apt to appear direct temptations to Providence.

But we are thinking of Wills to-night not only as a mountaineer and a founder, but also as a life-long friend who regarded this Club with a paternal interest and affection, an affection which was bound up in his love for the mountains, a love of which he gave effectual proof by setting up his summer home among them, in spite of the many obstacles that were put in his way by the local influences and prejudices prevalent in Savoy fifty years ago.

Wills will always remain in our memory here an essentially amiable and tender-hearted human being, a sensitive and responsive personality differing in many respects from the popular conception of a typical lawyer and judge. In his view of Nature he belonged to the generation that was inspired by Wordsworth, whom he quotes so often, rather than to the next which, under Ruskin's influence, submitted nature, and mountains in particular, to almost microscopic examination. Yet we have to remember that Wills was an eager botanist and keenly interested in the scientific controversy between his friend Forbes and Tyndall with regard to glaciers and their action.

I am sure we shall all for long miss his friendly presence, the 'good grey'—or rather snowy—'head that all men knew.' The Winter Dinner without Alfred Wills must seem to many of us like the view from Berne with the Wetterhorn left out.

To speak of Clinton Dent is to me a more painful duty. We must all bow to the conditions of our humanity. But when it is the younger who takes the lead on the 'supremum iter,' the last pass, resignation becomes more difficult, regret more acute. Dent was in the full swing of his brilliant professional career, on the point of obtaining its highest honours.

Dent was considerably my junior in years, but in the affairs of the Club we were practically contemporaries. From the day when he sent me a jubilant telegram from Chamonix announcing his, the first, ascent of the Dru, we had been close friends. He had been my colleague in affairs of many diverse kinds, my companion in travel both in the Alps and the Caucasus, my adviser in every case of difficulty.

Dent was a character in more than one sense of the word, and he will not easily be forgotten. Born to wealth, he was all his life a worker, more than many whose living depends on their work. The difference was that he worked mainly for the community, for the hospitals, and in particular for his own, St. George's. What his colleagues thought of him we may learn from the obituary notices in the *Medical Journal*. The Chief of the Metropolitan Police paid a very apt tribute to Dent's memory when he wrote of him that he was 'in all matters a fearless counsellor.'

As a fellow traveller and climber Dent was a perfect companion. His figure rises before me with many different surroundings, and in none more vividly than when we were together in the Caucasus, on the search party of 1889. I see him pacing up and down like a sentry between me and the stars by the side of a cold Caucasian glacier, while I, prone on a pebbly bed, pretend in vain that a book may be a pillow and a map a counterpane. I picture him earlier on the same eventful day, his skill and patience, his delicate handling of the rope while descending a six hours' rock-face where the deadly whirr of falling stones put a strain on all our nerves.

We must remember Dent as something of a philosopher as well

as of a humourist. If he looked on the world as a place for work and was always prepared to do his share of it, he also looked on life as more or less of a comedy, in the broad sense of the word. Fastidious himself, he thought human nature must be allowed its fling; he had none of the eagerness to set other people right of the strenuous reformer. He thought that every generation ought to have its day. In some matters of detail relating to the Club he was perhaps growing to be 'laudator temporis acti.' But if the younger Members liked their papers very long and highly technical, he was content so long as he was allowed to go home before the end.

As regards his own contributions to our Meetings and his after-dinner speeches, I think we all recognised the wit and wisdom, the grace and force with which he spoke. As a writer he has left us, in 'Above the Snowline,' a volume which is an addition not only to the Alpine bookshelf, but to literature. Enigmatical at first to strangers, Dent soon became attractive to his acquaintances; to his friends he was lovable. There is no one who could be a greater loss to the Club, no one we shall miss more here.

There are few in this room, I feel confident, who would not apply to Dent the words used by Edward Whymper in one of his last letters to a fellow Member of our Club: 'Good-bye, my friend. I have many pleasant recollections of you.'

Mr. H. WOOLLEY said: Mr. President and Gentlemen, I should like to say a word about one of the Members we have lost. I have travelled twice in the Caucasus with Clinton Dent, several times in the Alps in winter, and on other occasions, and shall always retain the pleasantest reminiscences of those expeditions; as Mr. Freshfield has mentioned, no one could have had a more interesting or a more delightful companion. What struck me especially about him was the great thoughtfulness he brought to bear on everything in which he was engaged, whether it was camping or climbing or any other form of exercise. My first thought on hearing of Clinton Dent's death was 'What an irreparable loss to the Alpine Club!' and the same thought seems to have occurred to every Member with whom I have spoken; because there was no one who had the welfare of the Club more sincerely at heart and no one who was more anxious that its best traditions should be maintained.

Mr. FRESHFIELD said: When speaking just now I dealt only with the two ex-Presidents of the Club who have been lost to us. I should like to mention another very lamentable loss which the mountaineering community at large has suffered in the death of Dr. Andreas Fischer, who, as we all know, perished from exposure to storm on the Aletschhorn this year. Dr. Andreas Fischer was a very interesting character. Born at Zaun near Meiringen in relatively humble circumstances, he rose from the position of guide to be the village schoolmaster at Grindelwald, and eventually became a teacher in the High School at Basle. He came of a family of mountaineers, and met the same fate as his father and brother

before him. The Club will, I feel sure, wish to express our feeling of sympathy with his widow and family in their bereavement.

I should like to add that as far as I know there is no foundation whatever for the charge of habitual foolhardiness brought against Dr. Fischer in the *Morning Post* to-day (November 5). Fischer was well known as a most capable mountaineer. I can testify to this opinion from my personal experience, when he joined Dent and myself in the expedition to the Caucasus, the main object of which was to ascertain the fate of the party of 1888 of which his brother had been a member.

The PRESIDENT said: I should just like to add one word. I did not mention the death of Dr. Andreas Fischer as I intended to confine my remarks entirely to those Members of the Club who had passed away since we last met. Mr. Freshfield is able from personal experience and knowledge to speak with an authority about Dr. Fischer which I do not possess, but I should like to remind the Members of the Club that Dr. Fischer was something more than a village schoolmaster. He had many years ago passed the prescribed examination and had obtained his Führer-buch, and for two or three seasons at least had acted as a professional guide.

I do not believe that there is any ground for the ungenerous strictures upon which Mr. Freshfield has so justly animadverted, and I am quite certain, speaking now for the Alpine Club as well as for myself, that you will entirely agree with the suggestion that we should express our sincere condolence with Dr. Fischer's widow and family in their sad bereavement.

I should also, as this disaster has been mentioned, wish to express my most warm admiration of the magnificent courage and devotion shown on that lamentable occasion by Dr. Fischer's life-long friend Ulrich Almer. It is, however, only what, from repeated example, we have grown to expect from that most gallant and faithful comrade in time of danger. No braver or more loyal soul than his exists amongst the noble confraternity of guides.

Mr. F. A. WALLROTH said: Mr. President and Gentlemen, I should like to say a few words this evening. First of all I should like to assure you, Sir, of the sympathy and support of the Club on this very trying occasion when you have such a long and melancholy list of deaths to report.

Wills I knew from the time I was first elected to the Club, and I can assure you that his genial and kindly presence will be sadly missed, more especially by all the older members of the Club who knew him.

With regard to Mr. Walters, I never met him personally; but I have something to say about him. He wrote to me at the time of the death of one of our former Presidents, my old friend Hinchliff, and gave me a long account of his ascent of Mont Blanc. They broke down the system then prevailing that everybody who went up Mont Blanc should take at least two guides. I have that account

still, and I shall be happy to send it on to the Editor of the ALPINE JOURNAL.

And now I come to Mr. Clinton Dent. I will not add anything to what has been so well expressed by others, but I should like to speak simply from a personal point of view. I met Dent when mountaineering in 1872, in the Alps, and that acquaintance, like most acquaintances so formed (and I am glad that it goes on still among mountaineers), soon ripened into friendship, a friendship which has lasted for forty years. He and I have been such personal friends that I can hardly say how much his loss affects me, but all those older Members of the Club who knew him thoroughly well can quite realise the loss we have suffered.

Mr. E. TEICHELMANN described some new ascents from the W. coast, in the New Zealand Mountains, which were illustrated by lantern-slides.

The PRESIDENT said : Gentlemen, I have no doubt there are many Members here who have more than a passing acquaintance with the mountains of New Zealand. I see Mr. Claude Macdonald here, and I am sure we should all like to hear what he has to say.

Mr. CLAUDE A. MACDONALD said : Mr. President and Gentlemen, I am sure it has been a very great pleasure to me and to all the Members present to see the beautiful photographs that Mr. Teichelmann has shown us, and I only hope that those of you who have never visited New Zealand will be fired with the desire to experience the delights of a visit to that country. It is really surprising how many people who ought to be well informed on the subject of the New Zealand Alps are not so : indeed, numbers of people know nothing whatever about them. I have had the pleasure of visiting them several times, and have done a little bit of climbing out there, but on many of the peaks that Mr. Teichelmann has shown us, I have gazed with longing, as did Moses on the Promised Land from Mount Pisgah, either because I had not the time to attempt them or because I was beaten back on my attempt by bad weather, which is always an important factor in New Zealand.

On the W. side, which seems to be Mr. Teichelmann's speciality, the scenery is even more wonderful than on the E. side, and I should like to impress upon enthusiastic climbers and explorers that there are thousands of virgin peaks to be climbed out there.

