THE LESSER KNOWN RANGES OF THE OTAGO ALPS

By J. T. HOLLOWAY

Read before the Alpine Club, August 11, 1942

When the Honorary Secretary invited me, as a young overseas member of the Club, to read a paper before you on the subject of the Otago Alps, I must confess I welcomed the opportunity. I am not by nature garrulous, but on this one subject alone I lack all inhibition even when I stand in surroundings such as these, hallowed by Alpine tradition and in the midst of my seniors. To me the Otago Alps have been the beginning and the ending of Alpine ambitions, and while I would dearly like to visit other ranges and to climb in other lands, I feel that, deep in my subconscious mind, such a desire arises solely from a wish to acquire a yardstick wherewith I might more truly measure the magnificence of my own mountains.

The Otago Alps might be defined as comprising that highland area lying to the south of Haast Pass and bounded to the west by the Tasman Sea, to the east by the cold lakes and the arid inland ranges, and to the south by the circum-antarctic waters of the Pacific Ocean. Here the traveller will find set out before him, not only the fjords of Norway, but also the glaciers and lakes of Switzerland, the forested ranges of British Columbia and the mellower glory of the English Lakes : the whole welded into harmony and stamped with the romance of the unsettled frontier. To describe these mountains, to portray their beauty, I find difficult within so brief a compass. I wish not only to give you some conception of the joys they offer to the mountaineer, but, at the same time, to say something of the hills themselves, their origin, their form and their modern vestment of forest and glacier.

The Otago Alps took their origin during the same period of mountain building, the Kaikoura orogeny, as the Southern Alps proper. For some reason, however, they escaped the foldings and crustal dislocations which were experienced in the north and this has given them those characteristics which mark them off as a distinct alpine region. The Jurassic land surface had been reduced to a peneplane, cut in the south-west in granites and in grano-diorites and in the north-east in a great complex of metamorphic schists. This peneplane was uplifted and tilted from north-east to south-west, the surface being undisturbed save for the development of a series of faults and zones of weakness. During and after uplift normal river erosion proceeded and valleys were etched out along these fault lines until this cycle was brought to a close by the onset of the recent ice age, the ice of which is still represented in the uplands. The glaciers of the ice age deepened

and over-deepened the pre-existing river valleys and, retreating, have left a typically glaciated topography, most marked in the granite country but everywhere evident, and especially have they left a fjord-land coastline in the granites fronting the Tasman Sea and great moraine-dammed lakes in the trough valleys to the east.

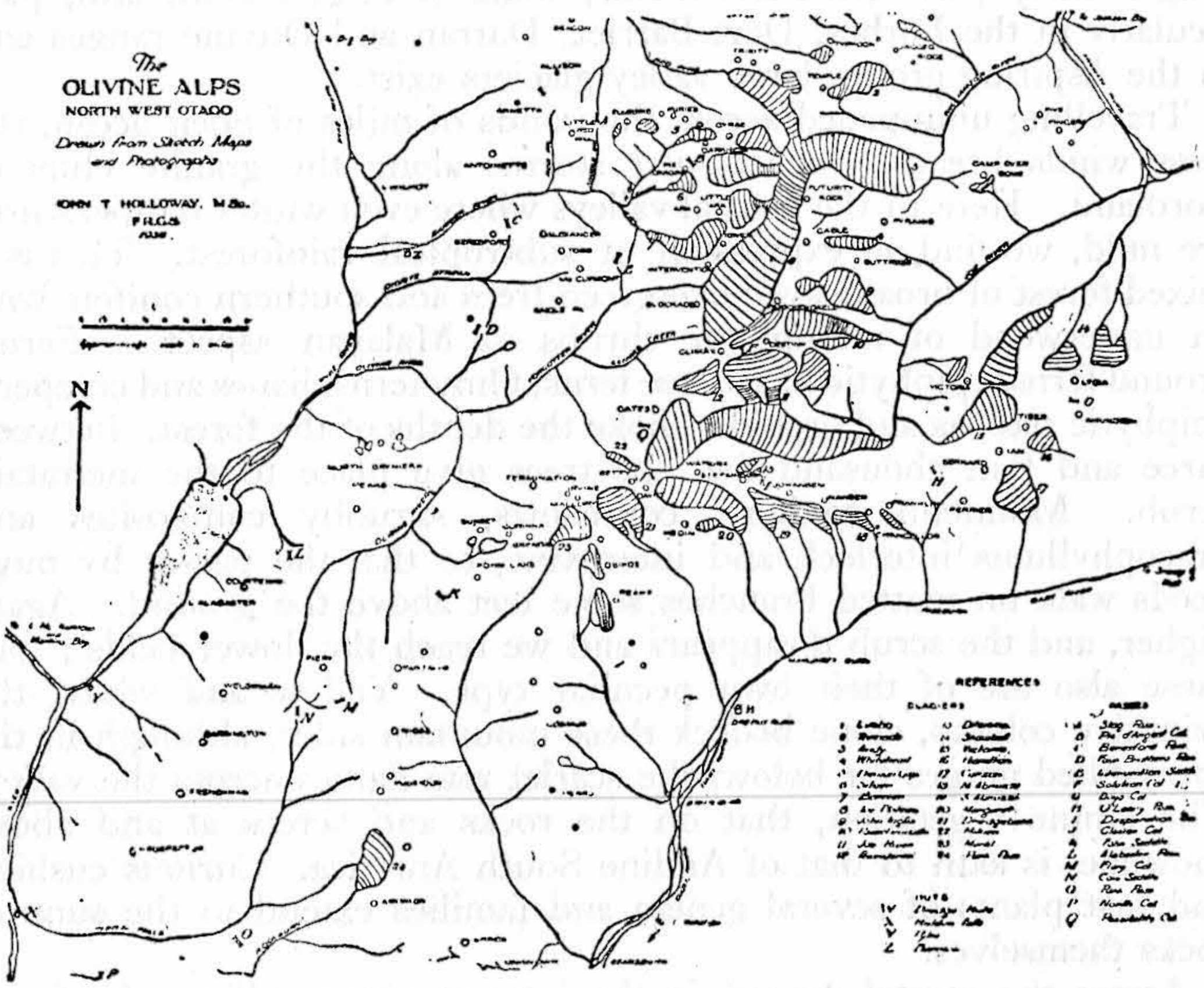
Thus, at the present day we have a highland area of rugged topography, bounded by fjords and glacial lakes and characterised by marked co-ordination of summit level, summit altitudes varying from 8,500 feet in the north-east to 4,000 feet in the far south-west. The only exceptions are the three peaks, Aspiring, Tutoko and Earnslaw, which rise a thousand feet above their neighbours and probably represent monadnocks left during the original peneplanation. All ranges carry permanent snowfields, some of large extent, and, particularly in the Forbes, Dart Barrier, Darran and Olivine ranges and in the Aspiring group, large valley glaciers exist.

