

THE MOUNT EVEREST RECONNAISSANCE : *A paper read
at the Evening Meeting of the Society on 2 December 1935, by*

ERIC SHIPTON

WHEN last spring the Mount Everest Committee received the permission of the Tibetan Government to launch another attempt on the mountain they were faced with an unusual situation. The permission to operate in Tibet covered a period of a year from June 1935 until June 1936. It was too late in the year for a pre-monsoon attempt on Mount Everest, and yet it was obviously a pity not to utilize all the available time.

There has been a very considerable body of opinion which held that the correct time for an attempt on Mount Everest was during or immediately after the monsoon, and there was much to be said in favour of this view. Probably the most serious and dangerous obstacle climbers have met with on the mountain has been the terrible north-west wind which is such a constant menace before the breaking of the monsoon. When the monsoon winds are established this obstacle is removed and there follow some months of comparatively calm and warm weather. Weather conditions indeed are then ideally suited to prolonged siege tactics such as those employed with such remarkable success by the Bavarian expedition on Kangchenjunga, tactics which would be quite impossible to employ on Mount Everest before the monsoon. But unfortunately the heavy snow which falls on the mountain during the monsoon makes a fresh obstacle about which we had very little data. It was known that the snows which fall in the earlier part of the monsoon would consolidate readily on flat glacier and on the great fluted ice ridges of the Himalaya, but we were by no means certain about the behaviour of the snow lying on extensive faces at altitudes above 23,000 feet. The disastrous avalanche on the North Col in 1922 and the impasse with which the Bavarians on Kangchenjunga were faced as soon as they left their ridge in 1931, were indications that monsoon snow at great altitudes formed at least a temporarily impassable barrier. Whether or not there occurred any time during the warm monsoon period when this snow was in a manageable condition was a question badly in need of an answer.

Therefore the Committee decided to send out a reconnaissance expedition with the following objects in view :

1. To collect data about monsoon snow conditions at high altitudes and investigate the possibility of a monsoon or post-monsoon attempt. This necessitated our remaining in the vicinity of the mountain during the whole period of the monsoon.
2. To examine the possibility of alternative routes from the west. Two had been suggested: the north-west ridge which rises from the head of the Central Rongbuk glacier; and the practically unknown Western Cwm which is really a tributary of the valley which contains the Khumbu Glacier.
3. To report on the present ice formations on the North Col. This would be of use in deciding what apparatus will be necessary for the main expedition next year.
4. To try out new men as possible candidates for the main expedition and to secure for them preliminary acclimatization.

*Telephoto from Nyonno Ri range. Lhotse, Mt. Everest,
N. Col, Changtse (N. Peak); Khinge in foreground*





*The Western
Cwm and Nuptise*

5. To try out new designs of tents and other equipment; and also new ideas for provisioning high-altitude expeditions. In this latter connection I secured great assistance from Dr. Zilva of the Lister Institute.

6. To carry out a stereo-photogrammetric examination of the northern aspect and valleys of Mount Everest, and to continue the work of the Reconnaissance Expedition of 1921. It is unfortunate that the all-absorbing problem of reaching the summit had relegated science to the background, and that we had still little precise knowledge of the heights and contours of the Northern Face.

This then was a golden opportunity; and the Committee invited Michael Spender to join the expedition. He had only just arrived in England for a short holiday from Copenhagen, where he was engaged in working out the results of his last Greenland expedition. The Danish authorities kindly released him from his contract and he had just three weeks in which to make his plans and to collect his instruments. Now, as on the expedition itself, he displayed an energy and enthusiasm for which I soon came to have a considerable respect. We took with us the Wild photo-theodolite which had been used by Professor Mason in the Karakoram in 1926, and a lighter Zeiss photo-theodolite lent by the Danish Geodetic Institute and adapted to take films.

I budgeted to run the expedition for an inclusive cost of £200 per head. The Committee invited five other mountaineers to join the expedition: H. W. Tilman, who had been my companion in the exploration of the Nanda Devi basin last year; L. V. Bryant of New Zealand, who brought with him a very considerable reputation for toughness and mountaineering skill; Edwin Kempson, a house master of Marlborough College, who had some twelve years of winter and summer mountaineering in the Alps to his credit; Dr. Charles Warren, who had had previous Himalayan experience as a member of Marco Pallis' expedition in 1933; and E. H. L. Wigram, a medical student at St. Thomas', the youngest member of the party. The last three named had all been members of the Cambridge University Mountaineering Club which has already produced such a remarkable number of Everest climbers of note.

The party assembled in Darjeeling about May 21 and were ready to move off three days later. We took with us as interpreter Karma Paul, who has served on all the Everest Expeditions except the first, and fifteen Sherpa and Bhotia porters amongst whom were our old friends Angharkay, Passang Bhotia, Tsering Tharkay, and Rinzing. Our passport had not yet arrived from Lhasa, and this caused us some anxiety; but on the way up to Lachen we met Rai Bahadur, the personal assistant of Mr. Williamson, who kindly gave us a temporary pass to cross the frontier. We entered Tibet by way of the Kongra La at the head of the Lachen Valley. This, by the way, would be an infinitely preferable route for the main expedition if the pass were fairly clear of snow by the beginning of April, which I have reason to believe is the case in a normal season. The heavy transport need not accompany the climbers on this portion of the march. For our purpose there was no need to go straight to Mount Everest, and we hoped to be able to see something of the beautiful Nyonno Ri range which had attracted Wager and me so much in 1933. From Gompa Lawu across the Kongra La we struck due west, thus avoiding Kampa and Tengkye Dzongs. We lived mainly off the country and our diet consisted largely

