Volume XVIII *1954*

THE HIMALAYAN JOURNAL

RECORDS OF THE HIMALAYAN CLUB

Edited by H. W. TOBIN

CONTENTS

OXFORD
AT THE CLARENDON PRESS

Price 21s. net or 14 Rupees

THE HIMALAYAN JOURNAL is published on behalf of the Himalayan Club by the Clarendon Press, Oxford. It may be obtained through any bookseller or by application to Mr. Geoffrey Cumberlege, Oxford University Press, Amen House, Warwick Square, London, E.C. 4, to whom all communications respecting subscriptions to the Journal or advertising should be addressed. Inquiries in India should be addressed to The Manager, Oxford University Press, Oxford House, Apollo Bunder, Post Box 31, Bombay, 1.

Panorama from summit of Everest: Makalu in right foreground, Kangchen Junga in left distance

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'To encourage and assist Himalayan travel and exploration, and to extend knowledge of the Himalaya and adjoining mountain ranges through science, art, literature, and sport.'

VOLUME XVIII

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OXFORD
AT THE CLARENDON PRESS
LONDON: GEOFFREY CUMBERLEGE
1954

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EDITORIAL

OUR apologies are again due for the tardy appearance of the *Journal*, which has been due to various causes. The chief one was the restriction in transfer of rupees to sterling. Also some of the plentiful copy has been late to hand. We are most grateful to our publishers for all their unfailing assistance and co-operation.

We warmly thank all who have contributed, and also all those organizations who have reciprocated. These include our own Alpine Club, the Climbers' Club, the Fell and Rock Club, the Swiss Foundation, and the Club Alpin Français, and we especially thank *The Times* for permission to make use of their copyright and for their willing co-operation.

EVEREST—1953 [1]

PREPARATION

CHARLES WYLIE

PLANNING for Everest 1953 started as soon as the Cho Oyu expedition returned to England in July 1952. It got into its stride in September when the summer holidays were over and the Himalayan Committee—the sponsors of the expedition—could meet to take basic decisions. And it received 'Full Steam Ahead' when Colonel Hunt arrived from Germany on 8th October.

This is not the place for a detailed account of our preparations. However, some aspects deserve mention as they played no small part in the success of the expedition.

To start with, our plans were firmly based on the considerable fund of hard-won knowledge and experience which we inherited from our predecessors. We knew, for instance, very much what to expect from the weather, and when to plan to put in the assault. We knew quite a lot about the effects of altitude on the human body; about the benefit of oxygen, about acclimatization, about diet, about protective clothing; much data on these matters had been collected, not only on Everest, but on Cho Oyu with Everest in mind. Our Swiss friends had pioneered the route on the Nepalese side, above the ice-fall and nearly to the South Summit, and this knowledge they generously put at our disposal.

The fund of knowledge was ably assessed at the start of our preparations, and as a basis for them, by Colonel Hunt in the form of a detailed plan, from which stemmed logically anything and everything connected with the expedition, from the number of tents required at the South Col to the latest date for the dispatch of our oxygen cylinders. This plan ran like a thread through the period of preparation and indeed throughout the whole expedition, for it was followed, except for minor changes, in the event on the mountain.

The salient points of the plan were that the climbing party should be of ten climbers and a reserve, the doctor; that thorough acclimatization should be carried out before attempting the climb; that this acclimatization should aim at making all members fit to live without deterioration at 21,000 feet for the period of the assault; that an

[1] Sir John Hunt has kindly consented to the publication in our Journal of the Everest 1953 story under the joint authorship shown below. Where not otherwise indicated the text has been taken from the article in *Alpine Journal* by Sir John and Michael Westmacott. To them and to all the other narrators our most warm thanks are due.

Advanced Base should be established at 21,000 feet at the top of the Western Cwm, from which the assault would be organized and launched: climbing and living above this Advanced Base would be confined to that essential for each member to do his allotted task in the assault—for instance, summit climbers would not go above this height until they attempted the summit; that a really adequate quantity of stores should be lifted to the South Col to give the summit parties good support as high as possible; that the summit camp should be placed as near to 28,000 feet as possible. Lastly, the plan recognized that the chances of success would be greatly increased if oxygen was used thoroughly and with confidence; oxygen was to be used by all above the South Col and by some from the Lhotse Face Camp. In addition, a large number of cylinders were to be taken for training, which could also be used as supplementary oxygen during the climb.

Six months were spent in making our preparations. During that time a considerable number of people became involved in helping us in one way or another. The fact that the expedition was well launched, well equipped, and well provisioned was largely due to the hard work and enthusiasm of one and all of these people, whether members of committees, manufacturers, packers, dieticians, or our two hard-working secretaries. Their willingness to put every effort into their work and the encouragement of the many hundreds of people who wrote to us to wish us well were a reminder to us throughout the expedition that the effort was not ours alone, and that success would bring inspiration to people the world over.

ASSEMBLY

On the last day of February the main party reached Bombay, where we were most hospitably received by A. R. Leyden, the local Secretary of the Himalayan Club. He, too, arranged our affairs so efficiently that the transhipment of our 480-odd packages through the Customs to the train presented no problem. This was typical of the invaluable and unstinting help given to us by members of the Club, both on the outward and return journeys.

The main body travelled with the baggage, a long and tiresome rail journey with several transhipments of kit, finishing up with the pleasant walk over the pass from Bhimphedi to Kathmandu. Meanwhile the rest of the party assembled separately by divers routes, mainly by air, by ones and twos at the Embassy. Here, once again, a British expedition was welcomed and looked after with the greatest kindness by H.E. The Ambassador, Mr. C. H. Summerhayes, and by Colonel and Mrs. Proud, the First Secretary and his wife. To complete the party we were joined here by Tensing and

seventeen Sherpas, the nucleus of our high-altitude porter team, who had been selected and enlisted in Darjeeling by Mrs. Henderson, the Club's excellent Darjeeling Secretary. The Sherpas' welcoming grins, the gaily striped pangdens of their attendant Sherpanis, the assortment of battered trilbys and odd pieces of climbing clothes gleaned from past expeditions, quickened in us at once latent memories of high hills and a growing sense of high adventure. We felt the expedition was really beginning. It was particularly good to get to know Tensing, about whom we had heard so much. We were all struck by his charm and sincerity, his cheerful personality and his authority with his Sherpas. We were lucky to have a man with such qualities both as Sirdar and a member of the climbing team.

The baggage arrived over the rope railway at Thankot, and with the help of the Indian Army Sappers engaged on building the road into Nepal, was ferried to Bhadgaon, at the east end of the valley, where the parade ground had been put at our disposal by the kindness of General Kaiser Shamsher, the Defence Minister. Here I enrolled some 350 coolies, mostly Tamangs from the valley or districts adjoining it. This young army would have been so unwieldy on hill paths that we had to divide it into two. We did so reluctantly, as it meant dividing also the climbing party, the members of which we had hoped would have the chance to get to know each other well on the march. However, this object was largely achieved by dividing the party so that a large majority, including most of our Sherpas, went with the first party, and only the minimum with the second.

THE APPROACH

On 10th and 11th March, while the newshawks took their final photos, the long trains of coolies filed through the narrow streets of Bhadgaon on the first stage of the seventeen-day journey to Thyangboche. For two hot days we descended to the deep cut of the Sun Kosi, which we crossed at Dolalghat at only 2,000 feet. A 4,000-foot ascent next day brought us to a delightful camp site on the open grassy Chyaubas ridge. My party followed this ridge the morning after a storm. The rain had swept the air clean over all Nepal. The whole Himalayan chain, from the Everest group to Annapurna, stood out with astonishing, dazzling, clarity. The ridge was carpeted with tiny blue gentians and dotted with rhododendron trees in full bloom—it would be hard to imagine a more delightful scene.

That night we camped at the Gompa at Risingo, a neat and flourishing Tamang village. The inside of the Gompa had just been exquisitely painted with fearsome allegorical designs of great

intricacy. The painter had been hired from Lhasa by public subscription of the village and had taken a year to do the work.

From here we descended for two hours and then climbed to a broad hill-side giving a wonderful view of Gauri Sankar and Menlungtse. We were lucky to be travelling before the haze came up from the plains. Roberts's party, following about a fortnight behind, had no such views.

Our routine was to leave camp soon after dawn and put in two or three hours' march in these, the best hours of the day. Then we would halt by a river and wash and bathe, while Thondu, our excellent cook, prepared a large breakfast. The coolies would catch up and pass on while we lazed about reading or writing, taking photos, bird-watching, or following our various pursuits as we felt inclined. Then we would go on past the coolies again to choose the camp site and check the loads in. The marches were easy, for the coolies did not cover more than 10 miles in a day, and we were able to enjoy the delights of Himalayan travel to the full. Whole hill-sides were ablaze with scarlet rhododendrons and white magnolias. The fruit trees were in blossom. The weather was fine and cool and our camps delightfully sited. Birds were mating, and we saw minivets, sunbirds, rose finches, verditer, flycatchers, and many other fascinating hill birds. We were soon in Sherpa country, and the people became increasingly interesting.

The coolies seemed to enjoy the march almost as much as we. They were being well paid, not only for the outward but for their unladen return journey as well, and would often hire their own carriers—normally the village belles—to carry their loads from stage to stage. There was *rakshi* on sale at almost every *chautara* and gay songs and the rhythm of madals would echo round the hills as we marched, and late into the night in camp, as youth and damsel vied to cap the other's couplet with one more daring than the last, as is the custom in the hills.

We also took advantage of the long march to break ourselves in to heavy load-carrying and to accustom ourselves to wearing oxygen masks. We soon knew that John Coats, the designer of the masks, had done a first-class job. We found we could race uphill at full speed, panting hard, or sleep a whole night through wearing a mask, without feeling any restriction in breathing.

After moving across the grain of the country for thirteen days, we turned north up the valley of the Dudh Kosi to Khumbu, the home of our Sherpas. Each day's march brought us to bigger and bigger country. Hill-sides rose 5,000 feet in a single sweep above the gorge. The white heads of 20,000-foot peaks began to appear all around us, instead of gleaming far away to the north.

At Namche we were surprised to find an Indian wireless post, through which we quickly arranged, through the kindness of the Indian Embassy in Kathmandu, to send urgent messages or dispatches. It was due to the presence of this post that the news of the success of the expedition reached England in time for Her Majesty's Coronation.

THYANGBOCHE

Next day we reached Thyangboche. Here we paid off our Tamang coolies. They had done very well, having given little or no trouble and having delivered all our many hundreds of loads intact and without loss. We now had a few days to rest and enjoy ourselves in the wonderful surroundings of Thyangboche before starting out on our acclimatization climbs.

On the march from Kathmandu we had noticed how well sited were each of the Gompas we had passed. Thyangboche was no exception; in fact we thought its setting would be hard to beat anywhere in the world. The Gompa itself, squat and forbidding, surrounded by a cluster of little whitewashed houses, crowned the point of a shoulder high above the Imja Khola gorge. In front of the Gompa was a grassy alp surrounded by rhododendrons, azaleas, and silver birch trees. Ahead, in full view, some 12 miles away lay our objective, the summit of Everest, as Michael Westmacott has described it, 'a massive shoulder hunched above the tremendous South Wall of Nuptse'. To the right, standing alone, rose Ama Dablam, a fantastic leaning tower of near-vertical precipices, which looked as nearly inaccessible as any mountain can be. Above our alp the early morning sun shone through the wafer-thin crenellations of the beautiful ice-fluted peaks of Kangtega and Thamserku. Across the valley and beyond Namche were rocky spires and more snow peaks. As if this was not enough, the area of the Monastery has become, thanks to the teaching of Buddha, an animal sanctuary. Blood pheasant, ram chickor, kalej, the brilliant cock manal, as well as musk deer could be seen quite close to our tents.

The lamas were most hospitable. The Abbot, a youth of 17, was still studying at Shigatze, and the senior lama, a portly figure of great dignity, deputized for him. Our Sherpas were specially blessed, and we were all treated to tea while the acting Abbot described how a *yeti* had visited the alp two winters before. Looking out of the window he pointed out where it had rootled about looking for grubs in the ground and where it had sat sunning itself on a rock. John Hunt laid ceremonial scarves on the Abbot's chair and on another reserved for the Abbot of Rongbuk, who periodically pays visits to Thyangboche and other Gompas in Sola Khumbu.

ACCLIMATIZATION

After three very pleasant days at Thyangboche we left in three parties for our first period of acclimatization. Each party went up a different valley with the object of camping at about 17,000 or 18,000 feet and climbing, if possible, to 20,000 feet. We took with us some of our training oxygen cylinders to get used to using the sets and to experience the beneficial effects of oxygen. We also tried out for forty-eight hours our special high-altitude ration; perhaps we were not high enough, but this ration was generally disliked and remained unpopular for the rest of the expedition.

Hunt, Gregory, Lowe, and Tensing camped beneath the South Face of Nuptse and climbed a peak of about 19,500 feet, which they named Chukhung Peak. Evans, Bourdillon, Westmacott, and Band went up the valley immediately to the south of Ama Dablam, camped on the south-west ridge of that peak and climbed to about 19,500 feet, some using open- and others closed-circuit oxygen sets —the closed-circuit sets, developed by Bourdillon, were in theory the answer to the oxygen problem, but they still had to be proved at high altitudes. They then camped on a col which they named the Mera La, at about 19,800 feet, leading over to the Hongu basin. The third party, consisting of Hillary, Noyce, Ward, and Wylie, went up the Chola Khola and camped at the col at its head. From here, using oxygen, they climbed a delightful peak of about 19,000 feet to the south of the Col. The following day they crossed the col and camped in the valley which lies between the Chola Khola and the Ngojumbo. From this camp they climbed the fine 20,000-foot peak, known as Kangcho, at the head of the valley.

By 6th April we were all back at Thyangboche for two days' rest and reorganization, after which we set off again in three parties, this time differently composed. Hunt, Noyce, Bourdillon, and Ward went up the Imja Khola, camped at the edge of the wide basin to the north-east of Ama Dablam, and climbed the rocky 19,500 foot northern outlier of Ama Dablam, Ambu Gyabjen. They then re-crossed the Imja and went up the westernmost of the valleys coming down from the south face of Nuptse. From here they crossed over on to the Khumbu glacier, climbing *en route* an attractive 20,000-foot peak known as Pokalde. Bourdillon returned to Thyangboche to meet the consignment of oxygen being brought up by Roberts, while the others went on up to Base Camp on the Khumbu glacier.

Evans, Gregory, Wylie, and Tensing with seven Sherpas specially selected for work above the South Col, camped at the head of the Imja glacier beside a lake. Putting a further camp at about 18,000 feet, they climbed a 20,000-foot peak, which they named the Island

Peak because it rose in the middle of the enormous area of ice formed by the glaciers flowing from Lhotse and the Imja-Barun watershed. Tensing led very competently, most of the way. The high-altitude Sherpas were trained in the use of the open-circuit oxygen set. Most of them said that it made going uphill seem like going along the flat; Ang Temba, however, not to be outdone, claimed that it made uphill seem like downhill.

All these climbs were carried out in the spirit of an Alpine holiday, and in perfect weather. The country was often unexplored, and all the climbs were new ones. Altogether this period was most enjoyable. It was also of great value: at the end of it we were all fit and acclimatized to about 20,000 feet; all the climbing party and high-altitude Sherpas had used oxygen and had gained confidence in its value; we had used all our equipment and tents. Best of all, the whole party, climbers and Sherpas alike, now knew each other on the rope and had shaken down properly into a happy, well-knit team.

THE ICE-FALL

The job of the remaining party (Hillary, Lowe, Westmacott, and Band) during the second acclimatization period was to go straight up the Khumbu glacier and select the best route up the ice-fall. As they moved up the glacier they were caught in a heavy snowfall. This proved to be the first of a spell of daily falls, which continued for the next five weeks. With the party were about forty coolies, who were not equipped for snow; however, snow blindness was prevented, except in a few mild cases, by the ingenious improvization of goggles from string, sticking plaster, and tiny squares cut from the spare tales of our Panorama ski goggles. Thus forewarned, we told the main body of some 300 Sherpa coolies to bring goggles of their own. So well is Khumbu equipped from climbing expeditions that more than half were able to do so.

On 12th April Hillary's party camped at the site of the Swiss Camp I at the foot of the ice-fall. Next day they made their first reconnaissance. They found the ice-fall had changed considerably for the worse since 1951. It was in fact four days before Camp II was established, just over half-way up the ice-fall, about 1,000 feet above the beginning of the steep bit.

After trying various alternatives, they chose a central route, well out of range of avalanches from the flanks. The dangers of the ice-fall itself, however, could not be avoided. The steep section below Camp II lay over a crazy pile of ice-blocks of all shapes and sizes. The whole section was threatened by seracs. In between were gaps and holes often hidden by fresh snow. The larger crevasses were

crossed by sections of our aluminium ladder, later to be replaced by tree trunks brought up from the woods near Thyangboche. Hand-lines were fixed at several places, including two vertical pitches known respectively as 'Hillary's Horror' and 'Mike's Horror'.

Camp II was sited on the edge of a flattish shelf reached by traversing a constantly changing area of crevasses and unstable blocks. There were continual cracks and rumblings to be heard at this camp. Later crevasses started to open right under the tents; the Sherpas refused to sleep there and the camp was abandoned. Fortunately by then it had served its purpose as a staging camp for parties ferrying loads up the ice-fall.

Above Camp II the best route proved to be on the right, coming back to the centre at the top of the ice-fall. Here the large slices of ice which break away from the Western Cwm had not yet started to break up into the small blocks of the lower part of the ice-fall. The route finished up winding between huge, iceberg-like blocks. The 40-feet vertical side of the final block was climbed by Hillary up a small crack. This was obviously the place for our rope ladder, a present from the Yorkshire Ramblers. The top of this block was joined to the floor of the Western Cwm by a narrow neck of ice which fortunately remained *in situ* until the end of the expedition. A few yards beyond this neck Camp III was pitched at the very top of the ice-fall, at 20,200 feet.

By this time Hunt's acclimatization party had arrived at Base Camp, and they took on the work of improving the track. More ropes were fixed, more logs brought up and laid across crevasses, more marker flags planted. They, and each successive party going up the ice-fall, improved steps and stamped down the new snow until in time the route became a 'main road' climbable, in good conditions, in three hours from Base to Camp III. Up till mid-May, however, conditions were seldom good. Snowfalls continued daily, and the day's first party often had to clear away a foot of fresh snow from the tracks. This made the Sherpas' task very much more difficult.

BASE CAMP

While this work was going on, the rest of the expedition had come up to Base Camp, bringing with them all the stores from Thyangboche. Major J. O. M. Roberts had arrived from Kathmandu with seventy coolie loads of assault oxygen cylinders, which had been flown out from England at the last possible moment, to give the maximum time for manufacture and assembly. With him had come James Morris, the Special Correspondent of *The Times*, who henceforth became a very active member of the expedition. A further

nineteen Sherpas had been recruited locally to help carry stores as far as Advanced Base. Base Camp had been moved to a fresh site, which we found preferable to the old Swiss Camp I.

THE BUILD-UP

On 24th April, after two days' rest at Base, the first teams started ferrying loads up the ice-fall. The Sherpas were divided into three teams. Two teams worked a two-day round trip shuttle service on the ice-fall. One team would carry to Camp II and sleep there; next day they would dump their loads at Camp III and return to Base. While the first team was carrying to Camp III the second would be on its way to Camp II. The third team was based at Camp III and ferried loads on up the Western Cwm to the site of the Advanced Base (Camp IV). A member of the climbing party always led each ferry team of Sherpas. We estimated that it would take about three weeks to lift the 4 tons of stores we required at Advanced Base; and so it worked out. The ferry teams stuck to their schedule in spite of heavy snowfalls, and in spite of casualties through coughs. After ten days Colonel Hunt was able to give everyone two clear days down at Lobuje—a delightful grazing ground on the edge of the Khumbu glacier, about two hours below Base Camp. This did us all a lot of good in many ways; in particular it helped clear up the cough infection which had hit the Sherpas badly.

FROM Camp III, at 20,200 feet, on 22nd April, the route into the cwm was explored by Hunt, Band, and Hillary. On the 25th the big crevasse, discovered during this earlier reconnaissance, was bridged by three sections of the ladder, and a way found by Hunt, Hillary, and Evans among the maze of crevasses in the floor of the cwm to the site of the Swiss Camp IV at about 21,200 feet.

Then came the task of moving the bulk of the loads from Camp III to Camp IV. Another ferry service of seven Sherpas with Noyce and Gregory started on this job on the 26th. They were seriously handicapped by heavy falls of snow, which made it necessary to remake the tracks afresh every day, no small effort at that altitude.

The time had now come to consider the second major technical obstacle—the Lhotse Face. On 2nd May, Hunt, Evans, and Bourdillon, using closed-circuit oxygen, left Camp IV for a preliminary reconnaissance. They were followed next day by Wylie and Ward. Moving with great difficulty owing to recent heavy falls of snow, they passed the site of the Swiss Camp V and climbed a short distance up the steep section of the Lhotse glacier, probably reaching 22,600 feet. They returned to Camp IV and the following day

established Camp V on the site of the Swiss autumn camp. Hunt then returned to Base with two sick Sherpas, while Evans and Bourdillon, supported by Ward and Wylie, continued the reconnaissance.

On 4th May a single tent was put up at a height of about 23,000 feet. This bivouac on a narrow ledge was dignified by the name of Camp VI. It was in the same place as the Swiss autumn camp and was reached by much the same route; some of the Swiss ropes were still in place. The going was extremely arduous and the route-finding very difficult, in spite of occasional traces of the Swiss. On the 5th Bourdillon and Evans continued to push up the face, in atrocious weather and through deep unstable snow, to a height of nearly 24,000 feet, before returning to Camp IV and eventually to Base.

This reconnaissance enabled the Leader to decide the plan of assault. A theoretical plan had, of course, been worked out in London as a basis for the planning and preparation of the expedition; since that time two possible alternatives had been evolved, both based on a double assault, with a possible third attempt timed to take place some time after the first two in the event of their failure. Broadly speaking, Plan A would consist of two successive attempts using open-circuit oxygen apparatus; in Plan B, one attempt would be made with the closed-circuit system and the other with the open circuit. The general pattern of each type of assault was to be similar, with the important difference that in the second alternative (Plan B), the closed-circuit attempt would be made direct from the South Col without using an intermediate camp on the south-east ridge, thus saving time and economizing on the amount of stores to be lifted up the Lhotse Face. As a result of the trials of both types of oxygen equipment during the reconnaissance, the closed-circuit cum open-circuit plan was adopted.

All was now prepared for a crucial stage of the attempt—the preparation of the face and the building-up of the South Col camp. The reconnaissance had confirmed what we had gathered from Swiss accounts: that a great deal of work would be necessary to make a good route for porters, and that even then the face presented a major obstacle, both on account of the actual climbing difficulties and of the rarified atmosphere. The face is very steep and very long, probably 3,000 feet from Camp V to the top of the glacier and another 1,000 feet on the rising traverse to the col—a total of 4,000 feet from the bergschrund to the South Col. The combined effects of altitude and of daily falls of fresh snow made movement exhausting, even up a prepared track. The Lhotse Face was clearly a problem which threatened to exhaust the resources of the party.

The reconnaissance had taken place during a break in the work

of ferrying the loads upwards, during which most of the Sherpas and about half of the climbing party went down the glacier to a grazing alp named Lobuje for a well-earned rest. With their return on 6th May the second half of the Build-up programme was resumed, the teams being reconstituted so as to provide variety. In the first half, the main work had been in the ice-fall: now the emphasis was in the Western Cwm. At the same time, a party was sent to prepare the Lhotse Face, following the report of the reconnaissance party. This consisted of Lowe, Westmacott, and Band with four of the best Sherpas: Ang Nyima, Da Tenzing, Ang Namgyal, and Gyaljen. Unfortunately Band fell sick before this party set out. Gyaljen and Westmacott were by no means well.

After the Swiss experience of the direct route towards the South Col, crossing the bergschrund and making straight for the couloir beside the Eperon des Genevois, we had chosen the more indirect route by the Lhotse glacier. The term is misleading for it is, in fact, a glaciated slope rather than a glacier. Its character is very different from that of the ice-fall. Photographs taken in 1951 and 1952 showed exactly the same conformation of walls and ledges as faced us this year. There was a comforting feeling of stability, at least as far as the larger features were concerned. The technical difficulties, however, were no less and the general angle considerably greater. Ice-walls succeeded sloping ledges, apparently without end. A thousand feet of fixed rope was used on the face. It was a period of tremendously hard work for those engaged in preparing the way.

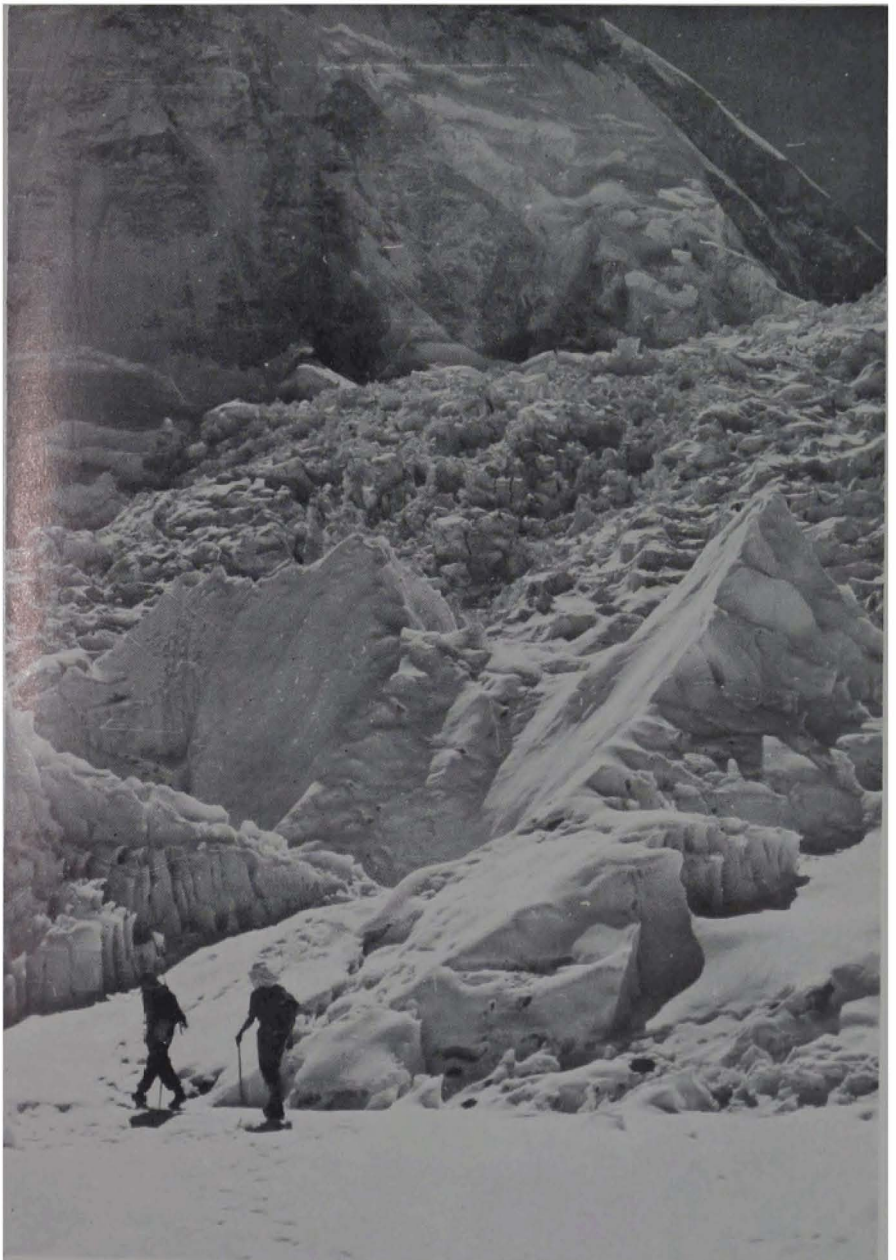
THE LHOTSE FACE

GEORGE LOWE

By the 10th May the plan of assault had been agreed in detail. Michael Westmacott, George Band and I were to prepare the ice face of Lhotse so that the loads could be carried forward to the South Col. We were to work without oxygen as high as possible, in order to conserve our supplies, and at one stage it was expected that one camp somewhere near the top of the face would be sufficient. In actual fact, there were two camps established on the Lhotse Face during the preparation of the route, Camp VI, a single tent, which was removed after the route was established, and Camp VII, which was the main camp used. I do remember during the first few days of the work on the Lhotse Face, when the difficulties appeared very great, that the question as to whether a third camp should be placed on the face was debated over the wireless and was firmly decided against.

On the 10th May I accompanied John Hunt, Ed. Hillary, and nineteen Sherpas from Camp III to Camp IV, and in the late afternoon I moved up to Camp V at the foot of the Lhotse Face with four of the Sherpas, Ang Nyima, Da Tensing, Ang Namgyal, and Gyaljen, who were to help me in the absence of Band and Westmacott. George Band, who was suffering from a very sore throat, had gone down to Base Camp, and Mike Westmacott was on his way up and had not yet arrived. We had brought with us a few days' food, but the main part of our loads consisted of 400 feet of Beales line, 35 pitons, and two piton hammers.

It snowed heavily and blew strongly that night—in fact, snow had fallen daily since 11th April, and we accepted it as usual, but it made all movements tedious and slowed down our progress. On 11th May Ang Nyima and I set out with pitons and rope to occupy Camp VI, 23,000 feet, leaving Ang Namgyal, Da Tensing, and Gyaljen to follow later with our bedding and some food. Gyaljen suffered from altitude headaches, but I gave him A.P.C. and he came gamely on. Snow began to fall before midday, the climbing was very steep, many steps had to be cut and we took $5\frac{1}{2}$ hours to reach Camp VI. On the first steep ice pitch we discovered a Swiss fixed rope and used it in a slightly altered position. We also discovered 400 feet of fixed line below Camp VI and replaced this with new rope. Just before 4 p.m. Ang Nyima and I occupied the small platform that we called Camp VI. We took the loads from the three Sherpas who had followed so valiantly, and they went back to Camp V.



Reconnaissance in the ice-fall

Sherpas crossing a crevasse on logs and section of a light bridge

Wylie and Sherpas on the Lhotse Face

On 12th May Ang Nyima and I cut steps and fixed ropes for perhaps 600 feet above Camp VI. The climb alternated between steep green ice-walls and terraces of knee-deep snow. In the evening after the usual snowfall the weather cleared and we sat in the evening sun looking out across the jagged tops of Nuptse, Pumori, and Cho Oyu.

John Hunt came up to Camp VI on 13th May to see closely the nature of the difficulties and to try and judge when the route would be completed for the 'lifts' to the Col. That day we began step-cutting at the tent door and cut great bucket steps down the 400 feet of steep ice below and fixed 400 feet of new line. Mike Westmacott, who was working on the lower part of the route from Camp V, delivered my mail. He was suffering from altitude and went down to Camp IV to recuperate.

On 14th May Ang Nyima and I left Camp VI at 8.30 a.m. determined to reach the site of Camp VII and fix the route. The wind was bad that day, and my feet froze severely even in the high-altitude boots. We became caked with ice and the cold air gave us very sore throats, but the snow was in many places firmly wind-crusted and therefore easier, and we reached the flat site of Camp VII in four hours and sank down. The height was about 24,000 feet. We fixed four ropes on the descent. During the afternoon it was fine for the first time in five weeks; the wind had dropped and the sun beat down on to the face, and we nearly passed out with the terrific heat.

The 15th of May was a rest day, and I slept for 17 hours. Wilfrid Noyce, Ed. Hillary, and four Sherpas came up from Camp V and arrived in such good condition that Ed. Hillary persuaded the Sherpas to carry tents, primuses, and fuel (some 25 lb. each) up to the site of Camp VII. This was a wonderful effort and allowed us to move up and establish Camp VII and work above from there. Ang Nyima, who had worked prodigiously and enthusiastically, went down, and Wilfrid Noyce stayed to help me. That night Wilfrid persuaded me to take a sleeping pill, and I swallowed this at 7.30 p.m. thinking that it would give me a good night's sleep before the ambitious day on the 16th. I slept like a log and at seven Wilfrid woke me and I knelt and started the primus, but went to sleep in a kneeling position. Then Wilfrid began to shake and pound me, but I rolled over and slept until 9 a.m. By slapping and pounding me he jerked me into doing things, hoping the exercise would revive me. I got out of the tent, roped up, and carrying our lilos, sleeping-bags, and clothing we staggered off. After two hours we were only two or three hundred feet above Camp VI, and I kept succumbing to attacks of sleepiness and Wilfrid led me back to camp, where I fell into the tent and slept until evening. I woke to hear Wilfrid wirelessing

THE SOUTH COL

WILFRED NOYCE

JOHN HUNT was most anxious for the first set of loads to the South Col to go up on 21st May with myself, the second with Charles Wylie on the 22nd. Altogether some 500 lb. of tents, oxygen, and food would be needed there in order to launch the assaults. When I reached Camp VII again on the 20th, however, the work of preparing the route had been hampered by bitter conditions. There were still some 1,500 feet unexplored.

It remained, therefore, to finish the route across to the Geneva Spur at a little over 26,000 feet, and also to get the loads up. To my dismay nearly all my eight Sherpas were suffering acutely from mountain sickness partly due to their over-heavy loads. I decided next morning, as the groans and coughs continued, to pioneer the route with Anullu, the best of the lot, and to leave the others to spend the day acclimatizing and adding strength in numbers to Wylie's party on the morrow.

The first part of the remainder of the Lhotse glacier was a complicated business of winding in and out of snowy terraces, chipping steps in some of the ice-walls intervening. Once or twice we went wrong and had to return, hoping to be able to warn the others later. We were both now using oxygen, and the benefit of it during hard work was enormous; as I was able to appreciate a week later without it. One or two Swiss ropes from last year we found hanging but did not dare to use. Near the top of the face a big crevasse did its best to stop us. The only practicable crossing required a long stride or jump, from one apparently unsupported ledge of snow to another. In the event the ledges were firm.

From the top of the glaciated face a long rising traverse leads to the crest of the spur. This Anullu led in good time, through trying snow. We reached the spur and looked down for the first time, down a slope of some 300 feet to the tattered remains of the Swiss tents. From here the final pyramid of Everest is a magnificent snowy cone. We laid 500 feet of nylon line to be used as moral support next day. From the camp-site we returned to VII, where Charles Wylie had arrived with nine Sherpas. Hunt had also sent up Hillary and Tensing to reinforce this party, as it was vitally important for the loads to reach the Col the next day. Wylie, Hillary, and Tensing were using oxygen.

On the 22nd these three, with fourteen Sherpas, set out at 8.30 a.m. Slowly they wound in and out of the ice-walls, two small figures in the lead. Very slowly they reached the snow at the side of

the Geneva Spur. Here one remained behind. We learned later that Wylie, whose oxygen gave out, had to carry a 20-lb. cylinder for the Sherpa who could not quite make it. Thirteen loads reached the col; a tremendous effort by the Sherpas, and more still by the climbers who had encouraged and nursed them. Hillary and Tensing returned with five Sherpas to IV that evening. The remainder, very tired, were looked after by Wylie at VII, and made their way down on the 23rd.

The way was now open for the assaults.

Using the closed-circuit apparatus, heavier, more uncomfortable but considerably more powerful than the open circuit, Evans and Bourdillon were to make an attempt from the South Col. Their instructions were to reach the South Summit if possible, and then, if they had ample supplies of oxygen, if they were fit and had plenty of time, only then were they to try for the higher North summit.

THE FIRST ASCENT OF THE SOUTH PEAK

R. C. EVANS

On the 26th at five in the morning the sun touched the tip of the tent, and we began to get ready. By six o'clock we had drunk our lemonade, put on our boots, and checked our oxygen sets. I struggled through the sleeve entrance in my bulky clothes, and Bourdillon handed out my set, whose sharp edges caught on every possible piece of cloth. In the fresh breeze, any exposure of the hands, or contact with metal, meant numbness at once. I retired to the lee of the tent, and found that even in that short time, the valves had frozen. Back in the tent we thawed them out over a candle, and I came out again. This time all seemed well, until, after a few breaths, I had a nasty sensation, which I cannot describe. Taking the set back to Bourdillon, who was coming out of the tent, I remarked in disapproving tones that it made me feel that I was going to die. He said, 'I expect you were', and tried it himself, with the same result. At last he found that the tap on the oxygen feed was broken in the closed position, and that no gas was coming through. Working with bare hands, blood from an unnoticed cut running over his fingers, he was able to fix a makeshift pipe, and at seven-thirty we got away.

Hunt had already started with Da Namgyal, Balu lying sick in his tent. In spite of our load, which was over 50 lb. apiece, we made good progress, and overtook the other two at the foot of the steep gully that leads to the south-east ridge. In the gully the snow was firm, and we cut or kicked steps steadily until near its top. Here we left the gully, going right, and climbed loose rocks to the site of Lambert's old camp, where we found a small platform built, and the poles of his tent, to which a few strips of torn cloth still stuck. There was cloud above us, and on the Kangshung face, but towards Malalu and Lhotse it was clear; far below us, we saw the tents of Camp VII, orange dots in the middle of a face of astonishing steepness.

We had a short rest, and tackled the ridge. There was no difficulty, and we moved together, usually to the left of the crest, over loose rock, covered with soft snow. It was steep enough for us to be using our hands nearly the whole time. We passed a prominent snow shoulder, and came to a pure snow ridge, at about 28,000 feet. At eleven o'clock, we reached a slight hollow in the ridge, giving some shelter from the wind, which had now freshened, and was blowing across from our right, bringing cloud and snow. We had climbed 2,200 feet in $3\frac{1}{2}$ hours, and I thought that this was the place to

change to our second oxygen cylinder and second canister; the comparative shelter reduced the chances of the valves freezing at the change-over, and, if one or other set failed after the change, the consequences could more easily be dealt with here than higher up. One cylinder and one canister last about five hours, and if nothing happened to slow us up, the next thousand feet ought only to take us an hour and a half.

After making the change, which went without a hitch, I brought out a flask of lemon drink, but the drink had frozen, and the glass was in fragments. We were very thirsty, and it was a sign of our fuddled state that we wondered for a moment if we could not suck the sweetened ice off the splintered glass. Instead we threw the flask down the South face.

For ten minutes we went very well. We had lightened our loads by 20 lb. each, and the going was good along the left side of the crest of the snow ridge. Suddenly I had an attack of breathlessness, and all at once felt done in. It was a repetition of my experience above Camp VII, but this time we could find nothing clearly wrong with the set. As we climbed on, with no improvement in my condition, and still no fault that we could find in the set, we concluded that my second soda-lime canister must have been damaged, and that carbon dioxide was accumulating in the circuit.

The ridge now steepened, and we took to a snow slope on the Kangshung side. The snow was deep and soft, and we returned to the crest of the ridge, because, as well as running some risk of starting an avalanche, we were making hardly any progress. The crest here has a firm, rocky backbone, with a loose and finely splintered surface, and was powdered with snow. It rises in a succession of abrupt steps, separated by sloping ledges. None of these rakes offers a site for a camp, or even any place where one can put down a rucksack, but they gave us a zigzag route to the foot of the last lift of the ridge.

Here we were on snow again; the ridge eased slightly, and steepened to a final cone; about a hundred feet of cutting through soft snow into the firm slope beneath brought us on to the South Summit. We stood on the corniced little dome which forms this point on the ridge, looking at the next splendid reach to the top. At our feet the ridge fell very slightly, presenting no obstacle, and then swept up in a succession of steps to a great cornice which hid the true top. Along its whole length, the rocks fell away steeply on the left, and cornices hung over the East face. I guessed that it would need three hours' work to get along it.

Since changing our soda-lime canisters we had gone very slowly, and now, already, it was 1.15 p.m. Our oxygen was only good for $2\frac{1}{2}$ hours more, enough to see us back to the South Col.

Here the wind was from the west, and the East face was everywhere hidden by the cloud and snow of the plume, which eddied round below us, and spilled over the south-east ridge on to the South face. There was not a great deal to see, beyond our immediate surroundings, but we saw a bit of Cho Oyu through cloud, and could see fragments of the north ridge of Lhotse, whose red towers seemed deceptively close, and nearly as high as we were ourselves. I took off my oxygen mask for a few minutes in order to suck sweets, without noticing any ill effect, and after taking a few photographs we started down. It was 1.30 p.m.

Our steps had filled with blown snow, and with our clumsy boots and short crampons, it was difficult, tired as we were, to keep our footing. Bourdillon, who was fresher than I, came last. When we reached the snow ridge below the upper steep rocks, the cloud was much thicker, and moisture was freezing fast on the lenses of my goggles. Even without them I could see only a few yards. At last our discarded oxygen bottles showed up through the mist, and by them we sat down to suck snow and glucose tablets. Below this the ridge steepened, and on the uneven ground, with its treacherous covering of snow, I had several minor slips. At one spot Bourdillon landed, unannounced, half on top of me, and we went down together, while I tried to dig my pick into a mixture of rock and floury snow. Then we stopped, through no fault of our own, and we panted for minutes before we could move again. At those times, after the strenuous exertions of a fall, during which we had probably held our breath, we felt, with desperation, that we would never get our breath back, and on this occasion, even our pleasure at having made some progress in the right direction was damped by the discovery that Bourdillon's axe was on a ledge 30 feet up. I had a few minutes' rest while he borrowed mine to fetch it.

At Lambert's camp we sat on the platform and made a comical, but, at the time, most solemn pact to treat the couloir below us with extra care. We knew that we were too tired to be safe, but somehow we had to get down it. Moving one at a time, and belaying with the axe-shaft driven well in, we had made several rope-lengths when I came off. I was last, and just beginning to move down to Bourdillon. I found myself shooting past him, was slightly annoyed with myself for the slip, and thought that I must keep my crampons off the snow. After what seemed a very long time, the rope pulled slightly at my waist, but there was no check to my speed, and I thought to myself, 'Hello, so Tom is coming too.' Fortunately we were below the steepest part of the gully, and before long the slope eased, and we came to rest in softer snow. My axe came sliding by, and I was able to catch it before giving myself over to the business of getting back

my breath. After I had made my apologies to Bourdillon (we were always punctilious on these occasions), we went on down.

We were now below the cloud, and could see the camp on the col, with several figures moving about the tents. Snow gave place to dry glacier, then to flat stones. It was only a question of putting one foot in front of the other. Our friends came to meet us, and, with arms linked, they helped us in, while we told them that we had not been to the top.

Lowe said, 'My, you gave us a thrill', and Gregory and he subjected us to a battery of cameras. They overwhelmed me with their delight that we had been even so high.

Near the tents we sat on a stone, I took off my mask, and Tensing wiped the slime off my face before giving me a dish of sweet lemon drink. Lowe was busy with a ciné camera, and remarked in unprintable slang that he had some good records of two people looking tired. It was four-thirty, and for the next two hours we sat around in the pyramid tent. The happy comradeship that evening made the South Col seem not at all a grim place.

It was a very bad night. Hunt, Bourdillon and I slept in a Meade tent, to make as much room as possible for the assault party in the pyramid. The wind was stronger than ever, and made a continuous cracking noise. The walls of the tent shook all night and, since we were pressed up against them, kept us shaking too.

In the morning there was little sign of the gale slackening, and Bourdillon was doubtful, after our experience of the effects of fatigue the previous day, if he could safely get down the difficult route to Camp VII.

At noon, the wind died down a bit, and he and I made a start with Ang Temba, who had come up the day before, but was no longer fit to stay on the col. Before starting the descent, there is a climb of 300 feet off the col. When we had gone 50 yards, it was clear that Bourdillon would hardly be able to get there, so I went back to the camp for an oxygen set, and for a fourth climber to strengthen our party. With an open-circuit set, Bourdillon immediately regained his strength, and was able to go on. Hunt joined us, and we roped up with Hunt leading and me last.

The climb down provided little excitement, which was as well. We dropped a glove down the great couloir, and watched it disappear from sight with increasing momentum. We took pains not to have any slips, and towards the end we sat down more and more often, to rest. Just above camp VII, as I was about to let the fixed rope go, Ang Temba, who was in front of me, fell into the crevasse. Very fortunately Wilfrid Noyce was at hand to haul him out. Noyce and Ward had come up from Camp IV to meet us, and when we

reached the tents, only a journey of 20 yards, but slightly uphill, and wearisome, they had tea ready for us. It was another example of the splendid backing which on this expedition we came to take almost for granted.

After a rest of nearly an hour, I went on to Camp IV with Ward. He carried my pack, and watched my step, and added my crampons to his load when I took them off at the foot of the Lhotse Face. Below Camp V it began to snow, and in the dim light I kept going off the track. At seven o'clock we arrived.

TO THE SUMMIT

EDMUND HILLARY

By 22nd May we had made the first great carry to the South Col and fourteen 30-lb. loads of vital food, equipment, and oxygen were awaiting our use. As we descended to Camp IV after making this lift, we met Bourdillon, Evans, and Hunt setting out up the Lhotse Face to attempt the first assault on the summit.

The next two days we rested and watched their tiny figures on the Lhotse Face climbing steadily to Camp VII and then on to the South Col.

It was now time for us to move. On 25 May Tensing and I, supported by Lowe and Gregory, moved up to Camp VII. The following day we climbed the steep glacier above the camp and then began to cross the great traverse towards the South Col. From here we got our first glimpse of Evans and Bourdillon on the south-east ridge, obviously moving strongly. Just before we reached the South Col, through a gap in the clouds we saw two tiny specks moving on the South Summit. It was a tremendous moment for us.

We reached the South Col in time to assist Hunt and Da Namgyal back to their tents after their strenuous efforts in carrying food and equipment to 27,350 feet. Much later in the afternoon, two tired figures descended out of the clouds on the ridge and came slowly down the slope towards the col. It was Evans and Bourdillon. They told us how they had reached the South Summit and the problems they had been faced with and the difficulties they had had with their oxygen sets. They also reported that the ridge leading to the top appeared to be of considerable difficulty.

We went to bed that night elated over the success of our companions but not particularly happy about our prospects for the summit. The next day the South Col wind at its worst was blowing and no move upwards was possible. We assisted Bourdillon, Evans, and Hunt and the Sherpa to the top of the Eperon des Genevois and saw them start off on their long and weary descent to the relative comforts of the lower camps. All night it blew fiercely and although we were ready to leave very early, no start was possible before 8.45 a.m. Our high-altitude Sherpas, who we had hoped would carry our camp high up the south-east ridge had all fallen ill except Ang Nima, so our only alternative was to carry everything ourselves. Lowe, Gregory, and Ang Nima cut a stairway up the firm, steep snow of the couloir. Tensing and I, following in these tracks were able to conserve our strength and make faster time. We caught them up on the south-east ridge near the remnants of the Swiss tent of

the previous spring. Despite our large loads we were all going very well. The ridge above, although steep, was generously supplied with foot- and hand-holds, and as we moved slowly up it, we were able to climb steadily and rhythmically, taking every care.

At 27,350 feet we came to the dump left by Hunt several days previously and reluctantly tied this extra equipment on to our heavy loads. Ang Nima had just over 40 lb., but the rest of us were carrying between 50 and 63 lb. Moving very slowly now, we hauled ourselves up the ridge, all of us breathing oxygen at the rate of 4 litres a minute. A deceptively flat camp-site would appear above us, only to disappear as we reached it. We were all very tired and, indeed, a little desperate when we finally reached a snowy ledge, which although uneven, was sufficiently roomy to pitch a tent.

While Lowe, Gregory, and Ang Nima descended to the South Col, Tensing and I made a very rough platform, tied our tent down as best we could and crawled in for the night. After a somewhat uncomfortable night, I looked out of the tent very early and was greatly encouraged to see every sign of a fine day. We quickly organized ourselves and at 6.30 a.m. set off up the mountain. The first 500 feet was covered very slowly but steadily. We were going well and any problems we met we were able to overcome without difficulty. Then we reached the great 400-foot face running up to the South Summit. This was a different proposition. Not only was it very steep but the snow was, I felt, in a dangerous condition. Laboriously beating a track up it, sometimes up to our knees and often deeper, we were always conscious of the tremendous drop to the Kangchung glacier, 11,000 feet below us. Half-way up the slope I asked Tensing his opinion of it and he replied that he was rather unhappy about it and thought it very dangerous. When I asked him whether he thought we should go on, he gave his familiar reply: 'Just as you wish.' I felt we had a fair chance so decided to go on. It was a tremendous relief, however, when, 100 feet from the South Summit, the snow became firm and we were able to kick and chip steps up the last steep slopes on to the South Summit itself.

We sat down and had a drink from our water bottle. We had been using oxygen at the rate of 3 litres a minute and I estimated that this would give us another $4\frac{1}{2}$ hours on our remaining bottle. The ridge ahead looked both difficult and dangerous, heavily corniced on the right, dropping off to enormous rock bluffs on the left. The only possibility was to keep along the steep snow slope running between them. I cut a line of steps down to the saddle between the South Summit and the ridge and was overjoyed to find the snow, far from being soft and powdery, was firm and hard and that a couple of good blows with the ice-axe would make a step

big enough for even our outsize high-altitude boots. We moved slowly and very carefully. I cut 40 feet of steps, then forced my ice-axe into the snow and belayed Tensing as he moved up to me. He then in his turn thrust his ice-axe in and protected me as I cut another 40 feet of steps. Moving one at a time and fully conscious that our standards of safety must inevitably be reduced at this great altitude, we forged slowly ahead.

After an hour's going the South Summit was dropping away beneath us but I suddenly noticed that Tensing, who had been going very well, was starting to drag. When he approached me I saw he was panting and was in some distress. I immediately examined his oxygen set and found that the exhaust outlet from his mask was blocked with ice, I was able to give him immediate relief. We moved on again and soon reached the most difficult problem on the ridge—a great rock bluff which looked far too difficult to tackle directly with our limited strength. There was, however, still one remaining possibility. Attached to the right-hand side of the rock bluff was a cornice and the ice had peeled away leaving a gap running the full length of the bluff and just large enough to take the human frame. With Tensing belaying me I moved into the crack, and cramponing on the ice behind and using every hand-hold on the rock in front I wriggled and jammed my way up and pulled myself out, panting, on to the little ledge at the top. I signalled to Tensing and heaved on the rope until he in his turn struggled up and collapsed exhausted on our little ledge. I really felt now a fierce determination that we would succeed in reaching the summit.

The ridge stretched on in a never-ending succession of corniced bumps and as I continued cutting a trail round the back of them I wondered just how long we would have to go on. We were starting to tire. I had been cutting steps continuously for almost two hours and wondered, rather dully, whether we would have enough strength left to get through. I cut around the back of another hump and saw that the ridge ahead dropped away and that we could see far into Tibet. I looked up and there above us was a rounded snow cone. A few whacks of the ice-axe, a few cautious steps, and Tensing and I were on top.

THE PRESS ON EVEREST

JAMES MORRIS

As for the mountaineer the climbing of Mount Everest was the summit of ambition, so for every British newspaper its ascent was a news event of the highest importance, the more especially as it came in the year of Queen Elizabeth's coronation. In the 1953 expedition, as in almost every previous attempt on Everest, my newspaper held the copyright of dispatches from the mountain, and from the inception of the venture there was a close and happy co-operation between the Himalayan Committee, the climbers, and *The Times*. But it was recognized from the start that the newspaper competition for the story would be ruthless and unremitting, and our rivals in Fleet Street would certainly use all their talents and energies to defeat us; so it was decided last February that I should join the expedition as Special Correspondent of *The Times*, to supplement Colonel Hunt's dispatches with messages of my own, and to ensure that our news got away swiftly, safely, and exclusively. Nobody, I think, will dispute the fact that my newspaper has always regarded the Everest adventure as something more than a mere commercial investment; and thus the friendship and help of Hunt and his team enabled me to establish a link between Printing House Square and the expedition that I shall always remember with pride.

The technical problems of getting news away from the mountain were exacting. The sinews of any foreign news service are the international cables, telephones, and radio links, for without them the hottest news is liable to cool; but between Everest and the nearest cable office or telephone there lie about 180 miles of difficult and roadless country. There was no question of our sending dispatches through Tibet, so our lines of communication had necessarily to run either to Katmandu (like the expedition's) or to the Indian frontier and thence to a cable office on the other side. Long-range wireless transmission was apparently ruled out, for the Nepalese Government, we were told, did not encourage it. When the problems of communications were discussed at the end of last year, ingenious amateurs suggested that carrier pigeons might be used; or beacon fires; or that dispatches might be floated down the Dudh Kosi in watertight containers; or that lamas might be induced to send messages for us by means of their alleged telepathic powers; but the only really practicable way of sending messages away was by runner.

We knew that runners would certainly be intercepted on their way to the cablehead, that they would be bribed to disgorge their news, that dispatches would be milched and hearsay evidence

eagerly collated. The most careful plans were therefore laid in Printing House Square to ensure that our communications would be secure. In this we had the advice of Arthur Hutchinson, Delhi Correspondent of *The Times*, who had handled the dispatches sent by the Swiss expeditions in 1952 and was therefore something of an authority on communications with Everest.

First, of course, we produced a number of codes. These made nonsense of messages encoded, and were printed on plastic-covered paper to prevent damage by heat or damp. For the transmission of film and long dispatches, canvas containers were made, with printed address labels, to be secured by stitching. On Hunt's advice we contacted the Himalayan Club, who not only gave me sound advice on what equipment I should need, but also most generously offered to lend me a good deal of it. Eric Shipton, whose association with *The Times* has been a long and cherished one, also gave me advice on this score. Black's of Greenock supplied sleeping bags and clothing.

It was decided that our main channel of communication should be the route to Katmandu, despite the concentration of newspaper correspondents that would, we knew, gather there. One reason for this decision was the fact that Hunt's own runners would be going that way, and we could therefore exchange services. Another was that from Katmandu a good radio link to India provided the first stage of our cable communication with London. A third was the presence there of the British Embassy, with its own radio channel to the Foreign Office in London for emergency use. Hutchinson was to move up to Katmandu from India to see that my cables got away safely and to interpret or supplement them where necessary.

At the same time we established alternative routes to the south. The Swiss had sent their dispatches south through the jungle of the Terai to the railhead at Jogbani, and thence to Patna, where a father at the Jesuit college transmitted them to Europe. This priest willingly agreed to do the same again if any runners turned up there from us. It was also arranged that an Indian employee of Hutchinson's should be at Jainagar to transmit dispatches from the cablehead there if necessary. In all these plans we were guided partly by the tremendous competitive efficiency of the London national papers, and partly by the well-known loquaciousness of Indian cable operators.

