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The Everest-Lhotse Adventure

The Everest-Lhotse Adventure

BY

ALBERT EGGLER

TRANSLATED BY

HUGH MERRICK

Ruskin House

GEORGE ALLEN & UNWIN LTD

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PREFACE

WITH a view to continuing the research work begun in 1952, it was decided to send a third expedition, composed of climbers and scientists, to the Everest area in 1956. This book is the report on the mountaineering aspects of the venture, whose objectives were Everest, which had already been climbed, and Lhotse, the highest unclimbed summit in the world.

It was essential to find a leader whose character and experience matched the responsibilities of such a mission. We chose Albert Eggler, from the Bernese Oberland, a climber tried by wind and weather, with an eye well practised in route finding, an innate talent for handling his fellow men, and all the experience of an officer in Alpine regiments, where precise planning and unhesitating decisions are involved.

The success of the Expedition is sufficient proof that we could not have made a better choice.

Swiss Foundation for Alpine Research

INTRODUCTORY

We are climbers, not literary men. Owing to the number of events happening at the same time within the confines of a considerable mountain area, none of the eleven members of the team probably reacted to individual details of one experience in exactly the same way. During the course of the expedition, too, we ran up against many things which, if they were to be properly understood, called for the expert knowledge of a scientist or even a philosopher's approach. Many a facet of this report, to which I append my signature as the compiler of contributions made by every member of the expedition, could not have been included but for their assistance.

I therefore wish to record my thanks to them for their unfailing confidence and team spirit. My special gratitude is due to Jörg Wyss, who collated our written notes and oral reports into their proper order for presentation.

A.E.

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CHAPTER I

The Green River

I HAVE been back a week. Here at home, I can see the Aar racing down the valley and sweeping round the old city of Bern in a wide bend, green and clear, its current bubbling up into little flecks of white foam. On it the young swimmers—brown, lithe boys and girls—come floating back to the town after disporting themselves in its waters. My own children might be among them, if I didn't hear their excited voices in the garden announcing that they have harnessed Peggy and young Dolly to Rekpa and Ki—two bundles of fluff I brought back from Namche Bazar, which seem to be developing into proper little yelpers. But my gaze is always drawn back to the river, and my thoughts too go floating on its quiet stream back to the town.

How well I know that green river! When I was small, I used to watch its tumultuous entry into our Lake of Brienz. When the snows were melting or after a thunderstorm on a summer's evening it used to carry the marks of its discolouring burden far out into the disturbed waters of the lake. No sooner had the surface relapsed into its usual calm than it again mirrored the woods and the clouds in clear reflection of the green world through which the river flows. And so my thoughts went winging back to the green river as we flew high over the watery veins of the Ganges plain, quivering in the heat below us; and again on that hot Sunday in March when we crossed the Sun Kosi in the ferryman's dugouts and revelled in the clear, cool water, leaping down to meet us from the hills, as if we were boys again, swimming in the Lake. For a boy's life in my native village of Brienz had bound me inescapably to Nature. Far up the valley, the Sustenhorn used to glow rosy-red in the sunset. If we scrambled up to the pastures high on the alp behind the village, the great Oberland snow-peaks began to lift their heads above the grey

ridges of the Wildgerst, Schwarzhorn and Faulhorn—the Wetterhorn, Schreckhorn, Finsteraarhorn and that lovely triple-headed group, the Eiger, Mönch and Jungfrau. But as a boy, I had never dreamed that one day I would be pitting my powers against a far higher, more savage trio of peaks—Everest, Lhotse and Nuptse. . . .

So the green river links my thoughts from far or near, as it encircles the old city of Bern in its motherly embrace—the city where I have spent my manhood and found my life's work. Like myself, many other young people who came from the hills only became mountaineers after settling in the city. People who face the wind and weather of the mountains daily as something taken for granted are unlikely to feel any urge to press forward into uncharted, untracked country. Such a man more often feels the Call of the Hills for the first time when homesickness for the mountains he has left behind him begins to stir him to look around for companions with whom he might return to what was by predestination and inclination his true home.

It was an experience which came my way in 1933, the year in which I began my legal studies at Bern. One of the undisputed advantages of that career is a certain amount of freedom of curriculum and a measure of leisure time. My first few terms were pleasantly relieved by periods of military service, considerable holiday periods and mountaineering.

In 1934 I qualified for membership of the Akademische Alpenklub in Bern, after a conscientious observance of the varied duties of a probationer for two terms. Not the least of these was to sit at the end of a table during many a Friday evening Club meeting, without attracting any particular attention. Sometimes, by a stroke of luck, a member would throw out a hint, towards the end of an evening, that a given climb might be suitable for a mere probationer, if by any chance he had a rope of his own and knew how to come down on it when doubled; of course, one had had some grim experiences with various novices on this or that climb, but one might give it a try. And so it came about that I, too, got the chance of climbing with one expert or another, and on their ropes learned many things which were to stand me in good stead not only in the mountains but in my studies and life in general.

Among those of my own age during the years of apprenticeship in the Alpenclub were Rudolf Gallati, Wolfgang Diehl, Walter Baumgartner, Christian Meisser, Fred Müller, Walter Scheuner, Hans Fritz von Tscharner, and my brother Richard. Among the 'old gentlemen' the leading lights were Hans Lauper, Daniel Chervet, Eduard Wyss-Dunant, Oskar Hug and Rudolf Wyss. Rudolf went off in 1935 on his second Karakorum adventure; during the same year Wyss-Dunant visited the Hoggar and Greenland. So there was never a lack of men with experience in regions outside the Alps.

It was in those distant thirties that the British were renewing their assaults on Everest, while the Germans and the Austrians were engaged in their vain attempts on Nanga Parbat and Kangchenjunga. We, in our own circle, followed the experiences of those expeditions with a lively interest. When Ruttledge's expedition was driven back on Everest by the premature onset of the monsoon in 1936 we were just as sympathetically interested in the outcome of its efforts as when two years later, on June 8th 1938, Tilman's party succeeded in setting up Camp VI on Everest's North Face at a height of over 27,000 feet. Our circle of friends often discussed the two notorious 'Steps' in Everest's north-east ridge at about 28,000 feet, which Tilman and Lloyd attempted on June 10th of that year, only to pronounce them impossible. We were equally interested in Willy Welzenbach's great achievements abroad, for his brilliant routes in our own mountains at home were ever before our eyes on many of our own ascents.

It was in those early climbing days that I met Lucie Durand, who was later to become my wife. With her I climbed many of the most interesting mountains and she still remains one of my most reliable partners on the rope. Among the climbs accomplished in those years were the traverse of the Weisshorn in the Valais by its North Ridge, Mont Blanc by the Brenva, the Aiguille des Grands Charmoz, the Écrins, the East Ridge of the Bietschhorn, and the Fiescherhörner. Later there were other Valais climbs (among them the Zmuttgrat of the Matterhorn, the South Face of the Obergabelhorn, the Mischabel Ridge of the Dom, the Viereselgrat of the Dent Blanche, the North Ridge of the Weissmies and the Portjengrat); in the Grisons we did Piz

Bernina's Biancograt, the Bumiller Ridge of Piz Palü, the traverse of Piz Roseg, the North Ridge of Piz Badile and other climbs; and, in the Oberland, the Engelhörner, the North Face of the Wetterhorn, the Lauper Route on the Mönch, the Jungfrau, Grosshorn, the Chervet Rib on the Breithorn, the North Rib of the Mittaghorn and a great many others. I always preferred combined routes on the great and lovely high peaks to pure rock climbs of the severest degree of difficulty.

The outbreak of war and years of military service banished even the most tentative hopes of climbing experiences outside Europe, and considerably reduced our activities even among our own Swiss peaks. To compensate for that, I had ample opportunity to gain experience of military mountain armament and equipment, in which direction my duties lay. It is with immense pleasure that I recall innumerable mountain training courses under the masterly command of Major (now Colonel) Fritz Erb, which took me in summer and in winter into every mountain area of our country. These courses, of a fortnight or three weeks' duration, were not only an admirable personal training but offered an almost unquenchable source of experience in mountain equipment, patrol leadership, mountain marches, bivouac-construction and team-work, under actual mountain conditions, and also in all questions of supply and support. Of equal service was the knowledge I was later to absorb of the maintenance of mule transport, the construction of wire ropeways, the preparation of usable roads on difficult terrain, the technique of explosives and the science of snow conditions and meteorology. But the finest legacy of all those courses on which I originally served as a patrol-leader, and later as a leading technician or as Commanding Officer, seems to me to have been the lasting friendships founded at that time with many leaders of roped parties and patrols. Participation in these military courses continued after my active service was over. Service as an officer in the 11th Alpine Brigade and my later activities as Commander of the Avalanche Company brought me a host of experiences which were to prove of the greatest value to me on our Himalayan Expedition.

On those courses, and also when climbing as a civilian during the war years and those immediately after, I was frequently

thrown into the company of Ernst Reiss and his climbing friends. His name is of course associated with numerous extremely difficult climbs in the Alps. He seemed to embody a combination of technical ability, bodily strength and endurance and the unshakeable idealism of the true climber. I often met Adolf Reist in his company and learned to appreciate his great qualities during our military service. The two together form probably one of the finest pairs of guideless climbers in Switzerland.

I was particularly pleased that in the autumn of 1952 Reiss was given the chance to take part in the second Mount Everest Expedition organised by the Swiss Foundation for Alpine Research. As is well known, he and my friend Raymond Lambert with Tenzing and seven other high mountain Sherpas reached the South Col on November 19th 1952. The party was forced to turn back above the Saddle at a height of 26,600 feet by bitter cold and murderous winds. At the very time in Dec. 1952 when the abandonment of that attempt became known, Eduard Wyss-Dunant was giving us his lecture at the Alpenclub about the expedition he had led in the spring, which had succeeded in forcing a way into the Western Cwm, by the route Shipton had discovered through the Khumbu Icefall, and had then pushed ahead by way of the South Col to a point high on the South Ridge of Everest. The conclusions reached by my fellow club-member in his lecture were to be proved right in the following year. It was essential, he said, if the summit of Everest were to be reached, to reduce the height differential between the final camp and the top, and also to improve the state of fitness, at that point, of the summit party. The requisites to this end were plentiful supplies of oxygen and plenty of fluid nourishment rich in glucose and vitamin content, which would have to be taken up by a strong and fit support party to a very advanced altitude. The British success of a few months later was to confirm the soundness of his judgment.

For it was in the spring of 1953 that the ninth British expedition, led by John Hunt, went out to assault Everest, determined to site a well-equipped high camp close to the summit, so that the summit-party would only have to undertake a relatively short final climb. On May 26th Evans and Bourdillon (who has since lost

his life when he and his partner on the rope fell to their death on a climb of the Jägihorn in the Valais) reached the South Summit of Everest (28,722 feet). On the 28th, Hillary and Tenzing occupied the highest camp ever sited on the mountain and were thus enabled to set foot on the summit of the world's highest peak the next morning.

This triumph by Hillary and Tenzing on Everest seemed to herald a new era in the history of mountaineering among the world's highest peaks. True, Maurice Herzog and Louis Lachenal had succeeded in climbing the first 'Eight Thousander'[1]: the 26,504 foot Annapurna, as long ago as 1950, but this had remained the solitary success. Now Everest had really been climbed, and Hermann Buhl had managed in the very same year to reach the top of the world's eighth-highest peak—26,660 foot Nanga Parbat in the Punjab Himalaya, in a solo effort without a parallel. In 1954 the Italians won their success on K2, the Matterhorn of the Karakorum Range, the second-highest summit in the world at 28,253 feet, and in the same season Herbert Tichy scaled the sixth highest, 26,870 foot Cho Oyu of the lovely shape. People were soon talking of a 'Sale of the Eight Thousanders', which was to continue in 1955. Kangchenjunga 28,168 feet, the third, and 27,790 foot Makalu, the fifth among the world-ranking peaks, both in the Nepal Himalaya, were climbed during that year; while Lhotse, Everest's 27,890 foot neighbour, with the sharp rock ridges, just managed to ward off an attempt the same summer. By the end of 1955 seven of the fourteen eight thousand metre peaks had succumbed.

I had known the Swiss Foundation for Alpine Research since its inception in 1940. Many of my friends and acquaintances had on occasions taken part in the expeditions sent abroad under the aegis of the Foundation—to the Himalaya (1939, 47 and 50), the Karakorum (1947), Tibesti (1948), Nepal (1949) and Baffin Island (1950 and 53). The two expeditions to Everest in 1952 had brought its activities into much wider prominence. The statutory objective of the Foundation is to support exploration and research in mountain areas outside Europe, as well as in the Arctic and Antarctic, and where necessary to equip and finance expeditions

[1] Peaks of 8,000 metres and more.

to those regions. Karl Weber, of Zollikon, is at present its President, and the Foundation works under the eye of the Federal Department of Internal Affairs. As long ago as 1954, attempts had been made to obtain a permit from the Nepalese Government to climb Lhotse and Mount Everest.

At the beginning of 1955 the Foundation invited several climbers, among them Ernst Reiss, Jürg Marmet and myself, to a conference in Zürich at which the intention to send an expedition to the Everest group was disclosed. Reiss was proposed as the leader of the technical climbing party, Marmet as the oxygen expert, and the general leadership of the expedition was offered to me. When, after due consideration, I accepted that responsibility, I only knew that we were facing something which would mean a great deal of hard work, but would at the same time be a wonderful experience. All the others who during the course of that year 1955 were called upon to decide whether to join the newly-launched craft, which still needed the provision of a crew and seaworthy equipment, felt much the same as I did. One thing I never doubted was that we would be able to get together a thoroughly competent team of tried mountaineers, ready to respond to the magic call of the Himalaya and to confront whatever experiences might await them in a new and marvellous mountain world.

CHAPTER II

The Team

I WAS given a very free hand in my team-building efforts. With the Foundation's approval a preliminary enquiry was sent out at the start of 1955 to two dozen climbers, who we thought would be most likely to accept. The calls of business and other ties soon reduced the number of candidates, and the party which eventually travelled to the Himalaya was not long in taking its final shape. My first consideration was to get together men who knew each other well and had tested their comradeship thoroughly together on the rope. Since Ernst Reiss had already reached an altitude of about 26,600 feet on the South East Ridge of Everest in the late autumn of 1952, it was obvious that he would fill a place of outstanding importance in the party which was being assembled.

A logical sequel to the conception that the hard core of the expedition should consist of tried and tested 'ropes', was an invitation to Adolf Reist. From his home in Interlaken he and Reiss, who lived in near-by Brienz, had done innumerable difficult climbs together all over the Alps, in summer and winter conditions. His amazing practical skill and technical ability, his tremendous mountaineering experience and powers of endurance, as well as his equable temperament and cheerful nature were invaluable to all of us. Another obvious choice was Fritz Luchsinger, who had so often been the third member on their rope. It was a trio which had come back safe and sound from many a severe climb. In spite of their very different natures, the three of them were a perfectly co-ordinated climbing party, in which Luchsinger, with his energy, his endurance, his unselfishness and his keen powers of observation played no mean part. This was a completely reliable team, in which one could place an extreme degree of confidence; indeed it must have been one of the soundest climbing-parties ever to visit the Himalaya. Bern produced

another ready-made rope of three. Wolfgang Diehl, who for a whole generation had been the mountaineering mentor to the members of the Akademische Alpenclub, was—to my great relief and delight—ready to join the expedition on the spot. His knowledge of Alpine mountaineering history and of foreign mountain ranges, his flair for route-finding and his vast experience had become a legend, far and wide. As the climbing adviser to some of Lauge Koch's Greenland expeditions, he had gained great experience of such undertakings during a number of summers spent in that area. One of his most expert and promising younger companions, Hansrudolf von Gunten, was known to be first-class on both rock and ice. He and his brother-in-law, Ernst Schmied, belonged to that school of Bernese city mountaineers dedicated to an extremely severe standard of climbing. The pair, often in Diehl's company, had, after careful preparation, familiarised themselves with all the finest climbs in the Alps. Jürg Marmet had some years ago won his guide's brevet for Canton Bern, had led quite a few difficult climbs throughout Switzerland and had also achieved considerable experience of the ways of expeditions, which he had gained in the icy wilderness of Baffin Island. There he had shown sound climbing ability by mastering a number of difficult rock pinnacles for the first time. Dr. Hans Grimm, from Wädenswil, had done most of the big climbs in the Alps. Besides being an experienced mountaineer, he was a dentist with practical experience in the Medical Corps, which later on proved most useful. Fritz Müller came along as the expedition's glaciologist. He too had experience of expedition conditions, thanks to his scientific work in Greenland and the Canadian Arctic. He also had the soundest climbing qualifications to offer.

My greatest difficulty lay in finding a doctor for the Expedition. A whole list of suitable people found themselves unable to leave their duties for several months on end and so had to be dropped from consideration. We had to decide once and for all whether Dr. Grimm's presence was enough, seeing that his medical knowledge as a Dentist was sufficient to deal with all first-aid demands. I never liked the idea of being left for some months in the Everest area without a qualified doctor. The two previous Swiss Everest Expeditions had both been led by Doctors,

whose skill and knowledge had been called upon in a number of serious cases. So I went on looking, only to be told over and over again that the long years of training as a doctor's assistant could brook no interruption whatever, nor would young doctors expose themselves to the risk that more sedentary colleagues might overtake them in the race for good Assistants' posts. To my great surprise, I discovered that the practice and experience a young doctor could gain on an expedition of that kind was not rated very highly in Switzerland as an adjunct to his medical training.

The greatest advantage of the composition of our team lay in the fact that they all knew each other well, either through having climbed or taken part in expeditions together, or because they had pursued their studies or done their military service in each others' company. That made it much easier to weld strong individualists into a single entity. Another thing that appealed to me was that they were all used to filling any position on the rope. If one wanted to apply the available man-power at will in various combinations or numbers, it would almost automatically work out all right, because each rope would be of equal strength. One combination might be the more experienced, another might be more powerful, a third more resolute, but, taking all in all, each of them would be equally competent to carry out whatever their assignment might be.

The formation and training of our team was greatly facilitated by the High Command of the Army, who made it possible for the provisional members of the expedition to attend two mountain training courses. When the Central Summer Training School moved up to the Furka, still under a covering of winter snow, in June 1955, almost all the men who eventually took part in the expedition were among the trainees. They were moreover enrolled in a special Training Group, which was allowed to follow its own special programme.

We soon abandoned the comforts of barrack-life on the Furka Pass and moved into tents in a camp on the right bank of the Rhône glacier, close under the Nägelisgrätli, that classical walkers' route since the early days of postal coaches, from the Grimsel to the Furka—now unfortunately sinking more and more into oblivion. We fitted this camp out as a Base Camp, one detachment

occupying themselves with pitching the gaily-coloured Himalayan tents, which belonged to the Foundation, others with the construction of a stone-built kitchen, others again with the sanitary arrangements. Though the enthusiastic assistance of the Sherpas was lacking, in every other respect the siting of tents, the party's culinary arrangements, camp-life in general and climbing-practice followed the same lines as were to prevail later enforced in the Himalaya. During this time we all learned how to handle the Army radio-sets, pattern SE 101, which were to serve us so well later. We got to know the good and bad points of the apparatus and its batteries, and then acquired an assurance in handling and maintaining them which was essential to their successful operation under difficult conditions when the time came. We also familiarised ourselves with the wire-rope rescue gear, whose possibilities when transformed into a lift were particularly interesting to us, for we were already considering taking a wire ropeway along, to hoist the loads through the Icefall or even up the Lhoste face. We worked extremely hard at the problems of establishing routes up icefalls. The technical and theoretical work put in by most of the members of the team was a great encouragement.

We took the opportunity to take the oxygen equipment into use, so as to accustom ourselves to moving about and climbing with the mask on. Then we practised hacking out platforms and ice-grottoes, which enabled us to try out various types of snow shovel and the use of explosives.

During the second week of the course we moved our camp on to the ice of the Bächli glacier above the Grimsel, in order to get an idea of what life is like when an expedition has to maintain itself for fairly long periods on pure ice or snow—an experience which also proved most useful later on. For this week a young and keen lieutenant of an Alpine regiment, who was not intending to join us on the expedition, was seconded to us. All the same, we gave him the Sherpa nickname of Annullu. 'Annullu' lent a willing hand to all the chores about camp and to carrying loads; and in recognition of his services we took him along on our climbs on the peaks which surround the Bächli glacier. By the end of the course, our own Lieutenant of Artillery Hansrudolf von Gunten as well as this attached officer, Lieutenant Freudiger, qualified for

the Swiss Army's high-mountain badge, which signifies 'Passed fit as a detachment-leader among the high Alps.' The other members of the party had qualified years before on various military courses.

In January 1956 we got another chance of several days' useful training. I was conducting a refresher course of the Avalanche Company, which I had been appointed to command in 1955, in the Montana-Rawil Pass area. Permission was given to the members of the expedition to join it. Part of the training curriculum of the Avalanche Company consists of practical exercises in blasting avalanches and ice. Specialist instructors from the Walenstadt Gunnery School were lent us for some days to supervise the laying of the charges. The members of the expedition took part in these exercises and so were introduced to the technique of using explosives under expert instruction. True, we were not to encounter any slopes rendered dangerous by avalanche snow and calling for artificial clearance on Everest, but we made considerable use of explosives in blowing up séracs while breaking a trail through the Icefall of the Khumbu Glacier. Now we also learned how tent platforms could be blasted out of suitable névé and ice-slopes. We Ice-Sappers in the making were somewhat surprised to find that charges laid in the ice produced only unimportant changes, hardly visible to the eye. But if we went to work with ice axes and shovels after the discharge, we found that considerable masses of the ice had been softened up by the explosion into loose blocks, which could be shifted almost as easily as lumps of coke in the coal-cellar at home. This joint training course, like the period of service in the summer of 1955, was fruitful: every day we spent together we got to know each other better and to appreciate each other more.

In the summer of 1955 we did a number of climbs in each others' company, though it was not always possible for everyone to get together at the same time. We all met for a climbing tour on the Tallistock among the Gadmer Flühe's ridges and on the Fünffingerstöcken above the Susten Pass. Reiss, Reist and Luchsinger climbed Monte Rosa's East Face in remarkably good time, seeing that they had to do a lot of otherwise avoidable step-cutting, owing to a broken crampon. Schmied climbed the North Rib of

the Gross Fiescherhorn, besides carrying out a successful programme in the Mont Blanc Range together with von Gunten. I, by contrast, disappointed by the bad weather the summer of 1955 was providing, spent part of my holidays by the sea, indulging a whim for swimming, and climbing on the steep cliffs of the Calanques—perhaps not the best training for a Himalayan expedition, but none the less providing a great deal of fun in the bosom of my family and a nice exercise in relaxation.

During the winter we all met again on the Grindelwald Glacier to practise using tunnelling-axes under the guidance of Gottfried Bohren, who presides over the ice-grotto at Jungfraujoch. These tools are admirable for excavating caves in the ice.

Meanwhile we were all engaged in our normal occupations, so that any work related to the preparations for the expedition was a spare-time commitment.

By the autumn of 1955 we had reached a point where the personnel of the expedition was settled, except for a doctor. Several of the men had great difficulty in getting the necessary leave of absence for almost six months. For most of them it meant a substantial loss of earnings and as the majority were married men they were mostly worried in one way or another as to how their families would manage while they were away. But it was just such burdens as these which welded us more intimately together, no less than our training climbs, which we were finally able to arrange to our great delight. It became clear in the meantime that participation in the expedition could not be allowed to hang on a question of financial loss; for the removal of this doubt we have to thank our good wives, who decided to counterbalance to the utmost extent possible from their own resources any loss a member might incur through reduced earnings.

In this respect I did not need to worry so much about the bachelors, Marmet, von Gunten, Luchsinger and Diehl. The two first-named were in the final stages of their scientific studies and were not yet much affected by questions of income or loss of income. Diehl was in any case spending the whole summer in Greenland, where he did not need to worry about his upkeep.

I started parcelling out duties long before the composition of the party was decided down to the last man. We formed working

parties, in which each member was occupied with the preparations according to his special experience and bent. The division of particular areas of activity settled itself almost automatically according to the habitat and the special knowledge of the individual members. Reiss, Reist and Luchsinger were soon engaged on questions of equipment and clothing. Reiss lives in Brienz, Reist in Interlaken, Luchsinger in Thun; so these three were able to develop a valuable degree of preparatory work quite early in the proceedings. Von Gunten and Schmied, both city-dwellers in Bern, tackled the problems of diet and commissariat; Grimm took over the preparatory medical work, seeing that all through the preparatory phase we were still unable, as already mentioned, to obtain the services of a doctor; Marmet assumed responsibility for everything to do with oxygen equipment, in which he specialised. Diehl set to work on familiarising himself with the climbing history of the training area we had chosen around Thyangboche and a general study of all the existing literature on Mount Everest and the area surrounding the mountain, nearer or further afield. There was a wealth of books packed with the experiences of earlier expeditions, in themselves of the greatest value, as was the large number of photographs illustrating them; these all contributed enormously, during the preparations, to the painting of a daily more impressive and clearer picture of the Everest Group before our eyes.

Our glaciologist, too, was able to prepare himself for his scientific tasks and duties, and obtained much useful advice from University Professors and Institutes as well as from the Federal Institute of Technology in Zürich.

Right from the start of our preparations we steeped ourselves in the configuration of Everest and Lhotse, and their problems. For weeks we pored, enthralled, over the vast amount of photographic material provided by the Foundation. We all worked with a clear conception of the terrain and surfaces which we would be encountering on the approach march, on the ascent into the Khumbu Basin, on the Lhotse Face and high up near the summit. I believe this thorough preoccupation with the Everest massif was a potent factor in welding our team together. Each one of us had a clear picture of the mountain world into which it was our

aim to penetrate; and although none of us except Reiss had set foot in the Himalaya, we began to talk about the South Col as if it were as familiar a feature as the Adlerpass in Valais or as the Lötschenlücke. When I was talking to the members of the team I couldn't help thinking of the passage in Gottfried Keller's *Fähnlein der sieben Aufrechten*, where the young Karl is preparing himself for his marksman's course and, by dreaming of shooting, or by lying awake imagining himself firing hundreds of rounds at the same target, accustoms himself to the actual firing in the butts. In our mind's eye we could see the camp sites of the British and Swiss expeditions on the slopes of Everest; we knew how long was needed to reach one from another in good or bad weather.

In this way our climbing plan, the basis for all our other work, came into being. Its main premise was that the Monsoon, as in so many previous years, would not break before May 20th but not later than June 10th, and that a definite period of three weeks of fine weather would immediately precede it, once the winter storms were over. We would have to make the best use of that period of good weather for the establishment of our high camps and the assault on the summit. We therefore counted on being in occupation of a camp at about the 26,000-foot level, ready to push forward to the summit, by May 15th; at the same time we wanted to be able to stay at great altitudes for quite a time so as to be able to delay a last attempt on the summit as late as June 5th.

We worked everything else out backwards from those two dates, starting by estimating the material which would be required for occupation of the highest camp long enough to make three attempts on the summit. We then worked out its weight and converted the result into porter-loads; we thus arrived at a figure for the shortest possible occupation of the second highest camp and were able to reckon how many loads would have to be carried to that point too. In this way we worked out the essentials right back to Base Camp, allowing for ample reserves of food, fuel and oxygen to cope with any spells of bad weather which might intervene. We plotted the resulting data as graphs, compared them with the scanty information available from earlier expeditions and went over them at conferences in which everyone took part.

I then had this Climbing Plan reduplicated and circulated to the

working parties, which at once set to work to implement it. Schmied's party produced the number of the Khumbu- and Summit-packs and the amount of fuel which would be required. The plan also enabled us to establish how many tents, sleeping-bags and air-mattresses would be needed. An allowance of 40 to 50 days for the establishment of camps up from Base to 26,000 feet and for full acclimatisation enabled us to arrive at the necessary number of high-altitude porters. Finally we established that the first reconnaissance party should move up into the Icefall from Base Camp by April 7th. We should be in a position to carry out our intended training fortnight above Thyangboche if we started our approach-march from Jainagar on March 4th. And in the same way we eventually arrived at the date of departure for the party which was to accompany the baggage, for the packing operations, the ordering of equipment and the activities of the various working parties.

Meanwhile one question kept me incessantly preoccupied. Dared we go out without a doctor? All previous expeditions of any size had taken a doctor along; smaller parties had over and again got by without one. The Foundation for a long time held to the view that we, too, could risk travelling without a doctor, in view of Grimm's great experience as a dentist and as a commander of an army medical unit. I never felt happy about this theory and continued the search unremittingly. Marmet eventually drew my attention to a friend of his who had just passed his State Medical Examinations in the autumn of 1955. He described him as an adept on skis who had already done several high mountain ski-tours and his passion for climbing was clearly based on a wide experience already gained.

I hardly dared hope that the problem of a doctor could still be solved, for by that time the majority of the team were already on the high seas. When I eventually met the young doctor, Eduard Leuthold, he only had a very few days in which to decide whether to lay aside his work and follow us. To my surprise and delight he agreed to come. The decision in thought and action which he then displayed was later to come to the rescue of the expedition again and again. As for me, a ton weight had fallen from my shoulders.

Now, for the first time, I could regard our team as complete;

a group of unblushing individualists of the first water, all of them minded, none the less, to stick together through thick and thin, because they knew that without selfless team work there would be no hope of success on and about Everest.

Diehl, my climbing partner for so many years and also my fellow-student when young, was appointed Deputy Leader of the Expedition, for he was the oldest; Reiss's post was Leader of the Climbing Parties and Marmet's that of Oxygen Expert.

And so in the event our expedition was composed as follows:—

Albert Eggler, Leader of the expedition, an advocate from Bern, aged 43.

Wolfgang Diehl, Deputy Leader, a Lawyer from Bern, aged 48.

Hans Grimm, a Dentist from Wädenswil, aged 44.

Hansrudolf von Gunten, Chemist, from Bern, aged 28.

Eduard Leuthold, Medical Practitioner and Doctor to the Expedition, from Zürich, aged 28.

Fritz Luchsinger, Army Instructional Officer, from Thun, aged 35.

Jürg Marmet, Engineer, Oxygen Expert, from Zürich, aged 29.

Fritz Müller, Scientist, Geographer and Glaciologist, from Zürich, aged 30.

Ernst Reiss, Head Guide and Aircraft Mechanic from Brienz and in charge of our climbing parties, aged 36.

Adolf Reist, Aircraft Mechanic and Staff-photographer, from Interlaken, aged 35.

Ernst Schmied, Business Executive, from Bern, aged 32.

CHAPTER III

Equipment and Supply

THE preparation of all the necessary equipment and commissariat, insofar as we were taking it along from Switzerland and not arranging for it in Nepal, occupied us many months. While each working-party was hard at it within its own province seeing to all the essentials, we discovered that there was much more to be done than any of us had expected before the expedition's heavy baggage—seven tons of it in all—was ready for despatch.

Our work on questions of equipment and food was greatly eased by the knowledge gained from the experiences of earlier expeditions. There were many items which had proved themselves on those occasions and which were beyond the realm of discussion. A few items of equipment were still the subject of argument or only in the development stage. Climbers are always inclined to accept their own experience in the first instance and to examine that of third parties most critically under a microscope. None the less the preparatory work and our conferences during 1955 resulted in a broad measure of agreement among the members of the expedition as to the equipment we needed. Nor were there any extravagant ideas about provisions. It was our intention to stick to things which had proved themselves on earlier expeditions and had shown themselves suitable under the exceptional conditions encountered at high altitudes.

There were two factors of prime importance to be borne in mind as contrary to anything met with in the Alps: these were the unaccustomed altitude, with its thin air, weak in oxygen content, and the bitter cold of the nights, to which we were bound to be exposed for much longer periods than on any tours in our own mountains at home. So our first consideration was the efficiency of our high-altitude breathing apparatus and our protective measures against the cold; and we were soon to find out that we

still had a great deal of work to do in these directions. We knew that, with the single exception of the first British Reconnaissance in 1921, every previous attempt to climb Everest had taken oxygen along. The Swiss Expedition in the spring of 1952 had relied on a closed-circuit apparatus, which produced oxygen chemically on the principal of a generator. Apart from the weight of the manifold generating cylinders, which was still considerable, this had the disadvantage of only supplying the revivifying gas when one was at rest. The lesson was learned then that a supply of artificial oxygen during periods of rest and recovery was insufficient; it was essential to provide a continuous supply while the climber was at work.

As a result, the Swiss Expedition which followed in the autumn of the same year used two different sets of equipment with open circuits, supplying compressed oxygen, brought along in steel 'bottles'. One of these, an automatically regulated type, produced in the minimum of time by the Draeger works in Lübeck, gave extremely satisfactory service and must still rank as a thoroughly reliable piece of high altitude equipment, seeing that it has been further improved since 1952. The other type, Swiss in its origin, was developed in the Institute of Hygiene and Industrial Physiology of the Federal Institute of Technology, in close co-operation with the firm of Carba Ltd, of Zürich. It was provided with a reduction-valve of a type easy to operate by hand. The British breathing-apparatus, used on the successful expeditions to Everest in 1953 and Kangchenjunga in 1955, were on the same principle as our Draeger equipment but better finished in important respects, the most notable of which was their possession of a hand-operated reduction-valve. On Makalu in 1955, the French used breathing apparatus designed on the same principle as the 1952 Swiss equipment. This had been developed quite independently and functioned splendidly, largely because of its lightness. Our choice fell on a combination of the French-built apparatus and an improved breathing-mask of our own design. The oxygen in this type of apparatus is fed under continuous regulated pressure into the mask, where it is mixed with air from outside. It was of great advantage to us that Marmet soon mastered all the problems of our oxygen equipment with his expert skill

and scientific ability. This was of course his own field of science and we unquestionably relied on his advice from the very beginning, for we knew it would be his aim, both as a climber and a scientist, to provide only equipment which would stand up to the severest tests.

The material comprising our high-altitude breathing equipment eventually weighed about 1,800 lbs in all and consisted of 22 separate sets of breathing-apparatus, 160 bottles of oxygen, each containing 1,000 litres, and a large quantity of spares.

Owing to the late delivery date, the oxygen equipment could not be despatched with the rest of the expedition's gear. It had to be sent on afterwards and, in the good care of Marmet and Grimm, reached Base Camp on April 14th.

Our choice of clothing, tent and sleeping bag materials was dictated by considerations of protection against wind and low temperatures. At the same time we had to keep their weight down to reasonable proportions.

For boots we relied on the experience of earlier expeditions which had been satisfactorily equipped by the House of Bally. For the approach marches we chose light walking shoes with buckskin uppers and thin rubber 'cut-out' soles. For the actual climbing we decided on comfortably-fitting mountaineering boots, made by Bally, with solid rubber cut-out soles. In the upper camps and when conditions were exceptionally cold we were to rely on the familiar fur boots which had already given such good service during earlier attempts on Everest. Ours were made of reindeer-hide, weighed rather less than earlier types and the original lacing was now brought round from the side to the front, so that the boots could be put on even in the most difficult conditions without anyone else's assistance. We took 28 pairs with us, with the intention of fitting out at least some of the Sherpas with first-class footgear. No Swiss expedition had ever suffered from frost-bitten feet and we were determined from the first to preserve that record to the best of our ability. A fourth type of footgear was a big Camp boot, of which 39 pairs were taken along, for one of the most important factors in keeping fit on the march is the opportunity to change one's boots regularly.

For underwear we took vests and pants of synthetic fibre as

well as combinations, an unusual item, which proved its value. It was intended to wear quilted jackets and trousers padded with down over our shirts, pullovers and woollen climbing breeches and, if necessary, protector suits on top of them. All these items of clothing were made to measure. The windproof suits were ordered in various bright colours so that their wearers would be easily identifiable.

Caps of wool and fur were to be our headgear and as a safeguard against frozen fingers a whole arsenal of gloves was provided. The inmost layer consisted of silk mittens, over which there were mittens of nylon-fur. We also took woollen mittens along, for wear under the great sail-cloth gauntlets. The equipment also included a number of wristlets, knee-warmers and body-belts of flannel or wool.

To protect our eyes we took the so-called Suval goggles, which have become so popular in climbing circles during the last few years, as well as several dozen pairs of dark motor-cycling goggles and hundreds of ordinary glacier spectacles with which to fit the Sherpas out and to provide a reserve.

Our crampon supply consisted of 69 pairs of lightweight Bhend crampons from Grindelwald, 24 of which had frontal claws, and 30 pairs of ordinary crampons. There were 50 rucksacks for the needs of climbers and Sherpas alike. We also provided a sufficient stock of pocket-knives and tooth brushes.

These items of personal equipment were extended by a huge stock of material which could be put to the uses of separate climbing parties or was available to the expedition as a whole.

We ordered 4 big mess-tents, 8 roomy tents for the approach marches, 7 lightweight Himalayan tents and 15 tents to hold four men apiece. For cookery purposes, and the protection of material, we took along 6 big groundsheets with loops attached, which proved equally good on rock and in snow. As insulation against damp and cold underfoot we provided 70 Airex floor-mats, $\frac{1}{5}$th inch thick, as well as 66 air-mattresses. We used 24 ordinary quilted sleeping-bags for the approach stages. For the high-altitude camps there were 73 quilted sleeping-bags made of nylon and cotton-wool, to ensure Sahibs and Sherpas alike unbroken rest at nights. A camp table and camp chairs were to some extent to act as

reminders of civilised life during the march to the mountain and back from it. The same idea lay behind the two hair-cutting machines we took along as far as Base Camp, though we did not go too far in the matter of their use.

We naturally paid the most meticulous attention to the actual climbing equipment. We decided on the well-tried 100 foot Grilon ropes of 10mm. (half-inch) diameter, of which we took 30 along. For fixed and reserve rope purposes we took along nearly 7,000 feet of 8mm ($\frac{1}{3}$rd inch) Manilla rope in 20 coils of 330 feet each. Rappel cords, foot loops, profiled ice-pitons 12 to 16 inches long, a variety of rock-pitons, hammers and combined axes and hammers, and about 150 wooden pegs made of ash, 18 to 30 inches long, afforded a separate little arsenal, intended to facilitate our opening up a route through even the most difficult passages, alike on ice and rock. Snow-probes, avalanche-rods, shovels and red tracer-cords provided our anti-avalanche equipment. Special tunnelling picks were taken to enable us to hack bivouacs out of the ice; and for the glaciologist's use we provided spades of sheet-steel with ash shafts as well as ice-borers.

We added to our climbing equipment 4 pairs of ski with skins, 30 pairs of ski-sticks and four Arfex kits, which can easily be fitted to a pair of ski, thus transforming them into a serviceable transport sledge.

In order to mark the trails from one camp to another and to provide a reliable means of communication by sound signals, we took several hundred marker pennants and a number of horns for signalling.

We devoted extreme care and attention to our tool-kits and repair outfits. Besides nails, screws, nuts, wire, insulating tape and cord, there were pincers, hammers, monkey-wrenches, ripping-chisels, chisels, files, gimlets, screw-drivers, mauls, hand-saws, metal-saws and needles. We knew that our repair and tinker-work would not only be directed to wood and metal, but also to tissue and leather; so our store of tools had to be pretty comprehensive, in spite of every effort to confine it to the bare essentials. We gave a high priority to materials for repairing boots and to the necessary items for sewing and mending, as well as to adhesives for both tissue and leather. We had to give equal attention to providing a

reserve of zip-fasteners, great rolls of packing cord and a quantity of padlocks. Two spring balances and a kitchen weighing machine completed our working equipment.

Our altimeters, functioning up to 30,000 feet, field-glasses, the Enicar automatic wrist-watches, some of them fitted with a thermometer, and our pocket compasses were proudly stowed in our own personal luggage, for experience has shown that these small items—often of such vital importance to establishing one's whereabouts—are frequently mislaid up in the mountains. We also took along a number of thermometers and wind-gauges to keep us informed about temperatures and wind-velocity.

Grimm, working assiduously in close conjunction with a number of specialists, put together the medical equipment. When packed, it weighed 170 lbs. which meant three loads during the approach marches. It included everything conceivable for first-aid purposes and a well-considered supply of medicaments. As it turned out, we were frequently to delve deep into our medical cases. Leuthold, who of course had to take over the equipment, when he got to the Nepalese frontier, roughly as he found it provided for him, had only a few days in which to give the matter any thought between his accepting the doctor's post and his departure from Switzerland; none the less he managed to make a few invaluable additions, which followed us out with the oxygen.

We were leaving our comfortable hearths and the reliable lamp-lighting of our rooms at home to become tent-dwellers for several months on end, so the greatest attention had to be given to the problems of heating and lighting. We took 30 candle lamps and 24 pocket torches, with adequate supplies of candles and torch batteries, as well as a number of miners' lamps, a Butagas lamp and a Butagas searchlight. It was our intention to solve the question of fuel for cooking and heating as far as Base Camp by using, so far as possible, wood gathered on the way from the areas more or less adjacent to our camps. Above Base Camp we were to rely on Butagas-burners, which had already proved their worth on previous expeditions. As a reserve we had four Primus-petrol vaporisers, with a number of empty tins to be filled on the way, and a large quantity of Meta heating-tablets as well. Experimentally, we took along some Alutherm heating-rods and plates.

It would be possible to write an amusing report on the cooking-equipment. Our basic equipment consisted of two cooking-kettles of the type used by the Boy Scouts, while steamers, frying pans, egg-pans and roasting-forks hinted at the more recherché kind of cookery. Pocket torches and hurricane-lamps were there to ensure that our cooks could give evidence of their artistry even in the dark. In the high camps, where we of course had to fall back on simpler culinary arrangements, the Butagas camping-burners, which we had been able to protect against loss of heat and the effects of wind by fitting them with aluminium shields, served us well, as did our heatable flasks.

A special mention must be made of our stock of explosives intended for the construction, where necessary, of ice-caves and for the artificial dispersal of avalanches. It consisted of 50 lbs. of Plastite, detonators and fuses, supported by a variety of ice-boring tools. In addition, we had six collapsible metal-ladders about 10 feet long, each weighing some 15 lbs., for the passage of the broader crevasses. These ladders, which had already been fully proved in the Alps in the maintenance of high tension cables, and the couplings which were selected after a number of constructional attempts, were delivered by the firm of Bieri in Bern-Liebefeld. We were, of course, falling back on the crevasse-technique of the pioneers, who in the early days of exploration in the Alps used ladders for crossing bergschrunds—the ladder being carried by some local denizen of bear-like strength. In any case, history had taught us that on Everest a ladder of this kind was indispensable at the upper exit from the Icefall.

We deliberated for a long time whether to take some kind of a wire ropeway along. Our primary idea was to erect a ropeway on the Khumbu Icefall, to avoid the necessity of relying solely on Sherpa porterage through that perilous zone, exposed to falling ice. We were also considering the erection of a ropeway on the Lhotse Face, to facilitate the handling of loads destined for the very highest camps. We knew, of course, from earlier reports that it was hardly possible to fix a proper wire-ropeway up there, but we thought there might be a possibility of rigging-up a cable hoist composed of a wire-winding drum and a sledge, capable of taking two or three loads at a time. Quite early in the proceedings,

Luchsinger got in touch with our climbing friend Friedli, who was engaged in Gwatt on the manufacture of the well-known steel-cable apparatus, used for the rescue of injured climbers on difficult mountainsides. Friedli, following out our requirements, built an aluminium sledge and winding gear and provided the necessary steel cables. The Italians had done very well on K2 with a cable-lift between camps on the steepest part of the ridge, and we were most anxious to see whether our equipment would prove of equal value.

Each member, of course, carried his own camera, and we stowed an enormous quantity of colour- and black-and-white film into the expedition's luggage. We did not take a cine-camera along. Several films had already been made in the Everest group; none of us was expert in such matters and there was no suitable camera-man readily available. Finally the great expense and considerations of transport decided us to do without a film, and I think we were all rather relieved by the decision.

We had already familiarised ourselves with the SE 101 type army radio equipment during our training spells on the Rhône Glacier. This apparatus is primarily used on military operations for communication between battalion headquarters and company commands, or for liaison between patrols. They are light, easily portable and simple to handle. When posts are within sight of one another their range is some twenty miles, certainly much further than our camps on Everest were likely to lie apart and, in favourable conditions, they will also provide good sound communications across high intervening ridges. We took six sets with us, with a sufficient reserve of batteries and three generators into the bargain.

I could of course give an account of a hundred and one items which were necessary for the maintenance of so large a party—identity discs for the porters, paper, pencils and ball-point pens, note-books and diaries, mailbags, handkerchiefs, cutlery, in short everything essential for so big an undertaking, which would be cut off for months from any source of supply. At times we felt that our baggage was excessive, at others we had doubts whether we had not forgotten to include a great many things we should need later on. We were rather glad that we had a target date,

January 20th, by which the general run of the provisioning and equipment had to be more or less settled, for by that day the baggage had to be packed and ready for passage through the Customs, and so a probably decisive stage in our preparations was at an end.

We had to go very thoroughly into all the problems of commisariat.

The approach march raised no problem, seeing that as far as Namche Bazar, a journey of three weeks' duration, our long train would be able to live mainly off the land. But from Base Camp onwards the number of mouths to be fed would be increased by the 12 Sherpas who would join the expedition there, and, into the bargain, we should already be some 17,000 feet up. The actual nature of the foodstuffs to be taken along was primarily dictated by considerations of weight, lasting qualities, ease of preparation and finally by the exceptional living conditions ruling in the region of eight thousand metre peaks. We had the experience of numerous earlier expeditions to guide us on these points. The British had studied the problems of nutrition on Everest down to the last detail and such was the weight of their outstanding experience that we approached our commissariat problems from a standpoint very similar to that of the 1953 expedition led by John Hunt.

We assembled single packages sufficient to keep eight men going for a whole day. To ensure variety, we provided four types of these packages, marked Khumbu packages A, B, C and D. The nutritional value, vitamin content and general acceptability of all four types was pretty similar. They were packed in Zürich and proved generally very satisfactory. Not surprisingly, experience showed that not all the components were equally appealing, but we never suffered from a shortage of things to eat. As an example of the diet available in the high camps, Khumbu package type A consisted of:—

Darvida	8 packets	4½ oz each
Butter	1 tin	18 oz ,,
Honey	2 jars	5 oz ,,
Milk Powder	1 tin	18 oz ,,
Prontovo	8 packets	4½ oz ,,

Spinach Soup or Vegetable Soup	8 packets	5 oz each
Corn Flakes for Birchermüesli	1 packet	18 oz „
Raisins	1 packet	9 oz
Granulated sugar	2 packets	4½ lbs
Hard Cheese	1 packet	20 oz
Nescafé	8 tubes	2 cups each
Hagebutt Tea	2 bags	1 oz „
Milk Chocolate	8 slabs	4 oz „
Various Sweets		3½ oz „
Basler Leckerli	1 packet	30 oz
Fruit Salad	3 tins	24 oz each
Limonia	1 piece	
Corned Beef	2 tins	18 oz each
Grapefruit Juice	2 tins	18 oz „
Paper Handkerchiefs	1 packet	
Toilet Paper	2 packs	
Matches	1 box	

For the final stages of the climbs, we prepared two different types of Summit Package, each containing sufficient for a rope of two men for a whole day. We took 80 of each type along and added to every 10 packages a supplementary package with 2 lbs butter, 2 lbs honey and concentrated lemon and orange in them. Summit Package A contained:—

Ready prepared Haferschleim Soup (Glactina)	3½ oz
Aroma Dice	4
Darvida	9 oz
Wafers (Noxy)	7 oz
Nuxo-bars, grapes and apricots	7 oz
Powdered grape sugar	14 oz
Ovosport	2 packets
Sardines	7 oz tin
Chocolate	3½ oz (2 slabs)
Sweets	3 oz each
Powdered Milk (sweetened)	3 oz (vacuum packed)
Herbal Tea	1 oz (1 bag)
Various tinned fruit	7 oz
Chewing Gum	1 oz
Hard Cheese	5 oz (vacuum packed)
Salt	2 oz

Loaf Sugar	7 oz (restaurant packages)
Nescafé	2 tubes
Toilet Paper	2 packs
Safety Matches	1 box
Polythene Bags	2

As none of us claimed to be particularly ascetic and we were going out in the definite hope of climbing one or other of our two mountains, we took with us three so-called de luxe Packages, with preserved fruit, tomato juice, tins of ham, salted almonds, olives, rum, cognac, chewing gum and smokes. All these preparations led us to believe that we were sufficiently armed against the pangs of hunger and of thirst—that admitted arch-enemy of life at great altitudes.

During our preparations the Neuen Warenhaus A G in Zürich acted as our warehouse and supply magazine; the firm not only providing the ample space required, but buying and packing much of the material under our guidance. Without this central supply dump it would have been almost impossible to keep the mountain of baggage and provisions ready for prompt despatch. Our baggage for the sea passage finally consisted of 520 cases and innumerable sacks and bundles. A further all-important consignment, the oxygen equipment, was left in the hands of the manufacturers in Paris, to be sent on after us.

It is my pleasant duty, on behalf of the expedition, to express our gratitude to our indefatigable helpers in the Foundation for Alpine Research and particularly to Alfons Kaufmann, Hans Braun and the lady secretaries, for their invaluable and unselfish work in getting ready and forwarding the expedition's belongings. Without their expert skill and assistance, we should probably still be sitting between piles of baggage in the storage accommodation of the Foundation's warehouse on the Binzstrasse in Zürich.

After this exhaustive discussion of the actual equipment, something must be said about the cost. The total expenses incurred ran to 360,000 Swiss Francs (£30,000). This huge sum was covered by the Foundation out of its own resources and from additional sources at its disposal, such as subscriptions, or partly from contributions allocable to the specific purpose, to such an

extent that the financial needs of the undertaking were assured. The members of the expedition also contributed a considerable sum, though this was a burden which weighed pretty heavily on some of them. The splendid relations existing between the Foundation, under its excellent manager Ernst Feuz, and officials, Institutions and the business world in general, in the broadest sense, were responsible for the rest. Our own contribution greatly strengthened our purpose to reach our objectives. As regards the Expedition's budget, which showed the slenderest margin between the means at its disposal and out-goings, we consoled ourselves with the thought that John Hunt's successful expedition in 1953 had, according to its leader's account, disposed of very marginal resources at the moment of its departure from England. We knew we had equipped ourselves well and were able to face the future with confidence. The *Asia* was due to to sail from Genoa on January 31st. We looked forward to that day with empty purses and high spirits.

CHAPTER IV

The Journey

THE first party of the Expedition left Bern on January 29th in order to embark in the *Asia* at Genoa on the following day. My deputy, Diehl, was in charge of the party, which consisted of Luchsinger, Reiss, Reist, Von Gunten and Schmied. They left Bern in great form. Only the presence of a few press-photographers lent a slightly official tone to the good-byes. We had often travelled by the Lötschberg-Simplon line on our way to climbs in the Bernese Oberland, in Valais or on the southern slope of the Alps. This time it was to take our teams on a much longer journey and, after all the long months of preparatory work, they were in holiday mood.

The party reached Bombay on February 13th after its passage—in good weather conditions throughout—of the Mediterranean, the Suez Canal, with a diversion to Cairo, the Red Sea and the Indian Ocean. One of the first to come aboard and bid the six travellers a hearty welcome was Dr. H. A. Sonderegger, the Swiss Consul-General in Bombay. The transport organisation, 'Trade Wings', saw the baggage safely ashore and through the Customs. Thanks to the careful preparation of the Expedition's gear and to advance negotiations with the various offices concerned, it proved possible to dispose of all the formalities inside a week. The only difficulty encountered was with regard to the explosives; at first they were refused clearance and removed on to a small boat, far away alongside the breakwater. Everybody had quite a job in getting that part of our equipment delivered, but in the long run even that problem was solved to everybody's satisfaction. There is a fairy story about 'six men getting on in the world'; it seemed to have its particular application to our six climbers.

A dozen porters laboured a whole day through under the eagle eyes of the members of the party to load the sizeable consignment

of baggage into two goods trucks. The next stage of the journey was a 1,600 mile railway journey through the endless Indian plains to Jainagar, on the Nepalese frontier. Our party of six split into two teams to take turns in accompanying the baggage. Luchsinger, Reiss and Reist escorted it along the first stage to Lucknow. The other three made a digression to Delhi, to get in touch with the Swiss Embassy there and arrange for the Nepalese visas. So while the baggage-detachment was crawling at a snail's pace across India on a goods-train the others had the chance of disporting themselves for a few days like real trippers. A six-seated compartment had been placed at the disposal of the baggage party, and they were consequently quite comfortable. 'Trade Wings' also allotted them a young Indian to look after the luggage, and he acquitted himself very well. According to the reliable reports of the baggage-team, the goods-train stopped at more than two-hundred stations on the way to Lucknow; but they never wearied of taking in new impressions—brown people, dwellings of straw and clay, huge rice-fields, water buffaloes at dark pools, the colourful scenes at the railway stations, the women striding along gracefully with jars on their heads, men chewing betel, beggars, and a perfect whirl of children demanding backsheesh.

At Lucknow the baggage was transferred to the narrow-gauge train which operates north of the Ganges. Diehl, Schmied and von Gunten took over the care of the baggage and, with the help of the young Indian, brought it undamaged to Jainagar. Whereas their predecessors had suffered all day long from the heat, the three relief men had now to contend with the cold at night, but they could not get at the sleeping bags and warm clothing stowed away in the sealed cases. It was now the turn of the other three to have a good look at the country. At Patna they met other members of the expedition, who had in the meantime arrived in India by air.

The air passengers in question were Müller and myself. We had been transported towards the end of February almost in the twinkling of an eye by Super-Constellation from an unusually cold Swiss winter into the tropical heat of Bombay. We suffered somewhat at first from the enormous difference in temperature,

but we got used to it all the quicker because of our absorption in the utterly strange world into which we had been pitchforked. From Bombay, where we had some details to attend to, we flew to Delhi. Thanks to the tireless assistance of our Embassy, it did not take long to obtain our Nepalese visas, to arrange with All India Radio for the provision of a daily weather forecast and to make a few purchases. Then we flew on to Katmandu, the capital of the Kingdom of Nepal. There the Prime Minister was most co-operative in giving us an audience, and the Foreign Minister and his Deputy Secretary N. M. Singh received us with no less kindness. In Katmandu we renewed our request for a permit to climb Lhotse, with all due regard to the formalities. We had been given permission for Everest before we left Switzerland, but not for Lhotse; for not unnaturally, the Government usually only allocates one peak to an expedition. With the same good will as was experienced in every respect at the hands of the Nepalese Government, the request was granted. The good relations founded during our visit to Katmandu were repeatedly in evidence later on. We learned with great pleasure that the son of the Chief of Protocol in the Nepalese Foreign Ministry was to accompany us as liaison officer. We hastened to make the acquaintance of this likeable and efficient young man, and we were much cheered and encouraged to find our first contacts with the Nepalese officials so easy and cordial. Before we left the city we were given a written recommendation by the Government, instructing all and sundry to facilitate our passage in every way.

In Katmandu we also got in touch with our compatriots, such as Dr. Thoni Hagen, who was working on a geological survey of the whole of Nepal in the service of UNO, and the agricultural experts Werner Schulthess and Ernst Siegenthaler, who were there under the ægis of FAO to organise the country's milk supplies. We were very well looked after at the Hotel Royal, whose world-experienced manager, Boris Lissanovitch, took us into his courteous care. Here we met two ladies from Solothurn, who were paying a pleasure visit to Nepal and we also called on Father Moran, the Head of a boys' school, who had offered to help with the forwarding of our mail.