Travelling unimpeded across thousands of miles of open ocean, the west winds break in spectacular storms along the granite cliffs of fjordland. Here in the coastal valleys where even winter temperatures are mild, we find an expression of subtropical rainforest. This is a mixed forest of broadleaved evergreen trees and southern conifers with an underwood of mesophytic shrubs of Malayan aspect. Ferns, ground ferns, epiphytic ferns, tree ferns, filmy ferns, lianes and creepers, epiphytic astolias and orchids, choke the depths of the forest. Between three and four thousand feet the trees give place to the mountain scrub. Mountain conifers, coprosmas, shrubby composites and dracophyllums interlock and intertwine, so that the passer by must needs walk on matted branches some feet above the ground. Again higher, and the scrub disappears and we reach the flower fields; but these also are of their own peculiar type. Yellow and white, the primitive colours, alone bedeck these mountain sides, although in the spray-filled gorges far below, the scarlet rata flames across the valley. The alpine vegetation, that on the rocks and screes at and above snowline, is akin to that of Andine South America. Curious cushion and mat plants of several genera and families extend to the summit rocks themselves.

Across the coastal ranges, in the inter-montane valleys, the forest is modified by the entrance of the Southern beech, an evergreen tree of sub-antarctic rain forest. Indeed, the beech extends to the coast itself, where it finds lodgment on granite fjord walls too inhospitable to support normal rain forest. Eastwards again, perhaps across a second range or in the head of a fault valley cutting across the ranges, we enter true sub-antarctic rain forest, compounded of three beech species zoned altitudinally. This forest is closely related to that of Southern Chile. It is more open in character than the coastal forests and, as we travel east and the annual rainfall lessens, two hundred inches to one hundred, one hundred to fifty, fifty to twenty, so the undergrowth decreases until in its eastern limits the forest is as open and as easy to travel in as English beech woods. On the eastern ranges

the forest disappears save in damp gullies and narrow ravines and we have bare rocky mountainsides of a semi-desert type clothed in dull ochreous tussock grasses and harsh xerophytic shrubs.

Until the coming of man the forests were devoid of animal life, that is to say, of mammals. Birds there were, parrots, wrens, tits, robins, curious wingless birds, and the two glorious songsters, the tui and the mako-mako. Ducks flourished undisturbed in the rivers and lakes and, until recent centuries, the eastern ranges were the home of the giant moas. Now, unfortunately, the European, in his mania for the 'sport' of shooting, has introduced deer and wapiti, goats and pigs, while above forest level thar and chamois are increasing. Gratifying as it may be for the modern mountaineer to find at the end of



an arduous day on the tops a deer track through the scrub to his base camp in the valley below, it yet must be realised that these forests, evolved during countless millions of years in the complete absence of grazing and browsing animals, are now completely unfitted to withstand their ecological impact. In the absence of control, a thing most difficult of achievement, the forests as we know them are doomed. It is a problem of the greatest importance, not only for the forest officer and the naturalist, but also for the river control engineer and the soil conservationist.

To the scientist the Otago Alps offer a plethora of problems. There is the problem of flower colour, the problem of circum-antarctic vegetational relationships with the bearing of this on Wegener's

hypothesis of Continental Drift. There is the problem which confronts us when we consider the apparent instability of plant species, the frequent hybridisation, the frequent mutations. There is the problem of the influence of deer on the forests, the problem of ecological interplay between sub-tropical and sub-antarctic rain forests. No glaciological investigations have been made although glaciation, moderately heavy, at low altitudes and in a temperate climate, would seem to present a most attractive field. Little is known of the insects—of many things nothing is known. But all this remains for the future. Meanwhile for the climbing.