Most of these arrangements were made in London. They were kept as secret as possible (not very) because we did not wish to encourage other papers to copy us. At a lunch at the Garrick Club early in February Hunt, after welcoming me warily to his group, suggested that I should travel to Everest from Katmandu with Major Jimmy Roberts, who was to convoy the last consignment of

oxygen to Thyangboche. Accordingly on 19th March I left London by Comet for Delhi, where Bobby Hotz of the Himalayan Club gave me a superb dinner, a fine camp-bed, and all sorts of kindness; and on the 24th I found myself in Patna, where one catches the aeroplane for Katmandu.

While in Patna I called on our friend at the Jesuit college. This was a curious experience. He is a man of saintly quality, devoted to his mission. We had tea together in the school dining-room, surrounded by eager young Indian pupils, and talking of his work and of the Jesuit concept of duty. Then, a few moments later, we withdrew into his study and discussed codes and stratagems and rates of pay, and all the subtle intricacies of getting news from Everest secretly. We never had cause to use the Patna route, but I am sure there is no one in India better able to keep a secret than our Jesuit confidant there.

On the 25th I flew into Katmandu. The climbers were on their way to Everest by then, and only Roberts was staying at the Embassy. I put up at the Nepal Hotel, on the outskirts of the city, where Hutchinson was waiting for me. It was a memorable establishment. It was a nobleman's palace, converted for familiar economic reasons into a cross between an Army transit camp and a provincial museum. At every conceivable doorway throughout the building was laid a fibre mat inscribed with the ironic word 'Welcome!' The walls of every room were hung with life-size portraits of the nobleman's relatives (one of them apparently in the uniform of the Nepalese navy, and looking quite extraordinarily like Admiral Beatty). Here and there could be found a stuffed crocodile or a petrified ibis, and in the hall two small tigers were locked in eternal conflict. Sometimes the place would echo with the roars of a rather mangy lion (a live one) that happened to live in a private zoo across the road. Now and again, too, the entire building would reverberate with the exasperated cry of a newspaperman: 'Bearer! Tea!'

Hutchinson was in bed with a fever, but he told me what developments there had already been in the Everest news campaign. One London correspondent had followed the expedition towards Everest, another was living in the hotel, and more were expected. A number of Indian newspapermen were in Katmandu, already sending home messages of a spine-chilling inaccuracy. Most important for us was the news that Mr. Summerhayes, the Ambassador in Katmandu, had agreed to send to London for us a brief dispatch recording the final result of the expedition, whether success or failure; this kindly service he would indubitably have performed for any other newspaper, if it had the copyright of the expedition and was in possession of the news.

I met Roberts at the Embassy and was instantly struck by his competence and his wonderfully dry sense of humour. There could be no better companion for a Himalayan trek; totally imperturbable, whether by the petulant squabblings of our porters, the powers of penetration of the local children, or the inferior quality of the *rakhsi*. In the grounds of the Embassy we recruited our porters, weighed the many crates of equipment we were to take, and loaded them into ancient lorries. In all this we had the help of our Sherpas, who had arrived in Katmandu after making the long journey around the south of Nepal from Darjeeling. They included several remarkable characters. There was Sen Tensing, the Foreign Sportsman (known to a new generation of Himalayan travellers as The Snowman); and two hardy mountaineers on their way to join Hunt's climbing party—the veteran Dawa Thondup and Ang Nyima. All three were travelling companions of high calibre.

Like the climbers before us, we motored as far as Bhatgaon, a few miles or so from Katmandu, where our loads were distributed among our porters and we said good-bye to our friends. Soon after noon on 27th March Roberts and I followed the long shuffling line of porters off the green of the Bhatgaon parade ground and along the road to the east. It was a beautiful sunny day, not too hot, with a gentle breeze off the Himalayas; but our journey, which threatened to become nothing less than idyllic, was soon interrupted. As we sat beside a stream eating our lunch we were approached by a shooting-brake, swaying dangerously and dizzily along the rough track. From it stepped Colonel Proud, First Secretary at the British Embassy.

He had a slightly alarming message for us. Through strange channels a message had reached the Embassy from Hunt, who was now at Namche Bazar. The climbers had found that several of their oxygen cylinders were below pressure, and they feared that those we were carrying (carefully screwed and nailed in wooden crates) might also be defective. Would we please open them all and check their gauges?

It was too late to do anything that day, so we hurried on to our arranged camp site, Banepa, with the intention of opening the crates (there were about sixty of them) first thing next morning. I spent much of the night wondering about Hunt's message. Proud had told me that it had been passed to him by the Indian Embassy, who had apparently received it from a wireless transmitter operating at Namche Bazar. What this could be I had no idea, but I very much feared that the British correspondent who was somewhere ahead of us would stumble across the transmitter and 'acquire' it for himself. Anyone with command of a radio transmitter in the region of Everest could certainly beat me not only with news of the final

result, but possibly with stories of events throughout the course of the expedition. At worst, the existence of the transmitter meant that if careless Sherpas of the expedition talked too much to strangers, other London newspapers could snatch the news from us. At best, it meant that I had available a totally unsuspected means of rapid communication.

We spent an invigorating morning with the oxygen crates, prising them open one by one in quick succession, checking their gauges and closing them again. Almost all of them were at full pressure, which was a relief; for extra supplies could scarcely have reached Everest in time for the assault. The innumerable Nepali children who watched our activities thought we were pretty queer anyway, but dismissed us as lunatic as they observed this perplexing operation.

The trek to Namche was delightful, enlivened for me by the occasional swinging plank bridges, the groves of gorgeous rhododendrons, the lavish bird song, and odd local music. Once I found an enormous and very damp frog sitting in my sleeping-bag, and for days my porters thought it funny to shout at me 'Sahib! Sahib! One frog in your tent!' Once (on Easter Day) I had an attack of stomach trouble so acute that every hundred yards or so I had to lie flat on my back and wish Everest to perdition. But for the most part, with the pleasant company of Roberts (who grew daily more like a genial grizzly bear), the journey was a joy.

Twice I sent short dispatches back, addressed to the British Embassy in Katmandu. The first I entrusted to a group of Hunt's porters whom we met on their way back to the capital. The second was taken by a rather dotty-looking young man I recruited in the bazaar-village of Those; he shambled off in the general direction of Katmandu, and I heard later that he delivered the message crumpled and heavily thumb-printed, but intact, and collected his due fee from Hutchinson. I gave one old boy with an immense white beard a copy of the air-mail edition of *The Times*. He regarded it with such veneration that when I came back the same way more than three months later he still had it protruding prominently from the neck of his shirt.

Below Namche Roberts and I parted company. He wanted to get ahead to report to Hunt. I was to follow with our consignment of oxygen. Thus I was alone when, near the head of the Dudh Kosi, I bumped into another European traveller. This was the British correspondent who had followed the expedition earlier from Katmandu. He had gone as far as the site of Base Camp at 18,000 feet, and was now on his way home. I knew him, for we had worked together briefly in Egypt, and we spent half an hour over a pot of

tea and biscuits before going our respective ways. He had much enhanced his reputation by his very amusing dispatches from the Everest region.

Luckily this colleague and rival of mine had apparently not discovered the transmitter in Namche. I myself could scarcely help finding it, for I was met on the outskirts of Namche by a cordial Sikh soldier who invited me along to an Indian frontier post established in the village. This post, maintained by the Indian Government to watch the flow of traffic over the border from Tibet, maintained a radio link with the Indian Embassy in Katmandu. Hunt had already visited it, and had sent his message over it, and the officer in charge kindly sent a short dispatch for me there and then. (In London a sub-editor headed the piece with the phrase 'By runner to Katmandu'; and our competitors were astonished to find that in Nepal there were men who could run 150 miles in three days.)

The existence of the transmitter posed new problems for me. I could scarcely afford to ignore it altogether, but on the other hand I had doubts about its security. The men who ran it clearly had no interest in our news ambitions, and might (quite reasonably) pass on our news to any other correspondent who turned up in Namche Bazar. Moreover, when the news reached Katmandu it was a fair bet that it would be available to other correspondents working there. All this, I should add, is no reflection on those responsible for the radio link; rather is it testimony to their essential fairness. I therefore resolved that unless other correspondents used the transmitter for news I would not use it except for the final message of success or failure; and even then I would have to disguise the news in some way.

Next day I reached Thyangboche, where I was met at the entrance to rear Base Camp by Tensing, his famous smile at its dazzling best. There I found most of the climbers. With Tensing's help I set about recruiting some Sherpas of my own, to act as runners; and on his and Roberts's recommendation I chose as my cook-sirdar a veteran by the name of Sonam, who became my good friend. May I stress his name to the Himalayan Club, and to future travellers in those parts, as that of a tough, honest, dependable, and infinitely likeable companion?

On 27th April, with Charles Evans, Alfred Gregory, and a company of Sherpa porters, I set off from Thyangboche for the mountain. We travelled leisurely, spending three days on the journey, and very pleasant it was. At Lobeje John Hunt met us, looking (as nearly always on Everest) like some horrid apparition from the high places; for his face was heavily smeared with glacier cream. At Lake Camp we found Ed. Hillary and George Lowe, and were tent-bound by a savage blizzard. Finally, at Base Camp I was introduced

to the few members of the expedition I did not already know; and there I set up my headquarters.

I spent several weeks at Base Camp, once moving down to Thyangboche to get rid of a heavy cold, and three times making journeys up the mountain, but always returning there to organize my runners. I had a double sleeping-bag; a high-altitude tent; a radio receiver for hearing B.B.C. weather broadcasts (the B.B.C. also broadcast the news of the birth of my second son); a 'walkie-talkie' set for communication with other camps; my camera, a Japanese version of the Leica; my typewriter; some books; and three desperately heavy sacks of coin for the payment of runners. All this rather cluttered up my quarters, but I managed to make myself reasonably comfortable; and indeed, although I lost about a stone in weight, I began to feel notably fit.

I soon accepted an invitation from George Band and Michael Westmacott to join them in a trip up the ice-fall to Camp III, spending a night at Camp II. This was my first experience of mountaineering. It would be idle to pretend that I found it easy, especially as I was not adequately acclimatized; but they were kindly souls on the rope, and somehow they pulled me over the crevasses, heaved me up the ice-blocks, pushed me over the dizzy makeshift bridges, and dragged me through the wilderness of crumbled ice.

Though I believe I acclimatized rather well, on the whole, I found the altitude something of a handicap professionally. It is well known that natural energies are sapped and ambitions blunted by great heights. I am something of a fanatic for my work, and few things in life give me more pleasure than writing a dispatch on a good story; yet on Everest I wrote much less than I should have done, and found most of the writing a fearful bore. Though in London beforehand I had realized all too clearly the magnitude of the story, on the mountain it seemed to lose a little of its urgency. I took scarcely a photograph, on the dubious grounds that the mountain would always be there tomorrow.

During the long weeks before the assault I sent dispatches home regularly, some by Hunt's runners, most of them by my own men. I built up a small corps of *élite* messengers, all of them swift and trustworthy. To ensure maximum speed, I offered them pay on what I think is called a sliding scale. They had a basic fee of about £10. If they did the journey in eight days, they got £5 extra; if they did it in seven days, they got £10 extra; and if, miracle of miracles, they did it in six days, they earned a bonus of £20. It was astonishing how they responded to these incentives (and I think also to the comradeship and sense of purpose which we shared with them). Time after time the journey, always supposed to take ten days at

the very least, was done in six days; and two magnificent runners (John Hunt's book notwithstanding) did it in five. Some of them regularly brought me presents of eggs; one had a deep contempt for the local *rakhsi* and used to pop over to Those now and again (a mere sixty miles or so) to bring me back some of a special brew prepared only there.

I used to like to watch these runners begin their journey down the glacier from Base Camp. They generally travelled in pairs, and before leaving would come to shake my hand reverently or even to kiss it. Then, tucking my dispatch and the mail inside their capacious cloaks, they would scramble away down the moraine through the towering ice pinnacles; and down the glacier they would go, two quaint figures in embroidered boots and comical hats, loping their way into the distance with the news from Everest.

The fight to wrest the news from us was now at its height. In Katmandu one of the great news agencies, and one of the London national papers, each had powerful receiving sets with which they hoped to intercept wireless messages from Namche and cable messages going out of Katmandu via the radio link with India. A Reuter correspondent had stationed himself at the Thyangboche monastery (he turned up at Base Camp one afternoon and I gave him tea before he went down the valley again) and an Indian working for a London paper was at Namche.

To make sure that at least the news of the final result went over the Namche radio safely—with the competition so immediate and so intense I had to make use of the transmitter—I devised a new code. Our existing codes turned messages into gibberish, but I was afraid the radio people would not accept dispatches unless they thought they knew what they meant. At the same time I felt I could not afford to pass the message over the radio 'in clear'. I therefore, with a certain nasty cunning, composed a new cipher in which coded messages looked as if they were not coded at all. Thus the code phrase for 'Everest climbed' was 'Snow conditions bad'; the phrase meaning Hillary was 'Advanced base abandoned', and that for Tensing 'Awaiting improvement'. The key to this code I sent by runner to Hutchinson in Katmandu, who passed further copies to *The Times* in London and to the British Ambassador.

In the meantime our reports of the expedition's progress were going through safely. Nearly all my runners were intercepted and questioned, and in some cases attempts were made at bribery; but they were honest men, and, anyway, my rates of pay were high and half the fee was payable on return. (I was later given a lovely description of a famous London correspondent sitting in the Nepal Hotel at Katmandu with a glass of whisky in his hand trying hard to

'pump' a shaggy old Sherpa runner with whom he shared not one single word in any language.) Only one story 'leaked'; that of the first penetration of the ice-fall. This complete monopoly of the Everest news, achieved by the use of an overwhelming variety of resources, had one ill effect; readers of other newspapers will recall the astounding things that were alleged to have happened on the mountain by those who had no access to information.

In the second week of May I went up to Camp IV, where I ate a disgracefully large quantity of the Swiss biscuits that had been found there. The date-line 'Camp IV, Everest' with which my dispatches were headed was, I believe, the highest ever to have appeared in a newspaper. Soon after my return to Base Camp I found myself the only European there, the entire expedition having moved higher on the mountain in preparation for the final assault. Each evening I would climb to an eminence on the moraine for a radio call to Camp III and sometimes Camp IV: besides giving me the news, the climbers would tell me what they needed from base and I would do my best to see that the right stuff went up by the next party of Sherpas. Often hastily scribbled notes would reach me. John Hunt sent me several; heaven only knows how he found time to remember my needs, but he always did. Wilf Noyce sent me a few lines describing the arrival at the South Col. Tom Bourdillon described the first assault, though, unhappily, this description was overtaken by news of final success.

As the time for the second assault approached I felt I must go higher on the mountain again, though I hesitated to move away from my runners at so crucial a moment and I was a little nervous that other correspondents might arrive at Base Camp in my absence. I knew that if anyone had managed to bring into Nepal a radio transmitter, and brought it up to the Base Camp, I would almost certainly be beaten with the story; I therefore asked my runners to put it about in Namche that any transmitter brought up the glacier would inevitably be destroyed with ice-axes. Shortly before I left base an Indian newspaperman did in fact arrive there, though with no radio. I insisted that his Sherpas should be quartered separately from ours, lest any news should pass from one group to the other; but luckily my Sherpas and I were able to rescue some of his men who lost themselves at night in the glacier, so he could scarcely accuse me of inhospitality. Indeed, we spent a pleasant evening together by our camp-fire, and he left next morning.

On 29th May I went up the ice-fall again, in company with Griff Pugh. The route had been badly affected by the thaw, and half-way up a small avalanche, sweeping down a gulley, narrowly missed us. However, we reached Camp III safely and next morning

went on to Camp IV. There we found most of the climbers, waiting in a state of high expectancy; a day of beautiful sunshine and excitement that was captured to perfection by Tom Stobart in his masterly film.

I shall never, as long as I live, forget the transformation that overcame the camp when the summit party appeared and gave us the news of their victory. It was a moment so thrilling, so vibrant, that the hot tears sprang to the eyes of most of us. The day was so dazzlingly bright—the snow so white, the sky so blue; the air was so heavily charged with excitement; and the news, however much we expected it, was still somehow such a wonderful surprise; and it felt to all of us that we were very close to the making of history; and away in England, as we knew, an entire nation, in celebration for the Coronation, was waiting eager-hearted for the word of triumph. It was a moment of great beauty.

The date was 31st May. It had occurred to me in moments of wild optimism that *The Times* could conceivably print the news of Everest's conquest on the very day of Queen Elizabeth's Coronation, 2nd June. I had climbed up the cwm that morning from Camp III, and I was tired; but I felt I must go down to Base Camp again that evening and get the news off by runner first thing in the morning. Michael Westmacott instantly volunteered to come with me down the mountain. I got Ed. Hillary's story from him as he sat in the big tent eating an omelette (he has since become, incidentally, godfather to my son) and we set off down the cwm in the late afternoon.

The thaw had set in, the sun that day had been blazing, and the snow surface of the cwm was crumbling. We kept falling in up to our thighs, and the process of extraction was tiring and unpleasant. Before long the sun had disappeared and the snow valley was cast into shadow. It was twilight when we reached Camp III and drank a little lemonade. Below us the mass of the ice-fall looked, I thought, singularly uninviting.

The route had been obliterated by snow and thaw, and only occasionally did we glimpse, often on some unattainable eminence, the little route flags which used to guide our way through the wilderness. We stumbled and slithered our way through the ice-blocks. Mike prodded his way through with infinite skill and patience, but I was fairly exhausted, often losing my footing on the crumbly ice, getting entangled with the rope, or tottering on the brinks of crevasses. Our progress was therefore slow and rather perilous.

Once we reached a steep snow-slope, and glissaded down it on our feet; I stubbed my toe on an ice-block at the bottom and spent a moment or two cursing creation in general and the foreign department

of *The Times* in particular; I had to hobble home with half a toe-nail, and eventually had the whole thing removed in Calcutta. At the foot of the ice-fall the little glacier rivulets had swollen in the thaw into swift torrents; we balanced our way along their edges, sometimes jumping across to surer footing on the other side, sometimes slipping in so that the water oozed into our socks and over the tops of our boots. One of my crampons had broken and kept tripping me up exasperatingly.

It was long after dark when we reached Base Camp (to be greeted by my loyal Sherpas with the welcome news that no competitors had made their way up the glacier). I slept fitfully that night, my last in the shadow of Everest, and in the early hours of the morning I slipped out of my tent in the moonlight to look once again at the staggering panorama of mountains round about. They shone palely, like ghosts.

Next morning I sent off two runners. The first carried a short code message for the radio station at Namche, for transmission (with luck) to Katmandu. The message ran: 'Snow conditions bad stop advanced base abandoned may twentynine stop awaiting improvement stop all well.' This meant that the mountain had been climbed on 29 May by Hillary and Tensing, and that all was well. The second runner was to go direct to Katmandu carrying a duplicate message and a longer account of the victory. In case the radio people refused the message, two other runners were ready to leave for Jainagar by the difficult route through the Terai; a prospect they did not much like.

All this done, I felt that it was time for me to leave Everest. I would get back to Katmandu as soon as possible, to pick up any instructions and if possible fly home to England; if not (as happened) I would spend a few days in the capital and then come back along the trail a little way to meet the returning climbers. Accordingly I packed my possessions, assembled my Sherpas, shook hands with Michael Westmacott, and set off down the glacier. I skirted Namche by devious mountain paths, because I did not particularly want to meet the Indians (they might ask difficult questions about my code message) and I camped the next evening in a village in the enchanting valley of the Dudh Kosi.

It was 1st June, and as I went to sleep I wondered with some anxiety whether my dispatch was indeed winging its way to Katmandu and London; whether the Indians had accepted it, or whether my only link with Printing House Square was my other lonely runner making his way over the mountains to the capital.

I slept like a log, and awoke next morning to learn that miraculously my wild ambitions had been achieved. On the very eve of

her Coronation, my radio told me, the Queen had been told of Everest's conquest. *The Times* had printed the news in that morning's editions, the vast Coronation crowds waiting in London's rain had been told in the dark of the night, the world was rejoicing with us; all was well.

I leapt out of bed in my tattered old shirt and holed socks, bearded and filthy, and shouted to my Sherpas, peering owlishly from the upper windows of a neighbouring house, 'Chomolungma finished!' I shouted. 'Everest done with! All O.K.!'

'O.K., Sahib', the Sherpas shouted back. 'Breakfast now?'

What a wonderful adventure it was! Enough to stir a man's heart for a lifetime!

SCIENTIFIC PROBLEMS ON MOUNT EVEREST, 1953[1]

L. G. C. E. PUGH

I. PROTECTIVE CLOTHING AND EQUIPMENT

TOUGHNESS as a cult has no place in the ascent of a really high mountain: conditions are sufficiently difficult even when everything is made as easy as possible. In climbing a really high mountain like Everest, meticulous care is required in design and planning of all the equipment. This was achieved under Colonel Hunt. On the whole the equipment was very successful; there was no significant frost-bite, and hardship was reduced to a minimum.

This was achieved largely because the 1953 expedition had much more effective scientific help than any previous expedition to Everest. Since the 1938 British expedition the applied sciences that deal with problems of the kind met in climbing high mountains have advanced enormously and they are better co-ordinated, so that nowadays knowledge from many sources can be quickly and effectively brought to bear. The Medical Research Council, the Ministry of Supply, the War Office, the Royal Aircraft Establishment at Farnborough, and many firms in industry helped in the preparation of the expedition, in fact the enterprise was, in every respect, a national effort. Moreover, we had a training expedition to Cho Oyu in '52 on which the scientific problems were studied on the spot.

Scientifically speaking there were three main problems affecting the climbers in their great undertaking: oxygen lack, cold, and nutrition. I will deal with the protective equipment against cold in this, the first of my talks, and I propose to divide it into two parts. First I'll speak about the enormous range of climatic conditions with which an Everest expedition has to cope, and then go on to explain how the difficulties were met.

Himalayan expeditions have to pass through an astonishing range of conditions . . . from tropical heat, with shade temperatures in the 90's, to arctic cold, with night temperatures of zero F. We had no data from previous expeditions about temperatures above 24,000 feet, but it was thought that at 23,000 feet, temperatures down to minus 40° F. might be expected, though the fact that past expeditions didn't suffer more severely from cold than they did suggested that, in the fortnight before the monsoon, the weather at the high camps on Everest might be somewhat warmer. All the same, a good expedition must be equipped to compete, not just with average conditions,

[1] Broadcast on B.B.C. Science Survey, autumn, 1953. By permission of the Medical Research Council.

but with extremes. Otherwise, if anything goes wrong, there'll be casualties from frost-bite, if not worse.

Another feature of the Everest climate is the wide fluctuation in temperature. At midday the sun is only twelve degrees from the vertical, the thin air absorbs less of its radiation than at sea-level. Measurements on Cho Oyu showed that at 20,000 feet the sun temperature was 165° F., while the shade temperature was near freezing-point. Because of the high radiation the temperature in an ordinary tent rises to over 85° within an hour of sunrise. A man climbing in the sun may receive as much heat from the sun as his body is producing, but if the sun clouds over, or if he enters the shade, this source of heat is and he cut off, is immediately exposed to intense cold. Smythe recognized this in 1935 and expressed the opinion that Everest couldn't be climbed in the shade.

These wide variations in conditions, as well as in the bodily heat production, according to the rate of climbing, demand clothing that can be readily adjusted. Sweating wets the clothing and spoils the insulation. It may also cause a drain on the fluid and salt reserves of the body. Another effect of the high radiation is that it melts the snow even as high as 25,000 feet, so, if boots are not waterproof, they become sodden with moisture. Wet boots provide little protection from cold, and they freeze solid during the night so that they cannot be put on in the morning.

Temperature, however, is only one of the factors that has to be taken into account in planning equipment for Everest. Wind is another. Balloon data from Indian hill stations indicated that winds up to 100 m.p.h. were to be expected on the South Col and above. It would, of course, be impossible to climb in such a wind and climbers would have to wait in camp for conditions to improve.

As a result of techniques developed during the war it is now possible to work out the amount of insulation that must be provided by clothing and sleeping equipment for any given climatic conditions. The unit of insulation in general use is the CLO. One CLO is defined as the insulation needed to keep a man in a state of thermal balance when he is sitting in a room at 70°, with 50 per cent. humidity. To carry out ordinary minor activities under arctic conditions a man needs 4 CLO: for sleeping at least 10 CLO. We hadn't time actually to measure the insulation of clothing for Everest, but experience of arctic clothing based on these principles was a sufficient guide for practical purposes.

Above 20,000 feet the question of weight becomes extremely important, since the success or failure of the expedition depends on getting enough equipment up to stock the high camps with the bare necessities. If protective equipment is too heavy, you can be sure

that the mountaineers will leave half of it behind and so endanger their safety. At high altitudes man's physical strength deteriorates rapidly and it is essential to provide the maximum comfort that physical conditions allow so as to conserve strength and allow of as much rest as possible. As far back as 1924 Norton emphasized this need for comfort in the high camps on Everest.

Such then were the conditions governing the design of the equipment for Everest. I'll now try to describe some of the individual items.

Let us take clothing first.

The clothes, boots, and gloves of a typical arctic assembly weigh about 23 lb.; for Everest this was reduced to 17 lb. The outer windproof smock and trousers were made of the same cotton-nylon fabric as the tents, chosen, after laboratory tests, for its wind-proof and tear-resisting qualities. The main function of these garments is protection against wind-chill. Special attention was given to the way they fitted because tight wind-proofs impede movement and spoil the insulation of the undergarments. The suits had nylon linings to make them slippery and easy to put on.

Protection against cold was provided by down jackets and trousers. This down clothing is now widely used in the Alps having come into fashion just before the war. Down clothing is much lighter than other types of protective garments, but it has the disadvantage that the down loses its insulation where it is compressed, as in sitting down. In addition to these suits we had loose-fitting pyjama-like pants, string vests, and three sweaters.

Special boots were designed for use above 20,000 feet. Here lightness, impermiability to wetting, and warmth were required. It has been found experimentally that as far as energy expenditure is concerned 1 lb. carried on the feet is equivalent to 4 lb. carried on the back. Wetting comes not only from the melting snow outside, but from foot perspiration inside. So both the inner and outer layers of the bottoms were waterproofed to keep the insulating middle layer dry, thus preserving the insulation and preventing them freezing hard.

Conventional arctic boots have relatively thin uppers and a very thick sole. But this tends to impede movement as you cannot feel the ground properly. The Everest high-altitude boots had kapok filled uppers nearly an inch thick and relatively thin soles. The soles were shod with microcellular rubber. This has three times the insulation, and half the weight for a given thickness, compared with the hard rubber of an ordinary mountaineering boot. Wearing these boots one's socks do become damp with moisture given off from the feet, but there's no discomfort and the skin doesn't become sodden.

Above all the boots mustn't be too tight . . . many cases of frost-bite are due to tight boots.

Other items of clothing such as gloves and goggles are important too, but I must turn now to tents and sleeping equipment.

For messing purposes up to Camp IV (i.e. 21,200 feet) we had a large arctic tent designed for the Army. For sleeping we had several types of tent including Swiss and American patterns, but undoubtedly the best was the two-man Meade tent. (Meade, by the way, has been a famous Himalayan explorer.) It has Λ-shaped poles at each end and can be put up very quickly, even in a high wind. Such a tent with the normal single entrance is much too hot in the daytime for Himalayan conditions, so to increase ventilation ours had large sleeve entrances at both ends. This sleeve entrance, tightly fastened at the neck, is the best way of keeping out snow in a snowstorm. An important feature of all tents was the sewn-in ground-sheet which is, of course, waterproof. In spite of their weight, 15 lb., the Meades were taken for the two highest camps. We had some lighter ones but they proved to be too small to be acceptable.

And now to the last item of equipment about which I can speak this time . . . sleeping-bags and inflatable mats. For the Himalayas double bags are essential because of the range in temperature conditions. In all about 9 lb. of down are needed to provide enough insulation, and the bags must be long enough to pull over the head. Also they must be wide enough to allow one to turn over in, and lined with a slippery material, such as nylon, so as to make this easy. At high altitudes turning over in bed is an effort and makes one breathless.

What I said about the importance of saving weight is very well illustrated here. The climbers thought their bags too heavy, and as a result they left the inner component of these behind when they went up to the South Col. They all suffered severely from cold.

As with the down suits, these sleeping-bags are compressed where the climber's body presses on them, so it is necessary to provide some additional insulation between the bag and the ground. This was done by using inflatable sleeping-mats of a design evolved during the war. They were like ordinary rubber camp mattresses, but had a double layer of tubes to increase the insulation. The tubes were constricted at the ends to provide a buffering effect which stopped one bouncing when turning over. These mats made a great contribution to comfort and were as pleasant as one's own bed at home. Bellows were provided to inflate them, in order to prevent cross-infection with cold germs from the Sherpas, who otherwise blow them up for the climbers with their mouths. The bellows were very popular with the Sherpas who are quick to accept an innovation if

it is good, and all of them disappeared mysteriously when we got back to Katmandu.

So much then for equipment. I hope I've said enough to illustrate the meticulous care with which it was designed. It was a success, but if we were in the future doing it again there's no doubt we could improve it still more.

II. RATIONS

One of the main problems facing mountaineers on Everest has always been high-altitude deterioration. This going-to-pieces starts at altitudes above 20,000 feet, and comes on more quickly and more readily the higher you ascend. The symptoms are increasing lassitude, incomplete recovery from fatigue, loss of appetite, loss of body weight, and eventually decreased performance. Men can stay four to five weeks at 20,000 feet, but only ten days at 24,000 feet, and three or four above 26,000. It was accepted as long ago as 1933 that the time spent on Everest above 23,000 feet must be kept to a minimum. On the other hand, up to 18,000 feet, given time, men can become completely acclimatized.

Now physiologists had long suspected that an important factor in high-altitude deterioration might be insufficient food and fluid. In 1935 Shipton brought back some records of food intake on the expedition of that year, according to which the calorie intake above 17,500 feet was only 2,000, and above 21,000 feet as little as 1,500. This amount of food was far too small to balance the daily expenditure of energy and it is not surprising that members of the party lost between $1\frac{1}{2}$ to 2 stones in weight. No records of fluid intake were available, but it is certain that the requirement was large, because of the increased loss of moisture from the lungs at high altitude due to the dryness of the air and the large volume that has to be breathed.

On Cho Oyu in 1952 we made a careful study of the problem of nutrition at the various stages of the expedition.

Cho Oyu was a fairly typical post-war British expedition. We lived largely off the land, supplementing our diet from bulk stores of tea, sugar, jam, biscuits, chocolate, milk-powder, and so on. The locally available foods were rice, potatoes, lentils, coarse stone-ground wheat-flour called *atta*, which is made into a sort of pancake called a chupatty, and a coarse meal made of roasted barley called *tsampa*. Climbers usually take this in their tea. A very limited amount of chicken and fresh meat was available, and we usually had one or two small eggs each for breakfast.

During the three weeks approach march, our main meals were breakfast and supper. Breakfast was a European type of meal with cereal, eggs and bacon, jam, butter, biscuits, or chupatties. Supper

consisted of huge platefuls of rice or potatoes and a little curried meat or chicken. On the march we ate chocolates and sweets. Our fluid intake consisted almost exclusively of hot drinks . . . chiefly tea . . . and amounted often to nearly a gallon a day.

Above 18,000 feet our appetites fell off remarkably; we hadn't sufficient pressure-cookers; adequate cooking was difficult because water boils at reduced temperature at high altitude. The butter ran out. The kitbag containing all the tea was stolen. Owing to difficulties in distributing and sorting the bulk stores, parties sometimes had little to eat but potatoes.

Under these conditions, food intake fell off from about 4,300 calories per day on the march to 3,000 above 18,000 feet. A large proportion of our food was taken in drinks in the form of sugar, and sugar intake averaged 12 ounces per man per day . . . a week's ration at home. Some climbers developed a craving for particular foods that were not available, such as tinned salmon and pineapple. This feature had often been noted before on Everest, for example Smythe wanted frankfurters and sauerkraut, Somerville's favourite food was strawberry jam and condensed milk, and Shipton had a craving for a dozen eggs.

Between 18,000 and 22,000 feet on Cho Oyu fluid intake was found to be 5 to 7 pints a day and it was fairly obvious that if this intake was to be kept up at the higher camps on Everest, the stoves would have to be improved. Above the snow-line, of course, all fluid has to be obtained by melting snow, and supplies are bound to be inadequate if fuel is short and the stoves are inefficient.

When the information gained on Cho Oyu was reviewed, it seemed that although most climbers eventually get adjusted to the bulky and strange diet, their physical efficiency is probably impaired during the first six weeks of an expedition. It is known in fact that the body takes a considerable time to get adjusted to any radical change of diet.

Also we had experienced cases of chronic bowel disorders which were probably kept going by an unsuitable diet.

At high altitude large amounts of sugar were obviously needed, and something would have to be done to satisfy the climbers' food preferences. Experience has shown that tired men, particularly if they don't feel very well, would rather eat nothing than put up with food they dislike, and if they don't eat, they deteriorate rapidly, quite apart from the effect of altitude.

To ensure adequate fluid supply, really efficient paraffin cookers were needed, and enough fuel would have to be taken up to high camps to give each man nearly a gallon of fluid a day.

In preparing the 1953 expedition, we decided to make a complete

break with tradition and take nearly all our food in the form of composite rations like the Army used for supplying landing forces. A composite ration means simply that the complete menu for each day is packed in a single box, so that you open a box a day and have everything you need. The advantages of this system are that you can have European food; and the sorting and making up of loads and the distribution of rations is greatly simplified. Shortages of essential items due to pilfering or over-consumption are avoided and there is less chance of getting diarrhoea from contaminated food.

These advantages are gained at the expense of additional weight and cost. Weight was relatively unimportant up to 18,000 feet, as there were plenty of porters available. The cost (about £1,000 for three months) we felt would be justified if it meant keeping the party fitter than they would otherwise be, and if even a single casualty were avoided. For use at altitudes above 20,000 feet, where economy of weight assumes over-riding importance, we designed a special high-altitude ration which came to be known as the assault ration. The problem of organizing and packing composite rations for three months is one of considerable magnitude and in this respect we received vital help from the Army.

I will tell you briefly of what these rations consisted.

First the general purpose or compo ration. It was packed in weatherproof fibre-board cases in 14-man-day and 28-man-day units. The 14-man-day boxes (weighing 45 lb.) contained an evening meal, a breakfast, and food for the day's climbing. There was a different menu for each day of the week; the boxes were labelled Monday, Tuesday, Wednesday, and so on. There were five kinds of meat as well as salmon, four kinds of vegetables, tinned fruit, cake, jam, butter, chocolate, and other items. All the items in this box were in tins. The 'soft' items like sugar, tea, and milk-powder, were packed separately, in the 28-man-day boxes, so you only had to open one of these every other day.

The assault ration consisted of essential foods like sugar (14 ounces), milk-powder (3 ounces), biscuits, sweets, oatmeal, tea, lemonade powder. The plastic bags containing these items were sealed under a vacuum. This greatly reduced their bulk . . . a 7-ounce packet of sugar, vacuum packed, is a hard rectangular object, but once the seal is broken it becomes soft again like any other packet of sugar. To save weight, and because of the extreme cold, no tins were used in the assault ration.

In order to cater for the food idiosyncrasies shown by individuals at very high altitude, before we left we asked each member of the party to select one or more articles he thought he'd like to eat high

up. This miscellaneous collection of foodstuffs, which included sardines, French saucissons, and various kinds of tinned fruit, were packed in two boxes and called the luxury boxes.

It was intended that each man, before going high should open his assault ration, discard what he didn't want, and substitute something from the luxury box.

How did we get on with these rations? It was generally admitted that the party was fitter at all stages of the expedition than on Cho Oyu last year, and we lost less weight . . . for example, an average of 2 lb. in the first twenty-six days after reaching Thyangboche, compared with 11 lb. in the corresponding period last year. On the average only 4 lb. was lost during the month spent in the Western Cwm, 20,000 feet.

Because of better acclimatization and more palatable food, the party lost much less weight above 20,000 feet than on any previous expedition on which weights were recorded.

We ate normal food right up to Camp IV (21,200 feet), and only used the assault ration for the Lhotse Face and above.

At Base Camp and in cwm the compo was supplemented with fresh food . . . we had sheep and yak meat . . . and the climbers insisted on having potatoes sent up into the cwm (in spite of their weight). Pressure-cookers made it possible to provide normal meals up to Camp IV and above.

As regards the assault ration . . . by general agreement seventy of them were modified at Base Camp . . . the pemmican and cereal, both of which were accepted last year, were rejected. The modified ration had an energy value of about 3,000 calories and weighed 2 lb.

Most of it was in fact eaten . . . certainly nearly all the sugar . . . . The luxuries were very popular: Hillary had sardines and a tin of apricots with him on his assault, but each man seems to have eaten something different. Some food from the Swiss expedition was salvaged on the South Col, and this was all the more welcome because it was unexpected.

The most popular kind of drink was lemonade . . . in fact Tensing used to call our expedition 'the lemonade expedition'. Sugar doesn't taste so sweet at great altitude and people would take two or three ounces of sugar in each mug-full. As planned, fluid requirements were on the whole well met, and it is doubtful if men were ever short of the right amount of fluid for more than a day at a time.

Now in conclusion I don't want to give the impression that every Himalayan expedition should take out all its food from England. Undoubtedly experienced Himalayan explorers can and do get used to living off the land. But when a really high mountain is to be climbed I do believe that everything possible should be done to

bring the party to the mountain in the best possible condition, and to reduce the terrible effects of the altitude on the human body.

III. OXYGEN

In 1922, the year of the first attempt on Everest, physiologists thought that 25,000 feet would be the limit to which men could climb by their own unaided efforts. Balloon ascents in the 1870's had proved the danger of rapidly ascending to 25,000 feet and over. At 25,000 feet the balloonists lost consciousness and two men in a famous ascent from Paris in 1875 lost their lives having reached 27,000 feet. Although it was well known that mountaineers ascending slowly acquire a remarkable degree of adaptation to altitude, it seemed a fair guess that above 25,000 feet men would not be able to go on climbing.

But the physiologists were wrong. Since 1922 no less than nine men have climbed to 28,000 feet on Everest without the help of oxygen equipment and have returned alive. The reason for their failure to get higher seems to have been a combination of climbing conditions and the effects of oxygen lack.

On top of Everest the pressure and density of the air, of which oxygen forms a fifth, is reduced to a third of what it is at sea-level. The air is so thin and the partial pressure of oxygen so low that it is questionable whether a man could get enough oxygen to supply his muscles during climbing. Low oxygen pressure impairs the functions of the brain, and this would be one of the chief dangers to the climbers, because it produces a condition very like alcoholic intoxication. There is over-confidence, failure to appreciate danger, as well as disturbance of balance and muscular co-ordination. But all these symptoms can be removed by breathing oxygen, and experiments in decompression chambers have shown that on pure oxygen unacclimatized men can do hard physical work as well as they can at sea-level at pressures corresponding to 33,000 feet.

There are two main reasons why it has taken thirty years to convince mountaineers of the usefulness of oxygen on Everest. First, they were so very keen to get to the top without it. Secondly, the oxygen sets tried on the mountain before the war didn't give really convincing results. Oxygen has in fact been taken on every expedition to Everest except the reconnaissances. Finch first used it in 1922. He found it increased his climbing-rate between 23,000 and 27,000 feet and gave relief of fatigue. In 1924 Odell reported that on the whole he was better without it, but he only used one litre a minute which we now know wasn't enough to be effective. Lloyd in 1938 claimed subjective benefit and improved performance, but Shipton and Tillman were not convinced that he went any better

than they did without it. They felt that the weight of the apparatus counterbalanced any improvement gained from the oxygen.

Last year on the expedition to Cho Oyu experimental work was done which suggested that to ensure success much more oxygen would be needed than had been taken before. Everything depended on whether it would prove possible to carry enough cylinders and equipment up to the South Col and the top camp . . . in fact, on how many Sherpas could be found to carry it up.

The work on Cho Oyu helped Dr. John Cotes to modify the design of the oxygen masks so as to handle very large volumes of respiration without undue resistance to breathing. It was this resistance to breathing that caused Finch to abandon his mask in 1922 in favour of a simple tube held between the teeth and a reservoir bag—this has since been found experimentally to be a relatively inefficient method.

Although we didn't notice much improvement in our climbing-rate at 20,000 feet on Cho Oyu, there was a striking relief of breathlessness and of the sensation of heaviness in the legs which is characteristic of climbing at high altitude. We thought that, given enough oxygen, men should be able to do a longer day with less fatigue at the higher altitudes, and would remain in better physical condition. We also estimated that the mere elimination of the need to rest every few paces to recover breath would double the rate of progress above 27,000 feet.

After the Cho Oyu expedition the Everest committee appointed as oxygen comptroller Peter Lloyd, who had used oxygen on Everest in 1938 (and as oxygen officer for the 1953 expedition, Tom Bourdillon). At the committee's request a group of experts was brought together by the M.R.C., under the chairmanship of Sir Brian Matthews, to consider the amount of oxygen needed and the most suitable kind of apparatus to use. Two types of equipment were considered, one based on the open-circuit and the other on the closed-circuit principle.

With an open-circuit apparatus, you breathe in a mixture of air and oxygen, and breath out to the atmosphere. But only a small fraction of the oxygen taken into the lungs is used: nine-tenths of it is breathed out again and wasted. The effect of breathing oxygen-enriched air is, as it were, to reduce the height at which the mountaineer is climbing. However, with open-circuit sets, not enough oxygen can be provided to bring a man down to sea-level; for example, breathing at 100 litres a minute at 28,000 feet, 4 litres a minute of added oxygen brings a man down to 15,000 feet. On the other hand, with a closed-circuit set you breathe pure oxygen at the prevailing barometric pressure, and this means that even above

30,000 feet you get enough to bring you right down to sea-level. In a closed-circuit set there is no communication with the outside atmosphere, and oxygen is breathed in and out over and over again. The carbon dioxide given off by the lungs in breathing is absorbed with soda lime, and fresh oxygen is admitted to the system at the rate at which it is absorbed. Although with the closed circuit the amount of oxygen used is halved, there is no saving in weight because instead of the oxygen saved a 10-lb. cannister of soda lime has to be carried to absorb the carbon dioxide.

Besides bringing a man down to sea-level as it were, closed-circuit sets have the advantage of conserving the heat loss from the lungs. It can be calculated that at 29,000 feet about half the total heat produced by the body is given off via the lungs in warming and humidifying the intensely cold dry air inhaled, so that the conservation of body heat becomes a difficult problem.

Open-circuit apparatus has been fairly well tested on Everest; it is simple and reliable to operate. Closed-circuit apparatus is much more complicated and has many practical snags. While closed-circuit sets have been in use for many years for mine rescue and fire fighting no existing set could handle the volume of respiration of men climbing at altitude, nor are they built to supply oxygen over long periods. It was clear then that entirely new sets would have to be developed for Everest and it was doubtful if they could be made reliable enough in the time available. This being so, it was decided to concentrate mainly on the well-tried open-circuit principle and take some closed circuit sets for trial.

I'll now try and tell you something of the experience of the party on Everest in the use of oxygen this year.

Sixty light alloy and a hundred R.A.F. cylinders containing in all nearly 200,000 litres of oxygen were taken out compared with 28,000 litres in 1922, and 30,000 litres taken by the Swiss in their expedition to Everest last autumn.

The open-circuit sets weighed about 30 lb. with two cylinders of oxygen each holding 800 litres. This would give a man a $6\frac{1}{2}$-hour supply at 4 litres per minute.

The closed-circuit sets weighed 35 lb. with one oxygen cylinder and a 10 lb. soda-lime cannister. On arriving at our base we found that 18 cylinders had leaked leaving about 150,000 litres of oxygen, most of which was used; . . . in fact all but six cylinders. About one-third of the oxygen was used for training and a small amount for experimental purposes.

The European party used oxygen above 22,000 feet for climbing and where possible for sleeping. Much of the work preparing the route on the Lhotse Face was, however, done without oxygen. During

the assault phase there is no doubt oxygen was of immense value in preventing high-altitude deterioration. Men recovered from fatigue in a way not possible without it. Including the sets, climbers carried 50-lb. loads up to 28,000 feet—whereas previously 15 lb. was considered the limit. For the most part the Sherpa porters didn't have oxygen on the way up to the col and they didn't have any for sleeping. Only two of them were still fit enough to carry loads above the col.

The party found that below 22,000 feet oxygen had little effect on climbing-rate but above that height the improvement became increasingly apparent so that the rate of climbing above the col was two or more times that of Lambert and Tensing in 1952. In part this was due to the fact that climbers were able to keep going at a steady pace, instead of having to stop every few paces to recover their breath.

All the party reported a striking improvement in well-being and increased energy. They were able once more to take an interest in their surroundings and enjoy climbing. This in itself seems a good reason for taking oxygen.

The sudden cutting off of oxygen during climbing caused breathlessness and weakness. If the supply failed gradually, however, people were apt not to notice that something was wrong, and this in itself is a characteristic effect of oxygen lack. As long as they rested and recovered their breath before removing their masks, they had no symptoms on going off oxygen, except in certain cases using closed circuit. At night oxygen induced sleep and warmth and the climbers were wonderfully refreshed by it.

The first assault was done with closed-circuit sets. Bourdillon and Evans climbed from the South Col (25,000 feet) to the South Summit at 28,700 feet and back in a day. On the first part of the route, they climbed at the rate of 900 feet an hour. This, considering the loads and the ground, approaches alpine speed. Over the last 700 feet Evans, however, had trouble with his set.

The second assault was done with open-circuit sets, Hillary and Tensing going from the top camp at nearly 28,000 feet to the top and back to the col. On the first part of the route they climbed at 400 feet an hour, but this should not be compared with the closed-circuit performance as they were using steps cut by the support party, nor with Lambert and Tensing's rate of 230 feet (last year without oxygen). They had some trouble with the formation of ice in the masks, but Hillary had no difficulty in correcting this. Hillary has described how he removed his oxygen mask on the summit and was able to set the shutter speeds of his camera and take photographs. But after ten minutes he noticed he was fumbling and getting fuddled, so he put his mask on again.

What would have happened if he had not restored his oxygen supply we just don't know. Be that as it may, it is clear that oxygen played a vital part in the final ascent and confirmed the conviction of G. I. Finch and the other climbers who pioneered its use over thirty years ago.

SOUTH OF EVEREST

J. O. M. ROBERTS

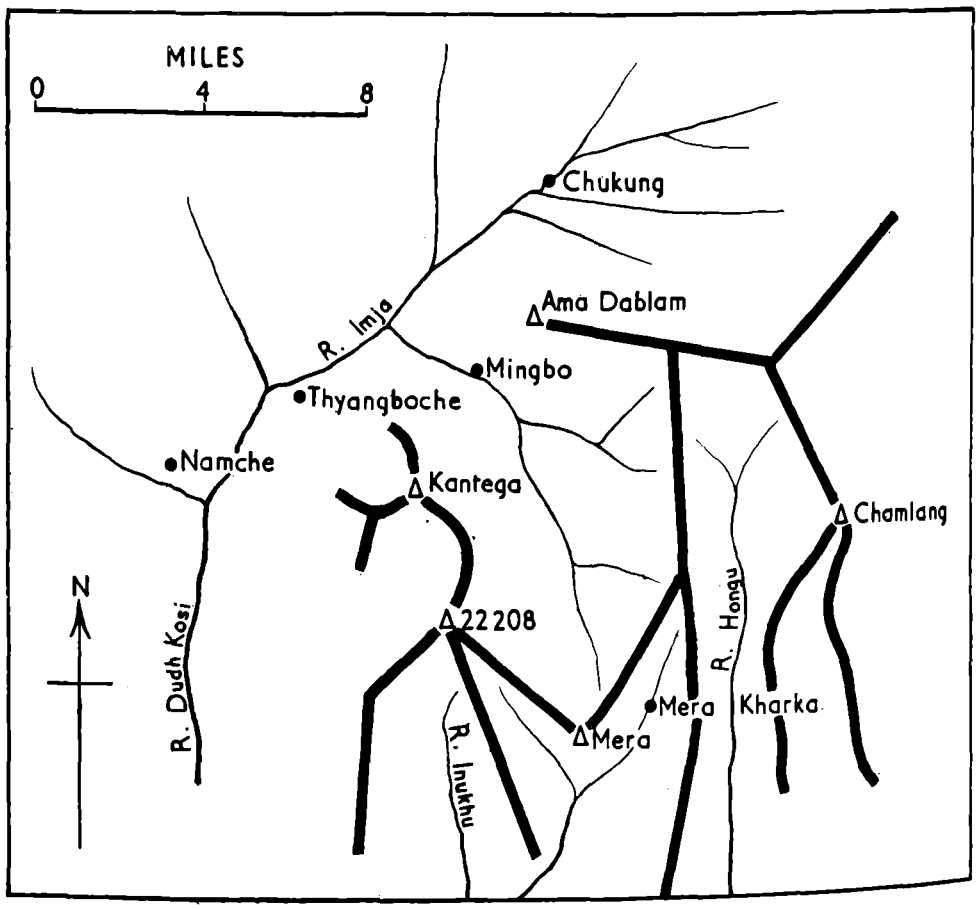
ON 17th April 1953 we of the tail of British Everest Expedition reached Thyangboche and I was thankful to hand over the oxygen loads. I now had about six weeks to roam, explore, and climb as the spirit might move me. But first I visited the leader and others at Camp I. I went up there in a holiday mood, persuading myself of the advantages of for once being at the foot of a high mountain without any obligation of having to try and climb it. Later, when the time came to take leave of this grand party and to turn my back on such great events as were brewing, these advantages seemed less obvious.

Back in Thyangboche plans had to be finalized and my own followers organized. During the long months of anticipation in Malaya it had been amusing to pore over the map and trace imaginary routes. But the quite sizeable 1951 and 1952 Shipton expeditions, operating for the most part in a number of small mobile parties, followed by the 1953 training sorties, had in fact left few obvious plums for the picking in the immediate area of Namche–Thyangboche, or to the west and east, and I had arrived with a very open mind. Here expert advice had been available. Charles Evans recommended an attempt on Pethangtse, which but for bad weather might have been climbed in 1952. However, I felt disinclined to commit an untried party to a longish and uninhabited approach involving the crossing of three high passes, and it was in the end Tom Bourdillon who gave me the clue to my final plan.

Eric Shipton's explorations in 1951 had shown that the Imja glacier system was, to the south, considerably less extensive than that indicated on the current map. The basin of the upper Hongu did not, however, account for the whole of this lost territory and it was evident that there must be to the east of Kantega and the other grand peaks which overhang Thyangboche a vast glacier cirque which might drain into the lower Hongu or, and more likely, form the head basin of the Inukhu. This river runs down parallel to and east of the Dudh Kosi and was shown on the map as rising from comparatively confined and unlikely sources. One of my local Sherpas, Dhanu, who came from Chaunrikharka, one march below Namche, said he knew of a yak pasture surrounded by fine peaks two days' walk over a high ridge above his home, and this could only be in the Inukhu. This then was the plan, to penetrate the hidden basin and if possible to attempt Kantega from the east.

I had few illusions regarding the strength of our party. There had

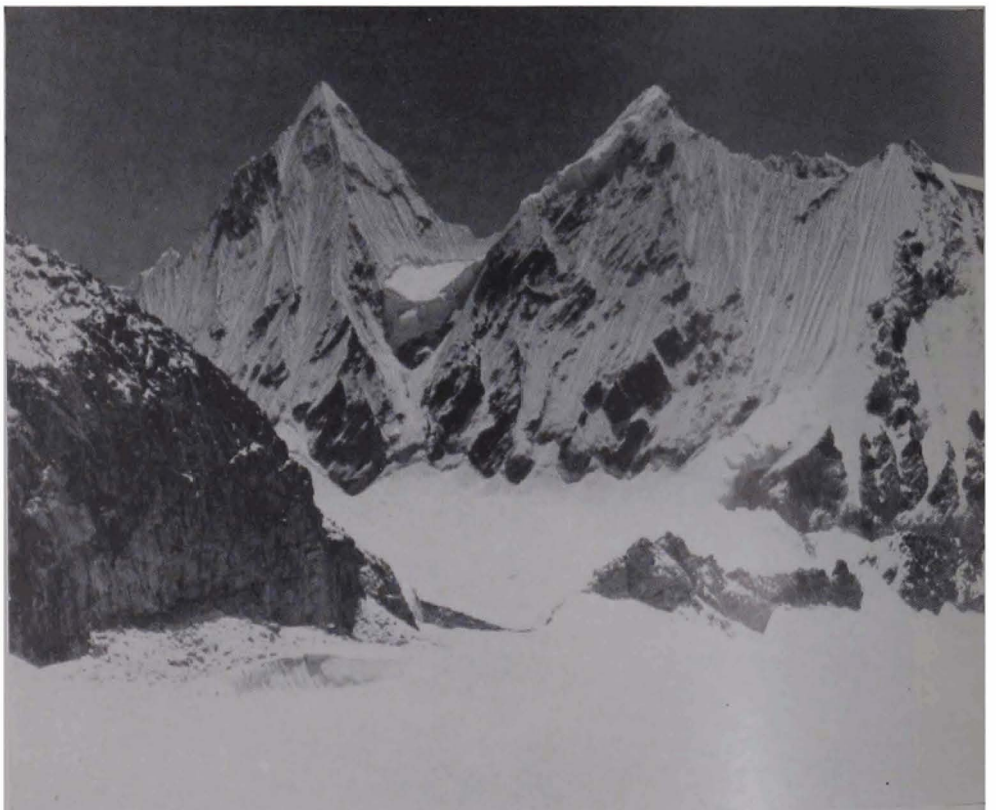
been a heavy run on Darjeeling Sherpas in 1953 and I had in the end obtained only one. This, however, was a man of character and sterling worth, Sen Tensing, the 'Foreign Sportsman' of Himalayan literature. My own name for him is the 'Snowman', as he is an expert on the species and has an ambling bearlike gait. The best local Sherpas had already been engaged for the ice-fall, but in any case the matter of selection was taken out of my hands, for S. T. comes from Phorcha village, which looks on Namche as a sink of vice, sin, and iniquity, and only men of Phorcha would do. Thus four men, friends and relations, were selected and I added, despite protests, Dhanu who had carried my load to Camp I, making a total of five porters. This number I found satisfactory for five weeks' self-contained travel, given some relaying of loads and rerationing at villages within two or three days' distance of our bases. In addition, besides S. T., there was a Gurkha Rifleman from my regiment, Dimansing Rai.



