success seemed assured—ended in failure, and has left a new climb yet to be done, although it may not be by Joseph Pollinger and R. W. Lloyd, who do not like dangerous places !

I desire to express my indebtedness to M. Montandon for the use of some of his photographs and to Mr. Spencer and Mr. Oughton for their assistance in obtaining others for my slides.

[We are deeply grateful to Mr. Lloyd for generously defraying the entire cost of reproducing the two coloured prints and several of the photographs accompanying his paper—EDITOR.]

SOME FAMOUS PASSES.

BY E. G. OLIVER.

(Read before the Alpine Club, April 5, 1927.)

THE word ' Pass ' as a mountaineering term may be defined as a well-marked depression in a range of mountains. Mr. Coolidge limits the mountaineering sense to depressions which have been actually crossed by man. The passes, the crossing of which I propose to describe shortly to-night, are, of course, passes in the mountaineering sense of the word, and they all come within Mr. Coolidge's definition, though the passages by man have not been numerous. They cannot, however, be described as convenient means of access from one place to another.

When I began my mountaineering career some twenty-five years ago, passes were out of fashion—at least as first-class mountaineering expeditions. Their only advantage over peaks was that one must descend into a different valley on the opposite side of the chain to that by which one ascended ; and, after all, in the popular contention, a superior result on the same lines could be obtained by traversing one's peak.

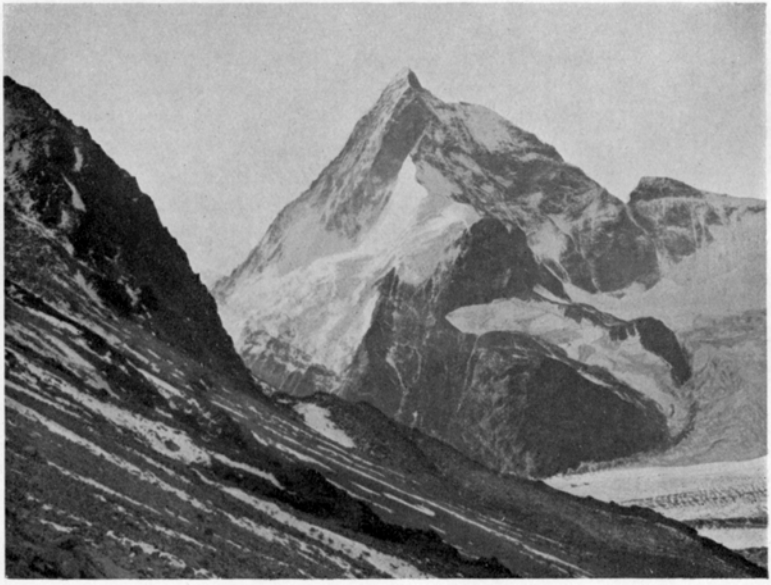
Reasoning on these lines induced me, in my earlier climbs, rather to despise passes ; never to attempt difficult ones, and

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in a horrid splayed-out rock and ice gully which was obviously impossible. The ice cliff here also overhung to such an extent that even if the gully had been overcome, it is doubtful if we could have reached the upper lip. Only a few yards remained, but advance being hopeless, we retraced our steps at 09.20, and, making our way most carefully down the objectionable rocks and couloir, regained the snow plateau at 10.50.



OLLIER, cutting over BERGSCHRUND
on COL DOLENT.
(Black shadow on left is the back of CROUX.)



Phot. E. G. Oliver.

MATTERHORN and COL DU LION.



Phot. E. G. Oliver.

ON THE ACTUAL WATERSHED
OF THE COL DOLENT.



Phot. E. G. Oliver.

COL DOLENT FROM GLACIER D'ARGENTIÈRE.

to use the easier glacier passes only as means of getting from place to place, when weather and conditions were too bad for the traverse of the big peaks.

That this was a short-sighted view, I have long since realized. Some of the classic passes may offer charms, and, indeed, difficulties (if these are desired) equal, if of a different character, to those to be found on any peak.

I think I do not delude myself in believing that my cult of passes in recent years at the expense of peaks, is not only due to declining energy and diminished physical powers, but also to the merits of passes themselves as Alpine expeditions.

The four passes I propose to deal with to-night are the Col du Mont Dolent, the Col du Tour Noir, the Col du Lion and the Jungfraujoch. Each of these will, I think, be generally admitted to be a first-class mountaineering expedition ; and each has an interesting mountaineering history.

The Col du Mont Dolent.

This pass is situated between Mont Dolent and the Aiguille de Triolet, or, more exactly, between the Pointe de Pré de Bar and the Pointe du Domino, at the head of the Argentière Glacier, and was crossed for the first time on June 26, 1865, by Mr. Edward Whymper with Christian Almer, Michel Croz and Franz Biener. On the Val Ferret (Italian) side of the pass in ordinary circumstances, no serious difficulties occur ; but on the Argentière side it is necessary to surmount a steep ice couloir at an angle of about 50°, while the bergschrund may be extremely troublesome. The height of the col above the head of the Argentière glacier is about 1200 ft. Whymper's party crossed from the Italian side and descended the couloir, using, however, the rocks on the right bank to a considerable extent. They took 7 hrs. to descend to the glacier, and the descent is famous among the many great ice climbs accomplished under the leadership of Christian Almer. The whole expedition from Courmayeur to Chamonix occupied 23 hrs.

No one has yet repeated Whymper's passage in the same direction ; but the col has been several times crossed from the Argentière side. Captain Farrar has been kind enough to supply me with a list of these expeditions so far as they are known to him, which are as follows :

2nd. Sir W. E. Davidson and Mr. J. W. Hartley with L. Lanier and J. Jaun, September 1, 1878.