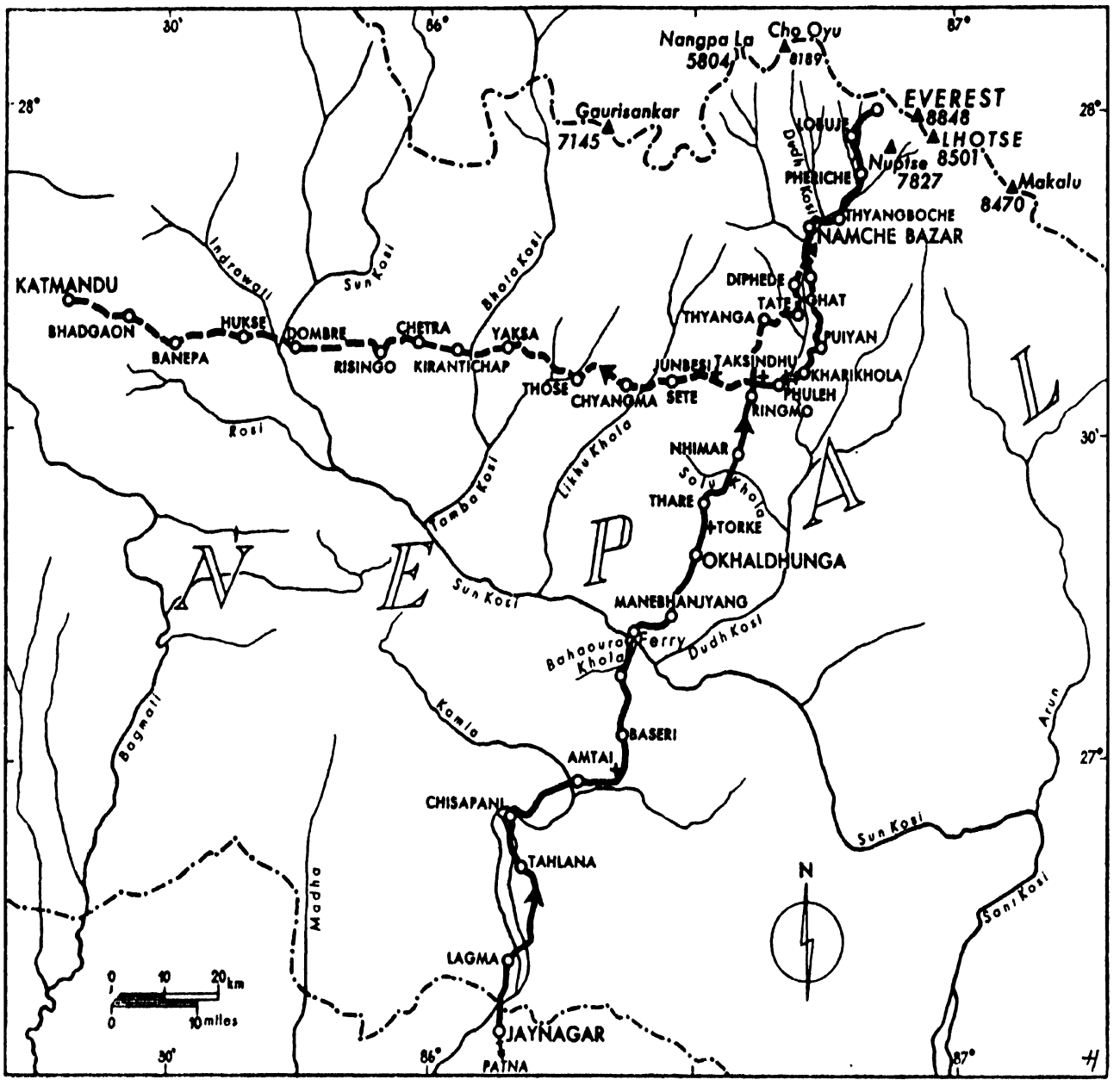
After this successful start in Katmandu, Müller, the liaison officer

and I flew to Patna. We were overjoyed to find Luchsinger, Reiss and Reist there, in fine fettle. They reported that the transport of the baggage had gone well so far, related with enthusiasm the story of their visits to temples and monuments in Agra and Benares, and described their railway journey in the brightest of colours. We visited Father Loesch in order to regulate in greater detail the transport of mails already arranged with Father Moran, and were once again impressed by the readiness to assist which we encountered.

After our short stay in Patna a flight lasting only half an hour brought us to Muzzaffarpur, whence we reached Jainagar at dead of night on March 2nd.

Here we met Diehl, von Gunten and Schmied, who had installed themselves in a Government bungalow reserved for the housing of travelling officials, where they were very comfortable, except for the savage attentions of mosquitos by day and by night. We brought them messages from their relatives in Switzerland and the comforting news that Marmet and Grimm, as already explained, were following on with the oxygen apparatus. I was all the more interested in their accounts of their excursions to the cave temples of Elephanta near Bombay, the Taj Mahal, the mosques and palaces near Delhi and the Fortress palace of Fatehpur Sikri near Agra, because I had had so little time to look around on my journey through India. On February 29th our chosen chief of Sherpas, Sirdar Pasang Dawa Lama, had joined the Expedition with 22 Sherpas from Darjeeling. We knew him already from his visit to Switzerland in 1955 and were delighted to see him again.

On March 3rd we distributed part of their equipment to the Sherpas and ourselves abandoned our travelling clothes for the approach-gear. We sent the former via Patna to Frau Siegenthaler in Katmandu, where she had kindly offered to look after them. It felt just like the moment at the army recruiting centre when we were ordered to send home the 'civvies' in which we had reported. It was the start of a new phase, and during the next days we were to undergo a variety of new experiences. On the same evening we loaded the whole of the baggage on to 22 bullock-carts—primitive, two-wheeled vehicles, drawn by small oxen



under heavily mortised wooden yokes. It was our aim to reach the village of Chisapani in a march of three days along the river Kamla. We watched with impatience while the long train of carts was getting under way, but we harboured some secret doubts as to how the vehicles themselves, the animals and their drivers would behave. We marched for hours across the sandy plain, walking among the carts under a burning sun. Constantly plagued as we were by dust and thirst, and thankful when each day towards noon the column halted to rest, we were thrilled by a landscape which to us was something utterly strange and new. Every now and then a cart would get stuck and it would require our united strength to shift it out of a sandbank or a shallow ford. We bathed on every possible occasion in the river, which was very warm. And from now on, we spent the nights in our approach tents.

The landscape was now tropical and unfamiliar to our eyes; at

times we moved forward between hamlets surrounded by banana trees and coconut palms. Once three of us rode ahead on ponies to scout out a suitable camping ground near the river. On March 6th we caught our first sight of the foothills, behind which Chisapani must lie hidden. The Kamla, whose course we had been forced to leave for 24 hours, now offered us the comforts of a dip again. At about noon the entire column had assembled in a clearing in the forest not far from Chisapani. We unloaded our gear and dismissed the drivers, who had conducted our transport with great skill, in spite our early fears. Towards evening there was a tremendous excitement, when a water-buffalo in a sudden access of bad temper chased a driver and finally careered through the camp at a tearing gallop with his head well down. We were a little off his course, and the natives ran like hares to get clear of the furious beast's line of attack. Only Pasang grabbed a heavy pick axe and tried to turn the wild buffalo away. The hunt ended in a thicket of thorns; fortunately no one was hurt. From then on, however, we decided to give water buffaloes a wide berth.

On the same day 300 porters arrived from the Solo-Khumbu area; 50 more came across from Darjeeling. So our Expedition now numbered about 400.

We spent the whole of the 7th in making up the loads. Their average weight was just under 60 lbs. To this had to be added each porter's personal effects and rations, several pounds more, in fact. Each porter was given an identity badge, as a recognition of his terms of service. We were delighted with the colourful spectacle presented by these men, some of whom had brought their women and children along; for the next fortnight we were to depend entirely on their physical strength and devotion to duty. None of our Sherpas carried any loads on this stage, following the traditional usage that they only begin to act as porters at Base Camp. The equipment and rations of the 350 porters were not among our responsibilities. Some of them wore Tibetan boots, others were barefoot, and they were responsible for finding and cooking their own food.

Leuthold joined us before we left Chisapani; Müller had waited for him at Jainagar, so as to provide the latecomer with company. It was very comforting at last to have a doctor with us, for a few

of the party had suffered from digestive trouble, brought on by the unaccustomed heat on the march; and it was highly probable that the three weeks' journey on which our column of 400 would be engaged till we reached the foot of Everest would produce a crop of casualties. We also knew that on previous expeditions the doctors had tended the sick and injured in the villages along the way, and it was good to know that when called upon we too would be in a position to offer medical assistance.

On March 8th the column of porters moved slowly off, and the march to the world's highest peak had begun.

This is a suitable point to introduce our cook, Thundu. Over more than twenty years he had served with innumerable expeditions, and his knowledge and skill were of the greatest service to ours. It was he who, with his expert experience and authority, decided on our camping places, thus also determining the length of our daily stages. These were on the traditional pattern, lasting on an average five to seven hours and affording an excellent training programme.

From the very first day our march lay through a marvellous world. The way was lined by gigantic trees with bright red blossoms. Gorgeous butterflies fluttered on the calm air. We followed age-old tracks through scenery which reminded us in its general features of home. Hills and valleys were both heavily wooded and we rarely came across a sizeable patch of flat cultivated country. Thousands of narrow terraces in the steep flanks of the hills, planted with maize, rice, or higher up, even with barley, bore witness to the industry of the inhabitants, who only earn a living by the hardest toil. Occasionally we caught glimpses of unknown ranges of the Himalaya, rising perhaps to 20,000 feet. The weather was fine, and we were all in the best of form and the most optimistic spirits.

True enough, we thought the porters took an unconscionable time every morning in preparing their rice or tsampa, the local porridge. In the end, however, the column got under way. The porters strode along at a great pace, but stopped frequently to prop their load on the T-shaped piece of wood which they pushed up under their pack so as to take the weight of their head-bands from their foreheads. They often lay down singly to rest, so that

the caravan frequently extended over some miles. We marched with them in small groups, talking and photographing. The Sherpas looked after the stragglers, and some time during the afternoon the whole company of travellers collected at the new camping site which Thundu, who always hurried on in front, had selected. Pasang, with his wife who was pregnant, and their little girl, usually brought up the rear. We had plenty of time for writing and talking, or to enjoy a refreshing dip in some stream or river.

On the fourth day, March 11th, we reached the Sun Kosi, a river of about the same size as the Aar at Bern, which we crossed with the aid of two rafts whose architecture dated from the era of the Lake-Dwellers. The boatmen calmly paddled back and forth, and the whole column was over on the other side within the space of four hours. We had meanwhile discovered that the water temperature was nearly 68 degrees, and to the huge delight of the natives one after another of the Europeans divested himself of his clothes and swam across. On the other bank one or two of the bigger lads began to try to imitate our prowess in a shallow pool. We joined the ambitious company of learners and tried to instil in them the elementary principles of the art, while the porters looked on and laughed enormously. Naturally, in spite of all their enthusiasm, we could not turn any of them into swimmers in so short a time. Still, we were pleased that the boys had tried to imitate us, and their efforts certainly justified the few draughts of water they inevitably swallowed.

The next stages led over an extended ridge, with wonderful views down into deep valleys. On March 13th we reached the little market place of Okhaldhunga. This beautifully situated hamlet commanded a number of shops and several large administrative offices, but only a single insufficient water supply. The village schoolmaster asked us for anti-typhus medicine, for the inhabitants suffered constantly from that disease. Our porters celebrated reunions with numerous friends and acquaintances, and on the following day it took longer than ever to get the column on the move again. The track now led over several passes of over 10,000 feet and the stone chortens of Buddhism became more plentiful along the road.

When were we going to earn our first glimpse of the Himalaya? So far we had only caught sight of isolated sections of the main range through occasional valley-openings. It was not till a ridge behind Thare that we saw it in all its majesty, spread wide before our eyes. We had dashed up to the ridge early in the morning and there we stood, bereft of words, in face of our journey's goal. The great peaks rose stupendous for all the 50 miles which still separated us from them. Everest was easily identifiable by its white banner, though its summit only over-topped the intervening Nuptsa-Lhotse comb by very little. We fell into considerable argument before we could all agree which of the many huge summits was Makalu, for map and compass did not seem to agree with the actual landscape.

The landscape grew more and more mountainous. The inhabitants of the small stone and wooden villages mostly came to meet our caravan with eager interest; and our liaison officer, who was an accomplished linguist, helped us to establish human relations with them. The women wore the typical elaborate Tibetan head-dress. They were friendly people, who welcomed us really warmly and, on the slightest provocation, they offered us their famous chang, their very tasty, fermented home-brewed beer. It sometimes happened that a few of the porters, under the influence of the heat and acquaintanceship renewed, drank more than was good for them, with the result that they had some difficulty with their loads; but the Sherpas rounded up the stragglers and always saw to it that they reached the next camping place.

On March 15th we crossed the Solu Khola and reached Phaplu, a considerable place, with sizeable stone houses, next day. We were immediately invited to contribute to the uncompleted school house. Here we paid our first visit to a monastery and were received with the utmost hospitality by the Lamas.

On March 18th, after a steep descent, we reached the Dudh Kosi, which is a mighty stream pouring down to valley level from the southern flank of the Everest massif. We crossed it near Jubing on a bridge built of tree trunks and hurdles, which gets washed away every year by the flood waters during the period of heavy monsoon rainfall. Our way became more and more

toilsome. We had now to deal with great differences in altitude every day, as we wound our way up and down. Each evening we would camp in the forest, or near little clusters of dwellings where our porters had left their provisions on their way down to Chisapani from their mountain villages. We were strangely impressed by the sight of the Mani-walls with the stereotyped prayers carved in them, and by the Chortens, familiar as we were with them from countless photographs. The landscape reminded us to some extent of the upper Ticino. We often covered five to eight hours of endless up and down without seeming to have progressed at all. At the end of one of the last long descents into lower levels, where there were still bamboos growing, the Sherpas explained to us that this would be our last chance of cutting any. We took several porter-loads of the slender stems along, as Müller wanted to use them for his snow and ice measurements.

March 21st was a rather exciting day, for we were due to reach Namche Bazar, almost 3½ weeks earlier than had the Wyss-Dunant Expedition in 1952 and a few days earlier than John Hunt in 1953. About a mile before the village, as we climbed the steep path, we had a momentary glimpse, through a narrow valley gateway, of Nuptse, Everest and Lhotse. Then, in the best of spirits, we entered that high habitation, 12,140 feet up, to be accorded an enthusiastic reception by its inhabitants. It was the end of an important stage of our journey, continually rich in wonderful impressions.

Namche Bazar looked exactly as its many descriptions and pictures had led us to expect. A few rows of houses on a bare slope, separated by dry-stone walls, and a great many gaily-dressed, happy-looking people, a pleasant feature in the spring time setting. Every now and then we saw in the village articles of clothing which had obviously been inherited from earlier expeditions—European headgear and genuine, if somewhat worn out, climbing boots. It was easy to see that Namche, which so few years before had not yet set eyes on a European, had begun to develop as a climbing-centre at the southern foot of the Everest Group.

We soon got to know the inhabitants. We liked these mountain

people with their friendly faces the moment we saw them. We were also brought in contact with the Indians who operate the Government Radio Check Post and keep in touch with Katmandu. For a few days, later on, this radio station was destined to keep us busier than we liked: but in the meantime we took comfort in the knowledge that, in spite of its isolated situation, Namche Bazar commanded a swifter means of communication with the world than our mail runner, who none the less undertook to cover the ground to Patna or Katmandu in six days. We had pitched our camp twenty minutes above Namche, on a broad saddle, from which the three rocky heads of Everest, Lhotse and Nuptse as well as Thamserku, Taweche and Kwangde were visible in all their majesty.

In spite of the spring-like weather the ground at Namche Bazar was still frozen hard; long ice-furrows and icicles marked the courses of the various streams. The morning after our arrival, there were more than six inches of newly fallen snow. The porters did not turn up at the usual time. Towards noon a great many of them asked to be dismissed, particularly those whose clothes were light or who were bare-footed; so the great pay-off had arrived. Each porter came forward and received his well-earned reward amounting to about 100 Indian rupees, from which advances had to be deducted. Then, delighted with their prompt payment, they mostly started immediately on their long journeys home, sometimes singly, sometimes in groups. The ones who lived at Namche took a couple of days off; the others had before them a more or less unpleasant return march, on which we wished them well; they had given us splendid service and we were very grateful for all their hard work. There had only been a few minor upheavals on the way when, in bivouacs in open country, surprised by heavy thunderstorms, one or two of them, in their panic, began to rip the delicate high altitude tents out of their loads in order to shelter in them. With the assistance of the Liaison Officer and the Sirdar, however, we had managed, after a certain amount of disturbance and argument, to persuade them to abandon their intention. The march had otherwise been absolutely trouble-free. Not one of them had abandoned his load and made off with his advance pay, nor was a single item of

baggage lost, though that would have been no cause for surprise, seeing how trying the road had been and how many rivers had to be crossed on the way.

Our next objective was the monastery at Thyangboche, which stood in the valley of the Imjya Khola, a day's journey above Namche Bazar, at a height of about 13,000 feet. It took about five hours to reach it unladen, and experience showed that porters with their loads would take a whole day's march over the stage.

On March 23rd, Diehl, Reiss and Schmied went on ahead to announce our imminent arrival at the monastery and to make the necessary arrangements for the transfer of our gear, which, owing to the reduction of our train of porters, had now to be transported in relays. They started off with an easy stride, in the company of our remaining porters, just as though they had nothing else to think of but how to climb Everest without further delay. After the long days of the approach at the lower levels, the mountain air was like a revivifying tonic.

On the next day we too moved off with our column of porters, now only about 150 strong, and reached Thyangboche at about midday.

We had none of us ever seen a more lovely corner of the world. All around us enormous peaks reached to the sky. From this aspect, Everest forms the head of the Imjya Valley, but the magnificence of the colossal rock-tooth of Ama Dablam, lifting close at hand, completely overshadowed even that impressive mountain, which is masked by the intervening Nuptse comb. Ama Dablam is more than six thousand feet lower than Everest, but to us it seemed the acme of savage inaccessibility. Towards the south-east rose the sharp summits of Thamserku and Kangtega, while northwards towered the great mass of Taweche. The monastery fitted harmoniously into this wonderful landscape. It stands on a little knoll, above a gorgeous forest of firs, birches and rhododendrons, overlooking lovely alps and pastures, which aroused in us a strong desire to tarry among them. But our job was to push on to the Alp of Pheriche, at 14,700 feet, where we intended to site our training camp.

CHAPTER V

A Run of Bad Luck

WHEN we entered the mountain fastnesses of Thyangboche we were perhaps in a comparable position to that of a party of climbers who in 1856 left Zermatt behind them and took up temporary quarters in the hamlet of Zmutt, with the intention of doing a few smaller things before finally trying to climb the Dent d'Hérens. The comparison must of course be a very general one, chiefly because of the tremendous differences in distances and altitudes and in the actual landscape itself. The main parallels lie in the fact that we too were dependent on the broad shoulders of the inhabitants for the carriage of our supplies and that our objectives reached out far beyond the mountaineering zeal of the local populace. In the eyes of the people eking out an austere existence in the buildings of the little monastery settlement, we too were in all probability endowed with worldly wealth as immeasurable as the mountaineering 'Lords', who came to the valleys of the Alps a hundred years ago, were rumoured to possess.

In the meantime we figured that our oxygen equipment in the good care of Marmet and Grimm must by now have reached Jainagar. They were also bringing with them the medical supplies which Leuthold had ordered shortly before leaving Switzerland. We had sent 60 porters down from Kharikhola to meet them and expected the column to overtake us in three weeks at the latest.

Till then we planned to get acclimatised on a number of climbs up to 20,000 feet, to occupy Base Camp at the foot of the Khumbu Glacier and if possible to master the first obstacle on the way to the summit regions—the Icefall. Everything seemed to be going according to plan. The weather cleared up after the snowfalls and as we moved up to Thyangboche the snow on the ground had disappeared.

Up to that point we had all enjoyed very good health. As a

matter of fact the doctor's duties had begun as soon as he reached Chisapani, the place where the porters and Sherpas were actually mobilised, for there were several Sherpas who had come over from Darjeeling without a medical certificate of health. These had to be thoroughly examined to prove their bodily fitness and we were lucky only to have to turn down one of them. He had a fistula of the trachea and could obviously not be accepted as a high-altitude porter; but as he came from Thyangboche he marched the whole way with the column. His gratitude for a few items of equipment, which we allowed him to keep, was to be of great value to us later on. He was a brother of Mawang Gyurmi, a monk from the monastery at Thyangboche, who marched all the way with us and offered us the most welcome hospitality there.

Leuthold's personal Sherpa had already taken part in five expeditions as Doctor's orderly. He fancied himself greatly in this role and showed amazing skill in his duties as an assistant. Along the line of march the Doctor held court at every new camping place. He mostly had to deal with skin and bowel diseases, sore feet and long-infected wounds, frequently covered by strips of parchment with maxims on them. There were always innumerable inhabitants of each district clamouring for treatment of every imaginable kind of wound, ailment and disease. Ningma Sitar, the medical orderly, tried very hard to act as interpreter, but mostly got no further with his account of the symptoms than, 'Sahib, dukza, dukza'—it hurts—accompanied by gestures and grimaces. We were astonished to be asked for 'injections' everywhere in a country so bare of all medical provision. The people must have heard of occasional 'miraculous cures' by injections and obviously expected a supernatural result from every treatment of this type.

Except for occasional digestive troubles, we were all very fit. Our liaison officer gave us a few days' worry with blood poisoning, which made it difficult for him to keep up with the column; but his condition improved rapidly after penicillin treatment.

The day after our arrival in Namche Bazar, Luchsinger complained of stomach pains and diarrhoea. In spite of the administration of entero-vioform and bismuth and finally of chloromycetin, the condition persisted on the following day. The doctor suspected

appendicitis, but an exhaustive examination lent no support to his suspicions. On the next day, March 24th, Luchsinger had improved to such an extent that he was able to start with the main body for Thyangboche. On the way his complaint renewed itself in a violent manner and after his arrival there it again took on all the symptoms of colic. Leuthold subjected the patient to a long and thorough examination. We sensed that some misfortune was in the air and we were really not surprised when he announced that he had diagnosed all the symptoms of acute appendicitis. Obviously Luchsinger could not remain in his tent in such a condition. We were given leave to house him in Mawang Gyurmi's quarters in the monastery, and there he lay awake all night, racked with pain. Mawang Gyurmi had himself contracted bronchitis on the march and been cured by Leuthold's treatment. From that moment he called the doctor 'Father', because he had given him new life, and he had become one of our best friends.

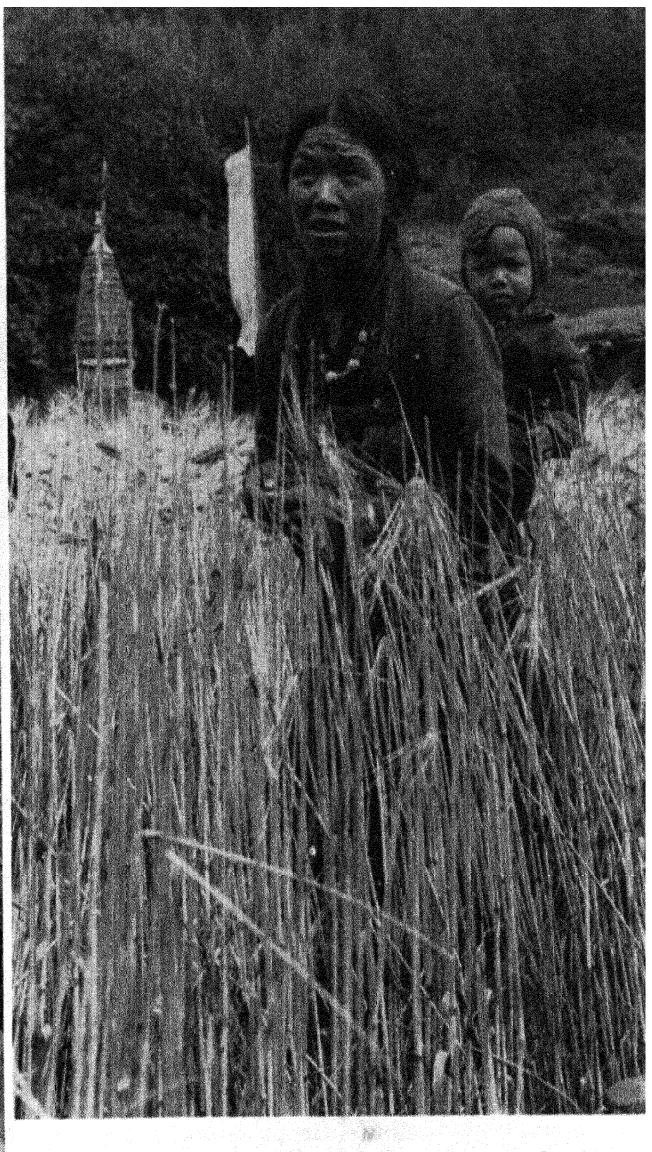
Mawang Gyurmi also helped us to find a room in the monastery where, if the worst happened, an operation could be performed. Since no blood might be shed in the personal gumpa of our host nor in the great gumpa of the monastery, the Chief Lama gave us permission to fit out the house of an absent Lama as an emergency operating theatre. The sooty room was fitted out with fly-sheets, an operating table was made out of the aluminium ladder, and the roof of a tent was immediately cut up and boiled with cloths, shirts and instruments. Leuthold had the necessary surgical instruments, and all the media for local anaesthesia and intravenous narcosis.

In spite of all these preparations the conditions were very unsatisfactory for an operation. Even during the day it was difficult to raise the temperature in the room to a little above freezing point. We were at an altitude of over 13,000 feet and now learned the strangely impressive lesson of how much, which is taken for granted in one's normal life at home, could here raise acute problems.

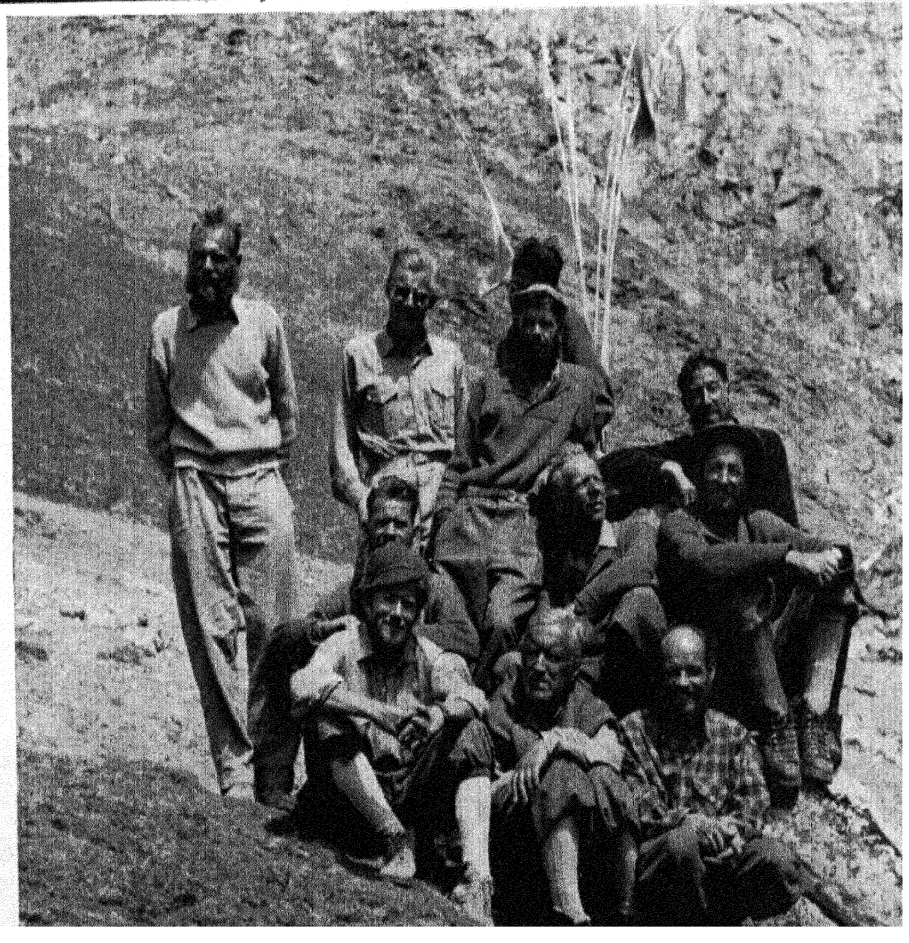
Luchsinger's illness seemed to be taking an extremely localised course and the doctor thought he could hope for the inflammation to encyst, although the patient's general condition gave growing cause for alarm. In the circumstances he took the view that an operation must be put off as long as possible.

1. *Lak Puti, a favourite with the Sahibs*



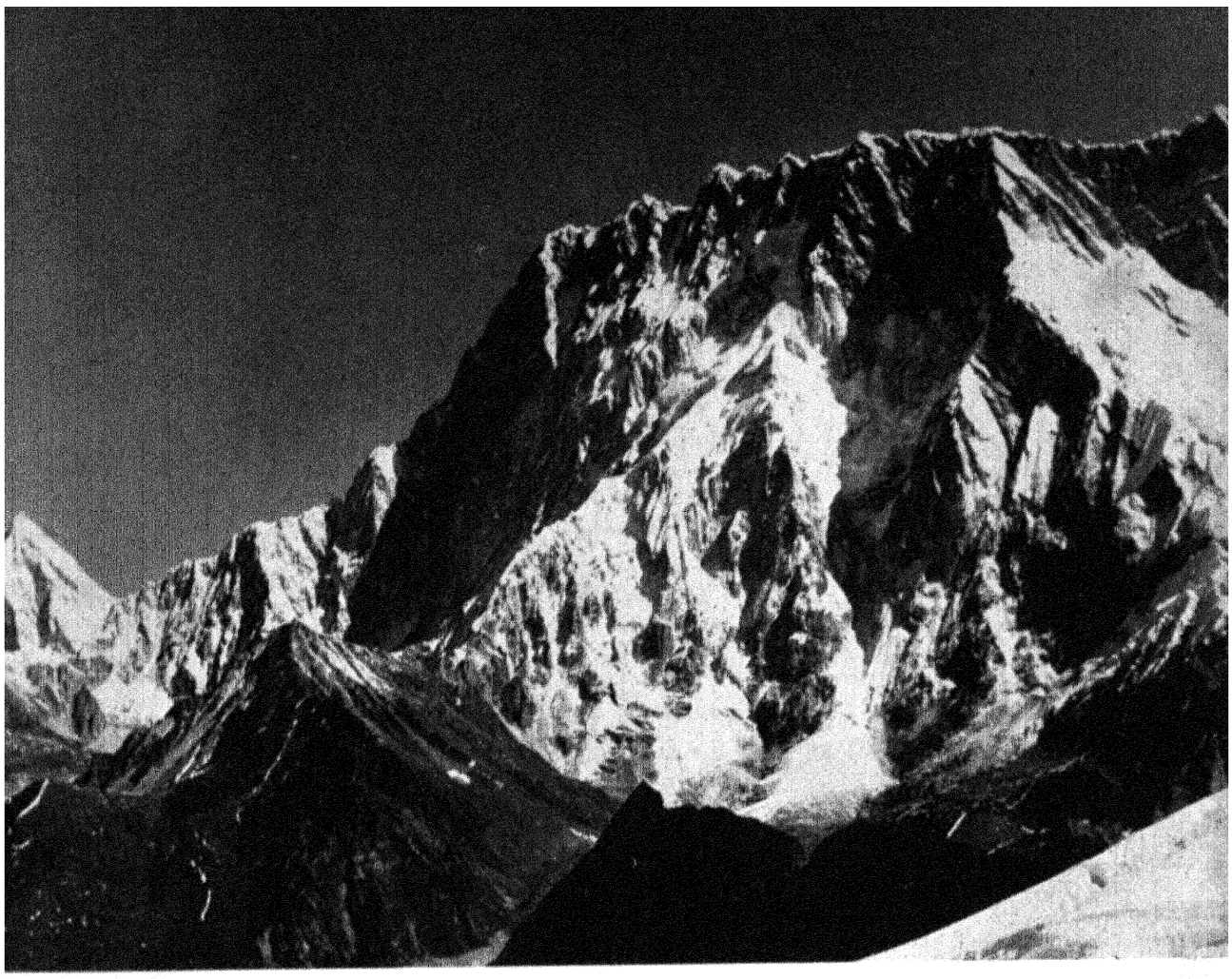


Sherpani and child in a field of barley



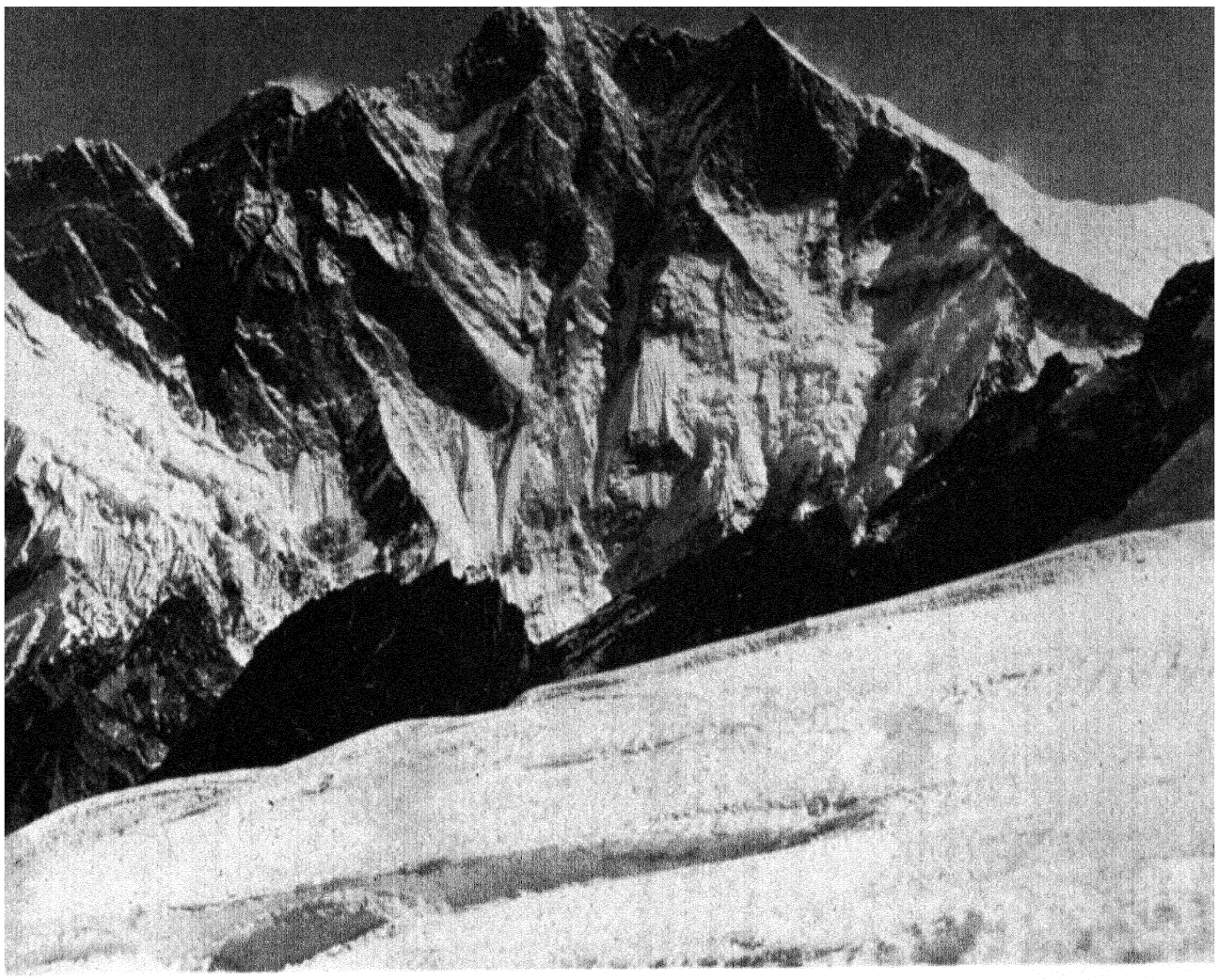
The members of the expedition

Seated, in front, left to right: Leuthold, Diehl, Reist;
Behind them: Luchsinger, Eggler, Grimm;
Standing: Schmied, Marmet, von Gunten, Reiss;
Half-hidden by von Gunten: Pradham



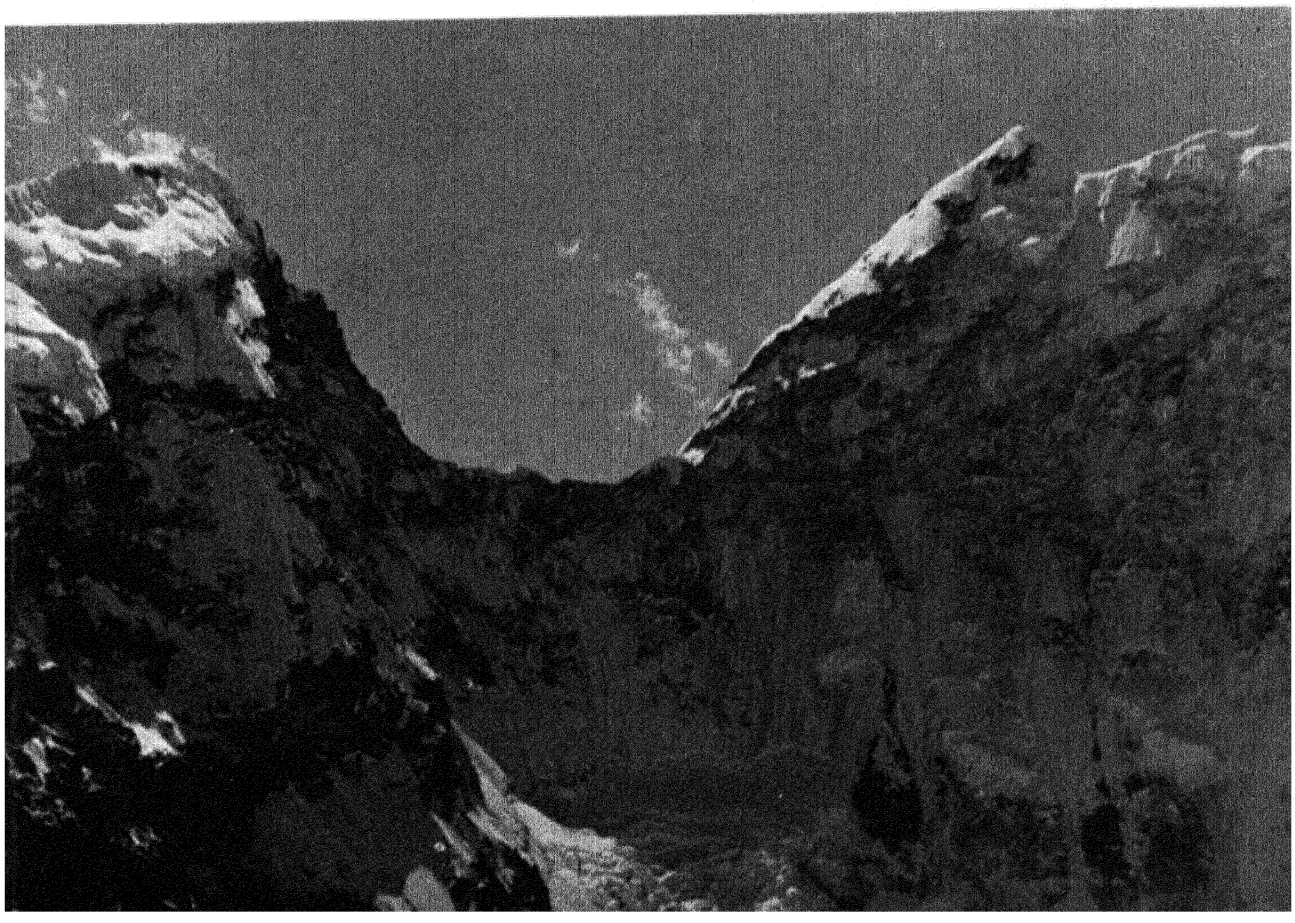
2. *Above (left and right): The Nuptse-Lhotse wall on the Imjya basin side. Left background: Pumori (23,190′). On the left the ridge comes to a point at Nuptse (25,680′) and swings right to Lhotse (27,890′). between the two summits in the right-hand picture the summit of Everest (29,002′) can just be seen*

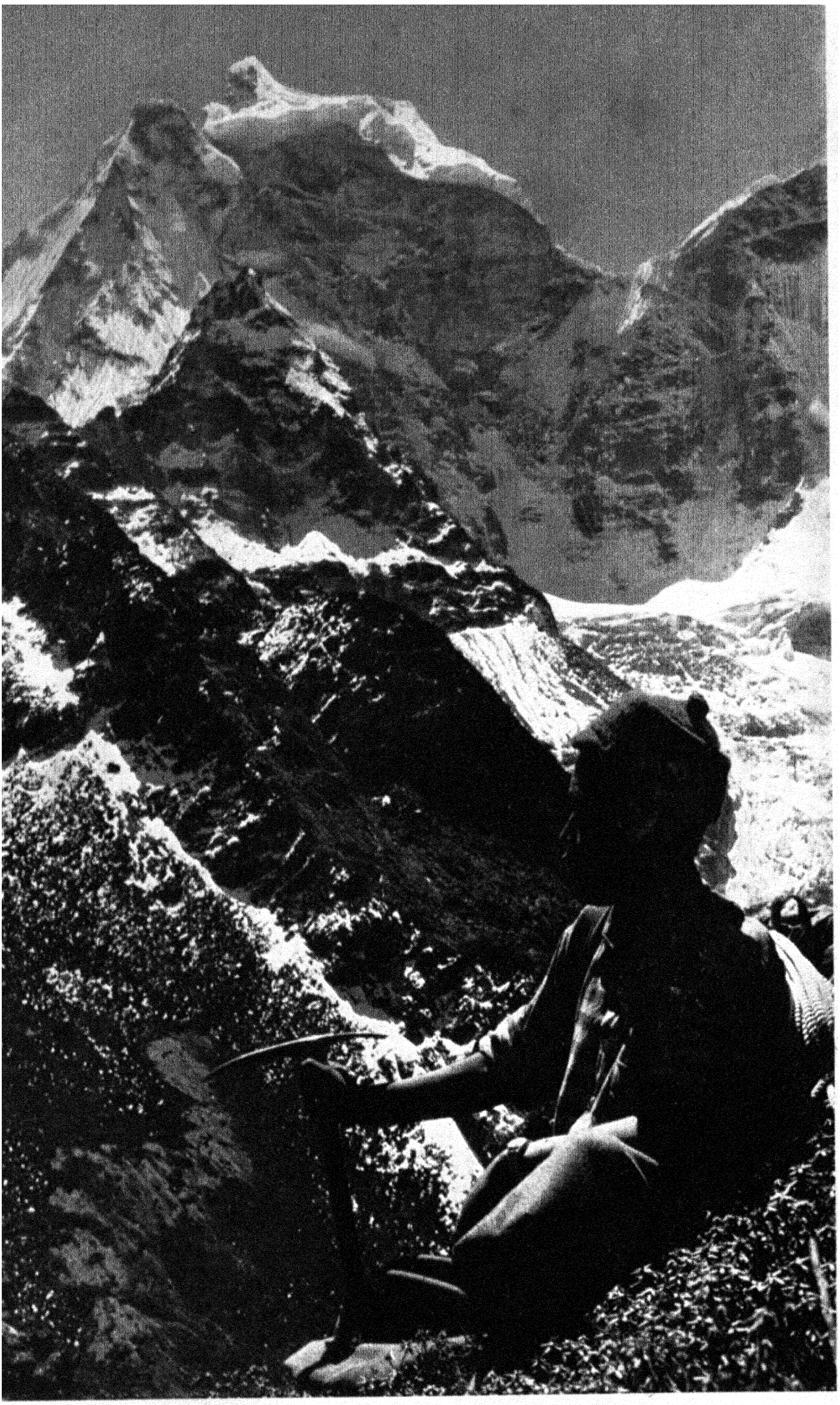




3. *Below (left and right): The pass between an unnamed six-thousander* at the eastern end of the Imjya basin is reached from the east by way of the Barun Valley, but it has not been crossed*

* *A "six-thousander" is any mountain of a height between 6,000 and 7,000 metres (approx. 19,700'–23,000')*





4. *Sherpa Ningma Sitar on a training climb above Thyangboche. In the background, Kangtega* (22,340′)

We therefore continued with the less drastic treatment, consisting of the administration of antibiotics in strong doses, of sedatives and the general maintenance of the patient's circulation. On March 26th there was a brief improvement followed immediately by a relapse; his temperature fell, his pulse improved and his pains diminished, yet every symptom of a local stoppage of the bowels began to manifest itself. Leuthold concluded that the first symptoms might have been followed by a perforation, a diagnosis which was further suggested by the results of the operation which was eventually performed in Switzerland.

We now felt it high time to report this serious case of sickness to Zürich, by way of the radio transmitter in Namche Bazar and the Foreign Ministry at Katmandu, so as to suggest to the Foundation that a helicopter be flown in if necessary, or at least that additional medicine and instruments might be dropped.

Next, I sent an express runner to meet the Grimm-Marmet party, with a request to Grimm to get the additional medical stores out of their baggage and rush them to Thyangboche by forced marches. Among these were the infusion solutions which had only been delivered just before the doctor's departure from Switzerland, and now so desperately needed. We had, however, a few small bottles of serum with us. We administered two of them to the patient, in order to refill them with nutritional solutions of Tibetan salt and glucose, which we sterilised and gave the patient as intravenous injections. The effects were almost instantaneous. The severe dehydration, the exhaustion and the low blood-pressure improved amazingly. On March 28th Luchsinger was able for the first time to take nourishment in fluid form. There was still some inflammation, but it was extremely local in character and already showing a clear tendency to subside. On March 30th, after a very worrying week for us all, every indication of a final and permanent turn for the better was evident. We now felt it would be possible to evacuate our sick friend within measurable time. To our great joy the improvement made swift strides, the local condition was almost fully restored by March 31st, and with great relief we telegraphed our cancellation of the request for further assistance. But our first message had met with delays on the way. On April 1st we received a telegram from the Founda-

tion, telling us that a Dakota would be flying in medical supplies from Patna and asking us to lay out ground markers to ensure that they were dropped at a convenient place. We immediately repeated the cancellation, but laid out the markers just the same. When no aircraft put in an appearance we knew that the cancellation had been safely received.

On Easter Monday Luchsinger's temperature stayed down for the first time since our arrival at Thyangboche. We had been lucky enough to get away with a desperate crisis thanks to Leuthold's skill, Luchsinger's tough constitution and his determination to get well again. On April 3rd we even abandoned all idea of sending him down. In another week's time he would be fit to start up the Khumbu Glacier with Leuthold.

This was not the only case of sickness and we were very glad to have a doctor with us. Leuthold had used the short time before his departure to ensure himself such preparation as was possible for his duties as doctor to the Expedition. With this object in view he had got in touch with the Institute of Tropical Medicine in Basle, the Headquarters of the Swiss Red Cross in Bern, and the Army Medical Corps. In addition he had visited private practitioners, Doctors Waser and Piderman, as well as Dr. Pfisterer, who had acted as Doctor to the Dhaulagiri Expedition of the Academic Alpine Club of Zürich, so as to profit from their experience for his special assignment. These preparations paid good dividends, for after Luchsinger's recovery he had to cope with Diehl and Pasang Dawa Lama. In order to give a brief account of their troubles, I must anticipate a little.

At the beginning of April, Diehl and von Gunten were on a training tour of some days' duration in the Imjya-Khola Basin. Diehl began to feel ill and by the 13th when he reached Base Camp, which had meanwhile been sited and permanently equipped at the foot of the Khumbu Glacier at about 17,900 feet, he was in a very weak condition. He lay down in his tent in the hope that what he thought was a feverish chill would soon moderate. On the next day, when Leuthold and Luchsinger reached Base Camp, we first of all gave them some tea and then asked Leuthold to have a look at Diehl, who was being nursed by Müller. Leuthold diagnosed incipient pneumonia, and im-

mediately ordered the administration of oxygen, which had just arrived. We thought of taking Diehl down to Namche, lying six thousand feet lower, but decided against it, seeing that the journey would have taken three days and would have been very dangerous for the patient. Besides, Diehl insisted on staying up there, whatever happened. The question was finally decided by the success of the doctor's treatment, for after five days Diehl began to recover, thanks to the antibiotics, circulation stimulants and the application of compressed oxygen through the breathing apparatus.

Marmet and Grimm had reached Base Camp on April 14th, the same day as Leuthold. They could hardly have dreamed that the first practical use of the high altitude breathing apparatus they had brought with them would be its application to Diehl's illness.

They had followed our route from Jainagar to Chisapani with five ox-wagons. There they had met the porters and Sherpas we had sent down, with whom they proceeded to Namche Bazar. Intent on reducing the delay in bringing up the oxygen apparatus and supply, they marched further than the main party on each day's stage, so that they only took twelve days to reach Namche. On the way their cook-orderly had trodden on a cobra while fetching water and been bitten. Grimm, assisted by Marmet, lanced the bite by the light of a petrol lamp and injected serum. It was only half an hour before the cramps subsided, and two days later the victim was carrying his 65 lb. load as if nothing had happened.

Half-way to Namche they were met by our runner with the news of Luchsinger's illness. Grimm with a group of porters detached himself from the column so as to rush the medical items we had asked for to Thyangboche by forced marches. But it was not long before he met the second messenger sent down to bring him the news of Luchsinger's recovery; he consequently allowed himself a rest day and waited for Marmet, with whom he then completed the journey. On April 8th at Thyangboche they found Luchsinger already convalescent and fit enough to have resumed training. It was therefore possible to celebrate the reunion with tea, chang and a few cheerful songs.

The Sirdar Pasang Dawa Lama had contracted bronchitis on the

way up to Namche Bazar, but seemed to have recovered under Leuthold's treatment. He accompanied us up to Base Camp and there worked for two days opening a way up the Icefall. At that point we had to grant him and the liaison officer several days' leave, as Pasang was required to give evidence in a court case. They did not, however, rejoin us on the agreed date and the liaison officer sent up a report that the Sirdar was sick, down in Namche Bazar. An English couple, Professor Sprigg of London University and his wife, who were carrying out social and linguistic researches in the district, interested themselves in his case. Mrs. Sprigg, who kindly nursed the patient, sent Leuthold a written report on the symptoms of the illness and suggested that it might be a case of typhus, whereupon Leuthold immediately sent down appropriate medicines. A few days later Pasang came up to Base Camp again, his condition having improved. He stayed there a short time and on May 4th he climbed to Camp I in the Icefall, to meet me. As he still felt weak, I sent him down again to take care of himself for a while longer. But he got worse again and began to suffer from shivering fits and a very high temperature. On the morning of May 8th Leuthold asked me over the radio to come down to Base Camp. There he told me that our Sirdar was exhibiting all the symptoms of chronic amoebic dysentry and an abscess on the liver, and that his condition and his bouts of delirium were having a bad effect on the morale of the Sherpas. So I went down with Reist and von Gunten, who both needed a rest, to Base Camp. As soon as I saw Pasang, who was very ill indeed, I knew that the only thing was to let Leuthold take him down to Namche. It meant that we would have to dispense altogether with the services of our Sirdar and also get along for at least a week without our doctor. We knew well from the accounts of previous expeditions what an important share in their successes had been due to their Sirdars. Just to quote an example, on Hunt's 1953 Expedition, which at last succeeded in climbing Everest, it was the Sirdar Tenzing who, with Hillary, reached the summit. Leuthold's long absence also seemed pretty serious for us, coming just at a time when we were approaching the final phases of our climb and were on the point of pushing forward to extreme altitudes. But it would have been sheer inhumanity to abandon Pasang to his fate.

He had acquitted himself nobly with Dr. Tichy on Cho Oyu in 1954 and we were bitterly disappointed that he now had to withdraw on account of sickness. When we saw him again a month later in Lobuje, he had, to our great joy and relief, recovered his health. And so, in spite of the run of bad luck, which afflicted us for quite a time, we finished up with a clean bill of health.

We learned later that Luchsinger's illness had received considerable publicity in the international press as well as in papers at home in Switzerland. This arose partly from the fact that the text of our first telegram was garbled owing to an error on the part of the radio team at Namche and partly because it suffered a delay of some days between Katmandu and Raxoul where it was transferred to the Foreign Ministry. Several press agencies indulged in a good deal of imaginative reporting on the subject of this illness, with the unfortunate result that quite a storm raged for a day or two among the leaves of the newspaper forest. While we, isolated at the end of a long line of communications, could do no more than nurse our sick companion with all our available resources and to send our glad tidings home when, on Easter Sunday, he was definitely on the road to recovery.

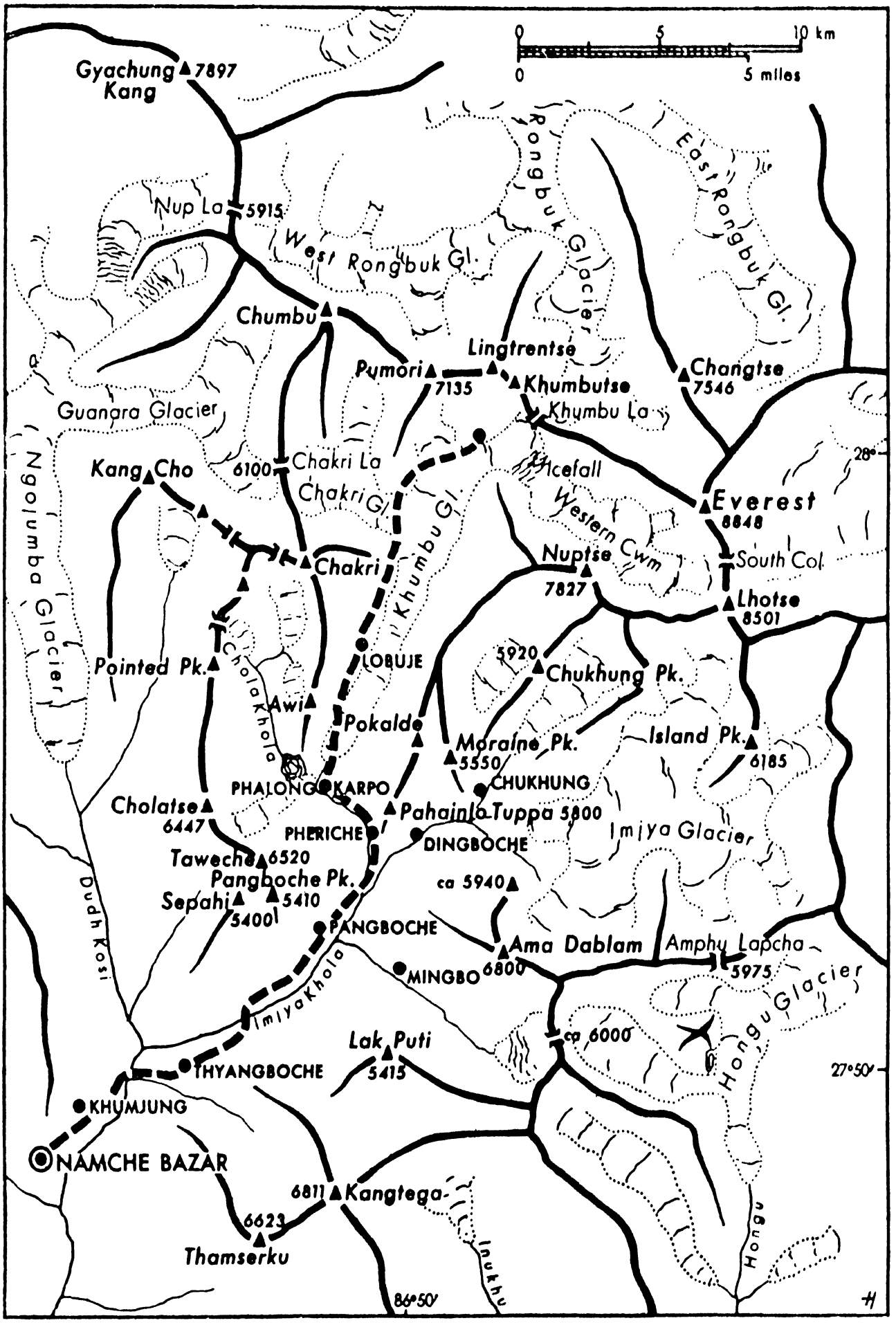
CHAPTER VI

Acclimatisation

THE experience of all former expeditions has shown how important it is that every member should have a chance of getting used to living at an altitude of 17 to 20,000 feet during several weeks of training, under favourable external conditions, before moving up to the highest levels of altitude. Members of Hunt's 1953 expedition spent a month on a systematic acclimatisation programme. They also had oxygen practice at heights below 20,000 feet and established that the difficulties of climbing were eased to a remarkable degree despite the undeniable hindrance and burden of breathing apparatus and oxygen cylinders. Our oxygen apparatus had not arrived at that stage, but we had never intended to use them during that phase of our training.

