A JOURNEY OVER THE PATAGONIAN ICE-CAP

By ERIC SHIPTON

My first two trips to the Andes of Southern Patagonia had given me some experience of the peculiar problems of the region, and I decided to attempt a more ambitious venture in the summer of 1960/61. My plan was to make a journey over the entire length of the ice-cap, starting from the Baker Channel at its northern end, and finishing at the north-western arm of Lago Argentino, just beyond its southern extremity; a distance of about 150 miles.

By far the largest part of the ice-cap, that lying to the north of Latitude 49° S., had never been visited. Apart from the geographical interest of a journey across it, I was anxious to determine whether it contained any more active volcanoes. I was also interested to find out whether the volcano that we had located the previous season had erupted in concert with those of Central Chile during the great earthquake of May, 1960; and if so what the effect had been upon the surrounding ice-sheet. Moreover I had become intrigued with the problems of mountain travel in the prevailing weather conditions. These presented a powerful challenge, and as no mountain journey of comparable length had been attempted in that part of the world, the plan provided a satisfactory way of meeting it.

There were two important reasons for attempting the journey from north-west to south-east. In the first place we would be starting from a virtually uninhabited coast and making our way through unexplored country towards a relatively known region, and ultimately to habitation. To have travelled in the reverse direction would have meant that we would reach the Pacific coast nearly at the end of our resources and with no means of getting out. Secondly we would be travelling in the direction of the prevailing wind, an important factor in the mountains of Patagonia.

I asked Jack Ewer of the University of Chile, who had been with me on my second expedition, to join this new venture. He did so with great enthusiasm, and his help in the preliminary organisation was invaluable. We agreed that a party of four would be the most suitable and we invited two Chilean mountaineers, Eduardo García and Cedomir Marangunic (geologist), to join us. They both had experience in the central Cordillera and in Patagonia. In January, 1960, they had

succeeded in reaching the summit of Cerro O'Higgins, which I thought was an impressive achievement.

The key to success lay in the choice of equipment. I realised from my previous experience in Patagonia that the type of equipment used on ordinary mountaineering expeditions would be entirely inadequate. I had found, for example, that lightweight tents were quite incapable of withstanding drenching rain driven against them by gale force winds; and I was far from sure that they would not actually be destroyed by some of the more savage gusts. I decided instead to adopt Ewer's suggestion to take a pyramid tent of the type used for sledge journeys in the Antarctic. It weighed 55 lbs. (dry) and its poles were ten feet long, but they were in three sections so that the tent could be packed into a portable load during the mountaineering part of the journey.

Ordinary windproof garments used at high altitudes afford no protection whatever from heavy rain. Our outer clothing was made from Gannex cloth which is designed to provide maximum impermeability with minimum interior condensation.

We anticipated that to reach the ice-cap with all our supplies might involve some weeks of difficult forest travel and mountaineering. It was necessary, therefore, that the sledge that we were to use on the plateau should be easily portable. None of the standard sledges used in Polar regions fulfilled this requirement. I am indebted to Messrs. Fibreglass Ltd. for making me a collapsible sledge designed by John Bull. Ewer brought a smaller collapsible sledge made to his design in Santiago. As skis are most awkward things to carry, particularly in dense forest and in a high wind, we decided to use snowshoes instead. There appeared to be none available in Britain, but Messrs. Slazengers Ltd. very kindly constructed four pairs to my specifications.

Our ration of food per day per man was composed of 8 oz. sugar, 2 oz. butter, 4 oz. meat bars, 4 oz. milk powder, 5 oz. cheese, 2 oz. rum fudge, 1 oz. soup powder and ½ oz. potato powder; a total of about 4,500 calories. Except for the butter which had to be carried in tins, each item was vacuum-packed in a Ralsin bag which in turn was put into a larger bag of the same material containing the day's ration for the party. This was the first time that this method of food packing had been used on an expedition of this sort. It was an unqualified success; its principal advantage was a very considerable saving in weight. I am indebted to Mr. Adrian Jucker, both for the idea and for the implementation.