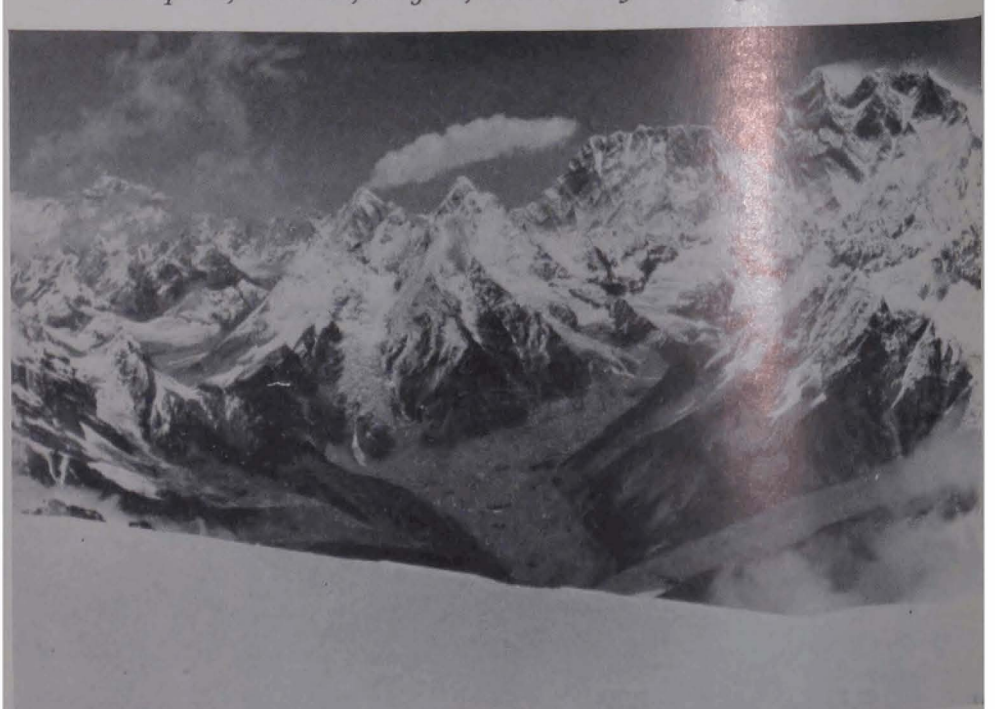
Imja–Inukhu–Hongu. 1924–1926 Survey

Before embarking on the Inukhu–Hongu exploration we went up the Lumding Khola, which flows into the Dush Kosi some 12 miles below Namche. From the confluence the valley runs up sharply north-west, but the way in is over a 14,200-foot pass from Ghat

The western rim of the Hongu basin. The two prominent cols leading to the Imja are left, Evans's, and right, Shipton's. Ama Dablam is on the right



Fluted peak, circa 22,000 feet, seen directly to east from Philibu La



Looking north from about 20,000 feet on Mera. Left to right: Cho Oyu, Pumori (with cloud plume), Ama Dablam, Nuptse, Everest, Lhotse. Middle distance: the Inukhu basin, with col to Thyangboche below summit of Cho Oyu

(8,800 feet) in the Dudh Kosi. This is a yak route later in the year and from Ghat to the Lumding pasture at 13,000 feet is one long day. The pass was well snowed up during our visit and as the last 100 feet were up a narrow crumbling rock funnel, I could feel nothing but admiration for the slim and athletic yaks which must run this route. During the days we spent up the Lumding the weather was thoroughly bad, thick mist, rain, and snow showers after 8.30 a.m. every day and no clearance in the evenings. Nor did the peaks reveal themselves easily, for a feature of the valley is a 2,000-foot rock step at the 14,000-foot level, giving the first impression that it is the valley head, while in fact the whole glacier system is dammed in above the step. The peak that I was after, Numbur, 22,817 feet, I did not consider climbable from the Lumding, even by a strong party.

Owing to the weather all this took some time to find out and when we left for the Inukhu on 9th May we were already twelve days out of Thyangboche with nothing to show for it. This march was a short one, to a camp above Chaunrikharka. The next was steep and weary, up through the mists and dripping pine trees towards our pass. I stumped ahead and the army dragged behind, talking volubly. About half-way, everyone sat down as if for ever and S. T. produced a jack-knife and embarked on a tedious and rather horrid operation on his horny feet. This drove me up into the mists and sufficiently far ahead to disregard the thin shouts about camp sites which drifted up from below. By these means we reached the edge of the scrub line at about 13,500 feet and camped at the early hour of 1 p.m. in a wetting rain which later turned to snow.

The 11th of May was a long and varied day, with all the interest of a descent into new country, despite an average visibility of 500 yards. An adequate path climbed over two cols of about 15,500 feet, separated by a half-mile dip, and descended to the Inukhu at 11,500 feet. I was happy to find this was a sizeable river, about equal to the Dudh Kosi and it evidently drained a large area. We proceeded up the west bank and camped as it grew dark at the first huts of the Lungsama yak pasture at 13,200 feet. The huts were deserted but the homely scent of yak was in the air.

The next morning was brilliantly fine and I set off by myself at dawn to get an idea of the lie of the land. My diary notes 'Map all to hell', but one cannot both blame the map-makers and claim the satisfaction of penetrating to all intents unmapped country. I began by climbing up the hill-side immediately to the west of camp, but soon realized that the main attractions lay much farther up the valley and the camp, as a base, was much too low. So I sloped down to the valley floor and about 2 miles and 1,000 feet higher up the

valley came to the yak herds, mostly tended by small boys. Dhanu was here, having been earlier dispatched in search of milk, and I sent him back to bring up the rest of the retainers while I continued my own walk another 1,000 feet, above a step in the valley and to the edge of a flat glacier plain.

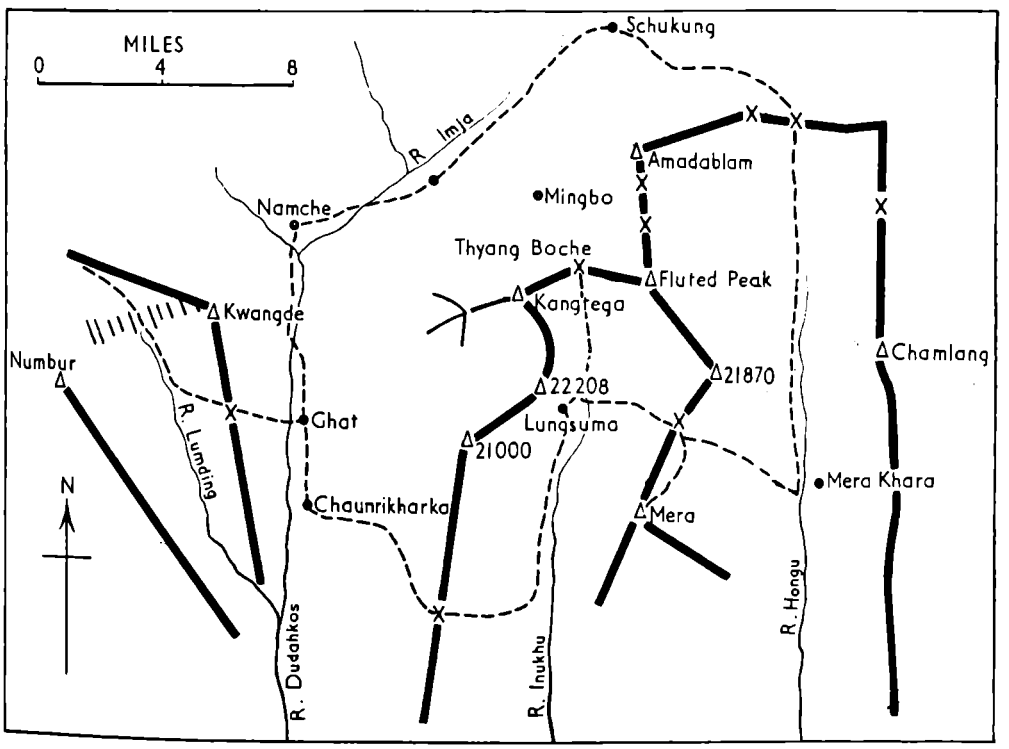
The initial key to the topographical problem to the east appeared to lie in the actual position of Mera Kharka (or grazing pasture) shown on the map as in a tributary of the Inukhu itself, and of the 21,120-foot peak of Mera. Local advice indicated a glacier pass to the east of the valley head leading to Mera Kharka in two days, and as this was said to be the easiest approach to Mera Kharka from Lungsama, used by animals later in the year, it was reasonable to suppose that both Lungsama and Mera Kharka did not lie in the same (Inukhu) valley system.

A day or two later the Snowman and I reached this technically easy 18,000-foot glacier pass and proved this rather obvious point. We looked immediately across to the 24,000-foot bulk of Chamlang and into the unseen depths between our pass and Chamlang, where only the Hongu could flow. After all the days of damp and drizzle it was exhilarating to be at last in the heart of the snows and unexplored country on a clear, crisp morning and I cared not that our ascent had merely broken a trail for a horde of yaks later in the season. And Mera itself was definitely climbable from the pass.

Before returning to this region we devoted a few days to exploring the northern portion of the Inukhu glacier basin. On 16th May the two of us reached the 'Philibu La', about 19,500 feet, and looked directly down the small valley of that name, between Thyangboche, which was just out of sight, and the Mingbo valley to the north. It had been my thought to finish our travels, having connected up with Shipton's tracks in the Hongu, with a direct descent almost onto the roofs of the monastery from the Inukhu. But this was not to be. On the east there are two or more cols, and easy on that side, but those western precipices down which we looked were not for the Snowman and myself and nor, I think, for any other party.

Now, having explored the hidden basin of the Inukhu, which had in the end revealed its secrets all too easily, we turned to the Hongu. Two of the men were sent back to Thyangboche by the Chaunrikharka route with surplus kit and on 19th May the rest of us, six in all, crossed the Mera La and camped at 17,500 feet on moraine just below the pass. On 20th May S. T. and I attempted Mera from this camp. Mera, no mean peak when viewed from a distance, is an indeterminate, rambling sort of mountain when one is climbing it and the horizontal distance to be covered was considerable. However, there were no real technical difficulties apart from soft snow

(it had snowed all night) and a mass of false summits, and we reached the top in six hours as the weather was beginning to close down. The summit ridge, running from west to east, consists of three or four large bumps and we chose the eastern one. To our west a semi-detached wave of ice hanging over the southern precipices may have been about 100 feet higher. These precipices were considerable and Mera from the south must be a very impressive mountain. To the north Everest and Makalu ruled the horizon.



Inukhu–Hongu 1953

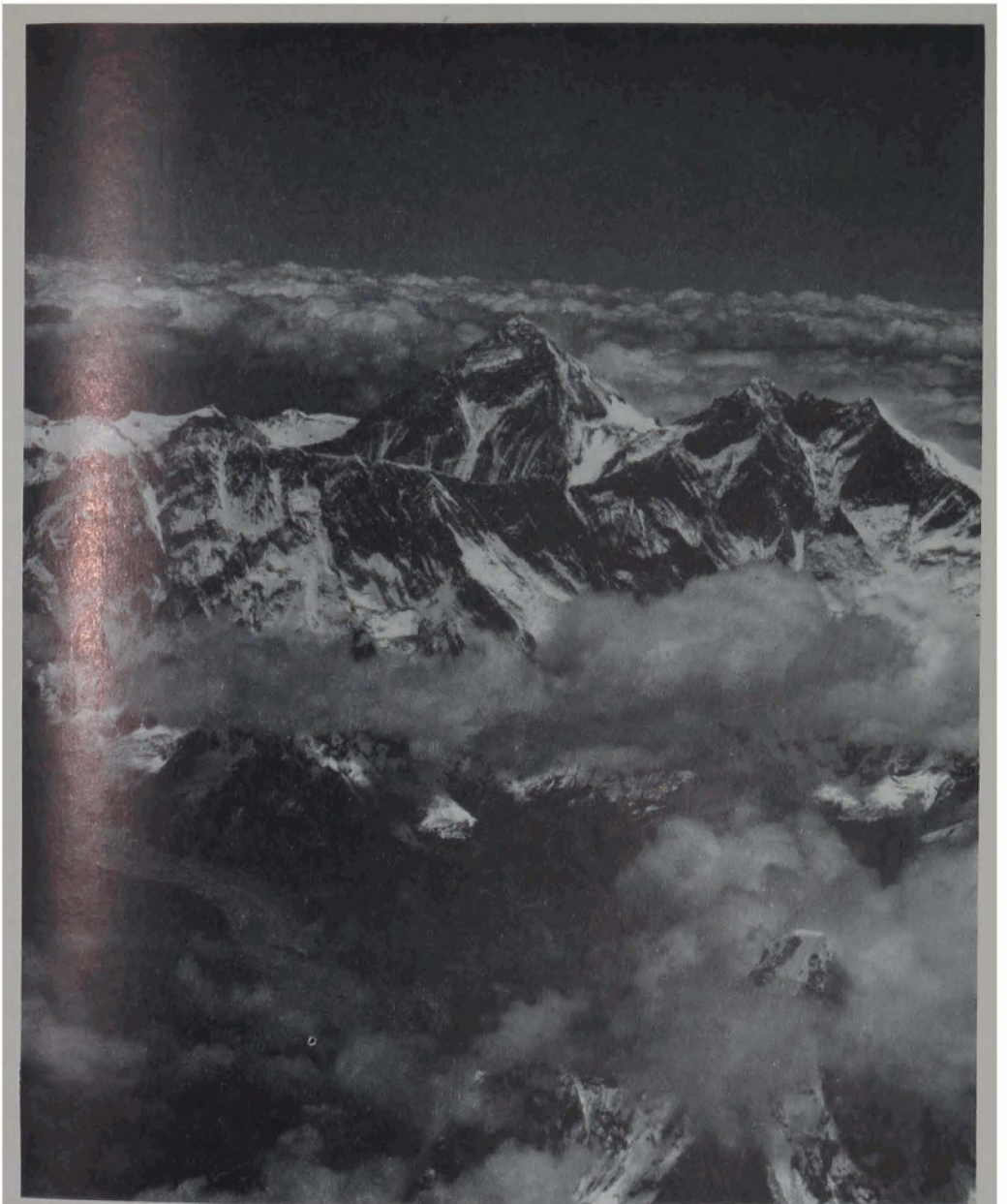
We moved camp right down to the Hongu the same evening and the next day I descended another 2 miles to Mera Kharka, still deserted, an idyllic spot backed by some attractive 19–20,000-foot peaks. Two days later found us camped by the glacier lake at the head of the Hongu, at the foot of the Amphu Lapcha pass, used both in 1951 and 1952, but not yet traversed from the south. On the way up I noted the pass used by Shipton when he left the Hongu in 1951, immediately to the south of Ama Dablam and the pass, farther to the south again, reached by Evans's party from Mingbo earlier in 1953. Both appear easy from the Hongu, but the far side of Shipton's pass is difficult and Evans's pass may be the best approach to the Hongu from the Imja system. He called it the 'Mera La' but I feel this name is best retained for the Inukhu–Hongu col crossed by our party.

We were now almost at the end of our travels, but despite magnificent weather I could not that afternoon suppress some slight anxiety regarding the outcome of the morrow. In recent years three strong parties had crossed into the Hongu from the Imja and much later in the season, and all had remarked on the difficulty of the route on both sides with laden porters. Evans had, while discussing Pethangtse, recommended his 'Mera La' as an alternative approach to the Hongu, as he had seen the Amphu Lapcha earlier in the year and it still appeared heavily iced up.

However, taking the line of least resistance and unroped we reached the crest of the 20,000-foot ridge above the lake at 10.15 a.m. and saw the cairns marking the true Amphu Lapcha at least half a mile away along the ridge to the west. The direct descent from our own col looked most unpromising so I dumped my load and embarked on a traverse of the intervening ridge. I soon realized that this would not go with loads and at the same time a closer inspection of the north side of the slopes of the Amphu Lapcha itself did not encourage a descent to the Hongu and a re-ascent of the ridge at that point the following day, although we still had food enough for this course.

I was beginning to feel slightly trapped but my travels had brought me to a large and firm splinter of rock on the ridge and from here a very steep snow slope led to a small shoulder of rock and scree 500 feet below. The shoulder formed a gully against the snow and ice face of the Imja retaining wall and this gully, once attained, was obviously negotiable.

The snow was good. The route lay along a gradual traverse, so loads could not be lowered. We had 400 feet of assorted nylon rope and line and securely lashed to the rock splinter I safeguarded the men down one at a time. None of them had had any previous experience of this sort of ground, but they all went down without a murmur. Dimansing, especially, was magnificent. The length of the 400-foot joined rope enabled S. T. to reach a firm position from which to safeguard my own descent, and on the shoulder we roped into two parties and continued down the gully without incident. The whole descent to glacier level took four hours. We reached the Chukung yak pasture in the Imja in heavy mist and rain as it grew dark that evening and went on down to Thyangboche the next day.



I. Nuptse-Lhotse Wall in foreground, Everest in background. Looking eastward at Everest

II. North Peak, North Col, North Face, South-west Face, South Col

III. Lhotse I and II—South Col left

INDIAN AIR FORCE FLIGHTS OVER EVEREST, 1953

FLIGHT-LIEUTENANT N. D. JAYAL

TWENTY years ago, the flight by two Westland aircraft over Everest was a creditable achievement worthy of the best traditions of human enterprise and adventure. Aviation was still in its infancy, and the numerous problems that confronted the organizers required thorough scientific investigation and research. The success of these flights undoubtedly achieved their main object which was 'the desire to increase the sum of human knowledge of Nature's greatest mountain stronghold'. The photographic record proved the efficacy of aerial survey from great heights in remote and inaccessible regions.

The Indian Air Force, in planning a flight over Everest at the greatly advanced stage at which aviation is today, set itself a comparatively easy task. The four-engined, piston-driven Liberator, fully fitted with an oxygen supply system, was capable of exceeding the height of Everest by a safe margin, but required careful handling of the controls, which incline towards sluggishness in the rarified atmosphere. The object, stimulated by the interest focused on the British Expedition's bid for the summit, was very similar to that of the 1933 Houston flights. The original intention—that of synchronizing the aerial photography of the Everest massif with the final assault by the British Expedition—was dropped in the interest of the safety of the climbers, who might well have been disturbed in their arduous task.

On the 2nd June the great news of the ascent of Everest was announced. It was the signal for the aircraft, which had been carrying out intensive trials, to stand by in readiness to start operations.

On the 6th June, eight days after the ascent, and after it was confirmed that the climbers were clear of the mountain, our Liberator aircraft took off at 0800 hours headed northwards on a steady climb. The captain of the aircraft was Flight-Lieutenant A. E. Paul supported by four aircrew. Two officers operated the still cameras, and two others including myself took ciné shots in colour. The plains of Bihar, baked by the intense summer heat, were shrouded by a thick dust haze. It was a relief to climb above temperatures of 114° F. into the cleaner and cooler upper atmosphere. Very soon the cold began to worry us, and when the altimeter registered 15,000 feet we received orders from the captain through the inter-communication to put on our electrically heated suits and to don our oxygen masks. We were still over the plains, a hundred miles away, when gigantic white towers suddenly loomed through the limpid higher

atmosphere into view. Instantly I recognized the Kangchenjunga massif to the extreme right, and Makula slightly right of the Everest group straight ahead. The foothills were obscured by a layer of strato-cumulus clouds and it was disappointing to be denied a view of the approach to Everest through the lovely valleys of Nepal.

After about an hour and a quarter, having gained a height of 32,000 feet, we found ourselves awed spectators of Everest, profoundly impressed by the magnitude and beauty of her form. It was late in the season and the monsoon was expected to break at any moment. We were, therefore, not optimistic about views. When we arrived, however, not a wisp of cloud shielded the entire massif, and it appeared as if Everest stood posed for the photographer. For over an hour we circled south of the peak over Nepal, and 'shot' the region with the aid of four cameras, capturing every possible aspect and detail of the mountain. Ports were provided on the starboard side of the fuselage to enable the camera lenses to be properly aimed. The cold draught at $-27°$ C. that entered these ports added greatly to the difficulties of handling the cameras, and although these were provided with electrically heated covers, there were stoppages which made a second sortie the following day necessary.

It was perhaps unusual luck to be blessed with two splendid days in succession and to find Everest in supreme repose during a somewhat prolonged pre-monsoon lull. The complete absence of the famed Everest 'plume' led us to believe that very calm wind conditions prevailed. At no time did the aircraft experience any 'bumps', indicating absence of turbulence, which very nearly brought one of the Houston flight planes to grief in 1933. In such favourable conditions good photographic results were to be expected and it was a great thrill to observe our efforts yield excellent results. Our photographs greeted the victorious Everest Expedition when they returned to New Delhi and their appreciation was a source of deep satisfaction to us. It was interesting to hear that they had had a glimpse of us through the clouds from the Thyangboche Monastery, but had not for a moment suspected the mission of the strange aircraft!

THIRD AMERICAN KARAKORAM EXPEDITION 1953

K2

H. R. A. STREATHER

TOWARDS the end of 1952 I was invited by Dr. Charles Houston to join an expedition, which he was organizing, to make an attempt on K2, the second highest mountain in the world. I had served for some time in the north of Pakistan and had a fair knowledge of the people there and of their language. My job was to be that of Transport Officer. I was to make the arrangements to get the expedition to its Base Camp and was then to become a member of the climbing party. Naturally I accepted this invitation with the greatest of pleasure and welcomed the opportunity of returning 'north of the passes' of Pakistan. The problem of obtaining the necessary leave from the Army was not so easy, for this was an American expedition and had little to do with British prestige, as did the Everest venture. However, this difficulty was fortunately overcome and I was granted special long leave to join the expedition.

BACKGROUND

K2, sometimes called, wrongly I think, Godwin–Austen, rises to 28,250 feet in the remote country to the north of Baltistan on the undemarcated borders of the Sinkiang province of Communist China. It holds, by a close margin, its claim to be the second highest mountain in the world, for Kangchenjunga is barely a hundred feet lower.

K2 was first noted for its great height by Captain Montgomerie, in 1856, while he was working with the Survey of India. Since then it has been seen by many great travellers but few attempts have been made to climb it. The first of these was in 1902 when Eckenstein reached a height of 21,000 feet on the north-east spur. The famous Italian explorer, H.R.H. Prince Luigi Amedeo of Savoy, Duke of Abruzzi, led a large expedition to the Karakoram in 1909 and, besides much other fine work, made an attempt on K2. He decided to try by the south-east ridge and three of his guides, after a very difficult climb, reached a height of rather more than 20,000 feet, towards a 'reddish rock', before deciding that it was useless to proceed farther. Later they reached a height of 21,870 feet on the western spur, above the saddle which later became known as the Savoia pass. The Duke eventually decided that further efforts to climb K2

would be hopeless. After that, K2 was seen by Dr. Longstaff, the Bullock-Workmens, the Duke of Spoleto, Dyhrenfurth, H. de Segogne, and others, but no further attempts to climb it were made until twenty-nine years later, when in 1938 Dr. Houston led an American expedition, in a determined effort to find a possible route to the summit.

Enough cannot be said of the good work and perseverance of this expedition. After many weeks of reconnaissance and after making bids on several of the ridges, they made a last determined effort up the south-east ridge, named then as the Abruzzi ridge, after the Duke who had tried it twenty-nine years before.

They reached the 'reddish rock' referred to by the Duke and this proved to be the key to the whole problem. A small and extremely steep chimney led to the top of this red rock. Bill House made a very fine lead and after a hard climb reached the top of the chimney. From then on they had worked slowly forward until Houston and Petzoldt had eventually reached a height of about 26,000 feet before having to turn back. They had spent many weeks on the mountain and believed they had found a possible route to the summit.

The following year a further American expedition led by Wiessner tried the same route. Wiessner himself reached a height of a little over 26,000 feet but the expedition ended in tragedy and one American and three Sherpas lost their lives. Little has been written of the gallant efforts of Pasang Kikuli, who, with two other Sherpas attempted to rescue the abandoned American at Camp VII. None of them were seen again.

And now, in 1953, fifteen years after he had found a possible route to the summit, Houston was to lead another team of Americans, determined to finish a job he had started many years before. I was to have the privilege of joining him as the only British member of the party.

TO SKARDU

Towards the end of May we assembled in Rawalpindi and most of us met each other for the first time then. I had come out by sea and had spent a few days travelling round Pakistan, seeing old friends—and the others had flown out from the States. We all stayed there with Colonel Ata Ullah, the Pakistani who was to join us as the last member of our party and who proved to be such a great comfort to us later, by his consistent support and encouragement from Base Camp.

Our party was a strong one. Charles Houston, the leader, is already well known for his wonderful achievements in 1938. He had also climbed in 1936 on Nanda Devi and might have been one of the

summit pair had he not eaten a bad tin of food at the high camp! Bob Bates was also with him in 1938 and this year again did a fine job with our commissariat. He had climbed extensively during the last twenty-two years in Alaska and the Yukon. George Bell, a theoretical physicist and a tough six-footer, had distinguished himself on Yerupaja (21,679 feet) and Salcantay (20,574 feet), two peaks in Peru, which had not been previously climbed. Then there was Art Gilkey, a geologist from Iowa, a man with great drive and determination. Dee Mohenaar and Bob Craig, both from Seattle, were ski and climbing instructors at the Army Mountain School. Craig had climbed Mount McKinley, the highest peak in the States. Pete Schoening, also from Seattle, was a great expert in the art of belaying and this proved very fortunate for us all later. Those were the seven American members of the party and then there were Colonel Ata Ullah and myself. The Colonel was a man of nearly fifty but this did not prevent him climbing with us to our Camp III, and visiting Windy Gap at a little over 20,000 feet, at the head of the K2 glacier. Only three of us had climbed in the Himalayas before. Houston and Bates on K2 in 1938 and Houston, before that, on Nanda Devi in 1936. I had climbed Tirich Mir, with the Norwegians in 1950.

This was the party which assembled in Rawalpindi and prepared to set off from there on the long journey to Skardu and then the march to Base Camp.

Due to the great changes which have taken place since the beginning of the war in Kashmir, we were able to fly the first stage of our journey and land on the rather frightening airfield at Skardu. This was truly a most impressive flight. We passed close under the walls of Nanga Parbat and one of the climbers even claims that he was able to see the tracks of the German expedition which was later successful in bringing to a conclusion the long and epic struggle with that mountain. On up the narrow gorge we passed Rakaposhi and Haramosh, with a brief glimpse of K2 away off to the north and then we landed at last at Skardu to breathe that cool, sweet air which only seems to exist in the great mountain ranges. It was hard to believe that we had reached Skardu in but a few hours, when, in the days before the partition in India, this same journey had entailed a long trek, of many days, from Srinagar, over the Zoji La or across the Deosai plains.

We were given a hearty reception in Skardu and the main street of the bazaar was brightly decorated and crowded as we passed through. The banners displayed by the schoolchildren and the conversation of the leading citizens made us fully aware of the strong feeling in this area over the bitter Kashmir problem. Skardu

had been the scene of much fighting in 1947 and had changed hands several times.

We were most hospitably entertained by the Political Agent and the officers of the Northern Scouts, who did everything possible to help us prepare for the next stage of our journey.

Coolies were employed, some of our loads were repacked, and food was purchased for the porters who would be remaining with us to work on the mountain. The Mir of Hunza had kindly selected a few good men and he had sent these down to join us at Skardu. One of them had climbed with me on Tirich Mir in 1950. This was the first time that Hunza porters had been employed to a large extent on a major expedition and later they were to prove themselves in every way worthy of great praise—but more of that later.

APPROACH MARCH

On the 5th of June all was ready, and having crossed the Indus in 'Alexander's Barge' we set out on our two-week trek to Base Camp.

For the first few stages we marched up the fertile Shighar valley and then, a little above the village of Bahar, we were forced to cross to the north bank of the Braldu river.

The coolies, who we had recruited from the villages around Skardu and the lower Shighar villages, said that the track on the south bank was no longer safe for laden coolies. Nothing would persuade them to change their minds and we were forced into accepting a delay of nearly two days while we laboriously ferried all our kit across the river on one, very inadequate, goat-skin raft, or *zakh*, to use its local name.

In Skardu I had drawn up a very careful contract, for the supply and payment of coolies, with a man who had been recommended to me by the Political Agent. It was during the delay in crossing the river that I realized what a rogue this contractor was. He was giving the coolies but a fraction of their pay and pocketing the rest himself. Each day coolies would become more and more difficult to find, and as we arrived in a village all the fit men would disappear, for fear of being pressed into labour with us. As soon as I realized what was going on, I sacked the contractor and from that day on all went well. In fact, at most of the villages, where we stopped for the night, men would crowd around us and fight for the loads when the time came to set out on the next stage of our journey the following morning.

After crossing two of the infamous 'rope bridges', both in very bad repair, we eventually reached Askole, the last village in the Braldu valley. We were given a great reception here, where the older men wanted to know if we knew the 'Duke Sahib' and the slightly less

old ones, if we knew 'Shipton Sahib'! We had fun here making tape recordings of the villagers singing and then playing their own songs back to them over our radio.

The following morning the whole village wanted to accompany us, but whether this was because of the novel entertainment we provided or because of the good money they hoped we would pay, we couldn't say.

As we moved on up the Baltoro glacier the novelty was wearing a little thin and twice most impressive 'sit down' strikes were staged. The cry would be 'the Duke Sahib stopped here so we are going to', even if we had only been marching a few hours. Spoleto I suppose —hardly Abruzzi! However, the strike leaders were prepared to listen to sense and we moved on without any increase in the settled pay.

When we reached Concordia, the junction of the many glaciers at the head of the Baltoro, I said to one of the older coolies that we had to turn left, up the K2 glacier. 'Oh!' he said, 'so you are not going to Base Camp, you are going to "Lambar Pahar".' I found that Base Camp, or rather the local pronunciation of it, was the name they had given to the area of the camp of the vast French expedition in 1936, which had employed some 650 coolies. Simply 'long hill' was their name for K2.

We reached our Base Camp on 19th June, at about 16,500 feet, at the foot of the south ridge of K2. From here we sent back our coolies and just our six Hunza porters and ourselves remained. Fifty of our most loyal coolies were given instructions to come back and collect us on 10th August. All these men had come from the village of Satpora near Skardu. This village had already made a name for itself by providing willing and loyal coolies for previous expeditions and they certainly earned our gratitude and respect this summer.

BASE CAMP—THE ABRUZZI RIDGE

Our first morning in Base Camp dawned bright and clear and, as we unpacked and sorted our loads, we had a wonderful view of the icy precipices and rocky ridges of K2 hanging over us to the north. We could follow the line of the Abruzzi ridge, running steeply, horribly steeply, up to the snow shoulder at about 26,000 feet. This shoulder seemed to be the first and only 'let up' on the steep ridge before it verged into the summit cone.

We started, at once, working a tortuous route up the glacier, through the ice-fall, to our Camp I at the very foot of the Abruzzi ridge. After further hard days of relaying loads, the first two camps were eventually established on the ridge—Camp II at 19,300 feet and Camp III at 20,500 feet.

Camp II was our last site of any size and this was the last place where there was room for the Hunzas to live as well as the climbers. They carried loads with us to III, but from then on all the carrying had to be done by ourselves. They never lived above Camp II. The risk of stone falls on the steep ridge was too great to allow for one 'ferry service' to work above the other, so we all had to climb together or wait in the sheltered camp sites untii the ridge was clear. These were two of the factors which convinced us that we would not be justified in taking the Hunzas above Camp III.

Camp III consisted of just two tents, perched perilously on ledges we had cut from the ridge. It was here that we experienced our first storm, which was but a foretaste of what was to come.

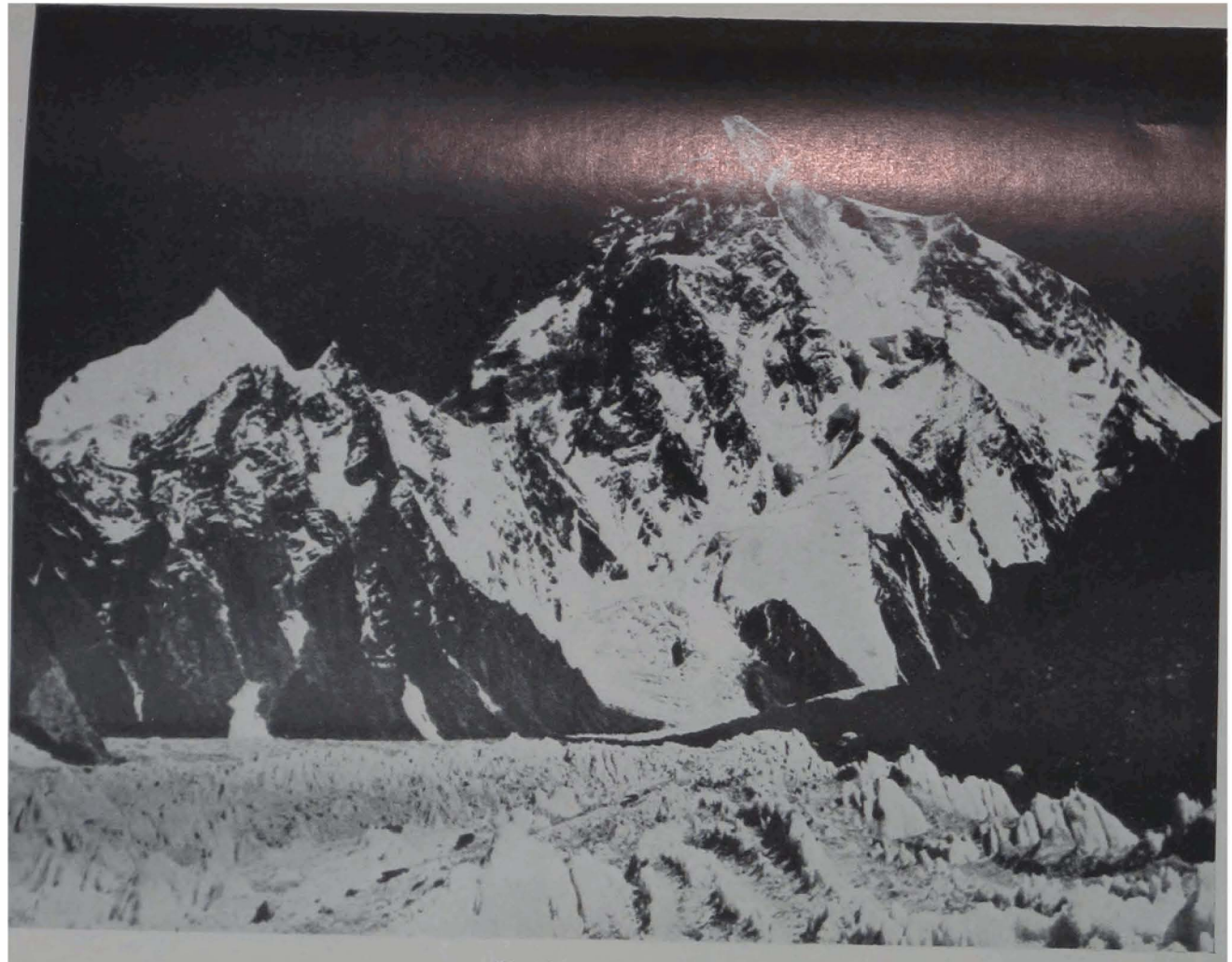
We continued relaying our loads forward and on 16th July established Camp IV at the foot of 'House's chimney'—the 'reddish rock' which the Duke of Abruzzi's guides had hoped to reach many years before. Camp V at 22,500 feet, was only some 500 feet above Camp IV, but it was a hard task, at that altitude, struggling up the chimney. We pulled our loads up on a pulley frame, which we had brought and erected for this purpose.

Once above the chimney we felt that we really were getting somewhere at last. The climb to Camp VI, 23,400 feet, was again a short one and this camp was fully established, with all of us there, by the end of July.

We had found other traces of the previous expedition during the climb, but it was at Camp VI that we first found anything to give us a lead on the last hours of Pasang Kikuli and the Sherpas who climbed alone from Base Camp, in 1939, in an attempt to rescue Wolfe from Camp VII. We found the remains of two tents and inside them, neatly rolled and ready for a move, were the sleeping-bags and a few personal belongings of those gallant Sherpas. It was clear that they had prepared everything for their descent before going up to VII, for a second time, to try and bring Wolfe down.

During the days that we had been establishing Camp VI, the weather had been deteriorating, but we continued to climb and build our 'pyramid' during the bright spells. All previous records had shown that the monsoon has little effect in the Karakoram and we did not believe that this was more than a local spell of bad weather. We did not expect more than a few stormy days before the promised clear, bright days would come.

The slab rock, covered with a thin layer of snow and ice, made the climb above VI treacherous, but we carried loads to the point where Camp VII had been established in 1938 and where we hoped to make our own camp. However, the formation of the seracs at the foot of the snow shoulder had changed so much that no level site



K2 from Concordia

Skyang Kangri

Bride Peak

could be found for a camp. A narrow ledge was cut out in the snow slope, just wide enough for our smallest tent and two men stayed up here to seek further for a suitable camp site. The rest of us dumped our loads and climbed down again to VI. Camp VII became, thus, just a cache. Gilkey and Schoening, who remained at VII, searched for the whole of the following day and eventually informed us, at Camp VI, by walkie-talkie radio, that they had found a perfect camp site, but that it was several hundred feet above the old VII site. We later estimated the height of this camp, Camp VIII, to be 25,500 feet. This meant that we had a long climb, with loads, from Camp VI at 23,400 feet to Camp VIII at 25,500 feet.

On the 1st of August we had sufficient loads at Camp VIII to justify four of the party moving up. Two were already there. The weather was still not good but surely the break would come soon!

Bates and I remained, that day, in support from VI, for the climb to VIII would be a long one and if the weather remained bad, they might be forced, by the cold, to fall back on us. Late in the afternoon we heard that all had reached VIII safely and had established a strong camp there.

The following day dawned clear and sunny and we hoped that this would be the chance we had been waiting for. Bates and I struck Camp VI and, leaving tents and food for our return, safely stored on one of the ledges, set out on the long climb to Camp VIII. The same day those already at VIII came down to the cache at VII to collect further supplies. Soon after we had started the weather once again deteriorated and before long we were climbing in appalling conditions. At about midday, we heard the others shouting to us from the cache, when we were tackling the treacherous ice-covered slabs of 'the black pyramid', as we called this pitch. From the glacier below it had looked most formidable and exposed. We reached the cache, after the others had already returned to VIII, and fortunately they had carefully marked the route up the snow slope with willow wands. The weather was now atrocious, but we had come too far to think of turning back. Night was coming fast when we eventually sighted the tents of Camp VIII through the driving snow. With relief we crowded into one of the mountain tents and welcomed the hot drink which was ready for us. We had been climbing for over ten hours.

CAMP VIII—THE STORM

We were all of us at Camp VIII now, and with food and fuel to last us for at least ten days. We had behind us a well-stocked line of camps and down at Base, in touch with us by wireless, were the Colonel and our six Hunza porters. In spite of the efforts of the last

few days we were all in extremely good condition and had acclimatized well. Our gear was in good shape and morale was high. Most of the difficult climbing was over and we were less than 3,000 feet from the summit. All we needed now was a break in the weather—just three days might be enough—so that we could put the last part of our plan into action. Our basic plan was simple. On the first clear day we would all carry loads to Camp IX, which we hoped to establish at about 27,000 feet. The strongest two climbers would go ahead with light loads and reconnoitre the route. These two would remain at Camp IX, with supplies for several days, and would make a bid for the summit on the next clear day. If they failed, a second pair would try, and there would still be time and food for a third or even a fourth pair if necessary.

We had no oxygen and did not plan to use it on our summit bid. The problem of carrying the extra loads up the steep ridge, without the help of a large number of porters, was too great—and, anyway, we did not consider its use essential to reach a height of 28,250 feet. We had already spent nearly a month above 20,500 feet, and far from deteriorating, we had been getting fitter from day to day. There were none of the usual signs of mountain sickness and we attributed this to the length of time we had been acclimatizing, with strenuous exercise, as we worked our way slowly forward from camp to camp. We had made six or more carries each, between most of the camps.

Such was the position when Bates and I reached Camp VIII on 2nd August.

That night the storm continued with unrelenting ferocity and the wind seemed to have some personal malice against us, as though it was determined to blow us from the mountain. It continued through the following day. We were confined to our bags and unable even to talk to each other without shouting at the top of our voices. The stoves would not stay alight in the flapping tents, so we were not able to get more than a cup or two of liquid to drink—not nearly enough at that altitude.

On the morning of the 4th, we heard a pathetic cry from outside, 'Help, our tent has gone'. Houston crawled in to join Bates and I and Bell joined two of the others. We were now eight of us in three small mountain tents.

Every evening we spoke to the Colonel on our wireless, and always he had received the same weather forecast from Radio Pakistan—'snow and storm!!'

So it continued until the morning of the 7th. I would be wrong to say that on that day we awoke to a bright morning, for there had been little sleep during the previous days; but the clouds were clear-

ing and the sun was shining although the wind was still blowing strongly.

For the first time since our arrival at Camp VIII we were able to think of further movement. Bell and Molennar had been slightly frost-bitten during the storm, so they would go down. Bates and I would go down with them to VII and bring up more food and fuel. The other four would kick steps up the snow slope and start working the route towards IX. We would have to be more certain of the weather before we could think of establishing IX, but we could start preparing the way.

THE DESCENT

When we crawled from our tents, intent on continuing with this plan, Gilkey complained of pain in one of his legs. He tried to stand with his full weight on it but collapsed in a faint. Houston looked at it and soon diagnosed thrombophlebitis! There was nothing else for it—if Art was to have any chance of recovery we must get him down at once. All our plans of going higher were abandoned and we set about preparing to carry Art down. We bundled him in sleeping-bags, wrapped him in the torn tent and set off, dragging him through the deep fresh snow. We soon realized that we were in grave danger of starting an avalanche and we were forced to return and re-establish Camp VIII. Craig and Schoening set out to find an alternative route and reported a steep rock and ice ridge some hundred yards to the south of the snow slope. By this time the weather had again reverted to storm and further movement became impossible that day.

The days passed but still the storm showed no signs of relenting. Each evening the forecast was bad. On 10th August we realized just how serious the situation had become. We were suffering particularly from dehydration, for we had not been able to melt much snow and we were suffering too from the effect of having spent ten very worrying days, cowering from the storm. I'm sure that our deterioration was due more to these factors than simply to altitude. Art was in a bad state. We must get him down as soon as possible. Both his legs were now affected and clots of blood had moved to his lungs.

We wrapped him again in a sleeping-bag and tent and set out, in the raging storm, to get him down by the new route. This was a desperate attempt, but we had no alternative. First we dragged him a short way through the deep snow and then we lowered him down the steep ridge and ice slope below. After many hours of exhausting work, feeling extremely tired and cold, we had descended little more than 400 feet. Somehow we would all have to spend the night

on the small ledge at Camp VII for there was no chance now of reaching Camp VI as we had hoped.

We had just lowered Art over a steep rock cliff, when one of the climbers slipped. We were climbing, for the most part, in pairs, and in some miraculous way our ropes crossed. Five of us were pulled off the steep ice slope. Pete Schoening, who was at the time holding the rope on which we were lowering Art, had the only strong belay, and somehow he held us all. Bell had fallen more than 200 feet and the rest of us a little less. Again, by some miracle, none of us was badly hurt although Houston was unconscious for a time and Bell had badly frozen hands, through having lost his gloves in the fall.

Those of us who were able, made our way to Camp VII and managed to erect a tent on the tiny platform there. We then helped the casualties to the shelter of this tent. During the rescue, Art had been left securely anchored on the snow slope by two ice-axes.

While we were getting the others into shelter we were able to shout back and forth at Art, only about 200 feet away over a small rise; but we could not hear what he was saying, above the noise of the wind. He was very heavily drugged so that he would not know too much of the awful discomfort he must have gone through as we lowered him down the steep ridge.

The rescue operation took about half an hour and then the three of us who could still move went back to try and do something for Art. We realized that we could not move him, but we hoped to be able to cut a small ledge in the slope and do something to make him comfortable for the night and feed him. When we got back he had gone. At first we could not believe our eyes, but slowly we realized that a small avalanche had come down and taken him away. The surface of the slope was soft and broken. There was no trace of Art or the axes which had anchored him.

Once over the shock of having lost Art, we realized that his passing was a miraculous deliverance from a situation which might well have meant disaster for all of us. As we realized later, if we had continued to try and carry him down over the increasingly difficult climbing below, it is certain that there could have been further and perhaps even more serious accidents.

That night at Camp VII is the longest I can ever remember and certainly the most uncomfortable I ever wish to spend—four squatting in one small mountain tent, on an even smaller ledge, and the other three of us in a tiny bivouac tent, with just a pole at one end. Charlie was delirious and would not keep still for a second except when he collapsed unconscious. He had cracked some ribs and his chest was paining him terribly and making it even harder for him to gasp the rarified air. George Bell had frozen hands and feet and all

of us had some degree of frost-bite. Pete Schoening was exhausted from the effort of having held us all for some considerable time on the rope, while we sorted ourselves out after the fall.

I had some tea and sugar in the pocket of my parka and Bob Craig had a stove with him. We spent the night making tea and passing it round for all to sip. We were able to make pathetically little, but it helped. And so we huddled in our tents, trying to warm our bare feet against the belly of the man next to us, and wondering what the morning would bring. The wind had ceased and the night was calm. This was almost the only kind thought that the mountain spared for us until we were well below Base Camp many days later.

Next morning we took stock and found seven very tired and battered climbers. We were determined to keep our heads and climb carefully down through the line of camps we had taken so long to build on the ridge. How Charlie and George climbed that day I shall never know. Charlie was still very dazed from his concussion and George's feet were in a bad state. But there were no slips and late that afternoon we reached Camp VI.

It was four days before we eventually reached Camp II. The descent had been slow and painful but now at least we were safe.

I shall never forget our arrival at Camp II. The Hunzas were there to meet us and, as they heard us climbing down through the darkness of the evening they came clambering up to meet us. We were literally carried the last few feet into camp and there a wonderful treat was awaiting us. The evening was calm and down here it was even warm enough to sit outside. We lay back on our sleeping-bags among the rocks, our boots off and our weary legs being massaged, while milk and rice and tea and then more tea was brought to us. The Hunzas did not attempt to hide their joy at seeing us safe again and many sincere tears were shed that evening. When we had eaten and drunk all our unaccustomed stomachs would take, we settled down to talk quietly among ourselves, for the first time for many days. There was an almost tangible feeling of relief in the air. I told the Hunzas about Art, and they offered a most touching prayer in his memory and asked me to translate their feelings to the others. Although I'm no sentimentalist, I found it hard to prevent my voice from breaking as I translated their thoughtful wishes of condolence to the Americans. No people from our so-called civilized countries could express themselves with such complete and unaffected sincerity as those six men from the remote central Asian state of Hunza.

BASE CAMP AGAIN

Next morning, after breakfast in bed, there was mail to open and newspapers, a month or so old, to be read.

Bob Bates and I set off ahead of the others, for our last climb down to Base Camp, to warn the Colonel of our arrival. We had lost one of our walkie-talkies in the fall and the battery of the other was flat, so we could not talk to him that day. The coolies from Satpora had already arrived and had been waiting for us at Base Camp for the past week.

We received a wonderful reception from the Colonel, who at once took us into his care. He set off up the glacier with the Satpora coolies to carry down George Bell and to help the others.

That evening we were all together again and were able to talk of our experiences during the last days. We were slowly able to fit together the details of the fall and of our night at Camp VII. Until then none of us was really sure what had happened.

Next morning we held a short memorial service for Art. The Colonel had built a splendid cairn on the spur of rock which juts out between the Savoia and K2 glaciers. This was in a magnificent position and could be seen from many miles away by anyone approaching the mountain. On this we left an aluminium box in which we had placed a few mountain flowers, a statement about Art's death, and his favourite poem. His ice-axe also lies there. After a short reading from the Bible we limped back to camp to prepare for our departure next day.

We improvised a stretcher—a camp-bed reinforced with tent poles—and on this we carried George for the 150-odd miles down to Skardu. Although three of his toes were black he never lost his good cheer and spent long hours during the day talking to his gang of stretcher bearers, who couldn't understand a word of what he was saying. On the difficult parts of the track he was carried piggy-back by one of the coolies. There was only one of them who was strong enough to carry George and this man became devoted to him and would carry him for seemingly miles, when the need arose.

The party split at Askole, half going over the Skoro La and half of us taking George down by the same route we had used on our approach march. The last part of the journey we completed in luxury, floating down the river on a *zakh.*

Back at Skardu again we received a wonderful welcome from the new Political Agent. Now the time had come for the party to break up.

Our faithful Hunzas left us, to continue their journey back to Gilgit. I would like here to mention them all by name, for I hope we will hear more of them on future expeditions. They were Khairul Hayat, Ghulam Mohamed, and Hidayat Khan, all from Altit; Mohamed Ali from Hindi and Haji Beg from Aliabad. The last, Walayat Shah, had been a personal servant to Colonel Ata Ullah

for many years, but welcomed the opportunity of returning to the hills and proved a first-rate porter.

Much as we would have liked to linger in Skardu, we had to get home as soon as we could. It was important that we should get George to a hospital quickly and we had our jobs to return to.

We were sad as the plane took off from Skardu airfield for the flight which would take us out past Nanga Parbat and then down to the plains and home. We had our last glimpse of K2—a vast pyramid standing high above the surrounding peaks, against the distant skyline.

Some day soon it will be climbed. We had failed in our attempt but then we had had our full share of bad luck. Perhaps we should have tried earlier, perhaps oxygen is as necessary on K2 as it has proved to be on Everest. I think not. Soon these things will be answered.

We could only be thankful that most of us were now safe and that we were fit to try again, perhaps, some other year. After all, we had lived for more than a month above 20,500 feet and ten days of that month we had been trapped at over 25,000 feet by the worst of storms. We were lucky to be alive at all!

The tremendous experience through which we had passed had only strengthened the already strong bond of friendship between us. Had we not been such a closely knit team it is doubtful that we would have survived.

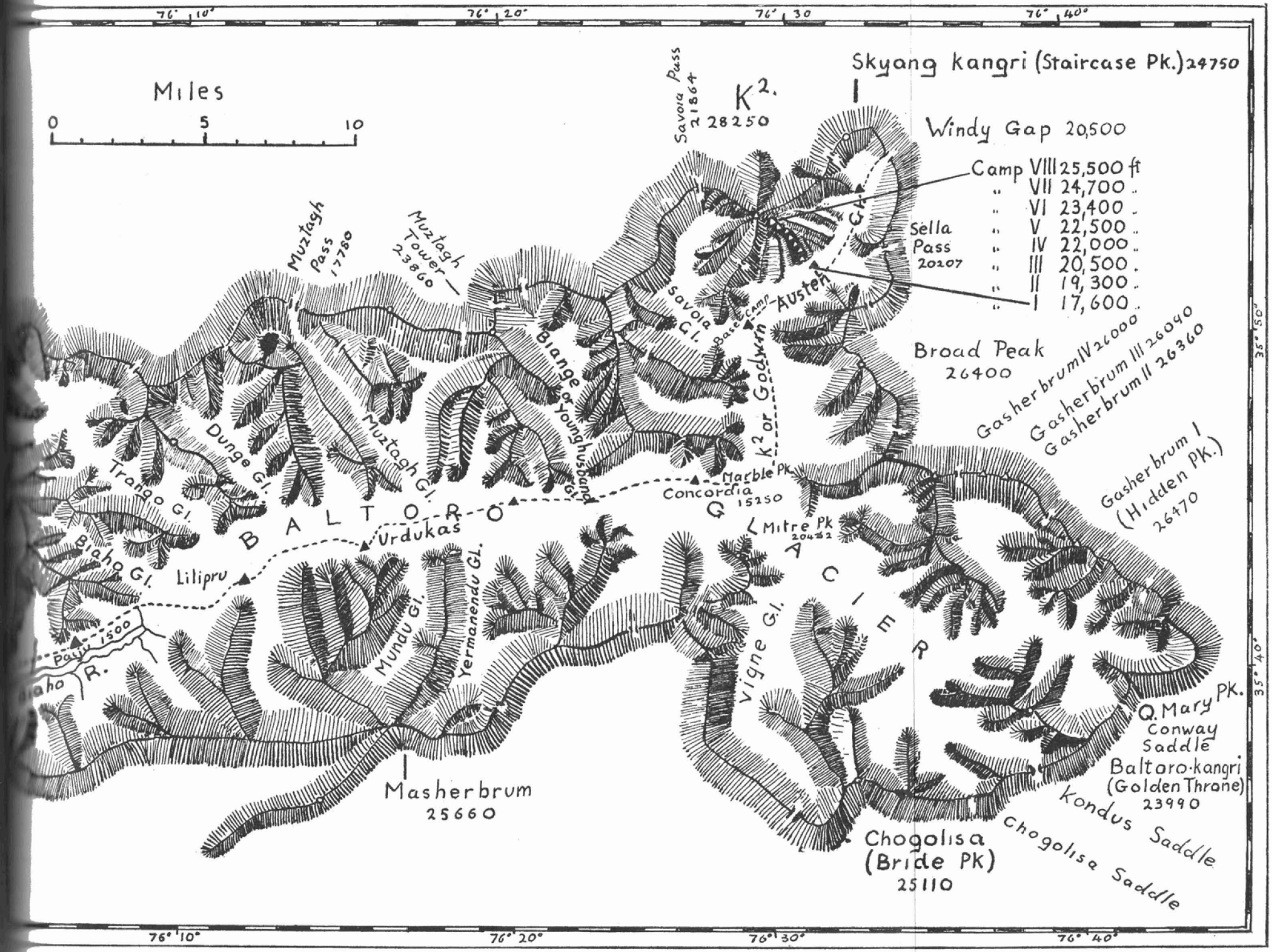
I shall not easily forget the generosity and courage of my new friends from across the Atlantic.

DR. HOUSTON'S NOTE ON HUNZA PORTERS

The 1953 attempt on K2 used six Hunza porters, specially selected by the kindness of the Mir of Hunza. These men, though bred in mountainous country, had not had previous high-altitude climbing with two exceptions: one man was on Tirich Mir with the Norwegian party, and went to High Camp; the other claims to have climbed on Nanga Parbat before the war. The remaining four men had not previously engaged in high-altitude climbing, and were taken with the objective of using their services possibly as high as 19,000 feet, but not higher. During the long approach march a few exercises in climbing technique were given; with these exceptions they arrived at Base Camp totally untrained. They were outfitted with warm-weather clothing, and boots, most of which were very poorly fitted, because the Hunza foot is of a different size and shape from that of the Sherpa. During packs from Base Camp to Camp I, which proceeds for about three miles through a fairly simple

ice-fall, the Hunzas rapidly learned glacier travel technique. By the end of five or six trips we considered them safe to travel alone, and our confidence was justified on several occasions when they rescued each other from minor crevasses. From Camp I to Camp II, a vertical climb of nearly 1,800 feet, some of it over quite difficult rocks, the porters did very well. During their first two climbs, lessons in belaying were given, but after this such training was not needed. By the time Camp II was established at a little over 19,000 feet they had demonstrated their abilities so well that we allowed them to go over the considerably more difficult climbing to Camp III. We should indeed have used them even higher except for the paucity of tent sites on the mountain, due to the precipitous slopes. We parted from them with regret, and were overjoyed to find them at Camp I six weeks later when we returned. Here they were invaluable in assisting the crippled party off the mountain.