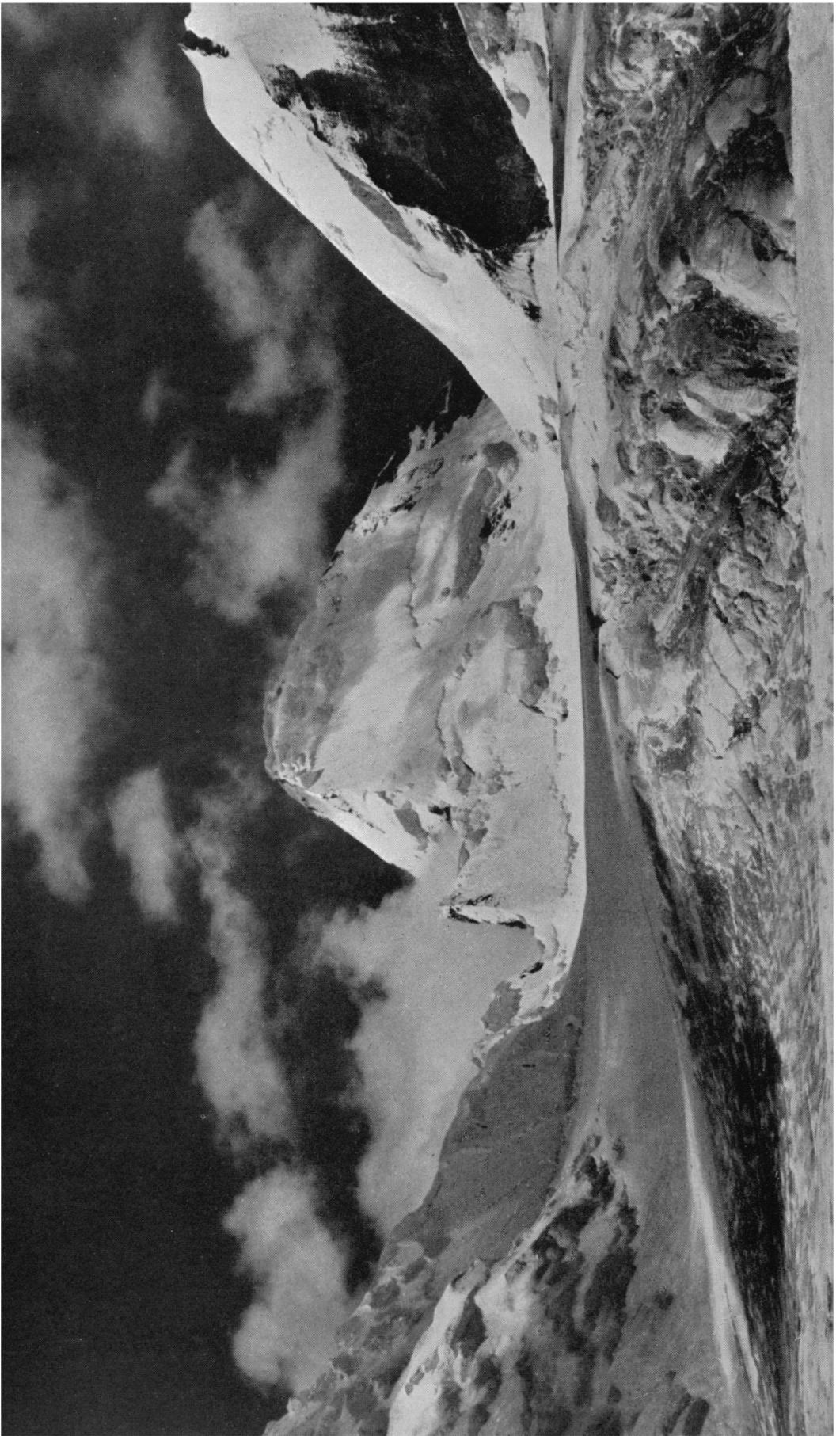
of tough mutton and eggs. We were able to obtain large quantities of the latter at each village and frequently consumed as many as a hundred amongst the seven of us in a single day. Once, when the party was split up, four of us ate a hundred and forty in one day. They were by no means always fresh and had to be scrambled in order to disguise the bad ones.

We reached Sar on June 8, and the party was divided into three: Spender with a group of Sherpas selected for their intelligence was to photograph the eastern aspect of the range from the rounded hills above Sar. This he succeeded in doing with characteristic thoroughness. He occupied five stations in ten days. Tilman, Kempson, and Warren, were to attempt to climb Nyonno Ri itself and also to explore the southern part of the range, taking with them the light photo-theodolite; while Bryant, Wigram and I would attempt to cross a high pass to the north, examine the interesting basin lying immediately to the west of the main watershed and return by some southern pass, thus completing the circuit of the main massif. We agreed to return to Sar after ten days.

Tilman and his companions encountered considerable difficulties on Nyonno Ri and failed to reach the summit. They had an interesting time however and did some useful work in the southern part of the range. We got over our pass and found ourselves in a strange basin completely surrounded by snow peaks. There were extensive areas of rich pasturage and we found that it was used as a grazing ground by the inhabitants of the Kharta Valley. We had a delightful time exploring this beautiful country. From various hills which we climbed we obtained views of Mount Everest and Makalu, and it was interesting to note that although it was already the middle of June these peaks were still clear of monsoon cloud, and there seemed to be little wind on them. Evidently this would have been a good season for an attempt on Everest. May we hope for a similar one next year. As I had hoped we managed to cross a pass to the south of Nyonno Ri and so returned to Sar.