The problem of reaching our starting point on the southern shore of the Canal Baker was solved for us by the Chilean Naval authorities, who generously volunteered to take us there from Punta Arenas, a distance of 600 miles, in a small naval vessel used for servicing the lights and maintaining contact with the few scattered settlements in

the channels. This ship was due to start on one of her voyages during the first week of December; so I sent the expedition's stores and equipment on the Pacific Steam Navigation Company's M.V. *Salaverry*, which was due to reach Punta Arenas on November 18. Unfortunately her departure from London was delayed for more than a fortnight by the strike of tally clerks.

When I reached Punta Arenas on November 30, I heard that the ship which was to have taken us to the Canal Baker had been severely damaged in a storm and was out of commission. However, Admiral Balaresque, commanding the third Naval Zone in Punta Arenas, was kind enough to take a personal interest in our plans and a few days later permission was obtained for the expedition to be carried in the frigate *Covadonga* under orders to sail for Valparaiso on December 7. But by this time it was clear that *Salaverry* would not reach Punta Arenas before the 8th. Apparently the frigate's departure could not be delayed, and it was evident that no alternative means of transport would be available for a long time. It seemed then that our expedition had foundered before it had begun.

The admiral suggested that if we could persuade the commander of *Salaverry*, Captain Thomas, to put the baggage ashore on one of the islands he would be passing, *Covadonga* could pick it up on her way north. But although through the good offices of Mr. Sven Robson, the British Consul, the Chilean customs authorities agreed to allow this unorthodox procedure, it seemed hardly likely that Captain Thomas would be willing to undertake an operation which would further delay his ship and which might well involve some risk in these treacherous, storm-swept waters. It was even more improbable that he would be able to extract our stuff from the 2,000 tons of cargo in his holds. But then I did not know Captain Thomas.

On the afternoon of the 6th we made contact with him on an amateur radio belonging to Mr. Cyril Jervis and I explained to him our dilemma. At that moment *Salaverry* was approaching the difficult English Narrows in thick weather. Without hesitation the Captain replied that he would 'do his damnedest' to help us out. Our baggage was located and brought out of the hold. It was contained in two large crates which could not be accommodated in the ships' boats, so the crates were opened and the stores and equipment repacked into twenty-seven parcels which were put ashore at Puerto Eden. This place is a meteorological station, manned by three men, on Wellington Island at the southern end of the English Narrows, and the only inhabited locality for hundreds of miles. This prompt and generous action by Captain Thomas and his crew had saved the day.

My companions arrived from Santiago with a few hours to spare, and the following morning we embarked in the frigate *Covadonga*. The

600-mile voyage through the channels to the Canal Baker was a fascinating experience and was made extremely agreeable by the warm hospitality of Captain Roepke and his ship's company.

The first two days were cold and stormy; sullen clouds hid the mountain tops and though it was nearly mid-summer, freshly fallen snow lay on the forested slopes almost down to the water's edge. But the morning of the 9th, when we reached Puerto Eden, was brilliantly fine. The dark and light greens of the nothofagus forest, splashed here and there with white magnolias, glacier-capped peaks and the cloudless sky were mirrored in the still waters of the channels. It was hard to believe that this was the first time the sun had shone there after three weeks of continuous rain.

Our baggage was brought aboard, and having checked it and found nothing missing, we went ashore. Besides the meteorological station, there is a small settlement of Alacaluf Indians at Puerto Eden. It seems that this tribe is rapidly dwindling and soon may be extinct; there are, I believe, only a few score left in the whole archipelago. Though now they mostly wear cloth garments, their mode of life is still exceedingly primitive; they live in small skin tents and travel about the channels in flimsy boats, fishing and collecting mussels, which form their principal diet.