These men, selected carefully to be sure, demonstrated quite clearly that given some training, opportunity, and good leadership, the Hunza has the climbing potential of the Sherpa, and is not as spoiled. In fact I would consider these men good candidates for any high-altitude expeditions, and hope to have them with me in the future if possible. Their faults are those common to all mountain natives: they need leadership, they are not capable of making difficult decisions clearly in time of stress, and they tend to become discouraged when things go wrong. However, provided their Sahibs assume the responsibility inherent upon having mountain porters, and lead them properly, they will make excellent additions to any expedition. Their pay, their clothing, their sleeping accommodation, and indeed their food, are in all respects similar to that required by the Sherpas. For those travelling in the mountains of Pakistan, it is politically desirable to use Hunzas rather than Sherpas, and I am confident that the Hunza will acquit himself famously in the future.



THE BALTORO GLACIER AND K2

NORTH OF POKHARA

B. R. GOODFELLOW

WHEN they extended their service to Pokhara at the end of 1952 Himalayan Aviation, however unreliable their schedules may have been, immensely improved the access to the central Nepalese Himalayas. Pokhara is only two days' march from the highest villages in the valleys running southward from the Annapurna Himal, and J. O. M. Roberts's striking 1950 photographs showed the splendid mountain scenery in which Pokhara is situated.

Frank Yates and I, having both to be in India on other affairs, applied for permission to visit the Pokhara district at the end of March 1953; we are greatly in the debt of H.E. C. H. Summerhayes, C.M.G., and to the British Embassy staff at Katmandu for their efforts on our behalf and for their help and hospitality on the way through, as well as for the very necessary letter of introduction to the 'Governor' (the Bada Hakim) of Pokhara, which was obtained for us.

With only a little over a fortnight, and so early in the year, serious mountaineering was out of the question. We thought it best to explore the two main valleys running northward from Pokhara, to go as high as we could on the ridges either side of them, and to see, survey, and photograph the southern approaches to the Annapurna Himal for the pleasure of looking at big mountains from a new angle and for the benefit of future (and more serious) parties.

Leaving Pokhara on 17th March we travelled first up the Seti Khola to Bharbhare, the last village, went some way up the gorge beyond and back, crossed to Mirsa, climbed through the rhododendron–magnolia forest to a camp just below Pt. 10982, and walked along the ridge northward by summer pasture tracks to perhaps 14,000 feet, where we had a magnificent panorama of most of the south side of the Annapurna Himal, except for Annapurna III, which was obscured by Machhapuchhare which towered very close above us.

Then we went round eastward to the Madi Khola (known locally as the Mahindri Ganga) and established ourselves at Siklis, the last village, splendidly situated at 6,500 feet, high above the river. Here our presence caused a good deal of consternation. As in the other valley we were, so they assured us, the first European visitors. But in Siklis we were told that we must not go beyond the village, neither up into the hills nor down across the river. We gathered that there is a genuine fear in this village of disturbing the gods by trespassing on their privacy. This is understandable since Siklis is

dominated by the tremendous precipices of Peak 22921, whose southern face is ringed with hanging glaciers from which ice avalanches pour down in great size and frequency. Fortunately, after a day's discussion amongst the elders, we were given permission to visit the upper pastures on the condition that we were only absent from the village for one night. Escorted by the friendliest of the village headmen we were able to put a camp on high summer grazing. Thence we walked to the highest point of the ridge west of Siklis, to perhaps 14,750 feet, where we were close under the precipices of the mountains proper. We had from here magnificent views of Machhapuchhare's east face, of Annapurna III, of the whole Annapurna II group, and of the upper gorges of the Madi Khola. We returned to Pokhara on 2nd April.

The following is a summary of our observations, from west to east along the range.

(i) *Head of the Modi Khola*

We could not see into this valley, but the fact that the last villages are low and a long way down from the glaciers suggests that its upper gorges are formidable, as in the Seti Khola (see iii). The head of the Modi Khola appears to form a huge glacial cirque, and Annapurna I (26,504 feet) rises sheer above it, looking as inaccessible on its southern side as Kangchenjunga. Our views of this terrain confirm the French opinion that the map is wrong on the south side of the range, as well as on the north. The main ridge probably runs north from Pt. 23607 to a point south-west of Annapurna I. The point shown 3 miles east of Pt. 23607 is an outlying spur.

This peak Pt. 23607 is a magnificent mountain, and the main ridge, south-south-west from the summit, might offer a route up it, though a long one with a formidable step towards the top. We could see no obvious difficulty in getting onto this ridge from the east side. The various other ridges up the mountain on the south-east face look more difficult.

(ii) *Machhapuchhare* (22,958 feet)

This splendid peak, standing well forward from the range, dominates all views from the south. Seen at close quarters the southern aspect strikingly resembles the Matterhorn in form, but on about double the scale in detail.

The two ridges shown on the map as bounding the Mardi Khola meet in fact at a subsidiary peak of about 17,000 feet, from which the south-west ridge of Machhapuchhare develops.

We believe that this south-west ridge could be climbed by a really determined party who were prepared to tackle first-class Alpine

difficulties at 20,000–23,000 feet. Access to this ridge over the foothills presents no problem—apart from water-supply on the dry hill-sides above Mirsa.

But this south-west ridge leads only to the first peak of the 'Fish Tail', and from the south-east the northern of the twin peaks appeared to be very slightly the higher and Tilman's photograph in *Nepal Himalaya*, page 125, confirms this. The ridge joining the twin summits looked a tough proposition.

The south-east ridge of Machhapuchhare has less to commend it, looking harder to reach and to climb. The east flank of the mountain is not to be thought of. We did not see its western face.

(iii) *Seti Khola*

Considering its proximity to big mountains this river is at a very low altitude. From Pokhara up to Bharbhare, the last village, the river valley forms a striking series of gravel terraces. Beyond the village a good track leads past grazing meadows for four miles; there the river emerges from a formidable gorge at a height of only 5,000 feet. Machhapuchhare is only 6 miles away and 18,000 feet above. This gorge seems to be 7 or 8 miles long, exceedingly steep walled, and densely forested. We picked up a vestige of a track, probably a hunters' trail; if so, it may lead through to more open country. If these gorges cannot be forced we think they could be turned by a high-level traverse (at about 15,000–16,000 feet) from the ridge which we followed (ii above), going on under the east face of Machhapuchhare.

However, our views into the glacier basin at the head of the Seti gorges did not encourage us to think that there was much to be climbed there. The ridge joining Machhapuchhare to Annapurna III (24,858 feet) falls on its east side in an appalling wall of rock seamed with steep, narrow glaciers. The west flank of Annapurna IV (24,630 feet), and of the ridge running south from it, falls in an impossible wall built of horizontal bands of alternating black slabs and snow. The main Annapurna ridge could probably be reached without great difficulty about midway between Annapurna III and IV, and Annapurna IV might be climbable from that side, by a very long ridge. We could not see if Annapurna III was accessible from this point. W. P. Packard, who has seen our photographs, considers that these southern approaches are more difficult than the 1950 route from the north.

(iv) *The ridge south of Annapurna IV* (24,630 feet)

This ridge, which is shown clearly on the map, descends to a slender ice spire and continues in a narrow spectacular ridge to end

in a huge rock fang whose height we calculate to be a little over 20,500 feet. This is called Rudrasi by the Siklis people.

(v) *Head of the Madi Khola*

We were not permitted to visit the gorges above Siklis, nor could we see very well into them. Again the level of the river is low, and it looks as if a route could be made along the bed up to the foot of the main mountain wall. But the glaciers descending from the 7-mile-wide basin at the head end in three tremendous ice-falls. The ice-fall descending from the broad eastern basin between Annapurna II and Pt. 22921 falls in part over a cliff into a huge funnel high above the main gorge. We watched enormous and constant ice avalanches coming down this, the ice dust of some falling a good 10,000 feet. It is possible that this hanging glacier might menace a route up the gorge at any time of year.

If the gorge can be forced we believe that the ice-falls can be turned and the upper snowfields reached. The ice scenery there is magnificent; through our glasses we studied seracs which measured up to 400 or 500 feet in height. If the upper snowfields can be reached there is a wide choice of mountains which look climbable.

(vi) *Annapurna IV* (24,630 feet)

The main ridge looks accessible at a number of points and from it it looks possible to climb Annapurna IV from the east without great difficulty.

(vii) *Annapurna II* (26,041 feet)

This huge sombre mountain dominates the whole area. It carries hardly any snow on the south and south-west faces, which rise from the glaciers in grey-black rock slabs. The west (skyline) ridge looks climbable; its average angle is about 40° and no obvious difficulties (other than altitude) are apparent. The summit ridge could be reached at its lower eastern end by a long couloir from the south, but it would then be necessary to traverse the summit ridge for a long way to reach the true summit.

(viii) *Point 22921*

This is a fine mountain, broad, many topped, and quite impossible from the south. However, it looks as if it might be climbable from the high snowfield to the north-west of it. The big ice-fall leading to this snowfield looks as if it could be turned by a corridor immediately to its north, provided, of course, the gorge can be forced.

Nomenclature

The many locals whom we questioned were extremely vague about the names of individual peaks. Machhapuchhare is, of course,

Photo. by B. R. Goodfellow, 29 March 1953

Eastern group of Annapurna Himal from about 14,000 ft. on ridge west of Siklis

Photo. by B. R. Goodfellow, 22 March 1953

Eastern group of Annapurna Himal from the south-west (from about 12,500 ft. on ridge west of Seti Khola)

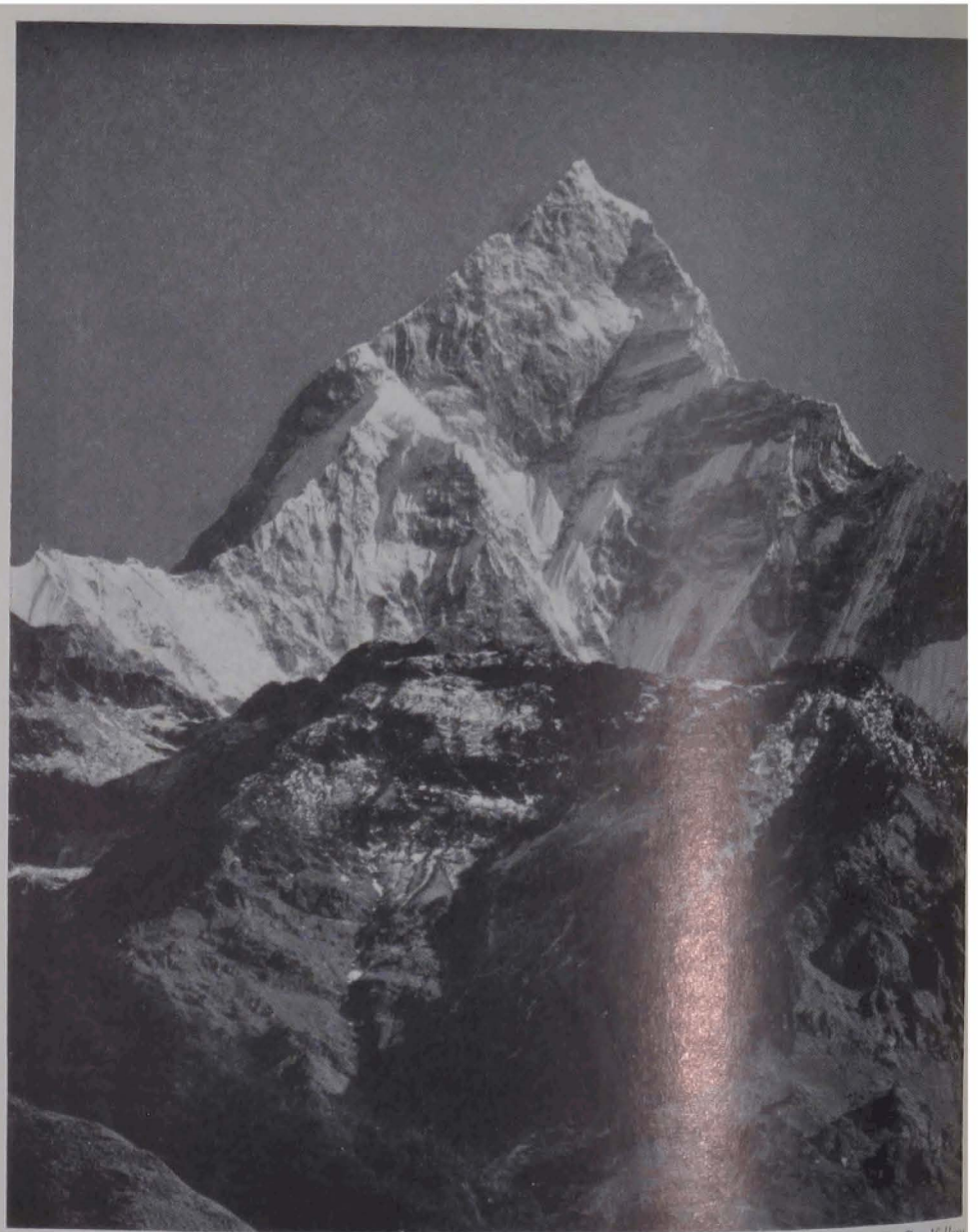


Photo. by B. R. Goodfellow

Machha Puchhare (22,958 ft.) from the south

known by that name to all of them. They do not seem to use the name Annapurna at the eastern end of the group, and this name might well be reserved for the main peak which the French climbed, if better names can be found than 'Annapurna II', &c., and reconciled between the various valleys. The Siklis people call their mountain 'The Three Sisters' and refer to any of them vaguely as 'Rudra Parbat' or 'Rudra Kailas'. 'Rudra', we were told, means a necklace, and indeed curved bands of rock on Annapurna II could explain this allusion.

We found no name for Pt. 23607 at the west end of the range. Pt. 22921 is called 'Siklis Himal' in the village. It was made quite clear to us that the Lamjung Himal is the group starting east of this peak.

Weather

Up to 24th March we had westerly winds and clear dawns. Every day by 9 or 10 a.m. cloud obscured the higher peaks. This usually produced thunder and rain each evening. After a severe storm on 24th March the weather changed. We had days without cloud until the late afternoon, but a great deal of dust haze (up to 12,000 feet) from the plains of India obscured the lower views. The wind was still westerly across the high summits; on several occasions we were able to calculate its force by taking bearings on clouds. This showed a steady 60–70 m.p.h. at 25,000 feet.

Food

We found food in the villages abundant and very cheap. We bought flour, rice, potatoes, eggs, chickens, milk, and occasionally vegetables. We could probably have bought sheep, which are abundant. Salt, sugar, and kerosene can be bought in Pokhara. *Raksi* was often as good as we could have wished, and costs only Rs. 1 per bottle. The Nepali rupee was then at 146 to Rs. Indian 100.

Porters

Our Darjeeling Sirdar picked up coolies on the Pokhara airfield. Rate Rs. 2 per day, plus rations. Their slow going in the hills was infuriating and it would be better to recruit locally for going high. But we found that the local 'guides', who are essential for the maze of woodcutters' tracks through the forests, were very reluctant to go on spring snow or beyond familiar ground. We had not brought boots for them, and the thorns troubled them exceedingly, once the

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Eastern flank of Annapurna Himal from the south-west at about 12,500 feet. From left: Annapurna IV, 24,630 feet; Annapurna II, 26,041 feet. Rudras.

beaten tracks were left, and naturally they disliked the spring snow which lay on north slopes above 11,000 feet.

Introductions

Our letter of introduction to the 'Governor' the Bada Hakim of Pokhara was most necessary. We had every possible help from him, but had we known how suspicious the upper villages would be of our intentions we would have prepared ourselves with letters of authority from him. Others would be well advised to do this.

Photographs and Survey

We have a large number of photographs illustrating the topography of this region, and took prismatic-compass bearings from all our main viewpoints. The outline map published with this note adds some knowledge to the Survey of India $\frac{1}{4}$-inch maps of the district.

It was a great disappointment to us not to have been able to attempt any mountaineering. But our short visit was well rewarded in other ways.

There can be few towns to compare with Pokhara; its neat ochre-washed houses, its cobbled main street with no wheeled traffic, its fields bounded by coral trees which in March are a blaze of scarlet on leafless branches, and the whole dominated at every turn by the unbelievable pyramid of Machhapuchhare.

In the villages old Gurkhas would come out to greet us, and the women and children who had never seen a white face crowded closely round our tents. It is a prosperous land, with rich crops (thanks to their astonishing industry as farmers) and they ask little from the world outside Nepal.

It was enough to visit these happy, honest, healthy people, to hear them singing as they tended their flocks and to watch their dancers with the Annapurna as a background.

OXFORD UNIVERSITY EXPEDITION TO TEHRI-GARHWAL, 1952

J. B. TYSON

It is seldom that expeditions from our universities are inspired by a single objective. Usually the motives include the wish to carry out specific investigations and the desire to see and travel in the chosen region. The objectives of the Tehri-Garhwal Expedition conformed to this pattern; the emphasis was on science, though we intended to do some climbing and exploration.

Our party numbered five. Dr. Acheson came to continue research on plant pigments. His stay in India was unfortunately limited to six weeks, but the rest of us were no longer bound by the exigencies of the academic year. We had the whole post-monsoon period to work in. Huggins and Lamprey, both biologists, were to study the plant and animal ecology of the high meadows near the snow-line. Borup was interested in the people and intended a three-year stay to complete his anthropological work.

When the expedition was first mooted, it had seemed impossible that we could ever raise enough money. We greatly appreciate the financial support and the backing which we received from Oxford University, from friends, and from various scientific bodies, which together put the venture just within our grasp.

The five of us assembled at Dehra Dun in the middle of August, where Mr. Martyn and his staff at the Doon School gave us a warm welcome. Here, our four Sherpas were waiting—Thandu (cook, sirdar), Annullu, Passang Dawa, and Ila Namgyal. There was much to be done; food had to be bought, coolies hired, and gear sorted into 60-lb. loads. It was a hectic rush. On 18 August we were off.

Our plan was to reach the Bhagirathi river and follow it through the Great Himalayan Range to its source near Gangotri. This would take us past the summer homes of the Jadh traders, whom Borup particularly wished to visit. Having arrived at the village of Gangotri, we should be well placed to explore and climb on the northern flanks of the Gangotri and Jogin groups whose valleys appeared from the map to offer promising country for the biologists also.

A ragged, grey monsoon-cloud clung to the tree-covered ridges as we headed across country towards the Bhagirathi. In a brief clearance we saw two great snow-peaks to the north-east—probably Srikanta (20,120 feet) and Jaonli (21,760 feet). We were frequently deluged by monsoon cloudbursts, and the rivers in spate had washed away many of the bridges. At Dharasu we reached the Bhagirathi river which we followed northwards for a week. The

banks of this great brown torrent, thundering through precipitous gorges hung with a lush tropical vegetation, proved rich collecting fields for the botanists. On the seventh day we emerged from the dank recesses of the gorge into a different landscape. Soft blues and greys replaced the tropical colours. The river now meandered peacefully over its broad shingly bed, between hill-sides clothed with deodar. Cool breezes raced up the valley and the sun shone from a cloudless sky.

We spent a day ferrying stores across the flooded Sian Gad. Then our track turned eastwards and in 2 miles led to a large village near the river. Mani walls and prayer staffs proclaimed that we were nearing the Buddhist Tibet. Cheerful, laughing people gathered around us, open and independent, fearless and friendly. This was Harsil, summer home of the Jadh traders. We were much moved by their spontaneous welcome. Tales of these great travellers had captured our imagination and Borup and I had hoped to spend some weeks living with them. Now our opportunity came. Govardan, nephew of the headman, stepped from the crowd around us and soon we were seated on carpets in his courtyard drinking tsampa-tea from silver Tibetan cups. We were to be his guests for as long as we wished to stay. For our climbs he would come as head porter and shikari, having had experience with Roch in 1947. No arrangement could have suited us better. We decided that Borup should stay in Harsil and that I should rejoin him there later.

Meanwhile the rest of us climbed to an alpine meadow in the Rudugaira valley, two days' journey above Harsil, and set up Base Camp at about 13,500 feet. From this point I set out on 2nd September with two porters to make a reconnaissance of the Gangotri and Jogin Groups. The journey lasted three days. The weather was bad but we saw enough to plan a route on Gangotri III (21,578 feet). We also climbed to the head of the Rudugaira valley, reaching the pass which had been crossed by J. B. Auden in 1939.[1] On the southern side a steep snow-slope leads down to the Khatling glacier and to the Bhillangana river valley where we intended to spend November on our biological surveys. The height of the pass is 18,000 feet. It is one of the few places in this part of the Great Himalayan Range where a reasonably easy crossing can be made. Local tradition claims that it was in former times a route frequented by pilgrims. If this is so, great changes in the glacier must have taken place, for the route, though nowhere very difficult, would now be dangerous for an unequipped party.

On the following day, Lamprey, Acheson, and I set out with three Sherpas and established Camp I at about 16,800 feet on the Rudu-

[1] *Himalayan Journal*, vol. xii (1940), pp. 17–26.

Part of Tehri-Garhwal

Photo. by John Tyson

Gangotri II (centre) and Gangotri I (right) from the north-east ridge of Gangotri III. 8 September 1952

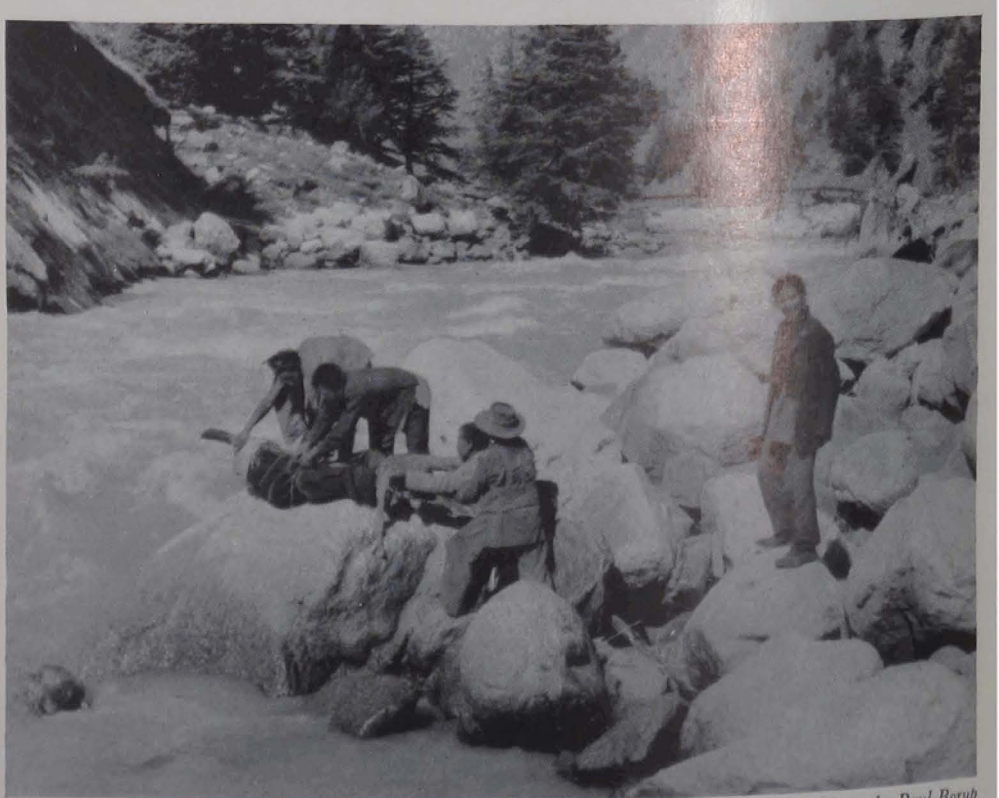


Photo. by Paul Borup

A Jadh funeral on the banks of the Bhagirathi river near Harsil 22 September 1952

Photo. by Paul Huggins

Gangotri III (left centre) and Gangotri II (extreme right)
24 September 1952

Photo. by John Tyson

View north-east from the slopes of Gangotri I. The Rudugaira valley lies on the right of the picture. The distant ranges include the Chirbas Parbat and Matri groups

gaira glacier, and two days later found a site for Camp II at 18,500 feet on the north-east ridge of the mountain. On 9th September we made an attempt on the summit from this camp, Acheson climbing with Ila Namgyal on one rope, and Lamprey with me on the other. Ila Namgyal unfortunately suffered from altitude sickness, and he and Acheson had to abandon their attempt. Lamprey and I were forced to turn at about 20,600 feet, 900 feet from the top, on account of deep snow. During the climb we obtained magnificent views westwards to the other peaks of the Gangotri Group, and eastwards to the Kedarnath and Kedar Bamak peaks.

Next day, Lamprey and I made a second attempt, accompanied by Sherpa Annullu. We left our tents at 5.40 a.m. and as all our steps were intact, in five hours we reached our farthest point of the previous day. Shortly after midday we found our route blocked by an ice-cliff extending from our ridge for hundreds of yards across the north-east face of the mountain. By traversing to our left across steep ice on to the east face, we were able to turn this obstacle and reach a small snow-covered plateau. From here we could see the shapely summit, glistening softly in the faint autumn sunshine, its corniced crest rimmed with shadow. But soon clouds began to gather around the tops, and when we reached the peak at 2.40 p.m., nine hours after leaving camp, there was little to be seen except for glimpses of Jaonli (21,760 feet), 2 miles south-south-west of us, and the nearby Gangotri peaks.

Shortly after we left the summit, the mists parted, giving us a clear view to the east. Across the Rudugaira basin was Ganesh Parbat (21,210 feet), whose three ridges were all visible. The south-east ridge looked the most promising in its upper section, and the map suggested an easy approach from the basin of the Kedar Bamak. Between the steep and corniced south-west ridge and the long north-north-east ridge lay the hanging glacier by which Auden had thought the peak could be approached. From our position we could look down on the upper part of this glacier. It was heavily crevassed and covered with the debris of rock and snow avalanches from the north-north-east ridge above.

Behind this mountain we could see the strange line of peaks which forms the right wall of the Kedar Bamak, along the 79th meridian. Brigupanth lay just to the left of Ganesh Parbat, a formidable array of cliffs filling the whole of the upper part of its long western flank. To its south rose the gigantic, rocky spire of Phating Pithwara (22,650 feet), its precipitous north-western face towards us. Behind, and half hidden in cloud, we could make out the gently sloping snow cap of Kedarnath peak. We reached camp at 6.30 p.m., the whole climb having taken thirteen hours. The weather now

broke, and we abandoned our plan to attempt the ascent of the south-west ridge of Ganesh Parbat. Instead we descended to Base Camp.

I then returned for a fortnight to the Jadh encampment (an account of which has been published elsewhere[1]), while the biologists continued their work in the Rudugaira valley. The zoological programme included detailed ecological work on an alpine meadow extending from 13,000 feet to 16,500 feet and studies of altitudinal variation within species. Birds, mammals, and reptiles were either identified in the field or were collected, and collections of all the invertebrates found were made. Among the insects brought back, at least fifteen were new species and some were new genera. The altitudinal variation of lizards, voles, bees, butterflies, and grasshoppers was studied, marked variations in the size and colour of the grasshoppers being recorded.

The botanical work consisted mainly of ecological surveys of the higher-altitude plant communities found between 13,000 feet and the snow-line. Measurements of various environmental factors were made, and a considerable herbarium was collected. Seeds for horticultural purposes were also gathered. Chemical analysis of the anthocyanin pigment of flowers was carried out by Acheson. About fifty flower species, mostly from the Rudugaira valley, were examined microchemically in the field, and all the colouring matters with the exception of two were identified as known pigments. The unknown pigments merit further investigation.

It was now time for Acheson to return home. Before leaving the Rudugaira, however, he ascended a 19,000-foot summit to report on the possibility of climbing Gangotri I. Though bad weather hampered his reconnaissance, he was able to suggest a likely route on to the lower part of the peak. On 27th September Borup and Acheson left Harsil and headed south, the former to continue work in Uttarkashi, the latter to catch a plane to England. After seeing them off I set out alone for the Rudugaira. At Dharali, 3 miles above Harsil, the fields were scarlet with amaranth and buckwheat. Villagers were gathering the harvest. Above Dharali the track was deserted. I slept beneath the stars, and in the morning travelled up through birchwoods turned a golden brown. On the way up, I met Huggins, who had completed his botanical work and was ready to join me in the attempt on Gangotri I. Lamprey had not yet finished his collecting, so we arranged that he should ferry all the stores to a point on the glacier near the 18,000-foot pass, where we would meet a week later.

Next day, Huggins and I, with Govardan, Annullu, and Pasang

[1] *Geographical Magazine*, July 1953, pp. 139–46.

Dawa, set out for one of our earlier camps at 15,400 feet on the moraine. We found it in chaos, a bear having torn open the tent and scattered our food supply. In the morning, we followed a long moraine to the west, keeping to the left of a 1,000-foot ice-fall which descends from the basin between Gangotri I and Rudugaira peak. We pitched camp in a snowy hollow at 18,400 feet. To our great surprise we found here a heap of juniper wood. At that time we had not heard of Auden's attempts on Gangotri I and II, seventeen years previously. This had been the site of his highest camp.

Just above camp there was a snow saddle leading over to the upper névé. Beyond was the rocky ridge joining Rudugaira to Gangotri I, the 'very steep wall of rotten rock'[1] which had deterred Auden. On 1st October Huggins, Pasang Dawa, and I crossed the névé and climbed the ridge. It belied its appearance—it was nothing but an easy scramble up screes. At the col we headed south-west up steep snow to some rocks, then up an icy section where we left fixed ropes. Above this the slope lessened. At 19,500 feet we found a possible site for our next camp. On the following day the five of us carried it up and prepared for our attempt on Gangotri I.

I had hoped to start really early, taking advantage of the full moon. But when we looked out at 3.30 a.m. there was a strong, bitterly cold wind and driving snow. At dawn the wind dropped, and a sea of cloud filled the valleys. We left at 7 a.m. in clear sunshine, and made good progress in crampons up easy snow and ice-slopes. At midday we gained a plateau, above which rose a graceful icy dome. We cut our way up to a cornice. A few blows with the axe and this collapsed. Pasang Dawa and I stepped out onto the summit. It was 1.30 p.m. Shortly afterwards Huggins arrived, with Govardan and Annullu. But the weather was breaking. Clouds had closed in and snow was falling, so we returned with all speed to our top camp. That night it snowed heavily and the Rudugaira valley was snow-covered down to the tree-line. We were glad of our fixed ropes on the ice pitch. We reached our lower camp as further falls began.

On the following morning Huggins mentioned that he was feeling rather tired and sick. This was the first sign that he was unwell. We came down together to the 15,400-feet camp where we met Lamprey. During the evening Huggins seemed normal and ate a good meal, but later when he lay down he began to experience a difficulty in breathing. This grew more acute as the night passed, and towards morning he became delirious. Shortly after dawn he regained consciousness, and we told him that we were taking him down at once to Gangotri, 6,000 feet lower. He protested that he would soon

[1] *Himalayan Journal*, vol. viii (1936), p. 100.

recover and insisted that this move would hamper the rest of us; a few minutes later he died. To the last he had displayed those qualities of selflessness and optimism for which he will especially be remembered. He was buried at 15,400 feet on an open flat on the glacier moraine.

We decided to end the expedition immediately. Leaving Lamprey to follow with the baggage I travelled as rapidly as possible down the Bhagirathi to Uttarkashi where Borup had been working. There I learned that he had fallen on a hill-side a few hundred yards from the centre of the village a few days earlier. He had died in hospital.

Within five days two of my companions had died in circumstances of pure misadventure; the one of a disease believed to have been pneumonia, though a thorough medical examination shortly before he left England had hinted at no such tendency; the other through loss of blood from a leg injury on a grassy hill-side crossed daily by local herdsmen. It was a cruel blow and a tragic ending to our first visit to the Himalayas. But the delight we shared in the weeks that came before will not be forgotten.

Photo. by J. T. M. Gibson

Swagarohini from Pt. 15,600 feet

Photo. by J. T. M. Gibson

Banderpunch mountain from Pt. 15,600 feet

Photo. by J. T. M. G

The ski-ing slopes above the Harki Doon

Photo. by J. T. M. G

The Black Peak below Banderpunch in the right background

THE HARKI DOON

J. T. M. GIBSON

THE Harki Doon has long been known to shikaris and I have seen a painting belonging to Mrs. Quarry of Dehra Dun done there by her brother well back in the nineteenth century and very similar in composition and colour to a photograph I took last year. I was credited by the local press with having discovered the Harki Doon, which amused Mrs. Quarry, who produced this picture as evidence that I had not. Her father came to India in a sailing ship with his regiment, marched with them from Calcutta to Ambala, and then up to what is now Chakrata, which he built. I have read his diary with the account of the voyage and march, and you feel as you talk to people like Mrs. Quarry of what they remember of their early life in India that you are almost living in history. I had often been told what a wonderful place the Harki Doon was, but it was not until 1948 that I was first able to visit it. Then I had been trekking with Gurdial Singh in the hills round the Bhagirathi valley and we had come to Harsil. From there he had to return so I went on with some local porters, over the Lamkhaga pass, down the Baspa valley to Chitkal, and then back over the Borasu into the Harki Doon. It was on this trip that I found my porters gambling one evening and using as counters some curious coins. I examined these and found written on them 'F. Wilson. Hursil. One Rupee'. As far as I can find out, Wilson was at one time a soldier. He then became a forest contractor in Tehri State. He is said to have had a number of wives and built himself, among other houses, part of what is now used as the Dehra Dun Club, and a fine wooden bungalow in Harsil. I believe there is still a descendant of the family living in Mussoorie. He must have been a romantic character, issuing his own coinage and scattering his progeny across the hills of northern India, and I wonder that no researcher into social history or seeker after plots for a period novel has found out and made use of his story.

My second visit to the Harki Doon was made in 1952 with John Martyn, Vimal Bhagat, Cheema, and Raghu Sher Singh of the Doon school, and Laroia and Jagjit Singh, then at the National Defence Academy. In 1953 I went again with seven boys from the school: Cheema, Manebendra Deb, Raman, Mahtab, Narendra Singh, Adi Guzdar, and Krishnayya. On the first occasion we took three Sherpas with us and on the second two, of whom Pemba was an outstanding success and young Chembe, on his first expedition, showed great promise. Both times we also took Kalam Singh, a cook from the Doon school. A Garhwali, he was at home with all the

villagers we met and was of great assistance with local porters; and a hill-man, he enjoyed the climbing and showed no keenness to stay at base camp.

It takes seven days to reach the Harki Doon from Chakrata where you can hire mules at Rs. 3 a day. The march is a pleasant one, at first along the Jumna–Tons watershed at heights of about 8,000 feet, through Mandali, Ringali, and Jarmola where there are comfortable forest rest-houses. Ringali has one of the most beautifully sited bungalows I know with a wonderful view of the snows, but is apt to be inhabited by bees and great green-eyed horse-flies. From Jarmola you descend into the Tons valley and through Naitwar, Datmir, and Oshla follow it up to its source. The forest rest-house near Datmir was burned down in 1952 and has not yet been rebuilt, and the rest-house it is planned to build in the Harki Doon has so far got no further than a foundation stone; so above Naitwar tents are necessary. If the journey has to be made in the rains, when the ridge road may be dangerous for mules, there is a good, but hotter route, in the Tons valley. Oshla is a village high above the right bank of the Tons and a good place to engage porters if further progress by mules is impossible. There is a permanent bridge a mile or so down river and a temporary one just above it. The latter is liable to be washed away or removed when the rains start and cannot be relied upon. As the river has to be crossed here if you are going to the Harki Doon, and as the track through Oshla is too difficult for laden mules, and the baggage has to be manhandled, it is well to be prepared for a delay at this place. Above Oshla the two main source streams of the Tons join, one from the Harki Doon, the track to which is passable for mules and runs above its right bank, and the other from the northern glaciers of Banderpunch. Up this valley there is no mule track. Both these valleys are excellent centres for climbing and skiing and both are full of wonderful sites for a comfortable low-altitude base camp between 11,000 and 13,000 feet, with plentiful water and wood.

In 1952 we went straight up to the Harki Doon. Just below Oshla we had been able to watch work going on in the forest. There is any amount of timber in these parts, but the cost of getting it down to the plains is enormous. Once felled, the trees have to be cut on the spot into beams that can be handled by a man. These are then carried to wooden log-chutes; the building of which is an engineering feat. Sometimes several thousand feet long, they lead down the mountain side into the Tons or a tributary large enough to float the logs. Water is run into the chutes and the beams slide down at a great rate sending up spray that reflects the sunlight in rainbow colours. Beside the Tons, below the village of Oshla, there is a

pleasant grove of walnut trees with a little wooden temple and a stream of clear water on the left bank of the river. Here we camped and engaged porters to carry the loads across the bridge, for it was not secure enough to send the mules across it loaded. From there we reached our base camp in the Harki Doon by lunch, and pitched our tents in a veritable fairyland at 11,600 feet.

Harki Doon means the valley of Har, one of the names of the god Shiv. To the south it is enclosed by a ridge some ten miles long from which rise the peaks of Sugnalin, the highest of which is 20,521 feet. Sugnalin is a corruption of Swargarohini, meaning 'The Path to Heaven', a fine name for a fine mountain. In the valley meet three mountain torrents draining a basin of some 60 square miles surrounded by peaks of up to nearly 21,000 feet in height and separated by ridges which offer wonderful climbing between 16,000 and 19,000 feet. The main torrent rises from the Jamdar Bamak, the glacier of the door to the God of the Dead. In the centre is the Hata ki Gad, and from the Barasu Pass in the north descends the Morinda Gad. In 1952 we had set out with the idea that we might attempt to climb Swargarohini, but closer inspection convinced us that it was more than we could manage. We therefore restricted ourselves to exploring up the three valleys to passes at their heads and to skiing and smaller climbs and scrambles. I quote from the diary I kept to give an idea of the sort of holiday this area offers to those not greatly experienced in mountaineering. For the experts there is any amount of more difficult and interesting country.

17.6.52. We all got up with the sun this morning and were off by 0630. We were soon across the river flowing from the Jamdar Bamak, crossing it by a natural bridge of great boulders. We had to jump from one to another, and those with rubber soles were well off, but those with nailed boots, which were apt to slip, had to be assisted. We walked up the left side of the torrent for about a mile through silver birches, rhododendrons, and grassy swamps bright with king-cups. Then we turned to our right to climb to the western ridge of Swargarohini. On the way we disturbed several monal pheasants which flew down past us uttering their high-pitched cries and displaying their wonderful plumage. At 1200 we came to an alp at the foot of snowfields and dumped our loads and left the Sherpas to pitch the tents. After lunch we climbed to the ridge and the boys and John went on to a little peak of 15,600. On the way back to camp we all had some pleasant glissading. Cheema learned how to do this very quickly and looks like making a mountaineer.

18th. Moved tents for Jagjit; Vimal, Gyalchan, and myself onto the ridge, going up myself on skis, while John and the rest went down

to bring up more skis. The view of the Harki Doon is magnificent: a great basin with a single narrow opening to the west, split into long narrow valleys by ridges that come down from the surrounding rim.

19th. Brewed tea from melted snow by 0500 and set out to explore along the ridge after breakfast. First along a snow ridge, always rather romantic walking, and then up a rock ridge with interesting scrambling and one or two pitches of good rock climbing, though the rock was very rotten in many places and we had to take care not to dislodge boulders. The boys went very well apart from always thinking they could see a better way than the one I was leading. I like going straight up the arete. Eventually we were turned back at something over 16,000 feet by rock that was too rotten and exposed for safety. Back to camp for an early lunch when we met the survey party now working in the area. (It had first been planned that we should join and help in this work, but the school holidays come only just before the rains, and the surveyors had to go ahead of us.) After lunch moved down to rejoin the others for skiing. I went down on ski with 60 lb. on my back and only fell once. Rather pleased with myself! Skied all the afternoon—tremendous fun—but we need more skis, so went down to base to bring up another pair.

20th. Back to camp at 13,400 with a monal shot on the way up.

Midsummer day. We all spent the morning skiing. It was tremendous fun, though we had to keep changing boots and skis so that everyone should get a turn. All did a run of about 1,000 feet from 14,800, the boys getting the hang very quickly. They must be almost the first party to learn at such a height.

In such ways our fortnight in the Harki Doon went by all too quickly. Twice we saw red bear at close quarters—when, of course, we had left behind the rifle. We had a day on the ridge north-west of the Morinda Gad after bhurral, but our aim at the range to which we were able to stalk was not accurate enough. We climbed to the Borasu Pass and to another rather lower at about 16,000 feet at the head of the Hata ki Gad. Clouds prevented us from seeing where this would lead to. We went up the Jamdar Bamak as far as we could get in one day, not to its end, but far enough to see that there is any amount of magnificent climbing around it. We practised rock climbing on different cliffs and great erratic boulders, and we collected a large number of different alpine flowers. Of our last day I wrote in my diary: 'on our way back we had a wonderful view down the valley. The area has all been glaciated in some past ice age and I have never anywhere seen finer examples of U-shaped valleys or great moraines. This evening the mist had filled up to the top of one of the steps in the valley below our camp and hung like a

great curtain plainly showing the formation. These great valleys, all with live glaciers at their heads, converge near our camp and then break through the surrounding mountains in one great gorge. Each valley, at its lower end, is beautifully flat and grassy and walled in by ancient lateral moraines. In the valleys flow the glacier torrents, behind the moraines clear streams. All around are great erratic boulders, some 100 feet high, and banks bright with every flower—the blue poppy, orchids, lilies, primulas, potentillas, anemonies. This evening we have just had a delicious rhubarb fool gathered on the premises. It has been raining heavily lately and we have had news that our bridge below has been washed away, which will complicate our return.'

In 1953, instead of crossing the Tons at Oshla and going up to the Harki Doon, we branched right up the valley to the south-east in the direction of Banderpunch. For this we had to employ porters, as there is no mule track. Again, perhaps I can give the best picture of what we found by quoting from my diary.

13.6.53. Had a sort of feeling the 13th might not be too good a day and it was not. In spite of all last night's sorting it took a long while to get the loads distributed among the twenty-eight porters and we did not get away till 0830, and then the porters, who were obviously on the make, sat down every ten minutes for a smoke, so we made sadly slow progress. On the way we came across a bank of magnificent wild strawberries and gathered about five pints. For a while we made our way up the left side of the Tons and then descended 500 or 600 feet and crossed the torrent by a flimsy bridge. From there we rose steadily up a valley not unlike the Hanuman Ganga with occasional gentle reaches overhung with silver birch. Then the rain started. I was ahead looking for a good camping site and had to go back to hurry on the porters, but once it started to rain they made a much better pace, though we were not in camp before everything was drenched in a very heavy thunderstorm. Tents had to be pitched in belting rain and consequently leaked, and the bedding all got wet. Added to this we had to make camp on the only level ground available, and that was a field of nettles. We were all in shorts and all got well stung. Just before sunset the rain stopped and as it did so there was the most lovely rainbow I have ever seen. There was no doubt about where it began and ended. It arched from one side of the valley to the other. The green foreground was in bright sunshine and through the bow, framed by the valley sides, were dark indigo thunder-clouds.

14.6. After allowing the sun to dry the tents we were off by 0845 and climbed steadily till 1130 when we reached a delightful spot we

should really, had we known the country, have got to yesterday. The river is in a gorge some 400 feet below us and separated from us by an ancient moraine covered with silver birches and rhododendrons. Another minor moraine from a side valley meets this at right angles and encloses a little lake beside which we are encamped. A clear stream flows into the lake, its banks bright with *Primula involucrata*. We are at 11,500 feet.

16.6. Moved across the river and slightly higher to 12,400 to a site in the ablation valley between the great moraine below which flows the river, and the main hill-side which just above us opens into a side valley which promises splendid skiing. Swargarohini towers above us across the main valley and the ice cavern from which the Tons issues is opposite the opening of my tent. In the evening Kirpal Singh, the local shikari, who had gone out with a gun and ten cartridges, returned with two bhurral and four snow pigeon. Wish I could do as well. We had our first skiing practice just above the camp in the afternoon.

17.6. A wonderful day. It dawned clear and we were off by 0730 after a leisurely breakfast in the sun, to climb to the top of the side valley at the bottom of which we are encamped. Cheema, Deb, and I went on ski, and the rest walked. On the way we saw four bhurral quite close to us and very shortly afterwards a female red bear and cub. The view of Swargarohini straight down the valley was tremendous. There is a possible way up it, but only for an expert party with ice pitons. A scimitar-shaped snow ridge, similar to that on Banderpunch, rises from a ridge that looks quite accessible. Above it are rocks that should go, but that looked nastily iced. Beyond them there seemed to be a sharp drop and then a steep ice-wall that might be impossible, led on to a steep snow slope that went almost to the summit, which to the south-west is a gigantic rock pinnacle. We reached the col at 15,900 feet at 1230 and climbed onto a little peak above it. The boys were all in great form and for all but Cheema this was a first ascent above 12,500 feet. Deb, who had only skied for an hour or so yesterday climbed like a veteran and came down across easy glacier slopes remarkably well. A 3,000-foot run at this height not bad for second day on skis. We all had a startlingly cold, but refreshing dip in the stream on return, and a first-class supper of roast bhurral, tinned peas, and pears.

20.6. Moved up two valleys to where we supposed the route to Jamnotri must go. Camped at only 14,000, lower than we had intended, but no place was to be found on the glacier so we put up our tents at its snout in a barren and rocky wilderness.

21.6. Another wonderful day. The weather had looked threatening, but it turned out ideal for climbing though aggravating for photography. Drifting clouds added to the beauty and mystery of the scene, but obscured things just when you wanted a picture. We went up our valley, finding it a long one turning slightly to the right at the end. A camp half-way up would be ideal for skiing—great wide glaciers, small crevasses, and broad open slopes of every degree. The pass was at 16,400, and from it, through the clouds we could see Karsali and the Jumna, and away in the far distance, across the Mussoorie ridge to the plains. After lunch Cheema, Deb, Pemba and I climbed up the ridge to a rock summit at 17,000—an excellent and exciting little bit of rock climbing. The Sherpas prefer ice. Got back to camp after nearly nine hours out and wonderful country. Issued rum and drank Krishnayya's and Adi's share myself.

On the next day we moved across the main valley again and pitched a camp on the right-hand side of the Banderpunch glacier immediately beneath Swargarohini at 14,600. Here we were stuck for two days by rain and I will refrain from quoting my diary. However, the next day I was able to record:

25.6. Before we turned in last night the sky had cleared and the snow tops were bright with an alpine glow. We were all up by 0500 this morning to a lovely day, but it was 0715 before we were off. The plan was to carry a tent and provisions for Cheema, Pemba, and myself as high as we could and for us three to try the Black Peak (20,956) the next day. All the boys carried a load. We started by skirting the south-east slopes of the Swargarohini ridge above the glacier and had some very steep scrambling, with here and there steps to cut across ice tongues which thrust their way down steep gullies across our path. All the boys went very well and showed an excellent sense of balance. Eventually we got onto the glacier and made our way upwards between groups of séracs through wild and fantastic scenery. It was not long before we were on fresh snow, and by 1100 we had reached an excellent place for a camp—rather lower than I had hoped, but the next promising looking place seemed a long way up, and I felt that at 17,000 feet the boys had carried far enough. So here we pitched our tent on the snow. The day was glorious; the Black Peak appeared invitingly near. We decided to have a crack at it there and then, and at 1130 we set off, leaving the others to climb an eminence of about 17,400, the top of the great black rock shoulder of the main peak, and return under the care of Chembe. The new snow was in excellent condition for climbing—a hard crust into which you could kick firm step-holds. Pemba and Cheema were both going faster than me, Pemba doing the kicking,

and I told them to go ahead and only wait if they met difficulties. They were climbing 200 to 300 feet an hour faster than I could. At about 19,000 feet they came to a slope where it was necessary to cut footholds and I caught them up. We roped up. I led for a little, but found it very exhausting. We had to cross a number of crevasses by snow bridges and pass beneath séracs in places where some had fallen and carried away small avalanches. Pemba, who was in great form, took over the lead, and eventually, at about 1530 and 20,000 feet, we got onto the final ridge and saw the summit apparently easily within grasp. But here we met with a tremendous wind blowing across our path and I was horrified to find that Cheema had left his windproof trousers in the tent below us. All he had on was a pair of grey flannels. The snow was wind slab—generally firm enough to hold our weight, but here and there letting us through to the knee which made rhythmical climbing impossible. In spite of this it seemed that we should make it. Cheema said that he felt O.K. and I was going well enough. We made steady progress, Cheema going very well, and Pemba a tower of strength, but the wind was icy cold and blew stinging snow across any exposed parts of our faces. If the rope got loose it was bowed out by the wind and jerked us sideways. We ourselves were occasionally blown out of our steps. At about 1615 Cheema said he felt very tired—his first expression of doubt after a wonderful climb. The top then looked about twenty-five minutes away. We stopped for a little rest and huddled together for shelter against the wind. The sky was absolutely clear except for some clouds coming up from below and the view was magnificent. We were now looking down on Swargarohini and I tried to photograph it, but it was so cold that the film in the camera snapped as I was winding it. We went on for another ten to fifteen minutes, when Cheema said he could go no farther. The top was perhaps 100 yards ahead and 100 feet above us. Cheema was very apologetic, but unnecessarily so. Had there not been the wind, he would have made it easily—and if I could have gone faster lower down we might have beaten the wind. As it was I consider it a magnificent effort for a boy of seventeen to have climbed in one day from 14,600 to 20,800 or thereabouts. We turned down at about 1630. Gradually Swargarohini rose above us and we got clear out of the wind. Cheema recovered quickly, though we were all pretty tired when we got back to the tent at 1830. Cheema and I were both a little greedily surprised to find that Pemba enjoyed tinned asparagus as much as we did.

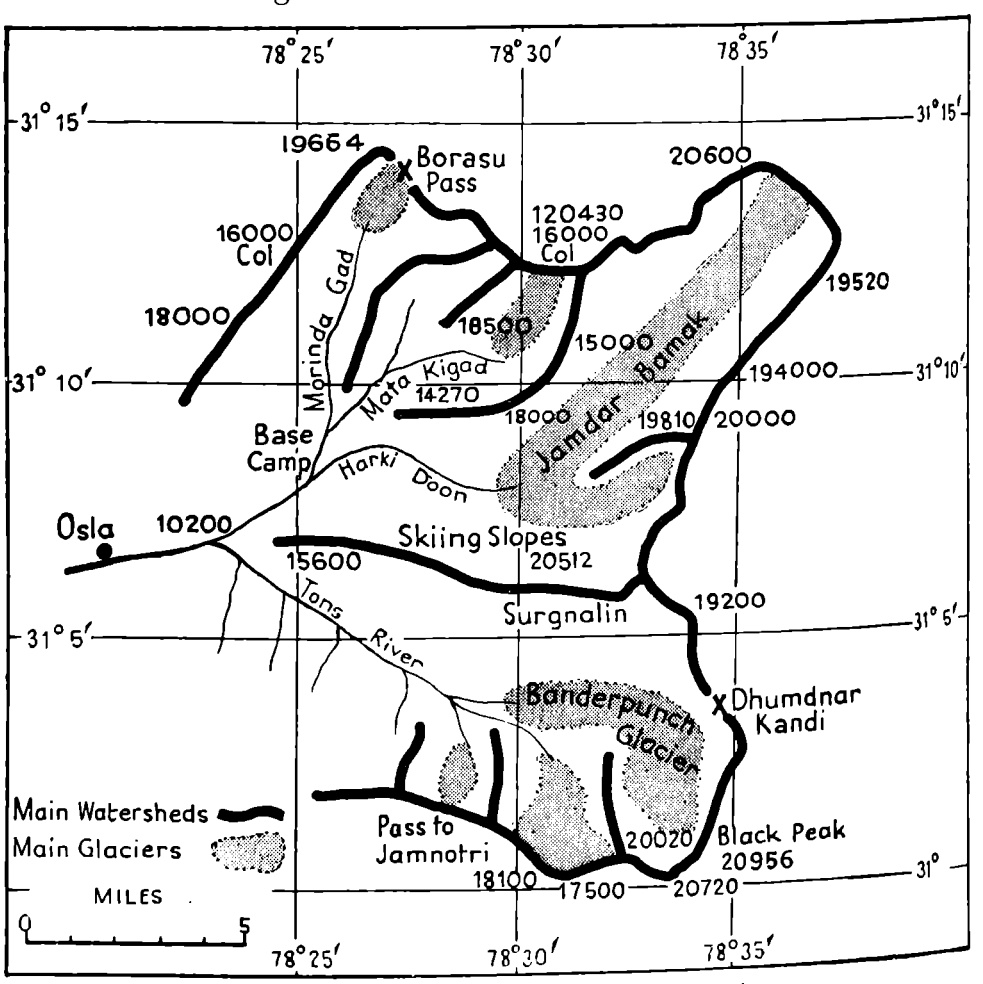
The next day we moved down to the camp at 14,600 and from there with the rest of the party back to the camp beside the lake. Here we rested for a day, and then crossed the Swargarohini ridge

into the Harki Doon. On a subsequent rest day I tried my hand at a verse description of this day which took us 11½ hours of going.