New Zealand is one of the most charming countries I have ever visited, and in addition to the exploration and climbing possibilities, the shooting and fishing there are very hard indeed to beat.

I wish to tender my personal thanks to Mr. Teichelmann for showing us such charming pictures.

The PRESIDENT said : I should like in the first place to apologise most sincerely to Mr. Teichelmann for not having been able to allow him more time than he has had. I think he has been unduly hurried in the exhibition of these very beautiful photographs. We really ought to have not only one, but two, evenings to thoroughly

appreciate them. Perhaps at some later stage he will be able to give us another exhibition when we shall have the opportunity of enjoying at greater leisure the pictures which he has placed before us. I feel, and greatly regret, that the time at his disposal this evening was much too limited for showing such a number of photographs ; but this has been, as he knows, owing to circumstances over which, unfortunately, we had no control.

I shall bear in mind the hint Mr. Teichelmann has given me with regard to the Rev. A. Newton. I had already made one desperate endeavour to get him to give an account of some of his expeditions in New Zealand, but was unsuccessful. I shall try again. One thing has been very satisfactorily demonstrated to-night, and that is, that not only do our colleagues in New Zealand succeed in climbing the mountains and exploring the glaciers, but they also obtain excellent photographs of them.

We are all extremely obliged to Mr. Teichelmann for having come here at some personal inconvenience on the eve of his return to New Zealand, and for the trouble he has taken in showing us these very beautiful pictures. I should like to move a most hearty vote of thanks to him, which I am quite certain from the applause which reaches my ears I may safely declare to be carried by acclamation.

Mr. TEICHELMANN briefly replied.

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RECORD OF EXPEDITIONS IN 1911.

(Issued in terms of the recommendation of the Committee, 'Alpine Journal,' vol. xxiv. p. 517, 'so as to facilitate the exchange of information.')

ADAMS, W. G., jun., see under DENT, H. L. R.

ALLEN, FREEMAN.—

From Tschierva hut—Traverse of Piz Bernina with Johann Grass and Son. Direct descent *via* Morteratsch Glacier impossible owing to wide crevasses and a long *détour* on the snow fields by Bellavista and descent by Munt Pers Glacier necessary.

Croda da Lago *via* Pompanin Chimney with Bartolo Barbaria. Becco di Mezzodi *via* Barbaria Chimney with Bartolo Barbaria.

Punta Fiammes *via* Dimai route with B. Barbaria.

Piz Popena *via* South Ridge with B. Barbaria.

Kleine Zinne, North face up, West face down, with B. Barbaria, Sorapiss (Müller Weg), with B. Barbaria.

BACKHOUSE, EDWARD.—

Crossed Col du Tour and Fenêtre de Saleinaz and climbed the Grande Fourche.

Aiguille d'Argentière from Glacier du Chardonnet.

Traverse of Aiguille des Charmoz N. to S.

Dent de Persévérance (Aig. Rouges).

Dent du Requin (turned back 100 ft. from top by threatened storm).

Aig. du Géant.

Aig. Verte by Moine ridge (greater part of the climb was on rocks after leaving the glacier, as there was very little snow left). Guide Alexis Brocherel and porter Alphonse Chenoz.

Aig. du Chardonnet from Glacier d'Argentière, descending to Tour Glacier.

Aig. de Blaitière (this year a rock climb after leaving the glacier).

Above two climbs were with the guide Jean Charlet, and his younger brother as porter.

BELCHER, H. W.—

Matterhorn *via* Zmutt arête. Weisshorn *via* Schalligrat.

Traverse of the Drus. Aig. de Blaitière.

Rossbodenjoch. Süd-Lenzspitze and Nadelhorn.

BENNETT, C. F., see under CLAPHAM, J. H.

▲

BICKNELL, R. P.—

Vetti—Up Stölsmaradalstind and over the Rüngskar.

Turtegrö—Over Lavskar and straight down the Stölsmaradalsbræ icefall.

Through the Mörkekoldedal—Tyenholm.

Tyenholm to Gjendeboden.

Knutshulstind from Knutshullet.

Gjendeboden to Leirvasboden.

Leirvasboden to Skogadalsböen.

Skogadalsböen—From Maradalsbræ to Midtmaradal through the gap between Manden and Kjærringen (new route).

Skogadalsböen to Turtegrö.

Turtegrö—Traverse of Store Skagastölstind.

BLACKDEN, LT.-COL. L. S.—

Aiguilles Rouges (traverse).

Petites Dents de Veisivi (traverse).

Aiguille de la Za, by the face. Owing to rockfalls during the winter, two chimneys have become more difficult than formerly and ropes have been fixed. Useful for leader, but not necessary for good cragsmen.

Arolla—Col du Mont Brûlé—Rifugio Aosta, Valpelline.

Rif. Aosta—Dent d'Hérens—Prarayé.

Prarayé—Col de Collon—Arolla.

General remarks.—Rocks dry. Crevasses open.

BOWEN, H. C.—

Täschhorn, traversed by the S.E. arête, and W. face.

Matterhorn, twice traversed (1) up the Zmutt, down the Zermatt ridge, (2) up the Italian, down the Zmutt ridge.

Strahlhorn, traversed by N.W. arête and S. face.

Gabelhorn, traversed from the Wellenkuppe to the Arbenjoch. Leiterspitze.

Rothhornjoch from the Trift to the Mountet.

Ober-Mominghorn, traversed from S. to N. and down the ice-fall of the Hohlicht glacier direct to Täsch.

BRADBY, E. H. F., see under WILSON, CLAUDE.**BROOME, E. A.—**

Weisshorn (only to summit ridge).

Leiterspitz (traversed whole of summit ridge).

Cols de Valpelline and des Bouquetins to Bertol hut.

Col d'Hérens.

New Weissthor to Macugnaga.

From Cap. Marinelli, traverse of Nordend by E. face to Zermatt. Täschhorn.

BURR, ALLSTON.—

Brèche de la Meije. Les Ecrins. Grand Pic and Pic Central de la Meije.

From camp on rocks to east of Brenva Glacier.—Col Oriental de

la Tour Ronde and Aiguille du Géant to Courmayeur.
 Mont Blanc by the Brenva to Cabane du Dôme.
 Herbetet hut—Punta di Ceresole and Gran Paradiso to
 Valsavaranche.
 From Valsavaranche—La Grivola to Cogne.
 From Cabane Valsorey—Grand Combin (traverse) to Bourg
 St. Pierre.
 Petit and Grand Dru. Grépon (traverse).
 Nordend (*via* Silbersattel and return) Dufourspitze (*via*
 Sattel and return).
 From Dom hut—Dom and Täschhorn to Täsch Alp.
 From Schönbühl hut—Matterhorn (by Zmutt arête) to Breuil.

CÆSAR, W. R.—

Fiescherhorn (traverse). Klein Wellhorn.
 Simelispitze (a little Dolomite). Kingspitze.
 Guggi hut—Mönch (traverse) (9 hrs. 40 mins. including halts)
 to Concordia. Lôtschenlucke.
 Bietschhorn up N. ridge, down W. ridge.
 Col du Géant. Mont Blanc by Brenva route.
 Schönbühl hut—Matterhorn, up Zmutt arête, down Tyndall
 arête, back over Furgjoch to Zermatt (22½ hrs. including
 halts).

CARFRAE, C. F. K.—

Eiger. Bergli hut—Jungfrau and Mönch to Klein Scheidegg.
 Schwarzegg — Schreckhorn and Lauteraarhorn. Climbed
 Schreckhorn by snow couloir to Schrecksattel, thence to
 summit, retraced steps to Schrecksattel and straight along
 Lauteraarhorn ridge. Descended Lauteraarhorn to Strah-
 legg Glacier, returning over Strahlegg pass. Time 16½ hours.
 From Glacier House, Canadian Rockies, Mount Abbot.
 Piz Nair, on skis as far as base of S. arête, thence on rocks to
 summit.

CLAPHAM, J. H.—

Bruneggjoch—Gruben to Herbrigen and Randa.
 Col and Tête de Valpelline to Prarayé.
 To bivouac in Combe d'Oren.
 Attempt at La Sengla from Col d'Oren : to Mauvoisin.
 To Panossière hut by Col des Otanes.
 Grand Combin—up W. ridge : both summits : descent from
 W. ridge to Plateau du Couloir : Col du Sonadon, Col
 d'Amianthe : to By.
 Col de Bassac Déré : ascent of Granta Parei from S. : to Val
 d'Isère.
 To Grange Martin above Les Brevières.
 Mont Pourri traverse of ridge from Col de Puisieux : to St. Foy.
 Nameless Col from St. Foy glen to Belle Combe : to La Thuile.
 To Courmayeur : to Col du Géant.
 Aiguille du Midi : to Couvercle.

Aiguille Verte by Moine ridge : to Couvercle.

To Montanvert and Lognan.

Col du Chardonnet and Fenêtre de Saleinaz to Champex.

CLARKE, L. W., see under DENT, H. L. R.

CLAYTON, COL. E.—

Aiguille de la Za *via* Col de Bertol.

Aiguille du Midi (3313 m. Barbey) from Glacier du Tour.