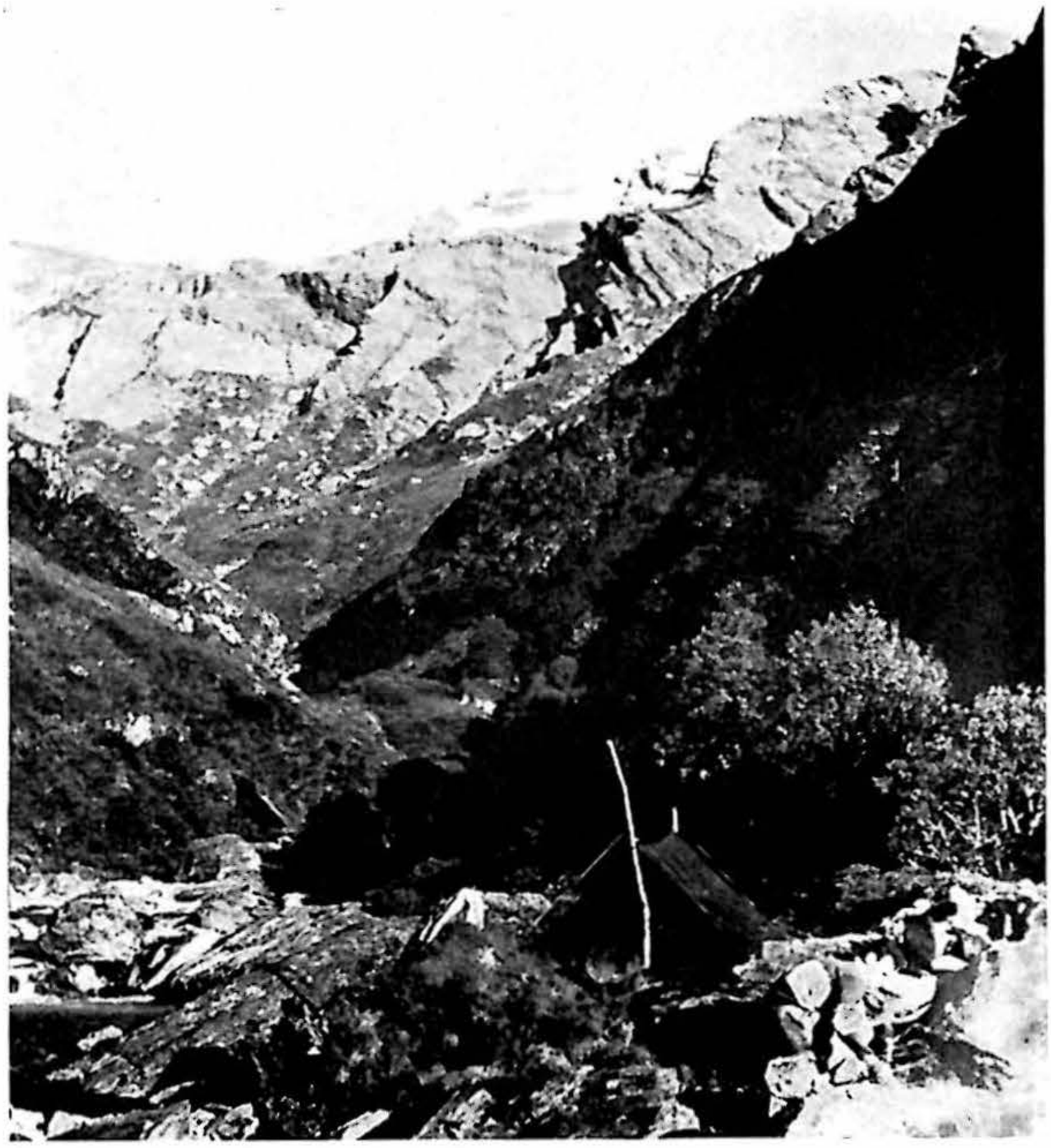
The Otago Alps do not offer many problems of any great technical difficulty. I mean by this that the normal routes on peaks and passes are not in essentials Alpine problems; and we have not reached, except in isolated cases, the stage at which more and more difficult routes and variations on routes are sought. Up to the present we have been concerned with making first ascents and traverses, with pioneer work on the passes and cols and with glacier exploration, and our guiding principle has invariably been ' maximum safety with maximum precaution,' a guiding rule which in unknown country insists upon the easiest possible routes of ascent. The two major dangers, as in all highland areas where frequent summer storms are experienced, have ever been flooded rivers and avalanches, as I hope to show in the following narrative. This is not the place to detail the expeditions we have made. All this has been done in the Journal of your daughter club, the New Zealand Alpine Club. For my present purpose I have selected but one incident from an expedition made in the summer season of 1936–37. This selection I have made because, to my mind, it combines within itself many of the salient features of Otago mountaineering.