First up the steep grassed mountain sides made white
By the anemone which when the sun is down
Folds up its petals and turns white to blue;
Then by ravines and crags and jutting buttresses
Where the *paraqualigia grandiflora* clings
In clumps of gentlest mauve or blue, and deep green leaves,
And where a slip or foot misplaced on loosened stone
Might spell headlong descent into the depths below;
Up to the waste of boulders, glacier strewn.
Then by a little ridge onto the pass
Beyond which lies the Harki Doon, our goal.
Here we have lunch: sardines, chuppaties, cheese,
While our stout porters catch us up and smoke.
Then down into the misty depths glissade
Across some thousand feet of rotting snow,
Down to the alp where last year's ski camp was;
On through the dwarf, foot-catching rhododendron
To where the silver birch, bent by the winter's snows,
Trunk to the ground and then in a curve uprising,
Brings us to forests and deep grassy glens
Through which pour streams along whose banks
The water-loving *primula stuarti* grows,
And from lush grass rise spurs of heavenly blue.
Here are the tracks of bear, their yellow turds,
And you may sometimes find the musk deer's slot.
We reach the Harki Doon where the fierce torrent
Runs in a wide and shallow bed; too swift to wade
Yet freer and less angry than below
Where down a valley step it pours confined
And roars between mightly boulders.
A group of these, huge slippery rocks,
Some twelve feet high or more,
Crashed from the crags above and ice born, now
Made for the nimble footed nature's bridge.
By this we cross, not without trepitude.
Those with nailed boots remove them and bare-foot
Spring from one smooth stone to the next.
Deb slips; his arm is caught.
Adi is pushed up by his broad behind.
Up the last hundred feet or so
Of ancient, grass-grown, lateral moraine
Where the blue Himalayan poppy blooms,
We reach at last the chosen site to camp.

Here, next the milky water from Borasu Pass
Flowing between the mountain and moraine
We dump our loads. Enormous boulders
Perch on the ridge, and ancient trees
Gnarled and fantastic, garlanded with moss.

For those who like statistics I might mention that the costs of these expeditions were, in 1952, Rs. 4,215; and in 1953, Rs. 4,430. Food came to roughly Rs. 1,250 each year; Sherpas Rs. 560 (for the year in which we took two only); Porters Rs. 750 for 1953 when we used many more and Rs. 230 in 1952; and mules Rs. 1400. The area is included in the Survey of India Map Sheet 53 I/SE, but had not been properly surveyed until 1952, and the results of that survey have not yet been published. I should like to make an apology to the Survey. In an article in the *Alpine Journal*, No. 283, I cast doubts on the existence of a peak 18,863. It is there all right on the ridge running northwards from point 20,020. When I wrote this article I was under the impression that this ridge ran to the Black Peak, and what I then thought was the Black Peak was in fact Pt. 18,863.



Sketch-map of the upper Tons Basin.

A RETURN TO THE HIMALAYA

T. H. TILLY

It was seven years since I had been in the Himalaya. I had seen something of the eastern end of the range during the course of a journey in Sikkim and had spent some months in Kashmir and Ladakh at the western end. A visit to the central part of the range, to Garhwal, to the region of Nanda Devi and Kamet and Badrinath, to the valleys of the Alaknanda and the Dhauli was a long-desired experience. Plans were hatched, irrevocable steps taken, the nucleus of a party collected and application made to our good friends of the Himalayan Club for a pass to Garhwal for the summer of 1952. The party consisted of David Bryson, of the B.B.C., John Jackson, a schoolmaster in Lancashire, John Kempe, Principal of the Hyderabad Public School, J. K. Misra, of Burmah-Shell, and myself. It was solely due to the Club and to the perseverance and enthusiasm of its local secretary in Delhi, and of his deputy during his absence on leave, that we reached Garhwal at all. It was not their fault or ours that, after a pass to the area had been granted, it was subsequently so curtailed by the Indian authorities as to become almost valueless.

We decided to start from Ranikhet and to carry out the long trek, so often and so well described by Frank Smythe and others, across the foothill ranges west of the Trisul–Nanda Ghunti massif to the Dhauli and the Alaknanda valleys below Joshimath, up the Pilgrim Road to Badrinath, and thence to a base camp in the Satopanth valley for an attempt on Nilkanta (21,640 feet). This beautiful and much-photographed peak, queen of the Garhwal Himalaya, remains unclimbed. It was then intended to carry out a journey to the Banke and Raikhana glaciers to the east of Kamet and expected to be beyond the worst monsoon influences, returning to the outward route at Tapoban.

At Ranikhet eighteen Dhotial coolies were engaged. They worked well and we had no reason whatever for complaint. In addition we had four Sherpas: Lhakpa Tensing (Sirdar), Ang Tsering, Nima Sitar, and Nima Tensing. The two latter were rather inexperienced but there is no doubt whatever that Sherpas are worth taking. Expedition wear and tear is noticeably reduced thereby.

It is small wonder that this journey has been so fully and so frequently described. It must be one of the most attractive in the Himalaya. In the lower valleys the chestnuts were in flower. We passed through long avenues of them, with intriguing glimpses of Trisul through the foliage. Higher the brilliant scarlet and crimson

of the blooms on the tree rhododendrons served as a frame to the distant snows of Nanda Ghunti. It was good to be back. We slept out in the open, using our sleeping-bags and dispensing with tents. As we rose it became cool at nights, even cold at the wretched camping ground at Dakwani. It was still early in the season—only the end of April. The following day in perfect weather an orgy of photography was indulged in on the Kuari pass. The immense panorama more than justified its reputation. We all climbed a friendly hill above the pass and enjoyed long glissades down the upper slopes towards the woods of Tapoban.

From Joshimath we intermingled with the pilgrims on their way to the opening of the Temple at Badrinath, though we actually preceded the Rawal by a few days. Great beds of winter snow blocked the track in places and the two ponies which we had taken on at Joshimath had a hard time. Badrinath was not only snowed up but more or less in ruins. Winter snows had been much heavier than usual and the spring avalanches had been devastating. The famous Temple, however, together with most of the other buildings at the north end of the little town, had escaped. Through the jaws of the nala behind Badrinath the upper part of the east face and north-east ridge of Nilkanta was visible. Conditions seemed wintry to a degree and the peak is in any case hardly assailable from this angle. The suspension bridge having been destroyed, we crossed the Alaknanda by huge snow beds between Badrinath and Mana. Mana itself was silent and deserted, the buildings secured against intruders by ancient padlocks. The Marcha Bhotias had not yet arrived from their winter quarters. Ahead the junction of the Bhagirath Kharak and the Satopanth glaciers was visible, each glacier curving round from its own valley and the two glaciers flowing together for a short distance before ending in a joint snout. In the angle between them rose the twin spires of Balakun (21,230 feet) with Chaukhamba (23,468 feet) visible beyond. From the cliffs on the north emerged the two Vasudhara waterfalls, vanishing in spray before reaching the rocks at the bottom. A short distance beyond we established our base camp and here paid off all our Dhotial porters except two or three whom we retained for a few days to bring up a few loads left behind at Badrinath.

After a day or two we set out in deteriorating weather for Bhagirath Kharak. This glacier has been traversed by several parties since the time of Meade who examined the col at its head. The ablation valley between the glacier and the hill-side was more or less snowed up, but the narrow top of the moraine was practicable. Two camps were established and from the second, at about 13,500 feet, an easy snow peak of about 18,000 feet on the north side of the valley was

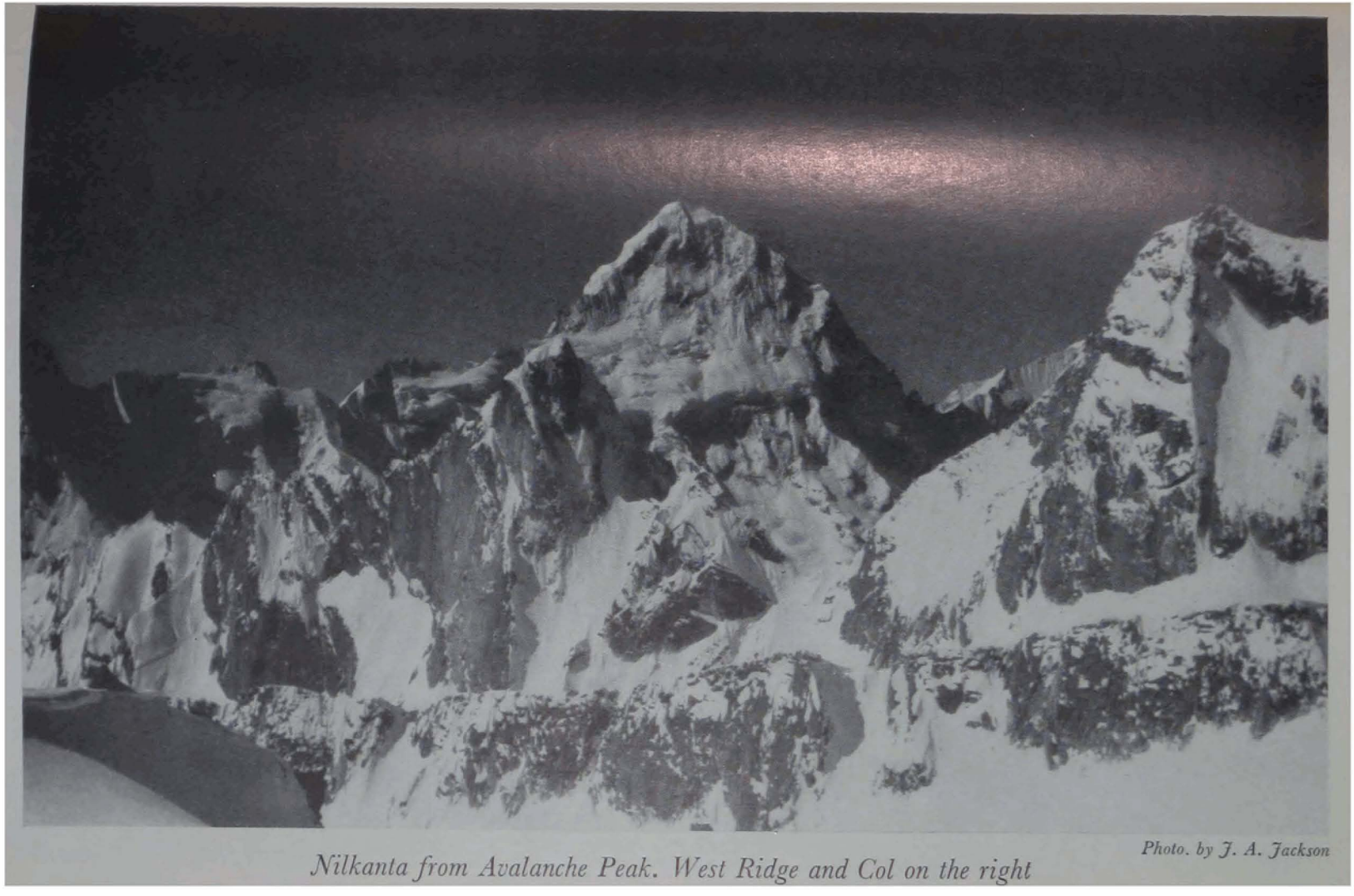


Photo. by J. A. Jackson

Nilkanta from Avalanche Peak. West Ridge and Col on the right

Trisul from Kanal Pass

Photo. by J. A. Jackson

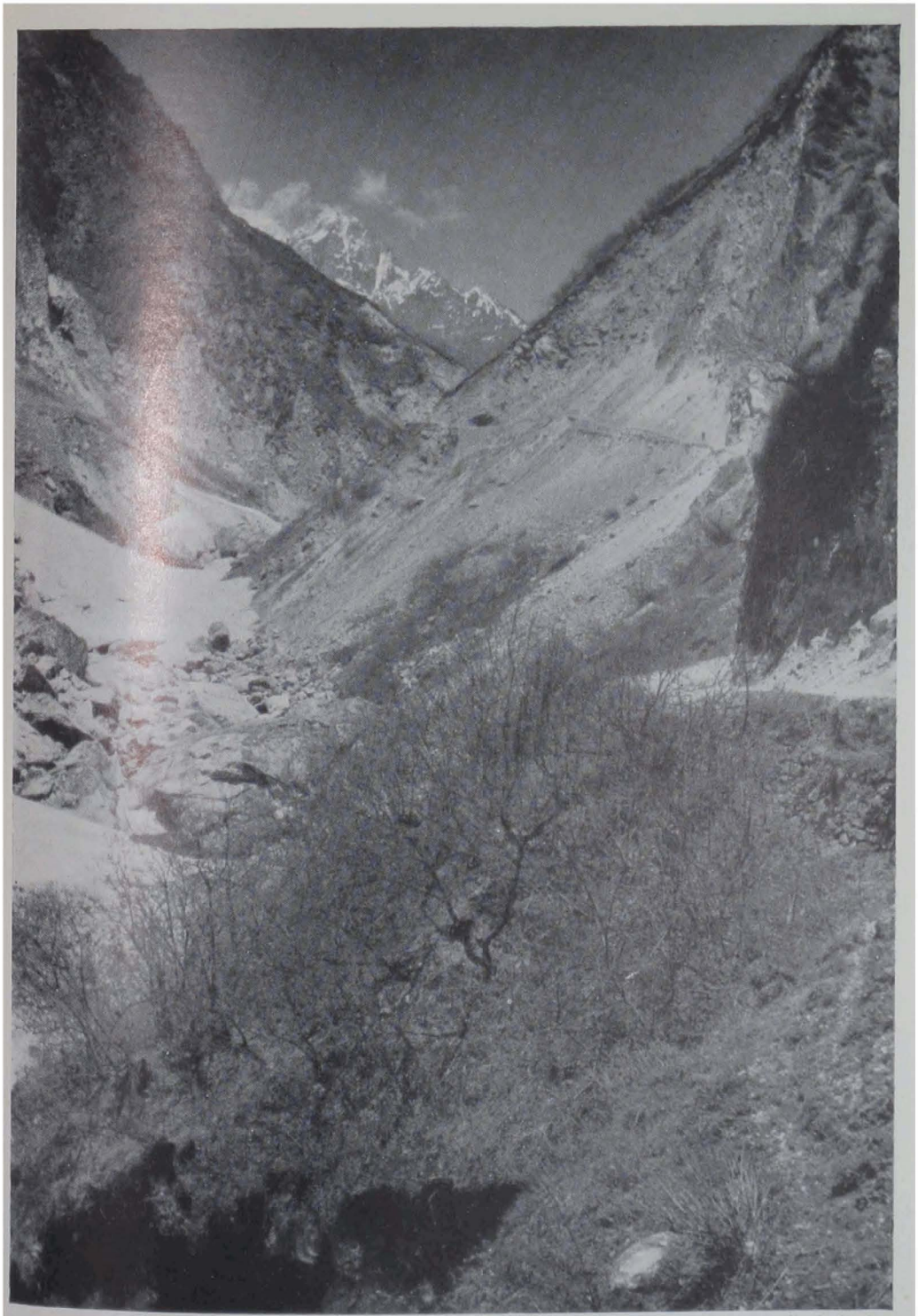


Photo. by J. A. Jackson

Pilgrim route up the Alaknanda Valley

Above the Bangneu Glacier

ascended in springlike conditions. The ascent gave us useful acclimatization as well as magnificent views of the east face of Chaukhamba. The enormous avalanches falling from this peak and its neighbours obviously precluded further examination at this season, though as spectacles they were worth a long journey. We returned to camp in a mild snowstorm.

The following day, 14th May, Jackson, Kempe, and Bryson, with the Sherpas, established a further camp at about 17,000 feet on a large snowy plateau near the 18,000-foot peak with a view to the ascent of some fine mountains in the vicinity. The Sherpas returned to the lower camp. It snowed almost continuously and the higher camp proved bitterly cold, much sleep being lost in consequence. A clear morning induced an attempt on a fine peak of 20,250 feet, about 19,800 feet being reached, but the decision to retreat was the right one in view of mist and heavy snowfall. The party were lucky to find their tents, their outward tracks being obliterated and visibility only a few yards. The following day they returned to the glacier camp and the day after that the whole party reached the Base Camp.

After a day off at the Base Camp, Kempe and I, with two Sherpas, set off up a very steep nala just beyond the camp, at the top of which was a glacier system, the Bangneu Bank, bounded by a ring of high peaks. The nala became a sinister looking gorge, overhung with green ice. In a flurry of snow, camp was pitched high up snow-covered slopes on the left and the Sherpas returned. The following day a vertical step in the bed, which had now become a glacier, was by-passed, and after a further camp had been established it proved possible to avoid an impossible ice-fall by means of further steep snow-slopes on the left which led to a branch of the Bangneu Bank. Another and milder ice-fall conducted us to a rocky rib separating the two branches of the glacier. A steep descent led to the other branch in the middle of which we camped. The glacier was surrounded by fine but difficult-looking peaks. At the head one mountain of 20,320 feet and another of almost 21,000 feet, both rock peaks, appeared impossible under existing conditions. Immediately opposite the camp a massive mountain of 20,330 feet seemed to possess two routes which might repay examination.

Kempe, unfortunately, had to retire to the Base Camp escorted by two Sherpas, having distinctly the worst of a violent attack of dysentery. This was the only illness of any kind suffered by any member of the expedition. Leaving the other two Sherpas at the glacier camp (about 17,000 feet), the other four left for the peak at 7 a.m. It was a fine though cold morning and the snow was in perfect condition. An easy, winding snowy rib led up the centre of

the south-west face of the peak joining the main westerly ridge only a short distance from the summit. This seemed the easier of the two routes, the other being the ridge mentioned, the continuity of which was interrupted by many rocky towers and gendarmes. Good progress was made and after a stop or two for photography and to recover breath, the steep slope leading up to the western ridge was tackled. The sun had been shining on the slope for some time but the snow, though softened, did not appear to be avalanchy. Good steps were made and fairly rapid progress was possible. The peak seemed to be in the bag.

It seems possible that the avalanche may have started through some snow sliding off the sun-warmed rock of the main ridge and caused the surface at the top of the slope to slip. The members of the party were now at about 20,000 ft. Misra was at the foot of the slope and was not involved. Bryson soon felt his feet on the solid snow, the avalanche having slipped away beneath him. Jackson and I were carried on the surface of the avalanche, he from nearly the top of the slope and I from more than half-way up, to the bottom. Jackson only suffered from superficial bruises but received some laceration of the right arm. I was unhurt except for a badly strained or twisted knee, which would not take my weight so that I was unable to walk. We both practised swimming motions on our backs and it may well be that this kept us on top of the sliding snow masses. Prodigies of valour and endurance on the part of Bryson and Jackson succeeded in getting me back to camp before dark. Two days later the Base Camp was attained.

Unhappily a note had been sent up from the police that our pass had been altered. It had indeed! Movement was absolutely prohibited, except in a homeward direction, with the exception of an attempt to climb Nilkanta. The long journey to the Zaskar range was at an end. It proved impossible to persuade the authorities to relent. Accordingly on 28th May, my leg rendering me immobile, Bryson, Jackson, and Kempe left with three Sherpas to reconnoitre Nilkanta. They established a camp beside the Satopanth glacier but appalling snow conditions and worsening weather rendered an attempt to reach the snow col at the foot of the west ridge hopeless. On 2nd June the party were reunited at the Base Camp and it was time for Kempe to leave us to return to his work in Hyderabad. The weather, which had been poor, now became hopeless. Floods of rain followed by heavy snow fell day and night at the Base Camp for forty-eight hours.

My knee had improved very little but, nevertheless, I decided to test it by accompanying Jackson and Bryson in another attempt on 'Avalanche Peak' so as to utilize the period of waiting for Nilkanta

to get into climbable condition. The steep gorges were successfully traversed but the soft snow of the upper part of the glacier demonstrated that the knee was actually useless, so after a night at Camp II (as we called the Bangneu Glacier Camp) I descended to the Base Camp assisted by Lhakpa and returned to England.

Bryson and Jackson left camp at 6 a.m. to attempt 'Avalanche Peak' by the ridge route. At 11.30 a.m., having attained an altitude of approximately 19,800 feet, it was realized that another three or four hours along the ridge would be needed to reach the summit. The ridge had developed a series of rocky gendarmes composed of smooth slabs covered with snow. It was realized that the return would be highly dangerous if the attack were pressed further. Nevertheless, it had been a memorable mountaineering day, with splendid views across the rugged Arwa Nala to the peaks of the border of Tibet. Nanda Devi and Trisul soared distantly but majestically over the ranges of eastern Garhwal.

It was decided to place a Camp III at 19,000 feet below the snow bulge in the hope that the ascent and descent of the dangerous avalanche slopes could be made before the sun had gained much power. Accordingly on 13th June, with the help of Lhakpa and Ang Tsering the lightest Meade tent was placed below the bergschrund on the bulge, the two Sherpas then returning to Camp II. Bryson and Jackson, after a cold night and a cheerless breakfast, left the Meade tent at 4.30 a.m. The old avalanche route was tried, but as the slope steepened doubts and fears increased about the underlying snow. Retracing their steps they then tried an even steeper slope to the left of the snow bulge. It had been noticed that the sun only reached this slope late in the morning and at once they found the going easier. It was possible for Bryson to kick excellent steps all the way to where the rock gendarmes joined the corniced snow ridge leading to the summit. Here the two roped together and began to traverse the steep ridge above the bulge. Always there seemed a doubt. After their previous experience the thought of avalanches was uppermost in their minds. On arrival at the last gendarme before the summit they traversed its base and ascended a steep little couloir to reach the summit rocks. It was 7.30 a.m. and for the first time they were able to relax and enjoy the superb mountain panorama. Mists filled the Arwa Glen and the valley of the Alaknanda, but across a rolling sea of cloud could be seen Kamet, quite near, Mana peak, and the other great peaks of the central Himalaya almost overpowering in their grandeur. Northwards rose a long line of high nameless mountains on the Tibetan border. The knife-edged east ridge of 'Avalanche Peak' drew the eyes across silvered clouds to Rataban, Hathi Parbat, Nanda Devi, and Trisul.

The snow remained good on the descent and as calculated the sun was only beginning to touch the snow of the traverse along the ridge and the dangerous slopes beneath. Back at Camp II the Sherpas produced a telegram from the Indian Government refusing a further request to cross the Bhyundar Khanta to Gamsoli in the Dhauliganga. It was decided to return to the Base Camp for a further reconnaissance of the west ridge of Nilkanta. Accordingly, on 17th June Bryson, Jackson, and Lhakpa, after a trip down to Mana and Badrinath, ascended the Bhagirath Kharak glacier to the Base Camp of the French Expedition to congratulate them on the ascent of Chaukhamba. The French broached a delicious cognac to toast the expeditions. Victor Russenberger and Lucien Georges, the two who had made the ascent of Chaukhamba, decided to join forces with Bryson and Jackson in an attempt on Nilkanta. Accordingly, two days later the French and British parties met at the confluence of the Satopanth and Bhagirath Kharak glaciers, and with the help of Mana Bhotias established a Base Camp near the grazing alp of Majna on the Satopanth glacier. Compared with Sherpas and Dhotials the Bhotias were very slow and the camp site was not reached until late in the day—and that only by resorting to the expedient of hiding the Bhotia pipe and tobacco in rucksacks. Majna had changed much since the attempt on Nilkanta five weeks before, and the lower slopes leading up to the basin at the foot of the slopes below the Nilkanta Col were partly covered by grass with a lovely show of purple primula, potentilla, and an aromatic dwarf rhododenron. The sun shone brilliantly the following morning and Jackson, Bryson, and Lucien Georges with four Sherpas left Base Camp and placed a Camp I at 16,000 feet at the foot of the slopes beneath the col. In the afternoon layers of ominous-looking clouds moved relentlessly up the Satopanth from the Alaknanda, but above them 'Avalanche Peak' and the Kamet group could be seen.

Though awake by 3.30 a.m. the following day an early start was delayed until 5.30 due to primus trouble. Snow conditions on the route up to the ridge were infinitely better than before and Camp II was placed on the col at 18,500 feet. Monsoon clouds were massing. Snow fell throughout the night. A reconnaissance of the west ridge was started the next day but quite early hail and snow reduced visibility to little more than a dozen yards. At the second gendarme Georges's head was cut by a fall of ice and stones. The three returned to the col in hopeless weather conditions. Soon three Sherpas arrived with food and fuel, and apparently had had a trying time on the steep slopes below the col, with small stone and snow avalanches passing them on either side. It began to snow

heavily again towards evening and through the night. Clearly this was the monsoon.

It seemed doubtful whether Sherpas could carry beyond the col owing to the difficulty of the rocks and it had been planned to bivouac at about 20,000 feet. The new snow made this hopeless. Rocks plastered with snow also increased the dangers of the supply route between Camps I and II. It was decided to descend. Through a break in the clouds, far to the north could be seen the Kamet peaks, and Ganesh Parbat on the Tibetan border, cloudless, and clearly outlined against a blue sky. These were to have been the main objectives in June, but withdrawal of the permit prevented the carrying out of the plans so carefully devised to avoid the rigours of the monsoon. It was galling to see these mountains as the party finally left the col and descended. The weather showing no signs of improvement after four days, a further descent was undertaken on the 26th to the former base camp at Vasudhara, with several tricky and amusing moments crossing streams swollen to raging torrents by monsoon rains. The party returned by way of Chamoli.

It was unfortunate that, owing to circumstances outside the control of the members of the expedition, the original design had to be abandoned. In addition the weather was poor on the whole and snow conditions were rather dangerous. Nevertheless, the expedition was greatly enjoyed by those who took part in it. For Bryson and Kempe it provided at least an introduction to Himalayan travel whilst to Jackson and me it served to recall days long gone by and revive memories which were becoming dim.

We acknowledge with gratitude the co-operation of the Fell and Rock Club with whom this article is shared.

THE DIBIBOKRI BASIN . . . AND BEYOND

KENNETH SNELSON

IT was as victims of the tightened Inner Line policy that we turned our eyes to Kulu. Plans for another attempt on Panch Chulhi, this time from the west, ideas of making a new pass to the north of the Ralam, of exploring more thoroughly the upper Darmaganga and then a visit to the Kuthi valley came to nought when our application to revisit the country we had roamed so freely in 1950 was refused.

So, in 1952, Dr. J. de V. Graaff, Dr. E. A. Schelpe and I went to Kulu where the Line is well to the north of the main range. We all finally assembled in the town of Kulu on 3rd June. Accompanying us were five Sherpas, our old friend from 1950 Sirdar Pasang Lama with Sonam Sherpa, Tashi Sherpa, Tashi Kiron, and Pasang Sherpa.

Our plans were to travel up the valley of the river Parbati, a tributary of the Beas, one of the 'Five Rivers' from which the Punjab takes its name, to the Dibibokri Nal, a tributary of the Parbati. The rather vague map showed the Dibibokri to drain a basin of some 130 square miles backed by the main Himalayan divide and containing four major glaciers. On the divide itself, the map marked peaks of 20,830, 21,760, 21,350, 20,414, and 20,482 feet. None of these mountains had been climbed or attempted, indeed the visit of only one mountaineer to the Dibibokri Basin is on record and he, Major J. O. M. Roberts, of the Ghurkas, spent only one day there.

On the far side of the main range, the map was even more sketchily drawn. With a series of the vaguest strokes it indicated four rivers, the Gyundi, Ratang, Parahio, and Pin flowing north-eastwards to the Spiti river, a tributary of the great Sutlej which it joins before the latter breaks south through the Great Himalayas. It is on record that the lower reaches of the first three of these streams are gorges, impenetrable from the Spiti. If we could find a way over the main divide, we might enter entirely new country. Such, then, were our plans as, with our gear carried by seventeen mules, we left Kulu for the snows on 5th June.

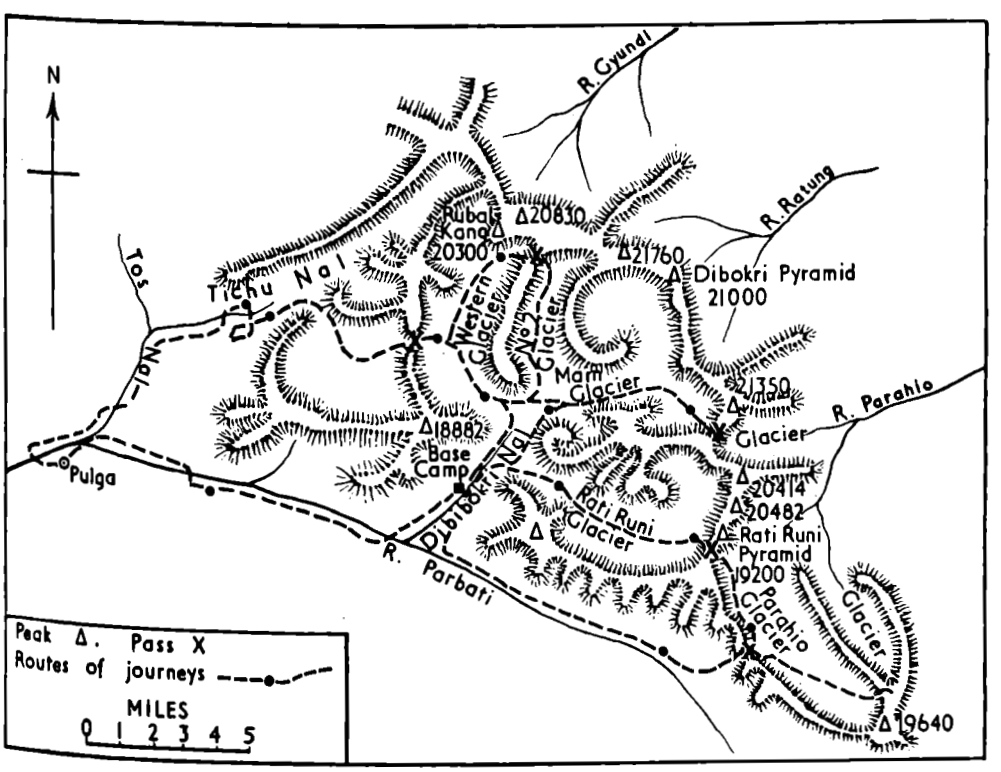
A march up a Himalayan valley is always a delight. The broad-leafed trees of the sub-tropics change to conifers as the altitude increases, then to silver birches and finally dwarf juniper before all timber is extinct and the topography moulded entirely in rock and ice. The track changed also. For two days, totalling 35 miles to Pulga, the last village in the Parbati valley, it was a well-engineered mule track with sound bridges across the river as the steepness of the valley sides forced it from one side to the other. Above Pulga,

only shepherds generally venture. The path became a scramble and soon the only bridges were the result of rock falls or the snow of winter avalanches beneath which the river had tunnelled a passage.

The mules would go no farther than Pulga and two days had to be spent recruiting coolies from among the local peasants. Schelpe welcomed this delay since it enabled him to spend more time collecting plant and insect specimens for the British Museum, but Graaff and I chafed at the wait and went ahead on 8th June with two Sherpas and two local men to choose a suitable site for Base Camp in the Dibibokri Nal.

The 10th of June found us following a faint shepherds' path into the entrance to the basin and we had our first view of the country we had come to explore. The narrow valley wound between grim black cliffs below steep flanking mountains of 18,000 feet or so. Dominating the scene was a peak on the main divide which we immediately named the 'Dibibokri Pyramid', a great black tooth rising to about 21,000 feet and, surprisingly, not marked on the map. The whole aspect was so fierce and wintry that, for a few faint-hearted minutes, we discussed turning the baggage caravan around and seeking another district.

Optimism prevailed and much of our gloom dispersed when we found the ideal base camp site. The snow had melted a few days



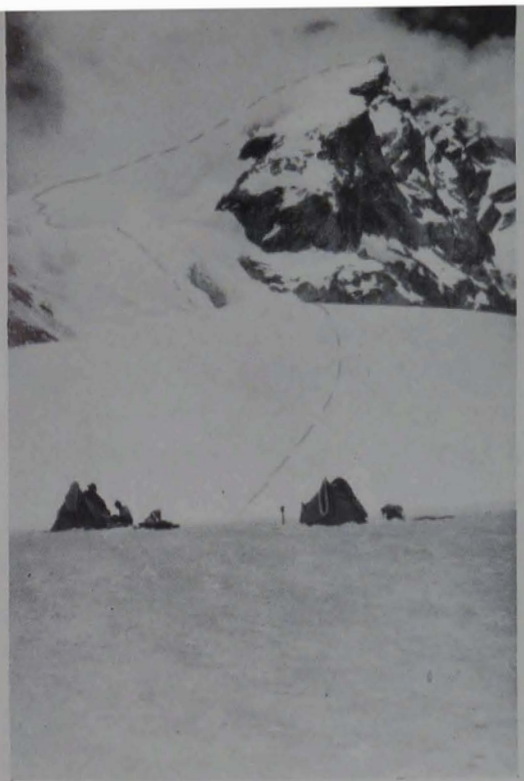
The Dibibokri Basin

previously from a little alp, about two acres in extent, perched a hundred feet above the river at an altitude of 12,800 feet. Through it flowed a clear stream and the last dwarf juniper of the nal assured us of a firewood supply. The first spring flowers were bursting through the turf. Schelpe reached the site two days later with forty troublesome coolies carrying the main baggage and by the evening we three Sahibs and five Sherpas were alone in our new home.

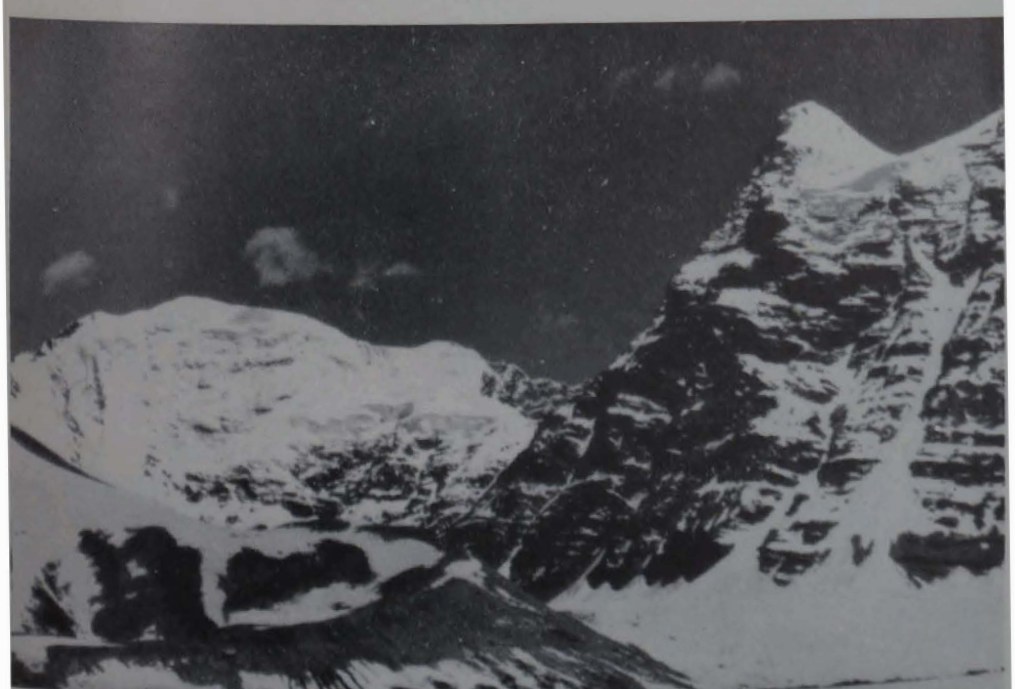
This base camp was to prove a delightful haven to which to return from our periodic excursions into the basin. It soon became a riot of flowers. Yellow buttercups and purple dwarf irises grew in profusion. In the dryer areas were yellow and red potentillas, while in the shelter of large boulders sprouted large mauve primulas. Purple geraniums and white anemones appeared later with forget-me-nots, yellow peas, and minute gentians. A special find was a small orchis with an intense shade of orchid mauve. Two types of fritillary grew on the alp, one a pale green and the other a slate blue. Down by the river, among the dwarf willows, appeared cream-coloured azaleas, while the smaller stream was bordered with king-cups. Towards the end of our stay we were delighted to find eidelweiss growing by the streams, a contrast to its craggy Alpine habitat, and blue Himalayan poppies among the rocks. It was a market garden too, for wild rhubarb grew in damp patches below the cliffs and was a welcome addition to our base camp fare.

From this idyllic spot we began our exploration of the Dibibokri Basin by climbing two small peaks of between 16–17,000 feet altitude which rose on either side. Then we made long day-excursions up three of its four glaciers. This preliminary work gave us a chance both to sort out the bewildering topography and to acclimatize to the altitude. Slowly the picture began to form and what had been an astounding mass of jagged upheaval was sorted into peaks we could recognize from different aspects, very few mountains we thought we might possibly climb and very many more we knew we could not climb.

We named the four main glaciers of the basin, rather unimaginatively, Western glacier, No. 2 glacier, Main glacier, and Ratiruni glacier. The last was because the map showed a forest of that name where there was nothing but rock and ice. The Main glacier was formed by the union of two branches beneath a most frightening rock wall which rose to the summits of Peak 21,760, the Dibibokri Pyramid (*c.* 21,000 feet), and Peak 21,350, all without the hope of a route to their tops. No. 2 glacier ended in a gloomy cwm beneath a similarly steep wall. We had not been able to see to the heads of the Western and Ratiruni glaciers due to bends in their courses, but all our hopes now centred on them.



Rubal Kang, 20,300 ft. from Camp II Western Glacier, showing route of ascent. Peak 20,830 ft. behind is obscured by cloud



Peak 21,760 and the Dibibokri Pyramid 21,000 ft. at the head of the Main Glacier

Before pushing camps up these glaciers, we decided to give them a week of the sun to melt some more of the winter snow from the moraines. For a change of scenery Graaff and I, with three Sherpas, made a four-day reconnaissance up the main Parbati valley where peaks 20,101 and 20,229 excited our interest. Before this venture had time to bear fruit, Sonam Sherpa was taken suddenly and violently ill with stomach trouble, vomiting up a tape worm. To Graaff and me this seemed the wrong exit so we rushed him back to Schelpe who was guardian of the medicine-box. Fortunately he rapidly recovered and by 23rd June we were ready to begin the more detailed exploration of the basin.

Our first big sortie was to be up the Western glacier and Graaff and I mustered four Sherpas to carry our first camp. This we established on the afternoon of 23rd June on its terminal moraine at an altitude of 15,200 feet. One Sherpa returned to Base Camp, leaving the party Graaff, myself, Pasang Lama, Pasang Sherpa, and Tashi Sherpa. On the 24th, after a wet night, we pushed up the glacier. Our packs were heavy and the sun now shone intensely and, reflected from the snow around and underfoot, induced extreme lassitude and a desire to sit on every protruding rock.

There was an excuse for this laziness. Ahead, where Peak 20,830 should have stood, were swirling clouds and a long view, before proximity foreshortened the mountain, was desirable if we were to find a climbable route to its summit. The mists parted and dashed our hopes by revealing the peak to be a magnificent tower of rock, but with almost vertical sides and without a chance of a way to the top.

A little to the left, however, was a peak about 500 feet lower which seemed to offer definite possibilities of ascent. From above an ice-fall a long humped ridge soared towards an apparently minute rock pinnacle of a summit at 20,300 feet. This mountain looked rather like a rearing turtle so we named it Rubal Kang, Tibetan for Turtle Peak.

We camped on the snowfield below Rubal Kang at an altitude of 17,800 feet. The 5,000 feet of ascent in two days from Base Camp now demanded its due and I had a splitting headache that evening. In the morning, 25th June, while I was fit again, Graaff was confined to his sleeping-bag suffering from vomiting attacks. Three inches of snow fell in the night and a thick mist enveloped the two little tents. This was not the day to attempt to climb Rubal Kang.

In the afternoon the weather improved and Pasang Lama and I roped to make a reconnaissance. First we kicked steps to a snow saddle at the head of the glacier and from 18,200 feet looked down into the upper cwm of No. 2 glacier. One interconnection had been

found. Next we kicked more steps up the slopes leading to a long ice-wall we had seen barring our intended route to the ridge of Rubal Kang. This we surmounted with surprising ease and reached a hump at 18,800 feet from which we could see that the slopes to the ridge, although steep, offered a definitely possible route early in the morning when the snow would be hard.

Graaff felt fitter next day, 26th June, and he, Pasang Lama and I were away from camp at 5 a.m., crunching across the preliminary snow slopes in a clear cold morning. By 6.30 we reached the foot of the slopes to the ridge and started up the steep snow. Luck was with us. Each step took two or three kicks and was then a firm hold. In twenty minutes we were astride the main ridge. From then on it was straightforward. The left side of the ridge steepened and was overhung by a cornice, but there was a safe route on less steep snow to the right.

At 9 a.m. we reached the base of the little summit head of rock, now seen to be 200 feet high and with a clear fall all round. A first tentative prod with an ice-axe loosened two blocks which flew into space. Loose snow plastered the rocks. It took half an hour to climb this last pinnacle. We moved very carefully, one at a time. The angle lessened slightly and there was suddenly no farther to go. We sat on the summit with our legs dangling over space, gazing with wonder at the vast panorama of mountains and glaciers extending around us for hundreds of miles. We had climbed a virgin twenty thousander and were supremely content with life.

After an hour of taking photographs, eating chocolate, biscuits, and raisins we sped down to our camp as quickly as safety would permit and on the following day crossed the pass Pasang and I had reached and returned to Base Camp via No. 2 glacier in a miserable precipitation of snow and rain, there to celebrate with Schelpe, using precious drops of that staple Scottish export which makes even melted snow taste so nice.

The next area for exploration was the Ratiruni glacier. A wet spell kept us slothfully in Base Camp until 2nd July. The 3rd of July found the same party, with the addition of Schelpe, camped at 16,500 feet on the upper snowfield of the glacier. Our hopes had been for Peaks 20,414 and 20,482, marked on the map as the possible prizes of this region, but a grim black amphitheatre frowned at us and told us there was no route up either. However, a consolation prize was offered, Peak 19,200 feet on the main Himalayan divide whose appearance caused us to name it the Ratiruni Pyramid.

In the evening light, the snow slopes leading to its summit seemed climbable and in the morning this opinion proved a correct one. Graaff, Schelpe, Pasang Lama and I reached the top without

difficulty after a very pleasant climb. Schelpe was delighted to find some lichen in which he is interested adhering to the topmost rocks, an Asian high-altitude record for this species, he thought. While he scraped away with his penknife, Graaff and I turned our eyes to the other side of the main divide and feasted them on a sight probably never seen before. Below us was the upper valley of the Parahio, a great long, smooth glacier not indicated on the map. Indeed this showed a mountain wall extending right across its position.

To our joy, there seemed to be a way into this sanctuary. By branching off our route to the summit of the Pyramid we could have reached a saddle at about 18,000 feet and now we could see reasonable snow slopes descending from the col to this new glacier, in fact here was a pass across the main range.

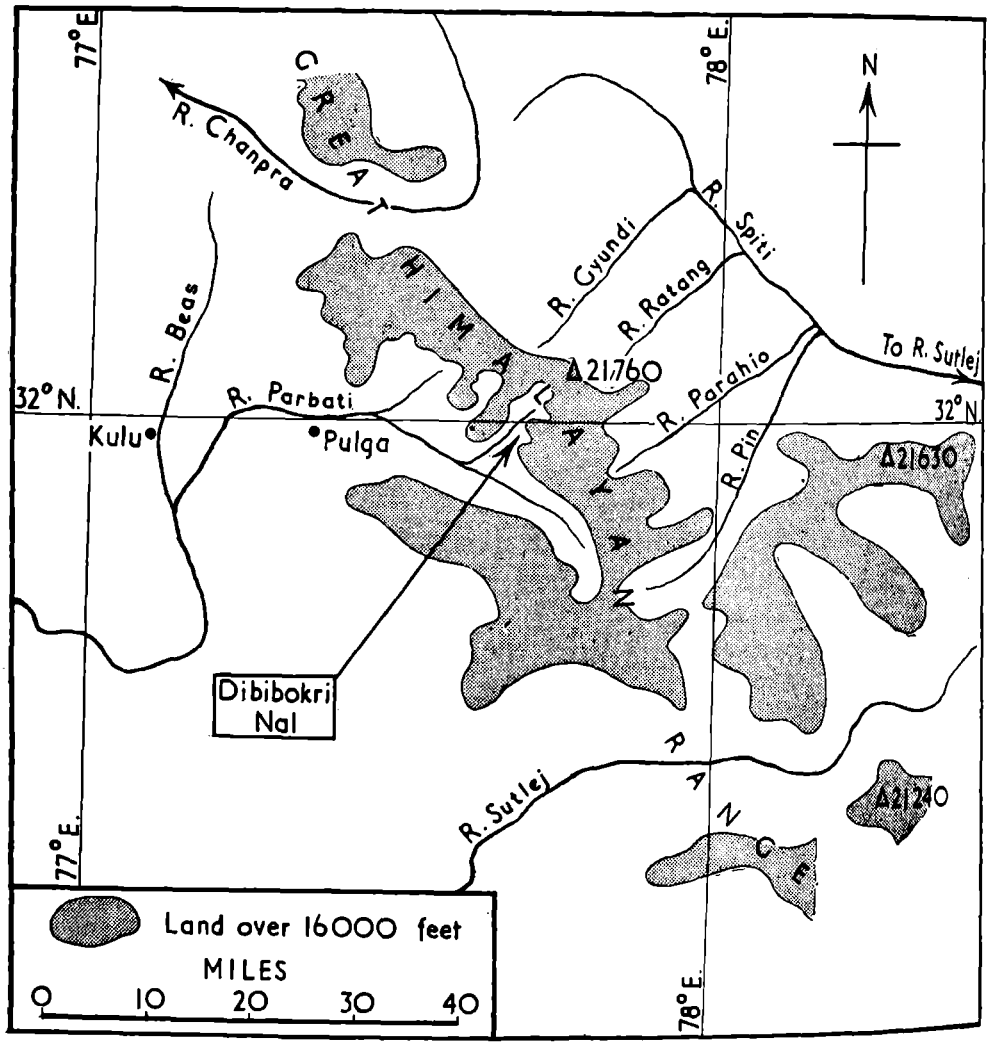
Schelpe returned to Base Camp with Pasang Sherpa on 5th July while Graaff, Pasang Lama, Tashi Sherpa and I set to the job of carrying ourselves and a camp over the pass. It was hard work and on the Parahio side the rather steeper slopes had been long heated by the sun. For much of the descent, rotten snow and heavy packs made it necessary to move one at a time on the rope, but by noon we reached the glacier and a few hours later had tramped a thousand feet up it, to camp just as it began to snow.

Our food supplies could only sustain one night behind the range so we planned a double day for 6th July. We were anxious to see more new country and add to our rectification of the map and then had to get ourselves to the home side of the divide. After a cold dawn start, we reached the head of the glacier and following a stiff climb up steep snow, brilliantly lead by Graaff who cut hundreds of steps, we were astride the ridge to our left and looked onto yet another glacier of which the map gave no hint. This was a tributary of the Parahio, joining it some miles below our pass.

We returned to camp and packed it. We could have retraced our steps over the pass beneath the Pyramid but decided to take a chance by trying to break out of the sanctuary into the main Parbati valley. The chance came off. We ploughed up rotten snow slopes to a col at about 17,000 feet and looked hopefully downwards. We were rewarded with steep, though feasible slopes which we descended for 5,000 feet to the warmth and luxury of a valley camp. The following day, 7th July, was a delightful stroll through carpets of wild flowers down the Parbati and up the Dibibokri to Base Camp.

In spite of mostly uncompromising views of Peak 21,760, the highest in the basin and the whole Kangra Himalayas, we were not entirely persuaded that it was invincible. Accordingly, on 10th July, Graaff and I set off up the Main glacier with three Sherpas to

ascertain. By noon on the 11th we were faced with a stark rock wall spitting avalanches and we knew that our earlier surmise had been correct. Peak 21,760 was not for us.



The Parbati Valley

Graaff returned down the glacier with two Sherpas in order to go ahead to Pulga to make arrangements for the evacuation of the expedition, but I was keen to try and find a pass to the Parahio from this glacier. With Pasang Sherpa I pushed up the right-hand branch beneath the fearsome wall of Peak 21,350 and camped near the head of the glacier at 17,000 feet. Ahead was an ice-fall but very early in the morning we evaded this by cutting steps up a small ice couloir to the right, negotiated a steep tongue of snow and then some of the most insecure rocks I have ever met to stand at 18,500 feet on another new pass over the great Himalayan range. On the other side we looked down easy snow slopes to a tributary glacier of the Parahio, the third new and unmapped glacier to be discovered.

One more sortie was needed to round off our exploration of the Dibibokri Basin, an attempt to break out of it to the west into the Tichu Nal. The Tichu is a tributary of the Tos Nal which joins the Parbati near Pulga. While Schelpe evacuated Base Camp with the coolies Graaff would be sending up, I could try to make this new route to Pulga. Accordingly, on our way down from the Main glacier, Pasang Sherpa and I dumped our tent and high-altitude gear at the site of our first Western glacier camp of 24th June and on the following day, 14th July, had returned to it with six days' food from Base Camp.

The 15th was a hard day struggling up the Western glacier bearing loads of 60 and 70 lb. and searching for a way up one of the series of tributary ice-falls to the left. Up the fourth we found a route and pitched camp at 17,000 feet. There was enough daylight for a quick reconnaissance higher and at 17,500 feet we found a snow col which, when we breasted it, appeared to fall away in gentle slopes to the west to a glacier which could only be a tributary of the Tichu. It was comforting to have found this new pass since Schelpe was then evacuating Base Camp and our source of supply in the rear was being cut off. It was go on, or go hungry.

Next morning, after crossing the pass, we discovered that the slopes were not so gentle. In fact they were a series of ice walls, requiring crampons and very careful handling of the rope. The sun made the surface softer every minute and we were extremely thankful to reach the glacier below. This led to the main Tichu glacier and to lower country and by the middle of the afternoon we camped on green grass.

The journey to Pulga was not as easy as expected. On the following day, 17th July, our net progress was one mile after nine hours' struggling through matted rhododendron bushes on the steep sides of the gorge into which the Tichu plunged below our camp. However, on the 18th, we extricated ourselves, reached the Tos and camped above the highest village in the nal. Now there was a good path and we joined Schelpe at Pulga in the morning. All the gear was with him, having been brought from Base Camp by twenty coolies. Now, eight mules bore the burden and we all reached Kulu and civilization, intact, on 21st July.

The achievements of the expedition can be listed as two new peaks climbed, altitudes 20,300 and 19,200 feet, five passes found, three of them over the main Himalayan divide, and three new glaciers discovered. Schelpe returned with 500 botanical and 200 zoological specimens. All of us returned with the reaffirmation that the Himalaya is the most wonderful country in the world and that an expedition to explore even some of its minor mysteries is the best way of living we know. The Inner Line disappointment no longer rankled.

DHAULAGIRI, 1953

ANDRE ROCH

The Zurich Academic Alpine Club with its 150 members can justly be proud to have organized this attempt on an unscaled 'eight thousander' (actually 23,810 feet high). The Club was supported both financially and morally by the Swiss Alpine Club and by other national organizations and distinguished personages. M. Bernard Lauterburg, who carries his sixty years lightly, was the chief, with Andre Roch his second in command. Incidentally Roch's father-in-law had told him that he would be better employed looking after his family. In Nepal the party was completed by ten Sherpas under Angtharkay. Actually nine only had been ordered but they explained that nine was an unlucky number. Base Camp was established on 20th May and thence Camps I and II were carried up. During these operations Angtharkay had a miraculous escape, being swept down more than 300 feet with a cornice which had broken under him.

We give the story as dramatically told by Andre Roch.

ON 29th May at Camp IV, about 19,500 feet on a snow hump on the north side of Dhaulagiri, Lauterburg with Pfister, our doctor, Marc Eichelberg, Hannes Huss and I were attentively watching the tremendous face which rises nearly 6,000 feet to the west ridge. To the left walls support a glacier slashed with blue. To the right near-vertical slopes with horizontal powder snow-covered horizontal rocks buttress the west ridge which itself looks easy to climb, but to which access is difficult. In the centre a bulge in the face, shaped rather like a half-pear, seems to be the best approach. The top of the pear is merged in rock walls. Our Camp V had been set up at about 21,500 feet on this immense slope.

That day we members of the expedition were watching two small dots, Peter Braun and Rudi Schatz, who were climbing from the top of the 'pear' over the last slope beneath the west ridge of the mountain. The two climbers had left without loads from Camp V, following three Sherpas, Gyaljen, Ila Tensing, and Kami, who were carrying the oxygen equipment and were opening up a track. At the top of the 'pear' the two climbers put on the oxygen masks and attacked the slope leading to the west ridge—the last apparent obstacle before the top. While they climbed, three other small dots descended in the large couloir situated orographically on the right of the 'pear'; the Sherpas. All was going to plan, and they were climbing so well that we had great hopes of success.

The Sherpas now seemed to be sliding down the slope, they were going so fast; so fast that it looked dangerous. But to our horror, we suddenly realized that they were not sliding, they were falling, raising a large cloud of snow as they went. Two of the dots seemed

to be tumbling together, while the third kept ahead of them—the slope became steeper and we watched with bated breath—the three must certainly be lost—the long slope down which they were falling ended in a sheer ice-wall at the foot of which was a snowy plateau; if they reached the wall they would certainly not survive, and as we watched we realized only a miracle could stop their fall before they reached the fatal edge. Then the dot in front accelerated and we had no more hope for it. But one of us with binoculars made out that it was only a rucksack—behind it the three Sherpas were a black blob surrounded by a large cloud of powder snow, the whole tobogganing mass had now fallen below the level of Camp VI and was reaching the crevasses before the ice-wall . . . they reached the first, cleared it, and crossing the second gradually came to a halt some 200 metres from the wall. We drew a breath of relief—they were alive! The rucksack stopped on the edge but two objects hurtled over—we wondered what state we should find them in and hardly dared think—broken legs, wounds from crampons, I had already had experience of just such an accident. We organized a rescue party; the doctor collected splints and equipment; we found changes of clothes and hot tea. Preparations for rescue take time and half an hour after their glissade, just as we were starting up, we saw the three Sherpas get up and, as if nothing had happened, cross horizontally to the track between Camp IV and V. We met them as they reached it. Their wounds consisted of Kami's grazed chin and a crampon scratch on Ila Tensing's thigh. Gyaljen was unhurt. We could hardly believe our eyes. They had, however, lost their ice-axes which remain planted for ever in the north face of Dhaulagiri. Was this fall going to put an end to the expedition which had hitherto been going well, in spite of great difficulties? . . .

But our doings prior to 29th May have not yet been related.

On 13th April, after a perilous flight, the members and baggage of the expedition landed at Pokhara, a charming village in western Nepal, at the southern foot of Annapurna. From there seventy ponies carried cases and bags along tracks so precipitous that the packs tore and broke against the rocky sides. One container rolled to the bottom of a precipice, emptying its contents of sugar as it fell. We were relieved when 120 Beni porters loaded our baggage three days later and took it to Muri, the last village before the unexplored gorges of the Mayangdi Khola.

The Muri porters had no warm clothes and were so frightened of the gorges that they demanded an exorbitant price. With difficulty we recruited porters from the surrounding villages, while Pfister and Roch, who had gone ahead to reconnoitre, lost themselves in the jungle and had to bivouac without food at 3,000 m. They were in

a sorry state by the time we had signed on a sufficiency of porters and caught up with them.