Descended by Glacier des Grands and Glacier de Brou and crossed ridges between Pointe de Brou and Grandes Autannes at point 2711 m. to Charamillon. A good round without difficulty.

COLLINS, G. L., see under LING, W. N., and THOMSON, J. M. A.

CORRY, CAPT. J. B.—

Ledwas—Mahadeo to Handil traversed—Camp S. of Surphrar in Sind Valley.

Camp in Surphrar Nullah—Deo Masjid and lower peak traversed first ascent—Sekwas in Lidar Valley.

Aro—Climb on spur up to 13,200 ft.—Aro.

Aro—Har Nag Pass—Harbagwan Valley.

Harbagwan Valley—Ascent to plateau—Camp on Kolohoi plateau.

Kolohoi Camp—Kolohoi N. Peak to within 30 ft. of top—Kolohoi Camp.

Kolohoi Camp—Descent of N. Glacier—Aro.

Shesha Nag Camp—Explored lower part of Kohinoor C Peak up to about 15,600 ft.—Kohinoor Camp.

Kohinoor Camp—Kohinoor C Peak, first ascent—Kohinoor Camp.

Kohinoor Camp—Climb on Peaks E. of Shesha Nag up to 15,100 ft.—Chandar Wari.

Tolien Valley Camp—Climb on ridge overlooking Mampal Valley up to 15,150 ft.—T. upper Camp.

Tolien upper Camp—Snowy Peak 'A' first Ascent—T. Valley Camp.

Camp S. of Sonasar Nag—Peak W. of Sonasar Pass traverse first Ascent—Suknes in Wardwhan.

Suknes—Bhat Kol Pass—Suru.

Suru—Climb on ridge above Purkubse La up to 14,500 ft.—Suru.

Tongul E. Valley—Climb on Sentik Glacier—Sentik La.

Sentik La—(Blizzard all night)—Tongul.

Khushokh Than Nullah W. of Umba—Climb on ridges N.E. of Machai—Camp on Machai Umba ridge.

Camp—Peak Gah Ling first Ascent—Umba.

Umba—Umba La—Lamagus La—Dras.

Camp near Shingo La—Peak at head of W. Branch of Shunderi Nullah, first Ascent—Dras.

Dras—Zogi La—Balbal.

Date—From June 13 to August 4.

CORRY, ROBERT.—

Aiguille du Tacul.

Mt. Mallel (traverse), Aiguille de Rochefort (traverse).

Les Droites. Aiguille du Tour (traverse). Grande Fourche.

Aiguille de la Fenêtre. Aiguille d'Argentière. Grands Charmoz (traverse).

COURTAULD, S. L., see under JARDINE, WILLOUGHBY.

DENT, H. L. R., and DENT, J. Y.—

Grosse Windgälle with H. G. Pulling and J. H. Hollingsworth.

Kleine Windgälle (traverse from North to South) with W. L.

Clarke, Furneaux, Pulling, Unna, and S. Donkin.

Düssistock with Pulling and Hollingsworth.

Oberalpstock (traverse) with Pulling, Hollingsworth, W. G. Adams, and Sidney Donkin.

Tödi. Ascent by west face and ridge and descent by same with Unna, W. L. Clarke, Hollingsworth, S. Donkin, and Furneaux.

Heimstock or Piz Gurka with Unna, Pulling, and four ladies.

Steinlimmi and along the ridge to the Giglistock and down ordinary route, with Pulling, W. M. Roberts, and three ladies.

Fünffingerstöcke, Nos. 2, 3, and 4, with Pulling, W. M. Roberts, Furneaux, Hollingsworth, and three ladies.

Mittel Thierberg point 3343, with Pulling and W. M. Roberts.

Walking tour from Locarno by the Campolungo pass to Faido, thence to Piora, Curaglia, Teniger Bad, Vrin, Ilanz, Brigels, Kisten Pass, Linthal, Altdorf, Rigi.

DODD, H. M. F.—

Ankogel *via* Feldsee Scharte. Sonnblick. Gross Glockner. Ortler. Piz Bernina (descent by Morteratsch icefall).

Piz Segnes with Piz Atlas. Descent from the latter little peak by following the S. ridge, although otherwise simple, was found, on arrival above an unexpected rock wall, to be impracticable, except by gymnastic tactics in a sensational situation on a rope doubled over a convenient block.

The foregoing expeditions were made without guides.

Matterhorn (Zmuttgrat).

DONKIN, S. B., see under DENT, H. L. R.

DURHAM, W. E.—

N. Pic des Cavales. Montagne des Agneaux. Bec de l'Homme.

Brèche de la Meije. Meije (traverse). Col des Trois Pointes.

Grande Motte. Col des Sachettes. Grand Combin (traverse).

Ruinette and Mont Blanc de Seilon (traverse).

Cols de Bertol and d'Hérens. Pollux and Castor.

Lyskamm (traverse). Matterhorn.

Alphubel by Rothengrat (traverse).

Laquinhorn from Laquinjoch.

Portjengrat. Rimpfischhorn (traverse from Adlerjoch to Allalinjoch).

Nadelhorn.

The Dauphiné expeditions with Mr. R. R. Howlett, Chr. Jossi (Sohn) and C. Gaspard, the rest with Chr. Jossi.

EATON, J. E. C.—

Traverse of Strahlhorn, up S. face, down by Adler Pass.

Traverse of Rimpfischhorn, up ordinary route, down by Allalin Pass.

Gabelhörner : along ridge between Unter- and Ober-Gabelhorn.

Down by ordinary route.

Nordend by E. face.

Matterhorn : up Zmutt arête, down Tyndall arête.

EDWARDS, H., see under DODD, H. M. F.

FARMER, J. B., see under MORLAND, J. C.

FARRAR, J. P.—

Schwestern (twice). Piz Bernina. Wetterhorn (N. arête).

A month's journey with a pack train from railhead G.T.P. over Yellowhead Pass, up Moose River, over Moose Pass to head waters of Smoky River and to N. foot of Mt. Robson. Some minor summits 6000 to 8000 ft. ascended.

FIELD, A. E.—

Vetti—Mörkekoldedal Pass—Tyinholm.

Gjendebod—Traverse of Knutshulstind from Knutshullet (A. J. Nov. 1911)—Gjendebod.

Skogadalsböen—Skagastölsskar—Turtegrö.

Turtegrö—Traverse of Store Skagastölstind—up by Slingsbybræ and down Heftye's Rende—Turtegrö.

Turtegrö—Store Midtmaradalstind from Lavskar—Turtegrö.

FITZPATRICK, T. H.—

Rifugio Tiziano. Intending to cross the Forcella del Froppa to explore the valleys on S. side of M. Marmarole, and to return *via* Forcella Piccola, but prevented on one occasion by the manoeuvres and later by thunderstorm and bad weather. The hut was found to be closed, as it is stated to be little used. The path to it is badly marked nor is the hut provisioned as stated by Bädeker, 1911 edit. The Topog. Detailkarte shows the path as diverging S.E., considerably below the hut and passing over the summit of M. Froppa (c. 9620 ft.). Bädeker gives Forc. del Froppa as 7445 ft. and the hut 7340 ft.; but we could see no pass over the chain corresponding to this difference in height.

Kleine Zinne (ordinary route).

Popena (Südwand).

FURNEAUX, L. R., see under DENT, H. L. R.

GARDINER, FREDERICK.—

July 8 : From Airola by Sassella Pass to Fusio and Bignasco.

July 9 : From Bignasco by Val Bavona to San Carlo.

July 10 : From San Carlo by Bocchetta Val Maggia to Tosa Falls. July 11 : Rest day Tosa Falls.

July 12 : From Tosa Falls by Tamier Pass to Piano di Cresta,

- Val Antabbia. July 13: From Val Antabbia by Halbhoren Pass to Valdo and Tosa Falls. July 14: Tosa Falls by Bocchetta del Gallo to Vannino. July 15: From Vannino by Busin Pass and crossed Monte Giove to Tosa Falls. July 16: Rest day Tosa Falls.
- July 17: From Tosa Falls, ascent of Basodino, to Tosa Falls. July 18: From Tosa Falls, bivouac at Zum Stock, Hohsand Thal. July 19: From Hohsand Thal to Hohsand Pass, ascent Ofenhorn and back to Hohsand Pass, and to Binn. July 20: Rest day at Binn.
- July 21: From Binn by Ritter Pass to Veglia. July 22: From Veglia by Furggenbaum Horn and Pass to Berisal. July 23: From Berisal to Simplon Kulm. July 24: From Simplon Kulm by Terra Rossa Pass, ascent Wasenhorn and down to Kaltwasserjoch and on to Veglia. July 25: From Veglia, ascent of Monte Carnera to Veglia. July 26: Rest day at Veglia.
- July 27: From Veglia, ascent of Monte Leone and by Fnè Pass to Veglia. July 28: From Veglia, bivouac Ciamporino Chalets, to Ciamporino. July 29: From Ciamporino, ascent of Pizzo de Diei and Monte Cistella and Passo Ciamporino, to Veglia. July 30: Rest day at Veglia.
- July 31: From Veglia by Passo Valtendra and Scatta d'Orognò to Devero. August 1: From Devero by Albrun Pass, crossed Albrunhorn to Val Deserta and back to Devero. August 2: From Devero by Geisspfad Pass and ascent of Pizzo Fizzo, Geisspfad Pass, to Devero. August 3: From Devero to Baceno and Foppiano. August 4: From Foppiano by Furka Pass to Bosco and on to Bignasco. August 5: From Bignasco to Locarno and on to Airolo. August 6: From Airolo to Piora. August 7: From Piora by Taneda Pass, Bocca di Cadlimo, Piz Borel, and Piz Ravetsch, and Taneda Pass, to Piora. August 8: From Piora by Passo Pettano and ascent of Piz Lucomagno to Piora. August 9: From Piora by Taneda Pass and Nalps Pass to Sedrun. August 10: From Sedrun to Ilanz, Coire and Buchs. August 11: From Buchs to Wildhaus Toggenburg. August 12: From Wildhaus, ascent Brisi Churfürsten, to Wildhaus. August 13: From Wildhaus, ascent of Hinterrück and Kaiserrück Churfürsten to Wildhaus. August 14: Rest day Wildhaus.
- August 15: From Wildhaus, ascent of Sentis. August 16: Descent of Sentis to Wildhaus. August 17: From Wildhaus by Buchs, Ragaz, and to Vättis. August 18: From Vättis to bivouac Lasa Alp. August 19: From Lasa Alp, ascent of Piz Sol crossed to Tersol and down to Vättis. August 20: From Vättis to Club hut (Sardona Alp). August 21: Bad weather Sardona Alp. August 22: Bad weather Sardona Alp and back to Vättis. August 23:

- From Vättis by Kunkels Pass to Tamins and on to Flims.
 August 24: From Flims to Ilanz and up to Brigels.
 August 25: From Brigels, ascent of Piz Tumbif, Kaves-
 trau Grond, to Brigels. August 26: Rest day Brigels.
 August 27: From Brigels, ascent of Piz Frisal, to Brigels.
 August 28: From Brigels to Puntaiglas Valley and Punt-
 aiglas Club hut. August 29: From Club hut to Puntaiglas
 Pass, ascent Piz Urlaun, and down to Truns. July 30: From
 Truns to Somvixertal. August 31: Rest day Somvixertal.
 September 1: From Somvixertal, ascent of Piz Vial, to
 Somvixertal. September 2: Rest day Somvixertal.
 September 3: From Somvixertal by Fuorcla de Lavaz to Curaglia,
 Lukmanier. September 4: From Curaglia to Lukmanier
 Pass to Santa Maria. September 5: From Santa Maria,
 ascent Piz Rondadura, to Santa Maria. September 6:
 From Santa Maria by Passo d'Uomo to Piora. September
 7: From Piora, ascent of Fongio, to Piora. September 8:
 From Piora by Taneda Pass and Piz Taneda to Piora.
 September 9: From Piora, ascent of Piz Columbe, to
 Piora. September 10: Rest day Piora.
 September 11: From Piora, ascent Cima di Camoghè, to
 Piora. September 12: From Piora, ascent Piccolo
 Pettano, to Piora. September 13: From Piora down to
 Airolo and on to Lucerne. September 14: From Lucerne
 by Pilatus to Lucerne.
 59 days' work; 10 rest days; 69 days in all. Only 2 days of
 bad weather. The season of 1911 was the very finest in
 point of weather of my experience of 42 years, not even
 excepting the summer of 1876.—FREDERICK GARDINER.

GASK, G. E.—

- Lauterbrunnen Breithorn.
 Jungfrau (traverse from Rottal).
 Finsteraarhorn. Schreckhorn. Berglistock from the Lauter-
 aarsattel. Wellenkuppe.

GASK, SYDNEY.—

- Lauterbrunnen Breithorn. Jungfrau (traverse from Rottal).
 Finsteraarhorn. Schreckhorn. Berglistock from the Lauteraar-
 sattel.

GORDON, J. M.—

- From Medel hut on Lavaz Joch, P. Medel, Cima Camadra, P.
 Ufiern, P. Cristallina, to Perdatsch.
 From Zapport hut, Rheinwaldhorn, Güferhorn, to Hinterrhein.
 Tambohorn. P. Platta.
 P. Materdell, traverse from N.
 P. Lagrev—by couloir near Fuorcla Gravasalvas.
 From Badile hut, P. Badile to Masinobagni.
 Dent d'Hérens.
 Petit Charmoz.

HARRIS, E. B.—

Piz Bernina—Ascent by the Scharte route. Descent by the usual way *via* the Labyrinth. The usual route through this was impracticable and we had to make a long détour.

Torrone orientale.

Cima del Largo.

Traversed Cima di Castello.

Attempted Ago di Sciora; first from the Forcola di Sciora, we attempted the traverse of the E. face, but the slabs proved impracticable; then from the S.W. corner of the Ago glacier; but we failed to hit off the route to the gap on the S. of the final pinnacle, and as it was getting late we gave it up and returned to the hut and went on to San Martino.

Disgrazia by the ordinary route.

Piz Badile. Our route was Variation *a*, page 25 of Strutt. The commencement of the climb is up a very difficult chimney with a jammed stone at the top.

Ascended Ago di Sciora. We went as before to the Forcola di Sciora, and traversed the W. face of the mountain, over steep and rotten rocks, till we struck a point on the final pinnacle above the gap on its S. This route does not seem to have been taken before. We descended to the S.W. corner of the Ago glacier, and down the Albigna glacier to Vicosoprano.

Ortler (usual route).

Königsspitze and Vertain Spitze.

Torre di Brenta.

Campanile Alto di Brenta.

Fünffinger Spitz (Daumenscharte).

Grohmannspitz.

Winkler and Stabelertürme.

Croda da Lago (Pompanin Kamin).

Croda dei Cesdellis (Pomagognon).

Campanile di Val Montanaia. There are some other good climbs in this group, but I had no time to try them. The hut is new and comfortable.

Monte Pelmo.

HASKETT-SMITH, W. P., see under LING, W. N., and THOMSON, J. M. A.

HOEK, DR. H. W.—

New Ski Expeditions in the Oberhalbstein (Grisons) (see *Oesterr. Alp. Ztg.*).

Several new climbs in the Sella-Dolomites (see *Oesterr. Alp. Ztg.*, No. 581).

HOLLINGSWORTH, J. H., see under DENT, H. L. R.

HOPE, R. PHILIP.—

Fleckistock by S.W. rib. Back same way and over Fluh-lücke to Meien.

A hut near Oberplatti (2055) N.W. of Hohrain—Over Stossenfirn to Wendenjoch and Wenden glacier to Stein.

Stein—Steinlimmi to Trift hut.

Trift hut—Weiss Nollen, Eggstock, Schneestock, Dammastock, to Trift hut.

Trift hut—Kilchlimmi with Kilchlistock by S. arête to Guttanen. Gleckstein—Berglistock up W. face down E. face. West Wetterlimmi to Dossen hut.

Jungfrau by S.W. arête.

Mutthorn hut—Lauterbrunnen Breithorn and down Inner Fafier glacier to Fafieralp.

Täschhorn.

Hochthäligrat, Stockhorn, New Weissthor.

Lyskamm by S. arête.

Théodule Pass.

Oberaarhut—Finsteraarhorn up S.E. arête down to Hugisattel and via Gemslücke to Oberaarhut.

Oberaarhut—Scheuchzerjoch to Dolfuss.

Dolfuss—Strahlegg to Grindelwald.

Schilthorn. Telli pass.

Blümlisalphorn.

Balmhorn.

Wildstrubel.

All expeditions without guides.

NOTE.—There is a new path from the Gasterthal joining Gemmi path where it becomes level.

A good new path from Razliberg (above Lenk) to Fluhsee.

HOWLETT, R. R.—

Pic des Cavales.

Bec de l'Homme.

Via Brèche de la Meije to the Cabane du Promontoire.

Traverse of the Meije. The first traverse in 1911 (July 4).

Owing to there being a certain amount of ice in the Grand Couloir, and to our being four on a rope, the traverse from the Cabane to La Grave took us 18 hours 50 minutes.

Grande Motte, by the newer route from the Col de la Leisse.

IRVING, R. L. G., see under TYNDALE, H. E. G.

JACKSON, W. S.—

Les Ecrins (first traverse this year, July 13).

La Meije (traverse).

Aiguille du Géant.

Traverse of Petit Dru and Grand Dru.

JARDINE, WILLOUGHBY.—

Verstanklator.

Piz Linard.

Diavolezza Inn—Fuorcla Bellavista, Crest'Agüzza to Marinelli hut.

Fuorcla Fex-Scerscen.

Forno hut—Passo di Casnile, Piz Bacün, Zocca Pass to San Martino di Masino.

Pizzo Badile.

Cima di Castello.

All'Acqua—Pizzo Rotondo, Wyttenwasser Pass to Realp.

JENKINS, H. STUART.—

Grand Cornier (ascent from Col du Gr. Cornier by S. ridge with descent by N.W. ridge to Pte. de Bricolla).

From Arolla—La Sengla (3702 m.). Ascent from Col de la Reuse d'Arolla by N.E. ridge. Descent by same route by the Combe d'Oren to Prarayé. A good climb from the Col, but a long one from Arolla.

From Prarayé—Followed the S.S.W. ridge of Jumeaux from Col Becco di Guin to summit 3805 m. (Siegfried map). Return by same route.