It was our original intention to move both men and materials in relays from Namche through Thyangboche to the Alp of Pheriche at about 14,750 feet and thence up to Base Camp on the Khumbu Glacier at an altitude of nearly 18,000. During that time every member of the expedition in turn would have had an opportunity to take part in training climbs and to get used to the demands of ever increasing altitude. Our plan had been to move into Base Camp on April 6th and there would thus have been a fortnight at our disposal, after our arrival at Namche, for climbs among the countless peaks, virgin or otherwise, which rise in the shadow of Everest and Lhotse.

Luchsinger's illness compelled us to alter this programme, and the monastery at Thyangboche thus became a half-way house, which had never formed part of our plans. Instead of siting our camp at Pheriche we had to stay there for the time being, taking turns in helping Leuthold nurse our sick comrade. Since Thyangboche is only 13,000 feet up it was an additional effort to climb to heights of 17 and 20,000 feet. But when Luchsinger began to


0 5 10 km
0 5 miles
Gyachung Kang 7897
Nup La 5915
West Rongbuk Gl.
Rongbuk Glacier
East Rongbuk Gl.
Chumbu
Lingtrentse
Pumori 7135
Khumbutse
Changtse 7546
Khumbu La
Guangra Glacier
Kang Cho
6100
Chakri La
Chakri Gl.
Khumbu Gl.
Icefall
Western Cwm
Everest 8848
South Col
Nuptse 7827
Lhotse 8501
Ngolumba Glacier
Chakri
Pointed Pk.
Chola Khola
LOBUJE
5920
Chukhung Pk.
Awi
Pokalde
Moraine Pk. 5550
Island Pk. 6185
PHALONG KARPO
CHUKHUNG
Cholatse 6447
Pahainla Tuppa 5800
PHERICHE
DINGBOCHE
Imiya Glacier
Taweche 6520
Pangboche Pk. 5410
ca 5940
Sepahi 5400
PANGBOCHE
Ama Dablam
Amphu Lapcha 5975
Dudh Kosi
MINGBO 6800
Imiya Khola
Honku Glacier
ca 6000
Lak Puti 5415
THYANGBOCHE
27°50'
KHUMJUNG
NAMCHE BAZAR
6811
Kangtega
6623
Thamserku
Inukhu
Hongu
86°50'

recover at the beginning of April, we were able to venture a little further afield and so the weeks of training provided us all with a delightful and interesting experience, in spite of their unpromising start.

On March 28th Diehl and von Gunten set the ball rolling by climbing a beautifully-shaped mountain to the west of Taweche at the entrance to the Imjya Khola. They ascended by steep slopes of grass and thorny scrub to about 16,500 feet, where they reached moderate climbing ground, which eventually led to a fine ridge. They both found climbing at that altitude laborious, and Diehl, who had spent the previous night on duty with the sick man, stopped about 700 feet below the summit. Von Gunten followed the rock ridge alone and by way of a steep slab reached the 17,700 foot summit. He was delighted to find that there was no sign that the peak had ever been climbed before, so he built a cairn. We named it Sepahi—the Sentinel—because it guards the entry to the Imjya Khola like a sentry. The pair had set out at about ten in the morning and it was dusk when they returned to Thyangboche with the news of their success.

On the following day Reiss, Reist and Schmied went out to tackle a subsidiary summit of Kangtega. They chose this black peak, which soars up opposite Pangboche to the south of the Imjya Khola, because we estimated it to be about 17,700 feet high and, according to the Sherpas and the monks at Thyangboche, it had never been attempted. The route turned some steep snow slopes and led out on to the south side of the peak, where they were able to make straight for the summit structure, still unroped. It turned out to be steeper than they had expected and put up a fair resistance to their assault. Schmied, who had fallen rather behind the others, recognised that the climbing was becoming stiff and worked further out to the right to look for an easier route to the top by way of a gap and a gully. Meanwhile the other two, finding their position somewhat exposed, took to the rope and worked their way by some difficult climbing up a chimney cutting through the final overhanging wall on to the summit, where they met Schmied. Delighted with their success the trio built their first cairn on an unclimbed peak. The altimeter registered 17,766 feet above sea-level. On the descent they roped down the steep

step at the top and reached Thyangboche in the evening fit and well. The whole team agreed enthusiastically with their proposal to christen the peak Lak Puti: Lak Puti was a ten year old Sherpa girl who was accompanying her father, one of our porters marching in the column, and had become the darling of all the Sahibs. In this way her name would be permanently recorded. Whether the names given by us to various peaks will survive remains to be seen, but we were pleased that members of our expedition had climbed yet another virgin peak.

On the next day Diehl and I climbed Pangboche Peak, a summit in Taweche's south-east ridge. Our way led past the hamlet of Pangboche, where we visited the gumpa, whose interior, in spite of its simple exterior, is richly decorated. Then we ascended across steep yak pastures. At the height of Mont Blanc we took a short rest among lovely mountain meadows. All around us and at our feet spread beautiful alps; and the Sherpas who were with us, Phurba Lobsang and Phurba Gyalzen, explained to us that the Sherpas of Solo-Khumbu move into these high pastures nomad-fashion with their animals during the short mountain summer.

We very soon reached the granite rocks which stand straight out of the meadow grass. We surmounted a subsidiary summit by way of a rocky rib, which at times provided some nice climbing; there the Sherpas at once erected a cairn. A sharp ridge led on from here to the summit, about 150 feet higher up. On it we first built a small stone-man, then we abandoned ourselves to the enjoyment of the magnificent view. Far below our feet lay Namche Bazar and Thyangboche. In the opposite direction, towards the north-north-east we could see, almost on the same level as ourselves, the Khumbu Glacier, with the moraine island on which we proposed to instal our Base Camp. To the left of the Nuptse-Lhotse Face, which was covered in cloud, the mighty peaks of Khumbutse, Lingtren and Pumori soared to the sky. To the east Island Peak rose out of the Imjya Glacier. Once more we were enthralled by the tremendous ice-armoured wedge of Ama Dablam which, from this aspect too, struck us as almost inaccessible. To the south rose the two unclimbed 20,000 foot peaks of Kangtega and Thamserku, and Lak Puti, which our friends had

just climbed. Right over our heads, based to our left on an ice-plastered wall and to our right on an enormous pillar of rock, soared Taweche, 21,392 feet high. It was a view fit for kings and a very pleasant summit sojourn. On the way down we tried to slow up the Sherpas' pace by well-tried expedients—photographing, consulting the compass, altimeter and maps, and continually taking fresh observations of our position. My first ascent to above the 16,000 foot level has remained a very impressive experience. A very slow pace seemed the best means of avoiding breathlessness after only a few steps. We had that day reached the height of our proposed Base Camp and were delighted to have established that one can live quite comfortably at that altitude.

We were all greatly encouraged by Luchsinger's improvement and it was now possible to plan more ambitious excursions, which had till now been confined to the hours of a single day.

On Easter Sunday von Gunten and two Sherpas went up to Pheriche. He wished to join Schmied, his brother-in-law, there and embark on a training climb with him. The latter had been up there since the previous day, checking our provisions, which had been gradually carried up to the yak alp, which lies in the flat floor of a little valley, ever since our arrival at Thyangboche. On April 2nd the pair of them started off to attempt a prominent yellow needle of rock, which stands above Pheriche, to the south of Pokalde. This needle had attracted them as likely to yield a repaying climb, on account of its extreme sharpness and its vivid colour.

They went up by a tiny path on top of a steep moraine. Presently they had to abandon their comfortable means of progress and make their way upwards over untracked ground. After a while, they reached a cairn the height of a man, which had probably been erected by members of a previous expedition for survey purposes. They then climbed a narrow ridge, on which snow and ice were lying in places, and reached a descending step which led down into a notch. Into this they roped down and then climbed easily up to a broad ledge of granite, where they enjoyed a longish rest. They then ascended on good rock, of only moderate difficulty, without taking much notice of the mist, which was growing continually denser. At last they seemed to be on the summit, where they set

to work enthusiastically to erect a cairn. They had nearly completed it when the mist parted and, to their considerable astonishment, these perpetrators of the first ascent ever saw their yellow needle surging high into the vault overhead. After debating awhile whether they had sufficient time at their disposal to complete the ascent they finally decided to have a go at it. They reached the foot of the needle over a connecting ridge with several gendarmes in it, making very slow progress because at nearly 20,000 feet they were feeling the lack of oxygen severely. There they found a gully with chock stones in it running straight up a newly-shattered face of the summit pinnacle. Schmied pulled himself up over them; then von Gunten came up carefully on the rope and climbed out past Schmied on to the summit, but found he had to use the slightest corrugations in the massive granite to support his hands and feet in order to do so. They were able to chip a few stones out of a fault in the rock and so to build a cairn. The altimeter read 19,193 feet. The descent of the severe pitch at the very top was done on the doubled rope. They described their climb with great enthusiasm after we reached Pheriche, where the major part of the Expedition was gradually assembling. We decided to stick to the name of 'Yellow Needle' or, as the Sherpas call it, 'Pahainlo Tuppa'. According to the account given by Schmied and von Gunten, the climb is on glorious, firm granite all the way and is in some respects like the route up the Klein Gelmerhorn.

After lunch on the same day Reiss and I went up a rocky crest which rises from behind the monastery towards Thamserku. We pushed up some 1,700 feet through the mist, where we built a cairn on a prominent shoulder. There was a solid cairn on the summit of this steep ridge too, placed there by Erwin Schneider in the previous year for survey purposes. As we were coming down, we unexpectedly met two Sherpas. They had been sent up to meet us at the request of our friend Mawang Gyurmi Lama, who told us after we got down how worried he had been on our behalf. According to him the lair of a Yeti* lay close to the route we took and if we had disturbed him he would have attacked us and we should probably have lost our lives. Now we had nowhere seen any tracks, not even on the north side, where snow was

* Abominable Snowman.

lying. Moreover we had Fooz with us, a dog which had from time to time followed the expedition ever since we crossed the Solu Khola, and he would certainly have put up a Yeti if there had been one anywhere in the vicinity. We ourselves did not believe in this fabulous creature, but the Lamas and the older Sherpas were always talking about it; on the other hand we did not wish to embarrass our friend Mawang Gyurmi.

On the morning of April 3rd I again spread out the big white cloth cross in the monastery meadow, but when no aircraft had put in an appearance by ten o'clock I had it brought in for the last time, for I was now certain that my last telegram had safely reached Zürich. Just as we were engaged in rolling up these great strips of cloth, to my great delight, Luchsinger arrived on his own feet. He had managed to get up for the first time, and though he was still a little vague and unsteady in his movements he expressed the hope that he would be fit enough to start taking a share in our activities in a few days' time. It was Leuthold's intention to stay down here with him and supervise his training. On bringing the cloths, which had been loaned to us, back to the monastery, we were immediately invited by two Lamas to an 'elevenses' of Tibetan tea, chang, and rakshi in their gumpas, in order to celebrate the recovery of our patient and to receive their blessings for the climb on which we were embarking. The Lamas proposed to pray for our well-being every day, for, thanks to the services of our liaison officer, we had established the most sympathetic relations with them. They thanked us for our large donation towards the new tin roof of the monastery; they had acquired the sheets some time before, but owing to lack of funds they had got stuck somewhere far down the delivery line. We proposed to make a further contribution in the event of a successful conclusion to our operations. It was not till well after noon that I was able to start off for Pheriche, accompanied by the liaison officer and our Sherpa orderlies.

Up there everything had been laid out in exemplary fashion. The whole of our equipment, unpacked and spread out in easily-inspected rows, covered the terrain. All the tents had been erected; where necessary safety ropes had been added. My friends had already shown the Sherpas how to put up the lightweight high altitude tents and were occupied in the distribution of warm under-

wear, the down suits, gloves, goggles and crampons. The Sherpas were marched in single file through the whole dump and the Sahibs handed the individual items out to them as they passed.

We too attended to our better equipment, for we intended to go up to the Khumbu Glacier, more than 16,000 feet up, and we needed to be armoured against the cold and sudden bad weather. So far the weather had been fine for weeks. Every morning the sky was cloudless and the snow-fall after our arrival at Namche Bazar seemed a thing of the distant past, a last spiteful fling of winter.

On April 4th Reiss, Reist and Müller climbed 'Moraine Peak' in the upper Imjya Khola and brought back numerous photographs of the nearer and further surroundings of that basin, which has hardly been explored. I went along as far as the glacier level at about 17,000 feet but turned back there, as I had to be back at Pheriche by four in the afternoon in order to make the final arrangements for the next few days.

Diehl and von Gunten left on April 5th for a week's exploration of the Imjya-Khola area, while Reiss, Reist, Schmied and I went up to the Khumbu Glacier to settle where we were going to site Base Camp and to have a good look at the next stage beyond it, the Icefall.

Diehl and von Gunten with their party went up by way of the hamlet of Dingboche on its alp and through Chukhung to the foot of Island Peak, where they camped at about 17,000 feet. Their first objective was that peak itself, a sharp mountain 20,293 feet high, which had already been climbed twice. After endless scrambling over debris fans next day, they got on to a rock ridge which offered comfortable climbing. Diehl, who was already feeling signs of the illness which was about to overtake him, stopped about 800 feet below the summit. Von Gunten went on with his two Sherpas, crossed a much crevassed hanging glacier of no great size at 19,350 feet and reached the foot of the very steep summit slope. Here he had his first opportunity of observing how the Sherpas got along with crampons on steep frozen snow. They came through their test well, for the trio quickly surmounted several rope's lengths on sound, holding névé and reached the summit of Island Peak six hours after starting the climb.

Next day they moved their camp to a spot about 16,800 feet high in a lateral valley to the south, at the eastern foot of Ama Dablam. The climbers were surprised not only by the very impressive aspect of the mountain from this side too, but also by discovering, next morning, the tracks of a large wild animal in the damp sand close to their tents. There could be no doubt that during the night a large wild cat had crept about between the tents. They failed to establish whether it was a tiger, as the Sherpas thought, but the tracks were certainly those of a very large animal. Everybody felt better when there was no sign of a repetition of the visit.

On April 9th they tried to climb an imposing ice peak, estimated to be 20,100 feet high, lying somewhat nearer the Hongu Valley. They got up early and eventually Diehl found a way through the fearfully shattered glacier and led the party of four, 'knitting' back and forth between innumerable crevasses, to the foot of the steep summit slope. The steepest and most difficult pitches were overcome by cutting steps, till quite unexpectedly they found themselves at the lip of an immense bergschrund. They spent so long in mastering this obstacle that they had to turn back in view of the late hour. It was four o'clock in the afternoon and the altimetre read 20,014 feet. It would have taken at least two more hours to reach the summit and they would inevitably have been forced to bivouac for the night, a procedure for which the party was not equipped. On the next day they returned to Pheriche. Diehl had a shocking cold, but went on up to Base Camp with von Gunten in spite of it, only to collapse with pneumonia on his arrival.

Meanwhile they had not been idle down at Thyangboche. Luchsinger continued to make a most satisfactory recovery. Serious as his illness had been, it had not succeeded in damaging his wonderful constitution. As early as April 7th he climbed, with Leuthold and under his watchful eye, to a height of 16,400 feet. They thus disposed of a height differential of more than 3,000 feet and to celebrate his newly-regained strength and health they built an enormous cairn on the rock needle they had climbed, high above Thyangboche.

Grimm and Marmet too were determined to continue the train-

ing they had begun with their heightened tempo on the way up, and to get used to high altitudes as quickly as possible, so as not to lag behind their team-mates. From Thyangboche they climbed a pinnacle about 17,700 feet high to the east of the monastery, and on April 12th Leuthold, Grimm, Marmet and Luchsinger reached the top of a sharp, unclimbed rock pinnacle about 17,400 feet high, above the alp of Pheriche, in the same range as Pangboche Peak, which Diehl and I had climbed from the monastery.

They looked across to where, a day's march above Pheriche, lay the Base Camp, which we had occupied on April 7th and where the work of fitting it out was already in full swing. Thyangboche lay far below them and was already a remote memory. They were determined to be in full discharge of their duties at Base Camp in a day or two and so hastened to bring their period of training to its conclusion and to march up to the Khumbu Glacier, where their very varied assignments awaited them. They could not know then that on that very day, April 12th, Schmied, working at 19,700 feet in the Khumbu Icefall, had opened the way into the Western Cwm.

These training expeditions had acclimatised us to the altitude and had also given us some insight into the area where our work lay. The most important lesson was what a long way we still had to go before setting foot in altitudes of 23,000, let alone 27,000 feet. We hoped to be able to make short digressions into the surrounding mountains from time to time, while moving up into the higher camps. I should like to give an account of one such expedition at this point, though it did not take place till April 24th, and so does not properly belong to our training period.

A remarkable double-headed needle rises from Nuptse's south-west ridge to about 20,000 feet. In 1952 this attracted the geological interest of Professor Lombard, because two different strata of rock impinge there. He named the needles 'Nuptse Trikhang', the Nuptse Belfries. Their counterpart is to be found on Pumori's west face and he named the corresponding needles 'Pumori Trikhang', the Pumori Belfries. Neither pair of needles had yet been climbed, so Reiss, Pasang Phutar and I took the opportunity of a rest-day to climb up towards the south-west ridge of Nuptse from Base Camp. After a long approach over loose boulders we

roped up to climb the steepening rock and got a lodgment on the ridge, which consists of granite slabs. After an interruption by a steep ice and snow slope we resumed the ascent of the ridge. The summit pinnacles provided an exposed and awkward climb on which we were particularly impressed by the enormous gulf into which we looked down their southern face. After long days among ice and snow we thoroughly enjoyed the experience of climbing on warm rock again. We were very pleased to achieve the first ascent of this needle of over 19,500 feet, for its rock and its ice alike were pretty exacting propositions.

CHAPTER VII

The Glacier

DURING our wanderings among the Alps we must all at one time or another have been deeply impressed by some particular glacier. We were all familiar with the relatively few truly magnificent glacier tongues, such as the curving sweep of the great Aletsch glacier as seen from the green slopes of Belalp or from the Aletschwald with its carpet of Alpine roses. Probably many of my companions had the same experience as I did on making our first acquaintance with the Khumbu Glacier. One could sense the proximity of one of nature's great manifestations long before it came into sight. For hours we had been moving parallel with huge moraine banks, and we had continually been amazed at the wilderness of ice slopes, hanging glaciers and veritable cascades of ice as our eyes travelled up and down the face of Nuptse; yet all this time our path still lay over the soft turf and occasional snow shields of the Lobuje Alp which lies embedded between the moraine of the Khumbu Glacier and the steep faces of Awi and Chakri. Far behind the last shepherds' huts a step led on to the terminal moraine of the Chakri Glacier, which flows into the Khumbu. We balanced our way forward along this and other moraines, high above the Khumbu basin, for a long time, and it was not till far up beyond Lake Gorakshep, which lies like an oasis between three walls of rubble and along whose northern shore at least a dozen bivouac walls bear witness to the passage of previous expeditions, that we actually descended onto the Khumbu Glacier itself. Below this point the glacier lies buried in its own debris, with only a few isolated fangs of ice and pinnacles, as high as a house, penetrating the carpet of rubble. None the less, this confused ruin of a glacier followed the pattern of all ordinary glaciers and there was therefore no reason for surprise that we were able to reach the middle of it by following a kind of avenue of séracs.

We only gradually got to know the nature of this particular glacier. For just as nobody potters about the debris-covered snout of a glacier in the bottom of a valley in order to enjoy the loveliness of the ice world, so our first encounters with the corroded torso of the Khumbu's lower end might have misled us into thinking we had quite a second-rate character to deal with. How wrong we were! Later on we were to be asking ourselves whether we would ever get the better of this savage creature. It was not till after long, arduous weeks up on the Lhotse face and South Col that we learned with what pent-up forces of nature the Khumbu's astonishing cataract was awaiting us. All the same, this monster of a glacier had no questions to pose to any of us to match the problems it set Müller, our glaciologist. I had got to know him during the march through the Himalayan foothills as a scientific observer of the greatest imaginative power. His geographical knowledge, and more still his years of work in the highly specialised field of morphology, had obviously developed in him a quite unusual talent for the solution of glaciological problems, of the kind the Khumbu glacier was now beginning to present at its every bend. Müller, as a result of repeated visits to Eastern Greenland, was familiar with the many peculiarities of the arctic scene, his personal research work in the Yukon and other regions of the Canadian Arctic had familiarised him with the manifold phenomena of periglacial freezing and he was thrilled now to have the chance of exploring the nature of a great Himalayan glacier and the history of its one-time bed lower down the valley. His expert knowledge made him a most competent adviser to our whole party. We were only sorry that the demands of the expedition's work so soon took us in different directions and that we could not all enjoy the company of our glaciologist to the full.

I had never had to get to grips so fundamentally with any glacier in the Alps as with this dragon, which came crawling down before our eyes from the highest domain of the clouds.

In order to enjoy a prospect which alone makes it worth while to have come such a long, long way, it is necessary to stand at about mid-day in the shelter of the enormous wall leaning back towards Khumbutse, Lingtren and Pumori, and look up the glacier's course. At about that time of day the upward trend of the wind is

usually driving the fine weather clouds of the normally sunny weeks in April and May up into the Everest massif. The fall in temperature caused by the rising cloud-banks frequently results in considerable snow flurries. At such times passing mist-veils and a light powdering of fresh snow give definition to the slopes of the mountains. Suddenly the geological strata are clearly accentuated, and the relationship of the jagged scars and fissures produced by weathering on the rock faces becomes clear. On such a day even a layman realises that these colossal mountains were not poured out of a mould into their respective places, but that they consist, on the contrary, of a variety of layers of stratified rock lying one over the other.

The wonderful trio of the Everest, Lhotse and Nuptse summits is today accepted as the classical example of mountain folding. Following Müller's explanation as he stood pointing with the shaft of his axe, it was not difficult for us to pick out the junctures of the different layers piled on top of each other, and to divide the mountain mass broadly into its component zones—the base of the massif being the gneiss and the crystalline slates which rise out of the rubble at its feet; at the top, forming the mighty summits themselves, was the massive light-coloured granitic gneiss with exposed caps of limestone set on it; and, jammed in between like a wedge, the arch-like formations of the Nuptse schist.

In the structure of the Himalaya, as in the Alps, the pressure and movement of a huge area of the earth's surface has resulted in a vast system of superimposed layers of rock. Here the inclination is in a southerly direction and certain of the main features of the Everest massif can be traced back to the very origins of the upheaval.

The great granite vault, as the Nuptse schist is called, has forced the upper formations, which were pushed across from Tibet, sharply upwards, with the result that the enormous bulge of rock of this zone of the Himalaya has an exceptional high crest, and so the ascending planes of overthrust in this almost unimaginably huge pile of mountains, being still interlocked at the base like crushed armour plates, must have dictated the direction of the valley formations. Finally, when the mountain mass came to rest after its movement from north to south, and weathering, rock-

falls, flood and ice-erosion sculptured the diadem of the Everest-Lhotse-Nuptse summits out of the vast conglomeration of rock, the valley was dug out more or less along the lines carved by the former planes of overthrust. And so the Everest massif achieved its present unique formation.

The splendid aerial photograph (facing page 80) taken by the Indian Air Force, gives a very good idea of the composition of the Everest Group. The fining down of the mountain probably began when erosion carved huge funnels into the surface. It is thought that the astonishingly roomy platform of the South Col may be the remains of the floor of just such a cwm between Lhotse and Everest; if one accepts the idea of a back wall, it is a reasonable conclusion that the water from that primaeval valley flowed southwards down over the Nuptse granite vault. It is equally probable that an enormous cwm bordered the western slope of Everest. If we then suppose that the water penetrating the bottom of the high Everest-Lhotse ravine was suddenly deflected westwards because a new valley running southwards had formed there, the role of the old plane of overthrust between Nuptse and Everest becomes intelligible; for the greatest depth of the erosion must then have followed it. In that way the funnel-like ravine high up at 23,000 feet was transformed into a deeply-cut steep-sided trench leading to the newly formed valley lying 8,000 feet lower down. This system of primaeval water-courses has since governed the direction of the Khumbu Glacier. And now it is possible to construe the fine air-shot: up near the summit Everest, Lhotse and Nuptse are ranged to constitute the source of nourishment of the glacier valley; in the foreground, in front of Everest, the névé-covered pyramid of Everest's Shoulder and its other outliers bar all egress to the north, thus forcing the glacier to take, as it were, a 'telemark turn' suddenly southwards, to fall into the bottom of the lower primaeval rift.

Down in its deep, steep bed the Khumbu glacier must have undergone through climatic ages similar cold periods with advancing ice, and warm periods with a corresponding recession, as have been experienced by our own glaciers in the Alps. For a visit to the valley above Phalong Karpo, with its lavish covering of moraine debris, discloses at once that many lateral moraines and

deposits resulted in huge banks of terminal moraine, obviously bearing witness to the existence of now vanished glaciers, in the same way as those alpine examples enshrined in the well-known Moraine-Calendar numbered 1856, 1820 and 1600. We indeed came into most effective contact with the relationship between glacier-ice and moraine-rubble when we were searching for a satisfactory site for our Base Camp; for frequently when we thought we had pitched our tents on firm ground, it was quite unnecessary to put an ear to the ground to hear the soughing and gurgling, the creaking and cracking of the ever moving bottom-ice underneath. And later, when the monsoon brought increasingly warm conditions to our camp-site, many a small dry-stone wall suddenly went tottering because of a suddenly melting ice-base.

The area from which the Khumbu draws its supplies is not as large as that of the névés from which our Alpine glaciers draw theirs. Its area of nourishment could be compared with the Ewigschneefeld, its arc of wastage, which at present shows through the glacier tongue, with the Fiescher Glacier. These comparisons are however only relevant to areas; the method of storage is different, the weather runs a different course, and the altitude at which it lies is completely different. The Khumbu has more in common with the névé-less type of glacier found in the Karakorum; and a few week's sojourn in its area of nourishment really teaches one what that means. Its sources are less the loads of snow, which are deposited by occasional heavy snowfalls as a thick cushion on the upper névé slopes, than the continual addition of new substance which gets blown on to them in the form of powder snow and then pours down in the form of powder avalanches and down innumerable constantly active flutings from the mountain faces which rise up like wind-shields. This also accounts for the glaciation of those faces themselves; to the north on the West Ridge and on Everest's Shoulder; to the east right across the Lhotse Face; and to the south all along the heavily-iced faces of the long Nuptse wall. All these factors combine to form a permanent glacier of considerable productive volume, flowing towards the west in the deeply-gouged Western Cwm. How thick the ice is in this basin is difficult to estimate, but its crevasses seem very deep and it can safely be assumed that compact uncrevassed

glacier ice goes down a long way further. The Western Cwm debouches at its lower end in a narrow defile about 1,000 yards wide where severe pressure is immediately inflicted on the first dammed-up masses of ice, so that deep and very large crevasses are opened up right across it. Only then does the rock bed obviously break up, the glacier is shattered into a criss-cross of lateral and longitudinal crevasses and is then subjected to a new and even more severe confinement as the rocky banks between which it flows draw closer to one another. Here the glacier forces its way through the narrows between the rocks and plunges about 2,000 feet in the form of an icefall before finding enough elbow-room to resume its normal pattern as a glacier stream; then, just as if nothing has happened, it streams vigorously away in an unbroken flow, under the guise of a normal glacier tongue, in that great bend, already likened above to a left-handed telemark turn, which swings the Khumbu from a westerly into a southerly course.

Directly he arrived at Base Camp our glaciologist had rigged up a weather observation post, so as to be able to study the local Khumbu weather to full advantage during the eight months he proposed to devote to his studies in the region. However, he was not satisfied with the matter of his note books, and the factual tabulation of recorded readings. In his blue eyes there flashed the sparks of an unconcealed passion for the mountains. He would have liked best of all to contrive somehow to climb to the very great altitudes as soon as possible. Finally he actually crowned his series of speed measurements and ice soundings, to say nothing of a thorough research into the composition of our fearsome monster of a glacier, by climbing a nice little 'eight-thousander' when making, in the company of Luchsinger, a first ascent of a bump near the upthrust of the ridge from the South Col.

On April 6th after a march of some five hours from Lobuje, Reiss, Reist, Schmied and I reached the moraine island on which former expeditions, Swiss and British, had built their Base Camps. Bits of walls, sites of old fires and rubbish showed that people had lived up here in this isolated world for weeks on end. The island was surrounded by huge towers of 'nives penitentes', which gave it a most picturesque appearance. All the same it seemed to me to be

pretty small for a camp of any real size. It would be difficult to instal tents, a kitchen, supply dumps and oxygen depots in a decent pattern and with sufficient room to move in between. The ice was only covered by a thin layer of rubble, and a further disadvantage from my point of view was that it commanded no direct view of the Icefall, through which we had to break our upward route. However, we decided to stay there for the time being.

Before the first tents were up, Reiss went off to have a close look at the Icefall and to scout around for a better camping-place. He reported that there were better ones further to the north, but he thought we ought to test them ourselves for exposure to falling stones. We therefore decided to have a first-hand look at the ground next day.

The first night in the Moraine Camp passed without incident and next morning Reiss and Schmied went up, bursting with enthusiasm, towards the Icefall to decide on the best route up it. I went on northwards along the moraine-trough by which we had come up; with me I had Reist, Thundu and the experienced Dawa Tenzing. We soon got off the glacier on to its right hand lateral moraine and drew near to the south foot of Khumbutse, the impressive corner-stone of the icefall. We could not take our eyes off the mighty glacier piled up before us. We had hoped to find a camp site with a full view of its shattered step and in this we were not disappointed, for in a few minutes we reached a broad crest with an uninterrupted view of the route which lay ahead of us. There was room here for a whole regiment to camp and there was an ample supply of suitably shaped granite blocks and gneiss slabs for the construction of buildings and cook-houses. Nor were there in the neighbourhood any séracs to throw their trying glare on the scene. There was no danger of falling stones from the slopes of Khumbutse nor of avalanches of ice from the Khumba La. We had no hesitation in deciding to move our tents across to this ideal site for a Base Camp.

We brought them over to the south foot of Khumbutse on April 8th. Under the supervision of our cook, the Sherpas built a spacious kitchen with walls made of great square blocks, which was covered over with the well-tested kitchen tarpaulin. Next

door to it we placed the somewhat less elaborate Sherpa cook-house. Dawa Tenzing, with the enthusiastic assistance of the Sherpas, levelled off the tent sites. By evening a gaily-coloured little village had arisen from the moraine-debris and its size was extended during the next day. Later on Reiss, with Sonam Tenzing and other Sherpas, built a stone hut for the Sahibs, between two immense boulders. In it we gathered for all our meals, conferences and—our especial pleasure—to warm ourselves in each other's company at the open fire. The room was lit by a Butagas lamp and there we felt as comfortable, after our life under canvas, as in any Club Hut in the Alps.

Gradually, proper paths took shape between the kitchen, the tents and the supply dumps and the camp grew more habitable from day to day. We were glad to have chosen a roomy site on which it could spread out. This also enabled us to deal with sanitation problems in a satisfactory manner; in 1953 these had caused the British on the narrow moraine island a great deal of trouble. Leuthold indicated the point of water supply and marked out a latrine area with yellow pennants. The most important consideration for me was the provision of an orderly and spacious camp, for it was here that the climbing-parties would have to recuperate, after spells in the cramped tents of high-altitude camps, before going up again with strength and energy restored.

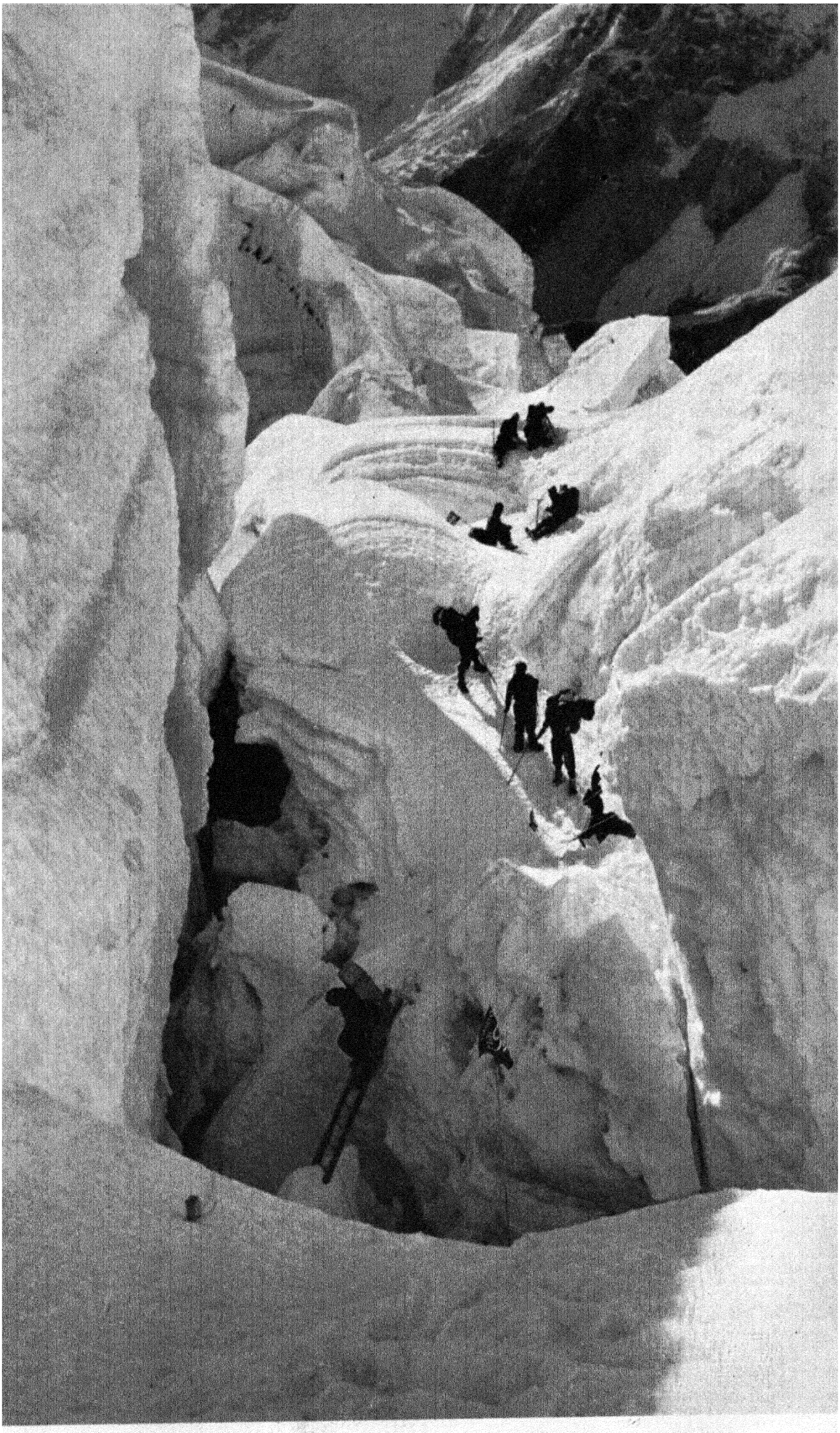
The weather continued fine. Every day the porters arrived in high spirits with the materials they were relaying up from Pheriche. Among other things they brought up about 10 Ster* of wood; and our wood fire, with its familiar crackling and its warm glow, was one of the chief and most constant contributors to a feeling of home comfort in the arid world of rock and ice. Later they brought regular supplies of potatoes, rice, tsampa, spices and petrol up from Namche Bazar.

The whole team assembled by degrees at Base Camp. Müller came up from Pheriche with the tail-end of the transport. On April 12th von Gunten turned up, followed next day by Diehl; and finally Grimm, Marmet, Luchsinger and Leuthold put in an appearance. On April 14th we were all collected together for the first time since our departure from Switzerland.

* A Ster=a cubic yard of wood, roughly speaking.



5. *Aerial view of the Khumbu Glacier and its feeding area, lying between Everest (left, 29,002′), Lhotse (centre back, 27,890′) and Nuptse (right, 25,080′)*



6. In the labyrinth of the Icefall

Müller occupied two tents on a little hillock quite close to the camp, where he installed his scientific institute. The Sherpas helped him to erect four chortens on which he placed a wind gauge, a Stevenson-screen, a rain gauge and a weather-vane. Here too he kept the bamboo stems which came into use later during his various measurements on the glacier. Although the weather was fine, the shade temperature only rose a little above freezing point at any time during the day. We mostly wore balaclavas and pullovers and often our down-jackets as well. There were occasions when it was possible to stretch out comfortably in the sun in some sheltered spot; but we kept on being reminded that our camp was 17,900 feet up.

Every day the All India Radio Service passed a weather report up to us. This weather-reporting service for expeditions at work in the mountains had become a regular feature in recent years. We were grateful to our diplomatic mission in Delhi for arranging with the Indian authorities to prepare these special reports for us.

One or two of the Sherpas had brought their families up to Base Camp with them, and so our village presented a colourful picture of constant activity the long day through. In the evenings the Sherpas sat around their fires singing and playing games and we were delighted to be living in so comfortable and well-designed a Base. We now had to force a way up over the Icefall into the Western Cwm, the Valley of Silence, into which our Genevese comrades had first penetrated four years earlier. Reiss and Schmied had got up to just over 19,000 feet on April 7th, breaking a trail up the sheer glittering ice of the continually moving Icefall.

We gradually accustomed ourselves to the rumbling and crackling of rock and ice-avalanches which never ceased to pour down from Pumori, Lingtren, the Khumbu La and Nuptse, opposite. It sometimes sounded as if we had sited our camp under a railway bridge, for there was not a single day or night when the mountains and glaciers overhead fell silent. Every evening, at almost precisely the same time, a gigantic ice-avalanche roared down the Nuptse Face: Reist with his delightful, dry turn of humour, referred to it as the 9 p.m. Express. At night, as we crawled into our tents after our usual evening of talk in the stone hut, we often gazed up at the glacier high above us in the brilliant light of the stars,

knowing it to be the first key point on the way to our objective. We could not yet see Everest or Lhotse, but we could hear the organ notes of the wind as it swept down from their proud summits into the Western Cwm at their feet. Then we would speak with great respect of the two mighty peaks so high above us, and longed to be properly at grips with them.

CHAPTER VIII

The Crystal Dice

It was in 1852 that assistants of the Survey of India first established a height of 29,002 for Mount Everest; till then topographers had merely accorded it the undistinguished symbol XV. Before 1852 Kangchenjunga, 28,163 feet high, but now considerably dwarfed by Peak XV, had ranked as the world's highest mountain. Its newly discovered supplanter was given the name of Mount Everest in honour of Sir George Everest, a past Chief of the Survey of India. To the Tibetans the summit was known as Chomolungma, of which a rough translation is 'Goddess Mother of the Land'.

The high peak beckoned from afar, but many a reconnaissance was necessary before the approach routes and later the way to the summit were disclosed. The British explorers Bruce, Rawling and Noel all made efforts even before the first world war to reach the mountain both from Tibet and Nepal, without ever obtaining the consent of the Tibetan or Nepalese authorities. It was not till 1921 that a British expedition succeeded in getting near Everest from the north. It was led by Col. Howard-Bury and consisted of four climbers, a doctor, a geologist and two cartographers. On July 19th, 1921, two of its members, G. H. Bullock and G. L. Mallory, exploring the Rongbuk Glacier, reached a little col between Pumori and Lingtren. They had hoped to find there a traverse into the Western Cwm, but found themselves disappointed. They saw Everest and Lhotse and far below them the Icefall of the Khumbu Glacier, but between where they were standing and the glacier opposite there fell away the enormous precipice which we now saw rearing itself above our Base Camp and at which we often glanced up when it sent its avalanches thundering down. Mallory noted in his diary that the glacier was appallingly steep and shattered, and he very much doubted

whether it was possible to get a footing on it. So the pair gave up their reconnaissance and returned to report that there was no way into the Western Cwm.

For the next twenty years all approach routes of subsequent Everest expeditions led over the Tibetan plateau and up the Rongbuk Valley to the northern foot of Everest. For a long time the Government of Nepal forbade any approach from the south; it was not till 1950 that a permit was issued to reconnoitre the mountain from its Nepalese side.

In the autumn of that year Charles and Oscar Houston, Elisabeth Cowles and Anderson Bakewell, all from America, and H. W. Tilman who had joined them from England, were the first white party to visit the south side of Everest from Nepal. They were received at the monastery in Thyangboche and later looked up at the Khumbu's impressive Icefall, much as we were seeing it now from Base Camp. Their observations and photographs moved the Joint Himalayan Committee in London to set in train a reconnaissance for the following year.

Eric Shipton and his party succeeded in climbing the Icefall on October 28th, 1951, and reached the level bed of the Khumbu Glacier at about 20,200 feet. At that point an enormous crevasse barred the way and they were forced to give up the reconnaissance. They reported that the severest technical difficulties of the western approach were probably confined to the Icefall and therefore to the relatively low stages. They were encouraged by what they saw of the route out of the Cwm up to the South Col, and the ensuing climb to the summit looked much more promising than the North Ridge, because the main tilt of the stratification and the articulation of its rock was favourable to the climber instead of against him.

The Swiss Foundation had obtained a permit from the Nepalese Government for an expedition towards the South Col and Everest from Namche Bazar in 1952, in the spring of which year they and the Joint Himalaya Committee in London had reached a co-operative and friendly agreement that 1952 should be Switzerland's year on Everest and 1953 a British preserve.

Wyss-Dunant's 1952 expedition succeeded in opening up and extending the route discovered by Shipton. In the autumn of the

same year a second Swiss Expedition under Gabriel Chevalley again climbed the Icefall. In 1953 Hunt's successful expedition repeated the ascent. In the autumn of 1955 our predecessors, the International Expedition, did it again and in relatively quick time. All those who preceded us had been impressed by its savagery and instability. In 1952, Reiss had found it in a fairly favourable condition, after the considerable monsoon snow-falls, but his reports had convinced us that we were faced with some serious work on its ice. We spoke with great respect of Eric Shipton and his team—Riddiford, Bourdillon, Murray, Ward and Hillary—as well as of the Sherpas Ang Tharkay, Pasang and Nima, who had made that first ascent as far as the notorious crevasse at the entrance to the Cwm in seven days.

What kind of a reception would we get at the hands of a glacier which, according to its first conquerors, changed from day to day as if shattered by an earthquake?

It is a commonplace among climbers that the first hour from the hut on the way to a peak is crucial; in the Alps the hour before sunrise often decides the success or failure of a climb. If in the grey light of dawn you find the right way through moraines, boulders and bands of rock, you will be hundreds of feet above the hut an hour after sunrise and there, with the next sector of the route before your eyes, you can indulge in a short rest. If you lose your way during that first hour, you will be wandering aimlessly around at sunrise without having gained any appreciable height, and instead of stopping for a snack you will be charging breathlessly up the next bit of the mountain. Our 'first hour' on the Icefall went well and our success during that time added greatly to our drive forward.

During their reconnaissance on April 7th Reiss and Schmied, with their two Sherpas, got appreciably further than intended. The weather was fabulously fine and turned the ice into a positive fairyland. Reiss led his party of four towards the right of the glacier curtain and they gained height rapidly between the towers of the Icefall's northern half. The sun blazed down almost vertically on to the maze of crevasses, so that the glare struck fiercely on the eyes even under two pairs of goggles. The party frequently thought they could make no further progress where almost

insurmountable difficulties confronted them, but all the obstacles gave way before resolute step-cutting, short ice-climbs with the assistance of pitons and rope-leverage, or by the use of a proffered shoulder. Soon the bottom of the valley lay far below and the altimeter already showed 18,700 feet. In spite of their being equipped only for a short reconnaissance of the route, the party pluckily decided to climb on into the middle of the Icefall to the hollow which every expedition had used as a camping-site. They found the continuation of the ascent very exhausting, for they were of course only partly acclimatised to the altitude. They marked the route with gay pennants. At the end of only four hours the two ropes of two were surprised to find themselves at the rim of the hollow in the glacier, which was to become Camp I, 1,300 feet above the camp on the moraine below.

The only liquid the reconnaissance party had taken along was a tin of fruit-juice, all right for moistening a dry throat, but no use for quenching thirst. So the four men climbed down their brightly marked route as quickly as possible and returned to the Moraine Camp, thirsty but in high spirits. The first 1,300 feet of the climb—our 'first hour' on the way to the summit—had prospered beyond all expectation.

Our introduction to the Icefall seemed to be developing under a lucky star. Never before had the spear-head of an expedition reached 19,200 feet in the Khumbu Icefall and I reflected confidently that we had got off to a flying start in our race with the monsoon.

As was only revealed later, the route from Base Camp to the hollow in which we eventually placed Camp I was technically less difficult than the next sector crossing the 20,000 foot mark. There was still a great deal of work to be done before it was fit for porters to use. In the course of time we erected five wooden bridges, about 300 feet of fixed rope and banged in many ash-pegs to provide foot and hand-holds. To make things more difficult, it was just in this lower part of the Icefall that the ice-masses were subject to continual changes; crevasses kept on opening and ice-bridges collapsed regularly. It proved possible to stick to the first line of ascent in its main outlines, but we were compelled to make short deviations almost daily. During the next few weeks

these changes became more and more violent and it became obvious that an expedition which delayed too late into the summer might well find its retreat cut off by this Icefall. We didn't bother ourselves much with such thoughts, for our job was now to improve the chosen route and to carry on the reconnaissance above it. Reist and I took this work over on April 8th, with two Sherpas to assist us. We forced breaches in two precipitous pitches and anchored considerable lengths of rope at various places. On the next day Schmied tried to force the route further ahead and reached a point more than 300 feet above the hollow, but was held up there by a wide crevasse. Pasang was supposed to be following up at the head of a small column of porters, but showed little enthusiasm for the task and in fact devolved the duty on his brother Ang Nima, who was our second cook. When I noticed it, I sent for Pasang and explained that I could not put up with that kind of thing. If he didn't feel like carrying out a duty assigned to him and wished to be relieved, he had only to ask me and I would naturally not refuse his request. This obviously had an effect on him and he immediately shouldered a ladder, which he dragged up some way at the head of the column.

On April 10th Reiss and Reist transported a lot of rope, wooden pegs and ladders through the lower part of the Icefall and up to Camp I, which was being provisioned in the big hollow. Above it they bridged the crevasse which had baulked Schmied with a composite ladder 16 feet long. Our dog followed them up to that point. A traverse to the left then led them into a zone of debris, which they managed to ascend in a direct line upwards. A further traverse to the left brought them to a huge, fearsomely shattered barrier of ice. Great towers, séracs and enormous crevasses compelled them to make innumerable detours. Hereabouts they found the remains of wooden bridges left by earlier expeditions and were able to make good use of them. Having established that further progress was impossible in the centre, they tried to work up to the right, but found that there was no exit on to the glacier plateau in that direction either. So they returned to Camp I, consoling themselves with the knowledge that the route thus far was being steadily established.

The technical material we had in the meantime brought up was

intended for our next attempt, which was to be made up the left side. Next day Schmied, Pasang and some Sherpas climbed from Base Camp to the point where the route-finding party had been forced to turn back the day before. Here a vertical ice wall almost 30 feet high barred the way. A double ladder barely reached half-way up, but Schmied secured it with an iron pin and climbed the rest of the wall by cutting steps up it to a small plateau, on which there were signs of an intermediate camp from the year before and some old marker-pennants. I arrived there shortly afterwards. At first the next sector seemed assured enough, but after 150 feet we again found ourselves at the edge of a huge crevasse. In spite of the pennants of the previous year's expedition, beckoning to us from its further side, there was no progress to be made there, so we climbed down again to where the day's route-finding operations had started. I then took a Sherpa and tried unsuccessfully to find a way along a corridor over towards Nuptse, the floor of which consisted of great wobbly blocks with a light covering of snow. In that maze we moved forward on all fours; no sooner had we climbed over one block than we sank to our hips in snow softened by the blazing sun. Further over, enormous cracks and unclimbable towers of ice denied progress. Meanwhile Schmied had unroped from his Sherpa and gone off to reconnoitre on his own. He roped down about 50 feet into a crevasse and worked his way up a good storey's height above me and along an even wilder corridor towards a small gateway, which seemed to promise hope of headway. After a whole hour of acrobatics among the blocks, he had to come back without achieving anything.

I climbed all the way down to Base Camp the same day, while Schmied stayed with some of the Sherpas in Camp I and had his first experience of a night of Himalayan storm. The gale blew one high altitude tent over and Schmied was deeply impressed by the endless drumming of his own. We were all to encounter the same experience soon, but it did not take long to get used to the unusual force of the wind and we didn't lose any sleep over it.

In spite of the night's tempest, Schmied was off again on the morning of the 12th to look for the route, keeping hard to the left this time, towards the shoulder of Everest. A party followed

him with two metal ladders. He made good progress for a while, but a few rope's lengths further on a gigantic crevasse stopped him dead. Down in its depths a bridge of loose debris led across to its further wall, which seemed to offer some possibilities of further progress. Fortunately, the bridge was firm and after crossing it they fought their way for two more rope's lengths up steep but climbable ice. The metal ladder enabled them to climb a crest of névé, but here again the party was faced by a deep crevasse. They had to rope down into it and, in order to safeguard their return they hung a metal ladder down the abseil pitch. From the bottom of the crevasse they managed to reach an ice-ledge on the opposing wall. Schmied traversed along it, cutting a long line of steps for the Sherpas, who followed; at the same time he fixed a traversing-rope to lessen the danger of a slip. A few steps further on he stood on a flat ice-shoulder of the high valley which was our objective. Softly undulating crests of névé lay before his eyes all the way to the foot of the great precipices of Everest and Lhotse. We had forced the Icefall.

This exit into the Cwm was a most uncomfortable place. Quite apart from its technical difficulties it lay right under the menacing séracs of Everest's west shoulder. So Schmied promptly took his Sherpas away to the right, well out of the area of danger from falling ice, where they could enjoy a hard-earned rest. I was overjoyed that evening to hear the news of this important success.

Schmied had been forced to halt by sheer exhaustion at the edge of a wide rift. This is where Shipton had been turned back in 1951 and our compatriots had built a rope bridge in the spring of 1952. On April 13th, Reist and von Gunten, who had only come into Base Camp the previous day from his excursion into the Imjya Khola basin, went up with two ladders to bridge the crevasse. The ladders were bolted together and laid across the chasm, which measured quite fourteen feet. The party was then able to zig-zag its way through a further crevassed area and over an avalanche track straight under the shoulder of Everest towards the middle of the glacier, where a small hollow, sheltered from the wind, offered a suitable site for Camp II. They immediately pitched their tents and spent the night at this point, where previous expeditions had camped before them.

The way into the Western Cwm now lay open, but we were all agreed that the route was by no means ideal, and would have been glad enough to abandon it in favour of a better because of its obvious dangers. So we explored the Icefall for two more days in search of a less exposed route, this time trying our luck on the Nuptse side. We found no way there, and finally decided to go on perfecting Schmied's route. We managed to circumvent one or two of the dangerous spots, using explosives for the first time in so doing, to get rid of the towers which were ready to collapse and debris which might fall on us. Artificial aids employed were two 16-foot metal up and down ladders and one 8-foot upward ladder, 250 feet of fixed rope, about twenty wooden pegs and a number of shorter wooden plank-bridges.

As soon as the route was made passable, the transport of the material began, with Camps I and II acting as relay stations. It had been my original plan to site Camp I at about 20,000 feet, but the upper part of the Icefall held us up unexpectedly long, so that it was impossible to delay moving the supplies forward any longer.

The stuff piled up in that hollow at 19,350 feet where all previous expeditions had camped, and we were more or less forced to camp there too. For reasons of safety and time-saving I would have been happier if we had been able to defeat the Icefall without an intermediate camp, but we accepted the solution, seeing that it had the advantage of breaking up the route from Base Camp to Advanced Base (Camp III) into three not too exacting stages.

We now directed our attention to our advanced base, which we planned to site at about 21,300 feet. It was our intention to fit it out well, so that the parties opening up and maintaining the route into the uppermost regions would always be able to return to a safe point of support. The first thing was to reconnoitre a site and get the way to it established.

We all agreed that the pattern of work we had been following was good and worth adopting permanently. It consisted of working in reliefs. In that way each of us learned every aspect of the work and was able to add to his all-round accomplishments. For instance, on the first day party A would act as trail-breakers. Next day they would rest, at least to some extent, for there were

always duties to be done; the loads for higher camps had to be divided up, items of equipment needed preparation or repairs, letters and reports took up their quota of time. On the following day the same party would be detailed to accompany a column of porters or to fit out a new camp or to improve the route. On the fourth day they would be on less strenuous work again. Party B would carry out the same programme one day, and parties C and D two and three days, behind them. Of course there were modifications, but in the main we adhered to the principle. Each separate member could thus gradually claim to have contributed his share of the work and so to qualify fully for the final assault. Everyone got fit that way, but no one was overworked; everyone acclimatised at great heights, but nobody stayed up at the top for too long. In this way we planned to avoid having to pin our hopes too firmly on any one individual for the ultimate achievement of our objective, only to find that for one reason or another he fell by the wayside during the last vital days. There was the same intention behind the changes in the composition of the parties, which naturally happened from time to time, and they added measurably to our team-spirit.

On April 16th Reiss and Schmied pushed ahead from Camp II to a height of 22,000 feet in the Cwm. On the 18th I joined them in leading a column of porters up to the 21,300 foot level, there to prepare Camp III for occupation. From Camp II the route led sharply to the right towards the Nuptse Face and then followed it for some hundreds of yards—a sector on which we were often startled into looking up at the wall as the stones came hurtling down it; when the big stuff came down, it sounded as if a jet fighter had suddenly zoomed over the Nuptse Ridge into the Cwm. After surmounting a terrace about 250 feet high the route curved away diagonally across the trough of the glacier in a steady ascent towards Everest. Camp III was eventually sited at the foot of a secondary rib falling from Everest's western shoulder. The porters from now on traversed this route daily, and on April 23rd Reist and von Gunten spent their first night in our advanced Base Camp, which gradually assumed the status of a real home from home during the next few weeks.

