

judgment in selecting a line must have meant instant disaster. But these three took the risk and safely brought the porters down.

So if Everest, as Mallory said prophetically in his last dispatch, 'shows no mercy,' at any rate it draws out chivalry from those who battle with her. And if we sum up all that men and women have felt the whole world over on hearing of the fight with Mt. Everest, he would be foolish indeed who said that those lives have been lost in vain.

TEN WEEKS IN THE SOUTHERN ALPS OF NEW ZEALAND.

By H. E. L. PORTER.

THE best investment I ever made was the purchase of a complete set of the ALPINE JOURNAL. I know no more fascinating occupation for the long winter evenings than the study of it from end to end. It was due to such a course of reading, reinforced by excursions into the writings of Harper, Mannering, Ross, and Miss Du Faur, that what had been for years a hazy aspiration to visit the Southern Alps some time was transformed into a definite resolution to do so at the earliest possible moment. Even from photographs one can realise the amazing beauty of the Tasman glacier and its flanking mountains, the giant bulk of Aorangi, the icy chastity of Mt. Tasman, the superb symmetry of Elie de Beaumont and its satellites, and the buttressed strength of Malte Brun. The appetite for novelty is also whetted by the Alice-in-Wonderland fauna and flora—mysterious bird-names such as kiwi, weka and kea, and speculations as to the nature of such plants as the vegetable-sheep and the Spaniard.

Before starting out I had made certain of a companion in Hugh Chambers, an enthusiastic New Zealand member of the Club, who unites an exhaustive knowledge of all that has been achieved there in the past with a keen eye for future possibilities. With him to look after me, all the difficulties that beset a stranger in a strange land vanished: no days were wasted or time lost through ignorance of where to go and what to do; but unluckily the weather seldom relented in the five weeks we were together.

After provisioning ourselves on a lavish scale in Christchurch, we opened our campaign on December 15 up the Rangitata,

one of several big rivers which deploy on to the Canterbury plains through narrow gorges, above which they expand into wide flats, where the old glacial bed, to judge by the contours, is buried under hundreds of feet of shingle. The head of the Rangitata leads over to the Godley glacier, and has hardly been visited since Dennistoun did his exploration there. Our objective was a range some distance below the head, named after its highest and most prominent peak, the Two Thumbs: this double-headed peak looks most attractive from the express as one travels south, and would certainly have been climbed long ago if it had been a little more accessible. Chambers had had an eye on it for some time, and had actually had a shot at it the year before with Clive Barker, a novice; after much hard work they had been robbed of success, largely by the weather. They were both keen to try again, and as for me, who had never even seen a virgin peak above the snow-line, the prospect made my mouth water.

We left Barker's home at Woodbury in a hired car, which carried us and our stores some forty miles up the valley over a villainous road to Ben Macleod, a station owned by a cousin of Barker's, who fed and housed us, lent us horses and harness and cart, and generally smoothed our way for the task of getting into position to attack the mountain, a task more laborious than the actual ascent. As it was a busy time of year with the sheep musterers, no one was available to look after the horses while we were climbing: we concentrated therefore first on another virgin peak, named Alma, which was easier to get at. The spring-cart was loaded up; Barker drove, I acted as balancer, and Chambers rode behind. After eight miles we looked in for morning tea at Mesopotamia, the next and last station up the valley, once owned by Samuel Butler: it was the mystery of the unexplored valley and its remote, impassable gorges that inspired the scenery of the opening chapters of 'Erewhon.' After tea and a chat with the manager, we bumped and jolted over shingle and through numerous creeks for another eight miles to a musterers' hut at the foot of Alma Creek. Having corralled the horses and shouldered heavy swags, we ascended the creek without undue difficulty for three hours to the highest patch of ribbonwood, and set up our little green tent. The night was cold, and one blanket apiece served only to emphasise the fact. The next day was windy and bleak, but good enough for the ascent. The climb involved nothing but simple snow and rock, and at 9.15 I stood on my first untrodden summit. Imagine my chagrin when we spotted, neatly piled on the exact

top, the bones of a defunct rabbit ! Anticipated by a rabbit ! —never : it had clearly been carried there by a bird of prey ; anyhow it was soon decently interred beneath a mighty cairn, and happily forgotten. . We saw nothing, and the cold speedily drove us down. The chief interest of the day was the discovery of a considerable error in the map : Alma proved to be on the main divide of the Two Thumb range, whereas the map placed it a mile off on a subsidiary spur. We were also intrigued by finding a huge square hole in the bed of the valley below the snow-line ; it was quite fresh, and the earth was splashed several feet away equally all round, so whatever made it must have come from directly above or beneath. We got back to the bivouac in just over eight hours from the start, and went on, after a meal, to the hut, rain setting in for the night shortly after. It cleared by 10 A.M., and we set to work to catch and harness the horses—that is to say, Chambers and I offered advice, while Barker, being young and competent, did the work. Eventually we got the charger into the trap, and the trap-horse under the riding-saddle : the first animal was clearly going to resent the impertinence, but imminent disaster was averted by prompt action. The next day, with the assistance of Barker's cousin, we made an abortive attempt to force horses up Black Birch Creek, which leads out of the main valley in the direction of the Two Thumbs, and were driven back to our base, depressed by our failure and a furious nor'wester.

On December 21 we returned to the charge with different tactics. Our host had a nimble and sure-footed pony, whose life he was willing to risk in such a good cause : our requirements, reduced to the uttermost, were packed into two sacks, and, with the pony carrying them, we set off in the teeth of the fierce gale, against which progress could be made only by leaning at a ridiculous angle, to climb the interminable tussock-clad slopes of Mt. Brabazon (5879 ft.). Luckily, as we mounted, the wind decreased. Near the top we saw some fine specimens of the vegetable-sheep, a cushion plant of the Daisy family which, seen at a distance of some yards and in a dim light, might easily be mistaken for a resting ewe. On the far side we had first to traverse and then to descend a long succession of screes of all consistencies and sizes. Barker was, of course, deputed to lead the pony, and by the combination of his agility and judgment with its sure feet, aided to some extent by Chambers and me, who shouldered the sacks for the last 1000 ft. of straight descent, the whole outfit reached the bed of Black Birch Creek above the impasse and a couple of miles below