3rd. Herr C. Gruber with Emile Rey and J. von Bergen, July 1881.

4th. Messrs. E. A. Broome and P. L. Pryor with J. M. Biener and A. Imboden, August 5, 1898.

5th. Signor E. J. Mazzuchi with César Ollier and Joseph Croux, July 18, 1903.

6th. Signor Cajrati-Crivelli with Laurent Croux and Alexis Brocherel, August 13, 1904.

If this list is complete, our crossing was the seventh ; and I have not heard that the expedition has been repeated since. I had accepted an invitation to join some Italian friends at Courmayeur, and had no expectation of doing any climbing, beyond, perhaps, a little walking exploration with a view to future expeditions. But, on arriving at Courmayeur, I found, to my surprise, that some climbing would be possible. My old friend, Henri Rey, was at large, and only too anxious to accept engagements. After doing a few expeditions with my Italian friends, I engaged Henri Rey and Alexis Brocherel, with the intention of doing some rock climbing on the Chamonix side of the chain. We climbed the Grandes Jorasses, and then crossed the Col du Géant to Plan de l'Aiguille. Glacier conditions were the worst I ever encountered ; we had considerable difficulty with the Planpansière glacier on our ascent of the Grandes Jorasses, and were, consequently, nearly benighted. When we crossed the Col du Géant, we had intended to take the Dent du Requin on the way down ; but found it impossible, in spite of repeated attempts, to get to the foot of it. Afterwards we actually took 6 hrs. to descend the séracs, and arrived at Plan de l'Aiguille at about 9 at night. Here the weather turned bad, so we resolved to return to Courmayeur by one of the more difficult passes, and selected the Col du Mont Dolent. On August 23 we walked up to the Cabane du Jardin d'Argentière, from which we intended to make our start.

Arrived at the upper plateau of the glacier, we had ample opportunity, as we walked along, to observe the aspect of our climb. I was aware that Sir E. Davidson's party in 1878 had succeeded in reaching the col in 2 hrs. from below the bergschrund, by taking to the rocks on the right of the couloir. Brocherel told me that he had crossed the pass with Signor Cajrati in 1904 without any particular trouble by the same route. Nevertheless, it was evident that an ascent by these rocks was going to cause formidable difficulties ; they were thickly plastered with snow. On the other hand the couloir

looked as repulsive as possible, being almost entirely composed of something as near black ice as anything I ever saw. Arrived at the hut, however, and fortified by a good meal, our spirits rose; and we jested and made wagers as to the number of hours we should sleep in the woods on the other side, awaiting the arrival of the carriage, which we had ordered to meet us at 3 P.M. Next morning we were off at 5 (French time), and got to the foot of the bergschrund at 7.10. On the way we discussed the route. Rey and I were for the couloir, using the rocks on the right side as much as possible. But Brocherel, who had the advantage of having done the climb before, pleaded for the rocks, informing us that once over the bergschrund we should have no serious difficulty, and that a little snow more or less need not be feared. His argument, fortified by his previous experience, eventually carried the day, and we started to surmount the bergschrund. Here we had a formidable task; the fissure was completely filled with frozen snow, so that the floor afforded a safe foothold, but the wall was high and steep, and the upper lip overhung at a height of perhaps 30 ft. above our heads. Brocherel started to cut up, bearing to the right, and then, gradually, to the left, and Rey followed him till both were over the top, almost directly above where I stood, and quite out of sight.

When they shouted, I followed; but at the first step I found that they had not left me enough rope, as I had to traverse considerably to the right and away from them. I shouted and pulled the rope. The guides above me, who could not see, misunderstood, and, supposing I had slipped, pulled hard on the rope, with the result that they swung me out of my step, and I found myself in a truly ridiculous position, suspended by the rope, though just able to touch the floor of the bergschrund with my toes; there was an overhanging ice-wall above me, and I was unable to hold anything either with ice axe or hand. It seemed quite an appreciable time before my shouts made them understand that I wanted more rope. But at last they let go, and I stood again on firm ground. I now followed in the steps, and at 9 A.M. we stood together above the bergschrund, which had taken us nearly 2 hrs. to surmount.

Above the bergschrund we found snow, and Brocherel rapidly made steps up to the nearest point of the rocks, where we changed our order, Rey taking the lead and Brocherel going last. The first few steps of the rocks were not difficult, in spite of new snow on them, and we made rapid progress. After climbing about 100 metres, however, we began to en-

counter serious difficulties, as the rocks were plastered with caked frozen snow. Rey had the greatest difficulty in cutting holds, and in placing his hands and feet, and could not find any place for a firm stand to hold the rope. He shouted to me again and again that he was not safe, and warned me to be extra careful. Yet there was no option but to proceed in this somewhat hazardous fashion.

Once or twice Brocherel and I unroped, and changed places, but Rey continued to lead. From time to time Brocherel or I gave him a shoulder. As we ascended, he was driven more and more to the left against the rocks of the Pointe de Pré de Bar, which, being steeper, held less snow and ice. These rocks, however, proved impracticable a little higher, and we skirted under them, traversing eventually to the right over exposed slabs covered with snow and ice, until we reached a corner not far from the main couloir, whence a slanting subsidiary couloir led upwards to our left, above which the rocks looked less difficult. It was now 4 P.M. The rocks directly above us were covered with verglas, and we were faced with the alternatives of going into the main couloir, where we expected to find hard black ice, or of trying the slanting couloir to our left. We decided on the latter course, and reversed our order, Brocherel again leading. An hour's step cutting in ice brought us to the top of this couloir ; but, arrived on the rocks, we again found difficulties at least equal to those experienced below. The rocks were very steep, and covered with verglas. At length, after two more hours of very arduous climbing, we found ourselves on the summit ridge, considerably above the col.