As is usual in the Himalaya, the rough track climbs some thousands of metres of precipitous slopes, only to drop again to the enormous torrent in the valley. This had to be crossed several times, on broken-down trees that we crossed like tight-rope walkers. Sometimes the trees did not fall true—but into the torrent, and it took fifty porters with ropes and ice-axes to pull our bridge into place. Further on bamboo forests impeded our progress and had to be cut down by kukri—an exhausting job. During three days the caravan only advanced a few miles. But at last, on 20th May, the Base Camp was set up in a delightful birch wood, below the tongue of the Mayangdi glacier, which comes out from between walls, considerably more formidable than those of the gorges we had crossed. The camp was at 3,500 m. at the west foot of Dhaulagiri, whose summit is nearly 11,500 feet higher. It was the lowest Base Camp I had ever known but a long way the prettiest. We paid off the porters, and all but six returned to their villages. Contrary to expectations the glacier held no difficulties. But though the six coolies had been warmly clothed by us, they hurt their feet in the endless moraines, and two days later, went on strike for more money. They were wasting their time; three of them left and the three brave ones who came on with us were Beniman, the Businessman, and Tarzan. The former appeared to be a simple soul, but was really very much 'all there' . . . the Businessman had come up from Base Camp to sell us bananas. As we didn't want them he had to eat them himself, and as he had come to make money and had failed, he therefore had to join us as porter. We called the third Tarzan because he looked so like an old man of the woods, with his old flint gun, so untrue that he had to fire at least five times to get a hit, and we only once had a Bharal in the cooking-pot.

As Base Camp was so low and so far from the point where we intended to start our attack we had to climb some fifteen kilometres up the glacier before we could begin the ascent proper. Two long stages were necessary to reach Camp I. For eighteen days we alternated between carrying loads to this camp, and exploring the region, and above all, the route up Dhaulagiri. We were anxious to know what this route would look like, up this enormous Mont Blanc of Nepal. We knew nothing of the north face beyond what we could learn from one photograph taken by Terray and Oudet during the French expedition of 1950. With a view to having a look at the north face, the only one that seemed to offer a chance of success, we pitched our tents at about 17,000 feet, above Camp I on the southern flank of a mountain of nearly 20,000 feet exactly to the north of

Photo. C.A.A.Z.—A. Roch

Dhaulagiri from the south

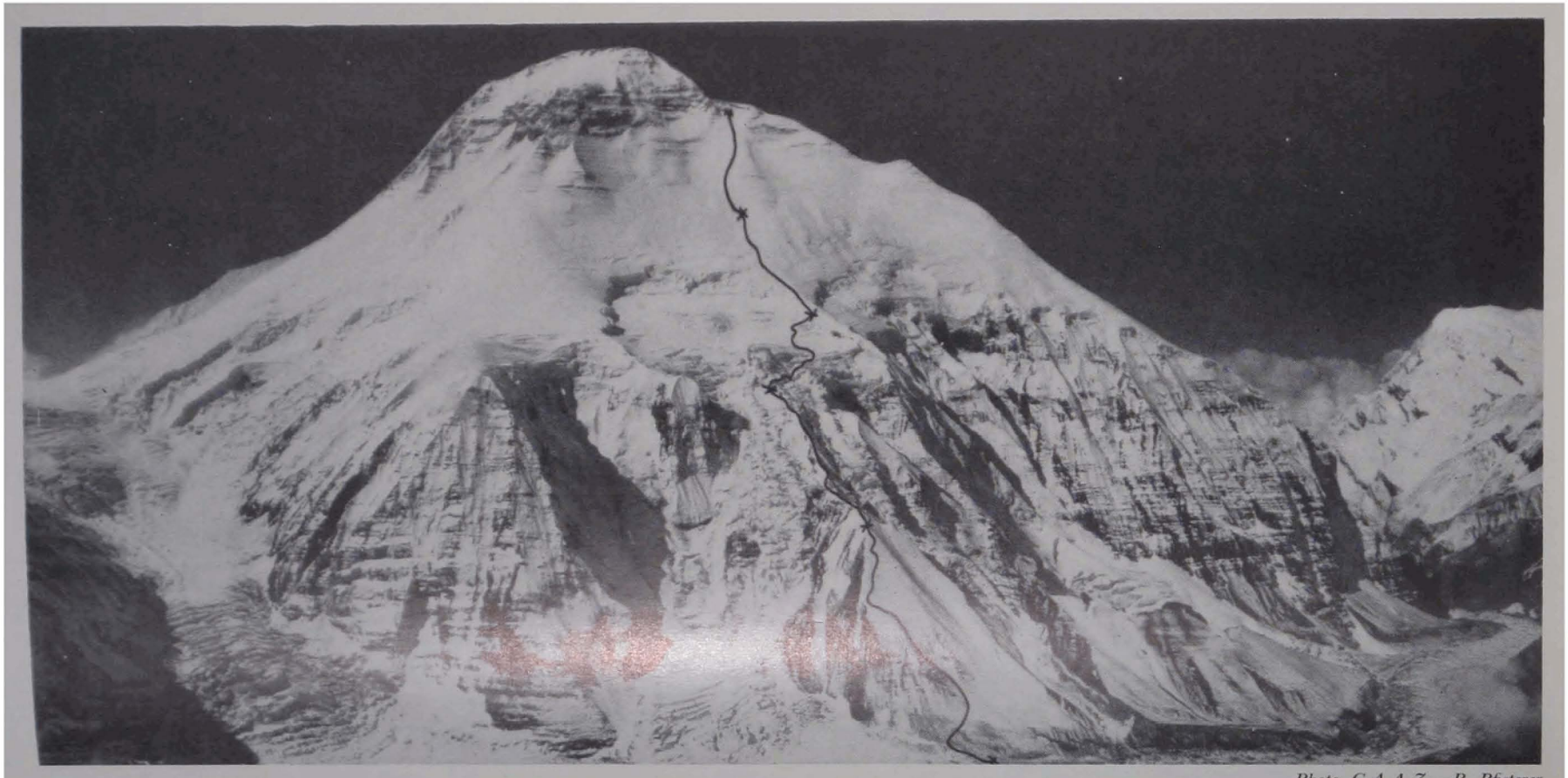


Photo. C.A.A.Z.—R. Pfisterer

Dhaulagiri seen from Pt. 6,000 metres to the north, showing the five camps and the highest point reached

Photo. C.A.A.Z.—H. Huss

View of the Nilgiri and Annapurna from the South Col of Dhaulagiri

Dhaulagiri. Three Sherpas brought the tents while Lauterburg, Pfister, Angtharkay and I carried up sleeping-bags and high-altitude equipment. On a giddy rocky platform we cleared a space and put up our tents. Next day, in spite of some unpleasant verglas, we climbed quickly—the weather was magnificent, like every day had been—before us towered Dhaulagiri, superb, majestic; the higher we climbed the steeper it looked—we were on the final ridge of our little peak and Dr. Pfister was leading, with Angtharkay following and myself taking photographs. A sudden loud crack was heard and our brave sirdar disappeared with a cornice of which 25 yards had broken off. They had been cutting too near the crest of the ridge. Pfister, one foot in space, clung on and saved himself, and looking down through a breach in the cornice, saw Angtharkay clinging on to the dizzy slope—braking with all ten gloved fingers, he had let the bulk of the little avalanche pass under him and taken refuge on a rocky spur. Profiting from the fact that the cornice in falling had swept the slope I climbed down with Lauterburg holding me on the rope for the first twenty metres, which were all but vertical —in ten minutes I was with our sirdar and in half an hour we were on the ridge once more. Mist now surrounded us but did not prevent us from reaching the top. Angtharkay accompanied us in spite of his fall, and even led, this time making the tracks a reasonable distance from the cornice!

While we were thus employed, Braun, Eichelberg, Huss, and Schatz were exploring the only possible route on the lower northern slopes of Dhaulagiri, a sharp moraine leading between two shattered glaciers, a confusion of blocks, towers, and pinnacles.

The Sherpas had a great job to do. Day after day, without rest, they took loads of some 30 kilos from one camp to the next. At last on the 26th May Peter Braun, Marc Eichelberg and I with three Sherpas, left Camp IV to establish Camp V at the foot of the 'pear'. Marc and Peter went ahead to prepare the site and Braun went back with the Sherpas. We had hoped to attain the west ridge much farther to the right, but one day an enormous avalanche swept away that hope. The best route left seemed to be directly up the left of the 'pear'. The climb up to Camp V seemed interminable. The snowy slopes got steeper and longer as we climbed—but at last the lower rocks of the 'pear' were reached. They were limestone and very steep. Above the rocks we dug a terrace in the snow; it was much too narrow but, nevertheless, just took our little tent, though the snow which fell and the snow that was whipped up by the wind accumulated between the tent and the mountain, so that I had to go out at midnight and brush away the mass of snow that was threatening us. Three o'clock next morning, Marc and I, with

sufficient equipment to bivouac, left this inhospitable camp and slowly climbed up the length of the 'pear' while day dawned and lit up the immense and distant horizon.

As we climbed higher the rocks became uncovered and more dangerous. We looked in vain for a camp from which a summit attack could be planned. There was not the smallest platform and the whole side of the mountain was equally steep. We inspected all the routes which would lead us to the western ridge, the best a poorly defined way which led over some unpleasant rocky walls to the right. I reluctantly formed the opinion that success was impossible. We could not put up a camp, not even one tent, at this height.

We were at about 24,000 feet. To the north a panorama of unimaginable beauty spread out from northern Nepal as far as the mountains of Trans-Himalaya in Tibet. The peak—nearly 27,000 feet—of Dhaulagiri Himal stands up like an enormous Weisshorn. It seemed to us more inaccessible than ever. At about 11 o'clock we went down.

Two days later, after a dreadful night at Camp V, Braun and Schatz followed our tracks, followed by the three Sherpas whose sensational fall we described at the beginning of this article. From the top of the 'pear' these two, with their oxygen, tried to reach the west ridge. On snow they climbed direct to the rocky wall plumb below the ridge, but found the rocks difficult, and they had omitted to take their pitons . . . they reached about 25,000 feet, but when the rocks became too much for them, had to abandon the ascent. They had seen nothing of the Sherpas' fall. . . .

As will be seen from these few details the ascent of this mountain is dangerous. At the top of the 'pear' a site for a camp must be dynamited. The least fall of snow brings danger of avalanche. It is not certain that the west ridge can be reached. From the ridge to the top, the route crosses to the south side. It appears possible though problematical.

Before leaving the large Mayangdi glacier which was covered with dead locusts, Lauterburg and Pfister explored the north-east col of the mountain and returned by the Col des Français to Tukucha. They also visited Muktinath, the place of pilgrimage for Buddhists and Hindus. The others, taking the equipment back through the gorges, climbed the south col to finish the reconnaissance of the mountain.

To my way of thinking, we tried the only apparently practicable route. Chances of success are extremely small as the difficulties are enormous. The climbing of Dhaulagiri will demand a new technique for the Himalaya, such as the dynamiting of the camp-site, which

at the present time seems far-fetched, but in fifty years' time may perhaps be accepted as commonplace by all climbers.

Although the summit had been denied to us we had been lucky enough to have explored a marvellous mountain, whose grandeur is unimaginable, and whose magnificence will remain in our memories, though in our hearts the unassuaged desire to conquer it dwells.

Translated by Barbara Tobin.

A FOURTH VISIT TO NORTH-EAST SIKKIM

T. H. BRAHAM

TIME was when the Himalayan mountaineer could choose his mountain, pack his rucksack, and be off. Nowadays, to add to other vicissitudes, he must plan his campaign inside the narrowing limits of allowable areas. If he has a special affection for a particular area or peak, he will learn sooner or later that such things are of little importance to any besides himself and, doubtless, he will have to satisfy himself with a second choice.

When, in the autumn of 1952, it was possible for me to plan another journey into Sikkim, my thoughts turned naturally towards Kangchenjhau which it had been my good fortune to attempt three years earlier. On that occasion, in late November, following Dr. A. M. Kellas's route on the north side of the mountain we had found it impossible, despite the absence of technical difficulties, to continue the climb owing to the extreme cold. Opportunity seldom repeats itself; and permission to enter Sikkim on this occasion was granted on the condition that I agreed to confine my activities to the area south of the Thangu–Sebu La line. Cornered thus, Chombu seemed an obvious choice: an impressive mountain, despite its modest height of 20,872 feet, and exceedingly beautiful. I had admired it on many occasions from several angles, but had never been able to discover what appeared to be a feasible route; until in 1949, whilst reconnoitring Kangchenjhau, I had seen the north-east ridge in profile and had judged it, perhaps somewhat prematurely, to offer some chance of success.

Only one serious attempt appears to have been made on Chombu. In November 1944 C. R. Cooke and D. H. McPherson approached the north ridge via a couloir and snowfield near the base of the north-east face. Although bad weather prevented them from reaching the north ridge, they expressed the opinion that it was climbable; and further, that once on the summit ridge the difficulties appeared to be at an end.[1]

I was very pleased that Angtharkay was able to accompany me again. He brought with him six Sherpas from Darjeeling; and I was thus fortunate to have a well-chosen team despite the heavy demand for Sherpa porters from larger and much more important expeditions. Gangtok was reached on 2nd October, a day behind schedule, owing to the bad condition of the motor road which necessitated a night's halt at Rangpo on the Sikkim frontier. The march up the Tista valley to Lachen and Thangu was accompanied by rain,

[1] *Himalayan Journal*, vol. xiii, p. 102.

which had washed away portions of the road at almost every stage along the route. Leeches were abundant in the steamy forests, and gym shoes offered little protection against their merciless attacks.

We reached Thangu on the 7th October. On the following day, a rest day, I climbed the hill, 16,241 feet, that rises north of the dak bungalow. Clouds obscured most of the peaks, but I was able to obtain a fairly good view of the upper part of Chombu evidently covered with a lot of new snow. With a view to examining better the approaches to Chombu, and the north-east ridge in particular, I had decided to cross the Sebu La from the Jha Chu valley and to establish a camp if possible on the other side, near the Sebo Cho. We reached the Himalayan Club hut at the head of the Jha Chu valley on the 9th October in misty weather. We were surprised to find that the hut was damaged; apparently by yakherds who drive their flocks up the valley for summer grazing. Snow began to fall early the next morning and continued throughout most of the day, so we decided to wait. The day was spent mostly inside the hut; either shivering in the loft, with a continuous dripping on the floorboards owing to a leaky roof, or in the kitchen, half-choked round a smoky fire owing to a damaged stove.

For the moment I had ruled out the possibility of trying Cooke's proposed route on the north ridge because of its apparent steepness, and also because I was rather anxious to view the north-east ridge from close quarters. We hurried away from the hut the next morning encouraged by an improvement in the weather. On the way to the pass we obtained good views of the north-east shoulder and summit ridge of Chombu, and Angtharkay and I discussed the chances of climbing the latter. Although, when seen from the Jha Chu valley this ridge appears to be fairly straightforward, because apparently horizontal, it is in fact rather broken up and evidently split into sections. We were both agreed that a camp would have to be placed somewhere near the shoulder at about 20,000 feet. But what startled us was the appearance of the uppermost part of the ridge where just below the summit pyramid a deep cleft of perhaps 2–300 feet showed up clearly. To climb its vertical sides which, at that altitude, might easily prove to be composed of ice, appeared to be a problem which we were hardly prepared to cope with. We reached the top of the Sebu La in about three hours and descended on the other side arriving at the Sebo Cho in the early afternoon.

The north-east ridge, or spur, which abuts against the precipitous east face of the mountain, could be judged more clearly now. As a route it is hopeless, presenting a series of sharp fluted crests and walls of ice set at a very steep angle throughout. The north ridge,

by comparison, seemed far less formidable and, despite one or two steep rock steps lower down which could probably be turned, appeared to be climbable. This ridge rises from a snowfield at about 17,500 feet. Cooke in 1944 had reached the snowfield via a couloir and snow col on the Jha Chu side. Access to the snowfield from this side is barred by a great ice-fall which is divided into two sections by a badly crevassed glacier. There seemed to be no way of turning the ice-fall, and siege tactics were obviously required. At the top of the north ridge, the route from the north-east shoulder along the summit ridge presents the same unhopeful appearance as it does from the other side, with the fault clearly visible below the summit. This, combined with the difficulty of the ice-fall, sealed our decision to abandon the attempt which, in point of fact, we had not really begun. The south ridge of Chombu has generally been ruled out on account of its excessive length. I believe that it deserves a closer examination, although it is likely to provide climbing of a high standard; its upper part possesses a narrow fluted crest perhaps half a mile in length. The approach certainly appears to be somewhat easier, along the Kalep Chu valley below Thangu.

The Sebo Cho which is fed by the ice-fall below Chombu, has undergone a considerable change. In September 1950 a large portion of the ice-fall is believed to have collapsed causing the bursting of the lake. The waters thus released swept everything before them and caused severe damage down the valley, destroying half of Lachung village and carrying away a suspension bridge 5 miles below Chungthang. The route to Mome Samdong, which is now over boulders and moraine debris, occupied a longer time than we had expected and we arrived just before dark. The Himalayan Club hut here was found in a badly damaged condition, and the Sherpas pitched my tent outside a quite respectable yakherd's hut where they themselves were billeted for the night.

With the object of seeing new country, I decided to visit the Khangpup[1] valley and view the peaks at its head. Sending two men down to Yumthang with surplus loads, we left Mome Samdong the next morning lightly laden. We forded the main stream soon after, and proceeded to skirt the slopes of the spur rising on the opposite side. The going was very pleasant, and after a few hours we found ourselves approaching the Khangpup glacier. There was quite a lot of new snow about, but we were able to follow tracks which bore evidence of summer visits by herdsmen. We pitched camp at about 16,000 feet below the glacier snout in an ideal place with abundant scrub fuel and water at hand. Before us rose three attractive peaks, and also a possible pass leading into a valley towards the east. The

[1] Also spelt Khonpuk.

peaks were 19,201 feet, 18,500 feet, and 18,310 feet. We decided to attempt the lowest on the following day, hoping that it might be possible thereafter to attempt the 19,000-foot one.

We awoke the next morning to find a light covering of snow around our camp and heavyish cloud about. Angtharkay, Ang Nima and I set out at 8.30 bemoaning the absence of sunshine. The glacier provided easy going; and higher up we skirted the rock edges to avoid some large crevasses. Thereafter, it was easy snow all the way, with a final rather exciting rock climb 200 feet from the top. This provided the main attraction as the rock was sound though steep and possessed perfect hand- and foot-holds from which a light covering of new snow had to be cleared. Unfortunately, we were in cloud most of the time and saw nothing except for a few glimpses to the north through scurrying clouds of the summit of Kangchenjhau standing out serenely in a blue sky. We were back in camp by about 2.30 p.m., and, shortly after, the usual snow-squall set in. It was rather disconcerting to find that this had increased during the night; and the following morning the outlook was very white and rather bleak. Snow continued to fall as we packed; and we made our way down the snow-covered moraine in a heavy mist, feeling rather fed up. Descending to the main valley, we took the road to Yumthang. The old road was almost completely destroyed in 1950, and the route is now mostly along the former bed of the river over boulders and alluvium.

After a rest day at Yumthang, a day of perfect weather, which helped greatly to raise everyone's spirits, we set off on 16th October up the Lako Chu valley leading to the Burum glacier. Once again, the weather was good; and, feeling that conditions had settled at last, we began to look forward to a final week in what promised to be an interesting region. About 2 miles above Yumthang we branched left, and began to climb steeply through a dense forest of pines. After we had gained about 1,500 feet, the gradient eased a bit and we reached a small alp where some yakherds were encamped under a boulder. Branching right, we followed the main stream and began to ascend the valley in the direction of the Burum glacier. The going was rough, but we discovered a few cairns which suggested that yakherds had been there before us. We camped at about 15,000 feet, at the limit of the scrub-fuel line below an arena of wild rock peaks. Leaving camp in good weather the next morning, we reached the lake below the Burum La half an hour later. The La, 16,000 feet, rose about 750 feet above us to the left. Almost directly behind us to the east the Khangpup glacier was visible, with the 19,000-foot peak we had wanted to attempt a few days earlier. Nearer at hand to the north, we were just able to catch a glimpse of

the summit of peak 19,284 feet, lying at the head of the Burum glacier. We decided at once to attempt this mountain. A vertical ice-fall, composed of tottering seracs, emptied into the lake on the opposite shore and barred access to the glacier from that direction. We skirted a rock ridge to the north-west over boulders and scree and reaching a rib of ice, set about tackling the lower defences in order to gain entry into the upper part of the glacier, which was not as yet visible. Angtharkay was in favour of skirting the crevassed section which now confronted us, and proceeded to reconnoitre some steep rocks to the left. I decided to deal with the ice direct and advanced some distance up it accompanied by Pemba Norbu. The gradient was steep, and the dangers of the route gradually increased with the presence of open and concealed crevasses. We paused for a breather, and wondered whether the passage of a laden party would be justifiable, especially as some of the porters would have to return alone along the route later in the day if we succeeded in establishing a camp on the upper glacier. The possibility of an avalanche occurring in this section could not be discounted. Angtharkay, meanwhile, had climbed out of sight on the left rock wall, and presently announced that he was in trouble and wanted a rope. Gyaljen and Ang Norbu went up to join him, and the three of them returned later to the foot of the ice. Defeat on this side had cost us nearly two hours. It was now 12.30 p.m., and clouds had begun to roll over. We had not yet shot our bolt. The last remaining alternative was an examination of the main Burum glacier, which flows south on the other side of the Burum La. There are, in fact, two Las; we crossed the northerly one which is shown on the map as slightly higher than its neighbour about half a mile to the south. A steep descent brought us to the Burum glacier which we crossed just above its snout. As we were now completely enveloped in cloud, we were ignorant as yet of our foredoomed failure. Climbing the moraine ridge on the right bank, we set up camp at about 16,000 feet below a steep rock ridge on the west side of the valley. We sent four porters back to the lower camp, and as they set off at 3.30 p.m. light snow began to fall. This continued throughout most of the night, and although it stopped before dawn, the sun failed to appear that morning. The main ice-fall of the Burum glacier was now in full view. One glance at it was sufficient to confirm our worst fears. An attempt on peak 19,284 feet, which had remained invisible except for yesterday's brief glimpse at its summit, was no longer within our scope.

We turned our thoughts to the adjacent valley to the west, where I knew the Chento peaks must lie. I had first seen these peaks on the march between Lachen and Thangu, from where they appear as

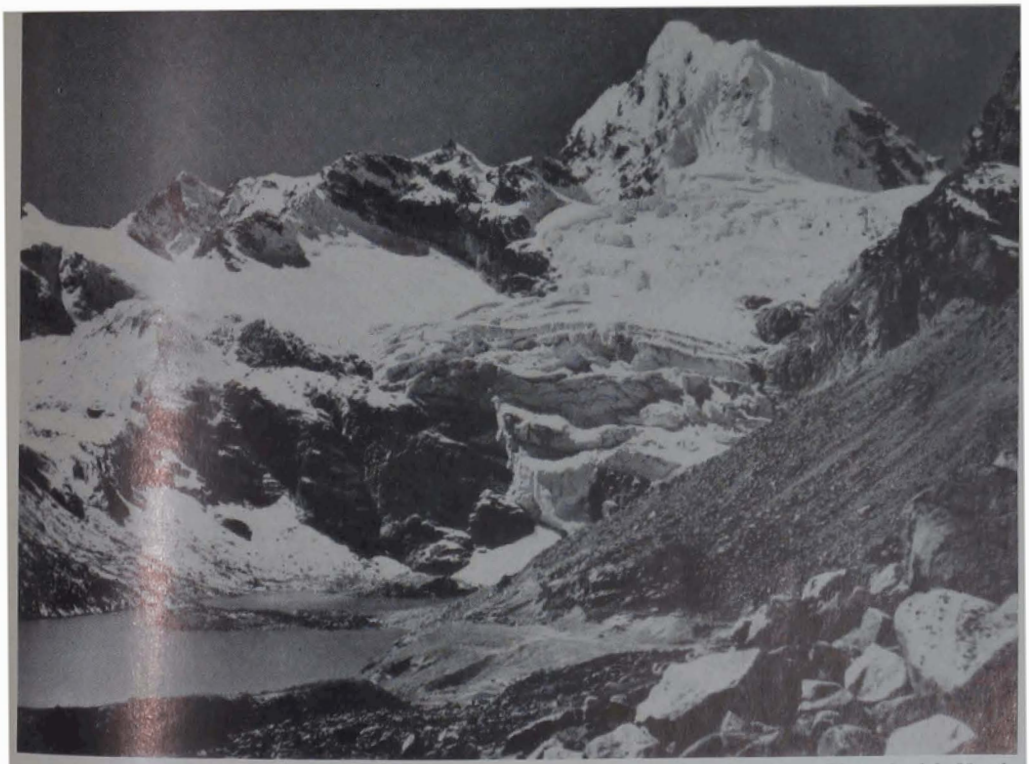


Photo. by M. Hruska

Chombu from Sebu La

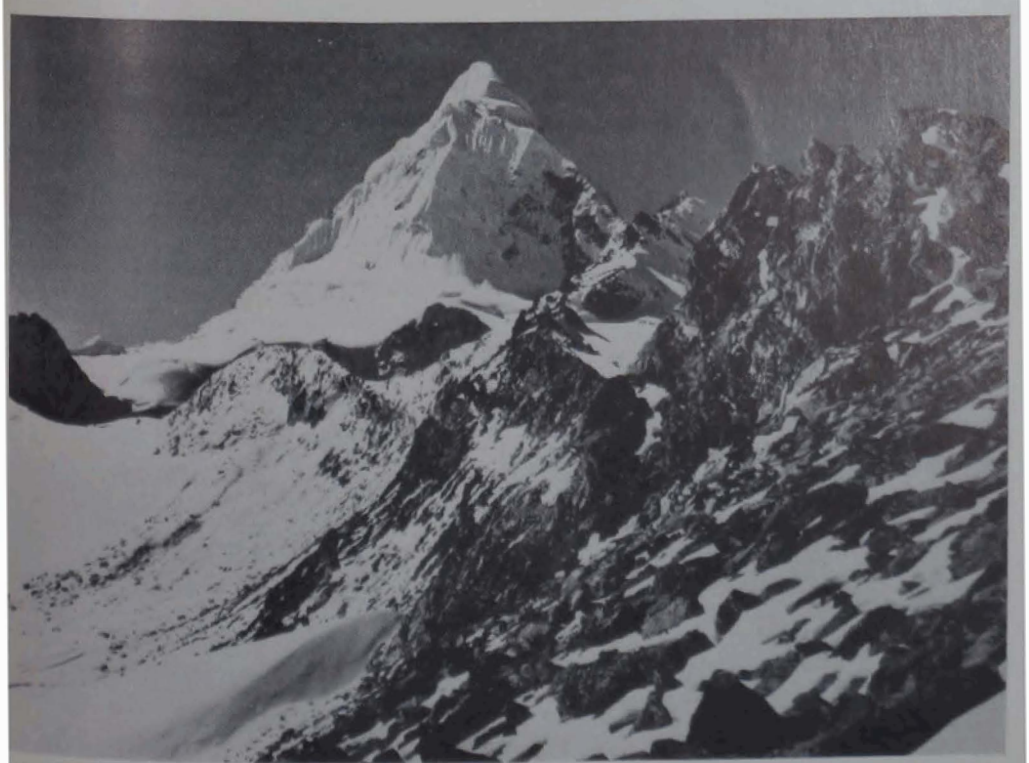


Photo. by M. Hruska

Chombu from Sebu Chu

two pyramid-shaped summits of 19,075 feet and 18,595 feet. Despite unpropitious weather, Angtharkay, Ang Norbu and I left camp after breakfast and scaled the rocky slopes above. After a rather steep scramble, we reached the top of the dividing ridge in about an hour and were just in time to look down on to the small glacier flowing roughly south-east from the Chento peaks; the latter, unfortunately, were obscured by heavy cloud and presently the glacier itself was hidden from our view. The two Sherpas carried on along the ridge and reached its highest point, about 17,000 feet, whilst I waited on the divide hoping for the clouds to lift. It seemed as though it might be possible to descend to this glacier and establish a camp somewhere near its head with a view to attempting one of the peaks. Whilst I was considering this scheme, snow began to fall and soon the Sherpas returned, but had, of course, seen nothing from their highest point. We were now getting rather despondent and returned to camp by 11.30. The snowfall increased. We had had quite enough by the early afternoon so, packing up, we made our way back to the lower camp over the Burum La, arriving at 4 p.m. after a tiresome march in continuous snow, sleet, and rain. It snowed heavily throughout the night and was still snowing on the morning of 19th October, when we decided to evacuate. A very tiring march down the valley, which was now covered with several inches of new snow, brought us to the alp where we found our old friends the yakherds, wet and cold, also preparing to descend to Yumthang. It was still raining when we reached the Yumthang bungalow in the afternoon, and rainfall continued ceaselessly throughout the evening and night.

With only a few days of my holiday left, it was impossible to wait for better weather and there was no alternative but to descend. It was heartbreaking, therefore, when we left Lachung on 21st October to find that the weather had changed and the purest sunshine filled a cloudless blue sky. The return march was uneventful and Gangtok was reached on 24th October.

It is always easier to write the story of a successful expedition; for then the weather and other vagaries may be glossed over or referred to quietly as a mere inconvenience. It is not always wise to blame one's own bungling to external factors, but in the present instance I think it is only fair to admit that defeat and despondency were partly, at least, the product of an unfavourable season. We had seen some new country; and the mountains had given us all that we had cared to take from them; that alone was enough.

ON THE SUMMIT OF NANGA PARBAT

HERMANN BUHL

1st July 1953

THE weather was wonderful. It was the first day for a long time that it had been fine and it looked as if it was going to last. Two days earlier we had had to struggle down from Camp IV through snow up to our chests: a very real danger of avalanches had also forced us to evacuate Camp IV and the position seemed hopeless for we were leaving the mountain and taking down with us all the equipment, sleeping-bags included. However, after a day's rest at Camp III our spirits rose.

Hans Ertl took the initiative and on the morning of 1st July, with our four remaining Sherpas, we climbed back to Camp IV. The snow was deep and exhausting, but we had taken on a new lease of life. Otto Kempter stayed on alone at Camp III to recover more fully from his exhaustion, but was to join us later. When we reached Camp IV we found it completely buried, with only the ridges of the tents showing and we had to sound for quite a while before we could find the porters' tent. It was a hard afternoon's work digging them all out, but everyone dug as if they were after buried treasure. Walter Frauenberger prepared the loads for next day and Ertl and I took 100 metres of rope with us and climbed up to prepare the steep Rakhiot face, up which it was imperative that the porters should follow us. We cut a veritable staircase, all the while being tormented by thoughts of the morrow, and then traversed under the Rakhiot peak, cutting steps and fixing ropes the whole way across. We then retired, tired out, fairly late in the evening to Camp IV.

2nd July

Hans, who had woken very early, served our breakfasts in bed. There was no sound from the porters' tent and we wondered if they were ill again. It transpired that some of them had headaches, so we gave them some pills and they were soon ready to start. Otto and Madi joined us just before we left and the former decided to have a short rest before following us, but Madi came straight on. We took with us one tent, a load of stores and fuel, and two sleeping-bags.

I led the way up to the Rakhiot face, sweeping the loose snow out of the previous day's steps and generally improving the track. Unfortunately I was not feeling too good; I had evidently taken too much out of myself the previous day and therefore decided to take it easy with a view to the morrow. I was astounded that the porters crossed the slope so easily and quickly; they seemed to have lost

their fear of heights. At the beginning of the traverse they waited quietly while I checked the ropes and then followed, with the exception of Madi, who had no crampons and passed his load to Frauenberger. We reached the Moor's head over a slope of deep snow and decided to have a long rest. We wanted to take them as high as possible up the ridge, but they would only go as far as the first difficulty (*sic*). So, as it was late, we had to send them back to Walter and Hans at the Moor's Head. Otto and I put up our tent (6,900 metres). From there the ridge ran straight up to the Silver Saddle which shone bright in the evening light. Far beyond and above is the main summit of Nanga Parbat, the south face of which drops down perpendicularly to the Rupal valley; a formidable mountain height which brought home to us the size of our task—1,200 m. (say 4,000 feet), in addition to the tremendous lateral distance to be covered, makes more than one day's work. Night fell while we were still making our preparations for the morning. The wind rose and about 10 o'clock began to shake the tent terribly. I feared lest the cornice, which was giving us some measure of protection, might crumble and fall. About midnight I took advantage of a slight lull to reinforce the tent supports with our ski-sticks and ice-axes, and at last got a bit of rest. Sleep, however, would not come and I was relieved to get ready, for mentally I was already on my way to the summit.

3rd July

Otto was buried deep down in his sleeping-bag and did not stir in spite of the disturbance I made getting up, dressing, and making tea. Our departure was timed for 2 o'clock and several times I shook Otto, who said sleepily that I had told him the previous evening 3 o'clock. I explained that every minute counted and that with him or without him I was going to leave at 2 o'clock. Just as I was packing my rucksack for a solitary trip I saw him working his way out of his cocoon and he told me that if I would go on and start making the track he would join me presently. I accordingly split the provisions, giving him among other things the fats, which I was to regret bitterly.

At 2.30, when I left, it was bright moonlight, quiet but cold. To start with the crust broke under me, but as soon as I got onto the ridge I found that the wind had packed it hard, and with crampons on I could make better progress. The ridge rose in majestic steps, crowned with cornices; to the right it fell in a giant cascade of ice to the plateau on which stood Camp II. To my left dark shadows limited my view and then I looked into a bottomless void. Sharp ridges of snow and cornices alternated with traverses along the face

of the ridge. A bitter south wind was trying to blow me over to the Rakhiot face. When I got to the point where I began to cross towards the Silver Saddle I allowed myself a rest. It was 5 o'clock and the dawn was breaking over the Karakoram—a sea of pointed peaks rising from the shadows lit up by the rising sun. K2, Masherbrum, Rakaposhi, the Mustagh Tower, those mountains I only knew through books, lay before me, almost within reach.

A light mist drifted in the valleys, a sign of good weather. Warmed by the sun I ate my breakfast, hoping that Otto would be joining me, but when I saw no sign of him I started off on my traverse. Once again I had been deceived as to distance. The kidney-shaped rock of the Silberzacken would not come nearer and, in fact, it was two hours later when I passed it and set foot on the vast glacier which hangs below the secondary summit. The altimeter showed about 7,400 metres, but so far I was not suffering badly from effects of altitude, but I gave myself another rest. I had some 3 kilometres to go across the glacier, the surface of which had been ploughed by incessant storms into furrows over 3 feet deep. Progress was very slow as I had to climb along the icy ridges between the furrows. It was incredibly still and it began to get hotter. Rests became more frequent and it seemed to me that 7,500 metres would be the limit, beyond which each step would demand tremendous effort. As to my friend Otto; after some time I saw a black shadow at the beginning of the Silver Saddle, which waited, started off again and then rested without further movement. My stomach contracted at the thought of the contents of my rucksack; I was to have no more to eat than my dried fruit and nougat, for Otto had the butter and the meat.

It had become very airless and hot and my limbs were drained of sap. I had been going a long time: my plan to reach the summit by midday had gone by the board, for by that hour I had not even got to the lower summit. I must hurry to reach the rocks, where I could leave the scorching ice. My rucksack cut into my houlders and I was tormented by thirst to the point of having no saliva to swallow.

At last I reached the rocks and decided to lighten my burden as much as possible by leaving my rucksack, winding my anorak round me as a belt, and taking with me only my camera, a flask, some Pervitine, some Padutine (against frostbite), my ice-axe, and a ski-stick. I felt better now and my stops were less frequent as I cut across the false summit to the Diamir Gap. Again I had underestimated distance and wondered whether my strength would last. Would it not be better to climb the secondary summit so that, although it was not an eight thousander, at least a virgin peak would have been ascended. I was still debating this when I reached a small breach

between the lower summit and the Diamir Gap, from which over some broken rocks I could drop easily down to the Bazhin Gap. I hurried down and reached the gap at 3 p.m. Three hundred metres now separated me from the summit. What would three hundred metres be in the Alps? Here they seemed each like a mountain and I was far from feeling that I was nearing the end of my troubles. For I could see several tricky points ahead of me. The ridge leading to the shoulder was very narrow, crowned with cornices, and altogether very exposed. I hesitated about taking Pervitine; it was tempting but I knew its effects would only last for six hours, and where would I be in six hours' time? I started climbing but quickly realized that my strength was failing and decided to take the risk and swallow two tablets. It was not an easy climb; at times I was clambering over very smooth rock; at times over sun-softened slabs of snow. Progress was rather better on the south face where only a few metres below me there was a sheer drop of several thousands of metres. That south face of Nanga Parbat is a far more prodigious abyss than I had ever had below me. I finally came to a gendarme some 12 metres high, a veritable tower on the ridge. My only way was to traverse along the face, practically hanging by my arms, and then regain the ridge by a crack of which the beginning was overhanging. This drained my last drops of energy. Fortunately things went better when I reached the shoulder, for it was a snowfield, scattered with rocks and led to the foot of the summit itself. It was 6 o'clock. I was disillusioned to realize that on finally getting so close to the long-desired peak I experienced no exaltation. It seemed to me no more important than a small peak in my homeland. Was this the Nanga Parbat which had repulsed seven expeditions and cost so many human lives? I swallowed my last mouthful of tea and crossed to the north flank where a pile of large blocks should lead me to the top. Only 100 metres more! Each step was an undertaking and I abandoned my ski-stick and climbed up on all fours. On top of the rocks was a small snow-cone. It was the summit. I did not feel at all like a victor and just sighed with relief that my troubles were over for a while. I brought a small Tyrolese flag out of my pocket, took a photo, and then started in with a Pakistani flag. My eyes looked down to the Rupal valley and I marvelled at the immensity of the shadow cast by my mountain on the plain below. It was 7 o'clock and the sun suddenly disappeared below the horizon. It began to get very cold. Luckily, the rocks on the way down would retain some of the warmth of the day.

I hurried down the slope, jumping from block to block. I had intended to bivouac on the shoulder, but while there was light I went on down. I might even be able to reach the Bazhin Gap. The

ridge itself, just below the shoulder, was an unpleasant memory so I decided to traverse the Diamir face. I had left my ice-axe on the top, keeping only my ski-stick. I was in the middle of the traverse when suddenly the fastening of my right crampon broke and left me, like a stork, on one leg in the middle of the face. It was with difficulty that I regained the rocks and night had enveloped me during the incident. It was pitch dark, but a few yards away I was able to discern a large block. It shook a bit but would nevertheless do as a spot for a bivouac. I must say that after the dramatic changes of fortune during the day it did not seem at all extraordinary to me to contemplate a bivouac at 8,000 metres without a sleeping-bag or provisions. Indeed, I remember several nights spent at 20 degrees below zero in similar situations. Towards midnight the moon would rise and I would be able to continue the descent.

It was 9 p.m. and the last glimmers of light faded in the west. Fortunately the night was calm. I started to doze, shaken by shivering. Presently I swallowed two tablets of Padutine because my feet were beginning to go particularly dead. A good deal later the moon began to rise and at two o'clock was just a thin crescent which faintly illuminated the north face but did not reach me; my route for the descent remaining in deep shadow. I therefore had to wait for the day and the cold was wicked.

4th July

A thin band of colour shone on the horizon but the stars had not yet disappeared. It was 4 o'clock: my feet were dead, my shoes solid, completely frozen. I redoubled my caution as I began the descent, crampons on my feet, for the rocks were covered with verglas. I took off my gloves when it came to a delicate traverse and when I wanted to put them on again could not find them. Lost!?

During the whole day I had had the impression of an invisible companion behind me: several times I had turned round to talk to him, and now I wanted to ask him where my gloves were: but I was alone. I had now reached the snowy foot of the shoulder. Twice I slipped, recovered myself and had to wait awhile to get my breath back. At last I got to the Bazhin Gap. This time I wanted to pass through the Diamir Gap because the difference in level would be less by this route than on the way by which I had ascended. During the traverse my right crampon had come loose again. I had fixed it with sticking plaster and this had given way. I mended it again but the effort, in the middle of the traverse, exhausted me. At midday I reached the Diamir Gap. The sun was hot and I gave myself a few minutes rest in the most comfortable spot I could find. I was woken by thirst. I felt absolutely dried up. I imagined I heard

voices, those of my friends who were bringing me tea. I rose and started down again. Each step was by now a struggle and I kept asking myself how I had had the strength to reach the summit the previous day. I saw mirages; everywhere I could see traces of footsteps, even cairns, although I knew that no man had been on that glacier. Often I scanned the glacier and imagined Otto waiting for me with a flask of tea. In despair I tried to find my rucksack. It took time because the crack in which I had put it had filled with snow. There was no question of swallowing either the dried fruit or the nougat. My bleeding mouth only allowed me to swallow a little Dextrosport, mixed with snow. It tasted delicious at the time, but after a few minutes I was thirstier than ever. I gave myself a long rest and started down again—only to see two black spots on the Silver Saddle coming towards me. I heard someone call HERMANN! and my heart jumped for joy, but a few minutes later the dots had not really moved: they were small rocks. I was bitterly disappointed and quite overwhelmed. And as I descended I kept hearing my name called and was prey to all sorts of hallucinations. Where was Otto? I was indignant at not meeting him and utterly discouraged. My halts became more and more frequent and longer.

At the lowest spot on the plateau, before the climb up to the Silver Saddle I gave in. What did it matter? I swallowed three Pervitine tablets at one go, but knew they would only be of use if I had any reserves left. At 5.30 p.m. I reached the Silver Saddle. Camp IV, of which I could only see the small tent, seemed to be empty and it was only at the Moor's Head that I saw two men. I went forward with a stronger step. The others came to meet me and I cannot describe that meeting to you. They were absolutely dumbfounded, for they had given me up as dead, and here I was coming back from the top. They looked after me as best they could and we all three spent the night in the tent. Before leaving next morning they treated my right foot which was frostbitten. I looked back for the last time at those crests on which all our hopes had been built, and my emotions of the previous day coursed through my mind like an impossible dream which had only for an instant come true.

Translated by Barbara Tobin from Alpinisme *with the concurrence of the Club Alpin Français.*

THE SOUTH PERUVIAN ANDES

PIERO GHIGLIONE

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THE southern part of Peru is still today an immense field for the explorer and mountaineer, since a quantity of virgin summits is to be found there, many of them exceeding 6,000 m. (*c.* 20,000 feet) in height. The best existing geographical maps show the better known giants, but they lack every indication as to a great number of other summits. I had the opportunity to ascertain this on my first expedition to the region in 1950, and it was for this reason that I wanted to return to southern Peru in 1952. As a result of the exploration done during the earlier year, I was certain that entire chains do not figure in the geographical maps of the country, even the most modern ones.

In the course of the expedition in question, we climbed two hitherto unclimbed giants, Solimana and Aussangate, as well as a virgin summit in the Coropuna group and two equally virgin summits in the absolutely unknown region of the Cayangate chain and of the Cordillera which stretches quite close to the great plain of the Amazonas, in a region equally unknown and never before traversed by white men. In this way we had been able to take a great step forward in the exploration of these wonderful Peruvian mountains, but great strides must still be made if we wish to come near to defining the orographic system of this marvellous territory.

From the summits attained during my climbs of 1950, I had several times observed various unexplored giants. However, the opportunity to climb them only came to me two years later, when with the help of two good comrades it was possible for me to make up a new expedition. These comrades were a young Swedish climber and engineer, Anders Bolinder, and the Austrian climber Mathias Rebitsch. I had got to know them at the Himalayan meeting at Munich at the end of September 1951. The business soon developed by correspondence to the point of settling all the essential problems and, among others, the date of the expedition. It is well known that an alpine campaign (and consequently an Andean one) requires good weather above all; that is to say, sure weather, and for southern Peru that means the period from the end of April till the end of July. Atmospheric disturbances are possible even at that time, but in all such cases they are very short; on the other hand, this favourable period is sometimes prolonged throughout the month of August. It was therefore a question of setting out at the end of April

Indian Porters descending

Aussangate—West Peak, 20,500 ft.

or at mid-May at the very latest. Unfortunately, hindrances not only to my comrades, but also to myself, resulted in delaying the arrival of Rebitsch at Lima until 23rd June. As to Bolinder, held up in Sweden by a dock strike, he telegraphed that he would reach Lima some twelve days late.

The consequence was that one of the giants we had wanted to climb was, by the time we arrived in the Peruvian capital, already the object of attempts by other expeditions: this was Salcantay (20,552 feet) and its terminal dome was just being climbed by one of the expeditions, which in fact reached the summit on 26th June. Thus we were obliged to abandon that mountain, while undertaking instead the exploration of other summits which figured in our programme. Among these were Solimana (20,746 feet), which I had perceived on 27th July 1952 from the south-western summit of the Coropuna (21,697 feet), and whose geological structure still remains a mystery. Solimana, in fact, has not the normal aspect of a volcano, that is, a more or less conical form, but presents instead the outline of a jagged ridge with pyramids and gendarmes, which by all evidence does not enter into the conception of a mountain formation due to eruptive phenomena.

Our equipment had been entirely prepared in Europe. Rebitsch had been entrusted with the provision of clothing and footwear for the native porters whom we should have eventually to select on the spot; furthermore, he brought with him all the heavy material. He had therefore to come by sea. We had five tents with us (Moretti and Schuster), wadded sleeping-bags and thermic blankets, pneumatic mattresses, drums for water, crampons (Grivel and Mariner), manilla and nylon Füssen ropes, and long-lasting Zéta batteries. Bolinder, for his part, brought primus stoves from Sweden, for burning petrol, benzine, and solidified alcohol, as well as a quantity of vitaminized provisions and pharmaceutical goods. Rebitsch and Bolinder were provided with special lined footwear of Austrian type (Mariner); as for myself, I wore special ultra-light amphibious top-boots with soles of vulcanized rubber, which proved excellent in use.

Rebitsch embarked at Genoa on 28th May and arrived at Lima on 22nd June; I left Rome by air on 15th June, and arrived at Lima, by way of Lisbon–Ile du Sel–Paramaribo–Caracas–Bogotà–Quito, on 23rd June. I had the advantage, during this long air voyage, of passing quite close to, and even of flying over, some mountain giants of Colombia and Ecuador.

At Lima we had the assistance of the representatives of our respective countries. On the other hand, the Peruvian Government departments had already been informed concerning our expedition; thus H.E. the Minister of the Interior, Don Manuel Callager, had

announced our forthcoming arrival to the Prefects and Military Commanders of the two south Peruvian cities whence we should set out on our various expeditions, that is to say, Arequipa in the south-west and Cuzco in the south-east. The Italian Ambassador at Lima, Baron Enrico Bombieri, had assured us of all his support and so had the Director-General of the Peruvian railways, the engineer Romero Leith, the Director of the Geological Institute of Peru at Lima, Professor Jorge Broggi, and the Faucett Aviation Company. On 26th June Rebitsch and I left the island in a plane belonging to that company. Thanks to a fine clear morning, we were able to observe from close range the southern and western slopes of Solimana, and we drew from this the conclusion that it would be advisable to attempt the ascent of the mountain by the eastern slopes or, perhaps better still, from the north, where the snow-line would probably be higher. At Arequipa, at 7,500 feet, we met the geologist Alberto Parodi, a professor at the University there, with whom I had already been in correspondence from Europe. He willingly agreed to take part in the Solimana expedition, which rightly interested him because of its yet unknown geological structure.

The Prefect of Arequipa, Don Camino Brent, announced our arrival by telegraph to the Sub-Prefect of Chuquibamba, a chief town situated at 10,000 feet, from which we would have to set out to reach the foot of Solimana. The garrison commander of Arequipa, General Perez Godoy, put a sturdy soldier at our disposition, Victor Motta, aged 21. He was always punctual; nevertheless, on the very morning of departure he arrived late, so that it was by a miracle that the bus for Chuquibamba did not leave without him. This bus was known as 'the gondola', probably because of its undulating movements while on the move. Thus we left Arequipa on 1st July; along an appalling road, we crossed the Sihuas desert and climbed thereafter the splendid Majes Canyon, reaching our destination at the end of the afternoon after a journey of 160 miles.

We made a quite long stop at Chuquibamba for organizing the caravan. An icy gale raged for three days; nevertheless, Rebitsch and I succeeded in effecting a preliminary reconnaissance as far as the first plateau of the *pampa*, to about 13,000 feet, so as to get from there a view of Solimana and to leave a part of our material in a cabin which existed in that region. The bad weather unfortunately prevented any real reconnaissance. Returning to Chuquibamba, we engaged muleteers and their beasts, thanks to the help of the Sub-Prefect, Don Julio Revilla; we also completed our provisions. On 5th July we set out by car for Tambillo, the lonely cabin of which I have just spoken, the last place which the road reaches with difficulty at nearly 13,500 feet. The weather was splendid. Gradually we saw

Chachani outline itself against the sky, quite far off; nearer to us was Ampato, and finally, facing us, was the whole Coropuna massif, majestic and white with snow. On the other hand, Solimana could not be seen.

At Tambillo we found the muleteer, Manuel Montañez, who was waiting for us with four saddle-horses and three mules for the transport of the material. After loading the baggage, we left for the second plateau, situated at about 15,000 feet. We ascended this on horseback for hours in frost and wind, blinded by swirls of volcanic dust. Various passes were crossed during the approach, which led us across a series of high valleys, the country becoming increasingly desolate and cold. It was only at five in the afternoon, from a pass situated at 15,750 feet, that Solimana came before our eyes, still very distant, beyond an immense plateau which had the characteristics of a steppe. We were able to see its whole north-east face, precipitous and covered with snow. We would have to go farther north, whence perhaps it might be possible to find a more feasible route to our goal. We descended for about an hour and towards twilight we camped in a small valley at about 15,400 feet, where the little torrent was already frozen. Luckily we had cans with us which had already been filled with water. During the night the thermometer fell to 31° (F.) below freezing-point.

For two more days we continued the crossing of the high *pampa* plateau, camping for a second time at 14,450 feet and for a third time at 15,600 feet, at the foot of the north-east wall. During the last afternoon I made a further reconnaissance and the following day we went up all together for a second reconnaissance to above 18,000 feet, climbing, with crampons on our feet, very steep slopes of snow and an ice-ridge. Solimana was right in front of us, but we established that we would have to carry the camp into another valley farther north, since the mountain was easier to attack from this latter side. This we did the following day, after having succeeded in taking our beasts up to 17,250 feet, despite the opposition of the *arriero*, the chief muleteer. Up there, in the midst of sand and scree of clearly volcanic origin, we pitched our fourth and last camp.

The following morning, 10th July, we left our camp at an early hour, climbing not without effort, having regard to the altitude—and even more because this was the beginning of our expedition—the slopes of scree above the camp, and then slopes of snow. After crossing the first glacier, which was covered with pyramids of pinnacle ice, we were involved in a long ice-ridge which took us to a height of about 18,400 feet immediately below the very steep final face of Solimana. We were on a small plateau. After taking some nourishment we took a direct line up the face which rose above us

for about 2,300 feet, at an angle in places of as much as 50 degrees. This face, which was partly of ice and partly snow, presented its greatest difficulties in its latter part, very steep and all of smooth ice; it was there, too, that we were at grips with a violent wind, which was the more difficult because we were now in shadow. At last, at half-past three, after having accomplished some acrobatic climbing, and having surmounted the only rock buttress (andesite) in the whole face, we emerged upon the north summit, that is to say the final spur, which was so thin that we had to move along it astride. The altimeter recorded 20,588 feet, and the thermometer 21·6° below freezing.

Besides its northern summit, Solimana comprises a central point of the same height and a lower southern point with the shape of a parallelepiped and by all appearances quite difficult to climb. Before us, beyond the high *pampa* plateau, rose all the silvery domes of Coropuna. The descent was quite long; we reached camp shortly after twilight. This was the first ascent of Solimana's northern summit.

The following day we crossed the high plateau, passing right through its centre. Thereafter we descended to the river Armas, which flows deeply sunk in a *quebrada*. To cross this wide and impetuous watercourse proved dangerous. With our mounts we climbed the very steep farther bank, reaching the high steppe plateau once more, traversing it in a long ride until it was dark, to the moment when we had to pitch another camp at 14,750 feet.

On the morrow, while Professor Parodi went back towards Chuquibamba, having business to deal with in Arequipa, Rebitsch and I, with the soldier Motta and the *arriero* Manuel Montañez, ascended the vast north-western slopes of Coropuna with the object of reaching the foot of the giant mountain and trying the following day to climb its north-western summit, which seemed to us the most central and likely to give us a complete view of the interior of the former crater of Coropuna, of which there only remains today six ice-covered domes and one rock point.

After further numerous entreaties from the muleteer (who, however, was able to run with greater agility than a goat over slopes upwards of 16,000 feet) we arrived with our mounts—one can, in fact, have complete confidence in these little Peruvian horses—at an altitude of 17,700 feet. It was there, quite close to a sort of barrier of great volcanic rocks, that we pitched our camp. The wind was extremely violent and terribly icy in addition. In the night the temperature fell to 40° below freezing.

The next morning we left camp at dawn, despite the very intense cold. Together with the soldier Motta, after surmounting scree and

blocks of volcanic rock, we soon reached the north-western glacier of Coropuna. Pyramids of pinnacle ice, followed by a series of large crevasses, some of them invisible and all of them insidious, as well as a deep bed of snow in which we sometimes plunged to our knees, forced us to ease the pace of our march. The glacier, in fact, turned out to be immense, contrary to what we had reckoned at first contact, misled by the clarity of the atmosphere. Rebitsch took extreme care, but that did not prevent him from twice falling into fissures in the ice; fortunately, it was possible each time to hold him up, thanks to the rope. At half-past three we had already reached a height of 19,700 feet; nevertheless we were only half-way through the glacier. Having regard to the late hour—at this altitude the sun sets at six and darkness falls immediately afterwards—we were obliged to regain our tents.

We took a day's rest at the camp: Rebitsch made use of it by instructing the *arriero* in the use of climbing material, since on the next day he too would come with us. A violent wind obliged us to retire into the tents early; before the sun set, benefitting by the most limpid atmosphere on earth, we were able to admire the imposing outline of Sara-Sara, which rises about 20 miles to the west of Solimana and which, we were told, is still virgin: among the former volcanoes of this region, this is the nearest to the Pacific, having an altitude of about 20,000 feet.