the musterers' hut where we were to spend the night. It was not much of a place, but we had brought with us a big tent-fly to cover the roofless portion of our palace, and we had a fine struggle with the playful wind before we got it in position. There was plenty of firewood, but, as so often happens, nothing to cut it with, until the deficiency was made good by our versatile steed. In front of the hut, when we arrived, was a luxuriant growth of long snow-grass: the pony was small but ravenous, and within an hour or two had turned the jungle into a lawn, reposing on the centre of which lay the missing chopper. With the aid of some moth-eaten blankets we had quite a warm sleep that night, somewhat interrupted by our horse, who would sneeze the quarter-hours throughout the night. Off at 5.20 next morning, we ascended a lateral creek for some miles of fair going, and then stumbled over a vast moraine, very reminiscent of the Dauphiné. At the head of this we paused to select our route. We could either ascend easy snow to the col between the two peaks, and attack what were known to be steep and probably difficult rocks up to the Big Thumb, or make nearly certain of the big peak by working away to the left and mounting the S.E. flank of the mountain by snow and rocks on to the main S. arête. The first route, if successful, would give us the Little Thumb as well, for Chambers had been some way up it from the col last year and knew it would go; but as the party was untrained, and its cohesion doubtful, we took the easier alternative. The ascent, without providing any thrills, was interesting all the way: unlike that of Alma, it required some knowledge of snowcraft and route-finding. We arrived on the summit (8338 ft.) hopeful of seeing the giants to the west, but the nor'wester was still discharging its venom on the main divide, robbing us of a unique view. We built a cairn and prospected a bit on the ridge leading to the col, and then returned in our tracks. We got back to the hut about 6 P.M.; to our relief the pony was still visible and still eating, and the fly was still defying the wind. Next day we returned to Ben Macleod, having completed our programme, watching without disgust new snow enveloping the hills we had just left. Out of the eight days we spent in the valley only two were at all fit for climbing; on each occasion we were fortunate enough to be in position to attack on the right day.

Well satisfied with the auspicious opening of our season, we transferred ourselves to the Hermitage, a Chamonix, Zermatt, and Grindelwald all rolled into one house. At the end of the year it is terribly crowded, and my first impressions were not

favourable. But, once the big rush was over, I found it a delightful spot, and enjoyed every minute of my long stay there. Good food, good service, and unlimited hot water never failed; while all concerned in the management took keen interest in climbers and their plans, and paid unwearying attention to their comfort and safety. We escaped after one wet and noisy day to the quiet of the Malte Brun hut. I shall not easily forget my first walk up the Tasman glacier at dawn on a fine still morning: it is all the more wonderful by contrast with the approach from the Hermitage up the Tasman flat and lateral moraine, which takes four hours, and is not very interesting after the first novelty has worn off. The next day Chambers and I ascended Mt. Darwin, a fine peak of 9715 ft. separating the Darwin glacier from the upper reaches of the Tasman, where it makes its great bend to the east. It bears a remarkable resemblance to a recumbent lion. The ridge is gained easily by the glacier slopes on its N. flank, and is followed to the summit. Our day on it was not wholly successful: soon after leaving the hut, Barker sat on his ice-axe, spiked himself and had to retire; Chambers felt thoroughly ill all day, and only persevered for my sake; there was a strong wind and much new snow. We got to the second peak some fifty feet below the highest point and half an hour from it, and then retreated. That was on December 31. The next eighteen days were a complete blank. The first four we spent stormbound in the Malte Brun hut, consoling ourselves with experiments in cookery, provisions being plentiful and various, and the reflection that we were better off there than in a crowded hotel. A few days later we were again detained for three days in the Hooker hut: a pocket edition of *Hamlet* was our only literature, and we amused ourselves by finding topical allusions in it. Some were far-fetched, but one was distinctly happy: 'I am but mad north-north-west,' says Hamlet. 'When the wind is southerly, I know a hawk from a handsaw.' We were also distinctly envious of Mercury 'new-lighted on a heaven-kissing hill.' One wet day in desperation we volunteered to help at road-mending, where the swollen creeks had washed away the track. In idea the day was to be a picnic; in actual fact it was a long and strenuous struggle to get various vehicles ranging from private cars to a 4-ton lorry to their destination—a struggle in which the total available man-power and engine-power were barely sufficient to secure an incomplete victory by midnight.

At last, on January 17, we started once more up the Tasman. On the 18th we found the vicinity of the Malte Brun hut swathed in a blanket of new snow several inches deep. Peaks seemed out of the question for a day or two, and we decided to spend the 19th playing about on the Malte Brun glacier. An early start being pointless for this purpose, we got off at 6.30 with provision for one meal. At 1.15 we were sitting, rather to our own surprise, some ten feet above the top of the mountain, the just visible cairn being buried under that depth of snow. At intervals as we sped up the glacier, crossing a lot of fresh avalanche stuff, we agreed it would be folly to persevere too long; but when we got in full sight of the N.W. ridge, which is the usual line of ascent, and saw that it was miraculously black (or rather red, the rock being a warm red sandstone), no more was said and on we went. The first ascent of this route is vividly narrated in Miss Du Faur's book, and I will only add a few general impressions. Below the ridge there is no real difficulty, provided you know the best line to take. The ridge itself is wholly delightful, being splendidly firm till the final rise; and the famous 70-ft. knife-edge is as sensational a place as I know. It is often taken straddlewise—a method which looks and probably is painful; but it can be crossed swiftly and pleasurably with hands on top and toes skimming from nick to nick three feet below. In technical difficulty, however, it is not in the same class as the acrobatic routes on the Chamonix aiguilles. We would have liked to have made the first guideless traverse of the mountain, but it was late and Chambers had not been on the other route; so, after munching an iron ration of a couple of figs and gingernuts, we returned as we came, getting in with the help of a glorious full moon just as night came on at 8.45.

This expedition gave the *coup de grâce* to one of Chambers's ankles, which he had ricked some days before. While he rested it, Barker and I set out at 4.30 on the 21st to have a look at Mt. Haeckel (9649 ft.). This mountain had been ascended only twice, in 1912 by the late Captain Head with Clarke and Murphy, and in 1914 by Mr. Frind with Conrad Kain. Both these parties had gone, by slightly different routes, to the col between Haeckel and Hamilton, and thence climbed the S.W. ridge to the top: both had commented severely on the extreme rottenness of the rock, and since then the ascent had been left alone. I had looked at it with some interest from the ridge of Darwin, and now had another good view of it, as we walked up the level Darwin glacier, the head



Photo : D. Theomin

of which it blocks. It seemed to me that a perfectly safe and probably shorter route could be made if one could get on to the Upper Darwin glacier above the ice-fall, which from here looked quite impossible, and after crossing it ascend a large square snowfield, connecting with the N. bank of the glacier; from the top of this we could certainly mount to the ridge at a conspicuous patch of black rocks, well above the steep and serrated part of the ridge with the evil reputation.