We passed through the English Narrows that evening and by dawn on December 10 we were approaching the head of the Canal Baker, one of the longest inlets on the Pacific coast. At 8.30 *Covadonga* anchored off Isla Faro and we were put ashore ten miles farther south in one of the ship's boats. Fortunately the weather was still fine, and the operation was accomplished without difficulty; but it was the last fine day for several weeks.

We landed at the southern end of a deep bay, near the front of the Jorge Montt glacier. Like most Patagonian glaciers it is retreating and though its ice-cliffs still extend far out into the waters of the fjord, only a few years ago it occupied the whole of the bay. As we had anticipated, its recession had left a wide strip of bare country which enabled us to proceed several miles inland without being forced onto the glacier, thus avoiding its extremely difficult lower section. It also enabled us to penetrate easily the forest belt, usually a formidable obstacle.

We spent the afternoon of the 19th sorting our baggage, and on the following morning we started carrying it inland. We had estimated that the crossing of the ice-cap would take about fifty-five days and we had brought supplies of food and fuel for sixty days. This, plus our equipment, weighed about 750 lbs. which could be shifted in three relays. It would have been tedious work but for the excitement of being in unexplored country, which was also very beautiful. The valley left by the retreating glacier contained a lake about four miles

long, dotted with innumerable icebergs; there were thousands of waterfowl, mostly upland and ashy-headed geese, many with young families, feeding along its shore. To our right was a range of mountains, still largely covered with winter snow, its steep forested slopes intersected by gleaming white ribbons of torrents and waterfalls. Beyond the end of the lake our way was barred by a river which was far too deep to ford. To overcome this obstacle we assembled the fibreglass sledge, sealed the joints with paper, and used it as a boat to ferry ourselves and our baggage across. It was a somewhat delicate operation, but the sledge only capsized once, and then fortunately only with personnel aboard.

Farther up the valley we encountered a number of *huemul*, a species of deer about the size of chamois. In other parts of Patagonia these creatures are rare, and so exceedingly shy that they are seldom seen. But here they seemed to be plentiful and they were so completely without fear that they often came and grazed within three or four yards of our camp. We tossed them pieces of biscuit, which they usually ignored and never ate.

By the end of the first week we were established on the crest of a high ridge by the side of the glacier. A mountain barrier now forced us onto the ice, but as this was much less broken than we had expected, we made rapid progress and two days later reached a point where we could begin to use the sledges. We were as yet only 2,000 ft. above sea level, but evidently exceptionally heavy winter snowfalls had been followed by a late spring with the result that this part of the glacier, which by now would normally have been bare ice, pitted with open crevasses, was still covered by a deep mantle of smooth snow.

The weight of our baggage was still too great even to be dragged on the sledges, and so we had to continue to move it in relays. We made the first of these sledge relays on December 20. That evening, having removed my sodden boots and socks, I was squatting in the tent brewing tea. The water had just begun to boil when the stove tilted and the entire contents of the pot poured over my naked feet. The result was very like frostbite; the scalded flesh became swollen and an open sore developed on one foot. I was incapacitated for the next week, so spent a cheerless Christmas, nursing my wounds and bemoaning my lot.

Meanwhile the others continued the work of relaying the loads, and for two days I rode on the sledge, shouting encouragement to my companions toiling at the traces. Though they gave no hint of their feelings, I imagine by the end of the second day my popularity must have sunk to a low ebb. We had then reached the foot of a broad ice-fall which led from the lower glacier to the northern rim of the plateau.

Photo, Eric Shipton]

OUR FIRST "LANDFALL" ON THE NORTHERN PART OF THE ICE-CAP.

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The ice-fall would certainly have caused us a great deal of trouble but for the wintry conditions which still prevailed. As it was, solid masses of snow choked all but the widest chasms, and my companions had little difficulty in finding a way through. But it was hard work hauling the sledges up the steep slopes and several relays were needed before all the loads reached the top of the ice-fall. By this time I was able to walk again, and on the afternoon of the 28th we established Camp VII on the edge of the plateau, at the height of 5,000 ft.