On the morning of 15th July, we set out at first light. Thanks to our tracks we succeeded in reaching the limit of the earlier attempt in scarcely three hours. But the altitude, the increasing steepness of the slope, as well as some formidable crevasses, made us lose still further time. Meanwhile, the atmospheric conditions were no longer as favourable as they were; there was a very violent wind that soon became a real hurricane; furthermore, very deep snow, as instable as sand, presented an obstacle to rapid progress. Thus it was only at half-past two that we succeeded in reaching our goal, half-blinded. The altimeter recorded 21,425 feet, and the thermometer, which we could read only with difficulty, recorded 40° of frost. We got back to camp late in the afternoon.

Despite their rounded structure, shaped like calottes, these summits of Coropuna require considerable effort on the part of the climber, either because of the fact that clouds gather very often around the culminating points, or because of the extreme cold, or the extent of the glaciers which are crevassed in a way without comparison with those of the Alps, or finally because of the bed of powder-snow.

On the next day we started along the road back to Chuquibamba. In order to accomplish this as quickly as possible, the *arriero* wished

to traverse some steep and snow-filled *quebradas*: there our mounts, which until then had performed miracles, encountered excessive obstacles. Some of them rolled to the bottom of the slopes with their loads, but thanks to the bed of snow there was no damage. Once the high plateau of the *pampa* was reached, we began a mad ride across the little sandy dales, dotted with a few shrubs, until we reached Tambillo, just in time to load all our material on to the providential bus which connects this remote place with Chuquibamba.

At Chuquibamba we met Bolinder and his young wife. We returned with them to Arequipa. From there our expedition transferred itself to Cuzco by *ferrocarillo*—that is to say, by railway—a journey of two days. There, at 11,000 feet, we at once began our preparations for our new exploration, the object of which was Aussangate. The Prefect of Cuzco, Don Alhardo Lanfranco, as well as General Enrique Indacochea, gave us very valuable help. Thanks to the general's intervention it was possible to attach a Peruvian N.C.O. to our expedition: Corporal Luis Rojas, a real giant. He revealed himself a clever and useful assistant, as well as a very strong walker; further, he was of great use to us as an interpreter, since he spoke the *Quechua* tongue.

On 25th July we left the former Inca capital in a car belonging to the Hacienda Lauramarca, placed at our disposal by Don Carlos Lomellini. To reach the hacienda (a word which means 'farm'), situated 13,300 feet up on the great plateau between the Caravaya and the Vilcanota Cordilleras, we had to go first of all to the little town of Ocongate at 11,200 feet, about 60 miles from Cuzco. At Ocongate we were met by the *Gobernador* and the bailiff of the Hacienda Lauramarca, Ermenegildo Cerillo, who had already brought together the natives and the horses necessary for our expedition. After loading part of our material (about 700 kg.) we reached the farm on the evening of the same day. It is situated in the heart of the plateau of which I have just spoken, in such a way that one can enjoy a magnificent view upon the imposing massifs of Aussangate, which form the dominating group, of Cayangate and of Coyllorite.

On arrival we were preoccupied at once with completing our preparations. Above all we carried out some reconnaissances of the north and east sides of Aussangate. The first of these reconnaissances, made by myself and Corporal Rojas, led me to the conclusion (which I had already reached two years earlier, on the occasion of my first expedition with M. Girando) that any possibility of making an attempt on the northern side—the side facing Lauramarca—must be ruled out: it is, in fact, a precipitous face, down which avalanches of stones and ice fall continually. The second reconnaissance, which

I made with Rebitsch and Corporal Rojas, lasted three days, while Bolinder remained at the hacienda to put our baggage in order, and especially our provisions. On the first day, by a six hours' ride, we moved round to the eastern side of Aussangate; during the second day we crossed the glacier which lay between our camp and the east face of Aussangate, and afterwards climbed a short way along the same wall, until eventually we decided to abandon any attack from that side, in view of the fact that the approach march would be too arduous for heavily laden porters and entailed some serious dangers from falling stones and avalanches of ice. On the third day we came back to the hacienda.

A whole day was employed thereafter in equipping some native porters in mountaineering style and in teaching them to use the ropes and crampons. This provided more than one amusing episode. On 1st August we finally took our departure with eight natives and sixteen animals, climbing arduously up a series of long and difficult valleys, with a view to turning Aussangate on the west and getting around to the south side, the only one possible henceforward, although it was filled with extremely crevassed glaciers. After a ride lasting two days, during which we crossed two passes of over 16,000 feet, we camped at the south foot of Aussangate, close to an opal-coloured lake. The whole southern side was examined carefully, after which we decided to take the camp up as high as possible under the south-eastern glacier, since this giant's highest summit rose from the eastern extremity.

Formidable cataracts of ice defended access to it, and it was a question of attempting—or forcing—the passage which I had found closed in 1950, during my first expedition. This time the season was farther advanced than on the first occasion, since we were already in the month of August. After much solicitation of the muleteers, together with offers of *propina*—that is to say, tips—I succeeded in reaching 16,700 feet with our horses, right to the lower edge of the fall of séracs. Our camp was pitched quite close to a little glacier lake. We built up small walls for the kitchens and shelters for the natives, Bolinder having brought several large pieces of canvas in the baggage.

For several days we endeavoured to make tracks across the séracs, with the object of getting above them. The snow was often knee-deep, the labyrinth of crevasses impossible to describe, while the séracs which threatened to fall on us from above were innumerable. There were also numerous snowfalls, the weather in southern Peru not being very favourable in 1952. Every evening we returned to camp after hours of work, sometimes in fog and finding difficulty in following the pennons with which we marked our route. It was often

necessary to have recourse to manœuvres with the rope. Rebitsch climbed up over vertical walls of séracs, previously pitonned; he performed every possible kind of acrobatics from the splits to descents *en rappel*. We tried various routes, but everything proved of no avail and we had to beat a retreat.

After a further examination of the immense south face, which we made from the peaks facing Aussangate, we decided to transfer the base camp nearer to the centre of the giant and attempt a route rising vertically above the new camp, which was pitched at 15,900 feet. So as to make the march of the laden natives secure, we had to fix ropes both to the polished rocks below the lower fall of séracs and to the first part of the passage across the séracs. The natives behaved manfully, both in crossing these first obstacles and in ascending the upper fall of séracs, which was steep and exposed.

We finally succeeded in pitching a tent at 18,000 feet, on a small plateau, right in the middle of crevasses and séracs. But that was the safest point in this immense labyrinth. The natives went down again with Bolinder, while Rebitsch and I spent the night up there. The next day, with the greatest difficulty, in snow which reached above our knees, we traced a route towards the final ridge of Aussangate. The following day we were rejoined by Bolinder and by the porters with further loads. On the third day, having improved our track, it was possible for us to ascend all together and pitch a high camp of two tents at 19,850 feet, just below the ridge, access to the latter being barred by tremendous crevasses. We knew then that the Indios would not be able to go any farther, because of the complicated nature of the upper region. But Corporal Rojas, on a single occasion, carried that far a load of 50 kg. (*c.* 1 cwt.). During the night the thermometer fell to 43° below freezing.

The next day, 15th August, leaving shortly after dawn, we opened up a route across the extraordinary maze of crevasses by going down into and climbing out of the chasms. The track, made through deep snow and up very steep slopes, was taken as far as the final ridge. This being reached at last, we began its traverse, which lasted two days. This interminable shoulder stretches from west to east for about 2 miles, part of it being thin and exposed, with cornices which, being sometimes of ice and sometimes of deep snow, entailed numerous dangers.

So, at the end of the afternoon of the first day, having overcome innumerable obstacles, including two ice-walls at an angle of about 50 degrees, we arrived below the central summit, that is to say, about half-way along the ridge. At this point, two enormous crevasses, at right angles with one another, seemed finally to bar our way. Earlier, we had already been forced to find alternative

routes on either side of the ridge, cutting trenches through the overhanging humps of snow. But here there was no choice, if we were not to go back. Doubly secured from above, Rebitsch began the passage of the vertical crevasse on top of an absolutely precarious snow-bridge, then ascended the opposite lip of the crevasse and reached the central summit at 20,834 feet. It should be noted that below the vertical crevasse just mentioned there was a precipice of 5,000 feet and that the final wall before reaching the highest point of the medial ridge was almost perpendicular. After reaching the central summit, Rebitsch wished to discover if it were possible to proceed beyond it towards the eastern summits, and this, in fact, did seem so to him. He then descended and all together we started the return—since it was hardly possible to remain up there—to the upper camp at 19,850 feet. It was late in the evening, darkness having already fallen, when we reached the tents.

The following day, thanks to the fact that the previous day's tracks had become firmer, we made the same passage in about three hours and continued across new obstacles and dangerous cornices. The farther we moved away from our last camp, the less did the weather inspire our confidence. Fresh difficulties arose when crossing some crevasses which opened up on the very ridge, as well as some rock spurs. At a quarter past two, when a few snowflakes began to fall, we at last reached one of the three main eastern summits: the altimeter, duly rectified, recorded 21,326 feet, and the thermometer 25° F. below freezing. This immense ridge had been vanquished and the mystery which until then had surrounded the possibility of traversing it could be regarded as solved, since the most difficult of the summits had been conquered. After photographing the flags of Italy, Sweden, and Austria floating from our ice-axes, we began the return journey in the midst of a tempest. Luckily its violence was about to slacken and this saved us.

At half-past six, when the last ray of light was about to fade, we arrived at the last slope, just above our tents, at 20,000 feet. The morning after, while I remained in wait for the porters who were to ascend to the camp and pick up the material, Rebitsch and Bolinder went up onto the ridge again to take some photos; they took advantage of the fact that the porters had not arrived by climbing another neighbouring summit, the north-west point of Aussangate, a thin vertical needle, completely ice-covered, reaching to 20,500 feet, which had always seemed to us from below as something belonging to the ether. At ten o'clock they had returned to the tents. In the afternoon the tempest arose once more; however, in the evening the sky became clear.

I then decided to take my revenge. Having left the camp very

early, I was able to climb that attractive needle in my turn: on that morning I went almost as far as the ridge, being conditioned to the altitude after so long a stay up there. On my return to camp at about 8.45 the Indios at last arrived, so that we were able to take down the tents and descend to the base camp without stopping. On the morrow we left the base camp in order to return to Lauramarca; on this same day there was an eclipse of the sun, a great cold developed, and in the afternoon a storm broke out which was to last for four days.

During the reconnaissance of Aussangate at the beginning of August, we had observed on the nearby chain of mountains to the east—that is to say, in the direction of the Cayangate, which is quite unknown—a series of ice-covered giants of formidable aspect. We therefore decided to explore it, once Aussangate had been climbed. After a few days given over to new preparations, we left Lauramarca on 25th August with a train of Indios and horses. Having crossed some high passes of about 16,500 feet, where we were surprised by snowfalls (one of which rendered the descent into the next valley very dangerous because of the steepness of the slope) we entered the heart of the unknown massif, taking the direction, to begin with, of the summits of Cayangate, the most important group.

As it was given to us to establish later, Cayangate itself constitutes a considerable mountain group with various summits, three of them absolutely precipitous and all of them difficult of access, either by reason of the crevassed glaciers, full of séracs, or of the vertical ice-covered walls. We camped in the bottoms of narrow, snow-filled valleys, afterwards crossing further passes, until we arrived facing the grandiose northern wall of Cayangate. In view of the insurmountable character of such a rampart, we were forced to turn it in the hope of finding a weak point in its last bastion to the north-east. We gave the name Cayangate III to this latter summit.

It was necessary to cross moraines with a surface of ice, where our little horses, nevertheless, performed miracles. On the fourth day, 29th August, leaving our 15,400-foot camp at dawn with one native porter we ascended a glacier scattered with ice-pinnacles and were forced to turn Cayangate III on the north-east with the object of seeing if there was a possibility of climbing it on that side. Thus we arrived at a pass which opened on to this north-eastern side at a height of 16,400 feet; from that point we had before our eyes another fantastic chain of ice-covered peaks, one of which, the most imposing of all, was called Colchecruz by the natives, or 'Silver Cross'. Without further ado we decided to explore that chain during the ensuing days. Meanwhile, having pursued our way across steep slopes and along a ridge of ice, in the afternoon, despite the usual storm and after performing some climbing acrobatics across a rock wall, we

arrived below the final pitch of Cayangate III which, from this side too, seemed to us inaccessible. The summit being conquered that day, we named it 'Verena' after Bolinder's wife, who had always helped us in our various camps.

The next day, after crossing another series of passes of 16,000 feet, we came into the Colchecruz valley, where we were able to admire some glacier lakes, one of them coloured like mother-of-pearl. We camped that evening in the middle of the valley, ascending it the following day. At one point the valley divided into two: we pursued our way, ascending the right-hand branch for an entire day, securing a view upon superb summits and reaching, after having crossed a glacier that was over 7 miles long, the highest pass in the region at 18,000 feet. Apart from the purely geographical success, from there also we were obliged to declare that the eastern ridge of Cayangate III was inaccessible.

We had thus already come to 1st September. On that day we ascended the western glacier to 16,570 feet. The result of our exploration was that throughout this valley the surrounding summits proved more or less inaccessible because of the extent and the crevassed nature of the glaciers, as well as the jagged ridges, all covered with ice, on all the slopes, barring access to the summits. All these valleys were deserted. However, on the last day an Indios, describing himself as chief of the little community living in a neighbouring valley close to the great Amazonas plain, came to our camp. He told us that the lovely lake of mother-of-pearl was known as Ereratinte and that the valley with two branches was called Moyacocha. He offered to guide us to his valley the next day; its name was Yanacancha. So we arrived, after a long and arduous ride, on the other side of Colchecruz, which from this side too seemed to us very difficult of access. Would this imposing giant now become the object of further expeditions?

In the evening we camped in front of the cabin of our friend, the Indios chief. Towards the end of the afternoon his wife came back from the pasture bringing a large herd of alpacas. The hut was situated at about 15,750 feet, just below the last pass (about 16,400 feet) we had crossed. After the usual evening storm we saw on the horizon another valley stretching to the south of the Amazonas plain, with a countless series of glacial peaks rising from both sides. We decided that the next day, 3rd September, we would climb the summit which was closest to the plain in order to secure the best view of that immense basin and to see if there were other chains beyond.

After a few hours on horseback, we ascended a crevassed glacier which presented some strange formations in festoons and stalactites of ice. Following a long ridge thereafter, we arrived in the midst of

hail upon the chosen summit, which reached to 18,000 feet. To achieve some success in photographing at any cost the fantastic world which surrounded us, we stayed for three hours on the summit. During various clearances, it was possible for us to verify the marvellous character of this exceptional viewpoint and the assembly of tremendous summits rising up on all sides except to the north-east. We had thus come in close proximity to the great Amazonas basin, the north-eastern side being the only one where there were no mountains.

On 5th September, late in the evening, we were back at Lauramarca and, on the following day, at Cuzco. Our expedition then broke up. For my own part I was still able to spend some ten days in making a few further explorations in this very interesting country. With the Swiss climber Felix Marx, conqueror of the first summit of Salcantay (a summit which is about 300 feet below the highest point), I made a few trips into the Yucai and Veronica Cordilleras, north-west of Cuzco, which are also unexplored. There are ice-covered summits in these massifs which reach to about 20,000 feet. In the two massifs in question, the bad weather prevented us from pushing on beyond 16,400 feet, but we were able to reconnoitre some great glaciers and some ice-covered walls, studying meantime the best route for future explorations. Interesting material was also collected concerning the flora of the Veronica massif.

In southern Peru entire valleys, with immense glacial stretches, still remain to be explored, while all their summits are yet unclimbed. The geological structure is a little different from one Cordillera to another, but the basis is always volcanic, with varying infiltrations, belonging for the most part to the crystalline. On Solimana I found quarzites with olivine; on Coropuna, limonite with iron silicates; on Aussangate, crystalline quartz and other species with an absorption of hematite. On Cayangate I was able to collect specimens of rhyolitic rocks with inclusions of quartz; on Yucai, rhyolitic volcanic rocks and olivine silica, as well as silicates with felspar; on Veronica, finally, quarzites with hematite and iron idrosside.

The snow-line also varies from one Cordillera to another; in general it lies at about 16,700 feet on the north-facing slopes, while on the south it descends to 15,700 feet. The flora in the south-east of the country, at about 13,000 feet, consists only of a few thickset grasses. In the Veronica massif there exists, at an altitude of about 10,000 feet, a typically equatorial forest in full development with giant heaths, lianas, and multicoloured epiphytal garlands hanging from the trees, like those I have seen in the jungles of Ruwenzori. This is due to the special conditions of the soil and sub-soil, which are different from those existing in the other Cordilleras of southern

Peru, especially the arid and desert western sector. The proximity of the Amazon regionas also has its influence.

The fauna is restricted to a few cameline kinds, of the lama and alpaca species; on the other hand, very rare is the vicuna; gardunas are found (beech-martin species), pumas, foxes, rabbits, condors; finally, there are the usual domestic animals, among them the innumerable quantities of dogs, small but vicious.

AN ATTEMPT ON PUMORI

NAVNIT PAREKH

In the spring of 1953 my friends and I assembled in Bombay to discuss plans for our next bid in the mountains. By this time it had become almost customary with me to visit the Himalaya once a year. My visits, however, did not mean just 'Expeditions' as such or climbing to 'conquer' a peak. I have always looked with profound reverence at the Himalaya, not merely as the highest mountain range on our planet, but rather as the traditional seat of Indian sages for self-contemplation and as the fountain-head of Indian civilization and culture. My visits to the Himalaya, therefore, have always been pilgrimages to me.

The colossal ranges of Himalaya offered us endless choice. My friends and I had been to several parts of the Himalayas before, but none had ever been to Nepal. Earlier, we had gone through Mr. Shipton's book on Everest's reconnaissance with great interest and were fascinated by the lovely photographs of the Everest massif they could take from the shoulder of Pumori.

Though Pumori had not been reconnoitered before, we thought that a possible route leading to its summit (23,190 feet) could be found out once we were on the spot. Our decision to make an attempt on Pumori was, therefore, unanimous. We had the solace that in the event of our failure to get to the summit, we would at least be compensated to a small extent by the magnificent views of the Everest group and of many a peak in the Khumbu region. In the Sherpa dialect 'Pumori' or rather 'Pumari' means an unmarried daughter. Mallory, the ill-fated Everest climber, called this mountain Pumori to remind him of his beloved daughter. There had never been any serious attempt to climb Pumori before and we could not, consequently, draw upon the experience of any predecessors. Our Expedition, therefore, had to deal with the dual task of reconnoitring and climbing.

We had selected autumn for our attempt on Pumori and had, therefore, a long time before us for our preparations. However, we ultimately discovered that it was not adequate to complete all the preliminaries of the Expedition. To secure, in India, proper and sufficient equipment for our climb was the greatest hurdle. We could borrow some equipment from the Himalayan Club at Bombay and at Calcutta and when we left for Nepal we had an idea of getting some more from the Sherpas at Namche Bazar. Our permit from the Nepal Government to go to Pumori also arrived only a couple of

days prior to our departure and only after a series of letters and telegrams were exchanged.

Our party originally consisted of three friends besides me. Jayawant Gaitonde, who had made an attempt on Panch-Chuli the previous year, was the eldest amongst us. Rusi Ghandhy with wide trekking experience of various parts of the Himalayas and P. V. Patankar were the other two. Later on, Rusi's brother Homi Ghandhy as well as my devoted cook Gebilal also joined our team.

Before we left Bombay, I had heard from Mr. Shipton as well as from Sherpa Tensing. Both were very kind in forwarding me their valuable suggestions concerning our proposed attempt. We also learnt more about the route along the Khumbu glacier from Mr. W. H. Murray who happened to pass through Bombay on his return from western Nepal only a few days before our departure.

It became apparent from the information gathered that any attempt on Pumori from the south was very likely to meet with failure. The ascent on Pumori from the Khumbu side would be extremely steep and even risky. Our optimism, therefore, was greatly subdued by stark realism. We hoped, however, that our attempt would, at least, reveal any possible approach to the summit from the south and would be helpful for any future attempt.

To save time, Patankar and I flew to Kathmandu from Patna, while others took the land route via Raxaul to bring the heavy equipment and supplies on laden porters. The motor road to Kathmandu had not been completed then. At the Nepalese capital, however, we received a very hearty welcome and co-operation from everyone we had to deal with—from the Chief of Protocol, Shri Prakat Mansingh, to Prime Minister Koirala. Our genial Ambassador, Shri B. K. Gokhale, and others of the Indian Embassy made us feel quite at home in Kathmandu. The Nepal Government kindly made their guest-house available to us for our stay.

We were lucky in securing twenty-three sturdy porters who had already been with the British Everest Expedition up to Namche Bazar, and we had to spend two days in rearranging our packages to form 60-lb. loads. We also found time to do a little sight-seeing in and around Kathmandu.

Most roads in this valley are primitive and the only convenient transport is the 'jeep'. We hurriedly went round the valley and visited all the well-known shrines—both Hindu and Buddhist—palaces, museums, and the bazaars. The most striking of which were the Pashupati Nath, Bodh Nath, Swayambhoo Nath, and the Singh-Darabar. But Kathmandu was not our destination and so we left the valley on 22nd September for Sola-Khumbu. Our first objective was

Namche Bazar, the principal village of that district and the home of the famous Sherpas.

Our departure from Kathmandu was carefully synchronized with the end of the monsoon and we, therefore, escaped the heavy showers which otherwise would have made our going extremely irksome. In the early hours of the first day we covered about 16 miles by 'jeep' to arrive at Banepa to catch up our porters who had started a day earlier. The same day we marched over 12 miles farther to reach Dolalghat at the confluences of three rivers—the Cha-Khola, Indravati, and the Sun-Kosi.

It was already nightfall by the time we crossed the suspension bridge of the village and climbed to a primitive rest-house on a hillock. But the full moon soon come out from behind the eastern ranges and brought to light a rather unearthly view of the sandy river-beds on both the sides.

From Chaubas, which we reached after a stiff climb of 5,000 feet on the second day, we had our first glimpse of the snow-clad sky-scrapers. Our path to Namche Bazar lay through forests of pines and firs alternating with thickets of rhododendrons and birch-trees growing at altitudes as high as 12,000 feet. The rhododendrons were covered with bearded moss all over the branches while at still higher altitudes a variety of stunted junipers flourished side by side with primula.

The agriculture varied with the altitude and climate of the regions we traversed. In the lower valleys they mostly grew paddy in summer and wheat in winter, while on higher elevations they cultivated potatoes, barley, maize, and buck-wheat. Like the Tibetans, the northern Nepalese prepare *sattu* or '*tsamba*', which is baked flour of barley or wheat. They also brew two varieties of liquor—the crude *chhang* and the refined *raksi*—out of barley or wheat or even maize.

On arriving at Junbesi on the tenth day, we found that we had entered the Sherpa district. In the monastery of Sange Lama where we had lodged for the night, we saw an enormous image of Buddha made of clay and painted gold. There were also complete volumes of Tibetan 'Kanjur' and 'Tanjur' in the Gompa. On the twelfth day we crossed the Karyolung pass with great hardship. The last leg of our trek to Namche lay along the bank of the Dudh-Kosi, which drains from the environments of Everest. 'Kosi' in these mountains means a river while 'khola' denotes a rivulet or a stream.

Our first glimpse of Mount Everest was both a delight and a thrill. We had been, in fact, looking out for it ever since we left Kathmandu, but it had managed successfully to keep its tall head hidden behind a veil of clouds all the while. It was not, thus, till the day we reached Namche, that we had this unforgettable sight just before we arrived

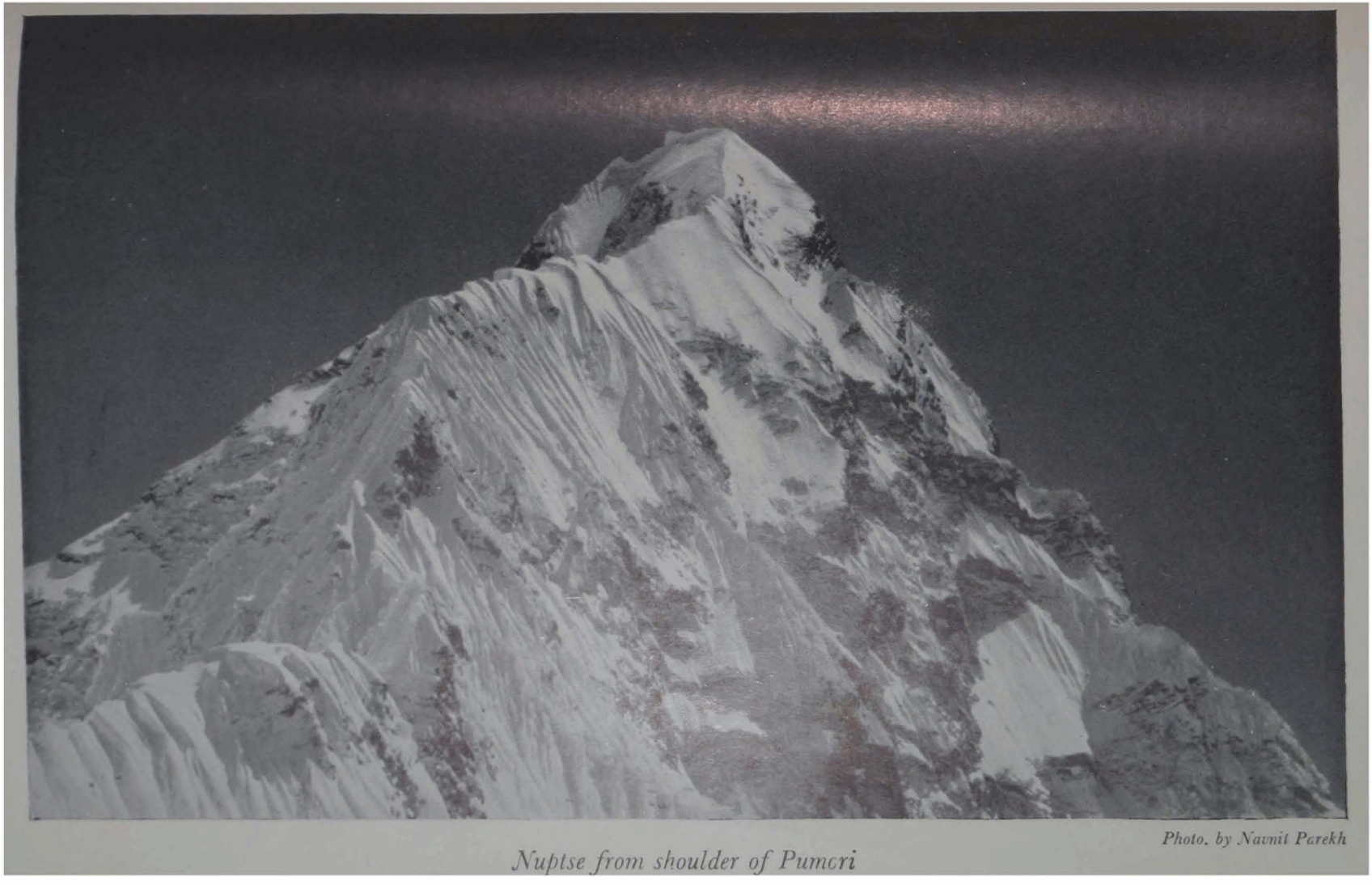

Photo. by Navnit Parekh

Nuptse from shoulder of Pumori

at the village. The summit of Everest was peeping out from behind the lofty Lhotse-Nuptse wall, and even from this distance, the long plume of snow-dust was clearly visible. Our heads bowed to Chhomolungma—the Goddess Mother—in silent reverence.

Namche Bazar is a snug little village of about eighty houses rising in tiers in a horse-shoe form at over 11,000 feet. On arrival there we received an enthusiastic welcome from the inhabitants, the Sherpas having slant mongol eyes, prominent cheek-bones, and a cheerful smile. We were made guests of Sherpa Gyaljen who was later to be the head of our Sherpa team. During the couple of days I spent at Namche Bazar, I had ample opportunities to study the peculiar customs and the costumes, the religion and rituals of the Sherpa community. As guests in a Sherpa home we could study their life at first hand.

The Sherpa house, built of stone and wood, usually has an upper story. The ground floor is divided into a store-room where are piled bags of sattu, wool, and other necessaries, and a stable for the cattle. In the darkness we had to fumble over yak-dung and hay to reach the wooden stairway at the end of the dingy stable. The two living-rooms were on the upper floor. In one corner of the main hall was the fireplace where water for tea was always boiling. There were long wooden seats with cushions on them and low tea-tables in front. There was a remarkable number of copper and brass utensils of various shapes and sizes.

In Gebilal we had an excellent cook and commissary. However, our hostess, the wife of Gyaljen, often offered us a variety of Sherpa dishes. Being a strict vegetarian, I could avail of only a very tasty loaf made of boiled potatoes while my companions relished *thukpa* and other delicacies. In no time, we had become very friendly with the check-post officers at Namche. At my earnest request, they arranged a special dance of the Sherpa women on a hill-top near the village. Though their movements were rather slow, it was very fascinating to watch them, clothed in their colourful attires and with their numerous ornaments while the Everest massif glowed in the background.

A steady descent and a steep climb on the right and left banks of the Imja-Khola brought us to Thyangboche, about 6 miles from Namche Bazar. Here stands a famous monastery on the knoll of a short spur amidst idyllic surroundings. The hill was covered with an amazing variety of luxurious vegetation, blazing with autumn colours, while towering peaks all round held the deep blue firmament high up like a canopy. Crimson-robed Lamas, rosary in hand, frequented the courtyard of the monastery while musk-deer and partridges occupied the surrounding woods.

From Thyangboche we had a clear view of Kangtega (22,180 feet), Ama Dablam (22,300 feet), Khumbila (19,200 feet), Taweche (21,390 feet), Thamserku (22,000 feet) and, of course, of the giant Everest massif. Ama Dablam is evidently an inaccessible peak and we saw its different faces and shapes as we advanced towards Pumori during the following days. The pointed peak of Khumbila was almost completely free from snow, and being so close to Namche Bazar, it is regarded as very sacred by all the Sherpas. The very sociable lamas of Thyangboche were obliging enough to dress up in their ceremonial robes and pose for photographs with enormous trumpets glued to their lips. A junior lama, wearing a striped yellow robe, performed a ritual dance for us and I returned their courtesies by performing a special 'Pooja' in the monastery the next morning.

At Pangboche we came across Dr. Charles Evans, one of the first two men to reach the south summit of Everest, who had been exploring the region for the last few months. We were told by the local Sherpas that the scalp of a *yeti* (Snowman) was preserved by the Lama of Pangboche monastery. Greatly interested in the story, we hurried to the Gompa where they took out an old piece of brown, thick skin. It had a conical shape and much of its hair had already fallen off. The lamas had, apparently, been wearing it as a headgear for ceremonial occasions. My bid to buy up the 'scalp', for a scrutiny by experts, bore no fruit and we had to console ourselves by taking pictures of the piece.

The same evening we reached Pheriche, consisting of a few scattered stone-huts, then deserted. Here the Chola-khola flows through a wide marshy valley full of stunted junipers and birds of the crow family. It is likely that originally this portion was a long shallow lake fed by the streams rising from the Khumbu glacier. By now our thermometer had started registering temperatures below freezing-point at night.

We marched for two days along the Khumbu glacier, pitching our tents on the sandy shore of a small lake at over 17,000 feet on the second day. Our Sherpas told us that the Swiss Everest Expedition had established its base camp near this lake which they call 'Goroshep Pokhri'. The upper layer of the lake was partly frozen. We had obtained an unusual view of Everest before reaching Goroshep Pokhri. Here, from the south-west of Everest, we could see the peak quite separated from the western shoulder.

One more day's march brought us to the foot of Pumori on the western side of Khumbu glacier. Gyaljen pointed out the site of the British Everest Base Camp on the other side of the glacier, amidst huge ice-séracs at the foot of the Khumbu ice-fall.

We could not spend any time for acclimatization and on the very

next day we started ascending Pumori. At first we had to go up a rocky side of the ridge and it became increasing difficult to climb as we went up. The effects of high altitude on us were evident and we experienced loss of sleep and appetite coupled with a mild but constant headache.

Pumori rises very steeply from the Khumbu side and any route leading to the summit involves a stiff climb over slippery ice and up perpendicular rock-faces offering rare foot-holds. The only possible way to the summit seemed to be by way of the col which links Pumori with Lingtrentse. The access to this col may, however, be from the side of the west Rongbuk glacier in the north. In order to take up this route, any party assaulting Pumori from the Nepalese side, will first have to divert from Namche Bazar to the north-west and cross the Nup-La to the north after negotiating a very difficult ice-fall at the foot of the pass. Such an attempt appears impracticable for the time being since it would involve treading on Tibetan soil now under Chinese domination.

After climbing up to about 19,500 feet only, I became convinced that it was futile to go farther up from this side. We therefore divided our party in two. The Ghandhy brothers stayed on the mountain camping at 20,000 feet and climbed considerably higher up the following day before coming down. The rest of us descended and crossed the Khumbu glacier on the next day to reach the base of Everest not far from the ice-fall.

Before abandoning our attempt on Pumori, however, we obtained one of the most magnificent sights visible anywhere in the world. Towards the north-east was an icy rampart formed by Lingtrentse, Domino, and Khumbutse while Changtse towered behind the Lho-La. In front of us was spread out the majestic Everest massif and we could clearly see most of the route leading to its summit. A long white plume of blown snow-dust emerged from the summit of Everest against a deep blue autumn sky.

I had earlier been informed by Sherpa Tensing that he had sighted from the summit of Everest a small green lake on the southern side of Pumori. Apparently it had never been reached or sighted by any other person. During my descent on Pumori, I took a chance to locate this small lake. With two Sherpas and Gebilal I made a short detour south-westwards and crossed two low spurs covered with crags and boulders. From the top of the second spur, we sighted the lake and descended to its shore. With its light-green surface of solid ice the lake presented an enchanting appearance and we hurled a few stones at its hard surface out of sheer jubilance. The lake measured roughly 150 feet by 60 feet and its altitude must have been a little under 19,000 feet.

Crossing the Khumbu glacier was not a tame affair. We had to make several short detours entailing tiresome ups and downs in order to avoid the deep crevasses. We saw a number of ice-tables on the glacier, formed by huge stones resting on short ice-pillars, protected underneath from the sun. We also came across a beautiful frozen waterfall while negotiating the glacier. It looked as if it had been chiselled out of marble by some talented sculptor, while giant pinnacles of ice spotted the entire glacial area.

Our return trip to Namche Bazar from the foot of Everest took less than three days. Before going to Namche we visited Khumjung, another noted village of the Sherpas. Our return march from Sola-Khumbu was straight southwards to the rail-head of Jayanagar. Okhaldunga was the only town *en route*, where we had arrived on the day of their weekly fair. The region below Okhaldunga is highly malarious and our porters recruited in Sola-Khumbu refused to come down for any inducement. The enlightened Governor of the district, Shri Makra Bahadur, rendered timely assistance to us in securing new carriers.

One day later, we dropped to Sun-Kosi and crossed it by a canoe dug out of a tree-trunk. The path beyond lay through the bed of Bahadura-Khola, a tributary of Sun-Kosi. The two following days were spent in the densely forested Terai belt which offers sanctuary to a variety of wild game and an abundance of snakes. We spent a night on a wooden structure, erected in the bed of the river to protect the lodgers from the reptiles below.

On 3rd November we all returned to Bombay, in time to celebrate Diwali amidst our families and friends. Despite our failure to reach the summit of Pumori, our disappointment was not great. We concluded that any attempt on Pumori from the south would be a hopeless proposition and the only possibility, visible from this side, would be from the saddle connecting Pumori with Lingtrentse.

We returned with the hope that our experience would guide the next team in a successful bid to climb Pumori.

THE THIRD DANISH EXPEDITION TO CENTRAL ASIA: ITS WORK IN THE HIMALAYAS

H.R.H. PRINCE PETER OF GREECE AND DENMARK, LEADER 1953–4

INTRODUCTION

No sooner had the last Great War ended, than Henning Haslund-Christensen, the well-known Danish explorer and writer, began at once to thirst after further enterprise and adventure, and to organize in consequence the Third Danish Expedition to Central Asia.

An enthusiast of Mongolia, he had already been in Hailar and Chahar in 1936–7 as leader of the First Danish Expedition to Central Asia, and visited the Oret farther west during the course of the Second Danish Expedition to Central Asia in 1938–9. But this was by no means his first experience of these little-known areas; it was, on the contrary, rather the culmination of many years spent in the Far East with other Scandinavian expeditions such as those, for instance, of the late Sven Hedin. Henning Haslund spoke and understood Mongolian perfectly.

The knowledge acquired during these scientific undertakings had convinced him of two things. First that further exploration to the west of where he had left off at the outbreak of war was necessary in order fully to grasp the nature of the country and peoples that inhabit it; and secondly, that unless this exploration took place very soon, in his own words 'Asia may close up to Europe again as it has so often done before in history, and the old cultures will then completely disappear, never to rise again' (from the project of a Danish Expedition to Central Asia: The 3rd Danish Expedition to Central Asia, H. Haslund-Christensen, Copenhagen, 18 June, 1946).

The idea which he put forward was that the vast, practically unknown space lying in Upper Asia between Alashan and the Pamirs and stretching over north Tibet and the Hindu Kush should be thoroughly investigated by Danish scientists of all branches. He organized his expedition in the following manner:

1. A first team, consisting of anthropologists, botanists, geographers, and zoologists would work during 1948 and 1949 in Afghanistan, from Nuristan in the east to Herat in the west, under his own leadership. This would enable Denmark to extend its scientific knowledge to the south-east of the Pamirs and Iran explored respectively by Ole Olufsen in 1896–7 and C. G. Feilberg in 1936.

2. A second team, consisting of anthropologists, archaeologists, geographers, meteorologists, and of scholars specializing in the comparative history of religions, starting from Sikkim in the south, would work itself up across the Tibetan plateau to Wang-yeh-fu in Alashan, where he would meet it, after having travelled by ship from Karachi to Tientsin and from there overland to the city beyond the Great Wall on the edge of the Gobi. In a letter dated 3 March 1948, Henning Haslund-Christensen asked me to lead this team, because of my knowledge of Tibet and Tibetans acquired in 1938 during an expedition to western Tibet, and because I was considerably younger he believed I would stand the high altitude of the Roof of the World better than he would. From Wang-yeh-fu we were to go on together in the direction of the Nan Shan and of the area west of the Etsin Göl where tasks of great anthropological and archaeological interest awaited us, such as, for instance, a study of the 'Yellow Uigurs', still in residence in these parts. This phase of the Expedition, Operation 2 as he called it, would last from 1950 to 1952.

3. 'At the same time', wrote Henning Haslund, 'I shall start Operation 3, the setting-out point of which will be NW. China. The working field of this operation will be SW. Mongolia, where I intend completing some ethnological work which I began there earlier.' The journey home, once these tasks had been terminated, was to take place in separate teams. One of these was to return along the Kwen Lun Shan to Chitral and India, while the other would go by way of south Mongolia and China. I was to have accompanied the western branch, while Henning Haslund would have taken the south-eastern one. By the end of 1953, or during 1954, the Third Danish Expedition to Central Asia would have been wound up.

This was a well-conceived plan. It received enthusiastic support in leading Danish circles, and its financing proved to be of no difficulty at all. (It would, perhaps, be well to mention here that since the end of the Second World War, Denmark has led the field in foreign exploration, having organized to date over twenty scientific expeditions to little-known parts of the world.) With the gracious approval of H.M. The King of Denmark, the Third Danish Expedition to Central Asia was placed under royal patronage.

In the autumn of 1947 Henning Haslund, accompanied by a number of Danish scientists,[1] set out for Afghanistan. He arrived in the capital, Kabul, on 14th December and immediately set up his headquarters in that city. The winter was spent in getting organized

[1] Dr. Paludan, Cand. Mag. Edelberg, Magister H. Siiger, later also Prof. Johs. Humlum, Mr. and Mrs. Køie, Mag. Niels Haarløv.

and in obtaining the necessary permits to travel from the Royal Afghan Government.

In the spring Nuristan was entered, while Mag. H. Siiger went to the Kaffir borderland in Chitral (Pakistan). Henning Haslund remained in Kabul and later joined up with the groups working in the south-east and central regions. But he soon returned to Kabul, where, during August he sickened gradually, and was soon so tired that he had to remain indoors. His condition worsened during the first days of September and, after having been unconscious for some time, to everyone's consternation and grief he passed away during the night of 12th–13th September 1948. He was laid to rest in the Christian cemetery of the Afghan capital, next to the tomb of Sir Aurel Stein, another great figure in the pioneering exploration of Central Asia.

Needless to say this was a stunning blow for the whole project of the Expedition. On instructions from the Board in Copenhagen, however, the members left leaderless in Asia carried on with their allotted tasks. During the remaining months of 1948 and the whole of 1949, they accomplished everything that had been asked of them in a quite exemplary manner. They then all travelled back home except Mag. H. Siiger who, after visiting Sikkim and Assam where he did original anthropological research work on the Lepchas and the Boros, arrived in Kalimpong in west Bengal, at the beginning of 1950. I was to join up with him here, having come from Ceylon and south India.

The tragic news of Henning Haslund's untimely death had reached me in New York, U.S.A., where I went, partly on a lecture tour and partly in order to equip myself before setting off for the task awaiting me.

I immediately wrote to Copenhagen, stressing my intention of carrying on with the plans as if nothing had happened. In reply I received a letter from the Board of the Expedition, signed by its Chairman, H.R.H. Prince Axel, encouraging me to do so, and asking me to contact Mag. H. Siiger when I arrived in India.

Accompanied by my wife, I then went to Ceylon and south India during 1949, during which year I completed some anthropological research work which I had started in 1939 and which had been interrupted by the outbreak of war. In January 1950 we travelled up to Kalimpong, in west Bengal, and there met Mag. H. Siiger, with whom I had been in correspondence already for some time.

In the frontier area of Himalayan West Bengal it was immediately evident that some degree of nervousness existed. There was talk of

the new Government of China militarily occupying Tibet, and officials on both sides of the border seemed to be in a state of tension. Judging that, under the circumstances, it would be inopportune and probably useless to request permission to carry on with the Expedition to cross Tibet as planned, after consultation with my colleague in Kalimpong, I decided to apply only for a permit to visit Gyantse at the end of the trade route in Tibet.

A request for permission to do so was handed to the Political Officer in Sikkim in April 1950 after a research scholar of the London School of Oriental and African Studies, Mr. R. K. Sprigg, had sought and obtained permission to proceed there. The precedent seemed encouraging, and I had no reason to doubt that we also would be granted permission.

Unfortunately this did not prove to be the case. After interminable delays during which reminders were continually sent to the Political Officer a telegram was dispatched direct by me to the Tibetan Foreign Bureau in Lhasa, requesting that they reply to the application forwarded to them through Indian intermediary. Within three days an answer was received, on 3rd August 1950, saying that no application had reached them. When then asked directly if they would allow a visit to Gyantse, I was courteously asked a few days later to 'kindly postpone my voyage' because of the present circumstances.

There thus seemed no alternative but for us to remain in Kalimpong, in the hope that something could be accomplished there. There was also the forlorn hope, in those days, that we should, all the same, perhaps be able to get into Tibet should events turn out otherwise than they were expected to.

And so we resigned ourselves to remaining where we were, and set to work in our immediate surroundings. Mag. H. Siiger left for Denmark during the spring of 1950, and a new leader of the Expedition, Dr. Carl Krebs, was appointed from Copenhagen. The latter arrived in India in March, together with three companions.[1] He wrote to me from New Delhi inquiring if I thought there was any possibility of us carrying out Operation 2 as planned, in which case he would join me immediately in Kalimpong. But on my answering that I believed there to be very little chance of this being possible, he departed for the Siwalik range in the Punjab, and later crossed over into Lahul, Spiti, Rupshu, and Ladak. During the autumn, after a brief stay in Rajastan for further study, he and his companions went back to Denmark, leaving me with whatever funds they had still with them, and in sole charge of any further tasks lying ahead for the Expedition.

[1] Dr. Eigil Nielsen, K. M. Jensen, and A. Berthelsen.

THE WORK IN THE HIMALAYAS

In November 1950 the awaited Chinese military occupation of Tibet began. Very soon after, the Dalai Lama, in order to be in a stronger position to negotiate with the invaders, transferred his seat of Government from Lhasa to Yatung in the Chumbi valley. At the same time, many Tibetan officials and their families, more free to move as they liked than the highest authority, came over the border into India, and settled temporarily in Kalimpong. Among them were His Holiness's mother, and Gyal-Yum Chen-mo and all her other six children. The few Europeans living in Tibet, such as Heinrich Harrer, Peter Aufschnaiter, the White Russian engineer, Niedbylov and Reginald Fox, head of the Tibetan Government's radio service, also came out on 'six months' leave', never, however, to return. And a stream of refugees, arriving from China via Tibet, also came this way: a Torgut Mongol prince with his family and retainers, twenty-three Russian Old Believers including a woman and a little girl of thirteen, and the Californian Fullbright student Bessac with the remains of the party with which he had started from Sinkiang and which had been decimated on the way.

All this made the place we had perforce settled in a most interesting and lively one. Apart from the excitement of meeting all these strange and fascinating people, there were enormous possibilities of work. Very soon we had got down to interviewing them, purchasing clothes and valuables from them which we dispatched to the National Museum in Copenhagen and, after the Indian Government had made registration of all Tibetans with the police compulsory, measuring and describing them in order the better to find out what their physical, racial characteristics were. We had been denied entry into Tibet, but Tibet had come to us, and under circumstances of stress which made it perhaps easier for us to obtain the results we wanted than if we had been working in the country under settled conditions.

During February 1951 I made one more attempt to enter Tibet. My cousin, King Paul 1st of the Hellenes, very kindly sent me his photograph and an introductory letter for the Dalai Lama. I wrote to the court in Yatung, asking for permission to deliver these things personally to His Holiness. I should record here how very helpful the late Reginald Fox proved to be in this case. He had not yet left Tibet and was in attendance on the Tibetan Government in the Chumbi valley.

When he came to Kalimpong on a brief visit, I asked him to sound official circles with which he was in contact, and to let me know what their reaction was to my application. As was perhaps to

be expected the latter was again negative. Very politely I was asked to hand over the photograph and the letter from my cousin to the Tibetan Trade Representative in Kalimpong, something which I naturally declined to do.

Some time later, both Tibetan Joint Secretaries of Foreign Affairs, Dzasa Surkhang Surpa and Dzasa (monk official) Liu-shar, also came to Kalimpong. In an interview which I had with them, they expressed regret that they had not been able to allow me to deliver the Royal Message, adding that they had found it difficult to agree to this taking place, because of the 'unusual interest which the U.S.A. had taken in Greek affairs with the Truman Aid to Greece and Turkey and which would certainly make my presence in Yatung with a message from H.M. the King of Greece appear as a provocation to the Chinese'. I was not a little surprised at this preoccupation with international politics, and I was, furthermore, astonished at the knowledge which these two Tibetan officials showed of world politics. I have since, however, become familiar with this sort of thing, and have come to learn that international politics are the real obstacle to scientific research in these areas. The height of the Himalayan barrier, the barrenness of the Tibetan high plateau, and the difficulties of supply and transport pale into insignificance when compared with this, the main impediment.

From Kalimpong we were able to obtain successfully from Tibet, through the friends whom we had made among those who had come from Lhasa and elsewhere, the medical statistics for which the Anthropological Laboratory of the University of Copenhagen had asked us, as well as the great majority of the books which had been ordered from us by the Royal Library of Denmark.

For my own personal research work into the curious organization of Tibetan society, with particular emphasis on the custom of polyandry, I was fortunate in finding and studying cases of *cha-ma-dung* (Cha-ma-gDung) marriages, in which fathers and sons share a single wife, the latter being either a step-mother of the boys or the daughter-in-law of the elder men. This was one of the principal purposes of my anthropological interest in Tibet, and it was thus fulfilled after fourteen years of waiting—ever since my trip to western Tibet in 1938, when I first heard of this extraordinary matrimonial arrangement.

Permission to travel in Sikkim and Nepal was regularly sought from the Indian and Nepalese governments. It seemed a sound idea to spread out laterally from where we were in Kalimpong, since we could not conduct exploration northwards. Only once, however, in either case, were we allowed to travel in those regions: once to

Kathmandu and the valley of Nepal during November 1951 and to the Jelep and Nathu passes into Tibet from Sikkim in May 1952. Other requests to visit north Sikkim and eastern Nepal (Shingsa Walung) were declined on the grounds that the first was a 'closed area' (presumably to foreigners as Indians were free to go there) and that the other was in the throes of civil troubles which did not allow the Nepalese Government to 'assume the responsibility' of us going there.

An interest in the legendary *Abominable Snowman* was gradually acquired during our stay in Kalimpong, and we very soon gathered the impression that some sort of unknown animal really does inhabit the higher reaches of the giant Himalayas. During the visit to the Jelep-la, at Kapup bungalow, just below the pass, a number of highly entertaining stories about the fabulous beast were collected. All requests really to set out and search for the strange animal were, however, turned down by the Indian authorities, their attitude towards our activities becoming, on the whole, more and more frustrating as time went by.

Today, in 1954, at the close of the Expedition, we have been denied permission to go on measuring Tibetans during registration, all our requests for permission to travel in and around the Sikkimese and Nepalese Himalayas have been refused, and it is even with difficulty that we are able to remain in friendly contact with the Tibetan friends which we have made here in the last four years. We are thus acutely reminded of the late regretted Henning Haslund's prophetic words:

'It is essential that this work be started now, because very soon Asia may close up to Europe again as it has so often done before in history, and the old cultures will then completely disappear, never to rise again' (op. cit., p. 1).

THE RESULTS

These can be divided under the following headings: anthropology (cultural and physical); photography (still and moving); sound recording; collection of artefacts and books.

When Mag. H. Siiger left for Denmark at the beginning of 1950 he already took with him a small collection of Tibetan ethnographical objects and books. The bulk of his results from the Himalayas was, however, made up of Lepcha records and books, and it was left to me in the following years to deal with the Tibetans. In 1952 I returned to Denmark for a short time and delivered to the Expedition's Board whatever I had collected to date. An exhibition of these things was held in Copenhagen during October of that year, at the termina-

tion of which I was requested to return to Kalimpong and to carry on for the two remaining years of the Expedition. This I gladly agreed to do, as the prospects of acquiring many interesting things still seemed bright at the time.

Under the heading of Anthropology, beginning with the cultural aspect, the Tibetan language was learnt with a number of various teachers (the jester of the former Radeng Rimpoche, Regent of Tibet, murdered in 1947, the local Tibetan printer, the son of the Tibetan State Oracle, &c.); the custom of polyandry as practised in Tibet, outlined above, was exhaustively investigated; biographies, mostly of women and with the invaluable help of my wife, were taken down; a record of the Tibetan nobility was drawn up (in course of publication); the Moslems of Tibet were described in an article of the journal of the Royal Central Asian Society;[1] social statistics were established for 2,000 Tibetans interviewed during registration in Kalimpong; Thematic Aperception Tests (Tibetan version) and Rorschach Tests were taken in co-operation with the Indian Department of Anthropology, Calcutta; for this same department, specimens of Tibetan alcoholic beverages (*chang* and *arak*) were collected for analysis; and for Professor Rolf Stein of Paris, records were made of the Kesar sagas as sung by professional Tibetan bards.

On the physical anthropological side, medical statistics were sought and obtained from the local hospitals and dispensaries, those in Sikkim and the three in Tibet, at Yatung, Gyantse, and Lhasa, attached to the Indian trade missions there; 3,284 Tibetans were anthropometrically measured and described as long as the work was allowed to take place during their registration with the police, the Indian Department of Anthropology with which we worked in co-operation making measurements and taking blood from 198 individuals. These Tibetans, coming as they do to Kalimpong for various reasons (trade, pilgrimage, begging, residence, &c.) give a most wonderful cross-section picture of the population of the country, people from Leh in Ladak in the west, to Tatsienlu (Kanding) in the east, and from Buriat Mongolia in the north to Kurseong in west Bengal, India, in the south, having been interviewed in the course of the work.

Under the heading of Photography, these are the results we obtained: 2,250 coloured stills and 770 black-and-white ones, of all sizes, taken with Leica, Rolleiflex, and Speed Graphic cameras, and consisting to a large extent of anthropometrical photographs taken in conjunction with the measuring of Tibetans; 4,850 feet of 16-mm.

[1] 'The Moslems of Central Tibet', by H.R.H. Prince Peter of Greece and Denmark, Ll.D., C.B., vol. xxxix, parts iii and iv, July–October 1952, p. 233.

Kodachrome movie film and 2,800 black and white of the same, taken with a Kodak Special Cine camera and a model F one. A single coloured film was made after editing these films and those taken in south India before we moved to Kalimpong; it was shown in Europe in various capitals (mostly in Scandinavia) during our 1952 visit there.

Sound recordings were taken both for the Expedition and for the Library of Congress, Washington, D.C., U.S.A., the latter having supplied us with wire for the purpose. They included a complete recording of the Tibetan saga of King Kesar of Ling, chapter of the war against the Tajiks (Persians), a recording of the war against the Hors (Vigurs) of the same saga; *namthars* or popular Tibetan songs, sung by girls; an entire *Nyingma-pa* (Red Hat sect of lamaism) religious ceremony; the whole of a *Gelug-pa* (Yellow Hat sect) ceremony; various renderings of free Tibetan conversation; Lepcha songs; the trances of a Tibetan oracle; and the Tibetan New Year Lion Dance.

The amount of artefacts and books collected proved to be quite considerable. As alluded to earlier, this became possible when many Tibetans settled in Kalimpong in order to tide over the first onrush of Chinese troops into their country. These Tibetans have since all returned home, and it is doubtful if anything more can be acquired now under the present more settled conditions. We thus have been fortunate in being in Kalimpong exactly at the right moment.

The Ethnographical Collection of the Danish National Museum instructed us to purchase the following artefacts: a man's sheepskin coat; everyday household articles, although not of metal; articles for the care of cattle; the complete attire of a woman from central Tibet.

Of these we were successful in obtaining the latter, with an excellent set of jewels, from a distracted husband who had tragically seen his four children die of dysentery within a week, during an epidemic at Kyirong dzong in Tö, and subsequently lost his wife in childbirth at Yatung, in the Chumbi valley. He sold all her belongings in order to go on pilgrimage in India and to make offerings to the gods for the happy reincarnation of her soul.

Instead of only obtaining a man's sheepskin coat, we prevailed upon a friend to get us complete sets of nomad's clothes with all their camping paraphernalia. This he brought to us from his 'own nomads' as he styled it, together with one of the spider-shaped Tibetan, black yak-hair tents.