Thus the parties were occupied until June 20, and I now hoped to be able to examine the southern extremity of the range. But unfortunately on our return we learned that this diversion from the usual route was not approved by the Tibetan authorities and in obedience to their wishes we proceeded as directly as possible to the Rongbuk valley. Now as in 1933 we were received with the greatest possible courtesy and hospitality by the Tibetans. The head man of Sar gave us free use of his house. He held several banquets at which we were fed lavishly and entertained by music and dancing. Our host was a great connoisseur of "Chang" and it was no penance to drink with him. The evenings occasionally became somewhat boisterous. Several times this year I took the opportunity of tactfully asking these head men the reason for their objecting to Europeans entering their country. In each case they replied that they believed that money and Western civilization could do nothing for them but promote unhappiness. I feel sure that the British Government would wish that this point of view should be respected.

We left Sar on June 26 on which day the first rains fell over the country, indicating that the monsoon had arrived, and we reached Rongbuk in nine marches, arriving there on July 4. We were delighted to find that our old friend the abbot of the monastery was alive and well. He received us with his usual good humour and gave us a good deal of sound mountaineering advice.





North-eastern aspect of Mount Everest from the summit of Khartaphu
[Telephoto]

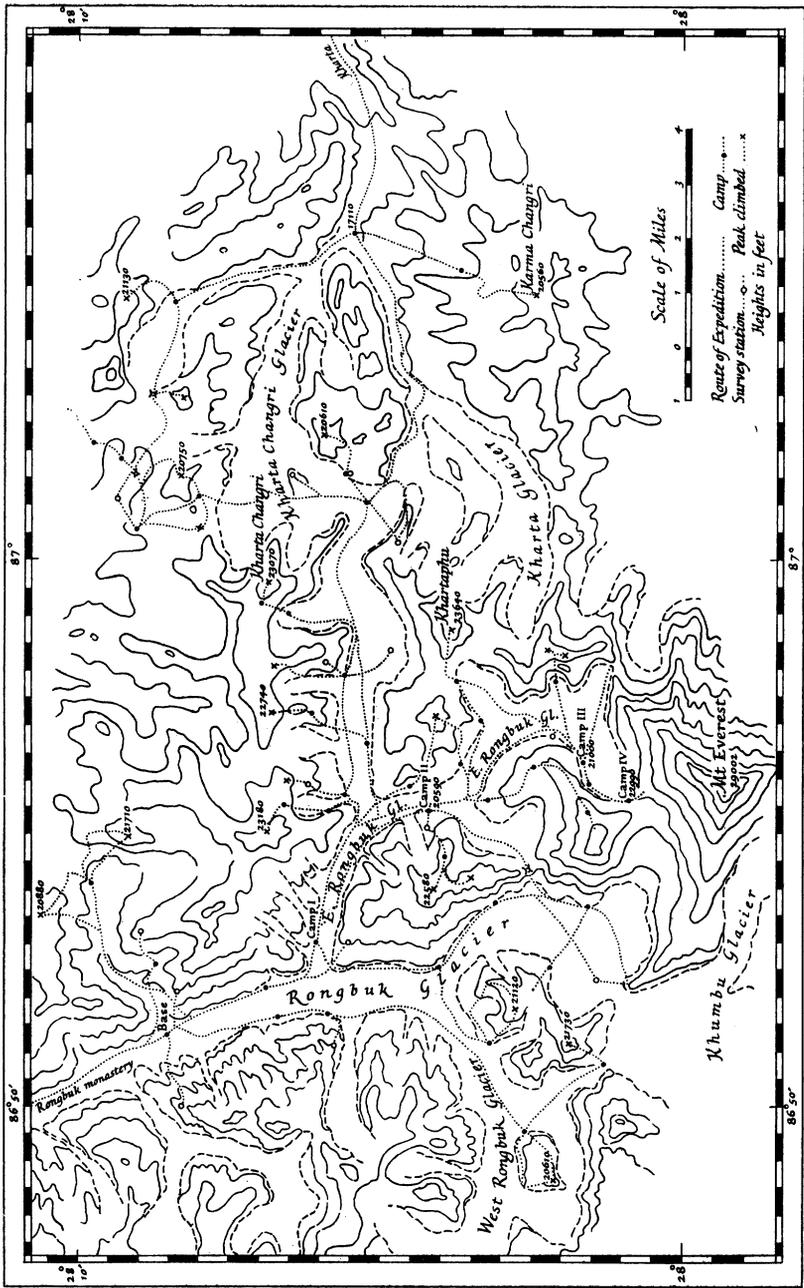


Kharta Changri from the east

The whole party, with the exception of Karma Paul, left the Rongbuk Monastery on July 6 in gloriously fine weather, taking with us sufficient food for five weeks, and forty Tibetans to carry our gear as far as Camp II. We left Spender and his cameras, together with a few of the older and more experienced Sherpas, at the old base camp and went on ourselves to Camp I the same day. While we made our way up the glacier to Camp III the weather continued fine and the north face of Everest became quite black and soon began to resemble the mountain in its pre-monsoon aspect. The days were hot and windless, the nights clear and cold, and it was difficult to imagine how the slopes of the North Col could be in anything but perfect condition by the time we reached them. Bryant unfortunately now became ill and had to be left behind at Camp I to follow up when he had recovered.

We reached Camp III on July 8 without much incident or effort and had enough food there to last us for three weeks, having dumped the rest at Camp II. The next day the weather became unpleasant, though very little snow fell. We spent the day moving camp farther up towards the North Col. A few hundred yards above Camp III, in fact within sight and hail of it, we came upon the body of Maurice Wilson. It was evident that he had died in his sleep from exhaustion and not from starvation, as he had found a dump of food which had been left in 1933 and which was still well stocked.