The point at which we arrived appears to be the lower point of the Pointe de Pré de Bar (Point 3614 m.), which was first climbed from the Argentière side by M. Emile Fontaine with Jean and Joseph Ravanel in 1904.

Hence we descended to the col in half an hour, over very steep rocks, but carrying less snow and verglas. We reached the col at 7.30 P.M., having taken 12 hrs. 20 mins. from the bergschrund. We started immediately to descend the Italian side in the fading light, and reached the last rocks above the bergschrund at 9.15.

We had been climbing for 15 hrs. without a halt of any kind ; we had had nothing to drink, and nothing to eat except some chocolates and prunes in our pockets. Our feet were wet through. We immediately changed our stockings and sat down to a hearty meal. My spirits revived at the thought of the difficulties past, and especially at the sight of a glorious full

moon now rising, which was going to save us from a cold and miserable bivouac.

At 10.15 we were on foot again, but, to our great disappointment, found the bergschrund (which I understand is, on this side, generally easy) very high and a mass of ice. It took 2½ hrs. of step-cutting to cross this bergschrund and reach the level part of the Pré de Bar Glacier (12.45 A.M.).

From here we made our way without further difficulty to the Col Ferret, and thence to La Vachey, which we reached at 5.20 A.M. (Italian time), after nearly 22½ hrs. going. Naturally our carriage had not waited for us, so we turned in—gladly as far as I was concerned—and slept till midday.

Thus ended the most difficult expedition in which I have taken part. The conditions, however, were undoubtedly exceptionally severe; and the experience of other parties proves that, given reasonably dry rocks, this pass need be feared by no competent party in fine weather. Indeed Mr. Broome's party took only 4½ hrs. from the bergschrund to the pass, although they found the rocks covered with deep snow.

The Col du Tour Noir.

This Pass is situated between the Aiguille d'Argentière and the Aiguille de la Neuvaz; the Tour Noir standing beyond and to the E. of the Aiguille de la Neuvaz.

The first passage was made on July 22, 1863, by Messrs. H. B. George and R. J. S. Macdonald, accompanied by the famous guides Christian Almer and Melchior Anderegg.

This party had no intention whatever of trying a new and difficult route, and started from Argentière with the object of passing over the Col d'Argentière, which had been traversed for the first time two years before. It seems extraordinary, if one looks at a present-day map, that such a geographical mistake as they made should have occurred. The Col d'Argentière runs roughly E. and W. The Col du Tour Noir runs roughly N. and S. To reach the Col du Tour Noir from the Argentière side, one must take the Glacier des Améthystes, while for the Col d'Argentière it is necessary to go up the Glacier du Tour Noir. Moreover, on the Swiss side, the Col du Tour Noir leads one down on to the Saleinaz Glacier, while the descent from the Col d'Argentière is made by the Glacier de la Neuvaz.

It is clear, however, from Mr. George's admirable account of the expedition that the maps available in 1863 were hope-

lessly inaccurate regarding this region; and he speaks of a 'No Man's Land' then supposed to exist at the junction of the Argentière, Tour and Saleinaz glaciers, claiming that his party had, by their expedition, settled a long debated geographical question.

This strong party left Argentière at 2 A.M., and going up the Argentière Glacier turned to the left up the Glacier des Améthystes, by mistake for the Glacier du Tour Noir.

They reached the Col du Tour Noir after 4¼ hrs. walking, being under the impression that they stood on the Col d'Argentière, and that they were looking down on the Glacier de la Neuvaz instead of the Glacier de Saleinaz.

The two guides examined the wall down which their descent must be made, and they found it very ugly, though they seem to have had no doubt that they were on the right pass. Fortified, no doubt, by the reflection that they could do what others had done, they decided on the descent. This was long, difficult and dangerous, and its successful accomplishment is recognized as one of the greatest feats of step-cutting accomplished even by Christian Almer, one of the greatest mountaineers who ever lived. They took 6½ hrs. to reach the glacier, and becoming involved in a maze of séracs lower down on the Saleinaz Glacier, they were obliged to spend the night on some rocks in a sort of cave formed by the glacier. Here they found fair shelter against the wind and rain, which fell intermittently through the night. At 3.30 next morning they started again, and reached Orsières at 9—31½ hrs. after their departure from Argentière.

I can find no record of other parties having visited this pass during the next twenty-five years; but on August 11, 1888, MM. Albert Barbey and Louis Kurz, with Justin Bessard and Joseph Simond, went to the pass by the easy route up the Glacier des Améthystes for the purpose of an ascent of the Aiguille de la Neuvaz. M. Kurz states that it was on this occasion that M. Barbey formed the extraordinary idea of proposing the Col du Tour Noir as a suitable expedition for a 'Course de Section' of the Diablerets section of the Swiss Alpine Club, but in the opposite direction to that accomplished by Mr. George's party. This suggestion, emanating from such an authoritative source, was duly carried into effect; and on July 26, 1890, 17 members of the section, accompanied by numerous guides and porters, duly arrived at the Cabane d'Orny. It was agreed, however, that only the boldest should attempt the passage of the Col du Tour Noir, and that the rest

should proceed to Argentière by means of the Fenêtre de Saleinaz and the Col du Chardonnet.