The first requisite was a sound route on to the upper glacier above the fall. Between it and the Bonney glacier a steepish 500-ft. snow-couloir runs up into the spurs of Hamilton: there were stones at the bottom of it, but not enough to deter one from using it in the early morning. After I had kicked and cut up it, an easy traverse on scree and snow took us from its head exactly where we wanted to be, and before very long we had reached a long rib of rock, which divides the upper glacier into approximately equal halves. Having breakfasted here from 7.30 to 8, we continued our traverse across the glacier, upwards and to the left, till we reached the schrund which guarded the square snowfield mentioned above. Its one weak point speedily proved fatal to it, but the snow above had its revenge by turning into ice and forcing me to ply the axe for ninety minutes on end. The black patch on the ridge was a dark and rotten shale, whose thin spiky laminae, turned up on edge, cut like a knife, if handled carelessly. This stratum reappears in other parts of the range, and I fancy a geologist who traced its ramifications and measured its angles might get a good insight into the nature of the folding hereabouts. The section of the ridge above the black patch was quite reasonably sound, and caused no anxiety at all. By 10.40 we were on the top. The day was unusually calm, and a superb panorama spread out on every side. Away in the east the Two Thumbs greeted us familiarly; in the middle distance that fine but rather inaccessible peak, d'Archiac, loomed tremendous; while an entrancing sea of unclimbed and almost uncharted peaks chained our eyes to the north. The descent by the same route went without a hitch: we only deviated from it at the breakfast-rocks; while we boiled the billy for tea, I was amazed to see a clear way through the ice-fall on to the level glacier below, one immense crevasse being completely choked by old avalanche snow; this discovery eliminated the long couloir, which might have been unpleasant in the afternoon. We were back at 5.10, so early that Chambers thought we must have been up Hamilton, its popular right-hand neighbour, full directions for which he

had given us, in case we did not like the look of Haeckel on closer acquaintance.

On the way down the glacier next day we were puzzled to account for two well-scored parallel ruts, about eight feet apart, running evenly in the direction of the flow, heedless of crevasses, for quite a long distance, for all the world as if the glacier-god had been driving his dragon-chariot on a tour of inspection of his icy domains.

Barker left me a few days later after a joyous traverse of Mt. Montgomery at the head of the Müller glacier. My next expedition was with the chief guide, Frank Milne, with whom I was to have several delightful and strenuous days later. Our aim was to conquer the virgin Unicorn (8394 ft.) on the Banks Range, which diverges from the main divide at Mt. Beatrice towards the S.W. Unicorn can only be reached from this side over the corpse of the two-headed Dilemma, the first peak of the range, climbed by Kain and Fyfe in 1914. On its W. side Dilemma breaks away in slabs of formidable appearance but unknown difficulty, and these were likely to be the crux of the venture. We left the Hooker hut at 3.20 on the 28th, and struck up almost at once on the rock-rib next to that used in the ascent of the Copland Pass. Where this merged into a steep wall, we sidled along a line of weakness where two strata met, and by a short descent reached ice. On this we traversed the flank of Raureka and in due course found ourselves on the divide within a few minutes of Beatrice. This interesting route, devised for the occasion by Milne, is an ingenious improvement on that previously taken, which follows the stony wilderness of the Hooker moraines for an hour or two before striking up. The two peaks of Dilemma were soon vanquished, though we lost half an hour by trying to turn a big gendarme between the horns, instead of climbing a crack straight up it. At 9.45 we were looking down the 400 ft. of slabs, which were the only remaining obstacle between us and our goal. A discerning eye could see at a glance that their uncompromising appearance was mainly camouflage—anyhow, in the upper 250 ft.; the lower part was steeper and barely visible from the top. A series of little felspar ribbons, projecting an inch or two from the greywacke, gave sufficient foothold, and occasional shallow cracks were helpful; half an hour took us to the col, and twenty minutes later we stood on the untrodden head of the Unicorn. A horn was speedily added to the fabulous monster in the only available spot, a niche a foot or so below the razor-back top. From our eyrie

the slabs of Dilemma looked rather like those rocks in the Odyssey where Scylla dwelt: 'No mortal man may scale the cliff or set foot thereon, not though he had twenty hands and feet. For the rock is smooth and sheer, as it were polished.' Foolishly I had chosen to fill my pockets with delicacies, when we left our sacks at breakfast, to the exclusion of my camera, and so missed an impressive photograph. Returning at leisure, we paused to study the W. face of Mt. Cook, for which purpose Dilemma is an ideal view-point. The whole expedition took 12½ hours, the homeward journey being accelerated by some long glissades.

On February 3, I traversed Mt. Sealy by the E. arête and S.W. face in company with Professor and Mrs. Algie, a pair so delightfully enthusiastic about mountains that you might almost say that their avocation is professing Law at Auckland University and their profession scaling the Southern Alps at the Hermitage. They had very kindly consented to my joining their party on their next attempt on Mt. Cook, and while the latter was discarding some of its superfluous snow, we took the opportunity of a fine day to see how we got on together on a rope on a fairly easy mountain. The expedition was a complete success: the E. arête is a jolly rock-ridge with an awe-inspiring precipice on the S. side, looking down into a branch of the Dobson valley; and the S.W. face provides some practice in step-cutting downhill. On the morrow we three were escorted by Jim Stout to the Ball hut, where he kept us in fits of laughter by his flow of anecdote on episodes in his climbing career: Milne and Williams went right through to stamp out a track up the Linda. The next night we had all forgathered in the Haast hut. We started at 1.20 on the 6th on two ropes, Milne being responsible for the Professor and me, while Williams and Stout came behind with Mrs. Algie. By 4, when the lanterns were put out, we were far up the Linda glacier, and reached the foot of the summit rocks at 6. At 7.15 we paused for a meal on the highest rock, and gazed with some awe at the 800 ft. of ice-cap above us. Up the first 300 ft. of this Milne cut regular soup-plates, and then traversed under the schrund to the Hooker arête, which lies at a gentler angle and saves much labour. From 10.45 to 11.5 we sat in a row on the level edge of the summit, eating the inevitable pineapple and drinking in the view of the world beneath us. The hut was regained at 5 without any incident worth recording, our time of 15 hours 40 minutes being the third fastest on this route,

The Linda route has not the best of reputations, and a short critique of the various alternatives to the highest point might be useful. A clear description of the routes themselves is given by Mr. Newton in 'A.J.' xxix. 12, 13, with magnificent illustrations.

(1) The Linda route. Since its first completion by Messrs. Chambers and Wright with Murphy and Clarke in 1912, sixteen parties have been to the top of the mountain : the Linda route has been used by these ten times on the ascent and no less than fifteen times on the descent.

(2) The N.E. Ridge, Zurbriggen's route, has not been followed to the end since 1906, its extra length and difficulty more than counteracting its advantage in point of safety.

(3) Earle's route by the W. arête from the Hooker side, said to be the easiest and certainly the shortest way to the summit, suffers from several drawbacks. The Hooker glacier is inconceivably broken, and generally impassable by February, the usual month for the ascent : in this case the fall has to be circumvented by the Pudding Rock, which is by no means child's play : carrying 40 to 50 lb. swags up it for a comfortless bivouac on an unsheltered slab, exposed to the first arrows of an advancing nor'wester, is hardly the best preparation for a tussle with a really formidable mountain. Things will be better when Milne gets the promised shelter-bivouac erected, a serious undertaking, but one which with his very willing staff of guides, his own energy, and the encouragement of Mr. Wigley may be put through any time. But apart from that, the steep rocks, by which the ascent is made, though of excellent quality when free from ice, face the full fury of the oceanic storms, and can only be tackled in an exceptional season. This year up to the middle of February they were one mass of repulsive, bulging ice in the higher sections.