For several reasons we had been unravelling the intricacies of the great mountain complex which lies at the point of junction of the Humboldt, Dart Barrier and Olivine ranges. Gradually we had worked our way along the ranges, climbing each peak as we had come to it, until, in 1936, we were ready to tackle the great icefields of the Olivines. We planned to establish a base camp within reach of the Olivine Ice Plateau and from there to climb the many fine peaks around the head of the Andy Glacier. Such were our plans, but in the Otago Alps matters do not always work to schedule. The location of the base camp was at a distance, Spitfire flight, of twenty miles from the head of our road transport. Throughout November, December and January we struggled in vain to reach the base. We tried to achieve access by way of the Dart River tributaries, the Beansburn, the Rockburn and the Routeburn. We forced our way into the Hollyford tributary, the Hidden Falls River and from there into the Upper Olivine River. Always we arrived within sight of our objective, now pin pointed as the upper flats of Forgotten River, but always some final barricade of cliffs or river or gorge barred our way. These months were not on that account profitless. During them we climbed many

new peaks along the Dart Barrier, Humboldt and Bryniera ranges and were able to clear up many minor points of topographical interest—but this was not what we had set out to do. So was exhausted the time at the disposal of most members of the party. Two of us were left to make a final effort.

We determined to cross the ranges near the summits of Mt. David and Mt. Gates ; that is, to cross at the very nucleus of the complex. By so doing we felt we must attain the river we desired. Thus at the beginning of February, when the climbing season was drawing near to its end, E. H. Sealy and myself crossed the Dart River, a difficult crossing, at the foot of Mt. Hedin. This was a point normally a day upriver from our camp at road head, but we were five days out having been held up by heavy floods. We established a first high camp above forest level on Mt. Hedin and from there in a minor blizzard, for the weather had again deteriorated, made a climb of the peak. It was as well we did so since the next day, when we began our crossing of the range, we found our projected route via the Margaret Glacier in too dangerous a condition and were forced to traverse Hedin to reach the glacier head. This traverse took much time, for the new snow was deep and soft and we had very heavy packs. Moreover, as the day grew hot, the steep snowfields showed an increasing tendency to avalanche and we moved very cautiously one at a time. Ultimately we had to abandon the snow and made our way down a shattered rib of atrociously rotten rock on to the glacier.

Once there we decided we liked neither the slopes ahead nor the slopes behind and, selecting a site well guarded by a series of crevasses, pitched the tent and prepared to await a freeze-up. The frost that night was halfhearted, but lasted sufficiently long to allow us to climb the avalanche slopes leading to the col between the Margaret and Joe River Glaciers by sunrise. The long plug around the upper snowfields of Mt. David and across the névé to the top of Mt. Gates was exhausting and monotonous, but enlivened by the magnitude of our surroundings. All morning our view was restricted to snow, ice and rocks, sweltering under a hot sun and a blue sky. Mts. Climax and Destiny, in particular, appeared most impressive from this viewpoint. From Mt. Gates, at midday, we could see our objective, the parklands of Forgotten River, but they were five thousand feet below us and from our point of vantage we could see only steep snowfields ending interminably in cliffs and precipices. We liked it not at all. The obvious route lay down the snowfields into the upper basin of Climax Creek, but this was cut off by a particularly vicious looking schrund. Second choice was to descend directly to the river from the summit of the peak. Soft wet snow lay soggily on the ice, which had been ribbed and furrowed by melt waters earlier in the season. We moved in short stages of fifty feet clearing the snow from each foothold and cutting steps into the uneven ice beneath. After four hours we had lost a thousand feet and had reached the rocks below. Luck changed and we found them adequately cracked and ledged. A short scramble