Our arrival on the ice-cap coincided with a spell of twenty-four hours of fine weather, the first we had had since landing. The deep trough of the Canal Baker was still in view, and across it we could now see the great peaks of that part of the range. Southwards there was nothing to be seen but a gently undulating expanse of snow; but to the west, barely eight miles away, a group of superb rock spires rose sheer out of the plateau, their vertical sides plastered by the moisture-laden winds with a floral pattern of ice-crystals.

By now the weight of our baggage was reduced to less than 600 lbs., which was just about as much as we could drag on the sledges; for the snow was always soft and usually sticky. Though it was extremely heavy work, it was a welcome change from the tedious business of relaying. Ewer dragged his own sledge with far more than his fair share of the load, while the other three of us were harnessed to the fibreglass sledge. At first we found that we could only pull for ten minutes at a time before stopping for a breather, but gradually our performance improved. The task of the leading man was the most exacting, for besides doing his share of the pulling, he had to make the trail in the soft snow and concentrate most of his attention on the compass; we changed the lead after every three spells of pulling.

We maintained a regular routine. At 3.30 a.m. we started to prepare breakfast, which consisted of 'brose' (mixture of oats, sugar and powdered milk with boiling water added) followed by tea. The business of getting started was usually the most unpleasant part of the day's work. Each morning we aimed at being ready at 7.30, but we rarely achieved this. Our reluctance to exchange the cosy warmth of our sleeping bags for the chilly hospitality of wet garments was part of the reason. But what really cost the time was digging away the drift-snow which had half buried the tent during the night and extracting the sledges and gear, a job that sometimes took more than three hours.

We usually stopped sledging at about three o'clock. In pitching the tent we followed a carefully prepared drill to prevent it from being blown away. It was laid on the ground with the apex pointing into the wind. While one man concentrated upon keeping the apex down, the others spread the skirts, secured the front and side guys and shovelled blocks of snow onto the ground flaps. Then the apex, securely belayed