We had thus concluded the first serious mountaineering stage

of our venture. The Sherpas ferried their loads ceaselessly up to the advanced Base by way of the relay points at Camps I and II. We were all kept busy improving the route and opening it up again and re-marking it after the afternoon snowfalls, which were not actually very heavy, but often necessitated considerable work on the trail. We had to dispose of menacing séracs by further blasting, and were kept continually at it in the living ice of the Icefall, re-anchoring stakes, and making détours round new crevasses, which were for ever forming. We also had to train the Sherpas in the use of the rope. This was particularly important when they were crossing the sector between Camps II and III, for there the route led through the actual zone of stress above the lip of the Icefall. Naturally there were huge crevasses there, partly concealed by snow, and every now and then the Sherpas broke through, though fortunately with no serious consequences. We too occasionally found ourselves treading on air, though luckily nobody fell right in. The glacier was in fact as kind to us here as it had been in the Icefall itself.

Although the supply-line worked according to plan, we were never very happy at the thought that the Sherpa parties were on the move through the Icefall day in, day out. They had their own odd way of assessing its dangers and would often sit down to rest at places where we ourselves would hold our breath. Gradually, however, a few traditional resting-places, which might be held comparatively safe, were recognised; yet I was heartily glad every time I heard over the radio that all the day's movements had passed off without an accident and that every relay team had reached its destination safe and sound.

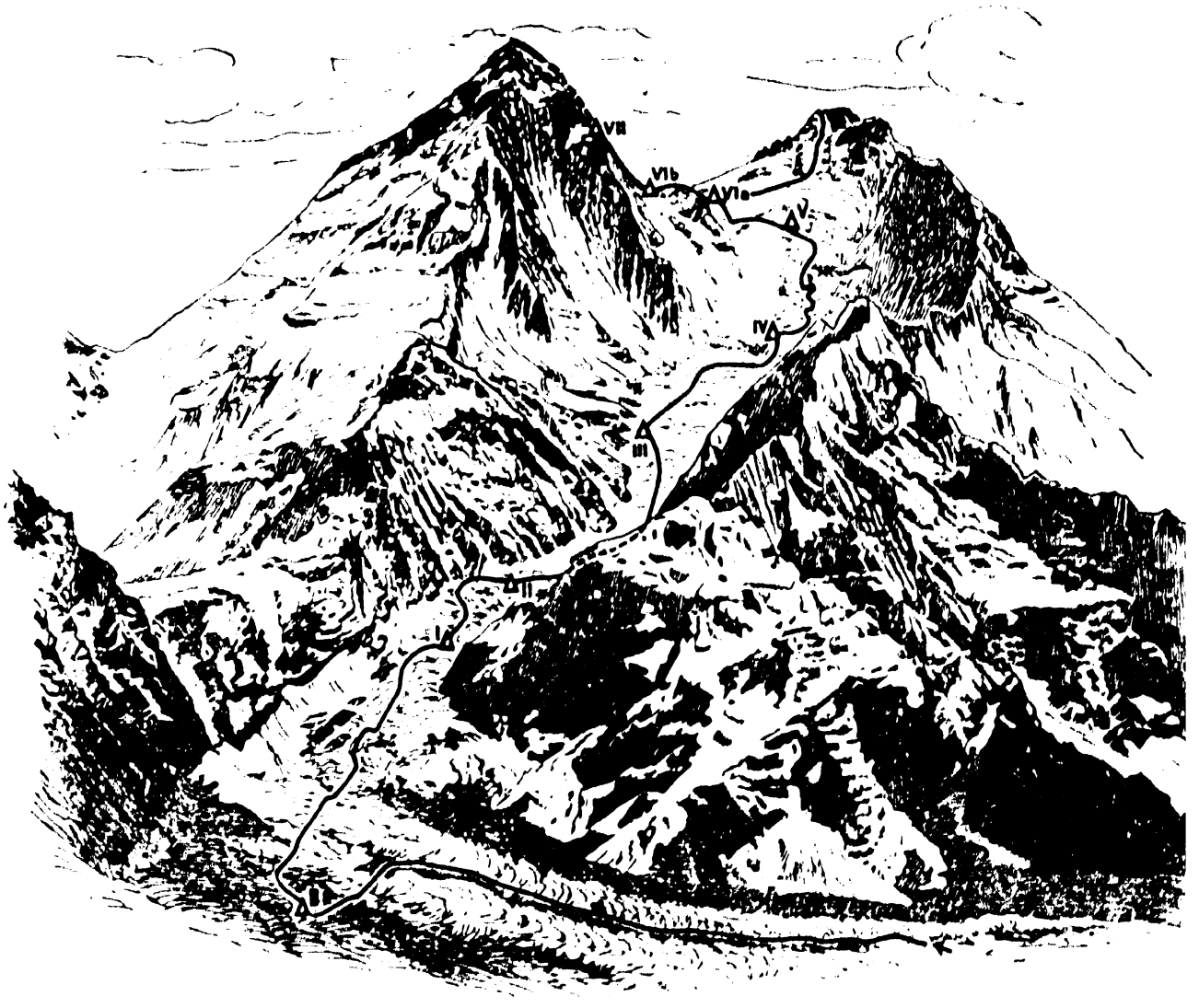
The Icefall had taken five days, a highly satisfactory state of affairs. Reiss explained to me that it had been easier to surmount the obstacle in the autumn of 1952, because the snow lying on the ice hummocks had been considerably deeper and many of the crevasses had therefore been far better covered. But although its coat of snow had on that occasion robbed the fall of some of its savagery of aspect, the ice had been just as unstable in the autumn as in the spring.

By far the most active ice was once again around Camp I. Especially at night it was never very pleasant there because of the

continual creaking and groaning, which never allowed one to forget the immense, primeval forces of the glacier at work. And we were always having to move tents because of newly opened crevasses.

The sun poured down on the Icefall from eight in the morning till the evening hours. Great torrents poured all day long down the ice-valleys at its foot and there dammed up into pools and lakes; there was an incessant sound of running water. The rushing and splashing noises were our only reminders that it was spring and the snows were melting. But the falls of ice from Everest's outliers and the terrific Nuptse Face were not able to cross our route, except at the notorious egress from the Icefall which forced us, like the expeditions before us, far nearer to the rock precipices than we liked.

The metal ladders built to our design by Messrs. Bieri of Bern-Liebefeld behaved excellently; it was easy to fit together their eight-foot sections. As already mentioned, we only needed two 16-foot ladders; elsewhere we used the sections singly. The ice-



drills were most useful, not only for drilling holes to house explosive charges when blasting, but also to provide shafts for the sinking of our wooden anchorage pegs. Blasting added immeasurably to the safety of the route. We had recourse to it at least twenty times with excellent results, almost always to remove unstable towers and blocks of ice which threatened the track. Luchsinger made these operations peculiarly his own and there was never the slightest accident. When, at the end of May, we were finally evacuating Base Camp, to the intense delight of the Sherpas, we used what was left of the explosives to provide a huge explosion, for having experienced the difficulties attending the import of such materials we did not propose to go through the drill of obtaining an export permit. We also thought that by so doing we might be removing a possible source of danger, until we discovered that some of the porters were taking home a fair number of detonators in their pockets. However we brought home the dangers of those dangerous firing-aids so forcibly that they were glad to hand them over. They had never meant to possess themselves of these detonators in an underhand way; they simply took it for granted, in all good faith, that when we left these objects lying about during the evacuation of the higher camps because of the bother of carrying them down the mountain, we were making a present of them, as of innumerable other items, to the Sherpas.

As explained above, the oxygen party reached Base Camp on April 14th and Marmet and Grimm were soon at work in the Icefall. Their chief job was to improve the route and also to supervise the movement of supplies from Base Camp and their transfer from one party to another at the relay Camps I and II, turn and turn about with the rest of us. They paid particular attention to the 'yellow loads' which contained the oxygen equipment.

Radio contact between camps was mostly good and we were glad not to have to maintain communications by means of runners. For the most part the porters moved up and down between the camps without a Sahib; on such occasions the more experienced Sherpas, like Sonam Tenzing, Annullu and Urkien took over the leadership, while the Sirdar of course moved up and down the route almost daily. The usual day's work of a party was to

take loads up from the lower to the upper camp, whichever it might be, and then come down again unladen to their point of departure, where they spent the night, repeating the performance again on the following day.

Looking up from Camp III at Everest and Lhotse we were quietly confident that the route onwards to the South Col could hardly be more exacting than the Icefall. We could, of course, only guess how the altitude would affect us. As to actual dangers, the route ahead of us appeared to be less exposed to them than the Icefall, which was a comforting thought.

Our activities in the Icefall and our climbs to and from the camps were hastening our acclimatisation to the altitude. We mostly slept well and the snowfalls which usually put in an appearance towards noon hardly affected our fitness.

At Camp III Müller took the opportunity to study the nature of the glacier's flow at the point where it fell away from the Cwm into the Icefall. He measured its movement and the stratification of the ice, having already collected extensive data round about Base Camp more than 3,000 feet lower down. He also proved his fitness at advanced heights, as did Leuthold, who ascended the Icefall as soon as Diehl had recovered from his illness. It was good to see every man in the team on the job, for we needed every available hand to ensure that Camp III would be ideally equipped as our springboard for the assault on Lhotse and Everest.

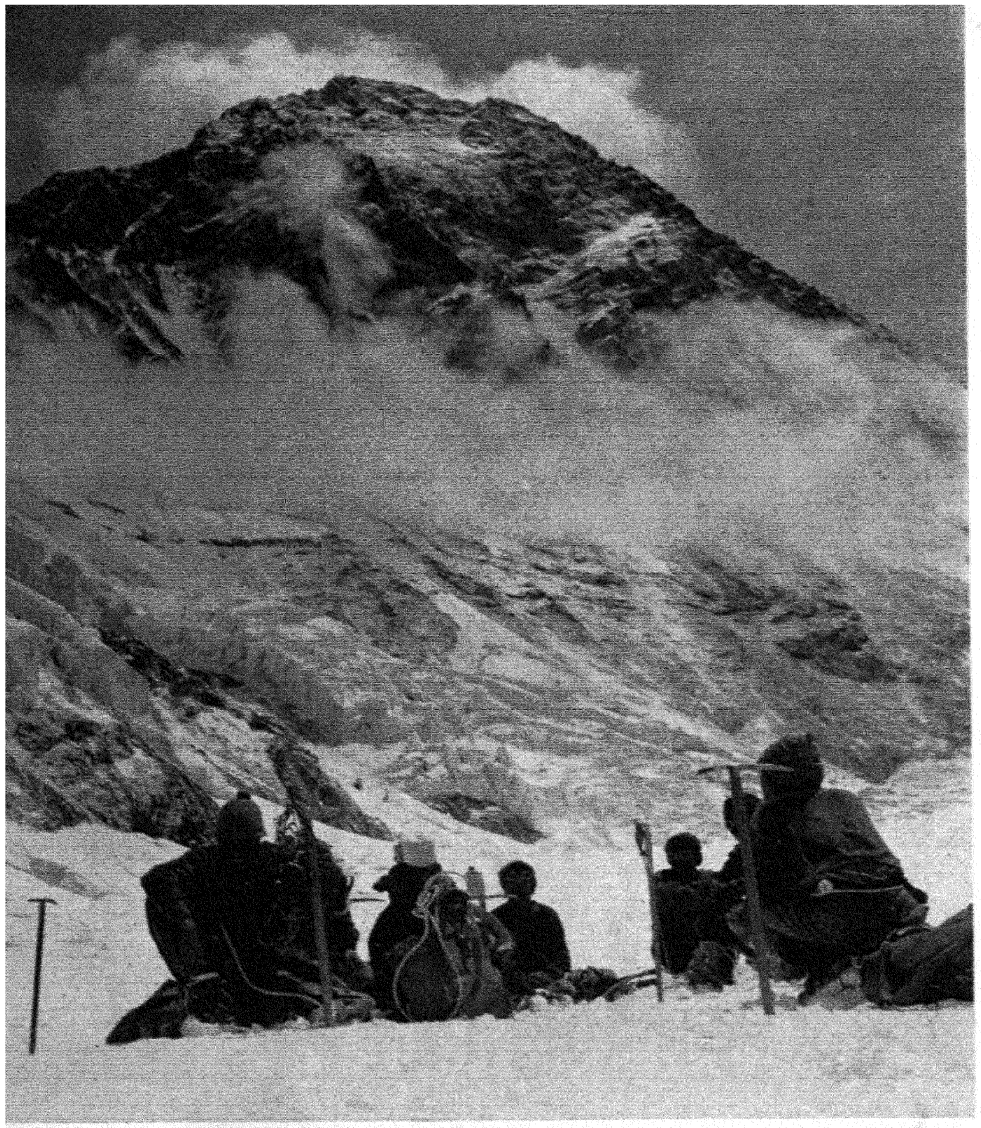
CHAPTER IX

The Sherpas

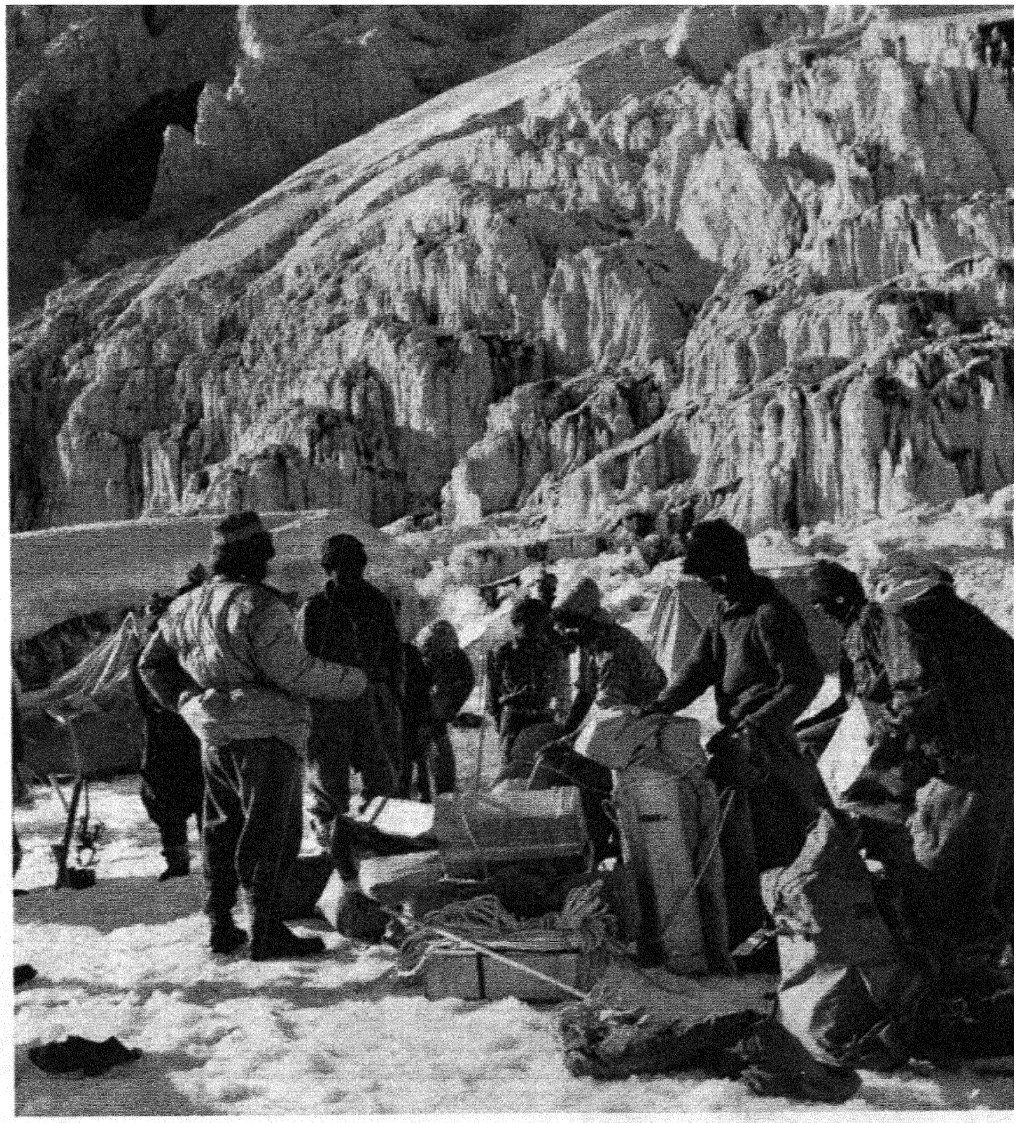
VERY soon after our first contact at Jainagar with the Sherpas, those almost legendary high-altitude porters, we were each allotted our personal orderly; and then we began to get to know and value these men in fair or foul weather. It was not easy to penetrate their exterior, for their nature, their religion and their language were all strange to us. Of course we knew something about them from the accounts of previous expeditions and we were well primed as to their fantastic endurance and the equanimity with which they bore their arduous labours. I had already met the most famous of them all, Tenzing Norkay, when he visited Switzerland with his family and climbed some of our mountains in the year of his success on Everest. Since then I had often had pleasure in recalling the frank and cheerful character of the man, his wife and their two children. It seemed almost incredible that so slight a creature could have climbed to the summit of Everest with a 45 lb. rucksack on his back. At a reception held by the Indian Ambassador in Bern he had moved about the polished flooring with the same natural assurance as if he had been traversing the mountain paths and suspension bridges of his own country.

In 1955 I had also met Pasang Dawa Lama, our own Sirdar, in Switzerland. Besides his great experience he had also a sufficient knowledge of English, which meant a good basis for co-operation from the outset. I learned a great deal more about him from Herbert Tichy, who told me all about his keenness and his splendid performances on so many occasions.

Ernst Reiss, too, had told us much about the Sherpas, so that we felt a strong bond of human understanding with them from the very first. Some of them were very small, most of them of average stature, and a few were very tall, so that I immediately began to



7. Sirdar Dawa Tenzing resting with a group of Sherpas at the foot of Everest. Left: von Gunten, and next to him, Reist



Dawa Tenzing with a column of high-level Sherpa porters who have just arrived in Camp III



8. *An aerial view into the Lhotse Face. Left: the South Col with the Geneva Spur below it. Right: Lhotse* (27,890′) *with its southeast summit* (27,560′). *The Yellow Band curves right from the foot of the Geneva Spur in a crescent shape across the Lhotse Face. In the foreground the Lhotse-Nuptse connecting ridge*

wonder whether the boots we had brought out for them were big enough. However, when we fitted the men out it became evident that even small Sherpas have large feet. I shall never forget how we disposed of our smallest pair of boots. When we knew they were too small for the feet of any of the Sherpas, we made a present of them to a small boy who had been a spectator at the fitting-out ceremony. It took countless encouraging gestures and finally explanations by the Sherpas before the lad could grasp that he was being given a present. But once he did, he accepted the boots with such evident pride and gratitude that everyone who witnessed the little scene was touched by it; and a little later he paraded proudly through the camp, wearing his boots, like a regular King of the Castle.

It has often been said or written that Sherpas pride themselves on marching with a load equal to their own body weight. We never put it to the proof, but were continually witnesses of their astonishing bodily strength. However, we stopped being surprised when we saw how the children carried their smaller playmates on their backs for long stretches of the way. Sherpa women and girls, too, had acted as porters along the whole approach route, carrying loads similar to the men's up to Base Camp and often a small child into the bargain. When it started to cry they put their load down and fed the squaller; when its needs were satisfied they shouldered their load again. Another Sherpa woman would put the child, cradled in a basket, on top; and off they would go on the toilsome march again. Like the men, they moved with short quick steps, changing the rhythm frequently, and not at a dull plod, as might be expected of carriers of heavy loads. This method of progress suits the alert and lively spirit of these people and is akin to the style adopted by most first-class distance-runners nowadays in achieving times which would have been thought impossible a few years ago.

With a few exceptions, the Sherpas were even better performers than their womenfolk. It was nothing out of the ordinary for them to carry loads of over 55 lbs up the Icefall every day of the week and, if they set their minds on it, in astonishingly short time. It was not surprising that some of them at first found it difficult to go up to 23,000 feet or more; their bodies needed, just as much as

ours, to get used to the smaller oxygen content of the air, but on the whole they acclimatised quicker and the best of them seemed to retain benefits from having previously accustomed themselves to great heights on earlier expeditions. Our Sirdar, Dawa Tenzing, who in spite of his 55 years was one of the most tireless of them all, astonished us again and again. He climbed to the South Col on successive days and was ready for another go a few days later. He was also the first to carry Pasang Dawa Lama, by then a desperately sick man, on his back for a long stretch down from Base Camp.

There were only two members of the 1952 autumn expedition among our Sherpas, Ningma Sitar, the medical orderly, and Da Norbu, Schmied's personal Sherpa. On that expedition Reiss had got along famously with his native companions in the most trying circumstances. Tenzing had been a superlative Chief of Sherpas and eight of them had reached the South Col, in the most severe climatic conditions, with him, Raymond Lambert and Reiss. The latter was of the opinion that, on an average, the 1952 Sherpas had been a shade more efficient than ours, and we heard later that in Himalayan Club circles they had not given us much of a chance with the 22 men Pasang Dawa Lama had brought over to us from Darjeeling. It is my pleasure to record that by far the majority of them did very well indeed.

At Base Camp many local Sherpas offered us their services. We knew some of them already as porters along the march from Chisapani. I made them produce their references and then hand-picked them with the assistance of the Sirdar. It was not at all easy to select the twelve best from so many good candidates, and when it came to the last three we tossed for it. We then had a sizeable team of Sherpas, about whom I would like to say a few words individually.

Pasang Dawa Lama acted as our Sirdar from Jainagar to the Base Camp, after which he went on leave and fell ill. As soon as he had recovered to some extent he fell sick again, this time to become a permanent casualty. He had learned a great deal during some months spent in Austria and Switzerland. He owned a good Swiss watch and a first-class camera, which he always carried prominently displayed about him and used assiduously. He needed

some persuading that the picture could only be seen on the roll of film after it had been developed. To confirm this he tore the exposed film out of a cassette and looked at it searchingly against the light. Reist tried to explain to him that this was not a good idea at all. After that Pasang dispensed with that kind of evidence and took some very good pictures. He had also bought a car, which arrived at Darjeeling while we were on our mountain; the news of its delivery reaching him by numerous telegrams and letters from his well-loved first wife there. His second and young wife, whom I had met in Zürich, came with him and marched the whole way to Namche Bazar. She was expecting a baby, which she wanted to bring into the world at her parent's home in Lukla; and a short time after our arrival she did in fact bear him a son there. Pasang's wife always looked very smart in her neat Sherpani dress. She might perhaps have inherited her red finger nails and lips from her journey to Europe, but they matched the gay colours of her clothing very well. In spite of Pasang's obvious attachment—he rarely left her side—he was determined to marry a third time if he succeeded in climbing either of our peaks. When we asked if it didn't cause domestic difficulties, he explained that he had a big house in Darjeeling, with plenty of room for them all. Unfortunately this hope of his was not achieved.

Pasang was definitely the only one of us who looked like an explorer. His brown face, decorated by a carefully trimmed moustache, shone under a brand new solar topee; a white shirt rose smartly from his dark grey shorts, to be matched by white stockings. He was honoured and respected by the Sherpas, not least because of his good looks: and I never knew them to disobey an order of his. They lay down obediently every evening next to the loads, piled up into a great heap. He bossed the ordinary porters around in a loud voice, and mostly took a stick along to lend him authority. We discovered for ourselves later on how difficult it is to control a column of porters numbering 350 heads. In any case, with or without Pasang, everything mostly turned out quite differently from our expectations. The distribution of the loads to individual porters took a whole morning and the very occasional redistributions consumed endless hours; but when there were no changes to be made the porters, who had marked

their cases and barrels, were mostly ready to move off in a remarkably short time. Pasang, who did not know the first part of our approach route, always marched with his wife and little girl servant at the tail of the column and saw to it that no one fell behind. The porters carrying his various personal cases and sacks were mostly scattered about the column on the march, so that we never really established how many loads belonged to him. In Solo Khumbu, however, he was thoroughly at home, and one of the Sahibs was in a position to report that Pasang must have another wife in Kharikhola, because near the village mill there a Sherpa woman had delightedly exhibited a healthy child of about two and continually cried aloud: 'Pasang, Pasang!', pointing to her body in further confirmation.

While he was sick, Pasang became jealous of Luchsinger, because he had been given many more injections. This seemed to persuade him that we were not paying sufficient attention to his own case, and he could not be pacified till the Doctor totted up for him how much more costly the medicines he had been given were than all Luchsinger's injections put together.

Having worked for some years as a Lama in the Monastery at Thyangboche, he was able to give us a broad understanding of Lamaism, but he did not know enough English to be able to answer all our detailed questions. However he acted as our guide at many a monastery, skilfully coaching us in our behaviour and explaining how many cups of tea or chang one had to drink in order not to be thought rude. He was also very skilled in laying the table and placing the occasional guests correctly. His table manners and deportment were beyond reproach, and we frequently marvelled at his refinement. All in all, he was a good friend and companion to us, and we were only sorry that illness prevented his playing the full role, for which he was so well equipped, in our undertaking. Fortunately, he had recovered sufficiently to be able to accompany us all the way on our return march.

When Pasang dropped out, I appointed Dawa Tenzing, his brother-in-law from Kumjung, Sirdar in his place. We had already been impressed at Namche Bazar, where he offered us his services as an ordinary porter, by his fine bearing, his clean and

tidy clothing, and his attractive personality. He wore Sherpa dress except for English boots and a felt hat, under which his long pig-tail lay coiled several times around his head. His stay in England with Evans after the ascent of Kangchenjunga, had had no effect on him whatever. He was still devoted to his rice spiced with chili. His leadership of the Sherpas owed everything to his outstanding capacity for work, at which he was first in the morning and last at night. He thought out the next day's work, allocated the Sherpas who were to do it, distributed their loads to them and himself carried loads incessantly. He was also a very experienced mountaineer, highly skilled in the use of the ice-axe and extraordinarily sure on his feet. When I offered him and some Sherpas oxygen apparatus at Camp V he politely refused; if we could not supply every porter with that aid—which was unfortunately not possible—they would themselves prefer to go up to the South Col without it. This they did without the assistance of that valuable artificial aid, whose benefits we were enjoying, keeping pace with us to above 26,000 feet. I remember very clearly how, on the way down to Lobuje, he skipped over the great moraine boulders with a nimbleness of step which would have done credit to a twenty-year-old. His weather prognostications helped us to make the right dispositions in the final phases. His knowledge of English was unfortunately very limited and at the beginning we sometimes had considerable difficulty in understanding one another unless the liaison officer was on the spot. Later, however, we reached a first class understanding without having to use many words. Like all the Sherpas, he liked to smoke a cigarette or even a Swiss cigar, but after the eclipse of the moon, to be related presently, he denied himself that vice completely. At home he possessed few yaks but plenty of rupees.

He certainly counted in his village as an important person. On our return journey he invited us to his home. His house did not at first sight look very different from that of any other Sherpa, but it was scrupulously clean and it was easy to recognise his prosperity by the highly polished copper water vessels, the quantities of provisions and wood, the piled up cloths and the rich carpets. The midday meal, which his wife prepared while we were occupied with considerable 'elevenses', consisted of rice and

potatoes and spinach. We enjoyed it all the more as it was only moderately spiced and it was served on beautifully worked brass plates. Dawa was well aware of my interest in dogs. As we were leaving his house, he gave me an eight-months old male Tibetan Terrier so that the bitch I had bought from a Sherpa woman in Phalong Karpo a few days before might have a companion and also to enable me to breed this affectionate, velvety and tough kind of watch-dog when I got home to Switzerland.

Any picture I might try to draw of this invaluable work-mate would be incomplete if I did not underline his delightful ability to enjoy our successes with us. When I brought our great news down to Camp III he embraced me spontaneously and his face shone with delight. He expressed his joy again and again in Namche Bazar, in Ghat and again at Taté. His neck was always freshly decorated with white scarves, presents from his friends and relations, each of which naturally called for a beaker of chang in accordance with local custom—to say nothing of the ensuing effects. This chain of celebrations only came to an end when we left the valley of the Dudh Kosi; then Dawa was able once again to devote himself entirely to his duties, which he carried out to their end with complete efficiency and great knowledge of the local topography.

My orderly was Pasang Phutar II, a relation of the Sirdar's. He was usually on the same rope as myself and I came to know him as a keen, cleanly and tidy man. He had a key to my pack of personal belongings and looked after my welfare most assiduously. He helped me to strap on and take off my crampons, checked the weight of my pack before we started off, to see that I didn't carry too much, and on our return promptly laid out socks, camp shoes and clean underwear. Whenever he got the opportunity he washed and mended my things. At night he brought a bottle of hot tea to my tent for me to use, as the occasion might warrant, as a hot water bottle in my sleeping-bag or as a drink during the sleepless intervals induced by chronic high-altitude thirst.

When I needed money to pay the porters or to buy provisions he brought me the wad of rupees out of my private bag and put back what was left over. I never missed even the smallest amount. But Pasang was not only a pleasant servant, he was also a superb

high-altitude porter. He joined in the training climbs with enthusiasm and, when I was detained for several days at Base Camp by administrative matters, he never failed to take his place in one of the columns of porters. He often gave proof of his strength and endurance. He was one of the few whom Sirdar Pasang allowed to carry him when he fell ill. In spite of the exhausting nature of that porterage down to Namche, he immediately returned to Base Camp and on the very next day carried a considerable load up to Camp III without any visible ill-effects. He moved about in the Icefall with great assurance, and crossed the log bridges without the slightest hesitation, a thing I could not normally do without a considerable effort. I only saw him slip once, on the way down from Trikhang, and then it was only because big clots of snow had caked up in his crampons, so that they did not bite any more. He was also one of the few to spend four nights on the South Col and climb up to Camp VII on Everest's South Ridge. I never had to scold him and we parted the best of friends. To express his goodwill towards me, he presented me with a dagger and invited me to Darjeeling, where he works as a trader.

Phurba Lobsang was Diehl's batman. They developed a good understanding and Lobsang, as we called him for short, did everything for his master and nursed him devotedly when he lay sick. He was one of the most experienced Sherpas and did extremely well right up to the greatest altitudes. He had climbed Island Peak with von Gunten, and he worked tirelessly as a porter on Everest. His only fault in Diehl's bachelor eyes was his interest in women. Every time any Sherpanis came up to Base Camp he managed to find a large number of jobs which could only be done in their vicinity; this gave him the opportunity for all sorts of larks and banter.

One of the best of the Sherpas was Da Norbu, who was Schmied's servant. We had already noticed him on the approach. It was he who gave his whole attention to seeing that nothing got lost and that the porters didn't stay over-long in the inns along the way. His wife, a sturdy Sherpani, came with him. She had signed on as a porter at Chisapani and tirelessly carried her 65 lb load, while her Lord and Master usually strolled along at her side

carrying a light pack, having, according to established custom, consigned his baggage, jointly with that of another Sherpa, to the back of a porter. It should however be put to his credit that Danru, as they called him, often exchanged loads with his wife, and at many a steep ascent he could be seen panting under the heavy case which we had allotted to her.

He was at his very best on the mountain, though at first he had some difficulty in keeping up with a master who insisted on forging ahead at a crazy pace; but that was not surprising, seeing the enormous load he carried. His short legs, too, had to take twice as many strides as the stilt-like limbs of his companion on the rope. Schmied was not satisfied and several times left Danru in camp, to the latter's mortification. He kept on asking for 'Aschi', who in the end found himself unable to resist his Sherpa's great, faithful eyes, and took him along again. In the meantime Danru had acclimatised and was able to keep close behind his master's heels. He climbed effortlessly to the South Col and was the only one to go up twice to Camp VII at 27,900 feet. At the South Col he proved himself a most useful cook. He spent a night in our tent up there. Next morning when Pasang Phutar II looked inside, a short but fierce exchange of words took place, immediately followed by action. They both picked up stones to improve their offensive powers. Danru lay on his air-mattress and hit upwards; Pasang, who had hurled himself on top of him, struck downwards. Very soon Danru had an enormous lump above his left eye, which infuriated him beyond measure. We had great difficulty in separating them and persuading them to settle their business down at Base Camp instead of up there; then we gave them each a sedative pill, which diminished their fury. Da Norbu was still threatening to cut his opponent's head off down at the Base with his kukri, the big knife the Sherpas carry; but at midday he climbed up to the top camp again as on the previous day. When we got down again they declared themselves the best of friends once more. This episode shows that the best of Sherpas can become touchy and irritable under the influence of altitude, and also how ready they are to make the peace again. Danru had every right to be proud of his performance. At Kumjung he invited us into the new home of his parents-in-law and when we

left Namche he was richly caparisoned with white scarves. His wife, who worked painfully hard, had practically to cover the ground three times over, first carrying her load, then her husband's pack and finally she had to look after him as well. Things got better after leaving Taté. Danru showed his gratitude and carried the heavy load, while she only had the light rucksack for several days. But every time Danru was presented with too many white scarves he let his wife do the heavy carriage and then did his penance next day.

Pa Norbu was originally allotted to the liaison officer, but when we found he was a good cook, we sent him from Kharikhola with Kami Lama, a son of the Sirdar Pasang, to meet the Grimm–Marmet party on its way up. Marmet was very pleased with him, so he kept him as his personal Sherpa. He stood the altitude splendidly, moving about at the South Col as easily as down in the valley, and was one of the party which carried the tent up the South Ridge of Everest.

Phurba Gyalzen, Gyalzen, Pasang Temba and Hlakpa worked with Reiss, von Gunten, Reist and Luchsinger. Hlakpa proved an exceptionally reliable, tireless assistant and sick-nurse, but he did not stand the height very well.

Ningma Sitar assisted Leuthold and was as handy with aspirin, bandages and scissors as if he had never done anything else in his life. He had in fact acted as medical assistant on five previous expeditions.

As Sirdar, Pasang was also entitled to an orderly and chose Pemba Phutar, while Jangbu was allotted to the liaison officer.

Hlakpa Gyelpu, Kami Tsering and Nima Gyalzen acted as energetic assistants to Müller in his ice drilling and survey activities.

For general porterage work, there were Urkien, Annullu, Yila Tenzing, Phutorze, Sonam Tenzing, Ang Temba, U Tsering, Kippa, Ong Chu, Phurba Gyalzen II, Rinzing—a son of the famous Pasang Dawa Lama who was with Wiessner on K2 in 1939—Hlakpa Norbu, Ang Norbu, and Ningma Tenzing, son of Dawa. Of these, the first eight and, towards the end of the expedition, Rinzing, who intended to become a Lama, distinguished themselves by their good performances and their influence over their younger companions. Kunga Norbu, a young lad,

acted as Grimm's servant for a short time, but did not prove satisfactory.

Our cooking was magnificently conducted by Thundu, assisted by Ang Nima, a brother of the Sirdar Pasang. Nima Dorje and Pasang Sonam, both youngsters, were attached to them as kitchen-hands, while Nima Thaundu did the Sherpas' cooking. The whole kitchen staff also acted as porters when their duties permitted.

Besides Da Norbu, Ang Nima, Hlakpa and some other Sherpas also brought their wives up to Base Camp from time to time to add to the general liveliness. They helped with the cooking, looked after the laundry, mended our clothes, darned our socks and helped wherever they could. We shall always remember the lovely natural colours of the famous woollen aprons of the Sherpanis and the gay ribbons in their long pig-tails.

One of the effects of Pasang's absence was that we sometimes had a little difficulty in making the Sherpas understand what was wanted. His successor only had a few words of English, whereas Pasang Dawa Lama had quite a few phrases at his command besides 'good', 'no good', 'money' and 'much troubles'. We soon achieved a few fragments of the Sherpa language and also were careful to express ourselves in the simplest possible terms; then conversation proved fairly easy.

We mostly relied on gestures to help us out. For instance, if a Sherpa threw his load down in the snow, lay down at full length and called out 'Sahib, finish!', we took it that a halt was called for. If the problems were complicated, we had to call in the liaison officer; unfortunately his father had sent him a wire forbidding him to go any higher than Base Camp. All the same, we had a pretty good basic understanding in spite of language difficulties. Most of us had grown up among mountains, so our outlook was not as different as might have been expected; and the more we tried to establish a human understanding with them, the more the Sherpas grew devoted to us. Even when they couldn't understand our '*Schwizerdütsch*' they read more meaning into the tone of voice we used, our gestures and the expression on our faces than we had supposed possible. They soon found out what we thought of them and reacted accordingly. When they sensed that we regarded them and dealt with them as equal human beings, they responded

to the utmost of their powers and any occasional misunderstandings which might arise were easily resolved.

They are by no means primitive people, their continual contact with others whom they encounter on their marches between India and Tibet, their strongly based tribal customs and the high esteem in which they hold their religion all have a notable effect on the formation of their character. Their simple way of life, so close to nature, makes them sensitive and versatile, and they are susceptible to new ideas. When we operated the radio sets, they crowded around, full of inquisitive interest; if we gave them the chance they tried to establish contact themselves. If our receiver was relaying the news or perhaps a concert from London they crouched down around us in complete silence. And when, on May 25th, I was overtaken by darkness half-way down the Icefall while coming down from Camp V to Base Camp with Annullu and Pasang Phutar, the whole population of the Camp bestirred itself anxiously. The Sherpas immediately set out with every available torch and lantern and climbed up to meet us. We could see their light ghosting about in the criss-cross of séracs and crevasses from a long way off and then suddenly U Tsering was standing by me, dripping with sweat. He pulled my pack from my shoulders and tied on behind me on the rope; then he pressed one of his lanterns into my hand and we started off down. However my light went out almost at once; U Tsering disapproved strongly and proceeded, in spite of all obstacles, to march behind me, now to my right, now to my left, illuminating with his torch the ground immediately in front of me, so that I should not slip. Very soon we met Thundu with his kitchen squad, who relieved my party of their loads. It is an incident which describes better than any words the devoted mentality of our Sherpas.

I am not for a moment suggesting that they were always angels; they also had their shortcomings, but as soon as these were recognised for what they were, the men were very amenable to leadership. Even at Jainagar, when we were loading up the bullock-carts, we realised at once that the Sherpas are not exactly gentle, once they set hand to a job. For that reason we supervised the pitching of tents pretty closely and kept our eye on their work whenever we were about the place. That did not prevent their

bending tent poles and breaking connecting pieces in their enthusiasm and they manhandled zip-fasteners freely. They were completely lacking in comprehension where gentle handling of equipment was in question; and instead of thinking out how to piece together or screw up this and that item of material, they often applied brute force. We also had difficulty in keeping the high camps decent. If one of them was forced by the calls of nature to leave his tent during the night, he usually went as short a distance as possible. When we hauled them over the coals about it, telling them that they were behaving like yaks, they took it amiss. Nor did they pay much attention to our standing orders to wash up and stack the cooking and eating utensils after they had been used; they always tried to put the work off till just before the next meal, with resulting delay to getting on the march again. They none of them liked having to crawl out of their sleeping-bags before the sun was shedding its warmth on their tents; so, if the pots and pans had to be cleaned before the rice or tsampa could be cooked, the meal was never over before ten or even eleven. Then there was no time left for washing-up and the vicious circle started all over again. As a matter of fact, we soon discovered that, in normal conditions, it was not so very important at what precise hour the columns of porters started off. In any case they only carried their loads to the next camp above, a matter of three to four hours or, counting the return journey, five at the most.

It is easy to understand that the Sherpas have learned how essential they are to every expedition and how to turn this to their best advantage. In that respect they do not differ very much from us Europeans, who much prefer selling our services to making a free gift of them. There were hardly any difficulties on this score, thanks to the agreements made in advance between the Sirdar and the Himalayan Club in Darjeeling as to pay, equipment and subsistence. Those agreements were in line with the rules of Tenzing Norkay's Sherpa Association in Darjeeling, which the Nepal Mountaineering Club, recently founded in Katmandu with Government support, is also seeking to adopt. Each experienced high-altitude porter got five Indian Rupees, roughly 7/6, a day, as well as his clothing and equipment, such as a sleeping-bag, air

mattress and so on. As on previous expeditions, extraordinary services called for bonus payments, and they all expected a sizeable tip by way of backsheesh at the end of it all.

So a Sherpa earns far more than a schoolmaster or an official in the medium grades; but his work is highly specialised and without his immense and invaluable contribution, nobody could get very far on a climb in the high Himalaya.

CHAPTER X

The Western Cwm

THERE are three distinct steps in the sector leading from the foot of the Khumbu Glacier to the South Col. The first, of about 3,000 feet, takes one from the foot of the glacier to the top of the Icefall; the second, of similar height, lies along the Western Cwm to the foot of the precipitous Lhotse Face; the third nearly 3,500 feet in height, leads up it to the South Col. The objective of every attempt on Everest by this route is to plant enough men and equipment on the South Col to ensure the launching of an assault, with its retreat well covered, on the last 3,500 feet of Everest's summit.

Before attacking each of these individual steps it is essential to establish a firm Base, from which one is equally mobile in the upward and downward directions. It is therefore obvious that the approach to the summit regions of Everest and Lhotse is primarily a transport problem. Our chief concern was thus to establish Camp III so firmly that we could tackle the next upward stages independently of any support from Base Camp. The experiences of earlier expeditions had shown that the conformation of the mountain provided three natural bases; a Base Camp at the foot of the Khumbu Icefall, an advanced high base camp in the Cwm; and a camp on the South Col from which the final assaults on the summits could be launched. From Camp III we had a clear view of the next sector before us. This was very convenient, for it meant that we could keep our eye on the progress of route-making and the transport of equipment as from an observation post. In the other direction we were not too far from the narrow jaws of the Icefall to be able to send assistance swiftly in case of an accident in that area.

The site of Camp III was ideal. The sun touched its tents as early as eight o'clock in the morning and did not leave it till six in

the evening. There were two small basins which held water from noon till late afternoon; thus we did not have to melt snow and saved fuel.

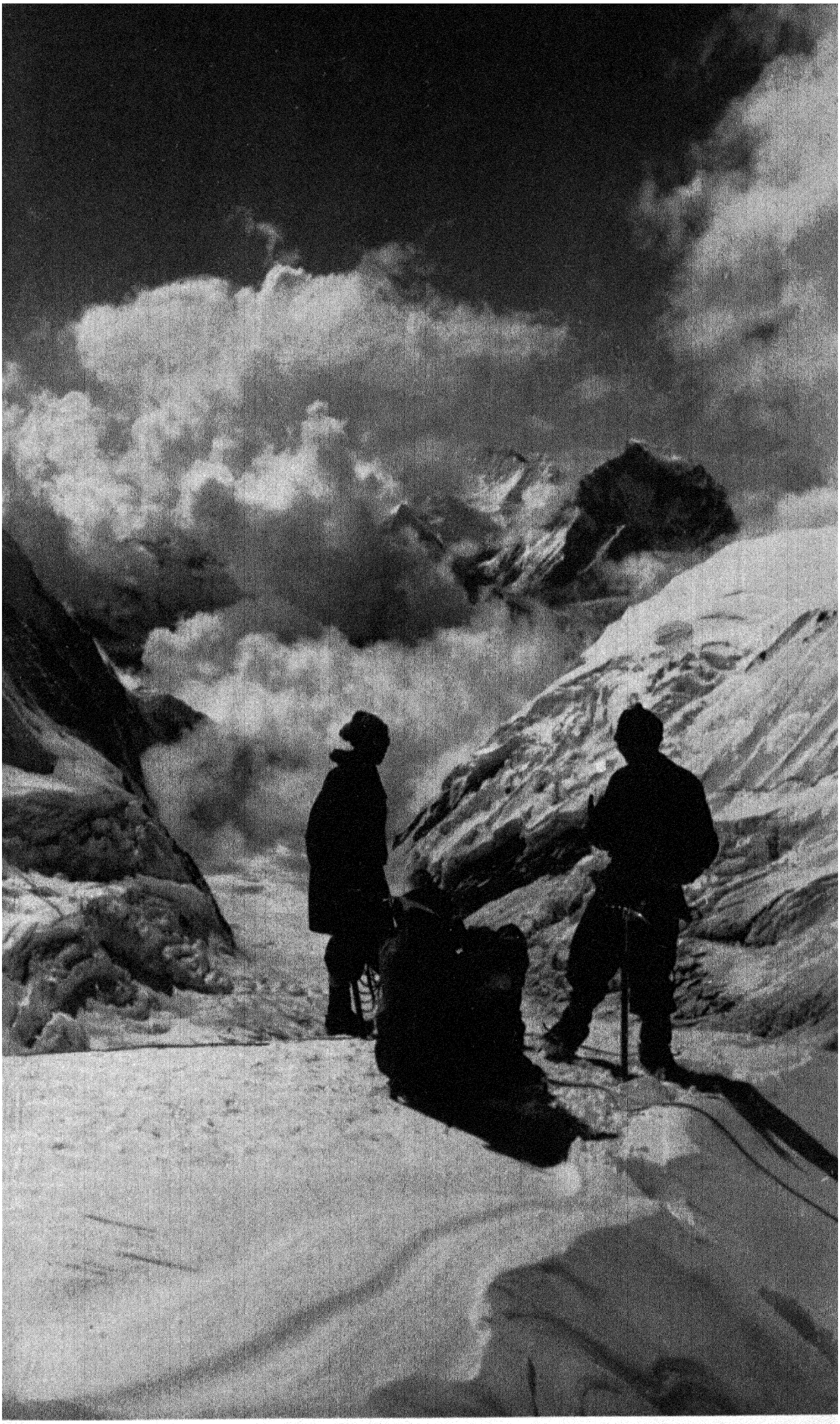
We could not see Camp III from II because a rib descending from Everest's west shoulder obscured it, and the uneven fall of the glacier levels also prevented a direct view. It lay a little aside from the wind channel which ran down from the South Col through this high valley, and we were several times to be grateful for its sheltered position. If the continuation of our route from Camp III teemed with unresolved problems, at least the approach route to the advanced base-camp improved daily. The continual relaying of loads and the work done on the actual route eventually made it possible for every competent man, who had acclimatised sufficiently, to make the journey. The Sherpas moved skilfully over bridges, ice-pitches and similar awkward passages and the pile of supplies at Camp III grew from day to day.

Gradually a little city of tents arose at 21,300 feet. Besides our sleeping-tents we pitched two mess-tents, one of which we used as a kitchen, the other as our dining and store room. One could stand comfortably in the mess-tents, and they were equipped with flooring. We did not put up the double roof, which in any case stopped short of the floor, because of the wind. We fixed provision cases to the walls of the dining room in such a way that the lids could be opened downwards; it looked as if we were surrounded by actual racks of provisions. It was, moreover, a kind of 'help-yourself' store, for it was always possible to take *knäckebrot*, salted almonds, *cornichons* or fruit juice from individual open cases. Besides the mess tents, five Jamet tents grew up on the snow.

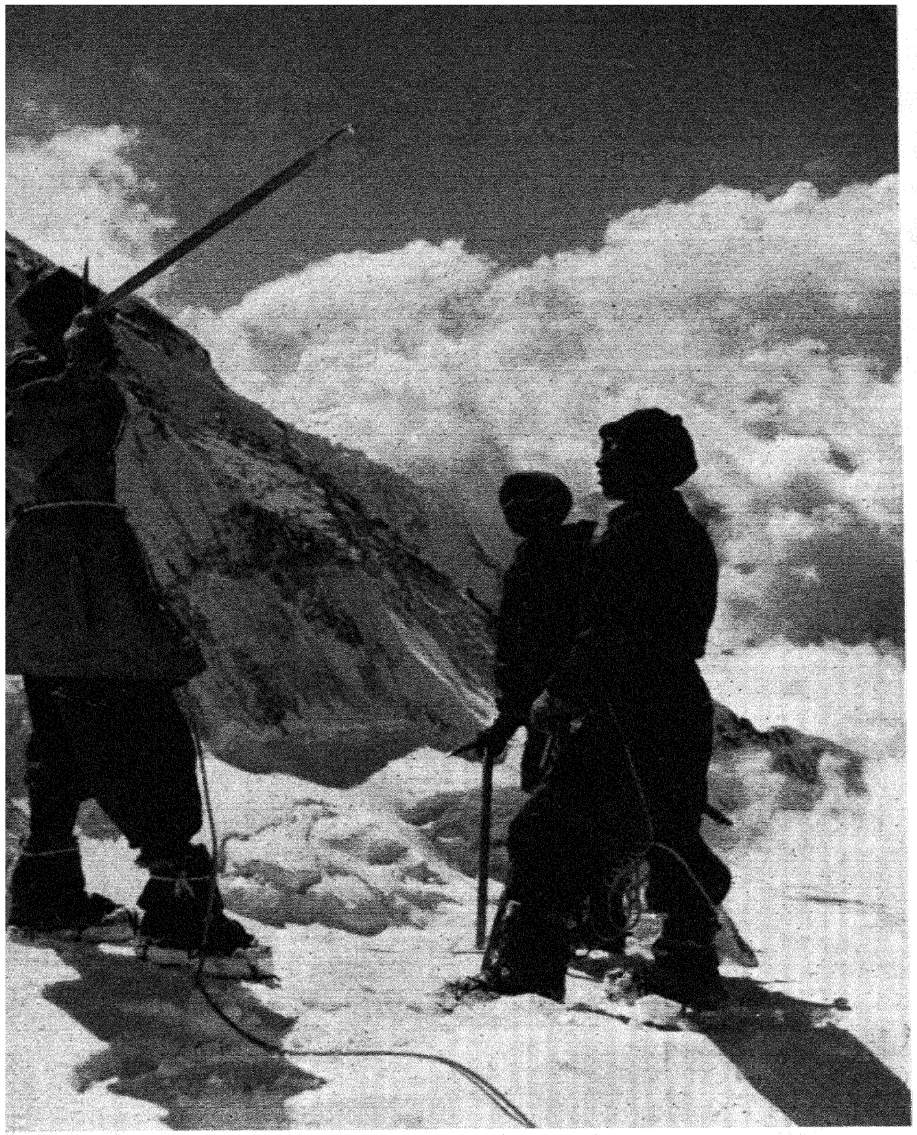
It was a comfortable spot to live in, and we felt no desire to go down to Base Camp. The tents were equipped with air-mattresses, Airex-mats and sleeping-bags. We all still slept well at this altitude, for our acclimatisation was going ahead splendidly. According to previous experience, it takes five to six weeks before complete acclimatisation to these heights can be achieved. Naturally we moved more slowly than down in the plains and were careful to avoid all sudden, hurried movements. During the first days in the Icefall we had sometimes slept badly, waking up in the middle of the night gasping for breath. We had by now got over those

difficulties and we were satisfied with our relatively good general condition. None the less, we found even at this level that our condition in relation to the effects of altitude rested on a pretty delicate balance. Frequently, one or other of us who had gone to sleep one evening perfectly fit, woke up next morning with all sorts of troubles; nausea, loss of appetite, intestinal disturbances and, most of all, sore throats and hoarseness cropped up without any warning and attacked each of us repeatedly. There was nothing for it but to stay in our tents for a day and coddle ourselves; rest was the best medicine. At the end of our stint, normally about four o'clock, we would slip away into our tents to relax and also to avoid the usual afternoon snow showers. In the kitchen tent the Butagas cookers and later, too, the primus burners began to hum. We drank quantities of mint or lime blossom tea which we mostly preferred to ordinary tea. For our main meal we repaired to the mess-tent and ate much the same food as on a climbing week in our own hills. The Sherpas showed no loss of appetite at this altitude and consumed their usual quantities of rice or tsampa, the local mess consisting of a mixture of various coarsely-ground and roast cereals. They were just as keen as we were to vary their menu. Between meals we issued *knäckebrot*, cheese, dried fruit, fish paste, chocolate and a number of other tit-bits, all much to their taste.

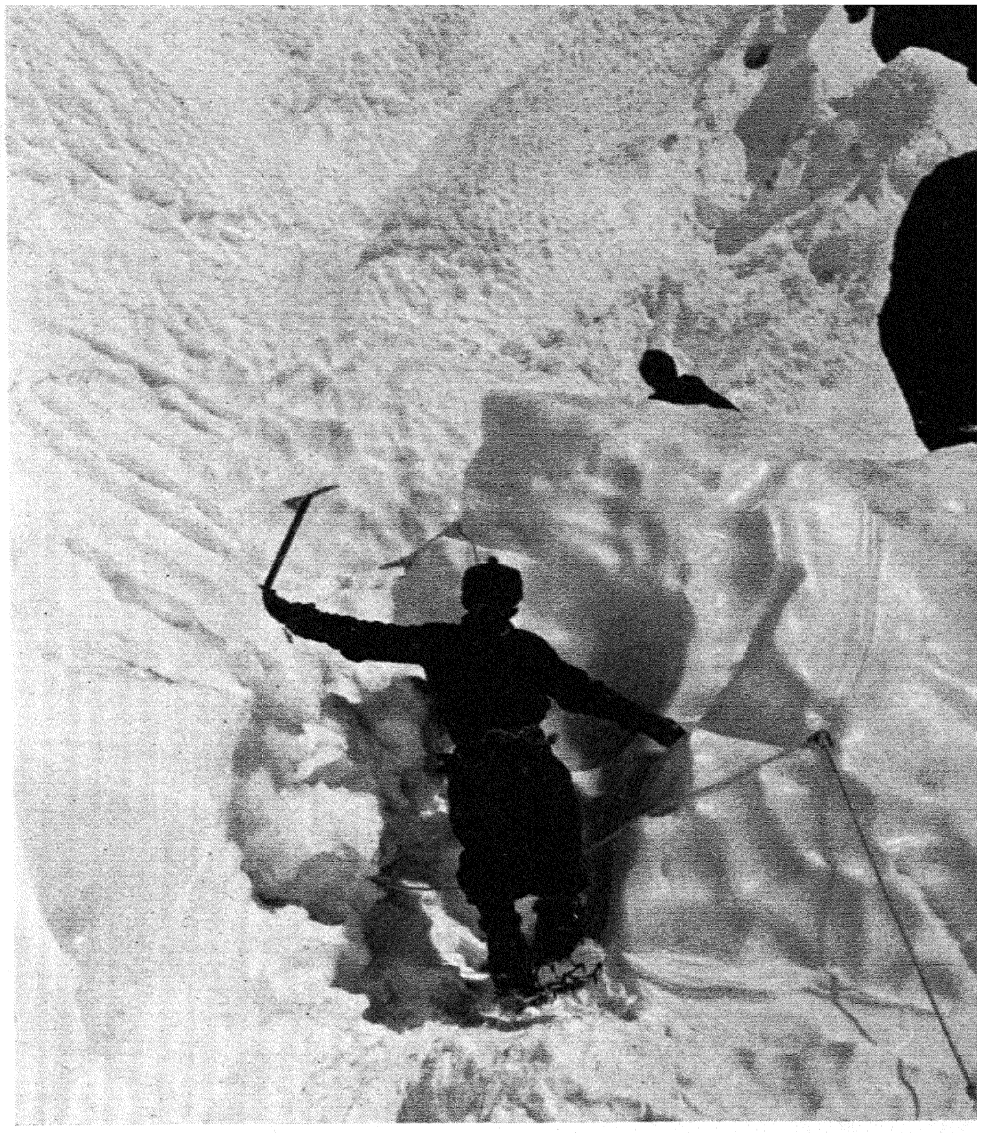
Up at Camp III we had more opportunity to talk to the Sherpas, and they told us some of their experiences with other expeditions. Some of them had been to Dhaulagiri with the Argentines, Swiss and Germans. Others had accompanied the British to Everest or Kangchenjunga, and a few had been with the French on Makalu. They carried out their duties up here with great assurance, and this gave us the opportunity to lead a regular life in our advanced base camp and so to build up our strength; for we knew that this was the last stage on which we could expect to enjoy even moderate comfort. Every ten days or so our home mail would come up from below. Then there would be plenty to read, and everybody would make an effort to catch up with his own back-log of letter writing. A few of us had reports and newspaper articles to compose about the progress of the expedition. These reports were sent to the Foundation, whose Press Service edited our accounts



9. *An advance party takes a rest on the Lhotse Glacier*



10. *Von Gunten makes himself understood by Annullu and Pasang Phutar. His gesture surmounts all language barriers*



Fixing a safety rope to a wall of ice on the ascent route to Camp V

of the expedition's progress and issued them to the papers. So our days were always busy.