The climbing party for the Col du Tour Noir eventually reduced itself to Messrs. H. G. Fordham and Jean Jaccottet, with the guides Justin Bessard and Henri Aulet and a porter, Joseph Bessard. They left the Orny hut at 2 A.M. on July 27, 1890, with fine weather and good snow, and passing the Fenêtre de Saleinaz arrived at the foot of the wall at 5.30. From here they took 6½ hrs. to the col, just the same time as the first party had employed in the descent. They used the rocks as much as possible, but had a great deal of step-cutting, especially on the upper part, where they found hard ice. They reached the col a little to the west of the lowest depression, and descended without difficulty by the Glacier des Améthystes and the Argentière Glacier to Lognan, where they rejoined their friends from the Col du Chardonnet.

The idea of attempting to repeat this expedition was suggested to me by Captain Farrar, and finding it possible to get away for a few days' holiday at Whitsuntide, 1925, I joined my guides Adolf and Alfred Aufdenblatten at Martigny, and, after a preliminary walk, we proceeded straight to the Saleinaz hut as the most convenient starting place. We spent two nights in the hut; but, though the weather was fine, the nights were warm, and the snow conditions much too bad to make the attempt possible. We were obliged, therefore, to return to Orsières without even trying the climb.

In August 1925, with the same men, I resumed the attempt, and again went to the Saleinaz hut from Chamonix over the Col du Chardonnet, and spent a night there. We left the hut in splendid weather, and arrived at the foot of the wall, which we found on this occasion a mass of hard ice. We spent several hours in forcing passages over the bergschrund, trying two or three different places in the hope of finding snow above; but it became apparent that the whole wall was hard ice, some 400 metres in height, and that we should have a slender chance of accomplishing the ascent without a forced bivouac. We reluctantly decided, therefore, to await more favourable conditions, and returned to Chamonix again over the Col du Chardonnet.

In 1926 the snow conditions appeared more favourable, and on August 1 we again went to the Saleinaz hut. We had intended to start at 3.30 next morning, but the custodian forgot to call us, with the result that we eventually started at 5.30, two hours late. We made rapid progress up the Saleinaz

Glacier, which was much less crevassed than in 1925, and reached the foot of the wall at 7.10. Here we halted for breakfast and to put on crampons, and actually started the ascent at 8.5. It was arranged that Alfred should lead, reserving Adolf for the upper part, where we expected to find more ice. We crossed the bergschrund without much difficulty to the right of the largest mass of rocks, which projects from the wall below the col ; then, traversing to the left, got on to these rocks at nine o'clock. We then went straight up the right-hand side of these rocks, which alternated with snow. At 9.40, as we were leaving the rocks to cross a patch of snow, Adolf suddenly discovered that he had lost his ice axe, and the two guides returned to look for it. Eventually they found it at the bottom of the rocks. As a result of this misadventure and of the desire of all the party for further refreshment, I enjoyed a rest of a full hour from 9.40 to 10.40, with a magnificent view over the Saleinaz Glacier and the surrounding amphitheatre of mountains.

At 10.40 we started again, using the rocks as much as possible, until they came to an end, merging in the snow slope. Hence we continued straight up the snow, using a few rocks which jutted out here and there ; and arrived on the summit ridge just above and to the right (west) of the col at 12.50, at about the same place as that reached by the 1890 party. There was more ice near the top, and we had had to cut occasional steps in hard ice lower down, but altogether I estimate that we had not more than perhaps twenty steps in hard ice. At no time, however, were we able to kick steps, so steps had to be cut all the way, except where we were able to use the rocks. Alfred led throughout.

Judging by times, our conditions must have been very favourable. Deducting half an hour, a fair allowance, for the time lost in retrieving Adolf's ice axe, the wall took us $4\frac{1}{4}$ hrs. only, against $6\frac{1}{2}$ hrs. employed by each of the two previous parties. The slope is certainly steep, perhaps 55° on an average.