Bertol hut *via* Col des Bouquetins—Aig. Jean Maître (also Aig. du Midi) 3690 m. on S. ridge of Bouquetins. Ascent and descent by E. face—Arolla *via* Col du Mt. Brülé.

Col des Hirondelles.

Grandes Jorasses (by Whymper's old route), both summits.

Jorasses hut—Aig. de Rochefort, traverse taking in Mt. Mallet, Return along the ridge to Col du Géant and Mont Fréty.

Mt. Fréty—Aig. de la Brenva. Complete traverse to breach at foot of Gendarme locally known as 'Le Père Eternel,' cf. 'A.J.' xxv. 741 *seq.* (Benighted.)

Sella hut—Mt. Blanc. Ascent *via* Rocher du Mt. Blanc and Tournette ridge. Descent *via* Aig. du Goûter to Tête Rousse.

Aig. Mummery and Aig. Ravanel (combined traverse). Repetition of E. Fontaine's climb on Aig. Mummery.

Staffel Alp—Matterhorn by Zmutt ridge to Zermatt.

JONES, H. O.—

Chalet de l'Alpe—Col des Aigles and Col du Clot des Cavales to Promontoire hut.

Promontoire hut—*via* La Bérarde—Bivouac on Glacier du Vallon de la Pilatte.

Bivouac—New route to Dôme de Neige des Ecrins, traverse of this, Pic Lory and Les Ecrins. Glacier on descent very troublesome ('A.J.' xxv. 736)—La Bérarde.

Promontoire hut—Traverse of La Meije (loc. cit. p. 748) 9 hours 10 mins.—La Grave.

Courmayeur—To Col des Hirondelles and exploration of E. ridge of Les Grandes Jorasses (21½ hours)—Courmayeur.

Sella hut—Exploration of Glacier du Mt. Blanc.

Sella hut—Col Emile Rey to Pic Luigi Amedeo. Over Mt. Blanc de Courmayeur to Mt. Blanc, descent by Dôme route 21½ hours. Dôme Glacier very troublesome (loc. cit. p. 736).

- Jorasses hut—Grandes Jorasses ; descent by E. ridge to Col des Hirondelles (loc. cit. p. 737) and Courmayeur.
- Jorasses hut—To Col des Grandes Jorasses, ascent of Punta Margherita and traverse to W. ridge of Grandes Jorasses (loc. cit. p. 738) and to Courmayeur.
- Sella hut—Ascent of Mt. Blanc by the Rocher du Mt. Blanc route. Upper Glacier du Mt. Blanc very badly crevassed—Chamonix.
- Bivouac on the Trélaporte—Ascent of Grépon by the Mer de Glace face direct to the highest point (loc. cit. pp. 739-741).
- Kien hut—Ascent of Täschhorn, much fresh powdery snow (Aug. 25); danger of frostbite too great to justify continuing to Dom.
- Schwarzsee Hotel—Ascent of Matterhorn, descent by Italian side and return by Furgjoch to Zermatt (18 hours).
- Schönbühl hut—Ascent of Matterhorn by Zmutt ridge and descent by Hörnli ridge to Zermatt.

JOSELAND, H. L.—

- Oeschinen See Hotel—Blümlisalhorn, descending direct to the Oeschinen See without making the détour to the hut.
- Wildelsigen hut—Balmhorn by N.E. arête crossing to the Altels and thence down to Schwarenbach and so back to Kandersteg and the Oeschinen See Hotel.
- Oeschinen See Hotel—Wilde Frau on the way over the Hohtürli to Gries Alp.
- Mutthorn hut—Lauterbrunnen Breithorn—back to Gries Alp.
- Gries Alp—A very interesting day's scramble alone on the Dündenhorn in which I explored both the rocks on the Kandersteg side and also the Kiental face, as well as some of the ridge. I finally descended from the summit by the Dündenband to the Gries Alp.

KER, W. P., see under THOMPSON, C. M.

KIRKPATRICK, W. T., see under HOPE, R. P.

Up to and including Théodule Pass.

LARDEN, W.—

- Goescheneralp—Up to the Hinter-Feldschyn. A short climb of the Chamonix Aiguilles character; one really stiff chimney of first-class quality.
- Goescheneralp—Sustenhorn. A mere walk.
- Maderanerthal—Grosse Windgälle. Local guide refused to go on after we came to the bergschrund! I should say it was a nice climb; under ordinary conditions no difficulty; and, even as it was, nothing that should have baffled our guide.
- Hüfi hut—Piz Cambriales. A nice, short, climb; easy.
- Hüfi hut—Gross Scheerhorn. A beautiful walk. It looks steep, but is not.
- From Hüfi hut—Traversed Tödi. From Hüfi hut by Planura Col and Sandpass, up. Down to, and over, the Gliems-

pforte, and then over Puntaiglaslücke to the Reinhart Hütte. A good expedition. Owing to lack of snow the descent from Gliemspforte was dangerous (from stones), and quite difficult (rotten steep rocks and ice), instead of being an easy descent of a snow couloir. Interesting and worth doing.

Reinhart Hütte—Traversed Biferten Stock. Up by Obere Frisallücke and arête. Rocks on arête high up would be rather dangerous if glazed or snow-covered; should not be descended from other side if in bad condition. For descent on other side we used the 'band' route. The bands (like that of Pelmo) very interesting. The first looks impossible, and is really but a walk. Expedition is to be recommended. To Taranasa.

Disentis—Brunni Pass. An easy walk of no special interest save for learning more of the group. Bad weather prevented us taking the Oberalpstock—to Maderanerthal.

Goescheneralp—By Thierberglimmi and Thierberg glacier. The bad condition of schruns this year made it none too easy. Entirely different from what it was some years ago when Legh Powell and I did it alone—to Trift hut.

Trift Hütte—Up Dammastock on the way. A walk and a view, no climbing—to Furka.

Furka—Traversed Galenstock. Up from Furka the usual way (starting up the Rhone glacier). Descended good rocks toward Tiefengletscher, and reached this below the Tiefensattel. [A bad bergschrund prevented a more direct descent on to the glacier.] Then walked over the Lochbergglücke to Goescheneralp.

A good expedition. It is the descent on Tiefengletscher side that makes it one; up and down from Furka and to Furker would not be anything like so good.

N.B.—This summer the bergschrunds were extraordinarily bad to pass, and many 'snow' couloirs were icy or bare—unusual difficulties.

V. LEYDEN, VICTOR.—

Monte Rosa Nordend and Dufour-Spitze, both from Silbersattel Teufelsgrat (Täschhorn).

Monte Sissone and Monte della Disgrazia from Forno hut to Torre (Val Malenco).

Traverse of Monte di Scerscen and Piz Bernina.

LING, W. N.—

Traverse of Weissmies down to Zwischbergen pass.

Ulrichshorn. Traverse of Nadelhorn and Südlenzspitz, descent by E. ridge.

Portjengrat. Traverse of Rimpfischhorn from Adler pass.

Matterhorn. Dent Blanche. Mont Blanc de Seilon.

Traverse of Grand Combin by Valsorey ridge and corridor.

The above all guideless with Mr. George Sang.

Traverse N. peak of Dents des Bouquetins with G. A. Solly and W. P. Haskett-Smith.

Traverse of Mont Collon with G. A. Solly, G. L. Collins and W. P. Haskett-Smith.

LLOYD, R. W.—

Traversed Herbetet from hut by the E. arête, descending by N. arête to Val Savaranche.

Traversed Grand Paradis from V. E. hut, descending to Herbetet hut and Cogne.

Traverse of Grivola by N. arête from Grand Nomenon huts and down the ordinary way.

Traverse of Mont Blanc by the Brenva, 11 hrs. 40 min. from gîte to top, descent to Chamonix.

N. face of Breithorn.

Traversed the Gabelhorn by the Wellenkuppe arête descending by S. face.

Traversed Bietschhorn by N. and W. arêtes.

Traversed Weisshorn, ascent by E. arête, descent by Schalligrat. Nord End of Monte Rosa.

Täschhorn.

LONGSTAFF, TOM G.—

April. Snow-shoe trips round Field, Canadian Rockies.

May-June. Spillimacheen Mountains between Columbia and Beaver Rivers, crossing the range twice on snow-shoes.

July. Small climbs round Glacier House, Selkirks. Followed by trip through Northern B.C., Yukon Territory, and Alaska down the Yukon River to Behring Sea.

MALLORY, G. H. L., see under TYNDALE, H. E. G.

MEADE, C. F.—

Becco di Mezzodi. Nuvolau Alto and Torre Inglese.

Punta Federa of Croda da Lago. Croda of Croda da Lago.

Cima di Formin of Croda da Lago. Punta Adi of Croda da Lago.

Westliche Zinne. Boespitze and Daint de Mesdi, partial traverse. Fermedaturm traversed.

Sass Rigais, Grosse and Kleine Furchetta traversed.

Grohmannspitze traversed. Euringerspitze, partial traverse.

Rosengarten traversed. Up by S.E. Wand.

Haupt, Nord, Ost Türme (Vajolet group). Kesselkogel traversed.

Einserkofel. Elferkofel. Zwölferkofel traversed.

Arêtes of Mulinet, Pta. Francesetti, Pte. Bonneval traversed.

Albaron by E.N.E. face, Pte. Regaud, also by E.N.E. face, both new ascents; traversed.