Meanwhile our liaison officer had settled in to his duties. His relations with us and with the Sherpas—at the start he had been a little aloof from them—developed well. He became our Base Camp commandant. Best of all he liked to operate the radio sets; without him it would have been almost impossible to establish any understanding with the Sherpas on the radio. The liaison officer became extremely expert at handling the sets and his clear diction was a distinguishing feature. Every evening he received the weather report from Calcutta down in Base Camp and promptly repeated it to us with the utmost clarity.

The sun's arrival in the morning was a standing source of delight in camp; by the time we had drunk the early morning cup of tea which was brought into our tents, and made the final effort to abandon the warmth of our sleeping bag, the camp and its surroundings were bathed in dazzling light. The sun's blaze increased in intensity till, towards midday, it often became almost unbearable. It would have been quite impossible to move about without dark glasses and we were thankful that our well-grown beards protected our cheeks and chins from sunburn. During the afternoon laden Sherpas kept on coming up from Camp II and we were all busy keeping the growing mountain of equipment in decent order. We had to open cases, kegs, bales and sacks, so as to separate the contents and enable the loads for the higher camps to be made up in such a way that no time would be lost in looking for the right ones when the time came. This was the first time when we realised how extensive our baggage was.

The official name of our high glacier basin was the Western Cwm. Topographically the Cwm begins at about where Camp II stands and continues beyond Camp III, over a series of hollows and crests in the glacier, right up to the lowest terraces of the Lhotse Glacier. The view upwards from Camp III gave clear evidence that there were no special technical difficulties before us in establishing a route ahead to the foot of the Lhotse Glacier at about 23,000 feet. There were, of course, a few crevasses to be got round; but for the most part the route took its natural course through the hollows in the glacier's surface towards the Lhotse

precipice. Even if our advanced base camp was a very comfortable place to stay in, the surrounding landscape and the alternation of heat and cold reminded us continually of the immensity of our assignment. Very often stones would come hurtling down the mountain faces, whining like bullets, throwing up great fountains when they hit the ice or snow. Every day brought the spectacular experience of smaller or greater ice avalanches pouring from the hanging glaciers all around. At night a bitter intensity of cold fell upon our glacier valley.

The next sector of our route lay before us just as we had seen it in innumerable pictures: the passage from the Western Cwm on to the tongue of the Lhotse Glacier which creeps down from the Yellow Band; above the Yellow Band again the actual ice-slope to the foot of Lhotse's summit rocks. The Geneva Spur rose steeply and forbiddingly, seeming to guard the South Col like a projecting rampart. Lhotse's soaring bulk dominated the whole head of the valley.

The precipitous fall of the Lhotse Glacier sometimes seemed close enough to touch, but we had long since learned to be wary in our assessment of distances. Actually we were still nearly a mile and a half in a direct line from the bottom-most step of the Lhotse Glacier, where we intended to site our next camp, at about 23,000 feet.

Reiss pointed out the spot on the traverse from the Lhotse Glacier to the Geneva Spur where, on October 31st 1952, a roped party of the second Swiss expedition was struck by a block of ice, killing the 25-year-old Mingma Dorje. We visited the site of his grave on the right hand lateral moraine of the Khumbu Glacier, but the mound over the grave had been displaced by the movement of the moraine. We paid our respectful tribute to this victim of the route we still had to tackle, whose resting place in that high valley is one of unique sublimity.

We were to reap much benefit from the fact that we had sited our Camp III rather further up the glacier than our predecessors. The remains of their corresponding camp were visible almost an hour short of our eventual site. Thanks to our higher position, the next stage to a camp just short of 23,000 feet was relatively less severe; we were all duly thankful, for the shortage of oxygen in

the air began to make itself felt from here on. Before actually tackling the next sector of the route it was our aim to assemble enough material to avoid any danger of having to send down to Base Camp for essential items of equipment. If that happened later on, we might easily lose invaluable days at a point in the operation when such a loss must prove far more critical than during these last April days, which we could devote to nothing more serious than the equipment of our high base camp and the preparation of the advance to come. Most important of all was to bring up oxygen in sufficient quantities, since in earlier expeditions the supply of oxygen during the last decisive days had always produced a crisis at their high camp, and we wanted to be forearmed against any such eventuality.

We were entirely dependent on our Sherpas for the supply-line; for it had soon become evident that our original plan to erect a cable railway up the Icefall would have to go by the board. In that labyrinth of ice-towers we had found not one single place where a cable could have been stretched with a clear span over a useful height differential. On the other hand we did not think it was out of the question to use a sledge-lift on the Lhotse Face, so we soon concentrated on the transport of sledge, winch and steel cables. At the same time we had the ice-picks brought up, for it was easy to see that we were not going to find a comfortable hollow like the one at 21,300 feet for our next camps higher up.

The next obstacle to be surmounted was the Lhotse Glacier; and as our supplies piled up in the advanced base camp, so our urge to be climbing higher grew. On April 16th Reiss and Schmied had pushed forward to about 22,000 feet and we were all impatient to reach 23,000 feet as soon as possible. We were glad to have the narrows of the Icefall well behind us and we looked forward with keen pleasure to the phase which John Hunt, in his splendid book about Everest, called 'Tactical Development'. Our ascent had till now been confined to a fairly limited route by the conformation of the ground; but now there was a certain broadening of the scene, offering some choice in route-finding. Our Genevese friends had avoided the Lhotse Glacier in the spring of 1952 and had made for the Geneva Spur by a diagonal route to the

left out of the Cwm. In October of the same year they had initially followed the same route, and it was not till November that they turned their attention to the Lhotse Glacier, which opened up their way to the Yellow Band and thence across the Lhotse Face to the South Col. Hunt's expedition had also climbed by the Lhotse Glacier route.

My task was to choose the route which was least exposed to actual dangers and could be opened up with the least loss of time. This required a reconnaissance of the conditions before pushing on with the siting and provisioning of the higher camps.

Our team of eleven was as keen to be on the way as any ice hockey team in winter, waiting in the warm changing room to be called out on to the rink for the bully-off. The weather kept fine and the ice and snow conditions seemed perfect for an immediate reconnaissance. While reconnoitring the Lhotse Glacier and Face in 1953, the British expedition had encountered deep snow and bad weather during the first week of May. Our good weather seemed likely to last, our supplies were coming up very satisfactorily, so I chose April 30th as the date for the preparation of our onward route. On that day, after a reconnaissance by Reist and von Gunten, Reiss and I, with several Sherpas and two tents, some kitchen equipment, provisions and oxygen bottles, climbed ahead up the Cwm and reached the lowest terrace of the glacier on the Lhotse Face. It certainly looked a great deal more forbidding from near-by than it had from a distance and we realised that its multitude of glittering green ice walls, joined by less steep pitches of glacier-ice, would give us plenty to think about.

We decided to pitch our Camp IV on the lowest terrace of the Lhotse Glacier at a height of 22,800 feet. We had a little difficulty in getting the Sherpas up to it because the British in 1953 and the Swiss in 1952 had both sited their corresponding camp a little lower down; they kept on stopping and putting their loads down in the snow. However, a few friendly words and encouraging gestures helped to get them up to our chosen terrace. There we dumped our equipment and climbed down again to Camp III for the night.

Next morning von Gunten and Reist turned up too, following my instructions over the radio that the whole team was gradually

to work its way up the Cwm, so that the route would be opened up by the joint efforts of all its members, taking turns. It was our objective that day, May 1st, to erect our tents on the camp site we had selected and spend our first night at nearly 23,000 feet in them. Luchsinger, Reiss and I, accompanied by three Sherpas, set off heavily laden, and soon the red and blue Jamet tents and the two mess tents lay far below us. The heavy rucksacks bore down on us as we slowly gained height along the trail. Later on we covered this distance of nearly a mile and a half and the height differential of nearly 1,500 feet in about two hours; today, under the grilling rays of the sun, we took nearly twice as long. On the previous day's terrace we found an excellent place for a camp below a broad crevasse, which offered protection from falling ice-blocks. It is true that a few séracs rose beyond its further rim, but the chasm was so wide that we relied on it to swallow up any odd masses of ice which might come down—a commission it carried out to our complete satisfaction throughout our undertaking.

Our tents were soon put up and we prepared for a cold night's bivouac. At Marmet's suggestion, we used our oxygen apparatus for the first time that night, putting the regulators on a ratio of half a litre a minute. We all found that this additional oxygen supply worked wonders. After a very few minutes a comforting warmth flowed back into our hands and feet and, although at first the breathing masks hampered us a little, we spent a relatively comfortable night. Lying in my warm sleeping-bag I had every opportunity to go over the events of the last ten days in my mind, and came to the conclusion that we had been very lucky.

All our blasting operations had gone off without mishap and on our way through the Icefall we had suffered not a single accident. True, Lobsang, on his way from Base Camp to Camp I on April 22nd, had fallen from a bridge into a crevasse, but fortunately without damage to himself, though he seems to have gone down some thirty feet. He was able to return to Base Camp under his own steam and was back at work again after missing a day.

A week before, we had celebrated Diehl's birthday and at the same time the improvement in his health. On April 24th I learned over the radio that Pasang Dawa Lama was sick down in Namche Bazar. That was sad news indeed, for with the increasing altitude

new and heavy tasks were beginning to fall on us and on the Sherpas. Fortunately, Dawa Tenzing, whom I had promoted to deputy Sirdar when Pasang went down on leave, was just starting to prove his worth. Half asleep, I went over the route up the Cwm again. It was an approach route of singular beauty, rising gently from the precipitous spill of the Icefall to the steep pitches of the strangely formed Lhotse Glacier. We still had to equip and provision Camps III and IV to even greater strength, for a climb of more than 3,000 feet still lay between us and the South Col. I had no doubt, however, that we would succeed in getting up higher during the next three days, provided the weather held fair and nothing went wrong in the Icefall. It was quite impossible to steer clear of every kind of danger down there and we would just have to trust that the luck which had accompanied us so far would hold good. Luchsinger's health had recovered miraculously during the last month and I was delighted to see him up here in the highest camp. It gave him great confidence and I was certain that he had completely recovered from the effects of his illness. I fell asleep at last in a very hopeful frame of mind. And tomorrow we were to go on up the Lhotse Glacier towards the ultimate heights.

CHAPTER XI

The Lhotse Glacier

By the term Lhotse Glacier we meant the extraordinary feature running down from the Yellow Band at about 24,600 feet to the bergschrund below which the Khumbu Glacier detaches itself, at about the level of our Camp IV (22,800 feet), from the precipitous faces of Everest, Lhotse and Nuptse. The Yellow Band not only represented a mountaineering obstacle but was also a topographical landmark and at the same time provided a many times enlarged meridian line by which the face rising from the Cwm to the black summit precipices of Lhotse was divided into two distinct sections. Above it rose the actual Lhotse Face, its frozen snow slope stretching away upwards, smooth as a mirror; below, the ice cataract of the Lhotse Glacier, like some frozen mass of lava or a creeping snow-layer in invisible motion, halted in the upper part of the Khumbu basin simply because at that point Lhotse's precipitous face met a gently inclined glacier valley. I had never before seen a similarly piled up mass of frozen névé, but we had to concede the designation of glacier to it, for its steps were of smooth irridescent ice, although it had no moraines and oddly enough comes to an end just where the Khumbu begins, to the accompaniment of all the indication marks of a traditional glacier. If we had not known from reading Mark Twain's *Tramp Abroad* how slowly ice moves valley-wards, I am sure the Lhotse Glacier would often have fooled us into expecting to be carried down from the Yellow Band to Camp IV by the current!

This extraordinary physical feature which was to keep us busy for the next few days was, according to Müller's explanation, the result of the sagging of the rock-bed or of a collapse of the mountain structure. So we owed it to a prank of nature's that we were enabled to surmount the next 1,700 feet or so not over a smooth precipice but a kind of staircase whose treads, each as

high as a house, were certainly to cost us much toil and sweat. Our lungs too were to be tested to the full by those innumerable upward pitches. Our only consolations were that this sector allowed us to gain height without having to traverse any great distance horizontally, and that, as we moved from tread to tread, as on the steps of a Roman Amphitheatre, every rope's length of altitude gained increased the magnificence of the surrounding scenery.

It was about noon on May 2 when Reiss, Luchsinger, three Sherpas and I, with some bottles of oxygen, 1,000 feet of line and 30 ice pitons started off to reconnoitre the actual way on to the Lhotse Glacier and to prepare a route for subsequent parties. The ice piled up steeply above us and we all secretly hoped that after the first rather uninviting pitches the glacier might display a slightly tamer disposition. We reached a ledge which went up to the right onto an ice-promontory. Here Reiss cut a long line of steps which each successive climber improved. We also put up a fixed rope to safeguard the ascent and descent. Several ascents over steep ice pitches, which we protected with further banisters, followed, alternating with traverses. We gained height very slowly, for the steepness of the ground called for careful step-cutting and it was of great importance to build a proper road through this not undangerous area. At 23,400 feet we built a supply dump in a small hollow of the névé and then turned back.

This first stage had only taken us 650 feet further up, but we felt sure that it would be possible to find its continuation from there. Down below us in the upper part of the Cwm we could see a little column climbing up to Camp IV; we knew it must be Reist and von Gunten, following up with their Sherpas, so as to extend our route the next day. We improved the track wherever we could on our way down, to make their way up easier, and joined them towards dusk at Camp IV. They had pitched another Jamet tent, which made it three tents with room for twelve to sleep. Schmied and Marmet were due to move up from below next day and I observed with satisfaction that the supply dump at Camp IV was beginning to grow very nicely.

Von Gunten and Reist were in very good condition. They made all their preparations for an early start next morning so as to devote a long and full day to the reconnaissance of the route's continua-

tion. Annullu, Pasang Temba and Gyalzen were detailed to go with them and next morning shouldered mountains of ice-pitons, wooden wedges and ropes. As the five men moved off under the first rays of another cloudless day, I felt quite certain that today would produce an important step in our upward progress. Moving along the trail we had prepared, they soon mastered the first steep pitches and disappeared in the maze of the glacier's séracs. We crossed our fingers for them and climbed down to Camp III, hoping from there to be able to watch our team-mates as they gained height. I reckoned that von Gunten and Reist should at least reach the height of the British Camp VII at about 24,000 and, as it turned out, the two parties were not far off that point three hours after starting out. Higher up they met splendid snow and ice conditions. The ground was a little easier than the first six or seven hundred feet above Camp IV; but there was another vertical step, with a rope hanging down it, and several steep slopes to be climbed. At 24,600 feet the parties found a comparatively comfortable terrace which they adopted as the provisional site for Camp V. In their enthusiasm they pushed on upwards but at about 24,900 they decided to turn back because of the late hour and at nightfall reached Camp IV. The five men had carried out a splendid day's work without using oxygen. Von Gunten and Reist remained in Camp IV but sent their Sherpas down to III, where they could recuperate. Schmied and Marmet also arrived up at Camp IV, with the intention of humping the bivouac material up to the proposed camp site with the assistance of six Sherpas.

In 1953 the progress of Hunt's expedition had been hampered by bad weather and by May 6th the British had only reached a little over 23,000 feet in lamentable conditions and with the greatest of difficulty. We, however, had been favoured by continuous fine weather and perfect conditions, and this strengthened our confidence from day to day. We felt convinced that our venture was going to succeed; there seemed nothing to prevent our reaching our goal.

Now was the moment to ensure that the spear-head did not collapse and to organise a perfect balance between advance and support on the mountain. I consequently decided on May 4th to go down with Grimm to Camp I, there to regulate the supply

and discuss the assignments of the Sherpas with Diehl, Leuthold, Pasang Dawa Lama, who had rejoined the expedition, and the liaison officer. It seemed profitable, now that we had achieved such a satisfactory altitude on the Lhotse Glacier, for me to turn my personal attention more closely for a few days to problems of transport. Diehl still looked rather poorly and was very hoarse, but he had stood the ascent remarkably well and was most anxious to be on the job again. It was decided that he should remain for a while at Camp I to superintend the transport at that point. We sorted the kegs and cases into different heaps according to their urgency. Pasang Dawa Lama had been vomiting on the way up and still felt very weak. All the same, he and Leuthold both hoped he would soon pick up again. It was agreed that he should continue to rest at Base Camp during the next few days and then gradually resume his duties, as soon as the doctor passed him fit for them.

The liaison officer had brought some mail along and felt very fit indeed. While he was down in Namche Bazar with Pasang he had succeeded in enrolling some more members for the Nepal Mountaineering Club. He asked for permission to climb up and join us in the Western Cwm, which I gladly granted; but first he had to fetch his sleeping bag up from Base Camp, and there he found the telegram forbidding him to go any higher on the mountain. Our friend, who had never seen a glacier before, had probably recorded his impressions a little dramatically and that had perhaps moved his father to use the veto. On the other hand, I was now relieved of the worry caused by the need for one of the expedition to be permanently in command down at Base Camp. Everybody had been agreed all along that one of us must always be in residence down there, but nobody enjoyed being the resident. I had every confidence that Pradhan would keep everything in good order there, and he did not disappoint me in my hopes.

After we had discussed all the problems of equipment and transport, Leuthold, Pradhan and the Sirdar went back to Base Camp. Diehl re-anchored all the tents; Grimm and I went up the mountain again. We were near Camp II and Grimm was going up a steep pitch with the help of the rope which had been fixed there, when one foot slipped—we had left our crampons up in Camp III—and, though he managed to hold himself on the rope, he

dislocated his right shoulder in so doing. He climbed painfully to Camp II, where with the assistance of the Sherpas and following his own directions we tried to put his shoulder back. We applied our full strength to his arm by several methods without success; however a strong sleeping draught gave Grimm a good night and when he woke up in the morning the shoulder had gone back. The drugs continued to have an effect till the afternoon hours, so that we could not start off for Camp III till then, arriving there after dark.

Meanwhile Marmet and Schmied had got several loads of over 30 lbs up to about 24,600 feet on the Lhotse Face. Luchsinger and Reiss had moved up into Camp IV, from which on May 5th they had climbed the couloir between the Geneva Spur and the Lhotse Glacier as far as the Yellow Band, to reconnoitre the ground for our proposed cable-lift. From the Yellow Band they traversed to the highest camp erected by Senn and Spöhel at about 24,600 feet in the autumn of 1955. On the way they met Reist and von Gunten, who had climbed up from Camp V into the great couloir to look for a continuation of the route. The International Expedition's camp, which was visible from Camp III, had suffered a severe handling. Of the tent in which Senn and his companions had spent five grim days, only a few rods, with bits of material fluttering from them like flags in the breeze, remained; the Sherpas made gaily-coloured scarves out of the tatters.

Von Gunten and Reist started to grub around in the snow and had soon dug up eight oxygen bottles, all in good condition and under full pressure. They were definitely heavier than our own, so the finders decided to apply their treasure-trove to the night-oxygen supply and brought them down to Camp V with that end in view; in this way Camp V received supplies from above as well as from below. In 1953 the British had frequently run into traces of the Swiss expeditions of the previous year and had found and converted to their own use oxygen, provisions and fuel in usable condition. All the same it would be quite wrong to try to climb Everest in the hope of supplying oneself on the way up from the jetsam of previous expeditions; the Sherpas have too good an eye for camps of that kind and clear them of everything which could be of the slightest use to them.

The two parties then climbed down past Camp V to IV together. Schmied had meanwhile gone back to III to organise the supply of fuel and provisions to IV. There were quantities of tinned ravioli at Camp IV, but the assault party was longing for some variety in the menu. They had certainly earned it, and Schmied, as Minister of Food, was determined to resume his responsibilities for the supply of provender to the high camps.

On May 6th Reiss and Luchsinger also went down to Camp III, while Reist and von Gunten again went up to Camp Site V, improving the route as they went, and anchoring hundreds of yards of fixed rope to make the ascent easier for the Sherpas. Marmet led a party of Sherpas up close behind them and succeeded in pitching the first tent of Camp V that same day. It had all gone off as I had expected: by May 6th the route up to an altitude of 24,600 feet had been reconnoitred and established, and the first tent up there provided a definite if modest spring-board for further progress.

We decided not to occupy Camp V just yet, as it was essential to save the precious supplies of fuel, food and oxygen for our further progress on the Lhotse Face. May 6th had also been the first day to remain bitterly cold throughout. A raw wind blew uncomfortably in the faces of the trail-breaking party and of Marmet and his porters following in close support. They were all thankful to turn back, Marmet and the Sherpas remaining in Camp IV, while Reist and von Gunten moved down to Camp III to recuperate. They had spent four nights in Camp IV and had earned a rest.

We had now been a month on the mountain. We were all standing the altitude well and nobody showed any signs of exhaustion. Our careful acclimatisation had proved its worth. But above 23,000 feet the altitude was making itself increasingly felt. One's appetite decreased, and everyone suffered severely from thirst. In the camps too we were by now much more dependent on our own efforts; at times we did our own cooking, and life in the tents was associated with exertions it was impossible to ignore. Yet it was possible, with the assistance of oxygen, to climb from IV to V without any particular difficulty, even though our rucksack equipment and oxygen bottle invariably weighed over

30 lbs. After the day's work we mostly suffered from a certain apathy; this could be dispelled to some extent by a short dose of oxygen, a relief we called the oxygen-shower. The word shower sometimes made us think ruefully of the last time we had stood under an actual shower-bath; indeed we had to think a long way back to recall our last feel of really hot water, for the food and drink we prepared up here were for the most part scarcely warm, and we were forcibly reminded that at 23,000 feet the boiling point of water is 170 degrees. We took these discomforts lightly, however, against the establishment of our Camp V at 24,600 feet. Even if the wind filled up the ladders of ice-steps between the camps every day with new-blown snow, we and the Sherpas knew the way now; and every day, too, we were becoming sensibly inured to the altitude. We were in fact a good stage nearer to the peaks overhead.

On the evening of May 6th, seven Sahibs met in Camp III—Reiss, Reist, von Gunten, Luchsinger, Schmied, Grimm and myself. It was the first time for a long while that so many of us had been together. Marmet was at Camp IV, Müller and Leuthold at Base Camp and Diehl at Camp II. We used our chance to discuss the next stage. We were now faced with the opening up of a route to the South Col, the siting of our camp at that great height and the establishment of our cable-hoist. According to Luchsinger and Reiss the lift could not be installed anywhere below the Yellow Band; the couloir was not so smooth, when you got there, as it appeared from a distance. It was interrupted by countless great snow crests which would promptly halt or capsize the sledge as it came up on the cable, so it only remained to be seen whether the contraption could be used above the Band. Obviously the amount of stuff to be transported would decrease as we gained altitude, so that the usefulness of a cable-lift became more and more questionable; on the other hand it could serve to make us more independent of the fitness of the Sherpas and the pranks of the weather. So it was decided to explore the possibility of establishing a lift, as the reconnaissance of the next upward stage continued.

That evening we also discussed in all its aspects the question whether it was Lhotse or Everest we were going to attack, or

whether we could hope to climb both, and if so, in which order. We knew from telegrams and from reports brought out by Grimm and Marmet when they came out to join us that the Foundation set especial store by a successful ascent of Everest. Several members of the expedition also had a strong preference for that peak. Against that, we had to remember that Everest is nearly 1,700 feet higher than Lhotse and would require an extra camp. Moreover snow and weather conditions might well permit an ascent of Lhotse by way of its sheltered groove, but might forbid a climb of Everest over its great South Ridge, exposed as it is to the wind and armoured with cornices. The ideal solution seemed to be an ascent of both peaks, but we had to be careful not to fritter away our strength. Finally the following plan was unanimously adopted.

We would establish Camp VI as a safe and adequate strong point, equipped with sufficient material to enable us to move forward from it in an all-out attack on Everest. Even before its establishment was completed, the first party which felt itself in a position to do so was to launch a single, determined assault on Lhotse. If it succeeded, well and good; but whatever happened —win or lose—that party would retire immediately to the advanced Base Camp III to recuperate. The other parties would cover the Lhotse party's retreat, but their main task would be to carry on with their work and continue the assault on Everest as soon as the allotted material had been accumulated at roughly the 26,000 foot level. After two or three days' rest, the Lhotse party would come up again as far as the South Col, there to support the Everest teams and to take part, as circumstances might dictate, in the final phases of the assault.

The next question to arise was whether we ought all go down to Base Camp for a short time before putting the above plan into operation, in order to prepare ourselves mentally and physically for the exertions which faced us. Porters had brought some spring flowers up from Namche Bazar and Thyangboche to Base Camp. We had heard about those flowers and we were all longing to see and smell those messengers from another, blossoming world; we also longed to stretch ourselves on an air-mattress among the warm rocks about Base Camp. We would all have loved to spend

a short time there, watching the little grey spiders at work or feeling the brownish-green lichens on the old granite blocks under our hands. But we did not know how long this perfect weather would hold. Dawa Tenzing had forecast on April 20th that it would last twenty days; that time was nearly up. So none of us wanted to invite, by the interpolation of a well-earned but not inescapable cessation of activities, the risk of missing favourable days on the mountain and thus possibly jeopardising our whole undertaking.

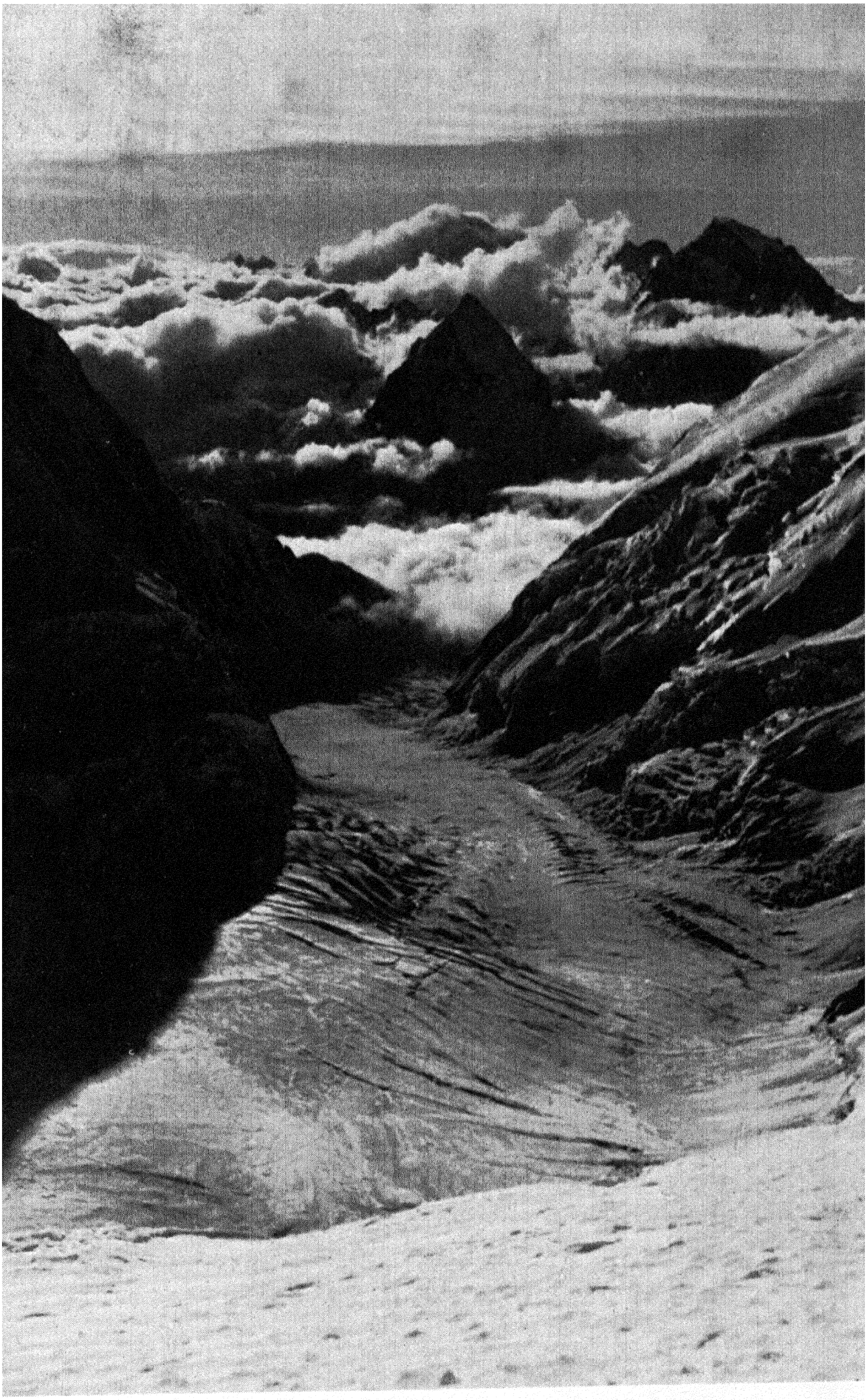
So we decided to get on with it. On the morning of May 7th Schmied, followed a little later by Reiss and Luchsinger, moved up to Camp IV. Von Gunten and Reist went to Camp II to fetch a consignment of Butagas bottles. At that moment I received a report over the radio that our Sirdar, down in Base Camp, had suffered a relapse and was on his back with a high temperature. Leuthold regarded his evacuation as unavoidable and had already sent a messenger down to the uppermost alps to collect ten porters. The Sirdar, however, wanted to be carried down to Namche Bazar by his relatives; but as those relatives included some of our best Sherpas, this meant a serious delay in the establishment of our high camps. Towards dusk the doctor reported that Pasang was delirious and continually uttering unintelligible words. I therefore decided to climb down next morning with eight Sherpas, all of them close relatives of Pasang's. Reist and von Gunten came down with us, determined to use the interruption now forced on us for a short breather.

Pasang looked very feeble; his delirium had reached a tearful stage. The porters, depressed beyond measure, vied for the personal honour of carrying their chief, but were terrified, as he himself was, that he was at his last gasp. His condition was such that the doctor had to go with him, which would mean that Leuthold would be missing just at the moment when we were pushing up to great altitudes. I debated for a long time what to do. Ought I to keep Leuthold here, because there were more than forty people involved, who might on any given day meet with a serious accident or develop frost-bite and therefore require immediate medical treatment? Leuthold could, after all, send medicines down with Pasang. Or ought I to send him down with Pasang because

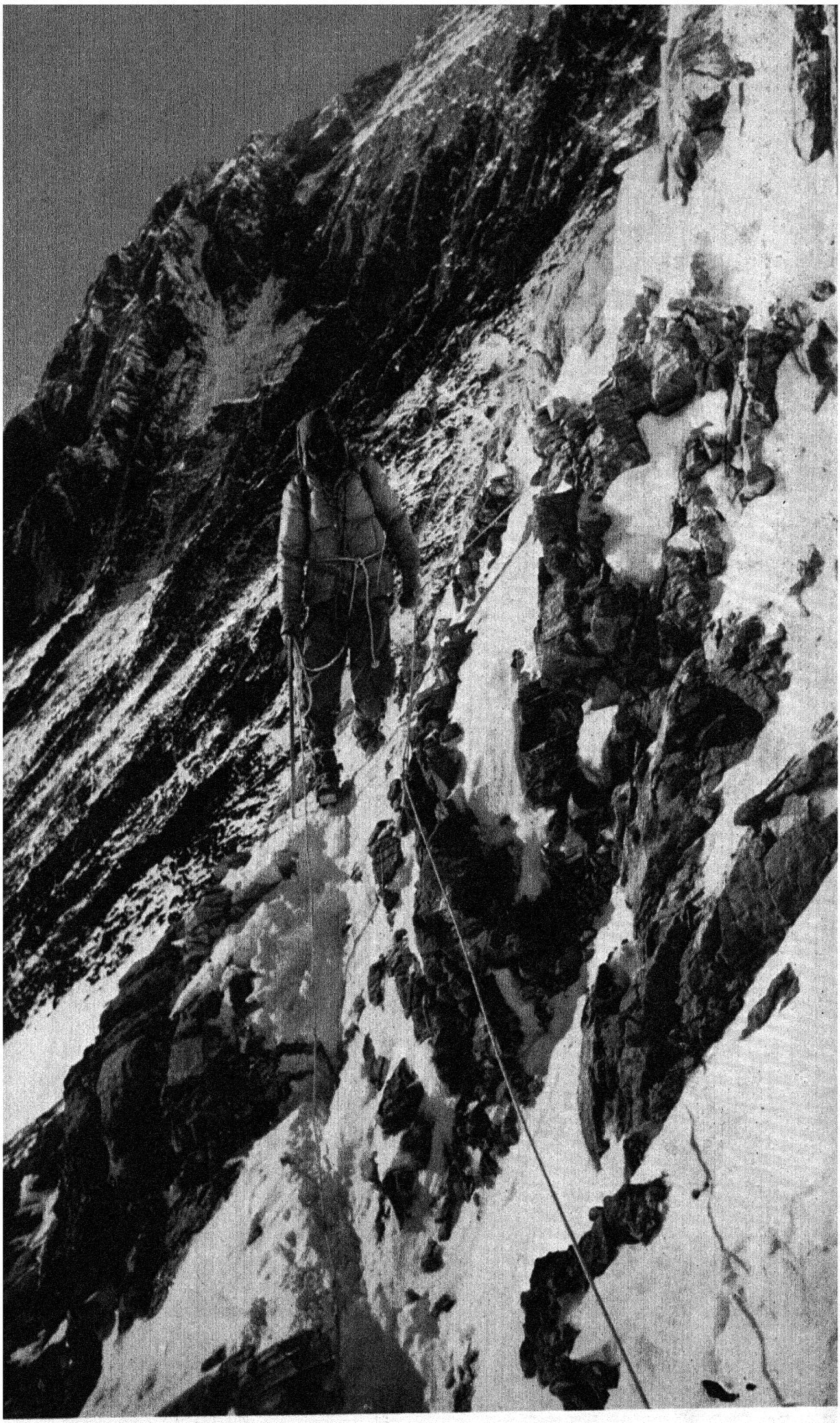
his personal need of a doctor was more urgent than anybody else's? If there was an accident on the mountain any of us and Grimm in particular, could of course administer first aid. After weighing up the pro's and con's with great deliberation, and taking into full account the purely humanitarian aspect I decided that Leuthold should go down with Pasang to Namche Bazar, should there see to it that he was provided with the necessary attention, and then come up again immediately. Pasang's eight kinsmen carried him down to Lobuje, four of them returning at once, while the other four took him on his way down with the aid of the porters we had collected from below for that purpose. We gave Pasang a tent, the essential medicines and a Sherpa to nurse and tend him. I knew I was putting off our assault on the mountain, perhaps irretrievably; but I set that off against the knowledge that I had arrived at the only possible decision. Pasang was grateful and exhorted the Sherpas in fatherly fashion to carry out their task conscientiously and to obey his successor Dawa Tenzing in every detail; he also wished us success from the bottom of his heart.

Before Pasang could be carried down, we had to clear up his financial affairs. Neither in the agreements we had made nor in the rules of the Sherpa Association or of the Himalayan Club were there any provisions for such an occurrence. At this point Peter Webster, an English planter from Darjeeling, came to my assistance. He had been travelling for some weeks with a number of Sherpas, climbing a few mountains among Everest's foot-hills, and had now come up to our Base Camp in the hope that we would permit him to go up into the Western Cwm. He knew most of our Sherpas personally and was acquainted with their social conditions. He now helped me to draw up an agreement which assured Pasang his whole pay up to June 15th, that is, the earliest date on which we could hope to reach Katmandu at the end of our expedition. We gave him a Sherpa and two porters and made provision for his return journey to Darjeeling and a thorough medical examination there. Pasang agreed to these proposals and accepted the advance covering all our engagements with gratitude.

Leave-takings and the construction of an improvised litter, made of a pair of ski and some bamboo canes, took hours, and



11. *View into the Western Cwm and to the Tibetan frontier ridge from the Lhotse Glacier. The cloud-covered summit of Cho Oyu (26,870′) lies above the peak of Pumori (23,190′); Gyachung Kang (25,910′) lies to its right*



12. *The crossing of the Yellow Band has been made safe with a fixed rope*

in the end the contraption proved unsatisfactory. So we turned a rucksack into a transport sling by cutting two holes in its side panels for Pasang's legs, thus enabling him to be carried in a comfortable sitting position. The column was at last able to move off at about noon on May 9th. The Sherpas took turns to carry their Sirdar and at all steep or otherwise awkward passages they all assisted the one who actually had the burden on his back. Owing to the swollen state of the glacier streams, the usual route along the normally comfortable trough in the glacier was not followed. At Dawa Tenzing's suggestion they went down as far as the so-called Lake-Camp at Gorakshep along the huge boulders of the moraine. To the Doctor's great relief Pasang's fever began to abate on the downward journey.

The column disappeared slowly from view and I was again assailed by serious doubts whether I had not weakened our resources too much through the arrangements I had made. I knew, though, that Leuthold intended to come up to Base Camp again as soon as humanly possible, for he wanted nothing more than to climb up to the higher camps at the earliest opportunity. Not only was his enthusiasm as a climber urging him on to greater heights; he also intended to carry out a series of experiments related to the effects of altitude on the circulation and breathing when he reached the high camps. He had already subjected each of us to a fitness test on the approach and at the Base Camp. He made his victims step on to a case sixty times in the space of three minutes and then measured the pulse and blood-pressure of his specimen. A test of that kind might well be questionable in the high camps when our strength was reduced; but I did not doubt that Leuthold would draw the necessary conclusions from whatever experiments he made.

On May 9th I had cause once again to be glad of our well-tried communications network; for a report came down over the radio that Schmied and Luchsinger had established a Camp VI at nearly 26,250 feet and intended to spend the night there. We were all overjoyed at this message, for our assault party had obviously made good progress; Lhotse and the South Col were suddenly seen to be almost within our reach.

Reist, von Gunten and I wanted to go up again as soon as

possible. One glance at the piled-up supplies of provender and oxygen convinced me that there was still a great deal of stuff to be carried up. For the material still down here consisted of supplies which would be of much greater value during the second half of May up on the Lhotse Face and on the South Col than in a Base Camp which, by comparison with the high-altitude camps, looked absolutely idyllic. Women and children from Namche Bazar moved about in it as happily as if they were in their own market-place. In the evening there was the aroma of wood fires and baked potatoes. Here we could stay no matter what the weather, without any worries as to our return journey or supplies. Further up, the camps were in part only scantily stocked; there were still more than fifty bottles of oxygen down here. It would take eight porters at least a week of hard work, even in fine weather, to shift these 600 lbs and more up to the highest camps. So we were still faced with very considerable exertions before we could launch our assaults on the summits.

Next day four of the Sherpas who had gone down with Pasang returned to join us in Base Camp. It had been arranged that they should only go down as far as Lobuje and there be relieved by other porters. The most difficult problems of carrying the sick man were at an end once Lobuje was reached, and it was unnecessary for him to be accompanied further down by a party of particularly strong mountaineering ability. With the four Sherpas came the mail-courier, bringing seventy-three letters from home, of which nine were addressed to von Gunten, who had got engaged just before his departure. Perhaps he had come down with me to Base Camp in expectation of these letters and not in search of rest, after all?

CHAPTER XII

The Yellow Band

As you look up at Everest from the Western Cwm, a prominent yellow band of rock starts at the mountain's base and runs diagonally upwards to the right, to disappear at its highest point under the Lhotse Glacier, only to become visible again beyond it in the long Lhotse-Nuptse Ridge. Across that broad face it runs, interrupted at one place by a step, before turning downward in an S-shaped curve.

How often in the history of Everest do we meet with descriptions of yellow limestone bands running across its North Face! How far do they correspond to 'our' Yellow Band? The first time I saw it, in the twilight, I seemed to see Mallory and Irvine, who thirty-two years before had climbed up those yellow slabs through the mists on a quest from which they never returned. And that expedition in 1924 had been Mallory's third attempt to climb Everest from the north. How could I help remembering the gallant British attempts over the twenty years during which Nepal was a sealed book to foreigners?

Mallory had been a member of all the first British expeditions. On September 24th, 1921, with Bullock and Wheeler, he had set out from the Kharta Valley, crossed the Lhakpa La, a 22,195 foot pass and by way of the East Rongbuk Glacier had reached the Chang La. The discovery of this pass—the famous North Col—provided the pushing-off place for all the attempts in subsequent years to climb the mountain from that side.

In 1922 Mallory had taken part in the expedition led by General Bruce. On May 21st, Norton, Somervell and he, climbing towards the shoulder of the North-East Ridge, reached a height of 26,986 feet. A few days later, G. I. Finch and Geoffrey Bruce managed to add another 350 feet to that record. A third attempt, in which Mallory again shared, came to grief, for a huge wind-slab broke

away and hurled the party down the mountain side, killing seven Sherpas. Mallory, however, refused to be discouraged, and the third expedition under Norton found him once more among its members. During a first assault that year Norton and Somervell had managed to cross the yellow limestone bands and their sandy slabs to reach the great couloir below the summit pyramid. There they had to turn back because of the late hour and a severe throat affliction of Somervell's after Norton, who had gone a little higher than his companion, had reached an altitude of 28,125 feet—a height which was not achieved again till, 28 years later, Lambert and Tenzing equalled and perhaps slightly exceeded it on the south-east ridge.

Mallory and Irvine, sent in as a second wave of the attack, left Camp at a height of 26,400 feet on June 8th, 1924, in doubtful weather to make an oxygen-assisted attempt on the summit. At about noon, when the weather lifted a little, they were seen for the last time, moving along the ridge, at a height of roughly 27,900 feet, before their figures disappeared again in the mists. Their team-mate Odell was not even sure whether they were moving up or down. The two men never came back. If only Odell, who suffered from altitude less than anyone else and who had such great experience, had been a member of the party, things might have been different! After this accident the Dalai Lama forbade any further attempts on Everest.

It was eight years before the British persuaded him to change his mind and give permission for the Fourth Everest Expedition. That expedition of 1933 was led by Hugh Ruttledge; it climbed by way of the North Col and established the highest camp yet at 27,400 feet.

On May 30th, Wyn Harris and L. R. Wager found an ice-axe about 100 feet below the north-east ridge at about 27,900 feet. It must have belonged to Mallory or Irvine and remains the only trace of them ever discovered. The riddle whether they reached the summit remains unsolved. Harris and Wager pushed on along the Yellow Band across the upper face of the mountain and reached almost the same spot, at a height of 28,125 feet, where Norton and Somervell had turned back in 1924. Frank Smythe also got to the same place on June 1st. In spite of its considerable success, this

expedition, too, was driven back by bad weather in the early part of June.

In 1935 Eric Shipton, having obtained a permit very late indeed, took out another expedition with the declared intention of examining the snow conditions on Everest during the monsoon and to make a photogrammetric survey. On July 12th Shipton, Kempson and Warren and nine Sherpas set up a camp on the North Col, provisioning it for a fortnight. There was a deep covering of powder-snow on the slopes of Everest and particularly on the slabby passages of the north-west flank. Bad weather prevented any further progress up the North Ridge. As they were descending from the North Col the party came upon the track of an immense avalanche, which had wiped out the entire trail of their ascent. Shipton established that it was not just a wind-slab but an avalanche of loose snow caused by the warm monsoon air. In view of the bad condition of the snow and continual foul weather Shipton decided to abandon the tents and provisions up on the North Col and start for home.

In 1936 Hugh Ruttledge mounted yet another expedition. On May 15th Smythe and Shipton with fifty porters moved into a camp on the North Col, but eighteen inches of newly-fallen snow compelled them to evacuate it again for the time being. On the 22nd a radio message warned the expedition that the monsoon had already reached the Darjeeling area, and the very next day the first monsoon snow fell on Everest's summit. However, the weather improved and it was decided to try to occupy the North Col again. Harris and Shipton were caught by an avalanche while descending the col and swept down the slope; they escaped being hurled over a 300-foot ice-cliff by a hair's breadth, the avalanche stopping on its very edge, where they managed to dig themselves out of the snow. This narrow escape and the dangerous snow conditions caused by the monsoon finally moved the leader to call the expedition off.

We might easily be menaced by similar dangers. After a heavy snow-fall enormous avalanches must come thundering down into the Cwm from Everest and maybe from Nuptse and Lhotse too. At present there was no fresh snow on the mountain walls and the weather indications remained good. But hadn't the last pre-

war expedition been robbed of success by a blanket of snow?

It was in 1938 that the seventh British expedition led by H. W. Tilman went out to make the last attempt to climb Everest from the North. They reached the North Col on May 28th and established their Camp VI at 27,070 feet by June 8th. The climbing parties met deep snow on the North-West Face, for the first monsoon snowfalls had come at the beginning of June; for that reason the attempts to climb the peak were made by way of the ridge. On June 10th Tilman and Lloyd climbed to the notorious Step in the ridge at about 27,900 feet, which is a famous landmark visible from a long way off. That excellent climber Lloyd pronounced this 50 foot rock pitch unscalable. They were prevented from turning it by snow up to their hips. And so the Seventh Expedition, like its predecessors, failed and the party were compelled to leave the mountain.

The outbreak of the Second World War put an end to all further attempts. After its conclusion, reconnaissances and full-scale expeditions began again in 1950, but now they approached the mountain from the Nepalese side, which had in the meantime been thrown open, and access from which eventually led to the climbing of the peak. The various ventures were led by Houston (1950), Shipton (1951), Wyss-Dunant (1952), Chevalley (1952) and finally Hunt (1953); they all contributed to a better knowledge of Everest's southern slopes.

Now, how long would our luck with the weather hold? It would need a heavy fall of snow, sufficient to menace us with imminent avalanche perils, to interfere with our plans; even a moderately light covering of snow could make our further assaults on Lhotse and Everest much more difficult, or even impossible.

Having gone over all the above circumstances in my mind, I took a sleeping-tablet and crawled into my sleeping-bag. We would have to tackle our own problems in the morning.

The Yellow Band was yet to set us various problems. Reiss came back from his reconnaissance with several samples of rock which we packed carefully in cotton-wool and put away in a small plastic bag; with it we put in a prepared sketch of the terrain, on which the finding-place was then marked. The bag was sealed,

with the intention of transporting it safely to Switzerland, where Professor Lombard could use it for the continuation of his techtonic work. The Foundation had underlined the importance it attached to these samples and had made meticulous preparations for their preservation; so each bag contained, besides the nice soft cotton-wool protection, a pencil sharpened at both ends to enable the place of origin to be clearly marked in the most inclement conditions of weather and cold. As the Genevese had established in 1952, the Band itself consists of three layers of yellow, slabby limestone, between which dark strata of gneiss lie imbedded. It was for the geologist to decide whether there is a definite connection between the prominent geological phenomena on the Lhotse-Nuptse Wall and the yellow 'Norton' Bands, which project from Everest's North Face.

According to the samples, the rock was rough and rich in holds, a fact which our reconnaissance had confirmed. The step, 100 feet high and vertical in places, could be climbed at several points and pitons could be driven into cracks. So we were entitled to believe that, wherever we attacked this obstacle, we should defeat it and even contrive a perfectly comfortable way through it with the aid of pitons, ropes and wedges. As yet, however, we did not know exactly which point we should choose for it. It would have to be at the place where we decided to tackle the Lhotse Face; so we left the actual sector over the Step till we had a definite and detailed conception of the route by which we were to climb up and across to the top of the Geneva Spur. Our task was very much lightened by the fact that the rock-step could be crossed at a number of places; we were thus enabled to concentrate on the search for a good route through the long, steep Glacier Face without really having to take the Yellow Band into much account. Later on, when the route had been well established, the Yellow Band still gave us plenty of food for argument. We kept on discussing whether it would offer a route to the ridge which joins Lhotse and Nuptse. I was rather inclined to think so, while others were of the opinion that it might be the chief barrier to an ascent of Nuptse from the Lhotse Glacier. The question will no doubt be resolved one day, when an expedition goes out with the main aim of climbing Nuptse.

CHAPTER XIII

The Lhotse Face

We assessed the Lhotse Face as a serious obstacle. To us it represented the threshold to that realm, above 26,000 feet, where our preparatory work, our efficiency and our endurance would meet its first real test. True enough, the way up to the Yellow Band had already demanded many a tough day's work and we should never have got as far without the will to see it through, the enthusiasm or perhaps better the demoniac energy of all my team-mates and Sherpas. Fine weather had been our constant assistant in our daily labours, and we had acclimatised well; but there was a great deal of hard work to be done before we could establish a camp somewhere about the 26,000 foot level from which our assault on Lhotse or Everest could one day be launched.

As ever among climbers, the planning of a route up the Lhotse Face was a continual source of discussion. There were various possibilities, but we could not simply choose the one we thought the most suitable from the point of view of configuration, snow conditions and security, for we still had to take into account the installation of our cable lift. It had somehow or other to be inserted in our route in such a way as to avoid unnecessary traverses to its top and bottom stations, with all their necessary safety installations. While the cable itself need not necessarily follow our own route, the end-stations must, of course lie on it. For, the less work we had to devote to installing and manning it, the greater its service to us. If the lift was not to be serviceable within the space of a few hours and if we had to approach it by difficult routes, it would hardly be worth while putting it in at all. We could hump our loads up the face with no greater expenditure of effort.

It was hardly worth thinking about the Geneva Spur route, for we did not want to complicate things by introducing rock-

climbing so long as firm snow lay on the face. It was true that the cable-lift could easily have been put on the slope to the south of the spur; but the approach route to the spur would then probably not have led past the bottom station, and a very uncomfortable détour would have been necessary at the top.

Another solution would have been the British route, which leads diagonally from the top of the Yellow Band across the Face to the crest of the Geneva Spur, but there were several objections. It is, of course, very comfortable to follow a diagonal route on the way up, but on the descent a direct line down is easier and less tiring; and the direct line down is also easier to follow in bad visibility. Moreover we could think of no reasonable way of installing a lift on a diagonal route. It would have meant rigging the cable in the direct line from Camp V or the gully close by it, up to the rock wall of Lhotse. In that case, the bottom station would not have been far from Camp V, but at the top a very exposed traverse of more than 500 yards would have separated the upper station from the next camp; and that would have necessitated the stationing of several Sherpas at a height not far below 26,000 feet. Worst of all, it would have been almost impossible to operate the winch in unfavourable conditions of snow or weather on account of this traverse.

Another possibility lay in a horizontal traverse of about 200 yards from Camp V through the glacier gully to the foot of the Yellow Band rocks, which could be climbed by way of a ledge. From there on it would be possible to climb directly up the snow-slope beside the Geneva Spur. This ascent seemed to offer no difficulties whatever, and the descent would be ideal, allowing one simply to throw one's whole weight back on one's heels. This route seemed to be practicable even after fresh falls of snow and when avalanches might be threatening. Here too the cable-lift could be installed without difficulty and the upper station would be close to where we intended to site our Camp VI. This slope too, could not be climbed without a traverse; but then the sledge could not be hauled diagonally up the precipice. Meanwhile, our last project involved only a short, easy traverse from Camp V to the lower station. The task of porters detailed to haul the loads to and fro between the station and the camp would be greatly

lightened because they would be starting at 24,000 instead of 26,000 feet. Seeing that the Sherpas were in any case to be stationed in Camp VI, they would be in an ideal position to operate the winch so conveniently close at hand.

The steel cable, more than 2,000 feet long, would have to reach up from the band, or a little above it, to the rocks in the Lhotse ridge and would serve us as a security measure in any circumstances. As soon as the results of the reconnaissances by Luchsinger, Reiss, Schmied, von Gunten and Reist were available, we weighed up all the possibilities again. We did not need very many words to decide in favour of the new route, and on May 8th I was able to go down to Base Camp with Pasang.

During my stay down there, my friends were working eagerly on the continuation of the route. The first thing was to make the sector across the Yellow Band passable. A rope about 250 feet long was fixed up the steep slabs by means of rock-pitons and lines, and carried on along a snow-covered ledge running gently up to the right. This ledge could easily be attained by a horizontal traverse little more than 200 yards long. The ledge was also safeguarded by continuous ropes anchored to ash-wedges. The terrain was easy but the snow-gully went straight down below it, steepening as it went, into the Cwm, and there was a greater danger of snow avalanching here than anywhere; in which case the rope balustrade would be invaluable, for it would provide a welcome safeguard even to tired men.

On May 8th Luchsinger and Schmied moved up from Camp IV to V in lovely weather, which was some consolation for the fact that the best of the Sherpas had gone down to Base Camp in order to transport the sick Sirdar on his way down to Namche.

On May 9th a very strong wind started to blow on the Lhotse Glacier at a very early hour. Luchsinger and Schmied had great difficulty in getting the Sherpas out of their tent and on the move. They provided the men with oxygen and loaded each of them with 35 to 50 lbs. The order of the day was to gain as much height as possible, breaking a trail up to 26,000 feet and erecting a tent up there. The improvements made the previous day to the route up to the Yellow Band, and the ropes which had been fixed on it, gave the heavily laden porters confidence. The party quickly

mastered the rocks and continued up the broad groove to the south of the Geneva Spur. The ground was very steep, but afforded good going on crampons; yet for hours this spur-reconnaissance party felt they were making no progress at all. At last the wind-beaten snow slope seemed to draw a little nearer, while the weather was getting noticeably worse. A cold wind whistled across the face from time to time, raising banners of blown snow. The breathing apparatus was a great help, but the heavy loads kept the average gain of height down to about 350 feet an hour. And still the climb went on, till the slope at last began to ease a little; the track at the bottom and the place where they had crossed the Yellow Band disappeared from sight. Finally, Luchsinger and Schmied decided to site their camp a little below the top of the Geneva Spur's Shoulder and on its southern side. The altimeter showed just on 26,000 feet. A heavy snow-storm was beginning as the Sherpas dumped their loads and prepared for their return journey. Luchsinger and Schmied told them to go down, and then set to work to erect their two-man tent.

They dug out a platform, using snow shovels and ice-axes. The altitude made this work very exhausting and they had continually to stop for lack of breath. It was two hours before the platform was big enough, and the actual erection of the tent called for a great output of energy. It was not an ideal spot, for it was on a very steep snow slope; and it was obvious that the drifting snow, which was already beginning to pile up, must press heavily on the tent. Fortunately, it cleared up towards evening and the reward for a heavy day's work was a magnificent sunset.

Meanwhile the four Sherpas had arrived safely down at Camp V and the news that a tent was being set up at the level of the South Col was put out to all camps over the radio. Down at Base Camp I, too, heard that Camp VI had been occupied. Glad as I was, I knew that with every foot of altitude gained the difficulties of our venture increased: indeed we were all aware of it. Up at those heights we felt much more exposed to bad weather than, for example, in Camp III. We could do nothing more to equip Camps V and VI down to the last essential item. If storms or fresh snow were to drive us down again it was doubtful if we could reopen the upward route in sufficient time. Without getting too

worried about it, we suddenly realised that the time left us for working on the mountain could no longer be reckoned by months, and hardly even by weeks.

It was Luchsinger's and Schmied's intention to install the cable-hoist on the following day, and they had already discovered a site for the upper station. About 100 feet below the Camp site it proved possible to obtain a firm anchorage among some rocky crests sticking out of the snow, without having to climb the rocks of the actual ridge itself in order to fix the cable. This slight advantage was some consolation for the fact that during the excavation of the camp site Luchsinger's ice-axe had broken. Schmied had applied his mighty strength too violently in wielding it and the trusty implement was therefore out of service.