A great deal has been said about the danger of snow avalanches on the North Col. Exactly why these slopes should differ from any others at a similar altitude it is difficult to say, but the memory of the disastrous avalanche of 1922 is partly responsible for the extreme caution with which subsequent parties have tackled them. *We* regarded the North Col with the same respect and were determined not to run any risk with snow which we considered to be in the least bit doubtful. Kempson had had very considerable experience of winter snow conditions in the Alps, while I imagined I was familiar with a fairly wide range of Himalayan snows. The weather conditions for the past week had been ideal for packing the snow, and although we examined carefully each section of our route we could not detect anywhere the slightest tendency to avalanche. In detail the aspect of the North Col had changed considerably since 1933. The middle section of our old route, known to us as the Punch Bowl, and the 30-foot wall above it were contorted beyond recognition into a mass of tottering séracs, which would have rendered the 1933 route exceedingly difficult, if not impracticable. A tongue of ice a few hundred feet to the right had protruded somewhat and now provided us with comparatively easy access to the old site of Camp IV. The ledge on which this camp had been had now completely disappeared, and the ice was far too steep for us to think of pitching a tent. In the upper section great bulges of ice forced us to traverse right across the face before we could climb to the crest of the col which we reached at a point very close to the site of our old Camp IVa. The big Arctic tent and the food dump which we had left in 1933 were buried under some 8 feet of (presumably) monsoon snow. For three days we worked on the ice slopes of the North Col and by July 12 we had established a camp at the foot of the north-east ridge and stocked it with sufficient food and fuel to last us for fifteen days. It was occupied by Kempson, Warren, and myself, and nine Sherpas. Our plan was to take a light camp up to 26,000 feet and from there



Scale of Miles

Route of Expedition..... Camp.....
 Survey station..... Peak climbed.....
 Heights in feet

to investigate the snow conditions on the slabs of the upper part of the mountain and to reconnoitre some of the ground about which there has been so much debate.

We had established ourselves on the North Col in less than a week after leaving Rongbuk, and it seemed advisable to spend the next two or three days in rest and acclimatization. The weather was bad and we were worried by a nasty wind which was particularly fierce at night. We spent four uncomfortable days waiting for better weather, during which time we went some way up the ridge. As time was of no particular object and our job was to keep a watch on the mountain during the whole of the monsoon, we had made up our minds that we should not force our way up in bad weather. It seemed a waste of time to hang about doing nothing, so we decided to leave on the North Col all the food and fuel we had with us and what tents and equipment we could spare and descend to Camp III to spend our time climbing other peaks in the vicinity until the weather improved. We could then return to the North Col without being obliged to carry anything further up there. With this plan in view we started to descend on the morning of July 16. Although the weather had been bad, only a few inches of new snow had been deposited on the mountain during our stay on the North Col and although we tackled the slopes below with extreme caution they did not seem to have altered materially since we had last seen them. We descended in two parties: Kempson and I were in front with five Sherpas, while Warren was some way behind with the other four. We had not gone far before we were brought up short at the brink of a sudden cut-off which stretched for several hundred yards in either direction. This indicated that an enormous avalanche had recently broken away largely along the line of our ascending tracks. In fact the whole face of the slope had peeled off to a depth of 6 feet. This was an alarming discovery and there followed a somewhat heated debate as to whether we should retreat to the North Col or carry on down. The others advocated the former course; but it seemed to me that if, as we had reason to suppose, the avalanche had occurred on the previous night its track must indicate a temporary line of strength, and it was not likely that another avalanche would fall immediately, while if we returned to the North Col we would later have to face a risk which we had no means of gauging. Anyway my argument was the simpler to put into effect and so we crept down with our hearts in our mouths and reached the glacier unharmed.

To my mind the incident had considerable significance. As I have said, very little new snow indeed had been deposited on the slopes and this cannot have had any appreciable effect on the stability of the old snow which we had unanimously agreed seemed perfectly sound. And yet the avalanche had occurred along our ascending route. That merely indicated that we were not competent to judge the stability of monsoon snow at these altitudes. Anyway I decided there and then to abandon our stores and have nothing further to do with the North Col during the monsoon. Later we were to have substantial evidence that the monsoon snow does not either disappear or consolidate at an altitude higher than 23,000 feet in the region of Mount Everest. We were thus able to provide a definite answer to one of the chief problems which we had come out to solve. In my opinion the only time of

year that one can reasonably hope to reach the summit of Mount Everest is during the exceedingly short interval between the end of the winter gales and the arrival of the monsoon. In 1933 there was no such interval.

When we reached Camp III we found a note from Tilman saying that he and Wigram had gone down to Camp II to bring up more food. They had climbed two peaks of over 22,000 feet in the neighbourhood. On the next day, the 17th, we moved a camp up to the head of a big unnamed glacier which flows into the East Rongbuk from the east. From here we climbed the peak known as Khartaphu—23,600 feet high. We carried the light theodolite with us, but before we could reach the summit clouds had rendered it impossible to do any useful work. However we managed to get some fine views into the country to the east which later proved to be very useful to us. We also took some telephotos of the summits of Everest and Makalu. We descended to Camp II the next day where we met Spender. He had completed several stations on both sides of the Main Rongbuk Glacier and had obtained sufficient data to enable him to draw a large-scale plan of the north face of Everest and to calculate with sufficient precision the altitude of any point on that face, both of which achievements will be extremely useful in planning a fresh assault on the mountain.