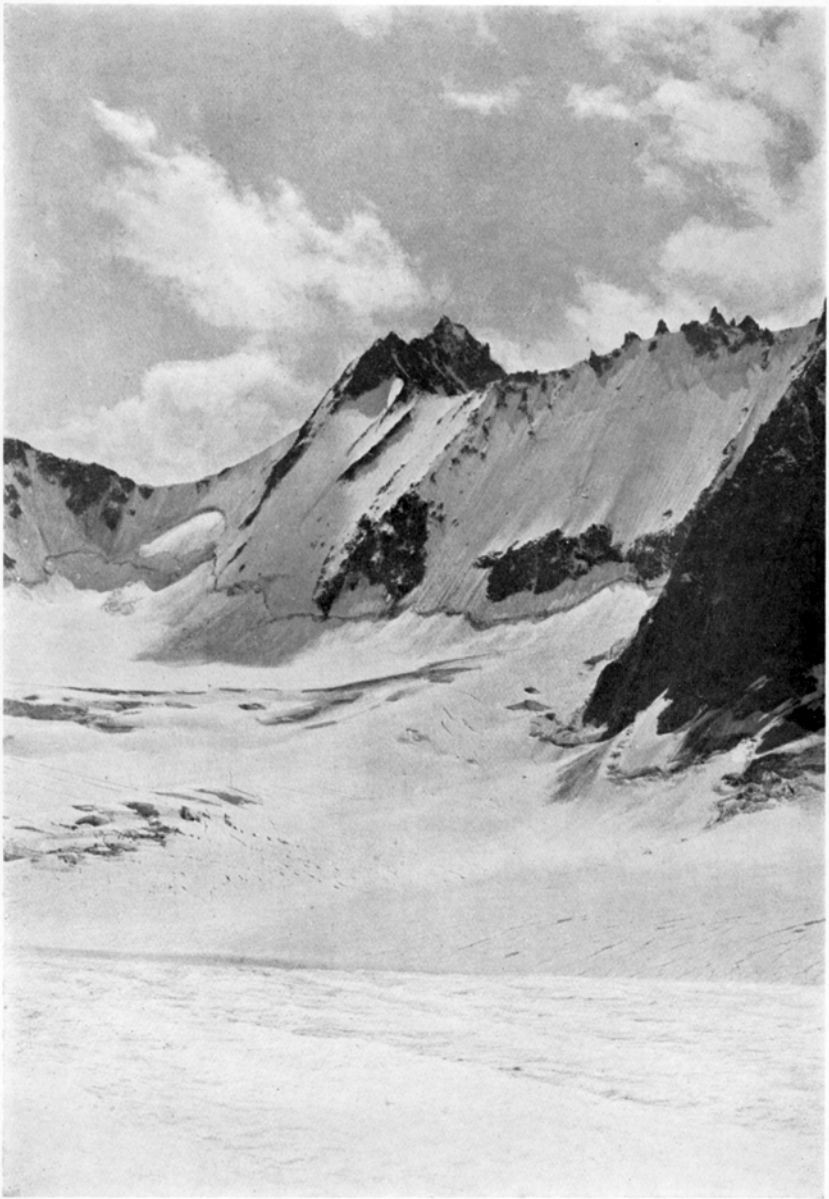
After a halt of rather over an hour we started down at 2 P.M., and finding few crevasses either on the Glacier des Améthystes or the Argentière Glacier, we reached Lognan at 3.45, well content with the day's work. We had taken only $1\frac{3}{4}$ hrs. from the top of the col.

The name Col du Tour Noir is possibly not a very appropriate name for this pass. I see that M. Kurz, in an article in the *Echo* for 1888, proposed the name Col des Améthystes, reserving



Phot. Lorria and Eckenstein Series.

COL DU LION.



Phot. Sydney Spencer.

COL DU TOUR NOIR.

the name Col du Tour Noir for the gap between the Tour Noir and the Aiguille de la Neuvaz, now called the Col Supérieur du Tour Noir. But the older name is now too well established in classical mountaineering literature for any change to be made.

Questions have been raised as to the gender of the word 'Tour' in this district. Mr. George called the pass 'Col de la Tour Noire,' on the ground that the feminine gender signifying a tower seemed more descriptive of the appearance of the peak; and because he seems to have thought that Chamonix people spoke of 'La Tour Noire,' although I can find no other authority for this. The masculine form occurs on the old maps, and also in the village Le Tour, and in Glacier du Tour, Aiguille du Tour, etc. Mr. George complains that he can find no significance in the masculine form; but the word means, amongst other things, a revolving cylindrical box of the kind used in monasteries for the purpose of passing articles in and out; or a round of cheese shaped like an ordinary Stilton. Possibly this sense may account for the origin of the use of the masculine form. In any case, it is used in all the modern maps, and members of the G.H.M. with whom I have discussed the question tell me that the masculine form is undoubtedly correct.

The Col du Lion.

Situated as everybody knows between the Matterhorn and the Tête du Lion, this pass has been crossed altogether on five occasions, four times from Zermatt to Breuil, and once in the reverse direction. The recorded impressions, except my own, appear to be unanimously unfavourable; yet I am unrepentant in considering this expedition, in the condition in which we found it, not only quite justifiable and safe, but also one of the most enjoyable in which I have ever participated.

In August 1923 I was in Zermatt with Adolf and Alfred Aufdenblatten, and discussed with Adolf the possibility of making this passage in comparative comfort and safety. We both agreed that, given fine weather and good snow conditions early in the season, there was no reason why an attempt should not be made.

Whitsun fell late in 1924 and seemed to give us the required opportunity, as I was able to get away from London for the short vacation.

Before I left London Adolf wrote to me that he had examined the couloir from the distance and thought it would go. He

reported that there was no corniche at the top (one of the chief dangers to be feared), though he had not been to the foot of the couloir to see whether there had been stone falls. I therefore decided to make the attempt.

The following previous ascents appear to have been made :

1st. Mr. A. F. Mummery with Alexander Burgener, July 6, 1880, from Zermatt to Breuil.

2nd. Dr. Paul Güssfeldt with Alexander Burgener, July 2–3, 1881, *Breuil* to Zermatt.

This party found ice at the top of the couloir, where Mummery the previous year had found snow; but they used a wooden stake, looping 200 ft. round it to minimize the step-cutting. Lower down the snow was in a better condition; but they were exposed to volleys of stones, which continued intermittently all night, being compelled to spend the night in an insecure position on a projecting rock on the right of the couloir, just where it bends, both having been badly hit. Thence they managed to descend to the Tiefenmatten Glacier next morning.

3rd. Herr Moritz von Kuffner with Alexander Burgener and Aloïs Kalbermatten about 1891.