(4) Fyfe's couloir to Green's saddle is a very evil place, one of those stone-raked abominations which make a prudent man sweat to look at, even in mid-winter.

(5) The Grand Traverse along all three peaks (in appearance quite like the Meije on a large scale) can in the nature of things be but seldom accomplished. It requires a leader who can cut steps quickly and untiringly, and the absolute certainty of a windless day. It looks worthy of its reputation as one of the greatest ice-climbs of the world.

There are, I believe, still two routes to be achieved, one to the central and the other to the low peak : but neither of these will supply the desideratum, a shorter and safer route to the



Photo: D. Theomin

MAIN DIVIDE FROM MT. HAAST TO MT. HAIDINGER

Below part of Grand Plateau with Glacier. Dome on its right. Hochstetter Icefall below.

highest point. Therefore, as men will aspire to stand on Aorangi, and as the pony-track to the top marked on the tourist-map exists only in the imagination of the maker thereof, the Linda route gives in general the best hope of success. Even this was only feasible on three occasions last season : once in early December, when there was no one to use the opportunity ; again, probably on January 25 (on that night the Algies were in the Haast hut, ready to climb on the morrow, when at 11.30 P.M. a nor'wester arose out of the blue and drove them home dripping and disgusted) ; and thirdly on February 6 and 7. A strong party of guides on a joy-climb were driven back at the end of the month by a gale when above the summit rocks. The strength of the defence may be gauged from some statistics : forty-eight persons have reached the top in the twenty-five ascents made up to date, the first being in 1894 ; of the forty-eight those who succeeded at their first attempt can be counted almost on the fingers of one hand.

As to the route itself, given a windless day after not less than five days of sunshine, freedom from impending séracs above Silberhorn corner, a carefully trodden-out track for the hours of darkness, and a leader who can construct a foolproof staircase on the arête above the summit rocks (all which conditions were fulfilled on February 6), the climb is a wholly enjoyable adventure, especially when one is in that state of exuberant health which I suppose Tyndall means to describe in his portentous remark : ' Every fibre seemed a repository of latent joy, which the slightest stimulus sufficed to bring into conscious action.' I was almost calling it a picnic, but picnic is too light a word : there is an indescribable something about Mt. Cook which encourages happiness, but forbids hilarity and frowns on bravado. It is merely silly to shave on the top of the Napes Needle, but to balance an ice-axe on your nose on Mt. Cook is offensive as well.

If I am asked to compare it with ice-climbs in the Swiss Alps, the nearest parallels I can suggest out of my own experience are the Guggi route up the Jungfrau and the Mont Maudit route up Mont Blanc. In each case the longest part of the day is the glacier work in the opening stages, which must be done by lantern light, and where mistakes in route-finding will probably be fatal to success ; in each there follows a rock-passage of similar length and calibre : and except for the last few feet of the Jungfrau, each finishes with another episode on glacier, which may or may not be snow-covered. It is, of course, difficult to balance the respective merits of climbs in

one country done with crampons and without guides against similar climbs in another country done with guides and without crampons : but my impression, for what it is worth, is that under equal conditions the Guggi route is distinctly the toughest proposition in the first stage and the easiest in the last, and that the ice-cap of Mt. Cook takes more conquering than the Mur de la Côte, apart from the effect that the extra 3500 ft. of the latter above sea-level have on the average lungs. In this connexion I may add that we felt no lack of oxygen on the top, and arrived perfectly fresh at the hut, Mrs. Algie's step in particular being as elastic at the end of the day as at the beginning.

Some days later Milne proposed an attempt on the uncompleted traverse of Mt. Blackburn, familiarly, but rather unkindly, known as Rotten Tommy (7835 ft.), first ascended in 1903, when the party spent ten hours on the ascent and a night out. We were to make the fifth ascent of the usual S.W. arête, and descend by the untouched N. ridge. Leaving the hotel on horseback in doubtful weather amid doleful prophecies, this not being one of Milne's lucky mountains, we forded the Tasman and Murchison, and so reached the tiny musterers' hut at the foot of Gorilla creek. As the evening wore on, we were distressed to see obvious signs of an impending nor'wester, which developed further during the night. As far as anyone can do so, Milne knows his weather ; moreover, he had his defeats to avenge. He thought it good enough for a start, so at 5.40 we set out in a drizzle, and going at a great pace without rope or halt, except for five minutes where we struck the ridge at a col, reached the summit, a climb of more than 5500 ft. in $3\frac{1}{2}$ hours. Up to the ridge the going is on steep grass and scree : the ridge itself, considered by some to be technically harder than the better known N.W. ridge of Malte Brun, has a number of very interesting pitches, sandwiched between slopes of debris. The rain ceased near the top, and during breakfast we decided that the outlook was not too bad for the traverse. Almost at once we were forced off the ridge down to the west by a precipitous drop, and had much difficulty in finding an outlet into the couloir descending from its foot. The solution, when found, was a steep and rotten wall, down which we moved obliquely under an awkward bulge, and which with badly numbed fingers proved decidedly arduous. The ridge was soon regained and followed for a time to another sheer drop. Again we took to the W. face, but this time the exit was simpler, and we were soon careering down the vast screes which are a conspicuous feature in the view of the mountain from the Hermitage. Lower

down, the scree-chute degenerated into a waterfall, and we had to take to the scrub. Before we got back into Gorilla creek, we had been punctured by innumerable Spaniards. This peculiar and fearsome plant, well-named *Aciphylla*, is an Umbellifer with long, sword-like radical leaves, forming a veritable armoury of spikes; its flower-stalks are similarly armed with spinous bracts. Since there are no native grazing animals in the country, these elaborate precautions must be due either to inborn vindictiveness, or designed as a protection against drought. The hut was regained at 1.15. Fathers Murchison and Tasman were in an angrier mood for our return, in token of which I carried two bootfuls of muddy water back to the hotel: at times, as the swollen stream swirled round my horse's flanks I expected a more complete baptism, but my trusty steed declined to be capsized.