The party was now divided into two. Spender, Kempson, and Warren were to attempt to explore the country lying between the East Rongbuk Glacier and the Doya La while the rest of us remained in the vicinity of Camp II. We moved across to the east and climbed the much-photographed Kellas Rock Peak, 23,000 odd feet. This mountain has so often appeared in newspapers under the name of "Mount Everest" that we experienced quite a thrill in reaching its summit. There, as on Khartaphu, we found that there was a very marked and sudden change in the quality of the snow as we reached 23,000 feet. The snow on the ridges below was good and safe, but that lying above 23,000 feet had always to be treated with the utmost caution. After returning to Camp II we climbed the beautiful ice peak which rises above it—it is 22,580 feet high. After this we explored the little valley which joins the main Rongbuk Valley on the east, and climbed two more peaks of 21,000 feet in the neighbourhood. This was done in order to be able to supplement with photographs the work which Spender had done in this valley a fortnight before. We returned to Rongbuk on the 31st and were surprised to find that Kempson was already there. A series of misfortunes had prevented them from completing the task they had set out to do. Their food supply had run short; they had encountered vile weather which seems to pour up through the Arun Gorge during the whole of the monsoon; two of their Sherpas had developed dysentery, and Spender himself had developed a complaint with disturbingly similar symptoms. However they had done some very good work. Spender had completed several good stations in the vicinity of what had come to be known as the Kharta Changri Pass, while Kempson and Warren had climbed two peaks of over 22,000 feet, up one of which they had taken the light photo-theodolite. They also climbed the beautiful peak of Kharta Changri which is just over 23,000 feet high. The rest of the party arrived in heavy rain that evening and the next two days were spent in devouring the luxuries which Karma Paul had collected in our absence and which consisted of two sheep,

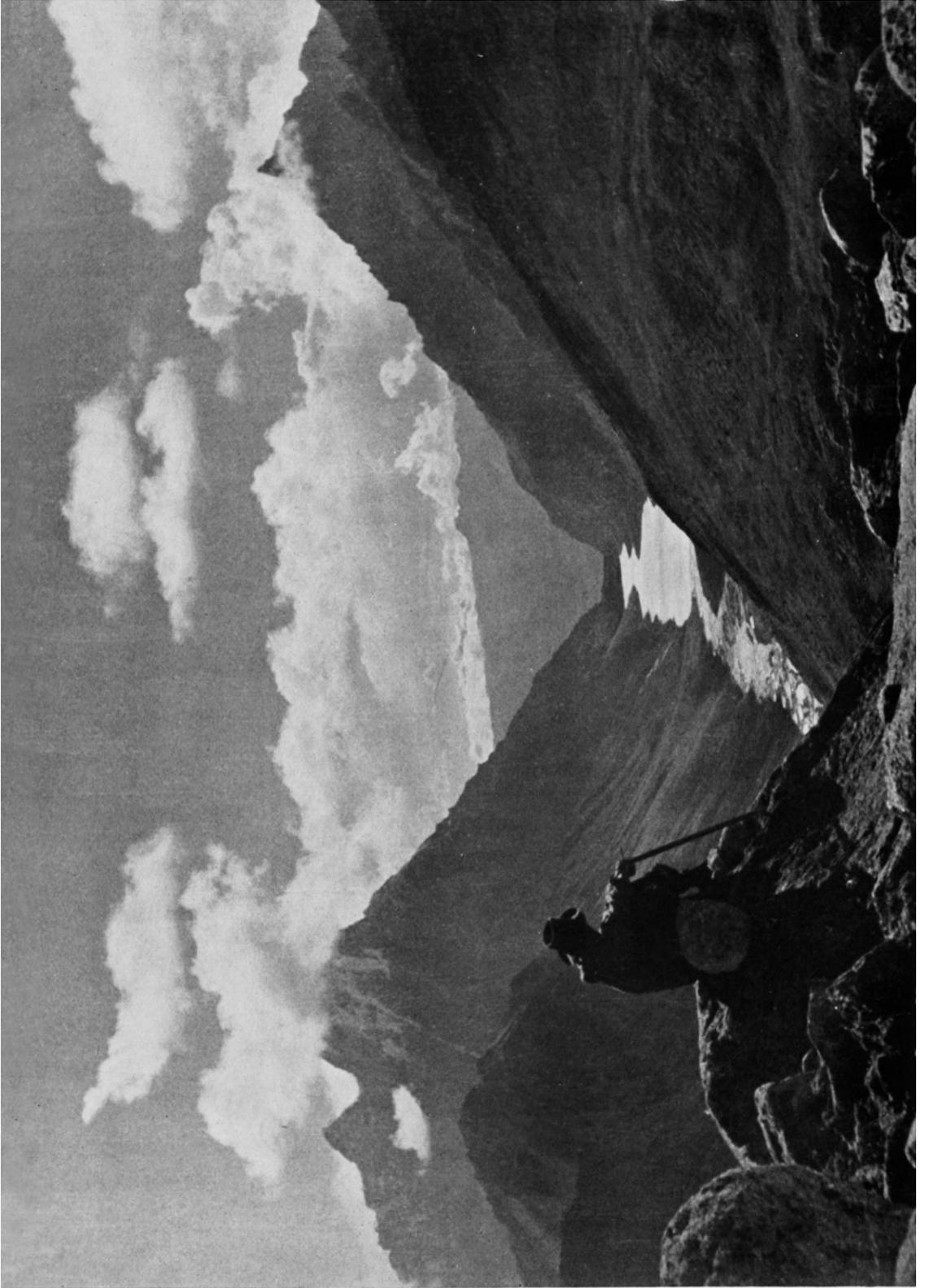
twenty-one dozen eggs, and a little rancid butter. Tewang and Namgir, the two sick Sherpas, were discharged. The party was greatly weakened by the departure of Kempson, who had to return to England.