4th. Mr. W. M. Baker with Aloïs Pollinger and his sons Josef and Heinrich Pollinger on July 16, 1900.[1]

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[1] [The following is an extract from a letter from Mr. Baker, dated March 5, 1926 :

' You ask me for notes of my crossing of the Col du Lion with the three Pollingers on July 16, 1900. As it is a quarter of a century ago, my recollection of it is not very clear, but I will tell you what I can. We started a little before midnight from the Staffel Alp and went up to a flat glacier plateau immediately under the S.W. arête of the Matterhorn—considerably further E. than the part of the Tiefenmatten Gletscher you and I crossed on our way to the Col Tournanche (June 22, 1906). Here we roped at 03.00 and crossed to the foot of the couloir, which we reached at 03.30. Breakfast. Started up couloir, 04.00. Reached col, 09.30. In the lower part of the couloir all parties must go practically the same way [Oliver does not agree and states " on the contrary, if we had found snow instead of ice, we should have certainly made straight for the narrow part of the couloir which we joined afterwards above the rocks and without touching the rocks in the lower part "], but in the last bit below the col, there is a snow wall which Burgener went up. The old man [A. P.] who was leading at the time, kept cutting across to it but would not trust it ; consequently we were driven away to the left and concluded the

Another expedition here deserves mention. On August 7, 1881, the late Mr. J. H. Wicks, with Ambrose Supersax and Theodor Andenmatten, started for the Col du Lion. Arrived at the foot of the couloir, they found stones whizzing down. They therefore took to the rocks of the Tête, which they reached by cutting up an ice wall exposed to falling stones. They then climbed the rocks of the Tête, which were very insecure; and reached the summit ridge about 100 yards to the W.—that is, on the Dent d'Hérens side of the Tête. They employed 7½ hrs. from the foot of the couloir to the top of the Tête.

I arrived in Zermatt in bad weather, but on Whit Monday, June 9, the weather cleared and we decided to start. Spending the night at the Schönbühl hut, we left at 1.30 A.M., and crossing the Z'mutt Glacier, and passing close to the bivouac place for the Z'mutt arête descended to the Tiefenmatten Glacier and reached the foot of the couloir below the bergschrund at 4.20. Here we were delighted to find that not a single stone was to be seen on

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climb over rocks—very bad but not *very* steep—otherwise they would have been impossible.

'We started again at 11.00 and halted at 12.20—I think at the spot where we ceased to go down and turned up towards the Furggenjoch. At any rate, we went on at 12.55 and reached the Furggenjoch at 14.20. Halted till 15.30. Unroped 16.20. Schwarzsee 17.00 and Zermatt 18.15.

'The principal items of "interest" were the rocks which fell on us shortly before the sort of shoulder where the couloir curves and where the old man changed places with Josef. All the top part of the couloir, he cut enormous steps, very far apart, so that I had to turn round and haul Heinrich from one step to another—his legs being short. . . . (Signed) 'W. M. Baker.'

With regard to Mr. Oliver's account (*A.J.* **36,** 372–5), Mr. Baker adds in a note dated March 16, 1927: 'The sun did not shine on the couloir till midday—quite right—we had noticed that from Col Durand and Dent Blanche in 1899. But the stones did *not* fall from the couloir, but from the Tête du Lion, and the sun gets on to that quite early . . . there is not much choice of routes cutting up an ice couloir. As I have said, the couloir is always ice. If it was snow it would avalanche. . . . Coolidge compared it with his Col des Avalanches, which, I believe, has not been repeated.'

Personally, we should prefer to compare the Col du Lion with the Colle del Badile, but the crossing of the latter, if less dangerous, is a much longer expedition.

Whatever may be the attractions of this gloomy and precipitous couloir as a 'climb,' the dangers, which are continuous, do little to warrant the expedition as a justifiable one.—EDITOR.]

the snow below the bergschrund. The sun could not touch the couloir before midday. We therefore felt confident of a safe passage.

While we were putting on our crampons I had a good look at the route. From the place where we stood I could not see all the way to the col, as there is a sharp bend about half-way up the couloir. But I was surprised to find how much broader the couloir really is than it had appeared to be from various points on the surrounding mountains from which I had previously observed it. It takes a shape rather like that of an hour-glass, broad at the top, if we include in the breadth two or three ribs of rock which project from the ice and snow, while the lower part spreads out like a fan to join the slopes below the Matterhorn and Tête du Lion. One does not really enter the couloir until considerably above the bergschrund. The middle section is much narrower, and is reduced to two narrow ribbons of snow or ice, with rock jutting out between them. Still, even here, the couloir is broader than I had believed to be the case.

I had Mummery's account in my mind; and, though it is somewhat difficult to follow, he seems to have started over the bergschrund to the left—that is towards the Matterhorn—making almost straight for the narrow part of the couloir. On this occasion, however, we found the lower part ice; so we decided to start to the right on the Tête du Lion side, and make for some rocks which descend from the Tête du Lion above which it appeared that we should be able to traverse back into the couloir. The bergschrund gave us no trouble and could have been crossed almost anywhere; but above we found bad ice; and, Adolf leading, it took us 2 hrs. to get to the rocks, which we found cold and slabby, but not extraordinarily steep.

After scrambling up two or three steps of these rocks we were fortunate enough to find snow above; we then traversed to the left over snow and easy rocks into the couloir, which we rejoined rather below the narrow part. The success of the expedition now depended upon whether we should find snow or ice. If it were all ice to the top we could never get up in a day. But to our great good fortune, crossing to the Matterhorn side of the couloir and keeping close to the rocks we found here snow, and were able to proceed rapidly without much cutting. By 9 we had rounded the bend in the couloir, and stopped near some rocks on the Matterhorn side of the couloir in full view of the col, which looked quite near—not more than an hour away at most. Here, however, we encountered a disappointment, and events proved that the hardest part of the task

remained to be fulfilled. The upper part of the couloir is divided into two strips of snow or ice divided by a rib of rocks hardly emerging from the ice, quite useless for climbing in existing conditions. We were now in the strip nearest the Matterhorn side, and it was soon evident that this was all hard ice to the top of the pass.