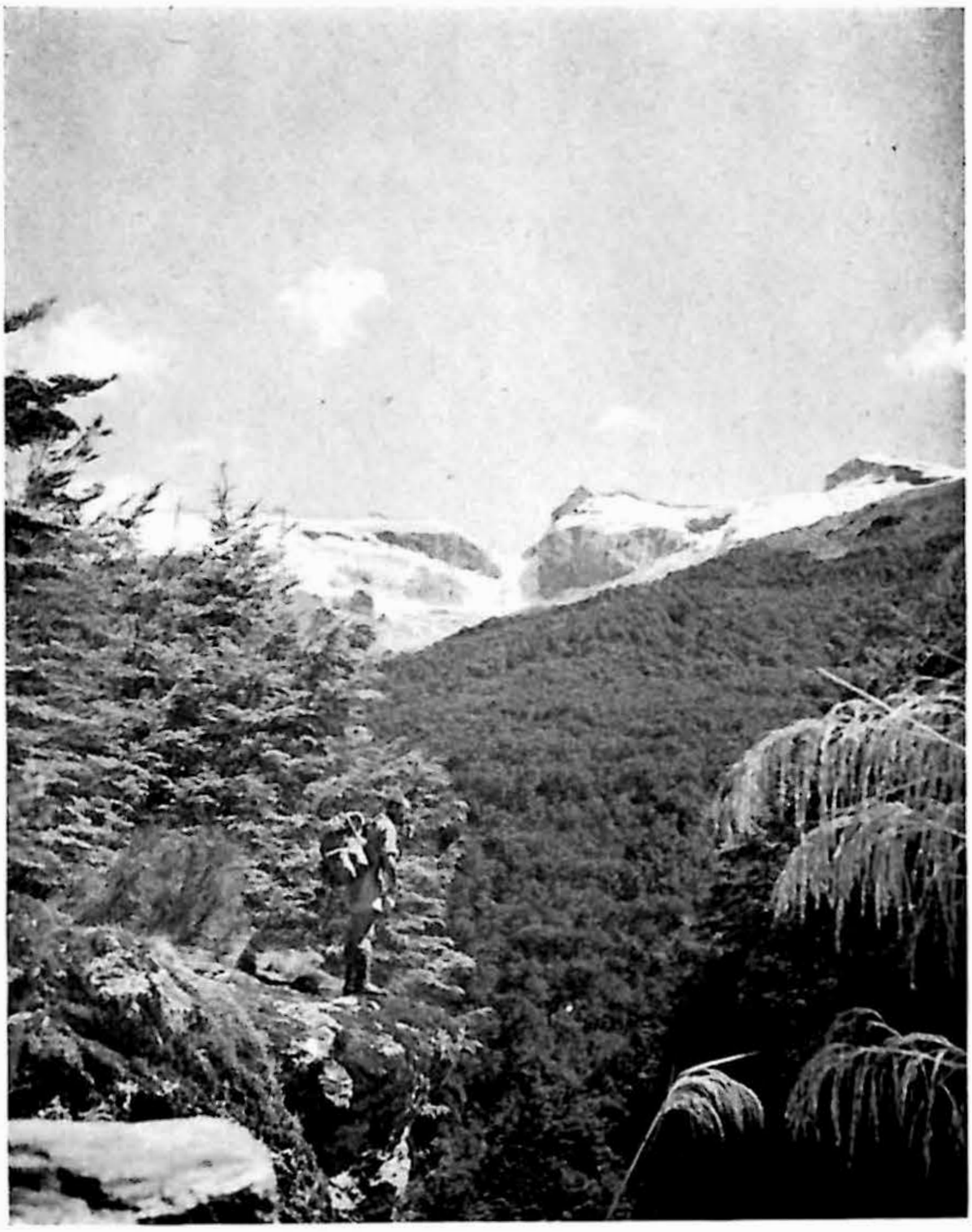


Photo, J. T. Holloway]

THE WESTERN APPROACH. BROKEN COUNTRY ABOVE THE GORGES OF THE BARRIER RIVER.

Photo, J. T. Holloway]

MID-WINTER CAMP IN THE SUB-TROPICAL FORESTS OF THE WESTERN COAST.

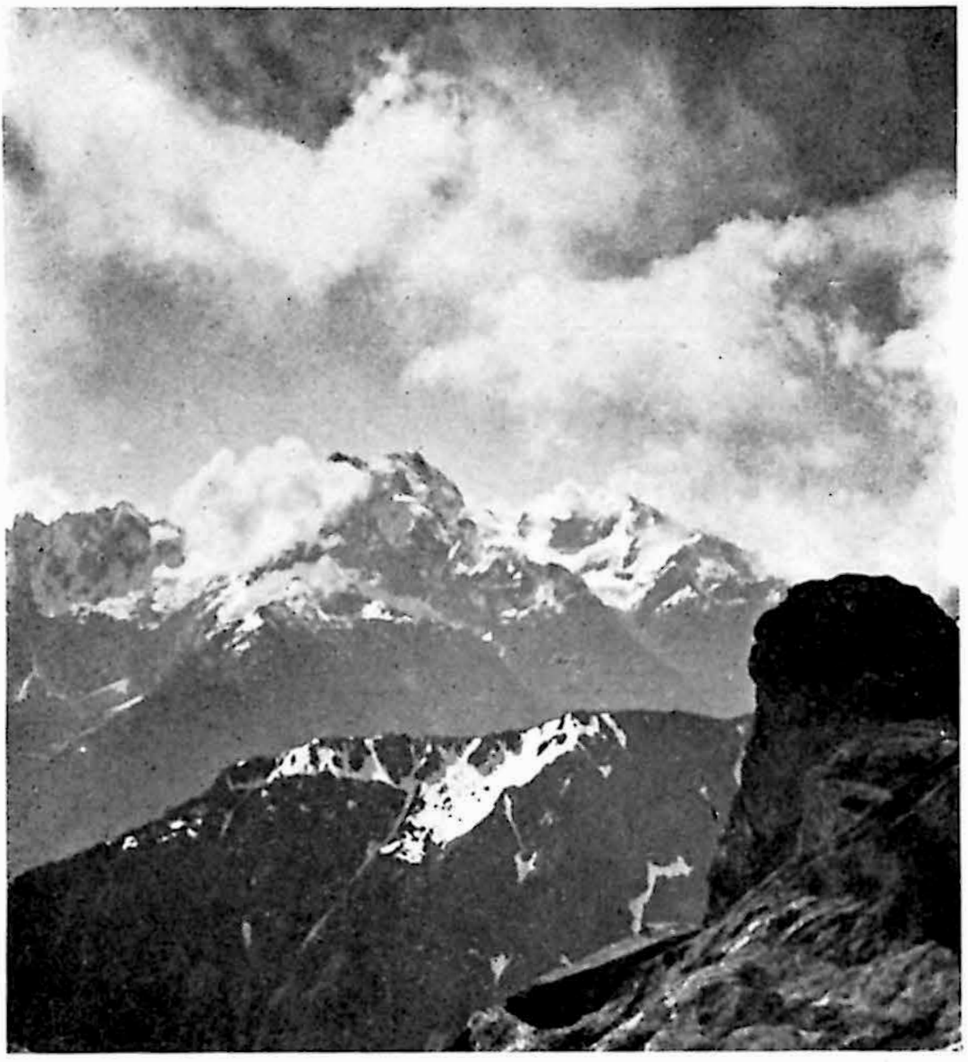


Photo, J. T. Holloway]