On Sunday the 17th, with Milne and Williams, I left the Müller hut at 4.45 to climb Mt. Burns (8984 ft.) in dull, quiet weather with easterly clouds drifting uneasily along the icy sides of Mt. Sefton. Burns is on the divide, immediately north of Fyfe's Pass at the head of the Müller glacier, and was first ascended by Mr. Turner and Peter Graham in 1914. Between Burns and the next peak, Vampire, there is a slight depression in the ridge, called Bernard Pass, once crossed by Captain Head and Mr. Earle. We struck up below this pass on snow-covered glacier, and for some time made fast and easy progress. When the time came to rope up, the omens of bad weather were getting momentarily more difficult to ignore. Sefton and all beyond was already in grey mist, and the surrounding gloom was visibly waxing. I expected and even suggested retreat, but Milne to my secret delight refused to give in yet. We proceeded, and got to within 300 ft. of the ridge before real difficulty confronted us at a big schrund. Bernard Pass was now well to our right and probably accessible by an upward traverse, mostly on sloping ledges. But we decided in preference to make for the ridge more or less straight above us. The schrund was vanquished by a delicate manœuvre, but the ice above was so steep, that to save time and labour we took to the rocks on our left, which looked to us all fairly simple: they proved, however, quite the reverse, providing one of those rare instances where an experienced judgment is hopelessly deceived even at close quarters. The holds were masked with new snow more than appeared from below, and also sloped adversely: luckily there were good belays here and there, which served to guard Milne, as,

insecurely poised, he cleared out holds with lifeless fingers. We were frankly relieved to reach the ridge without a slip, and resolved at once and unanimously that, whatever happened, our way down lay elsewhere. At 10.20 we halted on the top for a snack of food, viewing with displeasure a sort of triple mushroom cloud reposing on Mt. Cook in the few glimpses we had of it when the mists parted. The alternatives now open to us were either to return along the ridge to Bernard Pass, traverse Vampire and try to get down the side-glacier short of Mt. Bannie; or to go down to the west into the Landsborough valley by the untrodden Spence glacier. The first course was rejected, chiefly because it led us right into the thick of the weather: the second was chosen, because it would take us into new country, and give us a new traverse, and also because the west so far was still all clear and we could see from our lofty perch a sure way off into the valley, though a very long one. The extremely unpleasant predicament we could be in, if the clouds prevented us from finding Fyfe's Pass to return by, did present itself to our imaginations, but was not considered a vital objection to the scheme. The upper glacier presented no obstacle and one feature of interest. Clinging to a vertical wall of ice 20 ft. high I saw a Mt. Cook flea, an insect about an inch long with powerful nippers, which lives as a rule among shingle by the side of creeks: what freak of fate had lifted it to this eminence, I cannot imagine. Further down the glacier we tried to abridge our original plan, and contour round into the head of the Landsborough, only to find that we were cut off by impossible drops, where the ice hung over steep rock-cliffs. We tried in various places to find a weak point, but again and again were driven back and had to reascend. It looked as if we would have to go back to our first design, which involved yet more ascent, the traverse of a lot of broken ice, and certain benightment, an event much to be dreaded on the wrong side of the divide. As a last hope we resolved to try to descend a long series of slabs which we could see in profile further down the valley: where they steepened at the bottom, it looked possible to get into a shallow avalanche-chute with a fan of debris at its foot. The prospect of saving a couple of hours at this stage was well worth the very slight risk of something breaking away during the five minutes we would be exposed to it. The slabs, when we reached them, were pretty smooth, but set at an angle where friction was useful in checking too rapid descent. Down we slid an immense distance, it seemed, destroying beyond hope of repair breeches, puttees

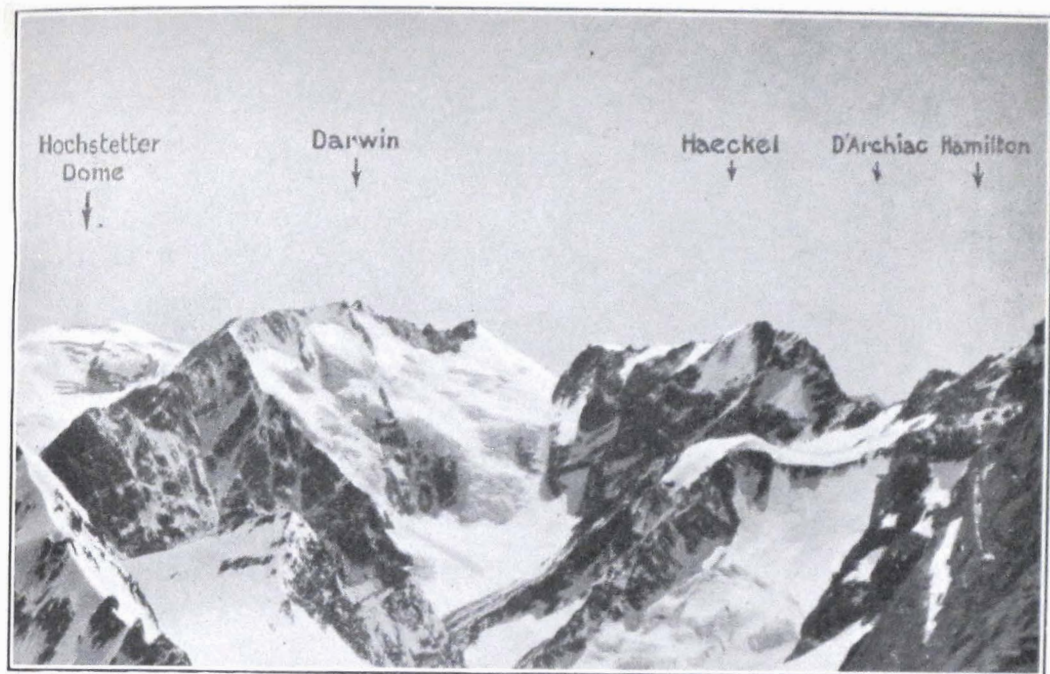


Photo. C. S. Barker.

FROM UPPER TASMAN GLACIER.

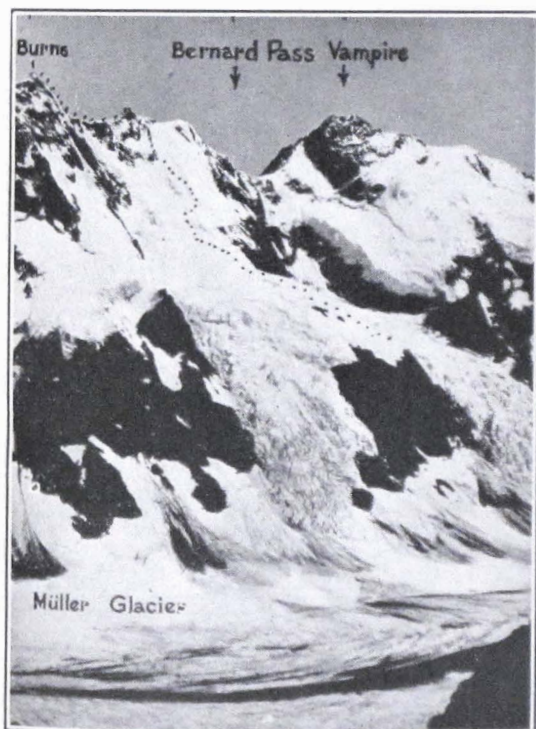


Photo. R. M. Algie.