Before lying down to sleep in their small tent, the two men drank in the glorious view. Pumori's shapely summit already lay 3,000 feet below them; by contrast, beyond and above, Gyachung Kang's keen-edged bulk soared almost vertical to the sky. Dominating everything to the west rose Cho Oyu, behind which the sun was going down in a cloudless sky. The two men stood alone in that mighty world of peaks, the highest point of Earth on which either had ever set foot, with the Lhotse Face falling sheer below them into the depths.

They both spent a good night in their high outpost, in spite of a temperature which fell to four degrees below zero. The dry air helped them to bear the cold; and the tent-floor, Airex mats, air-mattresses and sleeping-bags proved sufficient insulation from the coldness of the ground, though drifting snow kept on piling up against the tent.

The weather in the early morning of May 10th was clear and visibility good, but soon after sunrise the scarves of mist began to gather, the wind got up and, unexpectedly, it began to snow. Luchsinger and Schmied crawled back into their tent for shelter and tried to make up their mind whether this was just a passing caprice or a serious and permanent break in the weather. The clouds lifted every now and then, but it continued to snow; and very soon a ten-inch blanket of new snow was lying on the Lhotse Face. The omens were not too good, for if it were to go on snowing at that rate it was very possible that three feet of snow or

more could accumulate. With such a strong wind blowing they would have to reckon with deep masses of drifting snow, and wind-slabs might even build up. The descent from Camp VI to the lower regions would be a very uncomfortable business in such circumstances. They therefore came to the only possible decision, which was to go down at once. Leaving a few bottles of oxygen, some fuel and provisions, they closed the tent and set out on their retreat. They made good downward progress in spite of the new snow, and soon the tent-site, which had already become a familiar landmark, disappeared from their view in the mist and the swirl of snow-flakes. They used the fixed rope to cross the Yellow Band, and only an hour after starting down they were safe at Camp V, which after their bivouac-tent looked almost like a village to them. Here they found Phurba Lobsang and Yila Tenzing in good condition, but the other four Sherpas were suffering from the altitude and lay inert in their tents. Grimm and Reiss were very glad to see their team-mates safely back from the highest camp. There were now four Sahibs together. They were in radio communication with the camps lower down and there was nothing to do but wait to see how the weather would develop during the course of the afternoon.

There was plenty to talk about in Camp V. Reiss and Grimm had moved up on May 9th with nine Sherpas from Camp III to IV, intending to go on to V after a short rest. Crampons were necessary for this stage, but to their chagrin they discovered that most of the Sherpas had left theirs behind. So in the end only Reiss, Grimm, Kippa and Kunga Norbu were able to start off for Camp V. But on that particular day the two Sherpas were going so badly that Grimm and Reiss had to administer oxygen on the way. That kept them going for a while, but about 650 feet below Camp V they stopped and dumped their loads, which included part of the bivouac equipment, in the snow. There was nothing for it but to let the men go down. Meanwhile the weather was deteriorating visibly and it began to snow. Grimm and Reiss climbed on up to Camp V alone, and there they had to share one air-mattress and a double sleeping-bag, which did not seem to augur a comfortable night. However, they found a reserve Jamet tent which had not been erected and this provided them with

additional cover. They heard over the radio that everyone had gone down from Camp IV to III; so they naturally felt a little isolated, nor were the fresh snowfalls calculated to make them feel any more comfortable. They spent a long, cold night up there and were thankful when dawn at last broke. Visibility was still good, but down in the Cwm suspicious-looking white clouds were already gathering and the scarves of mist on Everest looked most unpromising.

The first thing was to retrieve the loads abandoned below the camp the day before, which contained a number of oxygen bottles. Grimm and Reiss detailed four of the Sherpas who had gone up with Schmied and Luchsinger to Camp VI and come down again the evening before, for the job. After four hours the team came back without accomplishing its mission. Snow had begun to fall in the meantime, and their report was not exactly encouraging. 'Sahib, no way, no luggage, no oxygen,' they explained, underlining their complete failure with expressive gestures. The weather got rapidly worse. During the afternoon Luchsinger and Schmied came in from Camp VI.

Sitting in their tent the four of them held a Council of War. Winter had suddenly descended on the Lhotse Glacier; snow was piling up on the tents. The wind blew fiercely; fresh snow covered the Yellow Band, the Lhotse Face and the summits above the camps which it had cost so much effort to establish. There were as yet no grounds why the four Sahibs in Camp V should throw up the sponge. True, they knew well enough that if the snow continued, the tent up on the Lhotse Face must very soon be buried; against that, experience had taught them that once the sun managed to penetrate the clouds its fierce rays soon made away with newly fallen snow. During recent days they had all sweated freely on the Lhotse Glacier and often enough wished for a few clouds to spread a little shade. After so many weeks of fine weather there was really nothing surprising that the world's highest mountain weighed in with a sizeable snowstorm for a change. They knew what loads of snow had fallen on Hunt's expedition three years before, at about the same point on the mountain. All the same, it seemed unkind to the four men that the break in the weather just had to come when they were so near the

fringe of the 26,000 foot level. Luchsinger and Schmied had felt just as well up in Camp VI as they did here in Camp V; all four were in excellent condition, and the idea of a long wait or, worse still, of having to retreat was painful. Nor were they yet committed to going down. They kept on looking out of the tent in the hope of an improvement in the weather. Every now and then the snow-laden clouds seemed to grow a little lighter; every time the hopes momentarily raised were dashed again. Thick cloud brooded over the whole Lhotse Face; snow fell incessantly.

Would it not be more sensible to climb down and employ the Sherpas on supply porterage between the lower camps than to let them lie about in their tents up here? Or ought one to see it through and not be intimidated by the first proper flurry of snow? The Sherpas were bent on going down. Finally, an evacuation of the Camp would not, after all, be such a dreadful thing. If the weather cleared up during the next few days, the route from Camp III to Camp VI could be opened up again in from two to three days. Yet, if this was the real breaking of the monsoon, there was the fear that the expedition would have failed without even reaching the South Col. Thoughts and words in the tent up there kept on circling round the grim question whether this was merely a forerunner of the monsoon or the monsoon itself, which can so irrefutably dictate the success or failure of a summer expedition. Only yesterday a route had been opened up the Lhotse Face; today every trace of it was being pitilessly wiped out. Down at Base Camp the Sirdar lay seriously ill, up at the spearhead there was heavy snow, which as the afternoon wore on intensified into a veritable blizzard. Had we started on another run of bad luck? Nobody in Camp V had any doubt that now the last word would lie with the weather.

CHAPTER XIV

The Harbinger of the Monsoon

A DECISIVE factor for every Himalayan undertaking is the monsoon wind, whose warm air-currents blow inland from the Gulf of Bengal during the summer's heat and result in a period of bad weather and heavy precipitations in the area for some four to five months. The onset of the monsoon on Everest occurs fairly regularly at the beginning of June, but there is frequently a variation of a week or two. Earlier expeditions have taught us that the actual monsoon in the Himalaya begins with disturbances lasting a few days or weeks, after a short fine weather spell of two or three weeks' duration. After this first skirmish, the monsoon usually sets in in full and lasting force. The air, saturated with moisture, cools off as it crosses the foothill ranges and produces rain in the lower and snow in the higher regions. In addition, the Himalayan weather has its own local pranks and moods. Our talks with experts and observers of many years' standing always confirmed that the volume and timing of the snow-falls vary from year to year.

The monsoon and the fine weather period preceding it played a critical part in all our planning. Swiss and British experiences on Everest and, to an even greater extent, Franco's Makalu reports had convinced us that the weather and the condition of the snow must be favourable for our ascent between May 15th and June 10th. We therefore had to be ready to launch an attack on the summit from about 26,000 feet as early as May 15th and still be in a position to deliver it, if necessary, as late as June 5th. We reckoned in certain circumstances to have to make several attempts during the intervening period. To make such a plan feasible we would have to bring up considerable supplies of food, fuel and oxygen and recruit sufficient Sherpas.

Unexpectedly, a fine weather period had begun about April 20th. Could we hope that this year it would last four or even six



13. *Cirrus clouds, burning sunlight and stormy wind, and banks of cloud surging ever higher are a prelude to a sudden change in the weather. It becomes advisable to abandon an exposed high level camp*



14. *Reiss, Luchsinger and von Gunten (left to right), near the top of the hoist. In the background, strongly foreshortened, is the Lhotse couloir*

weeks; or would the monsoon break early, before the middle of May? From the first days of May onwards we were living on borrowed time, and with every passing day we had to use that loan more economically.

On May 10th we down in Base Camp were also conscious that a change in the weather was brewing. The wind had gone round from north to south; the peaks were beginning to shroud themselves in curtains of cloud; raw gusts drove us early in the afternoon to the comfort of the fire in our stone hut. The mountain daws were busier than ever round the camp and we sensed that all was not right with the weather. When towards evening the radio message reported the evacuation of the high camps we were not surprised; and when next day the meteorological service announced a temporary forerunner of the monsoon our secret fears seemed to be confirmed. We looked at each other thoughtfully, and began to worry about a premature end to the whole venture. In further confirmation of the weather bulletin, snow immediately began to fall again. Our radio talk with Camp III was carried on during a smother of flakes which left no doubt that our three weeks' spell of lovely weather had met with a severe interruption.

Conversation in every camp during the following days centred on the weather and its effects on our further plans. Was the bad weather now reaching us the actual break of the monsoon or only just a short-lived forerunner of the inevitable summer storms? The question lowered over our heads. Marmet tried to cheer us up with the accounts he had brought along from previous expeditions, which proved that the monsoon did not normally set in with full force, but usually left a space for a few days of fine weather. We of course were quite familiar with these reports, but in our first mood of depression we had forgotten all about them.

But up in Camp V, after Luchsinger and Schmied returned from Camp VI on May 10th, there was no sign of an improvement in the weather. All four men up there came to the same conclusion and unanimously decided to go down; so the whole garrison of Camp V quickly prepared for retreat. The Sherpas crawled out of their snow-laden tents and roped up; in these conditions it took less time than in fair weather to uncoil the Grillon rope and tie on with the traditional 'fisherman's bend'. Their rucksacks were soon

slung on their shoulders and it was not difficult to see by their faces that they were greatly relieved at the Sahibs' commonsense in deciding to retreat. Grimm and Reiss roped a Sherpa up with them and brought up the rear of the column as it silently started on the way down.

The going was difficult. Snow had filled all the steps in the ice, and every stride demanded the utmost care. The track on the terraces and in the grooves was covered by fresh snow; only the fixed ropes occasionally lay snow-free as welcome signposts and aids to safety. The party came upon the equipment which the Sherpas had dumped on the way up the evening before, only a few minutes below the camp. None of the Sahibs could understand why the Sherpas had not been able to find these loads in the morning during all the hours they were away from camp; but the weather and the setting were unsuitable for following the matter up. The five oxygen bottles were left where they lay, close to the route, and only the rucksacks carried down.

They climbed on down, in cloud and driving snow. At times the wind and the snow were so fierce that it called for the utmost energy and determination to watch each separate step with due care. During a traverse things were nearly made worse by an accident. The Sherpa on the rope between Reiss and Grimm stumbled when his crampon slipped out of a step, and went sliding with lightning speed down the slope. Instinctively they both drove their axes into the snow and succeeded in holding him as he fell and in getting him up on to the trail again. Had these two practised climbers not been so instantly alert, the whole rope of three would have fallen some hundreds of feet.

Approaching Camp IV there was a slight improvement in the weather, and the spirits of the descending party rose accordingly. There was even an opportunity for a good laugh when Grimm at the tail of the party went down some fifteen feet into a crevasse with a collapsing snow-bridge. Grimm, who always preserves his sense of humour no matter what the circumstances, was more amused than startled by this leisurely lift-descent, and was able to climb up to the level of the rest of the party without much trouble. These two mishaps were no doubt the Lhotse Glacier's way of reminding us that it was in charge up here.

They reached Camp IV in two hours. Snow had begun to fall again and it looked as lonely and deserted as if nobody had lived there for years. The camp, which had been established with so much care and hard work, had to be left on its own, but this was no time for sentimental regrets; the weather absolutely dictated a retreat. The party stopped only for a few moments' rest and then started down for Camp III. Down there everyone was rightly convinced that the spearhead party would be on the way down and they were all waiting impatiently to hear the story of how the top camp had been established.

At times the gale parted the cloud curtains which veiled Lhotse, granting short glimpses of the Lhotse Glacier, the Yellow Band and the Lhotse Face; then the mists closed in again. The high step we had gained in the last ten days was deserted and bare of life; only a few tents, ropes and pennants bore witness that a host of men had tried to set foot on the dark summit precipice of Lhotse. We could only recognise once again the masterful strength of the high mountain-world and hope that a turn for the better would enable us to win back from the mighty peaks the 5,000 feet we had been forced to surrender.

At the lower camps the bad-weather spell was turned to account by some days of transport work. The morning of the 12th dawned clear, but a huge halo around the sun promised further snowfalls. Von Gunten went up from Base Camp with seven Sherpas. They picked up loads at Camp I and carried them to Camp II, returning the same day—a fine example of the fitness and endurance of the Sherpas. Down at Base Camp snow continued to fall and there was plenty of hard work to be done, clearing the route up the Icefall. In the evening the weather-report announced that the monsoon was moving steadily nearer. I had heard over our own radio that the 11th and 12th had been used as rest days up at Camp III, where the weather continued to be equally bad. I therefore asked the team if they wished to come down to recuperate; but they all wanted to stay up in their outpost, where they said life was quite comfortable. We were now reaping the reward of our careful equipment of that advanced support point at 21,300 feet.

On May 13th Grimm led a column of porters from Camp III to Camp IV. They cleared the tents of snow and tidied them up

inside, so that they would be in good condition when the next assault on the higher regions proved possible; then he brought the party back to Camp III in the evening. It had been a gloomy day and they all suffered for the first time from the combined effects of cold and excessive humidity in the air. It seemed to be confirmation that the monsoon had really broken, and morale was a little low in consequence; but they came to terms with the weather and consoled themselves with the thought that this standstill gave an opportunity for the unbroken furtherance of supplies up to the high levels. Early on the 13th, Reist with fourteen Sherpas climbed quickly through the Icefall from Base Camp. Taking six of them with him to Camp II, he sent the others down again. This intensive porterage resulted in the majority of the oxygen bottles reaching the upper camps; there were only 18 left at Base now.

The halt called by the break in the weather also gave us a chance to take stock of our position and go over our plans again. With the break in the weather, a few huge powder-snow avalanches had come down into the Icefall from Everest's west shoulder; but we had been able to continue with our carrying up to Camp IV in spite of them. So we fixed our further hopes on the weather and even more on ourselves. It was highly probable that it might clear up for a few days at a time and it was up to us to take advantage of such improvements. The certainty of success now no longer rested entirely on a well-equipped and provisioned Camp VI at 26,000 feet, but on the speed with which we could carry out our assaults; the shorter the time taken from Camp III to the summit, the more sure was our chance of success. The only answer now, in view of the uncertainty of the weather, was the quickest possible ascent and descent, carrying as little ballast as possible. There would be some risk attaching to this, but it was one that would have to be accepted. Above all, we had to ensure that every party was thrown into the attack and that they all moved up into the heights in relays one day apart, so as to be able to render each other mutual support.

I laid down the blueprint of the order and timing of progress, the distribution of the material to Camps V and VI, the sequence of the parties and the composition of their loads, and forwarded it from Base Camp to Camp III. Basically it was nothing but a co-ordination of the plans we had all of us agreed to for a long time

past and their adaptation to the changed weather conditions. The leader of the climbing party and all the climbing members of the expedition approved it, and only the actual composition of the parties remained to be discussed and modified in a few details. I allowed everyone to have a say in the working out and implementation of our plans, for I was determined to achieve a solution agreed by all and supported by each separate man's convictions. It seemed to me to be the best insurance that every one of us would take his decisions from a common standpoint should he be faced with assessing and dealing with a completely new set of circumstances. It was, of course, mostly possible to keep in touch across great gulfs of height and distance over our radios; but we normally only communicated with one another at eight in the morning and after four in the afternoon and particularly in cloud and snow conditions, when contact was most essential, we sometimes failed to get in touch. The method by which we achieved a common purpose resulted in great understanding in the team itself and contributed greatly to our success. For, once my friends were convinced of the necessity of a given course, they gave their whole energy and determination to the realisation of the plans, and allowed nothing to deter them on the way.

Planning, preparations and transport-work kept us going during this period of bad weather. It was highly important that everything should be set for an immediate return to the 26,000 foot level the moment it cleared up again. I felt that we had disposed our forces to the best advantage. On the evening of the 13th, Luchsinger, Reiss, Schmied, Grimm, Diehl and about ten Sherpas were at Camp III. Marmet was in charge of II with a few Sherpas. Reist, von Gunten, Müller and I were at Base Camp with another dozen. Leuthold, too, was back from Namche Bazar. In the event of a sudden improvement in the weather, there were plenty of people up above to start on a swift and effective re-opening of the route. We ourselves would move up in support and then do our share as a relief team a couple of days later.

As it turned out we were to put our plans into action much sooner than we had expected.

CHAPTER XV

The Oxygen

THE provision of high altitude breathing-apparatus and oxygen supplies had played an important part in the preparations for our expedition, so I think a more detailed note on the importance of this equipment to our venture and the technical aspects of this indispensible aid is called for at this point. For, useful as it had already proved, its real test was still ahead of us, seeing that we had not yet exceeded the 26,000 foot level nor entered the zone where, in certain circumstances, the provision of artificial oxygen could prove decisive.

Marmet had studied every aspect of the breathing-apparatus and the oxygen supply before leaving home. When he and Grimm joined the main party in mid-April it was therefore important for us to learn from him all about handling the apparatus as well as about the general principles of an artificial oxygen supply.

The energy which permits us to do a certain piece of work and which keeps our body warm is generated by the burning up of the nutriment within our organism. The necessary oxygen is supplied through the red corpuscles in the blood. The mixture of gases in the air consists of about one-fifth oxygen, not quite four-fifths nitrogen and a small percentage of carbon-dioxide and other gases. The 21 per cent. of oxygen in the air at low levels is amply sufficient for the body, and it uses only a small proportion of it, provided it continues to be supplied with more air. But at high altitudes the air we breathe is thinned out owing to the lower pressure.

For example, a litre of air at 16,400 feet contains only half the gas-molecules which are available at sea-level, only a quarter at 30,000 and only an eighth at 40,000 feet. The quantity of the gases is reduced as the altitude increases, but the ratio of mixture remains constant. In order to feed the blood in the lungs with oxygen, every litre of air breathed must contain a minimum of oxygen

particles, and only then can the blood carry enough oxygen from the lungs to the points where it is being consumed.

Reduced oxygen supply is one of the important factors in those phenomena grouped under the classification of so-called 'Mountain Sickness', and can kill an unacclimatised man even as low down as 20,000 feet. That is why airmen use artificial oxygen at great heights, and so must the climber who visits the Himalaya, if he is not soon to suffer from exhaustion and eventual collapse.

At the beginning of our training period we all climbed with greater difficulty above 16,000 feet than in our lower mountains at home. At Base Camp, too, at the outset every physical exertion had led to breathlessness. True, we had been able to walk at a moderate pace for hours on end; but, on crawling out of our sleeping-bags and pulling our boots on we often found ourselves short of breath for minutes on end. We suffered the same ill-effects if we got up quickly and took a few normally quick paces. In the end we were able to overcome this difficulty by living for long periods at about 13,000 feet, by frequent ascents to over 20,000, and by avoiding any kind of sudden movement. But we did not regard ourselves as properly acclimatised till we were able to get up, move about and go to sleep up at Camp III's 21,300 feet without any undue difficulties. Up to such altitudes experience and scientific proof have shown that man can live, work and maintain his health after sufficient acclimatisation—always admitting certain limitations—without additional oxygen supplies. During such a period of acclimatisation one of the things that happen is an increase of 50 per cent in the number of red corpuscles, the oxygen-carriers in the blood, and provided no illness is incurred, man can exist at these altitudes. But above the sphere of acclimatisation achieved, the air is too thin to provide the necessary energy for the increased exertions entailed; so, if he wishes to maintain his efficiency and fitness, the climber must add an artificial oxygen-supply to the air he is breathing.

This does not mean that it is impossible to climb above 21,300 feet without oxygen. Many expeditions have reached or exceeded the 26,000 foot level without its aid. We too covered considerable stretches at great heights without it. It is simply that one's bodily strength can be maintained much longer if oxygen is used.

As already explained in Chapter III, we picked oxygen apparatus of French construction with a breathing-mask we had ourselves improved.

The whole apparatus, composed of several important components, weighed 14½ lbs. The cylindrical oxygen container—supplied by the Paris firm of Gerzat—held four litres and was made of an aluminium alloy, to strengthen which, it was wound with piano-wire. At 59 degrees Fahrenheit the pressure was 230–260 atmospheres. Each container thus had an oxygen content of 920–1040 litres (at sea level). The cylinder was 30 inches long with a diameter of 4 inches. When full, container and valve together weighed 13 lbs. A regulator with ratios of ½, 1, 2, 3 and 4 litres to the minute enabled the oxygen supply to be prescribed. The regulator emitted less oxygen under high pressure in the bottle; that is to say, the emptier the container grew the greater the oxygen content supplied at a definite setting. The regulator was fixed directly to the container, without the intervention of a joint, by a regulating screw fitted to the valve-supports of the container and the connection could be made without a spanner. The regulator with its built-in manometer weighed just under a pound and was made by M. Verghe of Paris.

The oxygen was fed through a hose 3 feet long and ·35 inches in diameter into the bottom of the mask, where it was mixed with the external air. The bladder attached to the hose served as a reservoir for the continual oxygen supply during exhalation. The same firm as supplied the regulator was also responsible for the hose and bladder.

For our mask we had chosen a British product which is also in use in the Swiss Air Force, of rubber construction, lined with leather.

In the original mask the external air enters at the side through a single, small mica valve with a spiral spring. We were afraid that this inlet valve might freeze up, and that owing to its inaccessible construction it could not be readily cleared; so Marmet built into the frontal microphone aperture a large mica valve giving a maximum breathing-resistance of ·2 inches water column, at 24 deep breaths to the minute, and at either side a rubber valve giving a maximum resistance of half an inch. It was then proved that in

ordinary conditions the frontal valve was quite sufficient for breathing and the two lateral valves only came into operation when it was frozen up. Plastic or metal caps protected the valves from the entry of driven snow-dust. The rubber valves were sunk in the bottom of the mask; their resistance at 24 deep breaths to the minute was ·4 of an inch. The air one breathes is damp and therefore tends to assist the formation of ice as soon as it comes in contact with the cold air outside. But the valves were housed in a short trunk-like channel, so that their immediate neighbourhood remained ice-free even at the lowest temperatures; only very occasionally did an ice-crust form at the opening of the 'trunk', but it could easily be cleared by the fingers. To prevent the exhaled air from flowing back into the bladder, a corresponding valve was built into its supports. This valve was exposed to freezing, so we took the necessary replacements along just in case. They were only needed on a very few occasions; but the damage could be dealt with quite easily every time. This so-called oxygen-valve was the weakest point in the whole apparatus.

During the expedition Marmet experimented with a slightly smaller bladder of 300 c.c. capacity without a valve. The bladder collected the exhaled air (in the first instance the unused air which remained at the end of the inhalation in the mask and in the air channels above the lungs) till it was completely distended. By far the greater portion of the exhaled air (that is, mostly the used air) none the less flowed out into the open through the trunk; however, there was no certainty of saving oxygen. A possible drawback was the entry of moisture into the bladder (freezing of the condensed water). Flying-helmet hoods of thin tissue were used to fasten the masks; they worked excellently and were often worn simply as head coverings.

Marmet had discussed the modification of the masks with the Air Force Medical Institute at Dübendorf and the experts at the Military Centre there. The masks and their helmets were delivered by the Technical Section of the War Department. The mask weighed just over 6 oz., the helmets 3 oz. In addition to these masks used during sleep, we took along extra lightweight polythene masks of the type issued to passengers in aircraft of the Scott Aviation Corporation.

At great heights we hardly used the sleeping-masks, for the day-masks were scarcely any discomfort if just laid on the face and not properly fastened. Some of us used to unplug the lateral intake valve, thus reducing the unpleasant resistance to breathing; this did not produce any sensible loss of oxygen. As each of us had his own oxygen bottle beside him, it was possible to regulate the flow exactly as desired. But we also took along some T-tubes and corresponding hosing, so that we could connect a number of masks to a single bottle. A flow-indicator built into the hose showed whether the oxygen was flowing or not.

We planned to use oxygen while climbing above 23,000 feet at a flow of 2 to 3 litres a minute up to 26,000 feet, as ground and snow conditions dictated, and above 26,000 feet at 3 to 4 litres a minute. On the descent we only intended to use it above 26,000 feet and then at only 2 litres. Above Camp IV we proposed to use it at night at a half, and above 26,000 feet at one litre to the minute. Every Sherpa was to be given oxygen for at least an hour at a flow of 2 litres between 23,000 and 26,000 feet. In practice our estimates worked out pretty accurately.

The total capacity of our oxygen supply was 166,000 litres, measured at sea-level pressure. 148,000 litres were in 160 bottles supplied by the Gerzat firm and filled with oxygen by Air Liquide of Paris; 11,700 in 18 bottles from the Draegerwerke in Lübeck, filled by the firm itself; and 6,300 in 12 Draegerwerke bottles filled by Messrs. Carba of Zürich. The Draegerwerke bottles had already been used by previous Swiss expeditions and were now fitted with a connecting thread, which permitted us to fix the French regulators without difficulty. They were taken along for medicinal and reserve use.

There were 22 complete sets of oxygen apparatus, besides a large quantity of spares.

We knew that along the route from Base Camp to Everest and Lhotse there must be oxygen bottles left behind by the British in 1953 and the International Expedition in 1955; so, with a view to the use of any such extras as we might find, we had connecting pieces made which would fit the thread of any such bottles and enable us to link our apparatus to them.

The bottles were packed in waterproof material with a little

Silicagel added as a drying medium; there were 4 bottles to a crate. The crates were seriously damaged as early as Bombay, but we were able to reinforce them with steel strips, and they arrived safely at Base Camp. After the severe test to which our oxygen equipment was subjected even on the way up to the regions above Camp VI, that is almost to the 26,000 foot level, we had sufficient experience to go on by the middle of May.

In checking the material at Base Camp, Marmet discovered one empty bottle and eight deficient in pressure. As a result, we decided to mark clearly the bottles which were to be taken up to the higher camps. On one or two bottles the valve handle had come adrift, but this was soon put right. The check also revealed three defective regulators, one of which was repaired with a nail brought to red heat in a Butagas flame. One or two pressure gauges refused to work accurately at great heights. However our plentiful reserve supplies were able to offset these losses. The screw fasteners of the bottles sometimes froze when it was very cold and could not be undone till they had been thawed over the flame of a camp cooker.

Unlike the British in 1953, we did no special training with the oxygen apparatus. The first time we used it we all found the resistance of the valves uncomfortable, but we soon grew accustomed to this feature and later on hardly noticed it.

Generally speaking, we did not use oxygen below 23,000 feet, because we had all acclimatised well; and it was not till we were above 26,000 that we regularly supplied it to the Sherpas. We did however administer doses of oxygen below those levels during rest-periods and when signs of exhaustion were evident, and these proved very effective in raising their efficiency.

Although the masks did not fit properly, the slight loss of oxygen was not noticeable. To prevent the glasses from clouding over it was necessary to prevent any air from escaping at the top edge. The masks were uncomfortable to wear in conditions of great heat. Marmet got on quite well when he tried using the mask over his mouth only, leaving the nose uncovered. He was the only one who really mastered the art of breathing in through the mask and the mouth and exhaling through the nose. A great advantage of the mask was the protection it gave, with the goggles,

against cold and the fierce rays of the sun, which was appreciated by all. It also made breathing possible in the face of the strongest gale, which proved a great help in storms and when snow was blowing about.

The advantages of oxygen apparatus are to some extent counterbalanced by its weight, for its wearer has to put out a correspondingly greater effort; the greater output of effort again demands a greater amount of oxygen. Marmet applied scientific methods to the solution of this problem.

In spite of occasional defects, our equipment gave excellent service. The effect of the oxygen was definitely perceptible: not only was the general level of warmth very soon raised, but there was an improvement in the safe placing of one's feet and the quickness of one's reactions.

I should like to underline the fact that the experiences of earlier expeditions were of immense value to us in the preparation of our oxygen equipment. The Italians sent us data about the apparatus they had used on K2. I was in personal contact with the French in Paris during September 1955. The British even sent their specialist, Mr. Bridge of Normalair Ltd., to a conference in Zürich. Jean Couzy supervised the manufacture and, as late as January 1956, Marmet flew to Paris to check the details of production and transport with the French firms who were delivering the material. And there was equally close co-operation with all the Swiss points involved.

I append a table giving the details of the open-circuit apparatus used by the various expeditions since 1952. It will be seen that our apparatus was the lightest used till now in the Himalaya.

Year	*Apparatus*	*Weight in lbs.*	*Oxygen Content in Litres*	*Bottles per set*	*Weight per 1,000 litres in lbs.**
1952	Draeger Apparatus. Second Swiss Everest Expedition	31·2	1200	2	26
1952	ETH. Apparatus. Second Swiss Everest Expedition	15·2	600	1	25·3
1953	Draeger Apparatus.	36·5	1950	3	18·7
	British apparatus. British Everest Expedition	44	2400	3	18·3
1954	Italian Apparatus. K2 Expedition	39·6	1800	3	22
1955	British Apparatus. Kangchenjunga Expedition	22·7	1600	1	14·1
1955	French Apparatus. Makalu Expedition	14·7	920	1	16·1
1956	French Apparatus. Third Swiss Everest Expedition	14·5	920	1	15·8

* The last column disregards the fact that the oxygen bottles could not be obtained in stipulated sizes, for instance with a content of 1000 litres.

CHAPTER XVI

The Assault on Lhotse

AT 8 o'clock on May 14th we received a radio message from Camp III saying that the party up there were coming down to Base Camp on account of the persistent bad weather. It was impossible to oppose this decision, for, only a few days before, I had suggested to the whole team that they should abandon the icy desert of the Western Cwm for the comfort of the 'village' at the foot of the Icefall. Towards 9 o'clock I was called again on the radio to report that it was clearing up: they now wanted to stay for a while to see how the weather behaved. We agreed to discuss it again at 10 o'clock. The clouds also began to lift down where we were. Von Gunten, Reist and I waited tensely for the next message over the radio. It was precisely 10 o'clock when we heard Dichl's voice over the air from Camp III. 'It is clearing up steadily,' he reported. 'We want to open up the Lhotse Glacier and Face again.'

This information had the same effect as a starter's pistol on a field of trained athletes—a pistol shot fired up near Everest and Lhotse, as the curtains of cloud parted and the route and the peaks showed themselves again for the first time in four days in the clear sunshine of a glorious day. This improvement in the weather touched off a series of movements already planned in their broad outlines, though a great deal of thorough reconnaissance and trail-breaking were still needed before—on the morning of May 18th—the watchers at Camp III were to see a party climbing up into the steep groove on Lhotse, which runs up like a Jacobs' Ladder for more than 1,700 feet to the summit of what was still the highest unclimbed summit in the world.

Von Gunten and Reist immediately started from Base Camp to get up to Camp III, 3,000 feet higher up, during the day. They covered the distance in five hours, proof enough of the benefit

they had derived from their rest down at Base. I decided to go up next day with Sirdar Dawa Tenzing and my own Sherpa, so as to be in a position to watch the parties at work on the route from close at hand, to direct the assaults we had planned to make on the summits from the highest camps and also, if necessary, to take part in the attempts themselves.

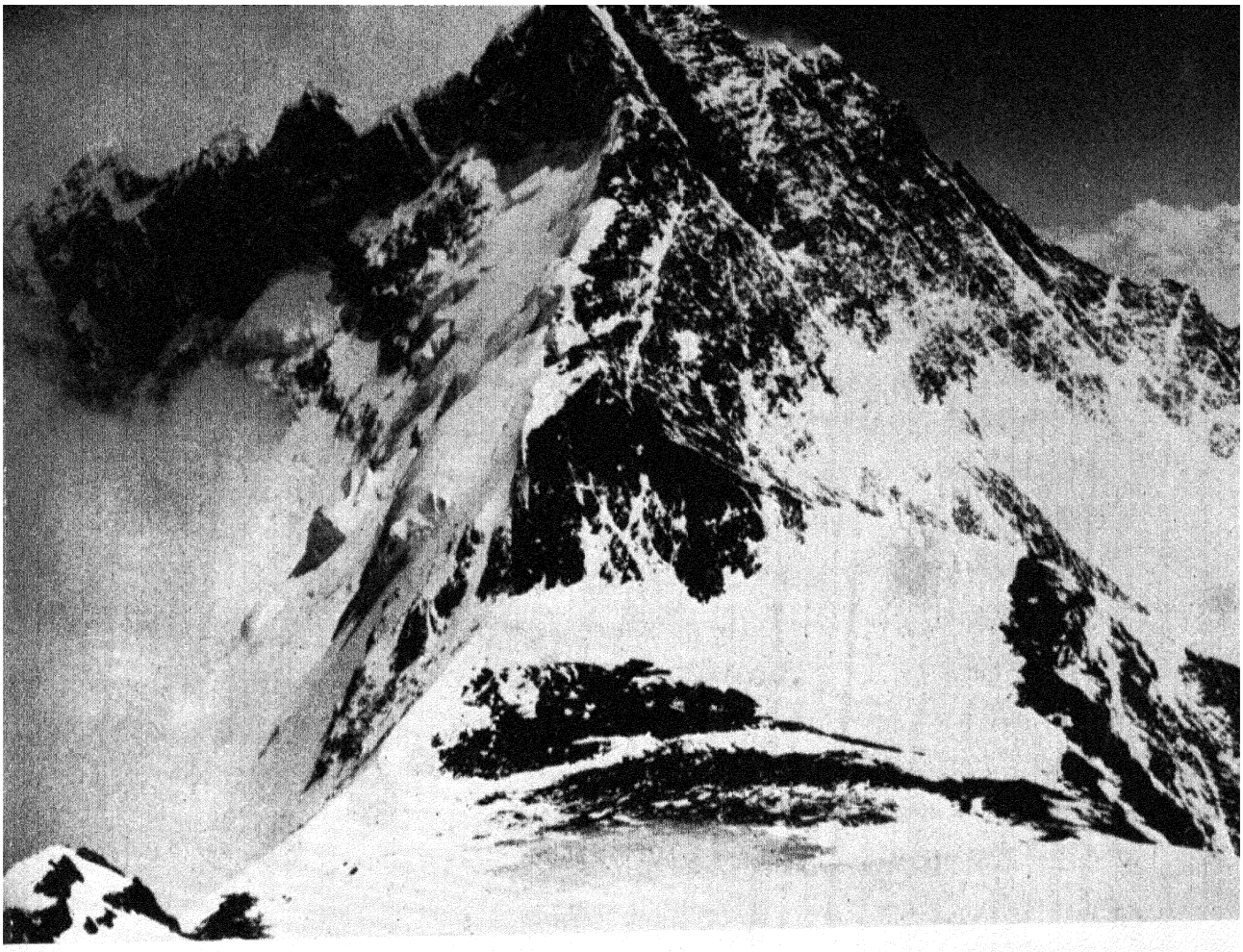
Luchsinger and Reiss climbed very quickly from Camp III to IV on the late morning of the 14th, making the ascent of almost 1,700 feet at that height in the astonishing time of 1 hour and 20 minutes. The sun blazed down on the climbers after the snow falls with an intensity they had not yet experienced. Fresh snow, a foot deep, promised even greater exertions on the Lhotse Glacier than it was already demanding on the much more level approach through the Upper Cwm. So the pair took a rest at Camp IV and put on oxygen apparatus to assist in the heavy work of breaking the trail up the Lhotse Glacier; even so they found it an extremely laborious task. The fresh snow balled up into lumps under their crampons; the ropes fixed before the break in the weather were mostly buried, though it proved possible to clear them and they then provided invaluable assistance. Luchsinger and Reiss fought their way up to 23,600 feet, but decided at 5 p.m. to beat a retreat. They had made good progress and the weather looked like holding; both had done an exhausting day's work and given of their best.

The weather did not look very inviting on May 15th, but Schmied successfully undertook to prolong the route as far as Camp V. Von Gunten and Reiss climbed up to Camp IV with the intention of reaching Camp VI the next day. So on that evening Camp IV was in occupation once again and the whole remaining strength of the climbing party was gathered at advanced Base (Camp III). During the night of the 15th–16th a strong wind rose and completely obliterated the trail between Camps IV and V. Reist and Von Gunten had therefore to remake it, but they reached Camp V in good condition and continued on their way up the Yellow Band and into the glacier gully on the Lhotse Face. There the snow was three feet deep in places and the work of breaking a trail proceeded slowly; none the less they made good progress and decided to go up beyond Camp VI, if humanly possible.

They drew steadily nearer to the site of the single tent. Newly fallen snow and drifts had done their work with great thoroughness; only a small triangle, the very tip of the tent, was sticking out of a deep snow-drift. Intent on breaking a trail up to the Geneva Spur the two men did not stop for long: then they traversed from the rocky projections where, below the tent, we meant to put the cable-winch, across towards the slabby steps of the Spur. They managed to reach the highest crest of the Spur, known in our expedition's terminology as the Geneva Shoulder, without any great difficulty, in spite of the freshly-fallen snow. In only an hour from Camp VI they had almost reached the 26,000 foot level and were thus the first members of the Expedition to look upon the long-desired prize of the South Col's saddle, which was accessible from there by a short descent over a gently-inclined snowfield. They were delighted at their successful day's work and with the fact that, inside three days, they had not only reached Camp VI but had been able to climb to a point more than 300 feet above it. They made a quick descent to Camp V, which had meanwhile been occupied by Luchsinger and Reist. There was now a very strong summit assault party in Camp V and, if the weather held fair, we were in a position to launch a well-supported reconnaissance against Lhotse or Everest.

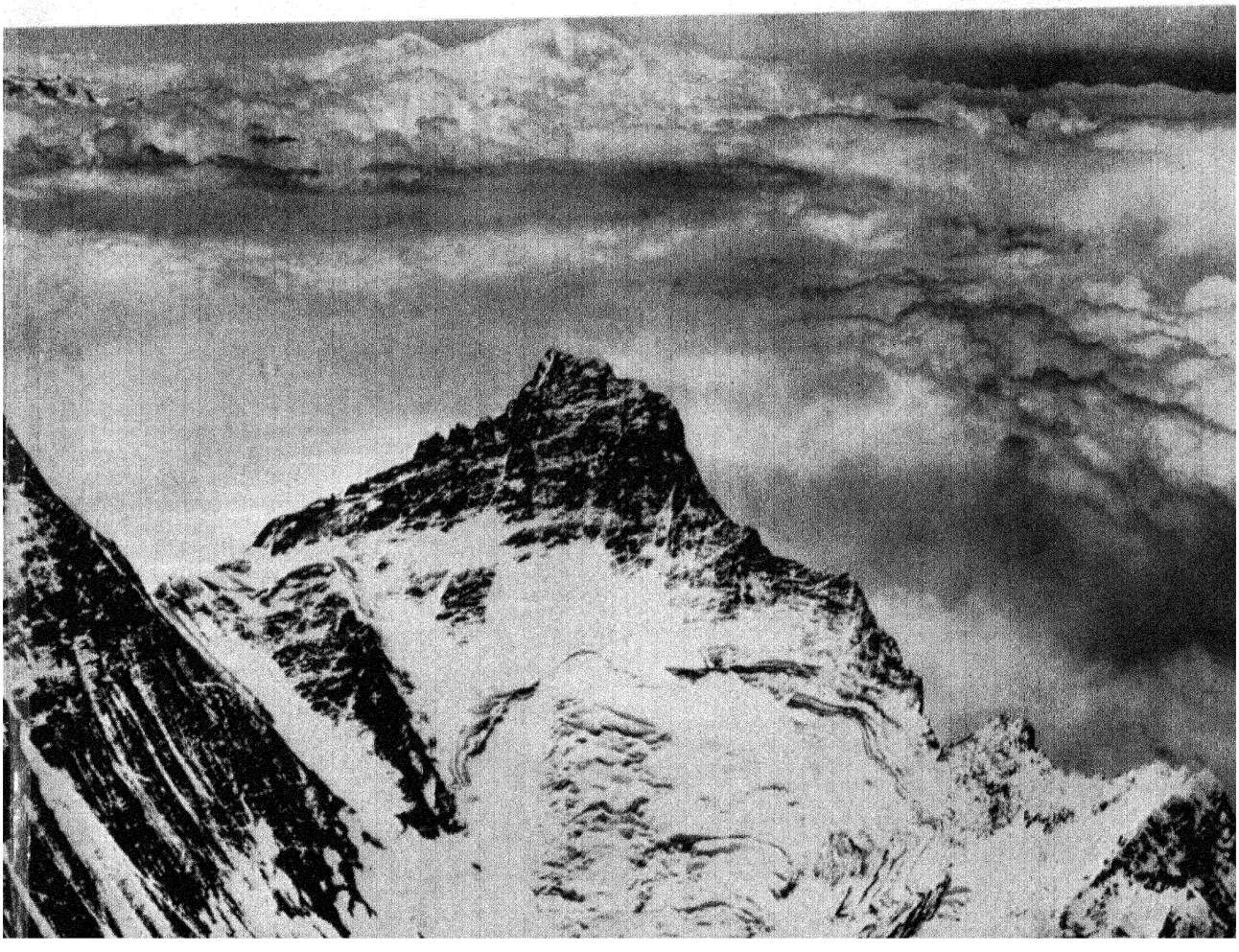
A fierce gale blew up towards evening at Camp V. While Da Norbu worked hard, the other Sherpas proposed to take shelter in their tents. It was obvious that if the wind continued to blow at such strength throughout the night, the trail to Camp V would be completely covered again by morning. The thermometer fell to 15° below zero. The gale continued to rage and von Gunten and Reist had to start their trail-breaking operations all over again, as foreseen; but they were not downhearted and quickly gained height on the familiar route. It was agreed that Luchsinger and Reiss should follow in their footsteps and husband their strength for the reconnaissance of Lhotse planned for May 18th.

In just five hours the Sahibs, with five Sherpas, were outside the deeply snowed-in two-man tent of Camp VI. Reist and von Gunten started to dig it out, but found the work more exhausting than they had bargained for on account of the crippling effect of the great altitude. Meanwhile Luchsinger and Reiss installed the



15. *View of Lhotse from the southeast ridge of Everest, showing the couloir that follows a fault through the West Face to near the summit*

The Lhotse Face from the air. In the centre the Lhotse glacier, with the Geneva Spur leading up to South Col. The yellow band rises from its foot and curves across the Face towards Nuptse





16. *Fritz Luchsinger on the summit of Lhotse* (27,890′) *with downward view to the Southern Summit in the background and the connecting ridge with Nuptse*

cable-winch. It took them several hours before they had securely anchored the frame for the winding gear and were in a position to make the first test-trip of the aluminium sledge. This showed that, even in wind-blown, freshly-fallen snow, the sledge, when loaded with two loads of 30 lbs. or so each, could be pulled up to Camp VI, a differential of about 1,000 feet, at the expense of about an hour's cranking—a great success for the expedition and a good omen for our supply-line to above the 26,000 foot level. Reist went up alone to the top of the Geneva Spur to take photographs, after which, with von Gunten and the Sherpas, he climbed down to Camp V in order to get back before dark. Luchsinger and Reiss stayed up at Camp VI.

We were all aware that they had with them in their rucksacks the pennants of Nepal, our host-country, and Switzerland. Reiss had also a small mascot with him, a little woollen monkey which his wife had handed to him at the station in Bern when he left; the idea was that it should go along on the Lhotse reconnaissance in case there were any rock pitches which required that creature's agility. There were also some rock-pitons and carabiners in the men's equipment. Reiss had always declared that the Lhotse groove went straight up in unbroken flight to between the two crests of Lhotse's double summit; all the same, in certain conditions, steep ice-pitches could dictate a divergence onto the rocks, or it might prove necessary to hammer protective pitons into the rock bordering the groove. Reiss and Luchsinger were a pair equally safe in picking a line and in their judgment of the terrain as they were technically accomplished in actual climbing; and we hoped soon to know much more about the legendary Lhotse Groove, which we all regarded as the key to Lhotse's summit. The double tent at Camp VI was well-stocked and we assumed that the two men would not have too bad a night, for it could hardly be much colder up there than it had been at Camp V on the previous evening; but thanks to the excellent bivouac equipment and the double-roofed high-altitude tent, no one had suffered excessively from the cold.

That evening, while our thoughts lingered at Camp VI with our two team-mates up there, Reist and von Gunten were at Camp V, Schmied and I at Camp IV and everyone else in Camp III. On

the 17th Grimm had gone down to Camp II to speed up the transport of oxygen supplies. In the evening he came up to III again, bringing with him a column of porters carrying the precious 'yellow loads'.

The morning of May 18th was very windy to start with. The gale sent huge banners of snow whirling from the peaks and drove snow crystals high in the air around the tents. There was no radio link with the top camp. It was up to Luchsinger and Reiss to assess the conditions and act accordingly.

We in the lower camps watched Camp VI intently, anxiously wondering whether they would press on towards Lhotse in spite of the raging gale, or whether they would content themselves with opening up the route towards the South Col again. It was nine o'clock when we knew for certain that the rope of two was heading for the Lhotse Groove. After climbing for a short time they halted and remained motionless for a long time. When they had still not moved on after a quarter of an hour, the watchers in the lower camps began to get worried, for they could only surmise that the oxygen apparatus had gone wrong or else there had been an accident. Had one, or both, of the men been hit by a stone or fragment of ice falling from Lhotse's rocks? The sun had reached the upper camps and the Lhotse Face, but it seemed hardly likely that they could deal with an injury from falling stones or ice, so early in the day up on the Lhotse Face, in the intense cold prevailing. At long last, after nearly an hour's delay and anxious doubt, the two figures were seen to be moving up the face again, and presently they disappeared into the Lhotse Couloir. Once there, they could no longer be seen from any of the camps, so there was nothing left but to wait and get on with the day's work, which consisted mainly of preparing the loads for the next few days. The Sherpas ferried equipment from Camp V to the cable-hoist, and after noon reported to von Gunten and Reist that Luchsinger and Reiss had been seen almost at the top of the Lhotse Couloir. The lower station of the lift offered a good view into the couloir, but Reist and von Gunten could not assume that this news presaged a final success; for it remained to be seen how the summit party would fare on the climb from the top of the couloir to the twin summits.

Meanwhile the wind steadily increased in force. At times the whole Lhotse Face was veiled in an unbroken cloud of snow powder; the summit structure had tatters of mist scudding across it. Everyone wondered whether the climb could be done in such conditions. Then, at half past two in the afternoon, intense excitement swept over Camp III: Reiss and Luchsinger were seen on the last cliff below the summit. They had evidently decided that the left-hand crest of the summit, as seen from below, was the higher of the two and were making for it after their successful ascent of the couloir. Twenty minutes later Diehl saw them actually on the summit.

A wave of cheering broke out at Camp III and the Sherpas joined in. They kept on shouting: 'Lhotse finish! Lhotse finish!' Diehl and his companions gave vent to their joy by shouting vigorously and waving their scarves. Everyone knew that the two climbers had a long downward journey before them, but we all felt that, in all reasonable judgment, they would accomplish the descent successfully. During those pregnant hours Schmied and I climbed to Camp V, where Reist and von Gunten greeted us with the joyful tidings. They themselves had not been able to see the party actually on the summit, but by way of an exception they had been in hourly radio communication with Camp III and had thus been kept informed about the course of events. We fixed up a permanent observation post and waited anxiously for the return of the two climbers. Even if the descent took longer than the climb, they should be back at Camp VI before nightfall. In the event it was half past six when we saw them emerge from the Lhotse Groove and traverse to the Camp. Our delight was boundless. Our expedition had achieved a success which was ample compensation for all its exertions to date. Even if the monsoon were to break in its full fury tomorrow and drive us down permanently from all our camps, our labours would not have been in vain.

Presently the two red dots disappeared into the tent and we wondered why they didn't come straight down to us, for they could easily have reached Camp V before dark. However, they had both had enough of it and preferred another night at nearly 26,000 feet to the descent through the dusk; Luchsinger told me

afterwards that they would have come straight down if they had any idea of the discomforts of the night that lay before them. Next morning Schmied and I waited anxiously for the successful party to come down. Soon after eight o'clock the two figures emerged from the tent and we were able to follow their descent without any interruption. They were soon at the Yellow Band; there they both cowered against the rocks, for tremendous buffets of wind threatened to hurl them from their stances.

Then they entered the Glacier gully, traversing it on the fixed rope. One of them was in frequent difficulties with a crampon. We went to meet them at the fixed ropes. It was icy cold, snow banners were whirling up off the Lhotse Face and the wind howled among the peaks overhead. The whole scene was drenched in dazzling light—a suitable setting for such a meeting. We embraced without saying much; for we all knew how much the successful ascent meant to Luchsinger and Reiss, as well as to the whole expedition. Reiss, who was leading, answered my enquiries by saying he was all right but that I ought to look after Fritz, who was probably badly frost-bitten. I immediately turned to him, asking him what was wrong and how I could help; but he too refused any kind of assistance, only remarking that 'Ere' was all in and needed urgent attention. I was touched to find that each man was more concerned with the other's well-being than with his own; this was the true team-spirit which had always been our ideal and which had already earned us our first great success. If it continued on the same lines, we had no need to worry about the final results of our venture.

Things were not nearly as bad as they had seemed at the moment of meeting. Our friends were neither so frozen nor so exhausted as we had feared, and they moved on up to our tent, a short distance away, very tired, of course, but happy beyond words. We immediately gave them a strong dose of oxygen and then took off their gloves and boots.

Their hands and feet were numb, but circulation was soon restored by massage. The Sherpas had got ready for the exact moment of their arrival a hot brew of gruel soup, which was greatly to their taste and revived them remarkably. They also got a well-earned tot of cognac. Schmied, who was responsible for

our feeding arrangements, had prepared yet another surprise. Up in the very high camps we all found it difficult to eat anything solid; chewing was anathema. We could none of us bear to look at the dear old mountain cheese we prized so much at home; jam, honey and butter were alike frozen solid. Chocolate didn't taste good and dry biscuits were out of the question. Yet we had to take regular nourishment, if we were not to lose our strength all too soon.

Now, Schmied had noted that the Sherpas, even at great heights, enjoyed nothing so much as their Tsampa and kept on insisting that we lowlanders were weak and sickly because we did not eat that concoction of good grain. That gave him the notion of brewing a porridge of Tsampa to our taste. The warm, brown mess did not look exactly appetising and was very stale; but it tasted very good when mixed with jam, butter or bouillon. We afterwards discovered that, even at 26,000 feet, it was possible to consume several plates of it at one session. It had thus become our main source of sustenance at the highest camps. When Luchsinger and Reiss had quenched their raging thirst with tea and soup, Schmied served them their porridge; they began by turning up their noses at it. Obedient to our advice, however, they tasted the brew; they found it so attractive that in no time they had emptied the big pot.

After this considerable repast, Reiss and Luchsinger, with the deep lines in their faces that betrayed the exhausting efforts of the past days, wanted to go down to Camp III to recuperate; but they told us the story of their climb before leaving. When we talked things over later on down in the valley, they filled it out with a number of details. Up there I was given a report, the economy and impact of which was such as could only have been achieved by mountaineers who had gone over their projected route hundreds of times in their minds beforehand and had the experience to draw comparisons, as to the difficulties, the conformation of the ground and the snow conditions, with innumerable other ascents already performed.

We had never contemplated the ascent of Lhotse from the South Col over its north ridge, which consists of a series of steep cliffs and horrific towers. These obstacles are all at over 26,000 feet

and the technical difficulties would be enhanced by the effects of oxygen starvation along a savage ridge. Experience has shown that it is essential at great altitudes to avoid exhausting rock-climbing in favour of steady ascents over snow ridges or ice-slopes. We had, however, tried to discover whether the towers of the north ridge could be turned on their eastern side. It seemed just possible, but it was very hard to judge from the photographs at our disposal how access could be gained to the steep (Eastern) Kangshung face and more especially how the ridge could be regained from it. We had also considered the possibility of turning the towers on their western side by following the two snow-covered ledges as far as the deep gash of the couloir; there was obviously a way along them, but there was some doubt about the possibility of obtaining a lodgment in the couloir, up which the rest of the route must lie. This couloir (seen on plate 15) seemed to offer a possible route from its very bottom; it was therefore regarded as the best way of tackling the climb and was chosen as the first line of assault. We felt that the route higher up to the left, along the ledges already mentioned, need only be explored from closer at hand if insurmountable obstacles were encountered in the lower part of the couloir.

The couloir was accessible by a traverse to the right from Camp VI, a few hundred yards long. The route then ascends very steeply for about 1,700 feet to a rock-face between the sharp twin crests of Lhotse's summit. Climbers mostly prefer ridge climbs to couloir routes, for the actual dangers are less on ridges; but there is an exception to every rule. In our case we regarded the route through the Lhotse Groove as the only means of reaching the summit without exposed and difficult climbing. Of course there were a number of imponderables about it. Could it be climbed without interruption? Would there be snow and ice to cope with? How would we be able to deal with the step in the middle of the couloir, which we were sure, from countless photographs and our own observation, must constitute its main problem?

All these questions were answered by the report given by Luchsinger and Reiss at Camp V.

Reiss's story ran as follows. 'After saying good-bye to Reist, von Gunten and the Sherpas on the evening of the 18th, we

settled down for the night in the small double tent. After the sun went down in a cloudbank over Cho Oyu we were in the grip of icy cold. The moon got up above the sheer, mysterious bulk of Lhotse. We lay in our sleeping-bags making soup and tea, and at times breathing oxygen. We hoped to snatch a couple of hours' sleep so as to be able to start our preparations early next morning; presently we fell into a restless half-sleep.

'We were awakened by a bright day. By five o'clock the peaks, from 23,000 to 26,000 feet high, away to the west were already sunlit. A gentle but very cold high-altitude wind blew about the tent. The cooking and eating, dressing and getting our gear ready took the usual unconscionable time. We were ready by nine o'clock and, though the sun had by then reached the neighbourhood of our tent, we hardly felt its warmth. We closed the tent behind us, took a quick look down on to the camps below and started on our climb up towards the Lhotse Groove, which at first lay over steep bands of rock. It was there that, a few minutes after starting out, we suffered a mishap. The oxygen supply hose on Fritz's set seemed to be frozen in several places. Standing there in the icy cold, we worked furiously to remedy the defect. We shook the hose, cut some of it away and rubbed it with the idea of thawing it out. Then we put in some of our scanty spare material and after a long and harassing hour the set started to function again. Meanwhile the cold had driven all sensation from our hands and feet, and we were thankful to be able to move on.

'We worked our way over the wind-beaten snow in a long traverse towards the bottom of Lhotse's Face. I led, and Fritz followed with our ropes and pitons. The snow gave good support and we made swift progress, stopping only to warm our numbed feet from time to time by agitating them. Then we moved up into the steep groove, wondering anxiously how the way would continue. To our delight and surprise we found good firm snow in it; very occasionally we would go in perhaps knee deep, but mostly it was very good indeed. We made our track very carefully, so as to be able to use our steps again on the way down. During the first hour in the couloir we gained about 450 feet of height and were already feeling optimistic about our chances of reaching the summit. We climbed on without interruption. From time to

time a strong wind flung clouds of ice-particles into our faces, but our glare-goggles and breathing masks protected us fairly well.