SUB-ANTARCTIC BEECH FORESTS. RELAYING SUPPLIES THROUGH THE DART VALLEY.

Photo, J. T. Holloway]

APPROACH FROM THE EAST. THE VALLEY OF THE DART.



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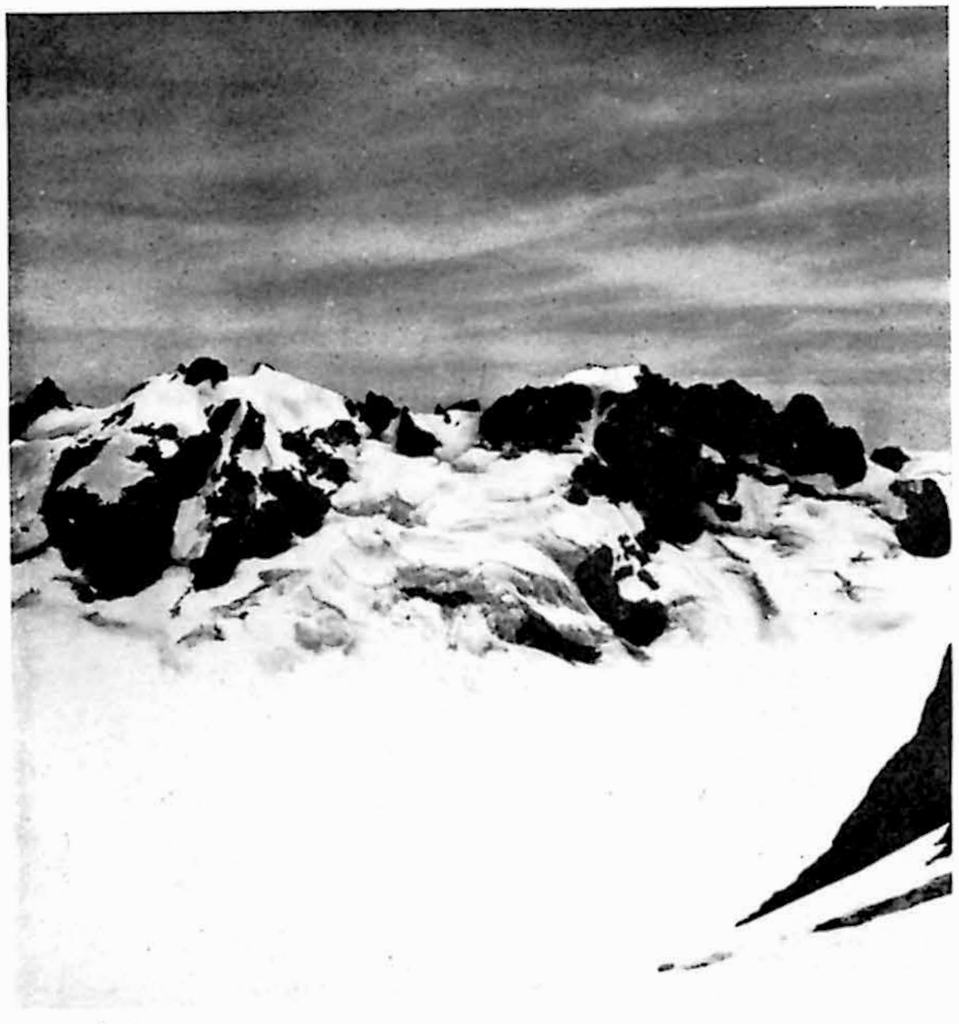
STORM WEATHER OVER THE DARRAN PEAKS.



Photo, J. T. Holloway]

PEAKS OF THE OLIVINE ICE PLATEAU. MT. INTERVENTION.