Pointe de Méan Martin.

Grande Sassièrè, Petite Sassièrè, Pte. des Pattes de Chamois, Becca di Suessa traversed.

Archeboc Ormelune, Grand Bec du Fond.

Vedette, Grand Bec du Lac.

Roc de Bassagne, Pte. de Calabre (by S.E. face perhaps new),
Pte. de Bazel, Cimes de Quart Dessus traversed.

Dôme de la Sache, Mont Pourri, Aiguille du Saint Esprit
from Marais chalets to Nant Croix in 15¼ hrs. including
halts.

Sommet de Bellecôte and Aiguille du Midi traversed.

Pte. Goletta, Pte. Bassac Déré, Mt. Bassac Sud, Grande
Traversière, Mt. Bassac Nord, from Val d'Isère to Fornet in
Valgrisanche in 16½ hrs. including halts.

Tête de Rutor, Château Blanc, Doravidi, to Courmayeur.

Grandes Jorasses (Pte. Walker).

Mont Dolent.

MONTAGNIER, HENRY F.—

Rifugio dei Dodici Apostoli—La Cima Tosa (traversed)—Tosa
hut on the Bocca di Brenta.

Tosa hut—La Cima di Brenta (traversed)—Berlin hut below
the Tuckett Pass.

Rifugio Presanella—La Presanella (traversed)—Mandrone hut.

Mandrone hut—Il Corno Bianco—Mandrone hut.

Mandrone hut—Cima di Presena and the Passo di Marocarò—
Tonale Pass.

Vioz hut (opened in July 1911)—Monte Vioz, Palon della Mare,
Cevedale—Hallesche hut on the Eisse Pass.

Hallesche hut—Königsspitze, Kreilspitze, Schrötterhorn—
Sulden.

Schaubach hut—Ortler by the Hintergrat—Descent by the
Payer hut to Trafoi.

Höllner hut in the Matscherthal—Weisskugel—Brandenburger
Haus.

Brandenburger Haus—Fluchtkogel, Wildspitze—Vent by the
Vernagt and Breslauer huts.

Vent—Ramolkogel, Ramol Joch—Ramol Haus, thence to Vent
over the Ramol Joch.

Wiener hut in the Pfitscherthal—Obere Weisszint-Scharte—
Edelraute hut on the Eisbruck Joch.

Edelraute hut—Gross Mösele—Berliner hut in the Zillerthal.

Berliner hut—Schwarzenstein—Schwarzenstein hut.

Schwarzenstein hut—Gross Löffler—Steinhaus in the Ahrnthal.

Defregger hut—Rainerhorn, Gross Venediger—Gschlöss by the
Prager hut.

During two months in Tyrol I met with only one party of
English climbers (Messrs. Wicks, Bradby, and Wilson at
Trafoi). The huts of the German Alpine Club—although
far superior to the average S.A.C. hut—are usually
frightfully overcrowded after the middle of July.—H. F. M.

MORLAND, J. C.—

Livigno—Alpisella Pass and Passo di Fraele—Bormio.

Sta. Caterina—Gavia Pass—Ponte di Legno.

Tonale—Marocaro Pass—Bedole.

Cima Tosa.

Cigolade Pass and Tschagerjoch pass.

Marmolata by S. W. arête and N. face.

Sertig Pass from Scans to Frauenkirch.

Mayenfelder Furka. Frauenkirch to Arosa by Furka—Höhe.

All easy but delightful days with Prof. J. B. Farmer.

MOUNSEY, W. A., see under **BACKHOUSE**.

MUIR, J. C.—

Col Giétroz and Col de Seilon.

Aig. de la Za by the face.

Col Bertol and Col d'Hérens.

Matterhorn by Zmutt ridge, descent by N.E. ridge.

Dent Blanche, usual route.

Col Vasevay.

Petite Dent de Veisivi, traverse W. to E.

Vuizez rocks, traverse from Col de Vuignette to N. end.

Ruinette by S.E. ridge, descent by S.W. ridge.

The last four expeditions were guideless. For the Zmutt ridge our guides were Martin Pralong and Jean Métrailler—both of the Evolena Valley.

NOELTING, F. A.—

Kislovodsk (Caucasus) to Urusbievo through Khassaut and Kirtik-Aush Col (3242 m.).

From bivouac on left bank of Shekildi glacier; attempt to reach Kashkatau glacier and Adyl Valley. Crossed col at N. foot of Bzhedukh-tau (about 3600 m.), but had to return same way owing to bad weather.

From camp in Adyl valley; climbed peak (about 3650 m.) on ridge between Adyl and Adyr valley.

Crossed Dongus-Orun col to Suanetia.

Crossed Ütür Col into valley of Nenskra, thence into valley of Seken; thence through Kodor valley to Sukhum-Kale. Guides Chumak Sârof and his son Djanbulat.

OLIVER, EDMUND G.—

Nord End from Macugnaga.

Dom and Täschrhorn (traverse).

Rimpfischhorn, N. arête (traverse).

Unter- to Obergabelhorn arête.

Rothhorn arête from Triftjoch.

Matterhorn traverse by Zmutt and Italian arêtes.

Pollux and Castor (traverse).

Dent Blanche (traverse by S. and W. arêtes).

OPPENHEIM, L. C. F., see under **STRUTT, E. L.** (for expeditions round Zermatt).

OSBOURNE, R. E.—

Lobhörner (five teeth).

Gspaltenhorn.

Gr. Schreckhorn, ascent by N.W. ridge, descent by ordinary route.

Grépon traversed from N. to S.

Grand and Petit Drus, ascent by Grand D. descent by Petit Dru.

Weisshorn, ascent by ordinary route, descent to Schallijoch and Randa.

Matterhorn—ascent by Zmutt ridge, descent ordinary route to Zermatt.

All with Fritz Amatter and Christian Kaufmann jun. as guides, and all but the Drus accompanied by Miss Osbourne, Ladies' A.C.

OSLER, JULIAN A.—

Evêque. Petites Dents de Veisivi. Mont Collon.

Aiguilles Rouges, traverse. Col de Collon.

Aiguilles Dorées, Aiguille de Javelle, Tête Crettex.

OSLER, J. T., see under SLOMAN, A., for Dents de Bouquetins and de Bertol and Vuibez arête expeditions.

PARKER, J. A.—Cima Tosa, and Rochetta di Nambrone.

PARKER, J. KENYON.—

Monte Leone.

Fletschhorn, traversed from Simplon to Weissmies Hotel.

Turned back from Südlenspitze by bad weather (Aug. 21).

Riffelhorn couloir.

Turned back from Zinal Rothhorn by bad weather (Aug. 26).

Dufourspitze (ascent by rocks from Grenz glacier, descent ordinary route).

Zinal Rothhorn (traversed) to Mountet Inn.

Col Durand (started 9.15 a.m. after thunderstorm).

Matterhorn (ascent by Zmuttgrat. Descent Swiss side. Left Schönbühl hut 1.50, summit 10.30, Swiss hut 3, Zermatt 6).

Weisshorn (ordinary route).

PULLING, H. G., see under DENT, H. L. R.

ROBERTS, E. E.—

La Vierge and Petit Flambeau.

Aig. de Rochefort and Mont Mallet.

Charmoz (traverse). Grand Dru. Grépon (traverse).

Col de Triolet and Punta Isabella.

Heimstock and Catscharauls. Düssistock (traverse).

Oberalpstock. Höhlenstock.

Klein and Gross Scheerhorn (traverse).

Gross Ruchen (Westgrat).

ROBERTS, W. M.—

Heimstock (Conway's Piz Gurkha)—Hüfi hut.

Düssistock (traversed)—Hinterbalm.

Oberalpstock by Regenstaldenfirn, both summits of final peak; return by Brunnithal—Maderanerthal.

Höhlenstock (Weiss Stöckli of Siegfried map).

Klein Scheerhorn by Halsigrat and traverse to Gross Scheerhorn, descending by Hüfi glacier.

Two days on the Fünffingerstöcke, including a circuit of No. IV. by the surrounding glaciers.

Mittlerer Tierberg (so described in the Urner Alp guide-book—unnamed on Siegfried map, but height given as 3419 m.).

All the expeditions were guideless with various members of Dr. H. L. R. Dent's party.

ROLLESTON, L. W.—

Traverse of Strahlhorn, ascent from Adler pass, descent by South Rocks.

Traverse of Matterhorn, ascent by Italian ridge, descent by Zmutt ridge. First traverse in this direction.

Traverse of Obergabelhorn, ascent from Wellenkuppe, descent to Arbenjoch.

Rothhorn pass.

Traverse of Obermominghorn. Descent through icefall of Hohlichtgletscher. This descent through the icefall was difficult and not quite safe.

Jägerjoch and Jägerhorn.

Nord End, Marinelli hut 4.5 a.m. summit 12.20 (halts 1½ hours).

Bétemps hut 3.15 p.m. (total halts about 2½ hours).

Rothhorn from Rothhorn pass.

Dent Blanche by E. arête from Mountet. Descent by W. arête and over Col d'Hérens to Zermatt, Mountet 2.40 a.m., summit 10.30. Ferpècle Glacier 4.30 p.m., Col d'Hérens 6.50, Zermatt 11.0 p.m. (total halts about 2½ hours).