'We began to feel the increasing altitude. Fritz opened the regulator of my oxygen supply for me to four litres a minute, to counter the exhausting work of breaking the trail. The great towers on the North Ridge drew very slowly nearer. We estimated the inclination of the groove at from 40 to 50°. It was indeed fortunate to find firm snow lying there, for if it had been sheer ice the height and steepness of the couloir would have compelled us to hack a step for each separate stride. As it was we could mostly kick steps with our feet or if necessary scoop them out with the chisel end of our ice-axes. After a long time, we decided on a short rest, to enable us to clear the crust of ice from our goggles, to take a breather and to consume a few lumps of glucose. The good prospects of reaching the summit in such favourable snow conditions soon drove us on our way again.

'At about noon we reached the zone about which we had always entertained some doubts, where the rock is noticeably more reddish and the couloir is definitely interrupted by a rock-ledge. We got into the shade of the 100-foot cliff which at that point forms the southern boundary of the narrow couloir. The step, that much discussed obstacle, is the Lhotse Groove's chief obstacle and the key to the climb. The snow groove ran up 100 feet above us not more than a foot in breadth, steepening as it went; the place looked difficult but not impassable. As a security measure we hammered in a rock piton at the start of the narrow passage and ran the rope through a snap-link. I worked my way forward holding on to the rocks with my hands and moved slowly but steadily up. After a rope's-length, Fritz came up to join me and knocked in another piton to safeguard our return. Then we had a look at the rest of the route ahead.

'The groove got broader and opened up in the shape of a funnel against the sky-line. The wind seemed to get caught in the upper part of the groove in some way, for we were struck by heavy gusts. The snow from there on was irregular and ridged, making it hard work to kick steps; the altitude and the heavy labour of breaking a trail in the treacherous snow made me feel weak, in spite of an oxygen supply at four litres to the minute. Our masks

and goggles were cemented with a thick film of ice. It was brought home to us that the route to the top of Lhotse was a difficult one, demanding our every effort.

'Fritz took over the lead and moved steadily upwards. It seemed to me that we were getting no nearer at all to the twin summits overhead, though it was by now quite obvious that the left-hand crest, with the snow cap on it, was higher than its rocky neighbour to the south. Heavy gusts blew down on us from the summit; tatters of cloud chased across the face of the mountain. Every now and then the towers of the North Ridge soared clear among them, and we thanked our lucky stars that we had not been forced to scramble about on those savage rock-pitches in such weather. The snow turned to very steep névé and we only moved forward a rope's length at a time. There was no point in taking any risks here and we protected one another by driving our axes deep into the névé.

'At last we climbed out over the little depression between the summits and were in sunshine once more. The last bit to the summit looked terribly steep. We had to get over one more band of greenish rock and then we were only a rope's length, at an inclination of about 60°, below the summit of Lhotse. The névé was as tough as sheer ice, and we were determined not to take a single risk in such an exposed position. I cut a row of steps, which necessitated hundreds of strokes of my ice-axe. Just below the crest of the ridge I hacked out a large stance in the snow-cap and leaned my head against the face of the mountain in an effort to recover from my exertions. Fritz joined me on the stance, where we crouched, waiting for a momentary lull in the wind. Then we hauled ourselves up over the crest, which was almost as sharp as a knife-blade, and looked down into the smother of cloud covering the eastern and southern faces of the mountain. We were on the summit of Lhotse.

'It was six hours since we had started out from Camp VI down below. We said very little; we were too overwhelmed by the incomparable magnificence and savagery of the view. Before taking a proper look round we removed our masks. Making sure once more that our ice-axes were firmly driven home, we hung our rucksacks on them. On that savagely sculptured summit there

was neither room to sit nor to put a rucksack down. We stood, holding on to the rim of the summit, looking at Everest's mighty south-western precipice and, near by, the rocky summit ridge of our own peak, plastered with ice crests and cornices. In spite of the cold we took our gloves off and fastened the Nepalese and Swiss pennants to our ice-axe; I fastened our mascot, the little woollen monkey, to the axe-head.

'In preparation for a summit photograph, I pulled a red pixy-hood over my heavy cap of lamb's fleece. This had been given me by Gustav Olander of Valadalen, the famous Swedish ski-expert, while he was staying at Davos in the winter. We had a good deal of trouble in posing ourselves upright for the photograph, for we were tired and limp after our strenuous ascent; and our tiny platform offered very little freedom for motion—indeed every movement we made was quite a dangerous operation. The most important thing was to prevent the wind from carrying our gloves away while we were taking the pictures. We stayed up on the summit about three-quarters of an hour. At intervals we could just see the camps, where our team-mates were waiting down below, through the driving mists; the way down to them looked endless, and we knew that a laborious descent lay before us. The oxygen supply had given out on the summit, but we put our masks on again as a protection against the cold. The gale increased in force, attacking us like some wild monster. Our hands and feet had lost all sensation; so we got ready to go down.

'We took every precaution against slipping or falling, and the steepness of the couloir impressed us much more on the way down than it had on the ascent. The only way was to work our way step by step downward with the utmost care. We moved one at a time, because our numbed hands would not have allowed us to arrest a slip by the other member of the party if we had both been moving at the same time. We made progress foot by foot, securing each other around the axe. After an hour we came to the narrow section of the couloir, where we fastened 130 feet of line to the top piton and climbed down on this fixed rope, thus overcoming the chief difficulty of the descent. Slowly but steadily we continued downwards till finally, with a feeling of relief, we were able to leave the couloir and traverse across to Camp VI. At a

quarter past six we reached the tent, which had been collapsed by drift-snow, in a state bordering on exhaustion. It was too late to continue downwards; the sun was setting and we therefore started digging the tent out of the snow. It was a long time before we were able to crawl into it. We got into our sleeping-bags and started to boil soup and tea; twelve hours had passed since our last hot drink. It took ages to convert snow into boiling water, and we took occasional whiffs of oxygen to restore our warmth; as my feet were still completely numb, I took off my reindeer-hide boots. The hot tea put new life into us. Neither of us had actual signs of frost-bite and we consoled ourselves with the thought of getting down to Camp III next morning. The snow-crystals rippled monotonously and with soporific effect on the roof of the tent, and we fell into a restless slumber, lulled by this steady sound and the occasional howling of the wind.

'Soon after midnight I began to feel very uncomfortable. Drifting snow had pinned us down up to our knees. Fritz, lying on the inner side towards the slope was absolutely unable to move. There was nothing left for me but to disengage myself from my sleeping-bag, put on my stiff boots again and try to clear the tent to some extent, an operation which took half an hour's hard work. There were only a few stars in the sky and it was not long before the sun's first rays touched the tent. All the time we were laboriously striving to get ready to start, great banners of blown snow swept the Lhotse Face; in a few hours' time the tent would be completely buried. At last we shouldered our rucksacks and started on our downward way. Our throats were utterly dehydrated and we had to sit down and rest from time to time. At the Yellow Band the wind descended on us again in its full fury; we clung to the rocks till its first fierce onslaught died down. Twenty minutes later we were safely back in Camp V.'

Reiss's report naturally raised a number of questions and, in spite of the exertions they had undergone and the discomforts of the night in a snow-silted tent, Luchsinger was ready to answer them. The party had taken a half length Grilon rope, that is only 50 feet, to keep down the weight of the equipment. Of the four rock-pitons taken along only two were used; none of the three ice-pitons proved necessary. They wore woollen trousers and

down-jackets with protector-trousers and jackets over them, reindeer boots with crampons, and gaiters fitting right over their boots. Their hands were protected by silk gloves with woollen ones on top; they took their nylon-fur gloves along in their rucksacks as spares. They wore Suval-spectacles with motor-cycling goggles over them to protect their eyes. On their heads they wore the expedition's well-tried fur caps; and as they were going on a definite snow and ice climb they had ice-axes and ice-hammers.

They made a good breakfast before embarking on the climb—Ovomaltine with condensed milk, biscuits, vitamin cheese and chocolate. They took with them on the climb some biscuits, chocolate and glucose as well as a flask of tea with an addition of Ovomaltine, but they had no time for a snack on the way as it turned out; they only stopped at intervals to rest for a minute or two and suck a piece or two of glucose. And they only thawed out the tea they had taken along after getting back to the tent.

They both started off on the climb with fresh oxygen bottles, but decided not to take a reserve bottle along, so as to keep the weight down, preferring to risk a descent without oxygen if necessary. They felt that their ability to move over the ground quickly might be the decisive factor, and both agreed absolutely that they would probably have failed to climb Lhotse if they had carried a second bottle, weighing some 14 lbs.

The mishap just after the start resulted from Luchsinger's having put his breathing apparatus outside the tent while they were getting ready to go, intending to put it on only at the actual moment of departure. During that time, the condensed water which had gathered in the hose and mask during the night must have frozen up. Reiss had been breathing oxygen all the time since the start of the day and his apparatus worked perfectly. Luckily, before starting from Camp III Luchsinger had put a complete reserve mask in his kit, and they had got his set working again by fitting this second mask. They had no difficulty with their oxygen supply the rest of the way, the leader breathing it at four litres to the minute, while the second man made do with three; each time they changed the lead they altered their regulators; they were thus able to climb with practically no difficulty. The long

time taken over the ascent of Lhotse was due more to the difficult nature of the ground than to the effects of altitude.

Both men had seriously underestimated the length of the traverse to the foot of the couloir, which they thought would take about twenty minutes. Actually it took an hour. The entrance to the couloir was at about 26,000 feet and from it the groove ran almost unbroken to the saddle between the twin summits. To begin with, it was about sixteen feet wide, with a very steep rock ridge running up its right-hand side, its brittle rock and outward sloping strata much too difficult to offer a climbing route; so they disregarded it from the outset. Along its left-hand side ran a less prominent ridge, but here too the rock was too brittle and bare of holds to offer a route. It was a question of sheer rock bulges which petered out into the face; the couloir was definitely the only route to Lhotse's summit. This confirmed the opinions of our Genevese friends and Reiss's personal observations in 1952.

Naturally, we were particularly intrigued by the key pitch to the couloir climb, the obstacle which was climbed with the help of protective pitons and descended on the rope they hung from one of them. Luchsinger explained that the couloir broadened out just there, a secondary groove falling into it at that point from below the gendarmes on the North Ridge. Above this wider section there is a steep barrier-like pitch about sixty-five feet high; thus it was possible to climb because there is another narrow groove running directly up over the ledge. The groove was full of hard snow, which made it possible to get up without having to remove crampons fitted with frontal points. Luchsinger and Reiss had brought down rock samples from this red barrier, of which they spoke with great respect; to balance that they left the fixed line hanging up there. It had been long enough to afford them security for sixty feet below the ledge.

After the pitch described, the couloir broadens again and continues, more deeply imbedded than before, to the saddle between the summits. Above this saddle the right-hand summit lifts in a horrific corniced rock-tooth nearly a hundred feet high; the one to the left rises as a steep névé and ice-pyramid for more than a hundred and fifty. They left the saddle to their right and climbed, by way of a very steep corniced ridge, which curves down to it,

to reach a small shoulder of névé below a prominent band of green rock. This rock band lies horizontally across the whole summit-pyramid. At the shoulder, a little more than eighty feet above the saddle, they were able to look for the first time down the enormous cornices of the summit ridge on to Lhotse's eastern face. The green band turned out to be vertical and terribly brittle; they had to climb it with extreme care. Then followed the last airy rope's length of sheer ice-technique. They threw their oxygen bottles away on reaching the summit.

Luchsinger reported that they came down alternating the lead continually on their 50 feet of rope; they secured each other dozens of times while a furious wind beating up through the couloir belaboured them. The snow crystals, blown up through it from the Lhotse Face as though through a wind-tunnel, rattled on their goggles. They had to climb down with the utmost caution, for a slip would inevitably have resulted in a headlong glissade, which could not have been arrested before reaching the Cwm. They both said no without any hesitation when I asked whether the couloir could be climbed in iced conditions; they maintained that there was nothing like it in the Alps and it was steeper than the Marinelli Couloir on Monte Rosa.

Unfortunately blown snow and wreaths of mist ruined the visibility. The difficulty of the ground and the icy wind were other factors resulting in a very scanty haul of photographs. There were a few good ones, but on the whole the bag was small. We fully understood the reproaches our friends were heaping on themselves on this account and we tried to console them with the thought that there were still many interesting subjects lower down which had not been properly photographed.

In both men's judgment the route from end to end set extremely stiff technical problems, being extraordinarily exposed and so steep that it would have to be classified as 'Extremely Difficult' at a much lower altitude.

These accounts made us feel very glad to have our team-mates safely back with us and in a condition which was a great tribute to their fitness and endurance. Reiss had the tips of two fingers slightly frost-bitten, but fortunately the damage was only incipient and a few days resulted in complete recovery. The cold had

left its mark on both Luchsinger's wrists; probably some snow had forced its way between the top of his gloves and the lower fastening of the sleeve of his protector-blouse, but again, luckily, without serious damage.

After their halt at Camp V, they went on down towards their well-earned rest, tired but very happy. They halted again for a short time at Camp IV and then continued on their way to III, where their team-mates and a crowd of Sherpas came out to give them a joyous welcome. Leuthold, in his medical capacity, was relieved to see them arriving in such good condition. Both men recovered very quickly from their gruelling; a few days later both were to be found up at the South Col again.

When on May the 18th 1956 the pennants of Nepal and Switzerland fluttered out on Lhotse, hitherto the highest unclimbed peak in the world, it was the first occasion on which Swiss climbers had reached the summit of an 8,000 metre peak. We were all thrilled to the core by this achievement. Every one of us had played his part in making the assault on Lhotse a success and the result had put us all in high fettle for the days still to come.

CHAPTER XVII

The South Col

THE pass-like defile of the South Col lies between Everest and Lhotse at a height of 25,850 feet. On May 26th 1952 the Wyss-Dunant Expedition established their Camp VII on this spot, which has since become world-famous; they were the first ever to reach it. Their laborious ascent of the Geneva Spur had been a valuable contribution to the final conquest of Everest. On November 19th Chevalley's expedition also reached the South Col, where they sited their Camp VIII. The spear-head of Hunt's successful expedition in 1953 arrived there on May 21st. If we managed during the next few days to force our way up to it, we should be the fourth expedition to visit that historic place. The reasonably good weather promised to hold out and we had to take full advantage of the boost our success in climbing Lhotse had engendered. Our motto for the days ahead was: 'Now it's Everest's turn.'

On May 20th Schmied took two Sherpas up from Camp V to VI. On the same day I took four Sherpas, carrying a variety of equipment, to the lower station of the cable-lift above the Yellow Band. Meanwhile Grimm and Marmet had joined me in Camp V. Everyone was intent on establishing a good pushing-off place for the ascent of Everest. If the weather did not deteriorate, we would have to make our decisive effort in the next few days. We were already in the second half of May; the monsoon had already sent ahead a number of its messengers and might easily set in with full force any day now. We would have no time to waste.

Next day Marmet and I, with eight of the Sherpas, also went up to Camp VI. I had offered the Sirdar oxygen equipment for six Sherpas on the ascent, but he refused my request, on the grounds that it would be much better if all the Sherpas climbed under the same conditions, that is without oxygen. Our route lay horizontally across the broad, steep Lhotse Couloir, along the fixed

ropes to the Yellow Band, where there was fresh snow lying. We traversed it on a snow-ledge, where the fixed ropes were a welcome aid, and then started on the ascent. We could now see neither Camp VI nor the lower part of Lhotse's north ridge and the route seemed to lead up on to a protruding snow-crest. After a few rope's lengths over rough slabs criss-crossed by narrow, snowy ledges we came to the snow-field. Half an hour later, we reached the lower station of the cable-lift and loaded two packages on to the empty aluminium sledge. It was very odd in that lonely place to see a cable stretching up to our friends in their invisible Camp above, and at the same time a great comfort to have this means of transport at our command. It had cost great efforts to bring the winch, cable and sledge up on to the Lhotse Face and we had great hopes that all our labours would be repaid during the days to come.

Our way led on, zig-zag fashion, between the Geneva Spur and the cable of our hoist. The wind had beaten the snow solid and we were grateful for our Bhend crampons on the extremely steep slope. As we climbed on, a ghostly hand set our sledge in motion too; the double load moved steadily upwards, though not more quickly than we ourselves, for winding-work at about the 26,000 foot level is likely to be somewhat more exhausting than down in the plains.

In spite of our four litre to the minute flow of oxygen, Marmet and I found it very hard going. The sun burned pitilessly through a thin layer of mist; the glare was almost unbearable and in such heat our masks were uncomfortable. As so frequently happened during the expedition we suffered more from heat than cold. I loosened the fastening of my mask, as Marmet had done, and just let it rest on my mouth. I found I could breathe out all right through my nose, but the continual alternation between breathing in through my mouth and out through my nose brought me no comfort; it simply made me nervous. I fastened the mask again rather higher up and now tried to push it away from my chin at every stride, so as to breathe out through my mouth without having to encounter the pressure of the valves.

I spent a long time experimenting in an effort to discover the best method of breathing, but whichever way I set the mask I

found climbing laborious. The best thing seemed to be to stop for a short time every five or ten minutes, like the Sherpas, to recover one's breath.

The slope gradually eased off, and the North Ridge of Lhotse came into view again through breaks in the clouds, so we must have gained some height. We actually caught sight of the top end of the lift and Schmied working at the winch in his bright red protector-trousers. The lift cable was 2,300 feet long, for we had joined two steel cables of 1,150 feet each. If the hoisting of the sledge was a laborious operation, the last two hours had taught me that climbing could be laborious too. This experience made me feel more kindly towards the sledge than I had at Jainagar at the start of the expedition, when we were loading the immensely heavy cable-drums on the bullock-carts, with a view to dragging them for months on their way to the point where they would eventually be used, at nearly 26,000 feet.

At last we reached Schmied and his party, and I was able for the first time to inspect the place where our Lhotse team had slept. The tent clung to the precipice like a fly to a wall. In order to accommodate the equipment or any additional tents it would be necessary to build new platforms, which would be exposed to continual obliteration by drift-snow rippling down the slope, nor would it be at all easy to find suitable places for them. There was only a thin layer of snow on the rocks, and the slope was not nearly as sheltered from the wind as we had expected. To rub this impression well in, there were fierce gusts of wind attacking us from the north and east, taking us in the flank, and thick clouds of snow were being blown in our faces.

Schmied promptly suggested, with his usual conviction, that the Camp should be moved to the South Col. He had worked and lived twenty-four hours on this steep face, and he had had his fill of it. I was convinced by what I saw and what Reist and Luchsinger had already told me that it was an essential move. So we got down to work without further delay.

André Roch, that experienced Himalayan climber, had warned us before we left that the South Col is a place 'where you go through it,' a view confirmed by Reist and others who have been there. The perpetual wind which blows over it makes a sojourn

up there either uncomfortable or unbearable. Roch had therefore counselled us to site our camp on the southern side of the Geneva Spur, from which Everest's South Ridge could be reached in reasonable time; all these arguments had influenced us in placing the first tent of Camp VI on the Lhotse Face, to the south of the spur. It was now obvious that the site, swept by the north wind and uncomfortably exposed to driven snow, was no good. A camp on the South Col might be uncomfortably open to the assault of the wind; but if the tents were properly sited, snow drifts could not hem us in to the same extent as here, high on the Lhotse Face. We could still not see the South Col, but we were less than an hour below the crest of the Geneva Spur, and from there an easy descent led to its broad and level saddle. The longer we stood there, only too conscious of the extreme steepness of the snow slope which plunged unbroken below us to the Western Cwm, the more the South Col appealed to us as a camping site.

In order to climb to the top of Everest from about 26,000 feet, one more day's staging is needed than for Lhotse, and for that very reason a better-equipped base would have to be established; this could not be sited anywhere except on the South Col. Schmied had already made preparations for the move. So we climbed, carrying the additional camp equipment, to the top of the Geneva Spur. The tracks of Reist's ascent on May 17th had already disappeared. Although he had climbed the Geneva Spur without oxygen, he had only been away from Camp VI an hour on that occasion. His objective in making that détour had been characteristic of the man: he wanted to take a few good photographs of the South Col from above in case the monsoon broke and so kept us from ever reaching the Col at all.

We made good progress up the easy, wind-blown ledges of the Geneva Spur in spite of our extra loads, traversed the crest of the Geneva Shoulder and descended over the gentle slopes beyond it to the South Col.

It lay before us just as we had seen it in so many photographs and read about it in so many accounts—a broad level expanse of snow and boulders, dominated by Everest's enormous summit structure, which now revealed to us its majestic face, towering another 3,000 feet above us. Yet the summit which we could see,

with a great snow-banner trailing from it, was only the subsidiary South Summit. Beyond it, withdrawn and out of sight, another summit ridge went winging, cornice-crowned and nearly four hundred feet high. We wondered whether we would have the good fortune to set eyes on it.

We had, however, little time for pondering about Everest, in spite of the tremendous impression the close-up view of the south face and south-east ridge of the mightiest of all mountains made on us all. Even on the way down to the col we came upon the remains of previous South Col camps. Tattered British tents, oxygen cylinders, fuel tins, provisions and sleeping-bags lay littered about. We dumped our loads about 100 yards to the west of the camp site and set to work at once to erect our tents. It was impossible to anchor them in the rubble with tent-pegs; but we were able to weight down the projecting ground-flaps, provided for this very purpose, so successfully with stones that we felt confident that our tents could survive the fiercest gale. We anchored the guy-ropes to particularly large boulders.

Meanwhile Dawa Tenzing and five porters had gone down again. Da Norbu, Pasang Phutar II, Pa Norbu and Annullu stayed with us, and we all went out hunting for useful treasure-trove. The first things the Sherpas retrieved were remains of tents, from which they made extra neck-scarves for themselves; but they also seemed to think bent tent-staves worth salvaging. Schmied concentrated on provisions, Marmet was primarily intent on oxygen apparatus. He had had the foresight, before leaving Switzerland, to have suitable connecting-sleeves manufactured, so that British bottles could be fixed to our gear. We were unable to use the oxygen generators left over by the Wyss-Dunant Expedition; to compensate for that, one of the British petrol burners, a Primus, seemed a useful acquisition. And we actually found a full litre of petrol in a kerosene tin which had been partly used.

We began to feel very hungry. So did the Sherpas, who were asking for angu, khana and oxygen. We understood enough of their language to recognise their urgent need for fire, food and oxygen. We had with us a sufficiency of all three commodities and our supplies had just been enriched in very welcome fashion. After we had attended to the Sherpas, who were also feeling the

altitude, they started preparing a meal. Da Norbu got the British cooker going in the most expert fashion, working away at the pump unremittingly. He seemed to me to have exceeded the prescribed number of strokes considerably and, fearing for our safety, I asked him to desist. He only laughed at me and went on pumping cheerfully. He knew from experience, as I did not, that to produce the required pressure in the thin air of 26,000 feet many more strokes of the pump are necessary than at Alpine altitudes.

We had left the pack containing the Sherpas' oxygen outfits lying on the south side of the Geneva Spur. We needed it now if we were to ensure for our loyal helpers the night's rest which they had so richly earned and which was now essential. We could of course lend them our own apparatus at times during the afternoon, but that would be impossible during the whole of a night; so the pack had to be fetched. Quite understandably nobody competed enthusiastically for this extra chore. In the end Marmet volunteered for it, and after a brief argument his Sherpa, Pa Norbu, who was a bit excited but not noticeably tired, and had already assisted both in the erection of the tents and the search of the abandoned camp, joined him. They then climbed back over the Geneva Shoulder and at the old Camp VI picked up not only the oxygen apparatus but some extra loads as well. They rejoined us in exactly two hours, hale and hearty. Climbing without oxygen assistance they had found the return journey very exhausting, and had been compelled to dump their loads every 50 feet and gasp for breath.

Dinner was ready by the time they got back. Each man consumed at least two litres of fluids, tea and soup as well as the inevitable tsampa porridge. We cooked the vitaminised goat's cheese in a tin cover to the consistency of a rarebit—it is up to the manufacturer to say whether we heightened the vitamin content in the process—and drenched the sardines in lemon extract. Hungry as we were we could not force food down our throats unless it was made tasty by extraordinary methods. Finally we filled our flasks with tea, so as to be able to swallow our sleeping tablets more easily and also for use as foot-warmers.

Once again we went over our plans. The next morning, May 22nd, Schmied and Marmet, with four Sherpas, were to push on up the South-East Ridge and there establish and occupy Camp

VII, the Sherpas returning to the Col. On the following morning the summit party would press on up the ridge, if possible to the summit, and then climb down to Camp VI. A second party would climb up the South-East Ridge on the same day and spend the night at Camp VII.

Our conversation petered out; we all laid our masks on our faces and regulated the oxygen flow to half a litre a minute. We soon fell asleep in our tiny tents between Everest and Lhotse and spent a passable night.

That evening of May 21st our doctor, Leuthold, had joined Grimm for the night at Camp V. In accordance with the plan, Reist and Von Gunten had climbed during the day to Camp IV, while Luchsinger and Reiss were resting at III. From his headquarters there, Diehl was supervising the supply line to the South Col in his usual reliable manner. Our whole team was thus poised for the assault at all camps. It was almost impossible to establish radio-communication from our great height, but I knew I could rely on my team to equip our camp on the South Col, Everest's threshold, with all the essentials for an attack on the summit. It was comforting to be so conscious of their support up here, for the South Col, in spite of its celebrated and unique situation, was no place in which to stay any longer than necessary. When Hunt saw it for the first time and prepared to climb down into its depression from the top of the Geneva Spur, he compared it to a trap. Indeed, many of our predecessors had found the short climb up again to the Geneva Spur from the saddle rather risky. We too knew that there was no line of retreat for us except that snow coverlet, which seemed to be thrown over the Geneva Spur like a saddle-cloth over a horse's back. In normal circumstances it was half an hour's easy ascent; but it could turn into a critical ordeal for a man under the effects of exhaustion, wind or cold. Those 300 feet were an obstacle seriously to be reckoned with.

After a glorious sunset and a clear, cold night we were astonished to be greeted on the morning of the 22nd by a snow-fall; but the sun kept on penetrating the mist and revealing the presence of clear weather up above. Activities began in every camp on the mountain. Schmied and Marmet made up loads, and our four Sherpas went back to the old Camp VI to fetch more equipment,

chiefly oxygen. I got the packet of photographic plates which Professor Eugster had given me for cosmic ray experiments out of my pack and laid it down outside our tent. Then I made a thorough search for the plates Hunt had brought up, which ought to have been lying on a big boulder near the camp, but failed to find them.

As the mist was lifting slightly, I did a round trip of the South Col plateau. The view across Nuptse's sharp, corniced ridge made me realise fully the great height of our camp-site. We had so often looked up from Thyangboche a couple of months ago at the enormous Nuptse Wall, and now it was below us. The view down into the Cwm was indescribably impressive: Camps II, III and IV must be somewhere down there. Outspread to the north and east lay the vast spaces of Tibet, that mysterious land from which the Sherpas had emigrated to Nepal 200 years before, and to which they still regularly returned across passes 20,000 feet high. But nowhere was there a sign of life, nor a single spot of green: nothing but a sea of brown and white ranges, stretching away to infinity. To the left soared Everest's North Ridge and at my feet the unclimbable ice and snow of the East Face fell away to the Kangshung Glacier from which, to my right, Lhotse's savagely-shattered East Ridge shot up again, lifting its towers to the sky. I knew that ridge from many a photograph, but none of them had succeeded in giving me anything like a true idea of its size and steepness, because I had looked at them with eyes accustomed to Alpine, not Himalayan, comparisons.

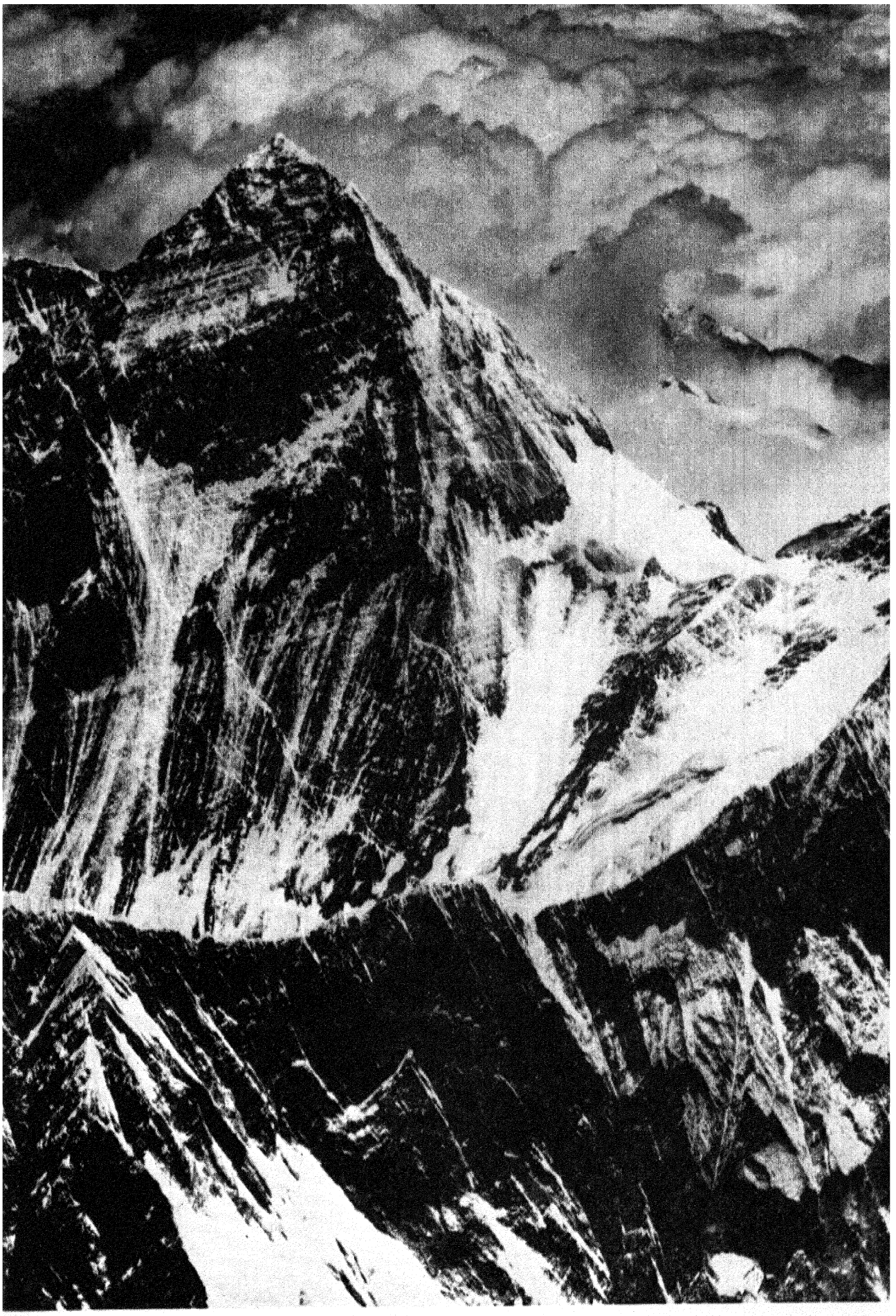
It was by now mid-day, the Sherpas had come back, and we tried to eat a light meal. Two mountain daws, which had come up on the rising air-currents, inspected us curiously and caught the bits we threw up to them. Then Schmied, Marmet, Da Norbu, Pa Norbu, Pasang Phutar II and Annullu—I had promised the Sherpas a bonus of fifty Rupees each—shouldered their loads of from 30 to 40 lbs. Schmied, who is usually so unemotional, shook my hand and said: 'Look after the wife and the kiddie, if I don't come back.' 'Of course,' I answered, 'but remember that there's no sense in committing oneself on any mountain, Everest included, to a point where you can't get back. Best of luck and watch your step.' They soon passed from my sight in an increasing

flurry of snow. There was nothing more I could do for them; nor did they need any help from me, for I knew I could rely on their skill and strength. All the same my hearty wishes that Providence would be kind went along with them.

Left alone on the South Col, I started off for the Geneva Spur, intending to see how things were developing on the Lhotse Face and to fetch up some more equipment. Half-way up I met Grimm's heavily-laden party and returned to the Col with them. There I gave Dawa Tenzing, who was once again among the team, a message for the lower camps, asking for the strongest possible support in oxygen and Butagas supplies. Then we all started off for the Old Camp VI again; the three Sherpas were to go on down to Camp V or even further, while Grimm, who was still very fresh, and I wanted to bring up the tent from Camp VI with all its oxygen and Butagas. There were only three bottles of oxygen up at the South Col and everything possible had to be done to strengthen our slender supply.

Just as we were crossing the crest of the Geneva Spur two gaily coloured figures appeared, one large and pink the other small and dark red: von Gunten and Reist, who had come straight through from Camp IV, thus climbing the Lhotse Face for the third time in a very few days. In spite of this incredible performance they did not feel exhausted and were very keen to carry on with their assignment and the chance it offered them to climb Everest. But as their Sherpas had fallen behind them and seemed hardly likely to get any higher than the old Camp VI, the pair, instead of being able to rest, would now have to carry their packs down to the Col and then come back again over the Geneva Spur.

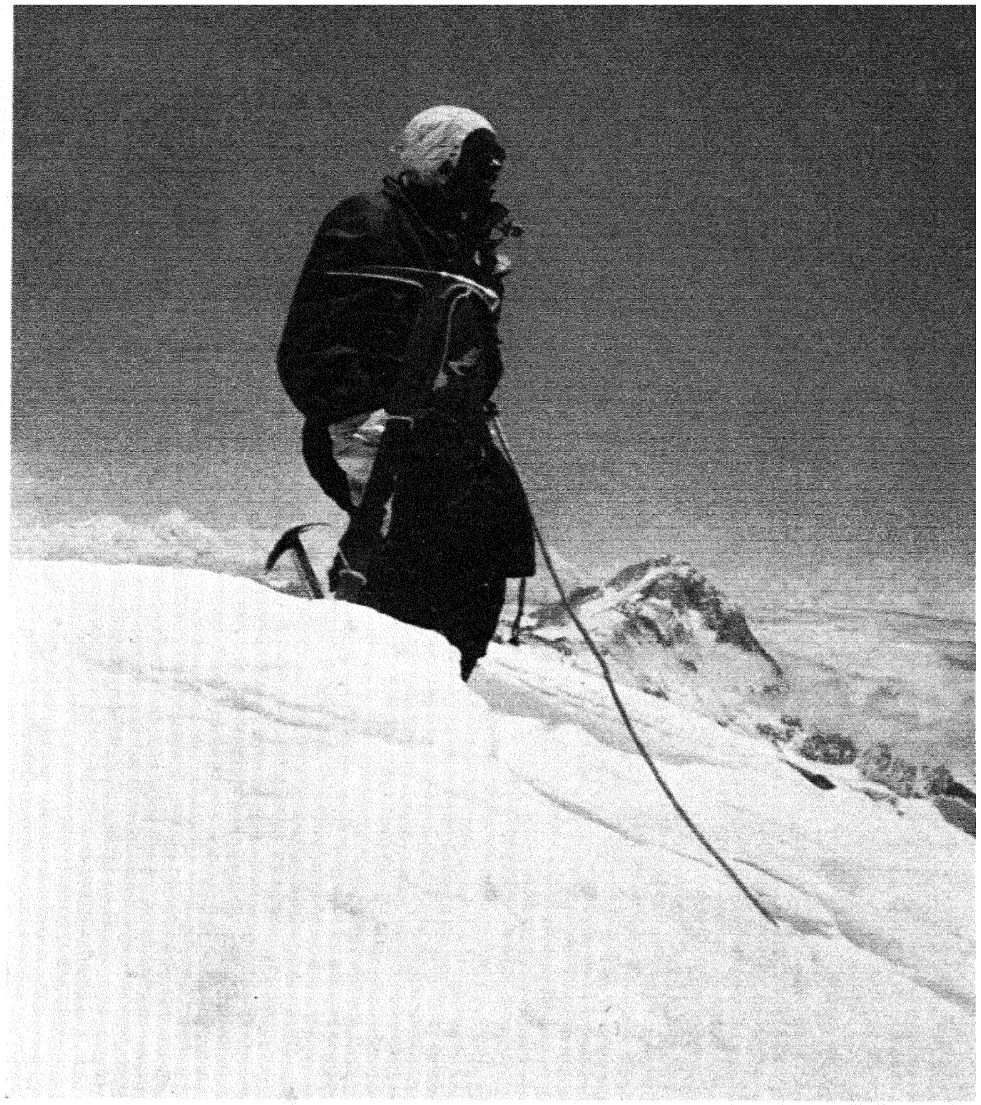
Grimm and I reached the old Camp VI and began to dig out the tent, which was deeply snowed-under. This proved a most exhausting occupation. The snow was as hard as névé and when, at last, we thought we could roll up the ground flaps of the tent, we found ourselves impeded by two anchorage ropes. We had had enough, however. So we decided to abandon digging and simply cut the ropes with our pocket-knives. Grimm shouldered the tent and started off again. With the help of Reist and von Gunten I searched the snow for the oxygen cylinders and waited for the Sherpas, who were by now close to the terminus of the cable lift.



17. *The South Col* (25,850′) *and above it Everest* (29,002′) *with the southeast ridge rising from the Col to the summit.* Indian Air Force photo



20. *View from the Geneva Shoulder on to the plateau of the South Col, with Everest in the background. The summit is not visible; it lies further back at the north end of the summit ridge*



Dölf Reist on the summit of Everest. Makalu (27,790′ *in the background*

I turned the handle for twenty minutes and then gave it up. The Sherpas finally arrived at about five o'clock. We relieved them of their loads and sent them down again at once. I learned later that the party at Camp V had kept a close watch on them as they came down and had gone out to meet them above the Yellow Band with lanterns, to ensure their safe passage to the tents through the falling darkness.

I had used up the remainder of my oxygen supply while working at the winch. I therefore got hold of a new bottle, but no amount of exertion enabled me to unscrew the frozen end-plugs. Von Gunten was in the same boat. Only Reist's bottle was still registering a sufficient pressure of thirty atmospheres. He consequently offered it to me, an offer I refused, for he had already put in some very exhausting days and tomorrow he was to go on up the South Ridge; it was therefore essential to husband his strength. It meant my climbing the 300 feet up to the Geneva Spur without oxygen assistance; in this I succeeded, even if somewhat slowly and laboriously. At first I tried to take fifty steps between rests, but very soon I could not manage more than twenty. Von Gunten, who was rather more heavily laden, was also glad to fall into the same rhythm. It had meanwhile become pitch dark, though the cloud-cover occasionally parted to allow a few stars to twinkle down on our path. Then the wind fell on us again in its full fury and dictated another rest. We stayed close behind one another and soon after eight o'clock we passed along the line of marking-stakes to the tents of the South Col Camp.

Grimm and the four Sherpas, who had come down from the south-east ridge, had warm drinks ready for us there. My hands and feet were terribly cold. Da Norbu and Pasang Phutar II soon got rid of my crampons, puttees and boots and started to massage and knead my toes and fingers vigorously, to restore the circulation.

I wondered how Schmied and Marmet were getting on in their Camp up on the ridge.

CHAPTER XVIII

Everest

WHEN, on the early afternoon of May 22nd, the small party had left the South Col to ascend Everest's south-east ridge, only the four Sherpas were roped together. Schmied and Marmet had preferred to go unroped. They would thus be able to take turns in kicking a trail and one of them would always be free to apply his energy exactly where it was needed, whether to regulate the oxygen apparatus or to safeguard the party at steep points on snow or rock. This measure had already proved itself in the view of both these men, who were in the finest condition bodily and mentally, but it is not meant to recommend going unroped as a normal practice. At all events, they reached their objective without mishap. The party climbed away from the tents in an easterly direction towards the small shoulder rising from Everest's south-east ridge at a height of about 26,400 feet. The oxygen sets were carefully tested again at the foot of the shoulder, the flow being set at three litres to the minute; all the sets were working perfectly. The party then turned sharply to the left and moved diagonally upwards to the foot of the couloir which runs up, growing steeper and narrower as it goes, to meet the ridge at about 27,250 feet. They started climbing the couloir and Schmied used the pick of his axe to make a step for each stride in snow which was sometimes wind-compressed and at others frozen to an icy consistency. In a very short time, in spite of the hard work entailed in making the trail, he was many yards ahead of the party of Sherpas, which Marmet was reinforcing to a certain extent from his station in the rear. The Sherpas climbed slowly. One or other of them had continually to adjust something or other on his oxygen apparatus, the straps of his crampons or some other part of his equipment; and that naturally meant that the whole party had to stop. All the same, the column moved forward steadily and reached the place

in the couloir, now very steep and narrow, which Schmied, in the lead, had chosen for their passage on to the rocks and had prepared with steps.

Above it slabby, step-like rocks provided a steep and difficult climb over a well-defined rib to the true crest of the ridge. This was the first rock problem set by Everest. Two hours after leaving the col they had gained that important place in Everest's history where Lambert and Tenzing had sited their tent four years earlier. There they rested a short time and took some pictures. The only signs of that plucky attempt of May 26th 1952 were a few bent tent-poles. The ascending party were here to some extent sheltered from the wind which lashed the ridge, screaming. The Sherpas were reluctant to leave the spot, having reckoned that Schmied and Marmet would be content with that objective; but in the end they were persuaded to shoulder their loads again.

From here on it was possible to follow the moderately inclined ridge without any great difficulty. Every yard of progress they made was an invaluable curtailment of the next stage ahead. Schmied and Marmet were now within measurable distance of achieving the plan, discussed over and over again and a hundred times recognised as the only right one, of establishing their bivouac so high on the mountain that it would be humanly possible to attain the summit the next day. In spite of the gale and the bitter cold they pushed on resolutely, intent on reaching a height of at least 27,550 feet.

An hour further up the party called a halt and decided to put up their tent. Five or six yards to the west of the crest of the ridge they found a small hollow in which it proved possible to make a comparatively level platform. There, with the day's objective fully achieved, climbers and Sherpas laid down their loads. The ridge lifted more steeply ahead, hiding the South Summit from view. Judging by the height of Lhotse, the place must be about 27,550 feet up. Schmied and Marmet had decided not to climb any higher, though they knew that the British Camp had been pushed 300 feet higher up the ridge. The wind had increased in strength, it was five o'clock, and the returning Sherpas had a long descent before them. Da Norbu, Schmied's faithful orderly, helped with the levelling of the tent site; then the rope of four Sherpas started

off again, and very soon they had disappeared from sight in an increasingly heavy snowstorm. They wore their oxygen apparatus and were visibly relieved to be on their way down to the comparative comfort of the South Col's surroundings.

The Sherpas climbed steadily down the ridge, negotiated the short pitches of rock-climbing down into the couloir and started to descend it. Grimm, who later that afternoon had been the first to climb back from the old Camp VI to the col, was watching them. Suddenly, to his horror, he saw the whole party start to slide, high up in the couloir, and come hurtling down the steep snow funnel at increasing speed. As they slid downwards the Sherpas began to leap-frog each other and failed to arrest their headlong journey till they reached the less steep slopes leading down to the col. Grimm followed their movements with great anxiety, for he feared they must have injured each other with their crampons, but after a little while they all got up and started down again towards the camp. They had got away unscathed from a slide down fully 750 feet of the slope, a piece of fortune largely due to the down-suits they wore; these were torn in places, but they had saved their wearers from injuries inflicted by crampons and ice-axes.

Da Norbu, certainly one of the best of the Sherpas, reported on their return to the South Col that they had carried all their loads to the place selected by the Sahibs for a camp, a feat of which he was obviously proud. The four men had faithfully carried some 150 lbs. of equipment up to 27,550 feet.

It is probably typical of the lowering of one's powers of reasoning at these altitudes that we hardly gave a thought at the South Col to the serious consequences which would have fallen upon the expedition if one or more of the Sherpas had been seriously injured during their tobogganing party. It was only much later that I realised that to carry down a single seriously injured man would have demanded the last ounce of effort of every man we had on the mountain. Faced with such a transport problem we would hardly have been in a position to muster the necessary strength for an attempt on Everest. Still later I reproached myself most seriously for allowing the Sherpas to climb down alone. Their livelihood depends on their walking and carrying loads on

bad tracks or over country entirely devoid of paths; this results in a measure of sure-footedness nowhere excelled, which frequently amazed me. But since they are used to carrying out their excursions at great altitudes and on difficult ground only in the company of highly experienced Alpine climbers, who choose the route and are responsible for safeguarding them, they are still lacking in the complete self-confidence which is the making of a truly safe climber. We had not taken this fact sufficiently into account.

Schmied and Marmet had in the meantime succeeded in putting up their little tent while the wind howled around them. The fresh snow which had fallen during recent days was whirled across the ridge from the east side over into the depths of the Western Cwm by an unbroken series of violent gusts. The two men weighted the tent down with stones and anchored it with rock-pitons to prevent its being carried away into the abyss. It would have been difficult enough to put up a tent in the Alps in similar conditions; here, however, every movement of a hand exacted double or treble the effort. They were a long time groping around to finish off the various security touches to the tent and getting the Sherpas' loads and their own rucksacks under cover. They were quite worn out by the time they had themselves gained its shelter and absorbed a really good dose of oxygen. They crawled into their sleeping-bags with their boots and clothing still on, there to attend to their household affairs. Each of them had an air-mattress and a light down-bag and there was a nylon bivouac-sack as well for them to share. For cooking they had a Butagas-burner and two small Meta-packets. Their rations consisted of a summit-pack, one of those packages assembled in Zürich containing a day's provisions for a rope of two. They were well-equipped and could be well satisfied with the five full bottles of oxygen left with them when the Sherpas turned back. As far as we could judge, they had everything a forward party could need on the eve of their attempt on the summit.

Snow was falling heavily at the South Col. I had no idea that by nightfall the clouds higher up had sunk a little below the level of the tent-site, and kept on wondering how the weather would behave. Schmied and Marmet, on the contrary, were drawing hopes of a fine day to come from a clear night sky above them.

The Butagas-burner behaved just as well at 27,550 feet as at the lower camps. Armed with experience of great cold on previous occasions they first warmed the gas-holder with the reliable Meta fuel; after a short time the camp-burner then began to function as if the tent were not on Everest's inhospitable heights but somewhere on the peaceful shores of a lake at home. They melted snow in the upturned lid of a packing tin and the water flowed through a hole into their flasks. The flame of the burner began to spread a genial warmth, as they went on cooking for hours on end to fortify themselves with food and drink. It was quite comfortable in the tent so long as they stayed awake, although the gale swept the site with unabating strength. Before settling down to sleep they reduced the oxygen flow to a litre a minute. Schmied only managed to fall into a partial and restless slumber in spite of having taken sleeping-pills; Marmet, on the other hand, fell peacefully asleep.

When at about eleven o'clock they took a last look out of the tent the sky stretched clear over the magnificent mountain world, but the wind persisted unremittingly, driving great masses of drift snow from the slope on to the tent. When Schmied, lying on the inner side, woke after midnight because of a nightmare, he was so firmly imbedded in snow that he was unable to move. The tent had gradually caved in under the increasing pressure of the snow and its walls hemmed him in so closely that he could not even get his arm out of his sleeping bag to look at his watch. Gasping and fighting for breath, he awoke his companion and asked for assistance. Marmet woke immediately and decided, as an expert on the subject, that what Schmied needed most was a good, strong dose of oxygen; so he adjusted the regulator to 4 litres a minute and began to look for his electric torch. After a few breaths Schmied's terrifying sensation of being suffocated disappeared. Marmet, who was not immured by snow and could therefore move about freely, let the air out of Schmied's mattress and tried to crawl out of the tent armed with the lid of the tin, but as soon as he opened the flap the gale drove great ice-crystals into his face as if a sand-storm were raging. He had to give up the attempt and wait for a lull; then he slipped out of the tent with all speed. It was fortunate that they had got into their

sleeping bags fully clothed, for Marmet was thus in a position to start clearing the tent of snow without losing a moment. After he had worked away for an exhausting half-hour, Schmied was able to move a little inside the tent, but it was not till half an hour later that he was able to get to his knees. By then it was half past three and a faint glimmer of light was heralding a new day. Immeasurably far below, the valleys still lay deep in the darkness of night.

Meanwhile Marmet had finished his exhausting labours and crawled back into the tent gasping and coughing, only to find that snow was now coming in uninterruptedly through three rents torn by the weight of the drifts and by the gale, and threatening to bury beyond hope of rescue all the provisions and cooking arrangements in the front part of the tent. It was an unpromising start indeed to an attempt to climb Everest. They reckoned that it would take at least an hour to dig out the cooker and the food with the only remaining tin-lid; it would need another hour to melt snow, bring water to the boil and prepare a warm drink. They both knew that this would all mean a great expenditure of time and energy but, worse still, the continual use of oxygen—on a day when two hours more or less might be the critical factor. Moreover the weather promised to be fine. They had consumed warm nourishment right up to midnight and were not at the moment hungry. They therefore decided to start out for the summit without breakfasting or trying to dig out their deeply-buried provisions.

When asked later how they could have brought themselves to break such a fundamental rule of mountaineering they explained it as follows: 'To wake up at 27,550 feet on Everest's summit ridge and find the morning clear was such a unique bit of luck that, after weeks of training, we felt we could face the prospect of having to tighten our belts for a day. We would probably have plenty of opportunities for breakfasting later on in life and the chance of climbing Everest seemed to us worth more than any breakfast.'

Their decision proved itself well justified. Even without any cooking, their preparations for the start took exactly four and a half hours. Anyone who has experienced life at great altitudes or

knows his Himalayan literature well will not be surprised that they took so long. Even Luchsinger and Reiss, keen as they had been to be up and doing, experienced as they were in bivouac routine and commonsense as applied to camp-life, had spent more than four hours getting ready under the shadow of Lhotse, though they, it is true, had breakfasted. Schmied and Marmet up there on the ridge were, however, some 2,000 feet higher up. It took them nearly an hour just to lace their boots and fasten their crampons to them.

It was 8.30 before the two men were outside the damaged tent, ready to move off. Both were toying with the thought, at that moment, that it might be more sensible, with such a gale blowing, to climb down and leave the attack on the summit to the second party, which was coming up in support that very day. Both admitted later that they would probably have turned back if the thought had been voiced by either of them. As it was, they decided in silence to climb as far as the storm, the conditions on the mountain and their empty stomachs would let them. Each of them had a fresh oxygen bottle and carried one in reserve in his rucksack. Like Luchsinger and Reiss, they only took a 50 foot rope and each man carried an ice-axe. In addition Marmet took along a rock-hammer, a few rock-pitons and ice tubes and, almost the most important piece of all the equipment, a camera, in his rucksack. He had already taken more than twenty pictures between the South Col and the tent-site and he wanted to use his camera every now and then on the ridge as they went up.

Great snow-white masses of cumulus cloud were forming close to the summit of Everest. While the caravan-leaders and Lamas in Tibet might consider this a sure sign of fine weather, it could easily work out to the great disadvantage of men climbing up here. The gale continued with undiminished force, and Schmied and Marmet finally started out not as men confidently attacking a summit, but in considerable doubt whether the tempest would not prove too fierce for them on the world's highest ridge. After only a few steps they had to stop to clean their goggles and recover their breath. It was like being in the Alps on a morning presaging heavy rain, when one expects to be driven down to the hut any minute by a break in the weather; they had no great hopes of

reaching the summit, but were prepared to try their luck.

We watched them almost fearfully from the South Col as they left the tent at half past eight and started on the ascent. Surely the weather was far too bad for an attempt on Everest's summit! Tremendous gusts were incessantly whirling the fresh snow, which had fallen the evening before, into the air and driving it out into the void like cloud-banners. The whole sky was laden with snow-dust through which the sun penetrated with difficulty. We could not assume that the weather was any better on the ridge than where we were, below. I had no faith in the attempt on the Summit which was just starting out 1,700 feet higher up. If they had possessed a radio-set in Camp VII, I would unhesitatingly have called them back. Our friends, however, were climbing steadily, unfettered by the load of our doubts; yet, every time they disappeared for minutes on end in a banner of mist or snow, we wondered whether, next time the air cleared, we should see them higher up or lower down. However, they continued to climb steadily and by noon had managed to reach the South Summit. Our hopes began to rise.

They had met a steep bit directly on leaving the tent, but at the end of an hour Lhotse, 27,890 feet high, was definitely below them. Carrying their heavy loads of over 30 lbs, they found climbing exhausting. Their thick down-suits kept them warm but interfered with their movements. This was especially noticeable when, on reaching the snowy connecting ridge which runs up to the steep rise below the South Summit, they found themselves on treacherous crusty snow. To the right of them the face plunged 10,000 feet sheer to the basin of the Kangshung Glacier; to their left, beyond the glacier world, nearly 13,000 feet below, they could see the highest of the alpine meadows where the vegetation was waiting thirstily for the first monsoon rainfall. If it only held off another day or two, the safe return of our expedition would be assured.

The ridge was steep and narrow, exacting their utmost care and attention.

At about eleven o'clock they reached a little shelf before the last steep slope to the South Summit, where they took a short rest. It had grown a little warmer and the wind had died down a little.

They decided to leave their down-suits there and to start a new oxygen bottle each; Marmet reckoned that the oxygen in the fresh bottles would last long enough to give them assistance all the way down to the South Col. If they climbed on a flow of four litres to the minute there would be enough to last five hours. Their packs had thus been lightened and they felt more mobile without their down-clothing to impede them: Everest had suddenly moved tangibly nearer. The two men began to congratulate themselves in secret on not having thrown their hand in early that morning. After a careful check of the connections of their oxygen apparatus and of the correct functioning of their valves, they started up the steep final slope to the South Summit. Its inclination of more than 50° and the treacherous condition of the crust compelled them to cut steps with the greatest of care. They moved steadily forward and at every stride the great peaks around them seemed to sink lower at one and the same time, an encouraging phenomenon and a unique experience.

It was about noon when they reached the snow-cap of the South Summit and looked down on the South Col, 3,000 feet below, remembering how they had left it yesterday with mixed feelings of hope and doubt. They knew very well that they were standing at an altitude of 28,720 feet, although the altitude was exerting a numbing effect on their processes of thought and their mood was alternating rapidly between lethargy and irresponsible light-heartedness. In any case they found it advisable to tackle the next sector with extreme caution, for it looked definitely unpromising.

The continuation of the ridge looked truly terrifying. Enormous cornices thrust out from its right hand side into the deep blue of the cloudless sky. Yet the two men were less than 350 feet from the summit of their dreams. They traversed the airy saddle across to the foot of the first pitch. The ridge consisted of rough wobbly blocks of limestone. The actual summit was not yet visible, for according to all accounts the highest point of the mountain must lie hidden behind the sharply-curved snow-ridge which was the highest projection into the blue of the sky as seen from the South Summit.

After a number of steep pitches interrupted by small notches

they found themselves at the bottom of the fifty-foot chimney described with such respect by the men who had been the first to climb it. The snow seemed to be firm, and Schmied worked his way up, cutting steps and climbing between the rock and the cornice. The two men thought respectfully of Hillary and Tenzing and how they had had to make the first ascent of that exposed pitch. When he was half-way up, Schmied let his companion come up to join him; a short traverse to the left, followed by another exhausting pitch only a few feet high, brought them to the top of the obstacle. There was nothing now to prevent their reaching the summit; they pressed on impatiently over steep snow-crests till, unexpectedly soon, the ridge went plunging away into the depths from below their feet. They were on top of the highest mountain in the world.

There they stood on their lofty pinnacle in awe-stricken silence. Then suddenly a great surge of joy overwhelmed them; they embraced and kept on thumping each other on the back. All unseen, tears of joy trickled down into their masks and their blond beards.