Household articles of daily use, although not of metal, were more difficult to come by. We did, however, successfully acquire two willow-knot wood butter boxes, a large butter and tea churn, and a wooden *chang* pot of some antiquity.

Finally, recently, after trying for four years, we finally took delivery from Tibet of all articles for the care of cattle, of implements for ploughing with yaks and of many agricultural tools such as are used in the Tsang province.

As things came our way under the stress of the prevailing political circumstances, we also bought at our own expense, later to be sold to the Museum, the following items of clothing:

a Lhasa nobleman's ceremonial riding habit, complete with pronged rifle, sword, bow and quiver of arrows, gilt saddle, trappings and pendants of rank;
the uniform of a cabinet minister (shapé);
a *Gye-lu-che* habit, as worn by all officials of the 4th rank upwards;
a *Tse-trung* (monk official) uniform;
the uniform of a Colonel (*de pön*) of the Dalai Lama's Guard (*ku-sung*);
the *gin-tshar* (wrap) and *ku-djam* (cloak) of the late Radeng Rimpoche;
a *sha-nag* (black hat) dancer's costume, with *rü-gyen* (human bone apron);
the clothes of a Red Sect lama, with *Wang-chä* adornments (for special ceremonies);
the complete set of clothes of a Tibetan oracle with pike, sword, and trident;
an ordinary muleteer's dress.

On demand from the National Museum, we also purchased the *chuba* (coat) of the Bhutanese Paro Pen-lop (an official of western Bhutan), a Lepcha *kom-fort-ki* or wrap made of woven nettle fibre, and a statue of Padmasambhava, the Buddhist preacher, with his two wives. We added further, an exceptionally good pair of ceremonial, lamaist spoons called *kang-sa kang-lug*, used mainly for pouring butter over pyres during the cremation of dead bodies.

All these artefacts are now on exhibition at the National Museum in Copenhagen, Denmark, and can be seen in the Ethnographical Collection's galleries.

The Royal Library had also made an order with the Expedition. They wanted the two great Canons of the Tibetan Buddhist faith, the Kan-gyur and the Tän-gyur. These we succeeded in obtaining, not without difficulty, the former taking fourteen months to be delivered to us. The latter, thanks to the assistance of a Tibetan friend, was specially printed for us at Nar-thang in Tsang, the wooden blocks of the printing-press there being first thoroughly cleaned so that a good impression was obtained. About 100 other books, both wood-block prints and manuscripts were sent off to Denmark; they

included such works as the Blue Annals of Tibet, the biography of Padmasambhava, the collected works of the reformer Tsong-kapa, the tales of Milarepa, &c. All of these are on view at the Royal Library, Copenhagen, Denmark.

CONCLUSION

At the end of last year, Dr. G. I. Finch, a member of the British Everest Expedition of 1922 and now Director of the National Physical Laboratory in Poona, India, told an Indian newspaper that, in his opinion, 'India's Himalayan region is likely to become a favourite tourist playground' in the future.

And the British Broadcasting Corporation, in its news broadcast of 27 November 1953, after announcing the opening of a motor-road from the Indian frontier to Kathmandu, the capital of Nepal, added that this would most certainly now open up this, until now, very closed country.

The Chinese armies in Tibet, on the other side of the Himalayas, are reported to be feverishly building new motorable highways towards Lhasa from many directions, including from Chumbi in the south.

These countries will undoubtedly 'open up' as the B.B.C. has put it, but for whom? I doubt very much indeed that it will be for 'tourists', as Dr. Finch thinks, if by that he meant, as I presume that he only could, Europeans or, better said, Westerners. For them, on the contrary, I believe, these countries will gradually close up more and more, and the Himalayas, far from becoming the 'playground' which we hear about, will rather much more likely become a strictly closed area, from which 'foreigners' will be rigidly excluded and where much more grim and serious activities than 'play' will take place. Bhutan has already become, if possible, even more forbidden than it was before, and even Tibetans and Indians are not allowed in today. Sikkim, once the paradise of trekkers, is virtually inaccessible, and the bungalows put there by the British Raj must be rotting away for want of use and attendance.[1]

It is a thousand pities, but there is nothing that can be done about it. Henning Haslund-Christensen was prophetic in his appreciation of the situation, and all that can be said about his pronouncement that 'Asia may close up again as it has so often done before in history' is that this is taking place even sooner than he expected.

We were not able to carry out Operations 2 and 3 as planned for

[1] This actually applies to Sikkim north of an east to west line through Gaugtok.

the Third Danish Expedition to Central Asia because of the countries north closing up before we got there. And those in which we have worked, as a substitute, for the last four years, seem gradually to be going the same way.

We may deem ourselves lucky to have done as much as we have in Kalimpong and the Himalayan frontier regions, and for this we must be and are very grateful to those of the present Indian Government who made it possible.

EXPEDITIONS AND NOTES

BABER'S CROSSING OF THE ZIRRIN PASS, 1506

THE crossing of mountain passes by kings and armies has always been a laborious affair. The most famous crossings in history are those of the Alps by Hannibal and Napoleon, but the record of Baber's winter crossing of the Afghan hills between Khorasan and Kabul, a less historic exploit, is yet one which exhibits the qualities of a modern mountaineering party.

It was in December 1506. He writes in his memorable memoirs:

The winter was come, and the snow began to fall in the mountains that separated me from my dominions. . . . Leaving Langer-Mir-Ghias, and passing the villages on the border of Gharjestam, we reached Chakeheran. The farther we advanced the deeper was the snow. Two or three days after we had passed Chakeheran the snow became excessively deep: it reached up above the stirrups. In many places the horses hoofs did not reach the ground, and the snow still continued to fall. When we passed Chiraghdan, the snow not only continued deep, but we did not know the road.—One Sultan Pashai was our guide . . . having once lost the road, he never found it again. . . . The road was not to be found with all our exertions, and we were brought to a complete stand. Seeing no remedy left, we returned back to a place where there was abundance of fire wood, and despatched sixty or seventy chosen men to return by the road we had come, and retracing our footsteps to find, under the high grounds, any Hazaras or other people who might be wintering there, and to bring a guide who was able to point out the way. We halted at this spot for three or four days. They did indeed come back, but without having been able to find a proper guide. Placing our reliance on God therefore, and sending our Sultan Pashai before us, we again advanced by that very road in which formerly we had been stopped and forced to return. In the few days that followed many were the difficulties and hardships which we endured; indeed, such hardships and sufferings as I have scarcely undergone at any other period of my life. It was at this time that I composed the following verses:

(Turki): 'There is no violence or injury of fortune
that I have not experienced;
This broken heart has endured them all.
Alas! is there one left that I have
not encountered?'

And that from a hardy prince who, since the age of thirteen, had lost and won kingdoms in Central Asia in scores of battles and skirmishes. He writes on.

For about a week we continued pressing down the snow, without being

able to advance more than a Kos [2 miles] or a Kos and a half. I myself assisted in depressing the snow. Accompanied by ten or fifteen of my household and two or three servants, we all dismounted and worked in beating down the snow. Every step we sank up to the middle or breast, but we still went on trampling it down. As the vigour of the person who went first was generally expended after he had advanced a few paces, he stood still, while another advanced and took his place.

The future emperor of Hindustan thus learnt and noted the difficulties of stamping out a snow-path in the high hills 450 years ago.

The rest of the troops, even our best men, and many that bore the Title of Beg, without dismounting, advanced along the road that had been beaten for them, hanging down their heads. This was no time for plaguing them or employing authority. Every man who possesses spirit or emulation hastens to such works of himself.

Here was the understanding of a born leader of men of action.

Continuing to advance by a track which we had beaten in the snow in this manner, we proceeded by a place named Anjukan, and in three or four days reached a Khawal, or cave, called Khawal-Kuti, at the foot of the Zirrin Pass. That day the storm of wind was dreadful. The snow fell in such quantities that we all expected to meet death together. When we reached this Khawal the storm was terribly violent. We halted at the mouth of it. The first of the troops reached the Khawal while it was yet daylight. About evening and night prayers the troops ceased coming in; after which every man was obliged to halt where he happened to be. Many men waited for morning on horseback. The Khawal seemed to be small. I took a hoe, and having swept away the snow, made for myself at the mouth of the cave, a resting place about the size of a prayer-carpet. . . . This hole afforded me some shelter from the wind, and I sat down in it. Some desired me to go into the cavern, but I would not go. I felt, that for me to be in a warm dwelling, and in comfort, while my men were in the midst of snow and drift—for me to be within, enjoying sleep and ease, while my followers were in trouble and distress, would be inconsistent with what I owed them, and a deviation from that society in suffering that was their due. It was right that whatever their sufferings and difficulties were and whatever they might be obliged to undergo, I should be a sharer with them. There is a Persian proverb, that 'Death in the company of friends is a feast'. I continued, therefore, to sit in the drift, in the sort of hole which I had dug out for myself, till bed-time prayers, when the snow fell so fast, that as I remained sitting crouching down on my feet, I now found that four inches of snow had settled on my head. That night I caught a cold in my ear. About bed-time prayers a party, after having surveyed the cave, reported that the Khawal was very extensive, and was sufficiently large to receive all our people. As soon as I learnt this, I shook off the snow that was on my head and face, and went into the cave. I sent to call in all such of the people as were at hand. A

comfortable place was found within for about 50 or 60 people, . . . and thus we escaped from the terrible cold, and snow, and drift, into a wonderfully safe, warm and comfortable place, where we could refresh ourselves.

Next morning the snow and tempest ceased. Moving early, we trampled down the snow in the old way, and made a road. We reached the Baladaban. Before we reached the Parjan-daban, the day closed on us. We halted in the defiles of the valley. The cold was dreadful, and we passed that night in great distress and misery. Many lost their hands and feet from the frost. Kupek lost his feet, Siyunduk Turkoman his hands, and Akbu his feet, from the cold of the night. Early next morning we moved down the glen. Although we knew that this was not the usual road, yet, placing our trust in God, we advanced down the valley, and descended by difficult and precipitous places. It was evening prayer before we extricated ourselves from the mouth of the valley. It is not in the memory of the oldest man, that this pass had ever been descended, when there was so much snow on the ground; nay, it was never known that anybody even conceived of passing it at such a season.

Then to the flesh-pots, as with most of us.

It was bed-time prayers when we reached Yake-anleng and halted. . . . To pass from the cold and snow into such a village and its warm houses, on escaping from want and suffering, to find such plenty of good bread and fat sheep as we did, is an enjoyment that can be conceived only by such as have suffered similar hardships or endured such heavy distress.

The foregoing account strikes one as an interesting episode in the intrepid life of a prince who was a joyous adventurer, one who lived and fought in the mountain kingdoms beyond the Hindu Kush, which he loved, yet ended his days by establishing a great empire in the plains of Hindustan which he detested 'for three reasons, its heat, its hot winds and its dust'. All that is now old history, but Baber's crossing of the Zirrin Pass surely rouses the admiring interest of contemporary mountaineers. He would have made a grand leader of a Himalayan expedition in our times. A. D. MODDIE

PANCH CHULI[1]

The author of this article was a member of the German expedition which attempted Nanga Parbat in 1939. He was interned during the war at Dehra Dun, escaped, and, in company with another internee, made his way to Lhasa where he was employed by the Tibetan Government. He returned to India a few months ago, and in this article he describes an attempt—unsuccessful but exciting—on one of the Himalayan peaks.

WHEN in 1939 I left Europe for Nanga Parbat, I hoped it would be the first of many Himalayan climbs. Though, in the meantime, I

[1] By courtesy of the *Statesman*.

have seen most of the giants, I have never had the fortune to try another one again. Seven years with Peter Aufschnaiter in Tibet, without serious climbing, was tantalizing; lack of equipment frustrated all longings. When some months back I left Tibet and met Frank Thomas, he suggesting trying to climb Panch Chuli in Almora District. It was so tempting, that I immediately went to Darjeeling to buy old equipment from Sherpas, on top of which I borrowed some more from the Himalayan Club and Thomas.

I think there is no other big mountain closer to a city than Panch Chuli is to Delhi. In one week you can reach the Base Camp. The train brings you to Tanakpur whence a bus goes to Pithoragarh in one day—sometimes it does, sometimes not. My bus stopped in the middle of the jungle and all the fame Indian drivers have in Europe —that they can repair any motor damage with a wire and a cigarette tin—was of no avail, when the driver murmured 'piston hogia'. Hogia it was, and how, the next day, I covered 90 miles in fourteen hours, is a story by itself.

Trackless

From Pithoragarh onwards there is only a bridle-path for the next 50 miles; then you reach Madkhot at the entrance of the valley coming down from Panch Chuli. Here I met our Sherpas Gyaljen and Lhakpa. After a steep ascent we reached the last inhabited place, Jilkhot. From here onwards it was unexplored and practically trackless. It was always interesting; up and down it went, crawling through bamboo and rhododendron, climbing rock and grass slopes, often wondering where the path would continue. Gay-coloured birds tried hard to make themselves heard in the rushing noise of waterfalls, and once I frightened a bear from his bamboo meal. The deafening noise of the glacier torrent drowned all speech. A pleasant surprise was a hot spring amidst old oaks and giant rhododendrons.

Above the tree line it got even more interesting. The glacier terminal was well below 10,000 feet and must be one of the lowest-reaching glaciers in the Himalayas. Kailas Sahni of the Forest Research Institute in Dehra Dun, who joined us later, collected nearly 400 different flowers around here, and a hunter, too, would have found his thrills.

For me, of course, there was foremost the excitement of finding a route which would enable us to reach the summit. Panch Chuli, 22,650 feet high, had been tried by Scots, Australian, and South African expeditions, but none had reached very high, owing to technical difficulties. The local population, whether Indian or Tibetan, said it was impossible, because of the guarding gods.

There was a tiny place in the gorge-like valley, at 13,500 feet,

where among dwarf junipers I decided to establish the Base Camp. This was already on the second terrace, above the first ice-fall, of which there are three before reaching a huge basin west of the mountain.

The Avalanche

By 3rd June, when Thomas joined me at the Base Camp, I had found a route to the Basin and even brought up some of our things. We left the same day to reach the second terrace above the second glacier fall. We crossed many avalanche fans, but otherwise there were no technical difficulties. To find a safe place on the second terrace for our tents was difficult. We finally decided on a site under a rock several hundred foot high, almost vertical. It snowed all night and half of the next day. Our camp was rather a noisy place; from the eastern slopes avalanches roared down, but all were nicely canalized into chutes, only to fan out in cones, to stop a few yards from our tents. There was also the continuous thunder of the seracs breaking loose from the 2,500-foot high third glacier fall. They, too, however, left us in peace, though once we got the blast of an exceptionally big one.

To overcome the third ice-fall and reach the Basin needed some technical work. When reconnoitring with the Sherpas I had climbed a 100-foot high vertical rock face, but there we had to heave the rucksacks separately, and now the heavy loads would have given great trouble. Moreover, for some rope-lengths it continued to be difficult and exposed and so I had decided for the big chute. All the huge steps I had some days back cut into the frozen waterfall of the chute had disappeared and so I had to make them all over again. Fortunately there was a huge boulder squeezed into the chute, which gave absolute protection from avalanches for people standing under it.

I had nearly finished cutting the new steps when the well-known thunder of an avalanche reached me from above. Relying on my ice-axe, I hurried a few steps to the left and hardly had I rammed in my ice-axe, when the avalanche roared past me for what seemed an eternity. Only the smaller debris rushed over me, shaking my hold and reminding me of the Eiger North Wall, where we endured for hours the same ordeal. Using the interval before the next avalanche, Thomas and the Sherpas followed quickly. We traversed some more steep slopes and ravines till we reached the huge snow couloir leading up to the Basin without difficulty. Once an avalanche made us give way to the right, but that one proved even useful, having given us a hard track which brought us soon to the Basin.

It was a perfectly clear day, the summit with its approaches

looked promisingly down on us; all were happy and content. The camp site was safe and we had a wonderful view of the huge Basin, feeding the only outlet from all sides, probably the reason why the glacier reaches so far down into the forest.

Next morning I went again ahead to do the weary work of making a track in the deep snow. Climbing gradually, I reached, after a mile or so, the foot of the giant slope, nearly 3,000 feet high, which would bring us to the foot of the last pyramid. Knee-deep, at times hip-deep, it took us the whole day to get to a place where we were fairly safe, half-way up the slope. The tents were protected by a solid looking serac, and huge crevasses above it would prevent big avalanches from making a surprise visit. I was tired and so must have been the Sherpas who did a wonderful job by going the whole distance twice, carrying loads.

Slow Progress

The next day saw us doing the same work. At some places the slopes were so steep and the snow so powdery that I feared the worst. These are difficult moments to make up one's mind. There have been so many disasters; to return, however, would be the cause of endless self-reproaches too. Anyhow, everything went all right and in the early afternoon we reached a most beautifully situated little plateau. Nearly 20,000 feet high, we had the pyramid-shaped summit of our ambition standing close by; Nanda Devi with her satellites, together with us, stood above a solid sea of fog, submerging everything mortal, leaving only the glorious peaks of the Himalayas to savour the warmth of the setting sun. The gigantic South Ridge, with the glacier shooting down for 10,000 feet, in one single sweep, were unforgettable sights.

Only slow progress was made next day; the rarefied air and the tracking in the deep snow, radiating terrific heat into one's face, made themselves felt. One could get the skin blistered by the sun and the toes frozen by the snow, all at the same moment. At noon, fog closed in and we were forced to pitch tents. We knew we were already close to the ridge we had chosen, and though we had to put our tents near some crevasses we saw, later on when it cleared up, that we were in quite a safe spot.

We decided to make an attempt on the summit next day. We had food only for a few days more and we had never intended to beleaguer the mountain. Though there was still some fog, I went with Lhakpa to make the track as high up as possible. Tomorrow it would be difficult enough, when we wanted to reach the summit and come back to the camp. For one hour it was good going, but then it got so steep that we had to retreat and put on crampons.

There was no snow, but the ice was softened by the sun and the crampons alone did the job, without the necessity of steps. Every 40 feet or so I cut a stand for rest and to secure my Sherpa. After a few rope-lengths we returned to the tents.

Thomas volunteered for the most troublesome job—to wake us at 2 a.m. and make tea with Gyaljen. It was the cold morning of 10th July; Thomas and Gyaljen must have been cooking all night because we were on our way up the track well before dawn. Soon we were at the foot of the pyramid; we fixed our crampons. When I tried the first steps, it was incomparably more difficult than the day before. The surface was as hard as glass. We continued however for some rope-lengths till it got steeper and steeper. Crystal-clear ice from the stand I was hacking jingled down on my comrades; suddenly I saw Thomas slip with his crampons. Gyaljen, who was roped to him, immediately started sliding too, but Thomas, with great presence of mind and skill, arrested the accelerating movement with his ice-axe. Gyaljen had had enough and so Thomas conducted him down to a safe place. I waited with Lhakpa for Thomas to join our rope.

When after some time he did not return, I traversed a bit downward to a tiny black rock, peeping through the ice, where it was not so tiring to stand. When Lhakpa followed, he, too, slipped, swinging wildly and yelling, probably thinking it was his end. However, I had no difficulty in holding him, but it was the signal to give up. Thomas and Gyaljen were already traversing through the Basin at the foot of the west-wall towards the North Ridge.

Lhakpa and myself followed them and, reaching the sun on the saddle at the foot of the North Ridge, I had to take off my boots to rub my already blue and red and swollen toes. We had a good look at the North Ridge, which was almost as steep as the Western one, which had just repulsed us. On our return, the sun had reached the western side of the mountain and was reflected as though in a mirror; photographs which were taken without a polarizing filter showed only blank spots.

Going Down

We packed immediately and went half-way down the slope the same day. Shortly before reaching the camp site, Lhakpa, who was standing above me, suddenly threw himself down in order to slide down the extremely steep slope with his heavy load. The moment he had done it, there was a thud and the whole slope to the right of my stand went down with him. When the rope tightened and I thought that I held him, the pull also loosened my side of the slope and down we went together. Tumbling and pushing the snow-blocks

under us, we came to a standstill after a few seconds; Lhakpa was there beside me and all we had lost was his ice-axe.

There were no more incidents till we reached the chute next day. One week of good weather on the mountain had melted all the ice in the chute and now there was a waterfall there. Everyone and everything was roped down the overhanging boulder in a few hours and when we reached the Base Camp safely, exactly ten days after leaving it, we could call our climb a successful one, having all four returned without major harm.

To reach the summit of one of the Himalayan peaks, even a lower one like our Panch Chuli, needs careful planning in every detail; the slightest error or underestimation brings failure. We mountaineers are thankfull that it is so, and for many generations to come there will remain unclimbed peaks to fulfil the longings in the youth of all nations for peaceful adventure.

HEINRICH HARRER

ANNAPURNA AND MANASLU, 1952[1]

A JAPANESE reconnaissance party of six members[2] including two scientists and one medical doctor left Kathmandu on 14th September 1952 with the object of exploring the Manaslu area, especially the Buri Gandaki side of the mountain, and collecting specimens and materials there in the field of natural history. Led by Dr. K. Imanishi, Professor of Animal Ecology at the Kyoto University, the party concentrated the first part of its journey on the Marsyandi side of Annapurna; it attempted first Annapurna IV following the Tilman's route of 1950. The attempt, however, was frustrated by a heavy snowfall. The Japanese team, therefore, returned from 5,700 metres at the foot of the first ice-step. The ropes fixed there by the Tilman party still remained intact, and an axe-head which had been left by the same party was recovered by our party. Before the team turned to Manaslu, they climbed Chulu (*c.* 6,200 metres) on the northern side of the Marsyandi valley. Three camps were pitched at 5,300, 5,500, and 5,850 metres, respectively; the 'Waldgrenze' was passed at 4,500 and the 'Schneegrenze' at 5,500 metres. Ascent was made on 23rd October without technical difficulties.

On the return journey to Thonje, one group of three members

[1] By courtesy of the Japanese Alpine Club.

[2] Dr. K. Imanishi (leader), Messrs. J. Taguchi, M. Takagi, S. Nakao, K. Hayashi, and S. Takebushi. Mr. Takebushi left Kathmandu on 5th Oct., as he could not arrive there with the main party. Mr. Dilli Bahadur accompanied the whole journey as a liaison officer, whose assistance was most valuable and indispensable. They had also six Sherpas, namely: Gyalgen, Sarki, Pansy, Angtsering, Anno, and Dako.

traced part of the route to Namun Bhanjyang to photograph the western face of Manaslu.

The monsoon was already over. In the forests the crimson foliage of creepers and the yellow leaves of birches and maples looked beautiful under the blue sky, but the only flower especially impressive in the season was the purplish gentian. The party ascended along the Dudh Khola. Some Bhutias were still found at Bimtakhoti as Larkya Bhanjyang had been opened for yak, zho, and sheep caravans. On 9th November the party crossed the pass, the watershed of which was covered by a thin layer of fresh snow.

Observable from the Sama side of the pass through the glaciers and snow-clad slopes was a direct route to the upper plateau region of Manaslu. It was inferred that this route is more advantageous; for the two cols, one of which is situated between the main peak of Manaslu and the northern peak and the other between the northern peak and its spur, can be used to set up advanced bases. This route may probably be the one discovered by Major Roberts and was later described by Mr. Tilman in his book, *Nepal Himalaya* (p. 201).

The Base Camp was established at Sama. The north-eastern face of Manaslu had been continuously explored until this camp was evacuated on 29th November. The porters were recruited from Lidanda, as Sama was badly infested with typhoid fever. The water of the Buri Gandaki receded and permitted passage on the winter route along the riverside. Since the corn and rice fields were cleared and dried up, any spot could be used as a camping-ground. Near Arughat Bazar, butterflies and dragonflies were again found active. The party returned to Kathmandu on 15th December.

From the experience of this expedition, the Himalayan Committee of the Japanese Alpine Club decided to send another party in 1953 to scale Manaslu from the Sama side in the pre-monsoon season.

K. IMANISHI

THE ELUSIVE MOUNTAIN

MY old friend Colonel Schomberg's note on K2 in the *Himalayan Journal*, vol. xvii, 1952, is misleading and incorrect in more than one particular. Godwin-Austen was not 'the great man who first *saw* and mapped it'. Captain T. G. Montgomerie is the first recorded Britisher to have seen it and to have recognized its great height; this was from his triangulation station Haramukh in Kashmir in 1858; it was seen again by the Shelvertons in 1858 and 1859, and its height and position were fixed from their and other contemporary observations. Both height and position were known to Godwin-

Austen when he made his rapid reconnaissance of the Baltoro glacier in 1861.[1]

Younghusband in 1887 was the first European to cross the Muztagh pass, shown very tentatively and not very accurately from hearsay on Godwin-Austen's plane-table; and he was the first recorded European to see K2 from the north. It was during the discussion[2] after Younghusband's lecture to the Royal Geographical Society on 14th May 1888 on his great journey across Central Asia in 1887, that General J. T. Walker made a suggestion, on the spur of the moment (and it was only a suggestion), that K2 'should be known as Peak Godwin-Austen, after the officer who first surveyed the Mustagh range and glaciers'. Godwin-Austen, who was present, had already spoken and given a brief account of his work in 1861 'when serving under Captain Montgomerie' and admitted that 'the position of K2 had been fixed by Captain Montgomerie's assistants'. With the exception of Sir Henry Rawlinson, no one else present supported General Walker's suggestion, which in fact was *not* approved by the Royal Geographical Society and was definitely rejected by the Surveyor-General of India and by the Indian Government.

Towards the end of his long life I discussed this question with Godwin-Austen. He told me definitely (i) that before the R.G.S. meeting he had no idea that General Walker would make his suggestion; (ii) that he had never wished his name to be attached to the mountain; (iii) that he was against the use of personal names for Himalayan or Karakoram peaks, with the exception of 'Mount Everest'; (iv) that if any personal name were given, it should be Montgomerie's, not his.

How wise has been the decision of our predecessors in the Survey of India not to scatter personal names over the maps of the Himalayas and Karakoram! Farther north Soviet Russia has expunged the personal names applied by Imperial Russia, and moves those of more recent 'heroes' about like pawns according to whether they are in political favour or not. Moreover, K2 is established in all the literature of the Karakoram for nearly a hundred years. It was used by Conway who led the first mountaineering expedition to the region and it was so shown on his map in 1892; by the Pfannl-Guillarmod–Eckenstein expedition; by the Duke of the Abruzzi in 1909; by all his and the Duke of Spoleto's assistants; and by the many recent expeditions. K2 is *not* an elusive but a dominating mountain; it stands in almost international ground. It is indeed now so well known that porters who go there with expeditions from all

[1] *Survey of India*, vol. vii, Dehra Dun, 1877.

[2] *Proc. R.G.S.*, vol. x, no. 8 (Aug. 1888), p. 516.

sides refer to it as Kechu, Cheku, and even as Kechu Kangri. If a name must be given, the last mentioned, meaning 'the K2 ice-mountain', seems most appropriate, for it records the fact that its height and position were known, and that the mountain was seen, before any European had any idea of going near it, and before its nearest inhabitants were in the least interested in it. K. M.

THE STORY OF EVEREST. By W. H. MURRAY. *Illustrated with fifteen maps and diagrams by* ROBERT ANDERSON *and with 24 pages of photographs. J. M. Dent & Sons Ltd.* 15*s. net.* 1953.

It is refreshing to find, in the cover of this book, a short description of its contents which really tells the prospective reader what to expect and is entirely innocent of the false sentiment which one associates with the term 'blurb'. The time was ripe for a condensed yet adequately detailed study, in one small volume, of the efforts made since 1921 to reach the world's highest summit; each effort contributing something to the store of experience to which the splendid and successful team of 1953 has borne such generous witness.

Mr. Murray was indeed well equipped for his task, both as mountaineer and as writer. He knows the mountains of Scotland and of the Alps; was a member of the Scottish Himalayan Expedition of 1950 and of the 1951 Mount Everest Reconnaissance under Eric Shipton which pioneered the south-west approaches for the Swiss and British parties of 1952 and 1953. He understands his fellow-mountaineers, European and Sherpa, their problems and their reactions. He knows what altitude can do to men. He has the artist's eye for scenery, and the power to describe it. Lastly, he is able to synthesize the struggles of thirty-two years in such a way that the reader will follow with growing interest the gradual improvement in organization, in both strategy and tactics, in judgement of weather and snow, in equipment and food, and in the all-important understanding of acclimatization and deterioration.

Expedition after expedition showed up our national tendency to underestimate the opposition, but also happily our general willingness to learn; and Mr. Murray has, without any pompous dogmatism, laid the necessary emphasis on the lessons.

I find myself in full agreement with his opinion that Mallory and Irvine fell while *ascending* in 1924; and I think that such evidence as we have indicates inexorably that Odell was mistaken in supposing that he saw them at all.

It is, I suggest, fair to assume that Smythe, Wyn Harris, and Wager reached the same height in 1933 as Norton in 1924. I showed Norton Smythe's photograph (the only one ever taken of the buttress across the great couloir), and he said he recognized the well-marked intersection of two scoops in the rock as the place he reached.

In general, I cordially recommend Mr. Murray's book to all who want a good summary of all that preceded this year's magnificent success. The sketch-maps and diagrams are excellent, so are the photographs; and there is a useful index. HUGH RUTTLEDGE

FRANCIS YOUNGHUSBAND: EXPLORER AND MYSTIC. By GEORGE SEAVER. *London: John Murray.* 1952. 391 *pp.* 25*s.*

Sir Francis Younghusband, who died in 1942, was elected an Honorary Member of the Alpine Club in 1905, after his return from the Tibet Mission. This mission was the crowning event of his Himalayan career which began when, as a young subaltern in the King's Dragoon Guards, he made an adventurous crossing of the Muztagh pass in the Karakoram at the end of his journey from Peking to India in 1887. His explorations in the Yarkand river headwaters, the passes into Hunza and the Pamirs, in Gilgit and Chitral followed, in days when these districts were virtually unknown, and before Conway and Bruce introduced ice-axes and European guides to the Karakoram in 1892. These adventures are well told by his biographer, who quotes freely from Younghusband's own writings, though there are a few slips when he summarizes the details. The story of the Tibet Mission in 1904 is very good: the three chapters devoted to it show Younghusband to be the pattern of what a great leader should be: thorough and patient in preparation, eager and daring in action, regardless of consequences to himself when he felt justified in departing from the letter of his instructions. His action in signing the Tibet Treaty, though disapproved by the Secretary of State at the time, has since been completely vindicated, and in his chapter 'The Aftermath' the author sets out clearly how wise was Younghusband's settlement of the problem.

Younghusband's qualities were the fruit of his adventurous spirit, his mystical character, and his faith in himself. Many of his friends will remember his almost devotional enthusiasm to the Mount Everest adventure in the early 'twenties when he was President of the Royal Geographical Society and Chairman of the Mount Everest Committee; and the leaders of the early expeditions, Howard Bury, Bruce, Norton, and Ruttledge all testified to his encouragement and support. His biographer traces the mysticism of his character throughout his life and shows how his experiences, and how in particular specific events in his career, influenced his later years.

KENNETH MASON

THE MOUNTAIN WORLD. 1953. Edited by MARCEL KURZ for the Swiss Foundation for Alpine Research. *Large 8vo.* 220 *pages,* 60 *photographs,* 12 *maps and diagrams.*

The publication in English for the first time of this, the seventh volume of the Swiss Foundation's well-known annual, is the first of a new series to be published in three languages of Berg der Welt.

Priority is given, naturally, to the articles on the 1952 expedition

to Mount Everest, written by the several members of the gallant team of Swiss Alpinists who came so close to success. Each of the successive phases has been vividly described and each is most interesting in itself. But there is too frequent repetition, and failure to achieve a connected and continuous narrative makes it difficult to gain a clear picture of an exploit which will live for ever in the annals of mountaineering. In his own *Mount Everest. A Century of History*, Marcel Kurz gives an excellent review of the history of the mountain and of the exploration of the approaches thereto, and of the many previous attempts to reach the summit. But the desire expressed in the preface for 'disinterestedness regarding the nationality of one's own achievements' does seem to have been overlooked in some of the comments. And it is only right to mention here certain omissions and inaccuracies. For instance, in addition to the so daring air reconnaissance by Robert L. Scott in 1942, a New Zealand airman brought back shortly after the war some valuable photographs. The American expedition referred to on p. 29 was ornithological and not botanical. The Lho La mentioned on pp. 33 and 34 which has hitherto retained that name is between Everest and Lingtren. But on p. 127 the South Col is shown as the Lho La. Even if the translation of the Tibetan name is correct the change in a book of this quality is not only confusing but untimely.

The climbs in the Bolivian and Peruvian Andes by Hans Ertl with Schroder and by Piero Ghiglione with Bolinder (of Sweden) respectively provide first-class reading and the translations are very good indeed. They provide interesting contrast with the Everest story and a not unwelcome reminder that there are other high mountains besides the Himalayas. Ertl's description of the ascent of Hancouma is almost an epic and he concludes with graceful and genuine tribute to the members of the Bolivian mountain troops who assisted them. As Ghiglione points out 'in southern Peru is an immense field for the explorer and mountaineer, with its quantity of virgin summits, many exceeding 20,000 feet in height'. The book ends with an account of exploration in Greenland which provides food for thought on the comparison of the respective problems of arctic mountaineering and those to be faced in other parts of the mountain world.

Throughout the photographs are magnificent and extremely well reproduced. Special mention should be made of the end panorama, from Taweche to Nuptse, which is as perfect as a photograph can be.

The book will be a joy to mountaineers, who without exception will be filled with admiration for the enterprise and fortitude of the men who took part in the various exploits described.

H. W. T.

HORNED MOON. By IAN STEPHENS. *Chatto & Windus.*

This is in every way a remarkable book; unbiased and yet a sympathetic account of a revisit to Pakistan. The illustrations, plain and coloured, are truly magnificent. Mr. Stephens is now a Fellow of his old college, King's, at Cambridge. He was first employed in public relations by the Government of India in the early 1930's, and from this he proceeded to the Editorship of the *Statesman*, the well-known British daily of Calcutta. There he stayed until well after the transfer of power in 1947, although he had incurred the displeasure of Lord Mountbatten and, by implication, of his new Indian Ministers. There is a factual account of the episode in Chapter 10 of *Horned Moon*, the trouble having arisen out of a leading article in the *Statesman* on the Indian action over Kashmir in October 1947. Mr. Stephens states, 'Glancing at it since I have found little that I would alter.' He appears to have acted on this and on all other occasions in accordance with the highest traditions of British journalism. Our author remained at his post for another three and a half years, holding the belief that a British-owned newspaper might be impartially helpful to both the new Dominions. This was although, as one result of the very equivocal Indian action over Kashmir, the two were virtually at war, with former brother officers and comrades of the now dissected Indian Army slaughtering one another. He found that his efforts to 'uphold an inter-dominion policy rather than to support one side' were misunderstood in India and he then returned to England. Mr. Stephens fully appreciates the fact that the Hindu and Moslem officers of both Dominions who had been trained at British military institutions approximated more to the outlook of the educated Englishman than did most of their own civilian compatriots, and he hints that had the conduct of affairs been left to the former things would have turned out far better. He furthermore states that the principal failing of many politicians of 'Delkaria'—a horrible new name he has coined for the old Indian peninsula—is vanity. This is not, of course, confined to Asia. The influence on the author of his intellectual background of Winchester and King's is very apparent as is also his self-confessed early tendency to left-wing politics. Thus he cannot refrain from tilting at the older generation of Anglo-Indian politicians, their occasional pompousness and social aloofness, even to the avoidance of Asiatic food. Men of the present generation who have never exercised executive functions, cannot well realize that officials of former days, isolated amongst virile, if primitive communities, had to rely on their own personality to maintain their authority. The author mentions the proximity of sudden death in India and from his own experience of

tropical disease may realize that before modern remedies came into use extreme care was needed in the dietary. He writes with the affection, so often felt by Britons resident abroad, of his own personal retainers and of his many Asian friends; and with understanding, but not uncritical, sympathy of Pakistan since 1948. He had the uncommon privilege of being permitted to cross the 'cease-fire line' in Kashmir where he came across a case of brutal and unwarranted slaughter of an old man and his son for trespassing in search of their cattle. As he says, 'Novel frontiers are not easy for the poor to remember.' He had the further privilege of going on patrol with the 'Frontier Scouts', the local corps who maintain order along the Afghan border of Pakistan. There he found no diminution of efficiency. The tribesmen have indeed comported themselves remarkably well towards their new Moslem rulers, setting an example to some of their neighbours.

The inspiration of a Monotheistic Faith has led to the creation of a new State and has moved mountains. A reader should find great profit in this book and a measure of comfort in these godless times. How the Faithful of Pakistan will confront the many and formidable perils that lie ahead depends, under Providence, on themselves and on their continued devotion and selflessness.

W. A. A.

HIGH MOUNTAINS. By CHARLES MEADE. *London: The Harvill Press.* 136 *pages,* 10 *photographs.*

Mr. Meade has sought for an answer to the age-old problem of why and how mountains, especially high mountains, exercise so deep an effect on certain men, and also women. He considers that a major cause is the sub-conscious urge, the longing for perfection. And he has gone deeply into the co-relation of nature-mysticism and religious mysticism, quoting widely from the writing of clerics, climbers, poets, and philosophers. He turns from De Saussure and Wordsworth to the Victorians—Leslie Stephen, Freshfield, and Conway—and to the moderns—Kugy and Young—to show the influence on all of 'the high hills'. In a striking chapter, 'Contemplation, Action and Memory', he shows how the old spell can return. And under 'The Spirit of Man' he deals with the motives that inspire climbers. After deprecating that of 'conquest', often prevalent in Germans, he shows fairness in quoting Paul Bauer after the ascent of superb Siniolchu: 'That we had reached the summit seemed a divine favour—our struggles on the slopes only deepened our reverence for God's creation.' His concluding chapter on 'Mountains and Mortality'

affords comfort and encouragement to those older mountain-lovers in whom 'the impression originally received may, like other human affections, become deeper and more tranquil as time goes on'. Mr. Meade has made a valuable contribution to the literature of mountains. H. W. T.

SEVEN YEARS IN TIBET. By HEINRICH HARRER. *Rupert Hart-Davis.* 1953. *Pp.* 288. *Illustrated.* 16*s.*

This is a delightful and illuminating book, in which the author has been well served by his translator. Much of it reads like a fairy story, since the evolution from a fugitive, begging his way to Lhasa, to the confidant of the Dalai Lama seems almost impossible without the assistance of a fairy godmother.

Harrer and others escaped from their internment camp in Dehra Dun at their third attempt in April 1944 and at last, accompanied only by Peter Aufschnaiter, he reached Lhasa in January 1946. The first half of the book tells of their flight across the frontier and their journey to Lhasa, while the second half is an account of life in that city and of how they became valued members of Tibetan society.

The sufferings which they underwent and the subterfuges which they practised to avoid being returned to India, show both Harrer and Aufschnaiter to have been outstanding both physically and mentally. They were clearly helped by being mountain men themselves and by having a very obvious sympathy for the Tibetans. The most outstanding feature of their wanderings was their crossing of the Changthang in winter, as Harrer says, 'days full of hardship and unceasing struggle against cold, hunger, and danger'. Penniless as they were, they suffered the continual risk of death at the hands of the bandits who infest that region. It is improbable that any European has travelled the route they took and none certainly in such circumstances.

However, all was forgotten at the sight of the golden pinnacles of the Patala and they bluffed their way into Lhasa, where they were made surprisingly welcome and treated with extreme generosity. When at length the Cabinet decided that they could remain, they had become one of the sights of Lhasa and in return were able to make themselves fully acquainted not only with the customs and habits of the inhabitants but also with many of the great in the land. Once granted asylum, they were not slow to prove their usefulness and, while Aufschnaiter was commissioned to build an irrigation canal, Harrer designed a garden and fountain for his host, Tsarong, Master of the Mint. From this they progressed to being fully recognized as

employees of the Tibetan Government and Harrer's tasks were varied and interesting, including the construction of a cinema for the personal use of the Dalai Lama.

Most interesting of all was the friendship they had with the parents and brother of the Dalai Lama, from which arose the most unusual and delightful relationship between the Dalai Lama and Harrer. It was much more than that which would exist between pupil and teacher and, of course, gave Harrer an insight into things Tibetan probably unequalled by any other European. He did and saw things normally forbidden and held a privileged position, all the more remarkable in that he apparently did not arouse the jealousy of anyone. His picture of the young ruler is touching and striking. The Dalai Lama is clearly an outstanding young man with great ability and a charming personality.

The closing chapters deal with the sad period of the threat from Communist China and Tibet's final eclipse. Harrer naturally feels sore at the way in which the Tibetans' pathetic calls for help were ignored by U.N.O. Even if physical aid were impossible, surely sympathy and recognition of the tragic events which were taking place could have been shown and the naked aggression condemned in terms which left no doubt of world opinion.

The book has two shortcomings. One is the lack of a really good map, which is essential for tracing the wanderings from Dehra Dun to Lhasa. The sketch provided is not sufficient. The other is an index, which would add greatly to the value of this work.

Whether the reader is well acquainted with Tibet or not, I am sure that he will enjoy this book, since in addition to being an adventure story, it is also an account of an interesting and charming people from an unusual point of view. We should congratulate the author on his work and condole with him on the sad end to an enterprise which had possibilities far greater than anyone could realize. What a privilege it was to be offered the chance of educating a ruler in the ways of the West and of satisfying his craving for knowledge and assistance.

J. E. F. GUERITZ

TIBET AND THE TIBETANS. By TSUNG-LIEN SHEN and SHENG-CHI LIU. *Stanford University Press, California (London: Geoffrey Cumberlege)*. 40*s*. SEVEN YEARS IN TIBET. By HEINRICH HARRER. *Rupert Hart-Davis*. 16*s*.

One day when I was enjoying an excellent luncheon as the guest of the Chief Oracle of Tibet in his little monastery near Lhasa a con-

versation developed on the subject of wars of religion between co-religionists of different sects. 'But surely', my host said, 'there may be many different routes by which different people may travel towards the same destination.' Nothing could be more dissimilar than the routes by which, and the circumstances in which, the authors of these two notable books approached Lhasa. But substantially they are in agreement as to what they found there. Between them they give a stereoscopic view of Tibet and the Tibetans during the years which preceded the Chinese Communist invasion of Tibet in 1950.

I first knew Dr. Shen (of Harvard and the Sorbonne and for many years a professor of history in China) and his secretary Mr. Liu as most welcome guests at the Sikkim Residency when Dr. Shen was on his way to take up the post, under the Chiang Kai-shek National Government, of Resident Commissioner in Tibet. Later in 1944 I had several talks with him in Lhasa and was impressed by his broad outlook. Of Herr Harrer, a graduate of the University of Graz, an international skier and a distinguished mountaineer, I knew that, having failed to get clear of India after the Nanga Parbat expedition of 1939, he had been interned at Dehra Dun in the foothills of the Western Himalayas, and that he had, at the third attempt, escaped in the summer of 1944 into the high and desolate regions of Western Tibet. By a combination of resolution, ingenuity, tact, and great physical endurance, he and another escaped prisoner of war, Herr Aufschnaiter, in the course of eighteen months made their way to Lhasa—up the head-waters of the Sutlej, down the upper reaches of the Tsangpo, and finally, in mid-winter, across the high, bleak, and bandit-infested Chang Thang.

The early part of Dr. Shen's and Mr. Liu's book contains an account of the history of Tibet as viewed by loyal Chinese subjects. This fills what had been a void in accounts of Tibet easily available to Western readers. The earlier part of Herr Harrer's book is one of the great escape and travel stories of recent years. But history can always be re-written, and of fine escape and travel stories there are many. What, a generation hence, may be valued most in these books are the later chapters.

In Dr. Shen and Mr. Liu's book—the style is restrained and the language admirable, with not a word wasted—Parts III to VI deal with Lamaism, the system of government ('of the God, by the God, and for the God'), life with the Tibetan people and the yearly round in Lhasa. Little of importance is missed and it would be difficult to detect a single false note. Herr Harrer's account is more intimate. Based on the theme that on his arrival in Lhasa he was a stranger and destitute and the Tibetans took him in and made him welcome and clothed him, it describes charmingly and with sincerity his associa-

tion with Tibetans of every class and the close touch which he established with the young Dalai Lama. His narrative of the abortive flight of the Dalai Lama towards the Indian border in December 1950, when the Chinese Communists were invading Tibet, raised a lump in my throat as I recalled how, some forty years ago, I had ridden for several days with the previous reincarnation of the god of Mercy, the thirteenth Dalai Lama, when, after the Chinese revolution, he was returning from temporary asylum in India.

Dr. Shen indicates that, if the Chinese Nationalist Government had continued to be in power, a way might have been found to permit of Tibet adjusting itself to the conditions of the present time without loss of essential liberty. Even as things are perhaps it may so happen that the East, to which the West owes so much—religions, writing, mathematics, medicine—may care, in turn, to borrow from the West and to grant to regions such as Tibet liberty to develop on their own lines. But whatever may happen it can hardly be doubted that the Tibet of a generation hence will be very different from the Tibet of yesterday. It is to be hoped therefore that those who know the Tibet of yesterday—some of their names occur in these books—will in the concluding words of Herr Harrer help to 'create some understanding for a people whose will to live in peace and freedom has won so little sympathy from an indifferent world' and whose one wish, as he writes in another passage, is 'to find God and to serve Him'. The task of future writers may be the simpler because now that the history and religion and the general circumstances of Tibet and the Tibetans have been so fully dealt with by Bell, Spencer Chapman, the present authors and many others, what will be most wanted in future are accounts of the particular experiences of individuals.

Mr. Richard Graves is warmly to be congratulated on his translation of *Seven Years* from the German. The one important criticism of these books is the quality of the maps and plans, and of the reproduction of the photographs which is not up to the standard of several recent books on Tibet. And why does *Seven Years* lack an index?

B. J. G.

The Swiss Foundation have sent us, most kindly and courteously, under the title of EVEREST *a picture album illustrating the doings of their expeditions which came so near to success in 1952. Needless to say the photographs are of outstanding quality. They are conveniently arranged with the connected letterpress printed separately. It is a worthy record of their gallant attempts.*

EDITOR.

PAKISTAN

Mountaineering is rapidly catching on with the youth of Pakistan and a number of clubs, both military and civil, have been formed. Several of the high-ranking officers and officials are keenly interested and it is hoped that a controlling body for mountaineering will be established before long. At the moment the new 'Karakoram Club' founded on the former 'Punjab Mountaineering Club' seems to be in the lead, but it is early yet to predict anything definite. The Himalayan Club's former local secretary in Karachi, Peter Goodwin, has recently taken over as Hon. Secretary of the 'Pakistan Ski and Mountaineering Club' which has its headquarters in Rawal Pindi. A Pakistani liaison officer is accompanying the Austro-German Rakaposhi expedition under Mathias Rebbitsch; Professor Desio, the Italian leader, has obtained the services of a liaison officer with some previous experience and it is understood that the Cambridge Baltoro party are also to have one.[1] EDITOR

[1] They were fortunate in having the services of Major-General Hayaud Din, Chief of the Pakistan General Staff.

CLUB PROCEEDINGS AND NOTES

CLUB PROCEEDINGS, 1953

The Twenty-fifth Annual General Meeting of the Himalayan Club was held at the Great Eastern Hotel, Calcutta, on Friday, 29th May 1953, at 6.30 p.m. In the absence of the President on home leave, Mr. V. S. Risoe took the chair.

The Minutes of the Twenty-fouth Annual General Meeting held in Calcutta on 25th July 1952 were confirmed. The Annual Report and Audited Accounts for the years ended 31st December 1952, copies of which had been circulated by post to all members, were confirmed and approved. Messrs. Price, Waterhouse, Peat & Co. Ltd. were reappointed auditors for the year ending 31st December 1953. The Officers, Elective Members of Committee, and Additional Members of the Balloting Committee were duly elected as follows:

OFFICERS

President: C. E. J. Crawford, Esq.

Vice-Presidents: J. Latimer, Esq.
Lt.-Col. H. W. Tobin.

Hon. Treasurer: J. T. Ewing, Esq.

Hon. Secretary: T. H. Braham, Esq.

Hon. Local Secretaries:

Delhi:	R. E. Hotz, Esq.
Darjeeling:	Mrs. J. Henderson.
Bombay:	A. R. Leyden, Esq.
Kulu:	H. M. Banon, Esq.
Dehra Dun:	Gurdial Singh, Esq.
Karachi:	W. Brown, Esq.
United Kingdom:	Lt.-Col. H. W. Tobin.

Hon. Editor: Lt.-Col. H. W. Tobin.

Elective Members of Committee:

Dr. K. Biswas	V. S. Risoe, Esq.
S. E. Golledge, Esq.	J. O. Sims, Esq.
R. E. Hotz, Esq.	J. A. Steven, Esq.
A. R. Leyden, Esq.	R. D. Vaughan, Esq.
R. H. T. Dodson, Esq.	Major-General H. Williams.

Additional Members of Balloting Committee:

W. B. Bakewell, Esq.	B. R. Jennings, Esq.
J. T. M. Gibson, Esq.	Brig. C. R. Mangat Rai.
J. N. Mathur, Esq.	T. D. Welby, Esq.

Other Appointments:
Hon Librarian: V. S. Risoe, Esq.
Hon. Equipment Officer: R. D. Vaughan, Esq.

The Annual General Meeting was followed by a very enjoyable function attended by seventy members and guests, which included a buffet supper and talks, illustrated by films and slides, by R. H. T. Dodson and M. Hruska.

Members have continued to be kept informed of the Club's activities, and of the major expeditions to the Himalayas by means of the News Letters, of which approximately three are issued every year. Expeditions during 1952 included the attempt on Cho Oyu by Mr. Eric Shipton's party.

The outstanding event during 1953 was the ascent of Everest by Sir John Hunt's party. Details of this fine achievement can be read elsewhere. Most of the Delhi and Calcutta Members of the Club were fortunate enough to be able to meet Sir John Hunt, Sir Edmund Hillary, Sri Tensing, and other members of the climbing party shortly after their return from the mountain. The President represented the Club at a number of functions which were held in London in honour of the Everest party.

On 23rd January 1954 the Club held a tea-party in Darjeeling for Sherpas, their wives and families, and other guests. The occasion was the presentation to certain Sherpas of Coronation Medals graciously awarded by Her Majesty the Queen for the part they played in the successful Everest Expedition of last year. In all twenty-two Sherpas had been recommended by Sir John Hunt to receive the medals, which were specially inscribed with the words, 'Mount Everest Expedition'.

The President, Mr. C. E. J. Crawford, who presented the medals, also awarded Himalayan Club Tiger badges to the following Sherpas for excellent services during the 1952 and 1953 seasons:

Da Namgyal;	Ang Temba;	Ang Namgyal;
Ang Nima;	Nawang Gompu;	Ajeeba;
Ang Tsering;	Pasang Phutar.	

The President addressed the meeting in Hindi, and in the course of his speech mentioned that the last occasion on which a party of this kind had been held was in 1924 after General Bruce returned from Everest.

It will be of interest to members to know that in addition to Tensing Norkay, G.M., the following climbing Sardars will assist in arranging teams if applied to direct:

1. Ang Tharkay Sardar,
'West View',
Clark Road,
Darjeeling.
2. Angtsering Sardar,
Toong Soong Busti
Darjeeling.
3. Ajeeba Sardar,
Toong Soong Busti,
Darjeeling.
4. Gyalzen Mikden Sardar,
Toong Soong Busti,
Darjeeling.
5. Pasang Dawa Lama,
'West View',
Clark Road,
Darjeeling.

As it was never the intention of the Club that the Honorary Local Secretary in Darjeeling should permanently become responsible for organizing Sherpa porters for expeditions and as there are now Sherpa Sardars able themselves to accept this responsibility, the Committee recommends that even when the Darjeeling Local Secretary is available, members should apply direct to the Sardars. The Darjeeling Local Secretary will continue to maintain the Club's register of porters and will always be glad to render advice and assistance to members. The Local Secretary in the United Kingdom, Col. Tobin, has available an up-to-date list of Sherpa porters on the Club's register, and will be glad to supply information to members in the U.K.

Attention has been drawn to the rather unsatisfactory entries made by some Expeditions in the porters' reference-books. These are unsatisfactory in that they are vague, and when analysed give no real information other than that the porter in question is a very good fellow. It would assist the Club greatly in ensuring suitable men for expeditions if a little trouble could be taken over the porters' references, and a reasonably comprehensive statement of their capabilities, or otherwise, given.

There are quite a few Garhwali porters trained in elementary snow- and ice-craft in eastern Garhwal. The Hon. Local Secretary in Dehra Dun would be very glad to put anyone interested in climbing that area in touch with them.

In spite of the restrictions upon access to certain areas of the Himalayas, there has never been greater activity. Though we cannot

expect another such thrill as the ascent of Everest, 1954 should be another wonderful year for those who, to what extent they may, physically or in spirit, voyage in the Himalayan mountains. There are no less than eleven important expeditions, among them the New Zealand Alpine Club Expedition to the Baran glacier area, led by Sir Edmund Hillary; the Californian Expedition to Makalu; the British Reconnaissance Expedition to Kangchenjunga, organized by J. W. R. Kempe, in which our Hon. Secretary, T. H. Braham, is taking part; the Japanese are trying Manaslu again; the Americans Dhaulagiri. At least three nations have sent expeditions to the Karakoram, the Cambridge University to the Baltoro, Austro-German under Rebbitsch to Rakaposhi, and the Italians under Desio to K2.

In the President's Notes and News, which appeared in vol. xv of the *Journal*, mention was made of the difficult period through which the Club had passed during the war years, and of the steps which were being taken after transfer of the Club's headquarters from Delhi to Calcutta to revive it. It can now be said, six years later, that the Club is in a flourishing and vigorous state. New members have joined and old members have been traced. There are up-to-date registers of both Members and Sherpa porters. On 1st April 1954 there were 553 members of whom 189 were resident in India. A new Members' List is in the process of being printed. We have a permanent home for our equipment and library. The *Journal* has appeared again, maintaining the high standards set in previous years, and members have been kept in touch with Club affairs and matters of general interest by the issue of periodic News Letters. The various sections of the Club have also sprung into vigorous life and in various ways have been able to be of much assistance to Himalayan Expeditions.

All this has been the work of many willing hands, but the Club is particularly grateful to its retiring President, Mr. C. E. J. Crawford, who has been President during the whole of this period, and to whose leadership and enthusiasm the Club very largely owes its renewed vigour and prosperity.

As we go to press word has come in of the death of Mr. V. F. HOUSTON of the OXFORD UNIVERSITY PRESS. Our publishers have our deep sympathy in their loss in which we share. For Mr. Houston was a staunch ally and an unfailing helper in matters connected with the distribution of our Journal.—*Ed.*