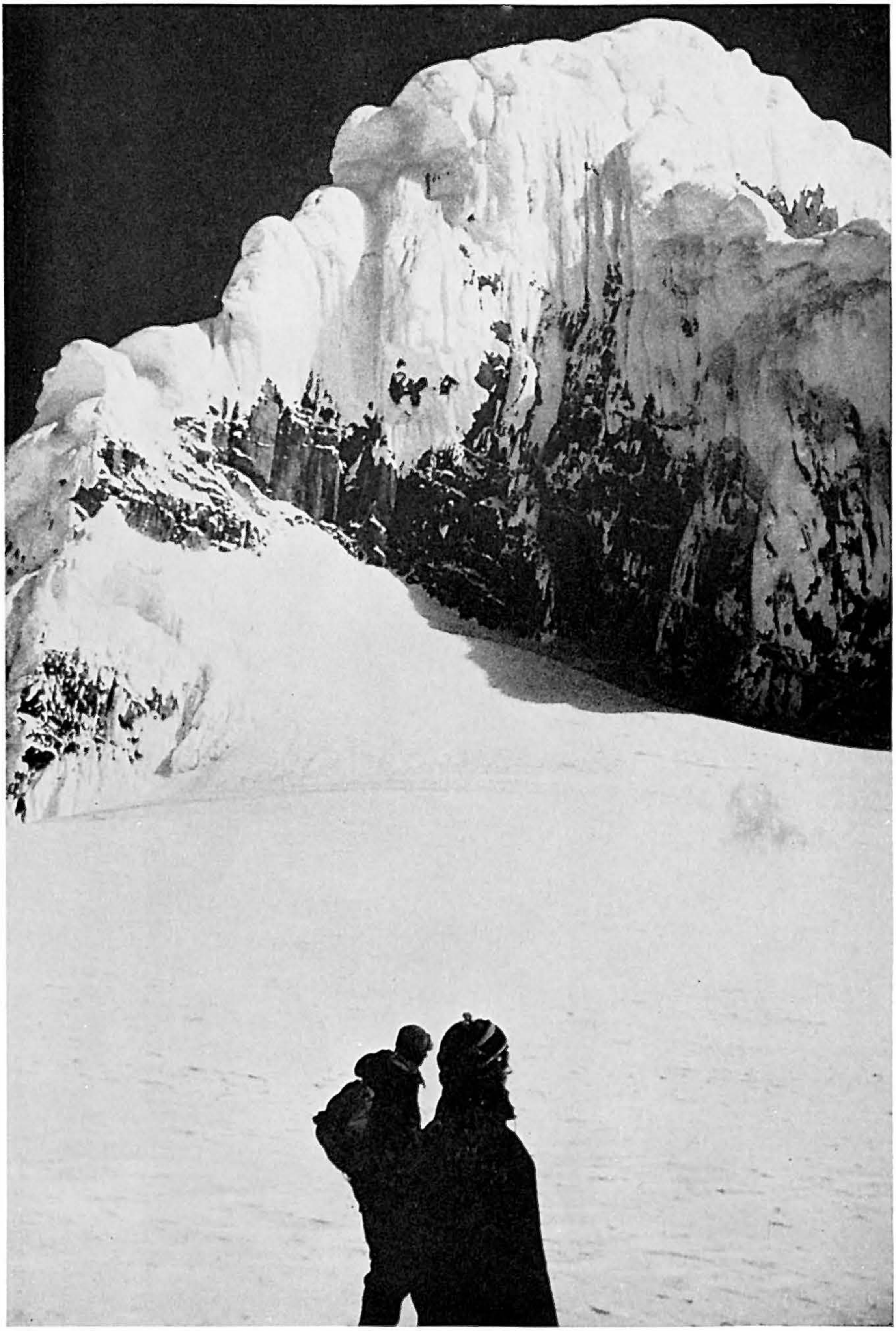
to an ice-axe, was allowed slowly to rise to its vertical position. It generally took us about an hour to pitch the tent and bed down inside it. After a brew of tea we started to prepare our evening meal, which consisted of a meat stew, thickened with potato powder and oats, followed by a cupful of 'brose'. We were ready to turn in soon after 7.30.

As we had expected, the weather was atrocious. But as we gained confidence in our ability to survive the worst that it could do, we developed a stoicism which enabled us to derive a positive enjoyment from combating it. On three mornings we used the violence of the wind as an excuse to lie up for the day; on each occasion the following morning was worse, and we set out as usual. Fortunately we always had the wind more or less behind us; for there were very few days on which progress would have been possible in the opposite direction.

In my previous experience of the ice-cap, precipitation had been mostly in the form of rain or sleet. Heavy falls of snow had been rare, and they had usually preceded spells of fine weather. But this time snowstorms were heavy and continuous, and rain was correspondingly rare. This of course resulted in a far greater density of drift, which was particularly tiresome when we were striking or pitching a camp; but it had two big advantages: the badly crevassed areas remained well covered, and we could keep our clothes and sleeping bags comparatively dry. A less welcome novelty was a dense mist which often persisted for many days at a time and rendered navigation difficult. Often on the northern part of the ice-cap we had only a hazy notion of our position or of the course we should take.

Between January 2 and 5 we passed through a group of widely scattered rock peaks, rising like lofty islands out of the plateau. We rarely saw their summits but when they did appear, sheathed in glistening rime, looming out of the mist and swirling drift, they had the ethereal quality of a Chinese painting. We had seen the southern side of some of these peaks the previous year from our base at the foot of the volcano; we supposed that they might also prove to be of volcanic origin, but the rock samples that we collected showed that they were composed of granite.