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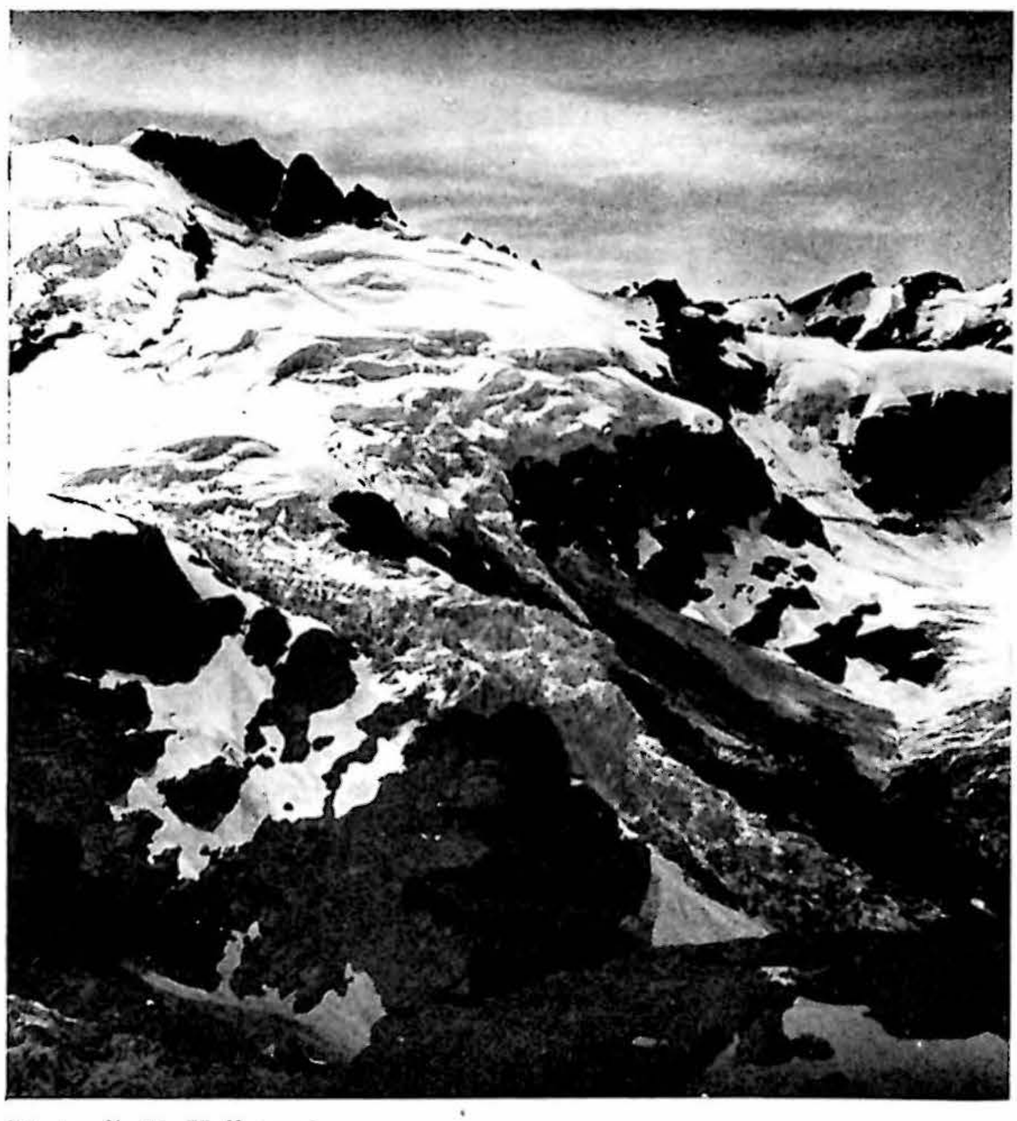
MT. DARKNESS AND THE ICEFIELDS OF THE CENTRAL OLIVINES.



Photo, J. T. Holloway]

MT. GYRAE AND TRIBUTARY ICEFALLS OF THE ANDY GLACIER.

took us into and across the head of an avalanche gully and out on to the flower fields beyond. And so in the twilight through the mountain scrub and elfin forest, and at dark we had pitched camp beside a clump of trees in the open park where a small stream sang over white quartz pebbles and wandered between banks strewn with gentians and mountain buttercups.

The weather now broke again and rain and sleet drifted endlessly down the valley. During the lulls in the storm we wandered about the flats and attempted a minor climb on the virgin Serpentine range, failing to locate our peak in the heavy cloud. The first fine day we shifted camp upriver to a cirque under the cliffs of Mt. Intervention and Mt. Blockade, and prospected a route up on to the Ice Plateau. This we climbed in the dark next morning. Easy scrambling for the most part with only one or two steps where we must climb from one ledge to the next. These steps were confused by some ice glaze and the cracks were invariably filled with decaying vegetation. By sunrise we were on the plateau where snow conditions were perfect, and with crampons on we raced the couple of miles to the foot of Mt. Gable. No definite climbing plans had been made but, in the early morning sunlight, Mt. Gyrae looked most attractive and we crossed the snow basins of Little Ark, Pic d'Argent and Mt. Darkness to reach the summit of the peak up windslab snow before midday.

Not a breath of wind stirred the air and the sky was unflecked by cloud. To the west white beaches streaked along the blue of the Tasman Sea. Rain forest filled the valleys and against the forest green the scarlet rocks of the Red Hill ranges clashed vividly. From Gyrae we crossed to Pic d'Argent and so back to the Barrier Glacier whence Mt. Intervention was but an easy climb. From Mt. Intervention we climbed down to the saddle at the head of the Barrier River where a snow couloir, previously prospected, slid fifteen hundred feet to our camp below. Unfortunately we descended the wrong couloir and at dark were belaying down waterfalls and scrambling around icicle strewn ledges.