Schmied hoisted the pennants of Nepal, Switzerland and Bern on his ice-axe. Marmet set to work recording the unique panorama with his camera. As soon as Schmied was ready with his flagstaff the scene was set for the kind of spontaneous summit pictures which are a better reflection of those unmatched minutes on top of the world than any description words can offer. They had both peeled their masks off and their joy at their successful climb, at the glorious weather and at the now almost windless day was heartfelt indeed. At their feet lay a landscape incomparable in its sweep and grandeur.

To the north, the endless brown hill-plateau of Tibet stretched away, range upon range; snow lay on the highest crests, then the hill country seemed to merge into a wilderness, immeasurable in its extent. In the distance, a silver thread stretching from east to west, they recognised the Brahmaputra, Bengal's river of destiny, which forms the boundary between Tibet and the glaciated ranges of the Himalaya. There was not a living thing in sight. Westwards, about 150 miles away, the steep unclimbed pyramid of Gosainthan soared to the sky. The other giant peaks of the world—

Cho Oyu, Gaurisankar, Makalu and Kangchenjunga—were there as they gazed about them, all markedly lower than Everest. The glimpse down in the direction of Thyangboche was like a balm; the monastery, surrounded by its rhododendron woods, was a picture which, after all those long days in the ice deserts of the Western Cwm and on the Lhotse Face, went straight to the heart. The little paths across the higher alps, the paths along which the expedition had set out so hopefully on its way up to Base Camp, were plainly visible. What a road to have traversed successfully, what a happy ending, to be standing here at the end of that road, letting their gaze wander out over hundreds of miles in all directions!

Again and again the two men's eyes were drawn to the prospect over forbidden Tibet, whose grey and trackless expanse merged into the distant blue of the sky. In truth, if there was a throne fit for the Goddess-Mother of the Land, up here on Everest was the place for it; and they gave a respectful thought to their two predecessors, Hillary and Tenzing who three years ago had laid their little offerings here in the snow—Tenzing, the native of the country, his few sweets; and Hillary, the New Zealander, a little cross Hunt had given him at the South Col.

To the south they could see the boundless cloud-sea of the approaching monsoon. It was time to be thinking of the descent; yet in spite of empty stomachs they could not tear themselves away from the matchless view. They sat or stood on the summit for nearly an hour, marvelling and taking pictures; then suddenly they were enveloped in dense fog. A great mass of cloud had closed in on the summit from the south, compelling them to start down the mountain. They had stood on the summit for twenty minutes without using oxygen, and the effects of fatigue and hunger were making themselves unmistakably felt. Far down in the depths they caught a glimpse through a hole in the clouds of Camp III and its tents; down there, they knew, Ang Nima the cook would be busy dispensing ravioli, fruit juice, tea and other desirable delicacies. But there would be a good meal awaiting their grumbling stomachs at the South Col too, and the thought eased the prospect of the long and laborious descent which faced them. Belaying one another over and over again as they alternated

in the lead, they climbed cautiously down in silence. The mist banked up across the ridge in ghostly fashion, and through it the huge cornices loomed out over the white emptiness of space, magnified to prodigious proportions. When they came to the oxygen bottles they had left just below the South Summit they did not bother to pick them up, for they might be of use to the second party. On and on they crept, intent only on reaching the tent and the South Col. It was five o'clock when they reached the storm-battered tent where they had bivouacked the night before.

There, Reist, von Gunten and the faithful Da Norbu were already busy digging it out of the snow. Their greetings were brief but heartfelt. Schmied and Marmet did not ask for, nor did their three companions offer them, anything to eat, for the two men who had stood on Everest's summit expressed only one desire—to get down to Camp VI as quickly as possible. The world's highest mountains do not encourage long conversations; everyone is too fully occupied with his own business. As proof that they were by no means spent, Schmied and Marmet offered to help dig out the tent, but their friends naturally would not hear of such a thing and counselled them to be on their way down, with every care as they went. Da Norbu, whose second visit this was to the highest camp, roped up with them, and the party climbed uneventfully down the rest of the ridge, into the couloir below it and along the traverse to the South Col.

Just before seven o'clock, about ten hours after they had started up from Camp VII, I saw the successful team approaching our camp across the levels of the Col. I hugged them both in silence, unable to find words with which to express my congratulations. They were both tired, of course, but in great form, and they moved on to the tent firmly and on sure feet.

They had accomplished their climb, in spite of the almost incessant icy wind, without the slightest sign of frost-bite. They brought back from Everest not a single scratch on their hands nor the tiniest tear in their clothing, and great was my relief that they had fought their difficult way to the summit not only with such good fortune but by virtue of their supreme skill and their true respect for the might of that great mountain.

Pasang Phutar II had helped me to prepare enough hot drinks

to allay their thirst. Oxygen was a more ticklish problem. Reist and von Gunten had taken the last full bottles up with them to Camp VI; what was left was only under feeble pressure. Luckily, the reaction from the tension of the day soon set in; and in a very short time Schmied and Marmet had fallen into the natural sleep they had earned so well.

Next morning they told Grimm and me many things we wanted to know. At four different places Schmied and Marmet had collected geological samples which they had either picked up or broken from the rock. Marmet was still all agog about the perfect photographic conditions they had met on the summit. Both men had been much impressed by the steepness of the slope to the South Summit and by the route from there to the top of the Hillary Chimney. They agreed that the uppermost 1,500 feet of the South Ridge were definitely comparable with the finest ice and snow ridges of the Alps. The snow was in splendid condition on the summit-ridge and it was easy to kick good safe steps in its hard, wind-beaten surface. On Everest as on Lhotse, freshly fallen snow and strong winds had probably been of great service to our expedition.

It was hardly likely that the snow conditions would alter very quickly, so it seemed probable that Reist and von Gunten would also be able to reach the top. Cold as it was again that morning, we were sure that our friends in Camp VII had enough warm clothing and bivouac-equipment. We did not know then that the bivouac-sack had been caught by the wind and hurled over the Kangshung Face and that the pair of them had spent a most uncomfortable night. They should be well enough off for oxygen, too, even if we down here had to go without that warmth-giving commodity.

Marmet reported that, with the steep sector of the main ridge to the summit in mind, he had for a time throttled the oxygen-flow back to 2½ litres to the minute, reckoning that the ridge would take a very long time and therefore wishing to save oxygen. It had soon become evident that climbing on the reduced flow was much too hard work and after some laborious rope's lengths he had switched back to the normal ration of four litres to the minute.

They both said the ridge had been more heavily corniced

than the pictures taken by Hunt's expedition had led them to believe. On the other hand the section from the top of the chimney to the summit had seemed very short to them, while to Hillary it had seemed endless on the way up, but quite short on the way down again. Schmied and Marmet judged the height differential to be not more than 100 feet, a few rope's lengths which can in all truth be called the ascent to the roof of the world.

They had little to say about food. Before going to sleep they had brewed endless supplies of coffee and had eaten some tunny-fish and dry bread with it, after first heating the tunny-fish tin over the Butagas flame. This supper had obviously provided sufficient nourishment to allow them to reach the summit and climb down again all the way to the South Col without eating anything more. On the way down a few boiled sweets had also come to light in their rucksacks, to add a little taste to the snow which they occasionally allowed to melt in their mouths. We were not surprised to hear that Marmet's dreams had been mainly about meals; in fact he had just reached the point where, after a long and satisfying banquet, he was about to turn his attention to the mille-feuille cakes which were being offered as a dessert, when he was woken up by his companion, groaning and in dire distress. Down at Camp VI we were able to laugh about it, but it was easy enough to imagine what a serious crisis it had been for the two men at the time.

All the morning, while we were chatting about their experiences, we were getting things ready for the descent. Every now and then we looked up at Everest, to where Reist and von Gunten had now embarked on their climb.

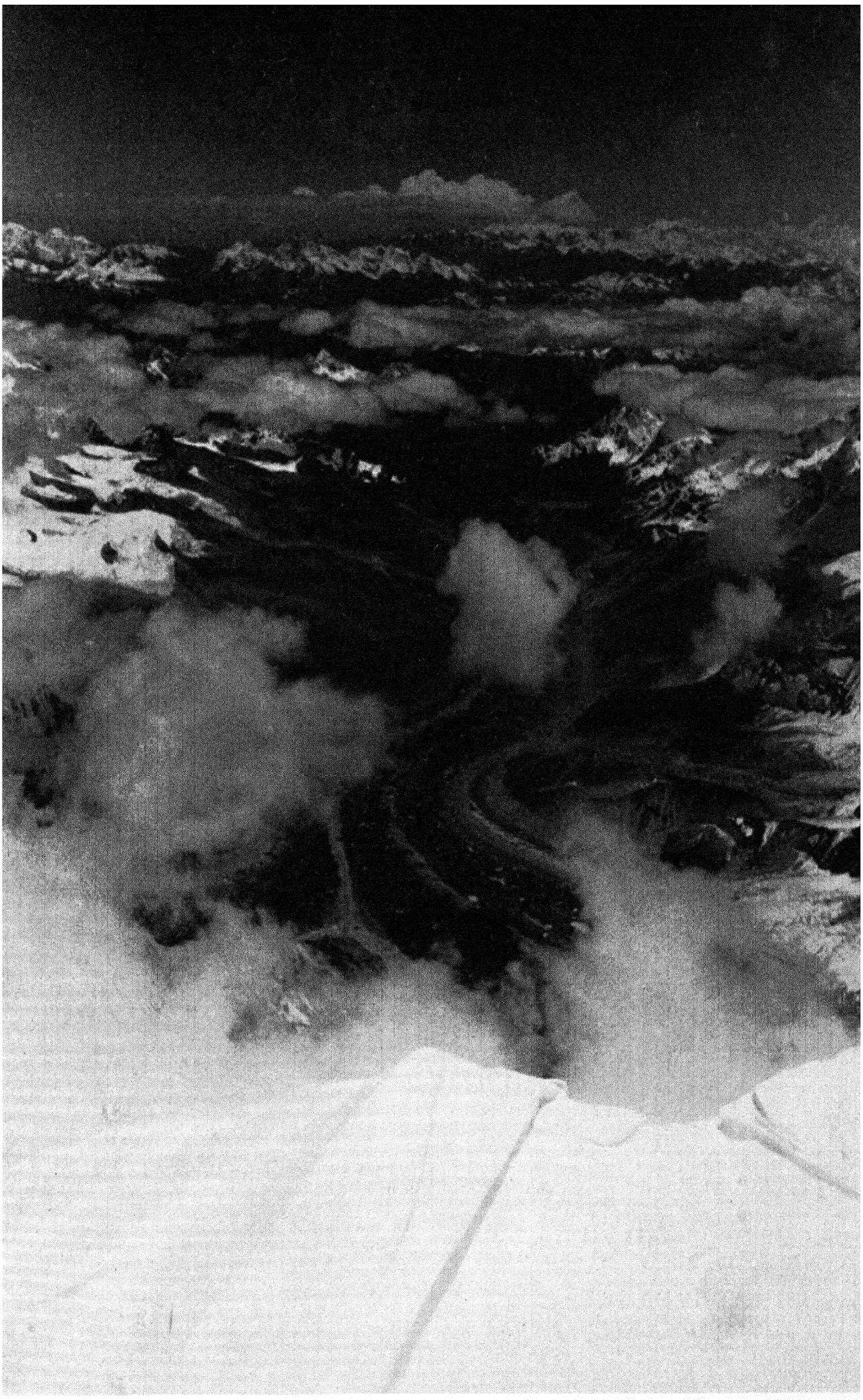
CHAPTER XIX

Perseverance

AT two o'clock on the afternoon of May 23rd, when Schmied and Marmet were on the summit of Mount Everest, Reist and von Gunten started out on their ascent to Camp VII. They would have preferred to move off earlier, but had been prevented by a variety of circumstances.

For one thing the violent brawl between Pasang Phutar II and Da Norbu had occurred that morning in our tent, and we had had great difficulty in separating and pacifying them. Then, we had spent a long time trying to put back Grimm's shoulder, which he had put out the evening before while arranging the sleeping bags; it proved a ticklish and very tiring job. The drop of cognac I had kept for toasting successful summit parties, which I had already got out in readiness, was not enough for the sufferer's needs. Grimm demanded an injection of Pantopon, which I administered; and though his pains immediately diminished and his muscles relaxed, all our efforts failed to replace the shoulder. In the end, we had to give it up, and after an interval we got Grimm ready for the descent. He could have gone down with Annullu and Pa Norbu, who were starting off at once for Camp III, but his injection had upset him so much and his balance was so disturbed that he could hardly stand upright. The very idea of a descent of the steep Lhotse Face was untenable; we had to take him back to the tent and tend him there, while the two Sherpas went down without him. Reist, usually so calm and quiet, was beside himself with rage, not at us but with himself for not having noticed sooner that Grimm, who was in his care, could not move another step. It took a long time to calm him down.

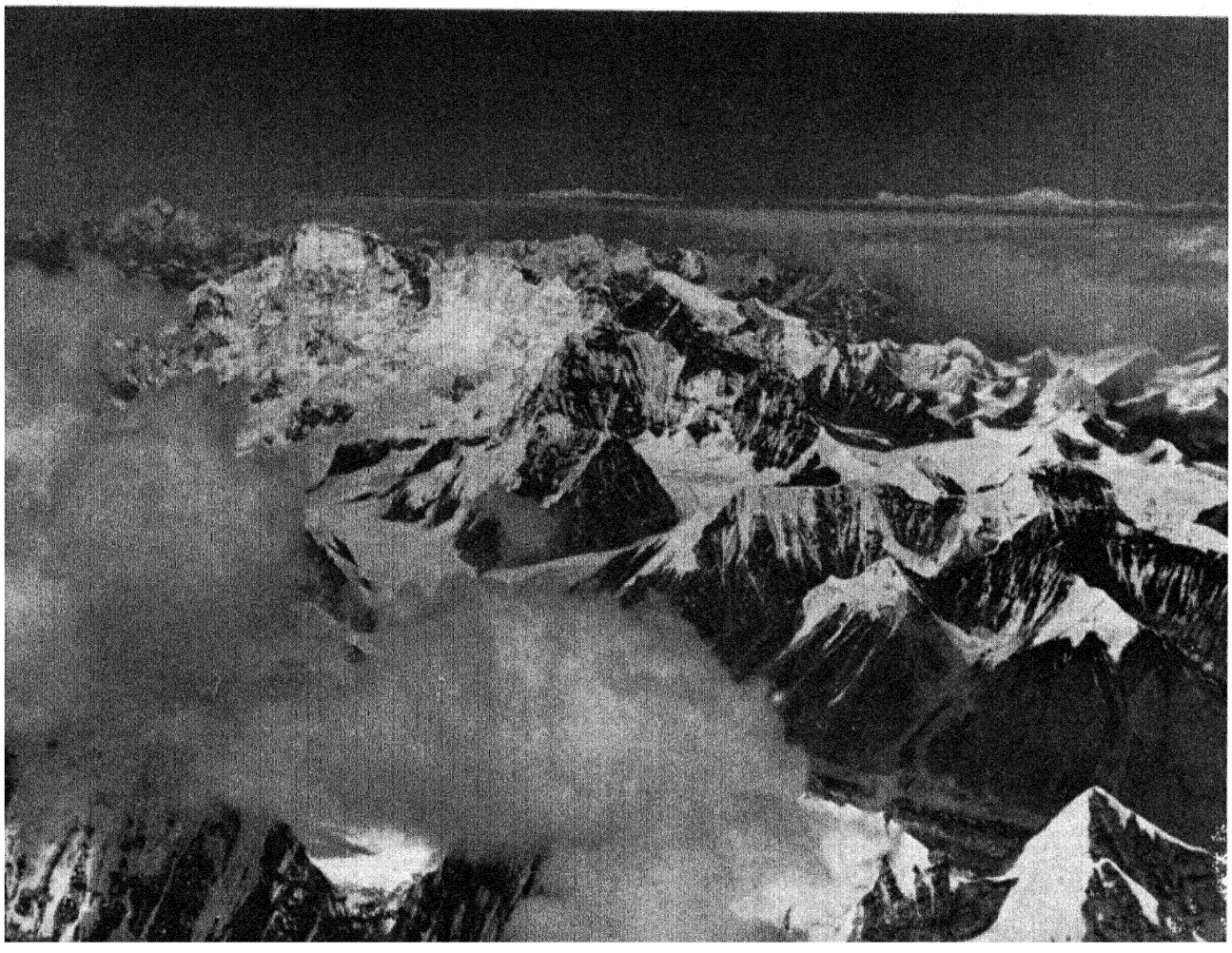
So Reist and von Gunten were only able to prepare for their departure when all these matters had been attended to. Finally Da Norbu, when the effects of his sedative pill had worn off, wanted



21. *Downward view from the summit of Everest, looking east, with the debris covered tongue of the Kangshung Glacier. The dark cloud shadow in the lower part of the picture lies* 11,500′ *below the summit cornice*



22. *Above (left and right): View southeastwards from Everest to Makalu (27,790′) and Chomo Lönzo (25,788′). Left of the summit cornice is the regular pyramid of Pethangtse (22,062′). The Barun valley forms a deep furrow southeast. The right half of the picture is dominated by Lhotse (27,890′); beyond it can be seen Chamlang (24,000′) the southern tip of the Hongu basin*





23. *Below (left and right): View northwards from Everest into the Rongbuk Valley, the drainage furrow of the three Rongbuk glaciers that meet in the middle of the picture. Between the middle and eastern glacier branches is Changtse* (24,730′). *Left: Cho Oyu* (26,870′) *with Gosainthan* (26,291′) *in the distance*



to go along too. He was probably being troubled by his conscience over the brawl and found it necessary to expiate his sins. He also knew that his Sahib Aschi, who had once left him behind, during the work of breaking a way through the Icefall down below, when he lagged behind owing to insufficient acclimatisation, was up there on Everest. Since then Da Norbu had acclimatised splendidly to altitude and he now felt the urge to advertise the fact. Moreover, Reiss and von Gunten had always handled the Sherpas with patience and good humour and were very popular with them—having acquired the status of 'Good Sahibs'—and that may also have helped Da Norbu to decide on joining them.

The three men shouldered their loads which contained, among other things, four oxygen cylinders for the next day and a Butagas container. Reist and von Gunten carried cameras and sleeping-bags and, in addition, were sufficiently laden with food, warm underwear, spare socks and gloves to enable them to spend an unexpectedly long time on the mountain, in case the men coming down from the summit were in any need of aid or they themselves were overtaken by bad weather. All three of them had done a notable stint the previous day, for Reist and von Gunten had come up all the way from Camp IV to the South Col, then gone down again to the upper station of the lift and carried up packages weighing nearly 65 lbs. During these labours they had climbed 3,000 feet, while Da Norbu had been up with the first party to Camp VII and then down again to the South Col. As a result of the fall on the descent, the back of his down-jacket carried a lengthy rent, which had been temporarily patched by sticking a strip of Leukoplast over it; we were all very grateful that the crampon-point had not penetrated any further.

The usual South Col gale was blowing as the three men started off on the 300 yard approach to the foot of the actual slope which leads to the couloir. Yesterday's trail had been obliterated. Once in the couloir the party made good progress, though both Sahibs had to clear the steps of drifted snow. At this point Reist found it a great effort to climb, although all the oxygen sets were on four litres to the minute; it was only when they reached the tent that von Gunten discovered that Reist's apparatus was only in fact supplying two to the minute. He was able to rectify this defect,

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which had obviously developed quite early on and it was only then that Reist, who was so tough that he had never set much personal store by oxygen until he reached Camp VII, decided that it was quite a good thing after all. And when, next day, the correct quantity flowed steadily into his mask, he climbed to the top of Everest with superb ease.

On leaving the couloir the rope of three followed the same route up to the rocks as their predecessors. They took ample time to belay one another thoroughly and to climb with great care, for the first rock pitch was difficult and tricky. In spite of a strong wind, they then ascended rapidly past the Lambert-Tenzing camp site and at about five o'clock reached the tent the first party had occupied; they found it almost completely buried in drift-snow. That set them a formidable task, if they were to turn the little shelter into anything like a satisfactory place in which to spend the night. They had hardly put down their loads and started on the job when they heard the clatter of crampons in the mist among the rocks overhead, and the figures of Schmied and Marmet appeared like phantoms out of the clouds. They reported their successful ascent briefly, and Reist and von Gunten were greatly relieved to hear that everything had gone off so well. The first party's success gave them the necessary confidence in their own ability to repeat the climb to the summit next day. Schmied was delighted to meet the dark-eyed Da Norbu, his small but wiry climbing companion, up there a second time in two days; he expressed his approval in good Bernese dialect and Da Norbu grinned with pleasure at his Sahib's obvious commendation. Schmied roped him up with his own hands, then the trio climbed carefully and safely down to the South Col.

If ever during the whole course of the expedition an Iselin shovel would have paid exceptional dividends, it was up there at Camp VII; unfortunately Reist and von Gunten had not brought with them the tool which had proved of such value at the lower camps. It was quite impossible to get into the tent, which was full almost to its ridge with drifted snow; it took the two men three hours of hard work to clear it, working with their ice axes and the lid of a large provision tin, and they were still at it when the moon began to rise large and clear above Lhotse. Any idea of wind-

protection was ruled out by three large rents in the tent fabric; it was an ancient Lyonese tent which had seen use on an earlier expedition and probably on that account had failed to stand up to its rough handling. It should however be admitted that none of our other tents were ever exposed to such thunderous gusts of wind as were encountered up there on the ridge. Still, if it held for just one more night, the wind that haunts the ridge could do what it listed afterwards. When they had nearly finished their work they made another unpleasant discovery: the wind must have caught up the nylon bivouac-sack for two people and whirled it away over the Kangshung Face while no-one was looking. This was a very serious matter. It was thanks to the bivouac-sack that Schmied and Marmet had been able to keep even reasonably warm in the tent; Reist and von Gunten would now have no such comfort. They searched vainly in the moonlight round and about the tent. Another unpleasant surprise was that the zip of von Gunten's sleeping bag was defective and the bag could no longer be closed.

Obviously they were faced with a very uncomfortable night, so they kept the camp-cooker busy from half past nine till midnight preparing endless brews of Ovomaltine, gruel soup, lemon-water and fizzy lemonade. There was plenty of snow in the tent and also plenty of food, for while they were digging they had uncovered alike the cooking equipment and the food left by the previous pair. Taking a tip from Marmet and Schmied, they packed their next day's provisions in their rucksacks during the evening. Then they lay down in their sleeping bags with their clothes and their boots on to try to snatch a few hours' sleep.

They never succeeded in sleeping properly owing to the increasing cold and the continual drifting of the snow into the tent, but they fell into a restless doze at times. The breathing apparatus worked well at a litre to the minute, but the cylinder to which it was connected was empty by 4 a.m. Reist tried to connect a new one but failed to extract the sealing-plug, which had frozen in firmly. He came to the conclusion that it was so arranged as to be only moveable with a box-spanner and not simply with the screw-driver attachment of his pocket-knife. In his usual practical way, he went straight on with the preparations for the start, intending to deal with the oxygen bottles while the cooking operations were

going on. They warmed the camp-burner with Meta and the Buta-cooker was soon humming its comforting song, uninterrupted even by the clouds of snow which were continually being driven into the tent. In the end, the plugs thawed out over the heat of the flame, and the difficulty was soon overcome.

Neither of them felt like eating anything that morning, but each of them drank a whole litre of hot Ovomaltine. Meanwhile the sun had reached the tent and, as its light increased, the wind very kindly dropped. Warmed by their breakfast and the oxygen supply, now again at full strength, they crawled out of their tattered tent to complete their preparations by the light of a lovely morning. It was a rare stroke of good fortune that this of all days should turn out to be the finest and calmest for weeks, up there at 27,550 feet.

Out in the open they packed their rucksacks, secured their crampons firmly, checked the breathing-apparatus again and roped up. It was a quarter to seven when they shouldered their packs and started up the ridge. Both carried 38 lb rucksacks. They intended to leave the partly-used oxygen-bottles on the South Summit as a reserve for the way down.

At first their way led over snow-covered rock on the crest of the ridge. Though the going was steeper than the last part below the tent, it was neither exhausting nor difficult from a technical point of view. At the end of a quarter of an hour they found themselves at the foot of a steep upsurge in the ridge, from the bottom of which a passable ledge stretched away for about 200 yards to the left across the South Face. There were no traces of the previous party's track, but the obvious route seemed to lie along the ledge. At its far end they picked up Schmied and Marmet's foot marks and followed them, through deep snow now, working their way up to the ridge again back towards the right. This sector was very exposed and also tiresome because of the deep and loose snow, but an hour after leaving the tent they had reached a point at about 27,700 feet, just about where the British must have sited their top camp in 1953. They looked around for traces of it but found none.

From there on, the snow ridge, if exposed, provided good going. Following it for half an hour they reached a hollow at the very foot of the very steep slope leading to the South Summit. It

was really hot there; they were very much tempted to stay for a short rest. However, they felt that the steep sector ahead might tax them severely especially if a gusty wind got up, so they resisted the temptation to shed their down-suits. The steeper section of the ridge on which they were now climbing is really less of a true ridge than an abrupt slope of névé and snow, bordered by sheer marginal rocks before it sweeps away into the huge South Face. They worked their way up it laboriously in the crusty snow, which refused to bear their weight, so that they often broke through up to their hips. They could see the big tracks, half filled with blown snow, left by Schmied and Marmet on their descent the day before. They had obviously kept to the rocks and Reist and von Gunten decided to do likewise, though they were steep and partly crumbling. Before leaving the snow, they changed to fresh oxygen bottles, leaving the used ones lying there. They had no difficulty in connecting the new ones.

This resulted in a welcome lightening of their packs and they would really have enjoyed the rock-climbing if their voluminous clothing had not hampered them. However they weighed the disadvantages against their ability to resist the cold and consequently to stay longer on the summit. It was quite comfortable climbing on the little slabby ledges of brittle rock even in crampons, though it turned out to be unexpectedly steep. They reached the South Summit at about ten o'clock.

Well satisfied with their progress, the two men sat down on that prominent feature, which is the highest point visible from the South Col, for a ten minute rest. In 1953 Evans and Bourdillon had reached it about one o'clock and had decided to turn back. The ridge running across to the foot of the main summit looked very repellent and, like their predecessors, Reist and von Gunten were immensely impressed by the huge cornices jutting out to the right over empty space. They were encouraged by the knowledge that Schmied and Marmet had done some wonderful route-making there and had been careful to preserve their steps on the way down.

The feeling of tension to which both men had till now been subjected slowly began to relax, and they now had every hope of reaching the summit before midday. Soon the few rope's lengths

of the traverse lay behind them and they gained height rapidly over great snowed-up bouldery rock. A quarter of an hour later they stood at the foot of the notorious pitch which is really a step in the ridge, but can be described as a chimney by a slight extension of exact mountaineering terminology. It is actually an almost vertical lift of the ridge, forty to fifty feet high, with a cornice sticking to its edge. Energetic but not particularly difficult movements, alternately on footholds in the rock and steps in the snow, enabled them to get up it. If a prank of wind or weather were to topple the cornice into the abyss, the step would tax a climbing party severely; though neither Reist nor von Gunten considered that it would be impossible to climb the rock itself. Fortunately, the snow wall to the right held firmly in position on this occasion and the pair were soon at the start of the short left-hand traverse, which they followed for a few strides before working their way up on to the ridge again. Twenty minutes later our expedition's second party had climbed the excellent steps made by their friends and reached the summit. They had taken exactly fifty minutes from the South Summit.

It was eleven o'clock in the morning, only four and a quarter hours since leaving the tent. All the difficulties and exertions of the last few weeks were forgotten in the moment of the rare experience for which they were now the richer.

It was absolutely windless on the summit. The Nepalese and Swiss pennants hardly stirred on the ice-axe. Reist and von Gunten made themselves as comfortable as if they were on an Alpine summit on a fine day. They photographed to their heart's content, changed films, and had a good meal of dried fruit and Ovomaltine. It was however very cold, in spite of the sun and the still air, and they were glad they had kept their down-suits on; without their warmth and protection they could hardly have spent two full hours on the summit, as they did. It only occurred to them later, down in the lower camps, that they had forgotten to look down the North Face, by which the earlier expeditions had tried to climb Everest. If they had climbed only a little way down, they would have had an uninterrupted view of it and would doubtless have established the possibilities of a route up from the North Col. Instead, they took numerous pictures of the glorious view. They

both felt so fresh that they were able to take their masks off and dispense with oxygen for more than an hour. During their rest they experienced no impression of being at very great altitude and were able to enjoy their stay on the summit to the full. They looked out over immeasurable distances, enthralled by the silent approach of the cumulus clouds, which sailed, in complete detachment from the ground beneath them, across the limitless plains to the south. In contrast to Tibet's peaceful ranges of hills, the incredible savagery of Lhotse's East Ridge and the groove in its summit structure, clean-cut as by the stroke of an axe, by which Luchsinger and Reiss had reached the top a week before, filled them with awed amazement. Abysmally deep below on the Khumbu Glacier they identified the camps and the well-trodden trails that connected the hospitable little villages of tents.

They rested for two hours before starting down again. Great cloud-fields were blowing up from the south, and a new forerunner of the monsoon was plainly approaching the highest pinnacles of the Himalaya. A descent of more than 3,000 feet lay between them and the South Col; they wanted to collect rock-samples on the way and also to pick up as much equipment from Camp VII as they could manage to carry. It was time to take leave of the summit.

We on the South Col had seen the two men disappear over the South Summit at about ten o'clock. We worked out that they would get to the Summit at about noon and would not return to us till late in the afternoon. We were therefore most surprised when soon after one o'clock we saw them coming rapidly down. An hour later they reached the high tent and by about three o'clock they were back at the South Col. Reist and von Gunten had accomplished the descent from 29,000 to 25,850 feet in a bare two hours. This almost incredibly exacting performance was due to their marvellous bodily fitness and adaptability, to the fine weather and favourable snow conditions; their quick but absolutely safe descent was also an expression of their delight at their successful climb. They left the oxygen bottles which they had dropped on the way up, so as not to waste any time. We could see them coming down below the South Summit at a great rate, as they followed the same line as Schmied and Marmet, leaving the rocks

to their right, and practically ran down the long snow slope with long strides. In spite of their hurry, they found time to break off rock-samples on the way. They stopped for a short time at the tent to load up fuel, food and bivouac equipment: so that they came down from the camp-site almost more heavily laden than on the way up to it the previous day. During those hours they were in a truly enviable condition.

While Reist and von Gunten were fighting their way to the summit, we at the South Col were getting ready for our descent. The Sherpas had another search through the old camp-sites for anything usable they could find and asked my permission to take along one of our Jamet-tents. They too had obviously liked this particular tent, which in spite of only weighing 24 lbs housed four men, or even six at a pinch. Its neat lines nowhere gave the wind a chance of getting a proper hold and the tough nylon of its outer shell had so far stood up to every demand. Its inner lining of double-weight silk was so warm that it had often helped us to bear night temperatures of up to 20° below zero without ill effects. True, the distended air mattresses took up most of its tapering ends, but we found no disadvantage in that; it had a little apse in which ropes and crampons could be stowed. The central space between the two halves of the tent was used for a variety of purposes and was a strong contribution to our lively feeling of comradeship. Sitting on the cushions of the air-mattresses at the entrance to the inner tent, one could cook, eat, gossip, put on boots and crampons and prepare for the day's journey in comfort. It was also the scene of the savage fight between the two Sherpas; here too we had tried in vain to re-set dislocated shoulders. When we were freezing cold we crawled into our sleeping-bags and got on with our work lying on our stomachs. We soon did away with the central supports which cramped our movements and seemed unnecessary. The push-button fastening of the inner tent protected us from draughts, but let in enough fresh air. At the outset we had felt a little sceptical about the light-weight zip-fasteners which connected the central section with the two halves of the tent, but they stood up to their work to the very end. We only once put up a half section of the tent, with a large apse to its entrance, and that was on the Lhotse Face, over on the other side

of the Geneva Spur; at all the other camps we used the two halves in conjunction as a four-man tent. I am not surprised that the observant Sherpas had recognised the virtues of this particular tent, and I was very glad to accede to their request to be allowed to have it. Their tremendous services had certainly earned them a special reward of this kind.

Grimm was normal again, having slept off the effects of his pantopon, in rather more than twenty-four hours. As he would not be able to carry his rucksack, he put it outside the tent, to be taken down by one of the Sherpas.

We waited till we saw Reist and von Gunten coming down from the South Summit. Then we started off down, first the two Sherpas Da Norbu and Pasang Phutar, who had made peace again with one another, then Grimm and I and, a few minutes behind us, Schmied and Marmet. We climbed laboriously without oxygen to the Geneva Shoulder, while Reist and von Gunten approached the Col at a cracking pace. We knew we need not bother about them: they would still be able to get down to Camp V today or, if they preferred, they could stop at VI. As soon as we had crossed the crest, I saw a column of ten men on the way up, only a little below us. Very soon I recognised Luchsinger at the head of it, perfectly restored after his Lhotse exertions, breaking the trail with apparently effortless ease. Reiss was on the rope with him and seemed to be very fit in spite of his slightly frost-bitten fingers. Behind them came Müller and Leuthold, and a little behind them six Sherpas. It was a joyous meeting, but I was rather surprised that the message I had sent down with Dawa Tenzing in writing and repeated orally on the radio on previous days had caused such serious misgivings. I had of course only asked my friends to send up oxygen and fuel; but they had interpreted these rather abrupt messages, which were moreover broken off in the middle of our radio communication, as meaning that we were in serious difficulties. So they had mobilised every resource to provide us with immediate and effective support by bringing up considerable quantities of fuel, food and oxygen.

In view of the great strength of the team and the reserves they had brought up, I immediately considered the advisibility of attempting yet another climb. I sounded my companions very

cautiously. Reiss only wanted to take the doctor and the glaciologist up to the South Col. Luchsinger would probably have liked to make a further attempt on Everest, but Schmied and Marmet would then certainly have wanted to have a go at Lhotse. Then again, would I have been in any condition, after three nights at the South Col, either to spend another two days there or even to take part in a climb myself? I found it a very difficult decision to take, up there on the rocks of the Geneva Spur, with such a strong reserve of men and material at the 26,000 foot level. If I had inclined even slightly towards another ascent, there would certainly have been two parties ready to go and I myself might have had my only chance of making such an attempt. If I did not clinch it now, I would never again have the opportunity of climbing one of these great peaks. But I dared not overload the camel's back. We had made three successful ascents—surely that was enough. The bad weather-report radiod up to Camp V by our liaison officer and the unmistakable bad-weather indications to the south finally settled the matter: there could be no doubt that the monsoon was about to set in with full intensity. In such conditions I would still have risked starting off on a climb if we had not been successful so far on a single peak; as it was it seemed my duty to call the expedition off. There was no objection to the column proceeding to the South Col and spending the night there with Reist and von Gunten; but the rest of us ought to go on down. And another consideration was that I wanted to let our friends in Zürich know the full results of all our exertions as soon as possible.

We shook hands and went our separate ways, and the column of ten was soon out of sight over the crest of the Geneva Spur. Marmet and Schmied went straight through to Camp III, Grimm and I only to V, which was fully occupied.

Long after nightfall, as the last of us were tucking in, a total eclipse of the moon set in. This heavenly portent threw the Sherpas at Camp III into a considerable state of fear. Linking the eclipse with our successful climbs, they were terrified that some deity or other was punishing mankind for our temerity in climbing Lhotse and Everest by removing the moon from their ken. In a great state of excitement they woke their friend and mentor Diehl, in order to show him the penalty, so plainly visible in the

sky, exacted for our meddlesome mountaineering efforts. In spite of Diehl's attempts to quiet them, a bedlam of exorcising shouts, songs and horn-calls broke out. Schmied's attempts to explain the phenomenon to the terrified Sherpas by drawing pencil diagrams on paper were equally useless. In the darkness and chill of a clear, starry night the camp deep in the Western Cwm was in a state of excitement bordering on panic. It was with relief that they witnessed the coming of a new day, and the Sahibs were as pleased as the Sherpas when on the ensuing nights the moon, disdainful of the petty affairs of men, sailed through the skies serenely on her usual course.

Nobody had seen the eclipse up at the South Col. They were all in their tents, where Reist and von Gunten were giving them a full account of their successful climb. Everyone was delighted that a double ascent of Everest had followed the success on Lhotse.

On May 25th the weather looked very unreliable. Early in the morning ominous mists crept along the mountain sides. Müller, who stood the altitude magnificently though he had never before been above Camp III, and Luchsinger went off together on a little détour to the little bastion at the south-east rim of the Col, so as to look down the Kangshung Face and out across Tibet. The point reached by them measures 8,015 metres (26,298 feet) and we were all pleased that Müller, who had quietly gone on with his glacier measurements while we were climbing up above, had had an opportunity of reaching that high point above the 8,000-metre line to crown his visit to the glaciers of Everest.

That day, May 25th, we said good-bye to the great heights. I sent another strong party of Sherpas up towards the South Col to help bring the stuff down; but they met Reist's party, which had already got down below the winch, and came back with them. Grimm's rucksack had been left behind at the top. Camp V was evacuated and Grimm now came under doctor's orders. His shoulder, indeed, went in again of its own accord on the way down, while he was gripping a fixed rope with both hands and trying to work his way round a projecting nose of ice; and so that matter was at last put right.

I myself went down to Base Camp. At Camp III I spent a long time discussing with my deputy, who was as happy as I was at

the successes achieved by his young friends, all the necessary measures for evacuating the upper camps; then I went on my way down, accompanied by Pasang Phutar and Annullu, reaching Base Camp at about 10 p.m. to the light of lanterns brought up to meet us by its occupants. There I spent several hours with our liaison officer in the stone hut. He listened to my narrations with rapt attention and we discussed the messages to be sent to the Ministry for Foreign Affairs at Katmandu. The Foundation had hoped we would be able to send a report in cypher, but we had discovered from experience that this was impossible; for the radio station at Namche Bazar is not an installation open to the public for the despatch of ordinary messages, but a Police Information Post. The people there had already expressed their willingness to transmit messages relating to the expedition, but not material unintelligible to themselves. Meanwhile the Ministry had most courteously agreed to my request to retransmit the message containing news of our success or otherwise, and only to make it public in Katmandu after its receipt in Zürich.

On the next day I sent the courier U Tsering down with instructions to deliver my radiogram at Namche, to order Tensingba to bring up 80 porters for our return journey and finally to take my detailed written report to Katmandu. To ensure speed and due attention to the delivery of the letter I had entrusted to his care, I promised him a handsome bonus.

The evacuation of the camps went ahead according to plan. We were also concerned to build up a considerable store for Müller, who was to continue his scientific work at the foot of the Everest group with a few Sherpas to assist him, till December. We made a present of everything we did not want to take back with us to the Sherpas, to use as they liked. They shouldered prodigious loads and we were glad to let them have the stuff. Even so, a lot of equipment was left behind in the Western Cwm.

We would have been glad to detail a number of porters to bring down food and other valuable material to share out to the local population had not the Icefall just at that very moment undergone decisive changes. Owing to serious movements of the ice our route, so carefully constructed, had become impassable at many points. In many places the whole neighbourhood had been

changed out of all recognition. There were forces at work here which we dared not provoke during these final days. The very thought of courting disaster during the ultimate phase, just for the sake of retrieving a couple of old tents or provision cases from the Cwm, filled us all with abhorrence. It was essential, in this as in other situations, to stop and weigh up the value of the material against the risks of an accident.

On May 29th Sahibs and Sherpas were mustered in full strength at Base Camp, and I declared the evacuation of the high camps complete. In face of the perils of the Icefall, which were growing from day to day, and the threat of the monsoon, there could be no justification whatever for letting a single man move up on to the very glacier which had treated us so kindly for nearly two months.

It was not till we were all safely assembled at Base Camp that the tension, which had lain upon us all for so long, relaxed. We were all fit and had survived the perils of the mountain. We were all deeply thankful, and to our recognition of our good fortune was slowly added the knowledge that the finest and rarest days of our life lay behind us.

CHAPTER XX

Homeward Bound

In the early morning of May 29th, to our great surprise and pleasure, we received, by way of the B.B.C., the congratulations of Hunt, Hillary and Tenzing. We now felt that our relatives and friends at home need no longer have any worries about our well-being, and we began the preparations for our return journey.

Towards evening the Sherpas who had been up to Camp II for the last time to bring down provision cases for Müller returned to Base Camp. Those cases were of greater importance to him than to the rest of us, because he was going to pursue his scientific researches and his tent-life in the glacier-basins and drainage area of Everest for some months to come. We had other and more attractive objectives before our eyes; the descent to the levels of afforestation, to pastures and meadows, to flowers and fruit, towards all those manifestations of life we had been missing so much during the last few months.

On May 30th we packed our belongings together and waited for the column of porters we had arranged for. It did not put in an appearance and the Sherpas refused to carry loads down from the Base Camp. We could not object to that, for there is a definite tradition that they are only used above Base Camp as high-altitude porters. In any case one day more or less did not matter, so we stayed in Camp till the next morning and as darkness fell we heard, probably for the last time, our old friend the 'Nine o'clock Express' —that familiar ice-avalanche from the Nuptse Face—thundering down on to the Khumbu Glacier with its infallible punctuality.

It was high time to be leaving the Base Camp. Under its skin of moraine-rubble the glacier was already continually melting. Several little walls in the camp had fallen down and small torrents of water ran between the tents all day long. We began to long for our departure.

On May 31st we were ready. Tensingba had not yet arrived with the column of eighty porters we had ordered, but we had meanwhile carried out a kind of press-gang act and had succeeded in enlisting thirty locals, who had come up scenting the possibility of a job. The Sherpas shouldered their own bundles, as anxious as we were to climb down to lower levels.

Luchsinger set off all our remaining explosives in one grand bang, which echoed back to us a hundred-fold from the surrounding walls which had become so familiar. '*Partir, c'est toujours mourir un peu.*'

The Sherpas were heavily laden with the mass of material they had collected, but they were in high spirits and obviously looking forward to the festive receptions awaiting us all at every village on our return. We moved down across swollen glacier-torrents and endless moraines, and in three hours with a feeling of intense relief reached the first yak pastures above Lobuje; though these were not yet green, there were tiny yellow primulas growing on them. At Lobuje we met Tensingba with his column of porters. We were delighted to see there, too, a completely restored Pasang Dawa Lama, who had come up to congratulate us on our successful climbs. I invited him to make the return journey with us as our guest; Dawa Tenzing was to continue to act as Sirdar as recognition of his great services to us on the mountain.

Over and above the first spring flowers, there was another surprise awaiting us at Lobuje. A fair-haired young lady came to meet us, accompanied by her porters, and introduced herself as Miss Courtney-Cowgill. Every man-jack of us was thrilled by the unexpected loveliness of this gracious presence and we crowded around the apparition from another world like bees round a honey-pot. She had been working for a long time in the service of the American Mission at Katmandu and now, at the end of her term, she was crossing Nepal to Darjeeling, with a détour to the foot of Everest en route. She had brought along a bottle of Benedictine for us and was only sorry that she had not been able to get to us before we left Base Camp. We spent the evening together with the Sherpas, who performed their monotonous but highly rhythmic songs and dances for us, and we tried to reciprocate with Swiss and American songs.

Next day Dawa Tenzing and the porters fetched the rest of our gear down from Base Camp. Müller pitched his tents near Gorakshep, the little lake in the middle of the huge moraines.

Then we bade farewell to that magnificent and impressive scene, as we finally left the realm of the Khumbu behind us. Happy and thankful as we were at the successful issue of our undertaking, we were sad at having to take our leave. And so we moved on silently over the gradually strengthening green of the pastures to Thyangboche. At Phalong Karpo I was shaken out of my reverie by the lively yapping of a small blue-grey pup. I picked him up and assisted by the liaison officer negotiated a purchase with the animal's Sherpani owner. In this way I was enabled to take home with me a real live memento of all our experiences.

At the monastery we received a cordial welcome from the Lamas, who invited us to a service followed by a light meal in the gumpa. The Lamas were seated according to their rank, we took up our places with the Sirdars on their left, and the Sherpas gradually filled the space behind, after each in turn had touched the floor with his forehead in front of the image of Buddha and offered a silent prayer. Then complete silence fell and the Head Lama began to pray in a deep voice, joined presently by all the other Lamas. Now rising in strength, now falling to a whisper, this litany continued for about a quarter of an hour. Then, one after another, they reached for their musical instruments. After a few tentative drum-beats, the deep tones of a big conch, blown by the Head Lama himself, suddenly filled the room, soon to be replaced by the shriller notes of two clarinets. When they died away two long, extensible horns lifted their sonorous voices in a sounding melody. That continued for some time, now one, now another instrument dominating with a solo in a curious rhythm, until they all joined in unison in a fortissimo, which died away slowly to end in a drum-roll. The instruments were then laid aside and novices brought in Tibetan tea. Thundu and his team had made a tasty meal out of the monastery's offering of potatoes, rice and dried goat's-flesh from Tibet, which was now served as a banquet. The dishes were handed to the Lamas at their places, and to us on the table. This friendly banquet ended late in the evening with chang, rakshi and Sherpa dances in the courtyard of the monastery, after

the Head Lama had once again offered his official congratulations and I had expressed to him our very warm thanks.

On the next day we descended to Namche Bazar and put up our tents at the same place as on our first arrival; then we went to visit the Indians at the radio station, where we found the first congratulatory telegrams awaiting us. The inhabitants had prepared a most cordial reception alike for the Sherpas and for ourselves. There were people everywhere waiting to offer us chang from beautifully shaped beakers decorated with bronze. The whole village was in festive mood and we joined in the celebrations with great enjoyment. It was late by the time our climbing party, which had split up into small groups, came back to the tents from the manifold scattered festivities.

On June 4th we paid a visit to the hamlet of Khumjung, which lies about an hour above Namche Bazar at some 13,000 feet. We climbed up through mist and pouring rain to the long terrace, covered in flowering rhododendrons and potato-beds, where the hospitable welcome in Dawa Tenzing's home made us forget all about the horrible weather. In the afternoon we visited one Sherpa's home after another, for those who lived here were leaving our service that very day; we must have been entertained in more than ten houses. The men were very proud to show us their property and their families, while the Sherpa women kept on pouring out home-brewed beer for us. We were most impressed by their natural friendliness and cheerful disposition; wherever we went, we felt we were in contact with an honest, reasonable and totally unspoiled race of men. We exchanged gifts. Dawa Tenzing gave me Rekpa, one of his gaily-marked Tibetan terriers, and I handed him a small Bernese pennant, which he immediately put up next to the photographs of Hunt and Evans. There was a great deal of handshaking and elbow-lifting to be done before we all got back to our tents at Namche Bazar again. Indeed, I am told that the last to return found the night-descent a very ticklish proposition.

Next day we left Namche. Our caravan was much shorter than on the approach: it now consisted of rather more than twenty Sherpas from Darjeeling and about sixty Solo Khumbu porters. Müller and his faithful Mawang Gyurmi Lama came with us quite

a long way beyond the village. Then we said good-bye to our loyal and co-operative team-mates, and they went back together to get on with their work. Müller with his alert intelligence and immense application was intent on the continuation of the expedition's scientific programme; the Lama anxious to get back to the instruction of his pupils in the three 'r's' and also in the Buddhist creed.

We left Namche late and richly caparisoned in white scarves, but that didn't worry us. After a very few hours we found an ideal camping-place outside Ghat, close to some water. There, at about dusk, we pitched our tents.

The next stage to Taté was covered in drenching rain. This was the monsoon in earnest and we could imagine the heavy snow which must be falling up in the Western Cwm. We were glad to be asked into a house at Taté to get warm before crawling into our damp tents. Unfortunately we made the unpleasant discovery that the tin box with the films in it, a case with all my personal papers in it and some dollar and franc notes were missing from the official box. The porter had entrusted the package to a Sherpa woman from Taté and disappeared. After taking the liaison officer's advice, I offered a considerable reward for the recovery of the stolen goods and that very night a small but strong Sherpa detachment went off to bring the culprit, of whose identity they were well aware, to book. Next day they brought him to the neighbourhood of our camp, where he got away again. Luckily all the stolen objects, except a very few but irreplaceable films we had exposed at high altitudes, were recovered. He had thrown the films away in the jungle where children had found them, taken the little yellow tins into use as handy drinking-vessels and were amusing themselves with pulling the film-strips out of the casettes and putting them back again. We informed the Police Post at Namche Bazar of the circumstances and heard later in Katmandu that the thief had been apprehended and brought before the court at Okhaldhunga.

This incident had cost us a day, and it was June 8th when we were able to move off along our route, which led through tropical jungle to a pass some 12,600 feet high. Thence it descended into a deep, wooded valley to about 10,500 feet, climbing out of it

again for several hours to reach another high pass at 14,100 feet. There we found the marvellous Himalayan alpenrose in full bloom. At the alp of Thyange, at 13,500 feet, our cook had selected an excellent bivouac-site in the shelter of a huge rock, offering shelter from the heavy rain which fell again that night. The porters had marched splendidly and had dealt with the two ascents totalling almost 6,000 feet in surprisingly short time. Diehl arrived with the stragglers, having shown a truly paternal solicitude for the youngest of the porters, a lad of fourteen. The child had been loaded up by his mother with at least 12 lbs. of potatoes and rice over and above his 66 lb. case. The load was too heavy for him, but he was determined not to give in because, quite wrongly, he feared that he would disgrace himself in his comrades' eyes and be sent home by us before the end of the march. It was only when he was sure nobody was watching that he allowed Diehl to carry the case for him.

The next day took us over a prominent high pass of wild and mountainous character, the path winding up to a height of 15,250 feet. As we crossed the saddle we remembered sadly the two porters who died there of cold and exposure in the autumn of 1952. We spent the night down in the valley at Ringmo and once again heavy rain fell as we sat in the shelter of our tents.

On June 10th U Tsering, the courier, brought our mail up to us in Thaktok and we were all delighted to receive good tidings from our relatives at home. We scribbled some hurried letters, and two days later the runner was off again bound in long forced stages for Katmandu.

Our next two marches brought us by way of Chyangma to Thosé. The weather kept to its pleasant habit of reserving most of its downpours for the night, while we completed our day's journey dry. Our daily landscape now consisted of woods and maize-fields, and we derived great enjoyment from the well-cultivated fields on terraces built and tended with such skill and industry. Just before reaching Thosé we received a message that two Sahibs and a Memsahib were awaiting us there and we hazarded various guesses as to who they might prove to be. The solution to the riddle was revealed when at Thosé we were greeted by the first representatives of the world's all-pervading

publicity services, Pierre and Peggy Streit, an American couple, working as photo-reporters and television and film agents, and by another photo-reporter from the Magnum Publishing Organisation, Marc Ribeaud. The encounter was a pleasant one and the forerunner of further meetings with numerous journalists who came to meet us in the course of the next few days, all of them bringing sheaves of letters and telegrams.

Our road led on westwards, up hill and down dale. Wonderful strawberries grew at the edge of the path and we enjoyed them although the porters would have nothing to do with them; we liked the taste even if they were perhaps past their best. Equally inviting was the opportunity to bathe in the rivers, which we never once missed. The air was misty and warm, and the water wonderfully refreshing. We usually marched only in a shirt, shorts and shoes. We waged warfare as best we could with the leeches, a matter into which the report of every expedition has gone deeply enough. Our efforts were neither more nor less heroic than those of our predecessors.

Dawa Tenzing always saw that our stages ended at high level. At times we passed through malarial valleys, but took care not to stay in them too long. On our ascent from the Bhote Kosi we met a party of Sherpas returning home from the Japanese expedition to Manaslu. From them we learned in some detail of the successful ascent of that 26,658 foot peak in the Nepal Himalaya. As an unmistakable sign of their participation in the Japanese expedition, the Sherpas were wearing big straw hats; it is problematic whether they managed to get them to Namche Bazar undamaged by the monsoon rains. This meeting provided us with a further example of the swift progress in opening up the Himalaya, and we rejoiced in the success of the Japanese, who had reached Katmandu a few days before us.

On June 19th we halted a long time for bathing at the junction of the Sun Kosi and Indrawati. When we moved on towards Hukse it turned very hot indeed. In the evening it rained long and hard; and we were glad to have been able to arrange our kitchen and mess-room in the open market-stall under a corrugated-tin roof.

Meanwhile we were within a day's march of Katmandu; for

days we had been passing splendid Hindu temples along the road. The racial characteristics of the people here were quite different. Our porters, in their Tibetan rig, were conspicuous among the inhabitants of the flatter land through which we moved, but they marched stolidly on. The two Tibetan hounds seemed equally happy as they trotted along, at times running hither and thither in the liveliest manner, then again waiting for us to carry them over the long rises.

On June 20th we Sahibs hurried on in the company of the pressmen to Katmandu, ahead of the porter column. There was one more pass to cross. At Banepa some of us were able to board the Streit's Landrover while others, a mile or two further on, ran up against the two Jeeps Boris Lissanowich had of his own accord sent out to meet us, loaded with beer and sandwiches. A whole mob of journalists took us by surprise just as Luchsinger was skilfully directing operations to lay a causeway of bricks through the mud under which the road had disappeared, and so to get our vehicle out. We were then able to proceed to Katmandu, while the porters spent one more night in Banepa, to be fetched next morning by cars.

A marvellous reception had been prepared for us there not only by resident Swiss, but also by the Americans, British and Indians, and above all the native population and the Nepalese Government itself.

A few days later we flew to Zürich by a route packed with interest and variety, by way of India, Istambul and Athens, at all of which we received the kindest treatment. We were deeply moved by our reception at Zürich and everywhere else in our own country. We had not, after all, set out to do anything heroic or fit for eulogies, but only to make closer acquaintance with a strange country, the great Himalayan ranges.

★ ★ ★ ★ ★

Now that we are at home again going about our accustomed business, my thoughts keep winging back to the peasants of India and Nepal, to the Sherpas, the monasteries, the giant peaks and the temples of Katmandu.

Our contacts with dark-skinned races, who speak a foreign language, was of necessity superficial, but wherever we went we met people who think and feel as we do ourselves. Their usages, their manners and their way of life were perhaps divorced from ours, but the differences tended to disappear and the common, unifying factors stood out, the more we had to do with them. The joys and sorrows which encourage and depress these people in their struggle for economic development are basically the same as those which shape our own lines of action; and many of us developed a better understanding with some Sherpa and Lama than with many of his everyday friends. And we had all achieved a new approach to life through our contact with the people of Nepal and their age-old culture and religion.

When my thoughts go back to our Sherpas, I always think of the many carefree hours of our march and of the climb itself, of the ever new and varied scenery from the broad, gentle plain of the Ganges all the way up to the savage cauldron of the Khumbu Glacier, and our strange confidence in tackling the summits of Lhotse and Everest strikes me afresh. Once again I see those tre mendous mountains, whose ridges and faces go streaming to the sky, and I hear the thunder of the avalanches and the glacier's groaning. Then I think with gratitude of all those who sought a way into those heights before us, and of their experiences, on which we were able to base our efforts. With no less gratitude do I recall those whose counsel and activities made our whole venture possible.

Then again I think of our fears for our companions, lying grievously ill, and of the early onset of the monsoon which in the end served to fortify our arm. When I try to sort out the greatest single impression it all made on me, I am left with no definite answer. Was it the approach to the Hills, or our activities at high altitudes, or perhaps the vast sweep of the panorama from Himalayan heights that left its most enduring mark? I cannot say. I only know that the long hours of our expedition, whether gay or trouble-laden, lay under a lucky star and brought to its every member an experience which bore fruit for each of us according to his mental and spiritual endowments.

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