Our next intention was to examine the western side of the mountain. Although Mallory in 1921 had visited the watershed in two places he had experienced bad weather while doing so and had not seriously commented on the mountaineering aspect of the southern side. Another task we had was to report on the feasibility of the suggested route up the north-west ridge of the mountain. Tilman, Wigram, Bryant and I left Rongbuk on August 3 making towards the head of the main Rongbuk Glacier. Warren stayed behind with Spender who was still sick. Some days later these two followed us up and completed Spender's work on the north-western aspect of the mountain. After two days' march up the west side of the main valley we divided our forces into two. Tilman and Wigram were to attempt to cross the Lho La to the foot of the Western Cwm while Bryant and I went up the West Rongbuk Glacier. We climbed two peaks, one a fine fluted-ice peak which commanded one of the most magnificent mountain views I have seen, the other Lingtren Nup up which we managed to take the theodolite for a round of angles and photographs. After this we took a camp on to the crest of the watershed and stayed there for two stormy nights. On August 10 from this camp we climbed the triangulated peak, 21,730 feet. The day was an adventurous one. Conditions rendered the climb a very delicate job; on the descent while we were making our way along a narrow ice ridge I heard a roar like a heavy gun going off, felt a jerk of the rope round my waist which nearly cut me in two, and found myself standing alone on the ridge. Bryant had broken away a bit of cornice, had gone down with it, and was now almost hanging on the other end of the rope some way below the crest of the ridge; but he had retained possession of his axe and was thus able to cut his way back to me. Later in the descent we got involved in a small snow avalanche which, fortunately, we were expecting. Early on the following morning, having spent an entertaining night trying to drown the noise of the wind with some of Bryant's extraordinary repertoire of comic songs, we erected the theodolite with considerable difficulty on the crest of the pass and took a round of angles and photographs. Unfortunately the photographs were spoilt by the film jamming in the camera. However we secured several somewhat cloudy views over that interesting section of Nepal which the Sherpas refer to rather vaguely as Sola Khombu. We also saw up into the mysterious Western Cwm. No descent is possible on the southern side of this col, and we were sorely tempted to try to find an exit from the basin of the West Rongbuk Glacier to the west but we had agreed to reassemble at Rongbuk on August 14. On our return there we learnt that Tilman and Wigram had found that there is no route southward from the Lho La, and having climbed a peak in its vicinity, had crossed a difficult pass lying immediately north of the North Peak and descended direct to Camp II. They had then climbed two more 22,000-foot peaks before returning to Rongbuk. While at the head of the main glacier they had found time to examine thoroughly the lower section of the north-west ridge which had been strongly recommended as an alternative route up Mount Everest. They were both convinced that an attack from this quarter would not offer the slightest

chance of success. From the mountaineering standpoint these two had put up a fine performance.

After two days' rest we set off once more up the East Rongbuk Glacier, having instructed Karma Paul to meet us in three weeks at Kharta with such surplus gear as remained. Our first objective was the North Peak, though Tilman's report of increasingly bad snow conditions above 22,000 gave us some misgivings as to the advisability of attempting a peak of nearly 25,000 feet at this time of year, and we bitterly regretted having left this until so late. We had two main objects in climbing the peak: one was to be able to secure some telephotographs of the upper part of Everest from its summit, the other was to collect further evidence of the behaviour of monsoon snow at these extreme altitudes. From Camp II we made our way up to and along the great horseshoe ridge of the mountain. We found that the snow was in a frightful condition and the higher we got the worse it became. We had three camps on the mountain, the highest of which we placed at about 23,200 feet, almost directly above the North Col. In order to reach it we had to flog our way through snow up to our waists. The weather was bad and at this camp we spent one exceedingly unpleasant night. Our primus stove ceased to function as the jets were too large for that altitude and we could not melt enough snow for drinking. The next morning we started at dawn but found that the snow was worse than it had been below and soon we were floundering in a seemingly bottomless morass. From where we were we could look down on to the North Col and could see that the large Whymper tents which we had left there in July were now buried under fresh snow. The final ridge of the North Peak we found to be very sharp and under the existing snow conditions it was impossible to reach the summit, and we were regretfully compelled to abandon the struggle. When we regained the East Rongbuk glacier the next day we found Spender waiting for us in the central trough, having completed with much difficulty two stations in the Eastern Cwm.

The next fortnight was spent in making a high level route between the East Rongbuk Glacier and the Doya La above Kharta. It was certainly the most delightful two weeks of the expedition and yielded the most interesting geographical results. We crossed the Kharta Changri pass to what Spender with his arctic terminology had called the Ice Cap Station. Indeed the upper glaciers of this district appear to resemble closely those of the Greenland ice cap. But in their lower reaches they are very Himalayan in character and take a great deal of negotiating. From here we had a delicious time crossing new passes, climbing peaks and unravelling the most interesting mountain topography. The mornings were generally fine, which allowed us to work in camera stations at suitable points all along our route. When we reached the Doya La we experienced again that indescribable pleasure of coming down to living things after a long sojourn in high glacier regions. The smell of grass and flowers was almost intoxicating. On September 6 we reached Kharta, where we hired ponies and hurried as fast as these would carry us to the Choten Nyima La. We spent the remainder of our time climbing in the little-visited Dodang Nyima Range of North Sikkim. As is generally the case, the results of the expedition fell short of our hopes, but our inability to wander far afield enabled us to do more mountaineering than we had intended. Twenty-



*A basin west of
Nyomo Ri*

six peaks, all over 20,000 feet high, had been climbed, the summits of only two of these had previously been reached.

DISCUSSION

Before the paper the PRESIDENT (Major-General Sir PERCY COX) said: It is very cheering, judging by the size of the audience, to see that Mount Everest is still a good draw. The paper we are to hear is on the Reconnaissance Expedition of 1935 by Mr. Eric Shipton. He will tell us the origin of the expedition and the conditions under which he led his party last summer. I will merely say a word or two to give you the background and refresh your memories.