This day's climbing, the only day we climbed from the Ice Plateau in an expedition lasting four months, was pure enjoyment. Twenty or more peaks could be climbed from the Plateau and nine or ten rivers could be reached from it, but our time was at an end and we set off down Forgotten River to the Olivine River and the Pyke. We had two gorges to traverse and these were difficult. Narrow rocky ravines choked with boulders and forest jungle in which we climbed and burrowed for two days. For much of the time we travelled roped up, and climbing on the rope with a heavy pack among low hung gnarled branches and along moss covered ledges is more exhausting than any peak climbing I have ever attempted. Dusk on the second day, and we were plunging down through the western rain forest towards the Pyke River. We slept that night on a bed of vines on the edge of a small precipice. When we awoke a waterfall flecked by the rays of the rising sun disappeared in rainbow tinted spray at our feet.

Scarlet rata trees overhung the cliff and in the branches parrakeets chattered noisily. Across the valley the unvisited Skippers range, shrouded in heavy forest, rose up into a blue sky, while far below the silver waters of Lake Alabaster mirrored the Darran peaks. In two days' march we reached roadhead once again, the only further excitement being when, in the course of fording the Hollyford River by night, we found the ford washed out and enjoyed a lengthy but quite involuntary swim.

Such are the perils and joys of Otago mountain travel. The salient points are, I believe, first that a party must be prepared to weather sudden and violent storms at any season of the year. Plans must always be kept elastic to cover this contingency. Secondly, to climb new peaks a party must be prepared to devote ninety per cent. of its time to the discovery of the route to the peaks. This position is improving as detail provided by mountaineers is, little by little, incorporated with the official Survey maps. And at the same time many of the ranges are becoming more readily accessible as the New Zealand Government pushes ahead with its great roading programmes. Especially is this so of the fine Darran ranges, where great peaks of ice-polished granite rise boldly up seven thousand feet or more directly from a first class highway. The third point I would make is that while on actual climbs even greenhorns may be included safely in a party, nevertheless every man must be fully experienced in bush and river craft. The last point would be to stress the fact that routes practicable in the Swiss Alps are here out of the question where every man must travel with a heavy pack and where the rock is notoriously unreliable.

These may seem great drawbacks, but to us they are part of the game and a facet of Otago mountaineering which I myself would not have otherwise. The Otago Alps breed an all round selfreliant mountaineer who, although not a polished Alpine climber (indeed he makes no claim to be), is yet at home under the most adverse conditions. He has no great experience of rock climbing but is well tutored in snow and ice craft and is necessarily reliable and enterprising. Much active pioneering work remains to be done in this great field, and I can assure you that, when these darker days are over, the Otago men will march on and will bear themselves in a manner not unworthy of the great traditions we have inherited.

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Since reading this paper before the Club, I have heard, to my very great regret, of the death in the mountains of A. D. Jackson, under whose leadership the earlier expeditions were made and to whom so much of the credit for any successes we achieved belongs. Jackson came late to the mountains and was no skilled technician, but with an immense fund of common sense and unbounded enthusiasm he

handed on to us, his younger comrades, much of his love of the hills. It is true that nowhere can you learn to understand a friend as on the mountains in defeat or in victory. I and those others of our parties, Lilly, Sealy, Johnson, Whitehead and Lewis, have lost a friend of whom we could truly say that ' We were proud to have known him.'

EARLY LADY CLIMBERS

By CLAIRE-ELAINE ENGEL

We owe our warmest thanks to Mlle Engel for her kindness in sending this article—EDITOR.

MUCH has been written about the first women who climbed Mont Blanc and they have taken rank among the best known figures in Alpine history. Yet I think it might be interesting to find out how people began to imagine why women might climb, and what they felt when they actually did climb.

Novelists and poets began early putting feminine figures in their mountain landscapes: a very bold attempt, as eighteenth century ladies were hardly ever associated with very strenuous kinds of exertion. When going through eighteenth century novels, either in English or in French, you do not find lady explorers; for instance, there is neither a Mrs. Robinson Crusoe nor a Mrs. Singleton. In another sea novel of the same period, *Les Voyages du Capitaine Robert Lade*, by the Abbé Prévost, the hero sails through most of the Seven Seas. He takes his wife and daughters to Capetown and back, but both crossings are excellent and deprived of usual accidents such as big storms or encounters with pirates. Prévost sends another heroine across the ocean: Manon Lescaut is transported to New Orleans; she escapes into the desert and dies in the middle of ' a sand-covered plain.' Prévost was an unusual novelist and *Manon* a most unusual novel, partly borrowed from a thirdrate English lady novelist. This episode may be taken as a spectacular departure from a strict unwritten law.

When writers began using the Alps as a background they did exactly the contrary. The women who came into their tales played leading and mostly tragic parts. There is an appalling avalanche story which has often been made use of, at the end of the eighteenth century. According to a *Dictionnaire d'Anecdotes Suisses* (1823), it was founded on facts which took place in the Haut-Valais, early in the eighteenth century. The first who borrowed the theme was St-Lambert in *Les Saisons* (1764):

' Au flanc des monts altiers, à leurs cimes glacées,
L'hiver a suspendu les neiges entassées,
Et lorsqu'aux champs de l'air luttent les aquilons,
Quand les feux du soleil pénètrent les glaçons,