RUNGE, HARRY.—

Klein Wellhorn. Simeli Stock. King Spitze.

Mönch from Guggi to Concordia hut.

Bietschhorn (traverse) by W. and N. arêtes.

From Col du Géant *via* Col de la Tour Ronde and Brenva arête over Mont Blanc to Chamonix.

SCHIESS, E.—

Doldenhornhütte—Gr. Doldenhorn, Kl. Doldenhorn (traversed)—Doldenhornhütte.

Wildelsigenhütte—Balmhorn (traverse)—Gizzifurgge—Ried.

Egon v. Steigerhütte—Mittaghorn—Ebnefluh (traverse)—Concordia.

Concordia—Gletscherhorn (West and Ostspitze, traverse)—Concordia.

Concordia—Hinter-Fiescherhorn (traverse)—Concordia.

Concordia—Agassizhorn, Agassizjoch, Finsteraarjoch—Schwarzegg.

Schwarzegg—Kl. Schreckhorn (traverse)—Gleckstein.

Gleckstein—Gr. Schreckhorn (traverse, ascent by Anderson-grat)—Schwarzegg.

Gamchibalmhütte—Gepaltenhorn—Sefinenfurgge—Mürren.

- Eigergletscher—Eiger (traverse, descent *via* Eigerjoch) and Mönch (traverse, ascent E. grat, descent S.E. grat)—Bergli.
- SLATER, E. V.**—
 Dent du Midi (Dent Jaune). Aiguille d'Argentière.
 Aig. de l'M and Petit Charmoz. Col de Talèfre—Courmayeur.
 Mont Blanc (from Grands Mulets to Montanvert descent by Midi route).
- SLOMAN, CANON A.**—
 Traverse of Cassierte, returning by Col de la Forclette, the most direct route, but not mentioned in Larden's Guide.
 Traverse of Mt. Ghitsa, descending by N. arête (apparently a new route).
 N.B. The Mt. Ghitsa, above named, is the summit with a cross, forming the most eastern end of the Mt. Dolin ridge, and called Mt. Ghitsa by the local guides. The point so named in Larden's Guides seems to be a different one.
 Aiguille de la Za, by the face, Martin Pralong, guide.
 Traverse of Zinareffien Rocks, Antoine Georges, guide.
 Most northerly summit of Dent des Bouquetins and traverse of South Peak of Dents de Bertol, with Mr. J. T. Osler and Pierre Epinay, guide (see 'A.J.' xxv. 749).
 Traverse of Loitecondoi Rocks.
 Traverse of Vuibez arête, with Mr. J. T. Osler and Pierre Georges, guide (see 'A.J.' xxv. 742).
 The expeditions where no guide is mentioned were guideless.
- SOLLY, GODFREY A.**—
 Diablerets. Wildhorn and Mt. Pucelle. Métailler.
 Col de Darboneire and Pointe de Vouasson—Arolla.
 Pigne d'Arolla by N. face. Aiguille de la Za.
 N. Peak of Aiguilles Rouges.
 N. peak of Dent des Bouquetins traversed from S. to N. (from and to the hotel without sleeping at hut).
 M. Collon traversed.
 All without guides.
- STEAD, F. B.**, see under **PARKER, J. KENYON**, for Monte Leone and Fletschhorn only.
- STEELE, LOUIS J.**—
 Col de Nivolet.
 Ascent of the Gran Paradiso and Becca di Moncorvé from Pont.
 Other minor ascents were also made in this region.
- STRUTT, E. L.**—
 Monte Rosa, Dufourspitze.
 Matterhorn, Zmutt arête.
 Wellenkuppe, traverse.
 Dent Blanche.
 Rimpfischhorn, N. arête.
 Täschorhorn.
 Castor and Pollux *via* Schwarzthor.

Cima di Jazzi, Fillarkuppe, &c., &c.

With Captain L. C. F. Oppenheim and F. N. Blundell; guide, Josef Pollinger; porters J. M. Chanton and Franz Imboden:

Hoher Prill, Weisse Wand, Todes Gebirge, &c. (Styria), chamois-shooting.

THOMPSON, CLAUDE M.—

Cogne *via* Pousset huts—Grivola by S. face, easy but requires care owing to quantity of loose stones—Cogne.

Cogne—Herbetet—to Victor Emmanuel hut.

V. E. hut—Grand Paradis—Cogne.

Piantonetto hut—Roccia Viva—back to hut.

Piantonetto hut—Grand St. Pierre—Cogne.

Valsorey hut—Grand Combin—Mauvoisin.

Aiguille de la Za, by the face.

THOMSON, J. M. A.—

Easter and Whitsuntide—Exploration of two new faces in Wales: Llechog and Craig y Cwm Du. Both afford excellent and varied rock-climbing.

Two peaks of the Vuibez from the Vuibez Glacier; with Mrs. Solly and Miss Collins.

Traverse of Pigne d'Arolla; ascent by N. face; descent to Col de la Serpentine; with G. Collins and G. A. Solly.

Face of the N. peak of Aiguilles Rouges with W. P. Haskett-Smith.

Traverse of the N. peak of the Dent des Bouquetins. Ascent mainly by the rocks of the E. face. New. Good rocks, with some very difficult traversing across couloirs; with G. Collins and G. Edwards.

Traverse of Mont Collon; with G. Edwards.

Traverse of Mont Blanc de Seilon from Col de la Serpentine; with G. Edwards.

Täschhorn.

Traverse of Matterhorn. Descent by the Italian ridge and return to Zermatt over the Furgg Joch.

Schönbühl Cabane—traverse of Matterhorn; ascent by the Zmutt Ridge, descent to the Schwarzsee.

Exploration on the Coolin as described in 'A.J.' xxvi. 17 *seq.*

THORP, PERCY H.—

Peters Grat. Beich Pass.

Aig. du Géant. Col de Miage. Petit Dru.

Herbetet. Grivola. Matterhorn (Breuil to Zermatt).

Guides Christian Almer III. and Adolph Schaller.

Kienhorn (attempt on the Teufels Grat, defeated by strong cold wind).

Oberaar Joch—Gemslücke—Grünhornlücke—Mönch Joch.

Wetterhorn (Gleckstein to Rosenlauri).

Ascent by the face of the Eiger from the Klein Scheidegg to the Eigerwand Station. (After an unsuccessful attempt to reach the Mitteleggi ridge from the Klein Scheidegg we made our way up to the Eigerwand Station. A rope was let down for the last 15 feet, but was not essential to the completion of the climb.)

Mönch.

Guides Christian Almer III. and Joseph Schaller.

TODD, CAPT. O. E.—

In Kaghan Valley.

June 22 : From Camp near Safus Malook—Attempt to climb Mali ka Purbut—reached col 15,500 ft. on E. face.

June 24 : From Camp near Safus Malook—Manoor 15,129 ft. by steep snow gully on E. face.

June 30 : From Camp above Duddur, 11,750 feet—Attempt to climb Mali ka Purbut by N.E. arête, reached col 15,200 ft. (Dubooka).

July 6 : From Battakundi—Dubooka 16,196 ft. by N. arête. Traverse of the whole mountain (4 summits).

July 11 : From Battakundi; crossed over Dubooka N. arête and over large glacier and snowfield, attacked Rewuree by N. arête, reached summit after a difficult rock climb in a snow-storm; went back by the same route and made a new pass down the Rewuree Valley to Burawai.

July 14 : From Basul—Peak about $1\frac{1}{2}$ miles south of, Basur Mountain (un-named) 15,300 ft. A steep and difficult rock climb, from the S.W. arête.

July 30 : From Badulgraun—crossed the Rasee Bojee ridge, traversed the whole of the Sukhi Sangal snow-field.

Traversed back by a entirely new route, eventually landing in the Shikara nullah. 18 hours. In terrible weather, snow-storm and thick mist. A very awkward expedition.

All these climbs are new ground and first ascents.

TYNDALE, H. E. G.—

Bonneval—Col du Bouquetin : Col de la Vache : Col de Nivolet—Pont in Val Savaranche.

Capanna Vitt. Emanuele—Col du Grand Paradis : Grand Paradis from Col de l'Abeille—Capanna Vittorio Emanuele.

Capanna Vitt. Emanuele—Cima di Ciarforon : up N.W. ridge from foot (variation of Signor Bobba's route), down by Col de Moncorvé—Capanna Vittorio Emanuele.

Capanna Vitt. Emanuele—Herbetet : over Moncorvé ridge and many glaciers to E. Col du Grand Neiron : up W. buttress, W. face, and S. ridge of Herbetet. Second ascent by this route. Descent by N. ridge—Cogne.

Cogne—To S. Col de Sengies : Punta Ovest di Valeille : Scatiglion : Ondezana : from Teleccio glacier over Col de Monei

to Cogne ; 13-14 hours going. First traverse of ridge from S. Col de Sengies to Scatiglion—Cogne.

Cogne—Col du Pousset : from Trajo glacier to Nomenon glacier by Col des Clochettes (first passage). Up N. arête of Grivola [*ca.* 7½ hours from Upper Pousset chalets]. Descent by ordinary route.—Cogne.

Cogne—To Col de Chaz Sèche : Punta di Monpers : Piatta di Grevon—Aymaville.