When the 1933 Expedition came home, the earthquake in Nepal and the death of the Dalai Lama seemed to make it very unlikely that we should get permission for another expedition for some time to come; but the whole question was discussed and it was decided that one never knew when permission might be forthcoming. Some fortuitous event might suddenly make it possible for an expedition to make another attempt. Therefore it was decided to keep a watchful eye on opportunities for asking permission for another expedition. Unexpectedly in January 1934 we received that permission. It was not received in time to enable us to fit out a strong main expedition to attempt the summit during 1935, but we were loath to risk letting the permission lapse by not starting operations at once, so we decided to send out this reconnaissance under Mr. Shipton.

Mr. Shipton has a very fine record as a climber. Before he made any attempt at climbing in the Himalayas he climbed in Kenya with Mr. Wyn Harris, and he was one of those of the 1933 Expedition who very nearly got to the top of Everest. It will be remembered that he was with Mr. Smythe on the second assault. Afterwards, when the expedition returned to England, he was not to be denied, and made fresh plans for the following summer and did a fine piece of mountaineering by penetrating into the basin surrounding Nanda Devi. On his return he read us a paper on that subject. He is now to tell us of his experiences on the Everest reconnaissance in 1935.

Mr. Shipton then read the paper printed above, and a discussion followed.

The PRESIDENT: I call first upon Mr. Hugh Ruttledge, who led the 1933 Expedition and is going to lead the 1936 Expedition.

Mr. HUGH RUTLEDGE: I wonder if all of us have realized, when listening to Mr. Shipton quietly describing his adventures, exactly what has been done during 1935, because the achievement which he has been describing so quietly is one of the most remarkable in Himalayan annals. Quite casually at the end of his paper he said that twenty-six peaks of over 20,000 feet had been climbed. If he had told you that he had entered twenty-two public houses this afternoon it would have sounded much more exciting.

But actually what has been done during 1935? Firstly, I think this performance has proved beyond reasonable cavil the right season for attempting to climb Mount Everest. Many people have sincerely believed that we were making a mistake in not attempting the mountain during the monsoon or, at any rate, just after it. I think the party's experiences this year have put that out of court. Secondly, the mountaineering judgment of Mallory in 1921 has been fully vindicated. It has been put beyond reasonable doubt that it is not the slightest use attempting the great north-west *arête*, which to one or two mountaineers has seemed rather attractive. That was seen at close quarters, and certainly that route will not do. Thirdly, we are pretty certain now, as I think

we were practically certain in 1933 also, that the proper route of ascent is that traverse which Brigadier Norton discovered with Somervell in 1924.

Fourthly, and most important, the monsoon snow conditions above 23,000 feet have been found to be difficult and dangerous; but more than that, the conditions on the North Col itself have been very thoroughly explored. Nothing but the most superb mountaineering judgment and skill would have got that party down off the North Col in the way it was done, and we must all endorse Mr. Shipton's judgment in coming straight down after that huge avalanche had fallen. None but mountaineers can understand. You saw that long line across the snow face of the North Col; that probably represented an avalanche of many hundred thousand tons of ice and snow, and it swept right across the route of ascent. Mr. Shipton was absolutely right to have nothing to do with the North Col after such a happening as that. So we must try to get up the mountain next year between, shall we say May 15 and, in more or less normal conditions, June 7. This year of course was an exceptionally favourable year in some ways, possibly the period during which the mountain might have been climbed may have been a little longer, say to June 14. You will remember that Mr. Shipton told us the monsoon did not break until about June 26, but probably the snow conditions were getting steadily worse by that time and a little before.

Fifthly, there is the fact that this party has subjected itself to that intensely exacting ordeal of acclimatization. I believe it is a fact that no test is known to medicine by which it can be proved how a man will react to very high altitude conditions. The party that was sent out this year had to undergo that test and, most unhappily, all did not pass it. They were all first-rate men, but it was the only thing to be done, and we can at least say that as a result of this test the nucleus of next year's party consists of men who have been thoroughly tried out and are known to be able to climb at those altitudes. That gives us a very much better chance of success in 1936.

In conclusion, may I congratulate not only Mr. Shipton on his extraordinarily fine leadership and judgment but also all the members of his party. I think I am right in saying that only two of the others have been in the Himalayas previously, but all climbed like veterans. I must not forget the fine performance put up by Mr. Spender who, I believe I am right in saying, had not done much climbing before he went with the party. How he got to some of his stations and did that valuable work for us in examining the north face of the mountain I do not know. Certainly he will train to be a good mountaineer if he is interested.

Finally may I say for myself that it is with a very deep sense of privilege and of responsibility that I am going to do my very utmost in 1936 to place these splendid climbers in an attacking position.

The PRESIDENT: We have Mr. Spender and Mr. Kempson with us. I am going to ask them to come up in turn. Mr. Spender, as you have heard, was the scientific element in the expedition and did very valuable work on the topography of the untrodden mountain region which the party were exploring.

Mr. MICHAEL SPENDER: I think the best contribution I can make to this evening's discussion is to say something as shortly as I possibly can about weather in general and Mount Everest weather in particular: it helps one to understand what happened to us and it may help others to understand what happens to next year's party.

As you all know, the typical feature of the weather which is met by the party which goes out before the monsoon is a frightful north-west wind, a wind of very great persistence and very cold. This year's party went out later in the year, at a time when the north-west wind would be weaker. It went out at the same time as Colonel Howard-Bury's party went out in 1921, and we could look

to them for an account of the kind of weather we might meet. So we borrowed the Secretary's copy of the account and read about their kind of weather and, Mr. President, we were depressed because they had a dreadful time in 1921; a time of perpetual cloudiness and frequent snowfall. We thought it might be difficult to take photographs under such conditions and that even the mountain climbers might lose their enthusiasm. So when we finally got to Rongbuk and the sun shone and the snow peaks gleamed we were very gratified.