Although Alfred worked hard, we were able to proceed only very slowly. We kept as close as possible to the rocks on our left, but could get no holds on them, so that every step had to be cut in ice. After three-quarters of an hour of very slow progress, I suggested to Adolf that we should bear to the right across the nearest strip of the couloir on the edge of which we were moving, and try a rib of what appeared to be snow, which led upwards on the near side of the above-mentioned rocks running down the middle of the couloir. He agreed, and, taking the lead himself, cut straight across the left strip of the couloir in very hard ice. Arrived on the rib, we found snow as we hoped ; but at the top of it we were again forced to the left into the left strip of the couloir, with nothing but hard ice between us and the col. It was now nearly 11, and the last two hours seemed to have brought us very little nearer our goal. We determined, therefore, to try the rocks to our left on the Matterhorn side. Two or three steps enabled us to cross the strip of ice between us and the rocks, which was here narrower than lower down, and Alfred was sent on ahead. These rocks were difficult, being smooth and slippery, with practically no hold. Alfred advanced the full length of the rope, and it was evident from his movements, and from the time he took, that the place was difficult. I unroped to give him more room ; and when about 100 ft. of rope had run out, he shouted that he was at the top of the rocks. Adolf now tied on and followed, leaving me last ; but the rope between Adolf and me being too short, we spent some uncomfortable and anxious minutes alternately scrambling and attempting to stand on smooth and slippery slabs, without any apparent hold, and so cold that I found great difficulty in keeping any sensation in my fingers. Our crampons here were much in the way. Alfred was unable to get a good enough stand to help us much, and for my part, I felt a sense of relief when we emerged above the rocks on an ice slope not far from the col. From here, a few steps in hard ice, with an occasional hold on a rock, brought us to the top of the pass, right above the middle of the couloir and at the lowest point of the summit ridge.

Here, after consuming a bottle of champagne and various

provisions, we basked in glorious sunshine for two hours. We had not felt a touch of sun before reaching the top. During the whole ascent we had neither seen nor heard a single falling stone.

The descent to Breuil was easy; but a native who asked Adolf what we had done, refused to believe him, and said that we had done the Col Tournanche; adding that only Burgener could do the Col du Lion. Thus is the memory of that great guide still preserved in the Valtournanche.

After this encounter we made our way to the Hotel des Jumeaux—at Giomein—as the larger upper hotel was not yet open—and there received a hearty welcome from Aimé Maquignaz, the genial host, who soon produced some good champagne. Our host, besides being a good raconteur, proved himself a convivial companion, and with his able assistance several bottles of his excellent liquor disappeared during the course of the evening.

Next morning we returned to Zermatt over the Furggenjoch, delighted with the success of our expedition; and the weather turning bad I returned to England without attempting to capture any more scalps. We had had the good fortune to select the only possible day for the climb.

The Jungfraujoch.

This famous pass was, as all the world knows, first crossed, July 21, 1862, by Sir Leslie Stephen, Messrs. H. B. George, A. W. Moore, J. F. Hardy, H. A. Morgan, and R. Livesey with six Oberland guides, headed by Christian Almer; and probably everybody in the room is familiar with Leslie Stephen's classic description of the ascent in the 'Playground of Europe.' They occupied 9 hrs. from the Wengern Alp to the top of the pass.

Undoubtedly the passage has been made many times since; and I have made no attempt to collect a complete record of expeditions. It seems clear, however, that, in the days of the pioneers, passages were more frequent than they have been in recent years.

As far as the plateau between the second and third ice falls, the route from the Wengern side is the same as that for the N. face of the Jungfrau by the Silberlücke; and from this plateau there are two alternative routes which may be adopted, according to the snow conditions. The route more generally followed leads straight up to the pass through the séracs of the Kühlauenen Glacier; the other route is up a steep wall to the

right, much nearer to the Jungfrau. The second route is steeper, but comparatively free from séracs and crevasses.

The first party followed the left-hand route, and a ladder was used to surmount the worst of the crevasses.

The second passage appears to have been made on August 8, 1863, by Messrs. Jacomb and Rennison with the two Michels, Christian Bohren and Peter Bernet, all of Grindelwald. On August 16, 1864, Messrs. Hornby and Philpot with Christian Almer, Christian Lauener, and J. Bischof, using ladders, *descended* from the Jungfraujoch on the N. side, a feat which was repeated in 1873 by Mr. Coolidge, Miss Brevoort and the dog Tschingel, led again by Christian Almer.

Other passages recorded in the ALPINE JOURNAL are those of Herr Andreas Fischer with Johann Kaufmann the younger on July 8, 1894, and Mr. F. W. Balston with Peter Inäbnit and Fritz Steuri on July 31, 1908.