Courmayeur—To Col du Géant. Mont Maudit by N.E. ridge from just above Col de la Tour Ronde : thence followed watershed between Brenva and Géant glaciers. Joined Maudit-Tacul ridge halfway between Col Maudit and summit of Mont Maudit. Thence by Mur de la Côte to summit of Mont Blanc. Third ascent from Col de la Tour Ronde.

St. Gervais—Up to Col de Miage : thence along ridge to head of Trélatête glacier : up Tête Carrée (bad thunderstorm) : down Trélatête glacier and over Col du Mont Tondu—Les Mottets.

Les Mottets—Over Col de la Seigne—Courmayeur.

Col du Petit St. Bernard—Over Col de Traversette—Tignes.

Val d'Isère—Cime de Quart Dessus : Tsanteleina : Pointe de la Traversière : Aiguille de la Grande Sassièrè—Val d'Isère.

Val d'Isère—Col de Fresse : Col de la Leisse—Refuge Félix Faure.

Refuge Félix Faure—Over Vanoise glaciers to Dôme de Chasseforêt—Pralognan.

Companions—Up to Les Mottets, Messrs. R. L. G. Irving and G. H. L. Mallory. Afterwards with Mr. Irving alone.

UNNA, P. J. H., see under DENT, H. L. R.

WALL, T. W., see under BLACKDEN.

WATSON, B. W.—

Tosa Falls—Blindenhorn and Mittenberg Pass—Binn.

Binn—Helsenhorn and Ritter Pass—Alp Veglia.

Alp Veglia—Passo Fnè and Monte Leone—Simplon.

Simplon—Rossboden Pass—Saas Grund.

Süd-Lenzspitze and Nadelhorn.

Matterhorn from Schönbühl by the Zmutt ridge and down the Hörnli ridge. No ice or snow on the Swiss side from the top to the lower hut ! Even dusty in places. (August 14.)

Weisshorn. Perfectly cloudless day from sunrise to almost sunset (August 17).

I had excellent conditions throughout, and it was probably the finest season for many years. It was a new experience to find the heat made one lazy.

WELLS, E. G.—

Dent Jaune (Dent du Midi).

Aiguille d'Argentière, ascent by Glacier des Améthystes, descent by Glacier du Chardonnet.

Aiguille de l'M and Petit Charmoz.

Col de Taléfre (Montanvert to Courmayeur); big bergschrunds on both sides, but of no great difficulty. A very interesting expedition, though the walk to Courmayeur is rather long; the bridge over torrent has been washed away, and it was impossible to reach the path without a wetting.

Col du Géant. Slept at the cabane, intending to ascend the Aig. du Géant, but prevented by snowstorm (August 26).

Mt. Blanc, ascended ordinary route from Grands Mulets, descent *via* Mt. Maudit and Mt. Blanc de Tacul. Bergschrunds very large.

The party consisted of E. G. Wells, E. V. Slater, and guide Q. Zurbriggen, of Saas Grund.

WERNER, C. C., see under CLAPHAM, J. H.

WICKS, J. H., see under WILSON, CLAUDE.

WILLIAMSON, O. K.—

Concordia—to summit of Lauithor—back to Eggishorn Hotel. Concordia to Gletscherjoch with exploration of upper rocks on Roththal side and over Lötschenlücke to Fafler Alp.

Fafler Alp over Petersgrat to Trachsellauenen.

Guggi Hütte (new), ascent of Mönch by N.W. buttress, descent by ordinary route, over Ober and Unter Mönchjoch to Eismeer Station and Klein Scheidegg.

Roththal Hütte, Gletscherjoch, (first passage) Ebnefluh to Concordia (had to wait twelve days before weather was sufficiently settled to justify expedition).

Staffel Alp, Matterhorn (ascent by Zmutt arête) to Zermatt.

Riffelhaus, Cima di Jazzi, and over New Weissthor to Macugnaga.

Marinelli hut, Nordend (ascent by E. arête, descent by Silbersattel) to Riffelhaus.

WILSON, CLAUDE—

Hintere Schöntaufspitze *via* Schaubach hut and Madritschjoch. Vertainspitze by S.W. arête, descending by S.W. face.

Ortler *via* Hintergrat (S.E. arête)—descending by N. route.

Ortler—*via* Hochjoch and Hochjochgrat—descending by N. route.

Traversed Hohe Angelus Spitze, and Hochofenwand.

Königsspitze—*via* Königsjoch (bad weather prevented traverse).

Traversed Vordere and Hintere Schöntaufspitze, ascending by N.W. arête.

Unsuccessful attempt to reach Suldenjoch. On failing went to Eisse hut.

Traversed Schrötterhorn, Kreilspitze, Königsspitze and Zeburu, from Eisse hut to Hochjoch hut.

Ortler Pass to Trafoi.

Traversed Cevedale from Sulden to Santa Caterina.

Ferro Occidentale from Masinobagni by S. arête, descending by W. arête—Masinobagni.

Zocca hut—Attempt on Ago di Sciora, but failed to find route from Ago glacier—to foot of pinnacle—Zocca Hut.

Zocca hut—Traversed: 1. Passo del Averno. 2. Pizzo di Zocca, up by S. arête, down by W. 3. Ferro Orientale, or Punta Qualivo, up by E. arête, down by W. arête—Masinobagni.

NOTE.—J. H. Wicks took part in all these expeditions except the last one. E. H. F. Bradby took part in all these expeditions, with the exception of the first three. No other companion or guide.

WORKMAN, DR. W. HUNTER.—June 1 to Oct. 14: During summer of 1911, I explored with Mrs. F. Bullock Workman the region lying between the Baltoro glacier on the north, the Shyok and Saltoro valleys on the south, the Kondus-Siachen watershed on the east, and the western barriers of the Hushe tributaries on the west. Found it a region of high, precipitous, mostly unscalable mountains with serrated ridges and summits, and deep, narrow valleys occupied by sharply descending, greatly broken, in many places unscalable, glaciers, with no discoverable passes northward to the Baltoro.

Explored the Dong Dong, Sher-pi-gang, Kondus, Chogo Lisa, Kondokoro, Masherbrum, and Alin glaciers. Ascended mountain-spur separating the Dong Dong from the Sher-pi-gang to a point 16,604 feet directly overhanging the latter and giving a wide view over both glaciers. Also ascended snow-capped peak, 16,839 feet in altitude, west across the Masherbrum glacier from Mt. Masherbrum, the slopes of which were everywhere deeply covered with shattered fragments of quartzite.

Having explored this region, ascended, the middle of August, the Bilapho glacier to the east, crossed the ice-pass at its head 18,450 feet, and descended a large affluent leading to the great Siachen glacier. Passed a month on this glacier, exploring it and some of its large tributaries, as weather permitted. Among others ascended a large east tributary, which, some 25 miles long, leads up to a wide snow-basin or plateau 19,000 feet and above in altitude, that connects with a snow-pass and a glacier descending toward the east and, apparently, towards the Karakoram Pass.

At the head of another large affluent joining the Siachen from S.W. a point 20,000 feet in altitude was reached at the base of an almost perpendicular precipice rising thence to the summit of K3, 25,415 feet. Also a snow-peak of 21,000 feet, overhanging the junction of the east affluent above mentioned and the Siachen, was ascended. From this a very extended view over the Siachen and its tributaries was obtained.

WYATT, J. W.—

Various climbs in the neighbourhood of Champéry, including Dent du Midi, Cime de l'Est (twice), Dent Jaune. Tour Sallières, Dent de Bonaveau, traversed (twice), Dent de Barmaz, traversed, Les Dents Blanches, traversed twice, once by new route up N. arête. All guideless, except Dent Jaune and Tour Sallières.

Grand Moeveran to within 300 ft. of top, very bad conditions, much fresh snow and verglas (June).

Grand Combin traversed from Valsorey hut by W. and N.E. arêtes.

Mont Vêlan, traversed from E. to W. from Valsorey hut to Great St. Bernard.

Cols de Fenêtre and du Ban d'Arrey to Courmayeur.

Col du Géant.

Aiguille du Tacul, traversed. Aiguille du Grépon, traversed.

YELD, G.—

Punta del Tuf, 11,129 ft.

Cresta del Tuf, 10,918 ft.

Punta Inferno, 11,129 ft.

Tour St. André, 11,976 ft. traversed from Valeille to Valnontey.

YOUNG, G. WINTHROP.—

La Bérarde—Les Ecrins, traverse; first ascent. Ascent S. face Dôme de Neige and traverse—La Bérarde.

Promontoire hut—La Meije, traverse—La Grave.

Courmayeur—Grandes Jorasses. Exploration of east ridge—Courmayeur.

Quintino Sella hut—Exploration Mont Blanc glacier—Q. S. hut.

Q.S. hut—Mont Blanc, from Col Emile Rey, by Brouillard ridge; descent by Dôme glacier.

Grandes Jorasses hut—Grandes Jorasses, first traverse and descent of E. ridge.

Grandes Jorasses hut—Grandes Jorasses, first ascent by W. ridge.

Col du Géant (alone).

Bivouac below Trélaporte—Grépon, first ascent to summit from Mer de Glace.

This remarkable list of expeditions shows that, given good weather, the oldest of Alpine Clubs can produce a record of work of the highest class that is not readily equalled.

April 26, 1912.

J. P. FARRAR.

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