LINE OF ASCENT.



Photo. D. Theomin.

IN FOREGROUND, HOCHSTETTER ICE-FALL. Behind, Glacier Dome and Haast ridge, leading to Haast, on left. Ridge from Grey Peak to Haidinger beyond.

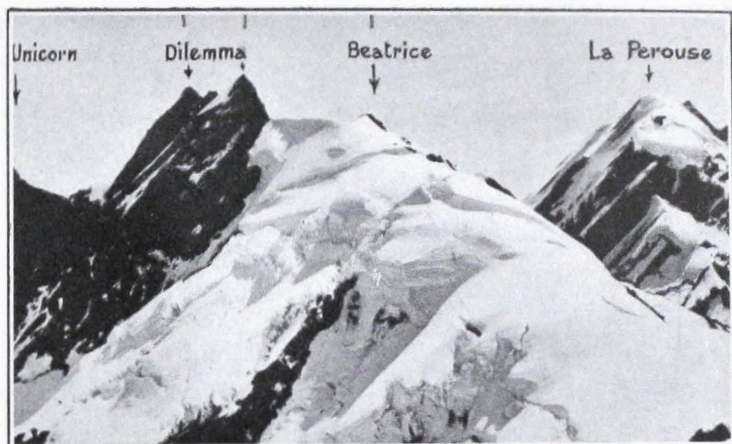
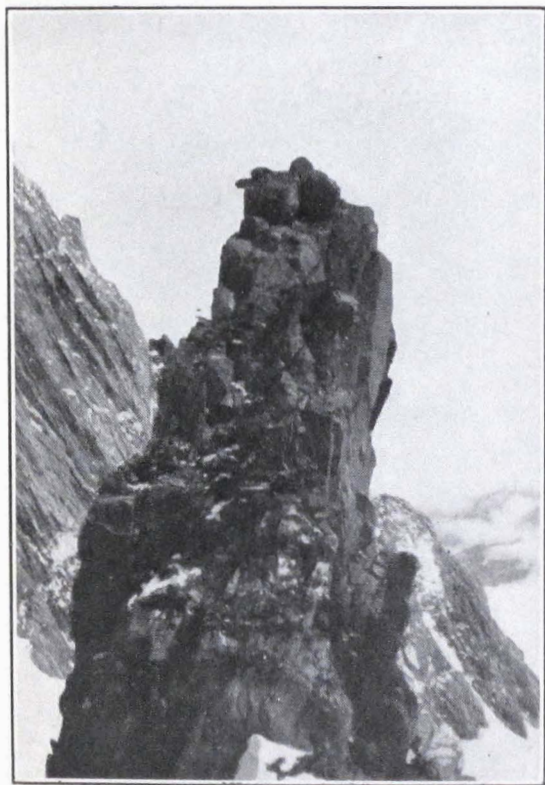


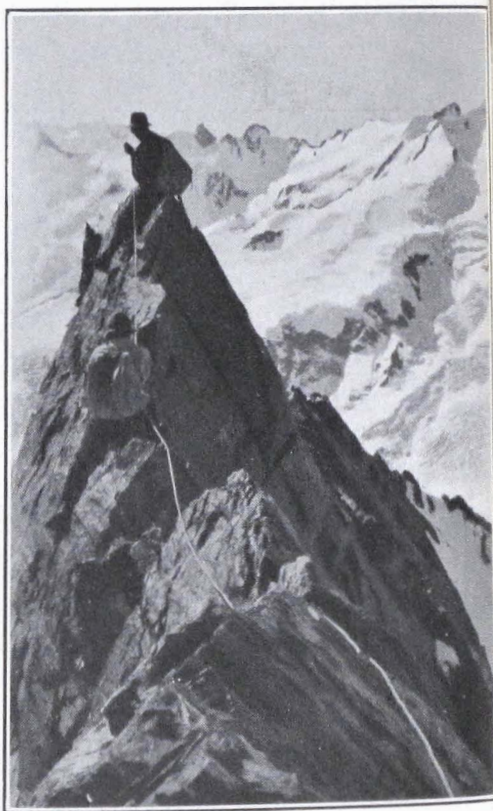
Photo. F. Milne.

TAKEN FROM RAUREKA.



GREY PEAK.

On the left is Mt. Haast, and on the right, below, is the Fox Glacier.



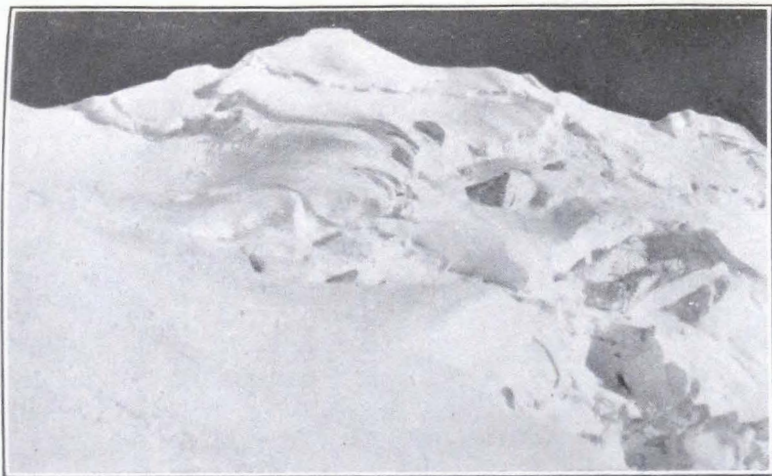
THE KNIFE-EDGE ON N.W. RIDGE OF MALTE BRUN, looking across the Tasman Glacier to the Main Divide.

Photos. H. E. L. Porter.