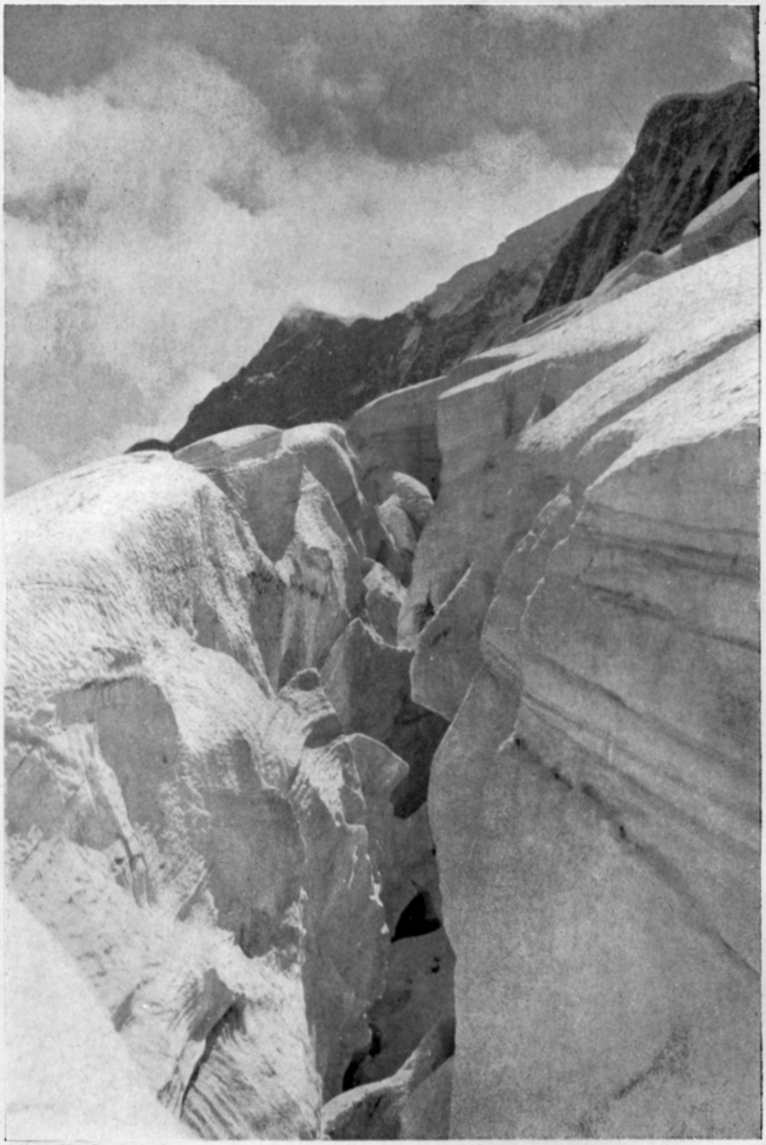
Herr Fischer's party found considerable difficulties on their ascent, and stated that the pass had not been reached on that side for several years.

Each of these parties took the left-hand route, Herr Fischer's party occupying 8 hrs., and Mr. Balston's party 6 hrs. over the ascent.

In Dr. Dübi's 'Climbers' Guide to the Bernese Oberland,' mention is made of an ascent by him in 1878, which occupied 7½ hrs. from the Guggi Hut; and of another ascent by MM. Louis Kurz and Victor Attinger, which took only 3¾ hrs. The last seems to be the fastest time recorded; and it appears probable the ascents were made in each case by the left-hand route. Captain Farrar informs me that the pass was crossed in 1872 by Mr. F. J. Church with Joh. v. Bergen, and doubtless a second man, as mentioned in von Bergen's 'Führerbuch.' No details appear to have been published.

Evidently the time required for an expedition of this character and the difficulties met with must vary enormously in different seasons; but it is probable, on the whole, that one will have an easier passage early in the season, before the crevasses have opened to the widest extent and the snow on the steep slopes has turned to ice. It was with this idea that, in May 1925, after our failure on the Col du Tour Noir, we went to Grindelwald to make the attempt.

We left the Guggi Hut in magnificent weather at 4 A.M.; and descending the villainous couloir that leads down to the Guggi Glacier, which was, on this occasion, much encumbered with snow, took the ordinary route for the N. face of the



Phot. F. S. Smythe.

A CREVASSE BELOW THE BERGLI.

Jungfrau, threading our way through the middle ice-fall without meeting any particular difficulties, to reach the nearly level plateau between the upper and middle ice-falls at 7.15. From here we knew there were two alternative routes. Previous examination from the hut had induced us to think that the left-hand route was feasible; but, from where we stood, we could not see right up to the top; while it was manifest that the wall to the right must be practicable, though the route would be steeper and longer. We therefore decided wisely, as it afterwards appeared, to take the right-hand route, and make certain of our climb.

We started at 7.45, Alfred leading, and at first made rapid progress, being actually able to kick steps in fairly good snow. When we were rather more than half-way up the wall, however, we encountered hard ice and Adolf relieved Alfred in the lead. We had 2½ hrs. of hard step-cutting before we emerged at 10.50 on the gentle slopes above the wall. The last piece, which included working round a huge overhanging bulge of ice, was quite sensational. As we were passing the steepest part of the ascent, an Italian aeroplane passed directly over us; and I remember the difficulty of concentrating on standing firmly in the steps while, at the same time, watching the progress of the adventurous aeronauts, who must have crossed very close to the top of the pass. Above the wall we found bad snow, and, sinking in deeply at every step, we emerged on the summit ridge just to the west of the Pic Mathilde, which we traversed to the col, where we arrived at twelve o'clock.

We had estimated 5 hrs. for the ascent, and had actually taken 8 hrs.; but we had not reckoned on finding so much ice. From above the ice wall we looked down on the alternative left-hand route, which appeared to be barred by an enormous crevasse running right across it. It would seem that this crevasse is often present. The first party used a ladder to pass it, as also did Messrs. Hornby and Philpott on their descent in 1864.

The first ascent by the wall seems to have been that of Messrs. Jacomb and Rennison in 1863, mentioned above; but their account unfortunately does not give the time occupied in the ascent. I have not come across any other account of this route, although I fancy it must have been followed by other parties.

I desire to record my grateful thanks to Captain Farrar, Mr. Spencer, and Captain Finch for kindly providing photographs and lantern slides for this paper.