On the morning of the 8th, after three days of very thick weather, the mist lifted and we saw a rock buttress which Ewer and I soon identified as the nunatak where we had made our base the previous year and where we had left a small dump of food. We were gratified (and somewhat amazed) to find that it lay almost exactly on the bearing on which we were marching. When we reached it, we found that the dump was buried under several feet of snow, but we managed to extract from it twenty meat bars and a 2-lb. tin of butter. Ewer and Marangunic were delighted with this addition to our store of food,



Photo, Eric Shipton]

NORTH-WEST FACE OF CERRO MURALLON.

for they were both voracious eaters and never quite satisfied with the existing rations. The 2 lbs. of butter was consumed in twenty-four hours.

We spent five days near the southern end of the Cordon Pio XI, collecting geological specimens. We had hoped to climb the volcano, but the violence of the wind made this impossible. Indeed the weather was so bad that we never saw the eruptive vent, though a strong smell of sulphur showed that it was still active. It was clear, however, that there had been no major eruption during the past year. On our journey across the northern part of the ice-cap we had not discovered any more volcanoes, and we are fairly confident that there are none.

We continued on a south-westerly course, and after three days of blizzard, the most violent we encountered on the whole journey, we reached the upper basin of the Viedma glacier. Then, with dramatic suddenness, the weather cleared, and we found ourselves in a narrow corridor between the peaks of the FitzRoy range, which are some of the most spectacular in the whole of the Andes, and the massive ice ramps of the Cordon Mariano Mareno.

By now the sledges were lightly laden and we could make rapid progress. We were nearing our goal, and as we had several days' food in hand, we decided, instead of going straight down the Upsala glacier to Lago Argentino, to make a diversion to a high plateau west of the Cordon Darwin, which had been discovered by de Agostini and named by him 'Altiplano Italia'. It had not, as far as I know, been visited since. We were rewarded by two days of almost cloudless weather.

The summit of Cerro Don Bosco, the northernmost peak of the Cordon Darwin, which we climbed on January 25, was a superb viewpoint from which we saw all the ranges surrounding the southern part of the ice-cap, sparkling in the storm-washed air and rare sunshine. To the south-east lay Lago Argentino, while westward we looked down into the dark waters of Fiodor Falcon, one of the inlets from the Pacific. All about us there was an exotic statuary of ice composed of a delicate pattern of crystal flowers; huge mushrooms and jutting gargoyles sculptured in rime by the saturated wind. The most remarkable of these formations were on Cerro Murallon, the peak immediately to the south of us, a square block of granite, its smooth, vertical sides festooned with a fantastic ice drapery, its flat summit, perhaps 600 yards long, crowned by a line of ice minarets.

Later we climbed to the summit ridge of Cerro Murallon. We had just reached it and were looking around to see which of the minarets was the highest, when suddenly, without any warning, we were enveloped in mist so dense that we could not see more than a few yards.

At the same time a strong wind started to blow from the west. A few minutes before, we had been standing in sunshine under a cloudless sky; now we were groping in a blizzard. It was then 5 p.m. The way back to our camp was long and complicated, and our upward tracks had been obliterated. It was largely due to the lucky chance of a brief clearing when we were on the most tricky section of the route that we found our way home that evening. We should have known better than to trust Patagonian weather, whatever its blandishments.

The normal régime of wind and mist and driving sleet was now re-established, so we descended to the Upsala glacier and headed for home, sadly abandoning the sledges when the ice became too rough for their further use. On the night of January 30 we camped on the lower part of the Upsala glacier in a howling blizzard; the following afternoon we were walking down through enchanting woodlands, our world alive again with the song of birds and the smell of growing things. At six o'clock we reached Estancia la Cristina, and at 7.30 we sat down to a deliciously cooked dinner, followed by strawberries and cream.

The crossing had taken us fifty-two days.