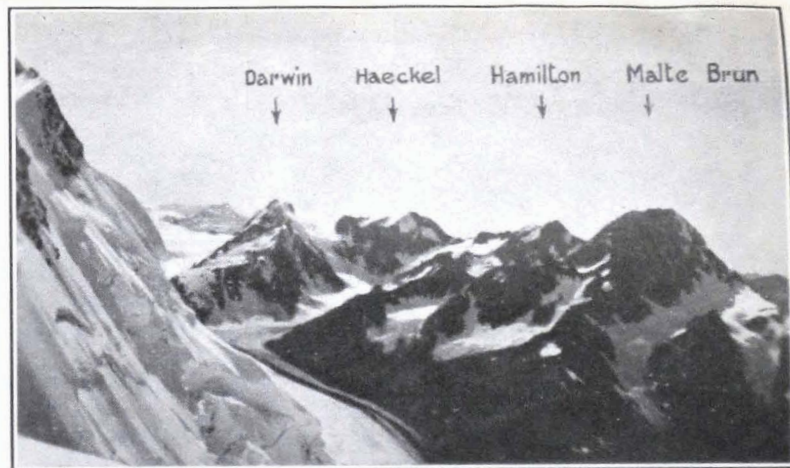
and stockings. Below, where gravity was too strong for friction, some delicate work on small holds had to be accomplished before we could enter the chute. This was rushed with *éclat*, and at 4.15, 5½ hours after leaving the summit, we paused for a short and scanty meal. The whole head of the valley was now obscured in heavy cloud. None of us had been in it before, but luckily I had looked down Fyfe's Pass only three weeks ago from the ridge of Montgomery, and had some idea of the general topography. After an hour's struggle up the glacier, I felt fairly confident where the bottom of the pass must lie, and Milne's excellent bump of locality coincided with my view. The pass is known to be swept by hanging ice, and sure enough at the foot of the narrow trough we had selected, a confusion of dead séracs lay around. Very soon we took to the slabs which bound the couloir on the right, and by which the pass had been descended originally. They were not severely difficult but demanded continual attention, and after so many hours of unremitting exertion seemed interminable. We were unroped : Williams and I kept up what I thought was a very creditable pace under the circumstances, but Milne skipped on ahead prospecting the route at a simply phenomenal speed. A final traverse led us out on to the ridge of Montgomery 150 ft. above the pass at a point I was delighted to recognise. We had taken just over an hour to climb about 1700 ft. of slab. It was now 7.5, and an angry sunset was already dying away in the west. We had still to strike the passage through the much-crevassed upper reaches of the Müller glacier before the light failed completely. With Milne like a bloodhound in the van, this last intricacy was unravelled without a false scent, and soon we were skating down the nearly level ice with no anxiety left, save as to finding the hut in the utter darkness. So long as we were on the ice, the faint glimmer of moonlight filtering through the cloud-bank sufficed to preserve us from serious stumbles ; but groping a way up the unstable moraines, tier above tier, in the direction of the hut was to me a foretaste of purgatory. As a matter of fact the guides went straight to it ; Williams entered it first and held out a beacon light, while the kindly Milne lingered to direct my unspectacled fumbings. Our adventurous day ended at 9.30, ushering in one of those delicious nights when in warmth and comfort one runs over the events of a day full of episode and vicissitude with the trusty friends who shared them. Burns, of course, is not a great mountain ; but in the extent of ground covered, the variety of problems presented

for solution, the thrills of hope and its opposite, and the high speed maintained, it provided one of the very best days I have ever had ; and I believe Milne and Williams think the same.

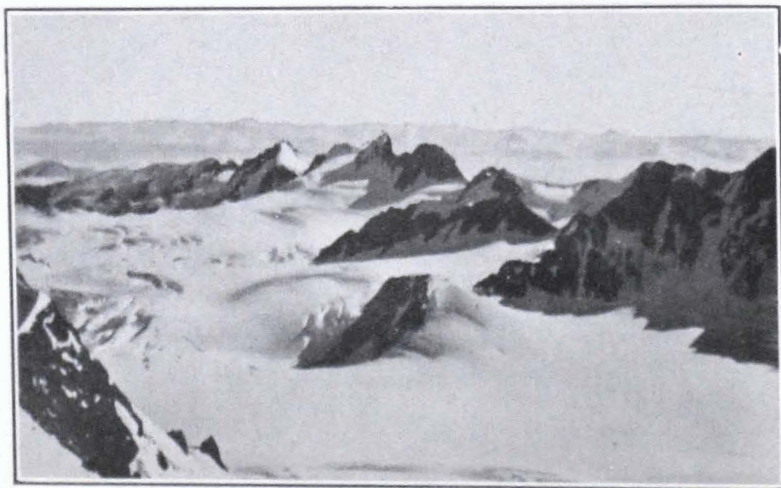
I was due to leave the Hermitage on the 22nd, and could not have desired a better finish to my season. But Fortune smiled again. My symphony actually ended, like an Horatian ode, with a movement which, while perfect in its way, had a more subdued tone than that which preceded it. I had expressed a wish to stand on the main divide somewhere between Mt. Tasman and Graham's Saddle, and Milne filled in the details of this vague scheme by suggesting a visit to Pioneer Pass, which separates the Haast glacier from the Fox ; a continuation along the ridge northwards to Grey Peak (9800 ft.), the highest unclimbed point in New Zealand ; and on to Haidinger, whose southerly peak (10,178 ft.) had not been scaled since Mr. Fitzgerald with Zurbriggen and Clarke first ascended it in 1895. They had started from the Haast bivouac, ascended Glacier Dome, gone round on the Grand Plateau to the Haast ridge, descended on to the névé of the upper Haast glacier below Pioneer Pass, and, contouring under Grey Peak, had reached the ridge north of it and so gained Haidinger. The 19th dawned clear, and that night we witnessed an unforgettable sunset from the Haast hut. Milne aims at giving every member of his staff at least one good climb every season, and we had with us a young porter, Keith Ritchie, who did very creditably on this his first big peak. Starting at 4 A.M. on the 20th, we followed Fitzgerald's route to below the pass. This was protected by a huge schrund of forbidding aspect. Being very keen to make the pass, we went up to look at it, though without much hope. At one point only did there seem the least chance of success : in the inner angle, where the schrund took a sharp bend to the E., the interior being protected from the sun by the gigantic wall at the back, was some hard-frozen debris, which permitted a passage across to a roomy ledge, on which we all assembled. The upper lip was still some fifteen feet above us ; the first few feet sloped up to a niche, in which Milne squatted uncomfortably, while morsel by morsel he hacked out a chimney in the strictly vertical section above. A curious rumbling noise now made itself audible overhead, the cause of which was suspected, but not proved, till Milne at last got his head over the top and nearly had his hat removed by an icy blast. The upper lip of the schrund was the very top of the pass—a phenomenon I have never seen elsewhere. On the far side a gentle snow-slope led down into the heart of the Fox, which lured me almost



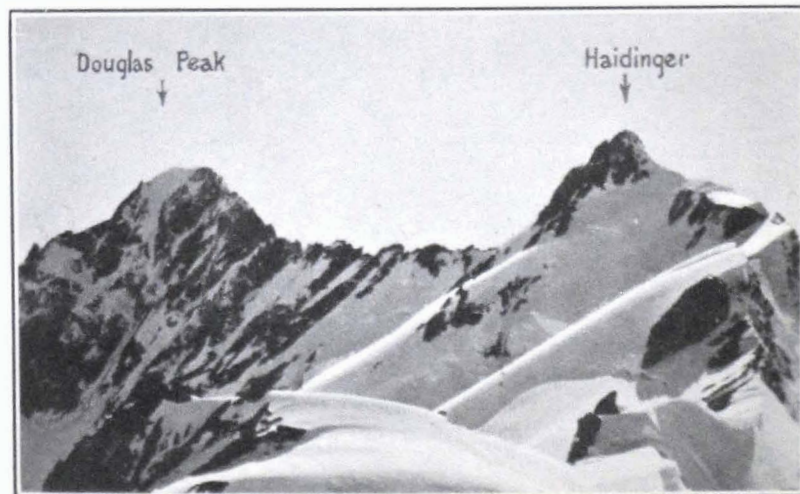
MAIN DIVIDE FROM HAAST RIDGE. In foreground névé of upper Haast Glacier. Pioneer Pass on left: Grey Peak in centre (the rocky knob) and Haidinger on extreme right.



TAKEN FROM PIONEER PASS OR RIDGE ABOVE, LOOKING ACROSS TASMAN GLACIER.



LOOKING N.-W. FROM GREY PEAK ON TO FOX GLACIER.
Nor-wester clouds in distance.



TAKEN FROM RIDGE NEAR GREY PEAK
LOOKING N.

irresistibly by its incredible beauty. We hastily donned storm-clothes, and hurried up the ridge to Grey Peak, no great distance away. Its highest point is a 70-ft. obelisk of rock to the west of the ridge, to which it is connected by a little neck; the route up it was steep and rotten, but sheltered from the worst of the gale, which we could now see driving its clouds before it in serried ranks from the W. coast. The time was 9.10. Back on the ridge we circled the horizon with our cameras, and regretfully renounced Haidinger. A most inviting aerial causeway with no visible hindrances led to it, but the least estimate of the time required to reach it and return was six hours, long before which the ridge would be a death-trap. By 1.30, when we got back to the hut, great billows of storm-cloud were boiling over the divide at every gap: our plight would indeed have been perilous had we persevered. We hurried down to the Ball. The rain reached us there about 7, and a perfect deluge set in soon after, which beat a multitudinous tattoo on our tin roof all night. Though not conducive to slumber, this was less irritating than the toboggan races which, on fine nights, take place on the same roof to the accompaniment of peals of parrot-laughter. So ended my season.

I will conclude with some general remarks, subject to revision on better acquaintance with this glorious range.

I was unable to visit Waiho on the W. coast, where Peter Graham has a hotel, from which the marvellous Franz Josef glacier is easily reached. At present not much seems to be attempted from here except the traverse of the Copland Pass and Graham's Saddle, but it will be a fine base for big mountaineering when a permanent bivouac is put up on the Fox glacier. Till then the Hermitage remains the only centre well equipped with facilities. The huts for this district are good, and except at the Christmas season, when they are overrun with tourists, quite adequate to house the number of climbers likely to use them. They are liberally stocked with tinned foods and such stores as rice, oatmeal, cornflour, etc., and provided with most efficient spirit-stoves. I frequently started out in the early hours on porridge and bacon and eggs: in fact, I attribute the first-rate health I enjoyed throughout my stay very largely to the excellence of the commissariat, and only in a minor degree to the recuperation due to the large number of compulsory off-days. The system in vogue is that a fixed daily rate is charged, whether you are in the hotel or the huts, your room being reserved for you in your absence. This system is simply a godsend to the guideless climber, who

need only carry bread and butter with him from the hotel. In former days, I was told, guideless climbing was not only discouraged but made nearly impossible. This is no longer the case; on the contrary, we were given every assistance both by Milne and his staff and by Mr. Long, the manager.

As to the guides, I can fully endorse every word that Mr. Mumm has said in their praise. A charge has been made by a certain writer that New Zealand guides lack enterprise. The reason for this charge is patent to all who know the circumstances, and reflects no discredit on the guides; it is certainly untrue of the present contingent. My account will, I hope, show what manner of man Milne is. As he hates advertisement, I must ask his pardon for repeating Mr. Mumm's words with a corollary: he is a born mountaineer, sure in judgment and swift in execution. He has under him a number of keen men in different stages of development, who are on the road to making a name for themselves in an exacting profession. All they need is more climbers to give them encouragement. I was frequently asked why more members of the Alpine Club did not pay them a visit; they would receive a very warm welcome if they did.

On almost all the peaks over 10,000 ft.—which I believe number eighteen—icecraft is more important than rock-climbing ability: much more so relatively than in the Alps. One has only to look at a photograph of the E. side of the divide to realise this fact. Owing to the big precipitation, there is more snow to be digested and eliminated; hence the glaciers move faster than in the Alps. Faster movement in turn causes vaster fissures and schrunds; hence, as the season advances, some peaks get regularly cut off, either owing to physical impossibilities or to dangers too serious to be ignored. I was surprised to find that crampons are not used in a range where they would be particularly helpful; Geoffrey Young's great work, however, is being diligently studied, and it is to be hoped that his advice on the subject will pave the way to their introduction.

I did not think that the rocks wholly deserved the reputation for rottenness which they possess. For a sedimentary rock the red sandstone of Malte Brun is splendid, while the great slab-faces, which are so prominent on the W. flank of the lesser peaks, are remarkably sound and clean. They run with the dip at an angle of 45 to 55 degrees, and Mr. Mannering has acutely suggested that this is the reason why the W. coast glaciers are so much cleaner than those on the E. Here, as the axis

of the anticline does not coincide with the divide, the dip is against the slope : the rocks are far more liable to disintegration, and the glaciers carry a huge load of debris. Ridges running more or less north and south seem to be the worst offenders, e.g. the notorious ridge of Mt. Sefton.

Finally, there is an enormous field for new work. Though all the giants have fallen, many of them have only been conquered by one route, and there are still fine alternatives to be elaborated, on perfectly sound lines. In other districts men prepared to endure hardship and discomfort for a sure recompense of imperishable memories will find occupation for a lifetime.

THE MOUNTAINS OF THE WHIRLPOOL.*

By J. MONROE THORINGTON, M.D.

'The first travellers called them the Glittering Mountains, on account of the infinite number of immense rock crystals which, they say, cover their surfaces, and which, when they are not covered with snow, or in bare places, reflect to an immense distance the rays of the sun. The name Rocky Mountains was given them, probably by later travellers, in consequence of the enormous isolated rocks which they offer here and there to view. In fact Millet's rock, and M'Gillivray's above all, appear to me wonders of nature.'

GABRIEL FRANCHÈRE.

I. Athabaska Pass and the Voyageurs.

THE region surrounding the Athabaska Pass has acquired considerable historic interest because of its importance as a trans-Canadian route in the days of the fur trade.¹ For

* The present paper contains a short history of the Athabaska Pass—its early travellers, the mountains adjacent thereto, the mountaineering, and the writer's expedition of 1924.

Cf. Sketch map, p. 94.

Explanatory notes in quoted documents are in square brackets [].

¹ For the relative importance of the Athabaska Pass route compared with other trans-continental routes, consult chapter on 'Routes to British Columbia,' in R. C. Mayne's *Four Years in British Columbia and Vancouver Island* (John Murray. London, 1862), chap. xiii. p. 353.