As the season went on there was a worsening and unfortunately the day Shipton was on the North Col, July 15, was a very bad day indeed. By August 15 the worst of it was over. But even when it was at its worst the weather did not give us bad days in succession. There would be one bad day and then we were able to get on with the job the next day. It was not as in the Alps, where bad days come in such long periods as to make one restless. Those single bad days were welcome to us as periods of rest.

The principal point is that the north-west wind is the dominant factor. You must think of the monsoon as a great mass of warm air trying to trespass on the rightful stream of air for those parts. This has actually a very curious effect; for when you get the bad weather in the monsoon period it appears to come from the north and our joke was to call it the Gobi Desert monsoon. The real monsoon splits round the land mass of India into two branches, one of which comes from the Arabian Sea direction and the other makes a sort of flanking attack along the east coast. The first, the Arabian Sea monsoon, hardly ever gets to Mount Everest: it is the second wind that really brings the bad weather.

When the monsoon first comes up towards India the layer of warm air is only a few thousand feet thick, and it has no chance of reaching the summit of the Himalayas. But when you have a front of warm air advancing against this north-west stream of cold air, all sorts of disturbances are set up which develop into the storms which wander up and down and to and fro till they strike the Himalayas. When the first of these disturbances gets to Mount Everest there is some cloud and snowfall, and the expedition telegraphs back "The monsoon has broken." Well, that is just as you like to take it because the real mass of warm air has not yet reached Everest. That will come later on. Until the warm air gets to Everest there may be longish periods of fine weather, although there is always the risk of other circumstances coming in.

We got to Rongbuk just at such a fine period. We left it on July 6 in the most beautiful weather, when Mount Everest and all the other high peaks were glittering with new snow and there seemed to be no wind or cloud. But as we went on, and even until the beginning of August, we only got the warm air in fits and starts. From August 9 for a few days we had stormy weather, and it was very difficult to go on with my sort of work. That was the period when Mr. Shipton and Mr. Bryant were climbing together, and they had an uncomfortable night and very bad snow conditions. A few days later, when Shipton was at 23,000 feet on the North Peak, there were only 3° or 4° of frost at night.

The reason things were like this in the summer was because the north-west wind held its own more effectively than it generally does. The Bengal Bay monsoon actually was blown sideways by the north-west wind. Those of you who have had reports from India are already aware that Calcutta had only half its former rainfall and that Lower Bengal in general was very short of rain. On the other hand, Assam, Upper Burma, and Sikkim had too much, as we saw when we came back to Sikkim: roads had been washed away, bridges were down, and so on. Very probably Tibet had a good supply of rain, and we came in for the benefit of that because as we walked home we walked through good crops which the headmen were kind enough to credit in part to us.

On the whole, we really had finer weather than we should have had, and the little bit of bad weather we had in August was due to a disturbance skirting the foothills of the Himalayas and drawing up the warm air into the mountains; but as soon as that was past the north-west wind came in again and you could see it blowing over the top of the warm monsoon air. As August came to an end we watched the north-west wind gradually deepening and gradually pushing before it the warm summer air and taking the clouds away from the regions visited by the monsoon.

Mr. E. G. H. KEMPSON: Acclimatization, I am afraid, is as necessary in speaking in public as it is in mountaineering, so I shall not detain you for more than a minute or two. There is one thing Mr. Shipton told you that I should like to underline, and that is the remarkable change in conditions that appears as you rise from the 21,000-foot level to the 23,000-foot level and above. On the occasion when Dr. Warren and I were climbing Kharta Changri we had a delightful camp on the glacier at 21,000 feet; it was a beautiful crisp night, with 30° of frost and actually the coldest night we had during the usually temperate monsoon weather. When we started up our peak it was perfect alpine weather. We got on to our col just making nicks with our feet in the ice, but as we rose to about 22,000 feet conditions got progressively worse. First we found crust such as you sometimes, unfortunately, get in spring ski-ing; then this degenerated into the powder snow of which you have been hearing. The worst characteristic of that powder snow was the fact that the steeper it got the deeper it got: progress was very slow. We actually took four hours getting to the top of our peak whereas it took us only thirty-five minutes to come down. This gives a measure of the work in the ascent.

I cannot close without saying two things: first, and you all know it, the porters that we had were simply superb. Some of us started by being just a little ashamed of not carrying enormous loads when every one round seemed to be carrying 60 and 80 lb., but you get over that after a bit. The porters were really quite first rate, and my porter who came back to Darjeeling through Tibet with me was one of the best. Secondly, and this I also need scarcely say, I cannot tell you what an excellent leader we had in Shipton. He left out one point about himself. He suggested that he always ate a great deal. Well, perhaps he did when he was in the valleys but he was an astonishing person up high. He seemed to subsist on nothing, though he himself would dispute that fact and blame all of us for eating nothing. But that is the only fault I can find in him. It is sufficient to say that our party under his leadership had not a single quarrel.

The PRESIDENT: Colonel Howard-Bury who led the original reconnaissance expedition is here. We shall be very disappointed if he will not give us a few words. It must have been of great interest to him to compare his own experience with what he has heard to-night.

Colonel HOWARD-BURY: I came here this evening to try to recall some of the old places that I had seen about fifteen years ago, but I should really like to congratulate Mr. Shipton on those wonderful photographs he has shown. He mentioned the enormous consumption of eggs on the way up. I should like to ask whether they were chickens' eggs, for on our way up we were presented with wild geese eggs, and we could not possibly have competed with the 1935 party's consumption. Further, I would like to ask him whether he was also given eggs on the way down. The children found out that we liked eggs very much and kept the eggs all the summer, offering us them in the autumn, and being surprised that we would not have anything to do with them as food!

What has interested me enormously is that Mr. Shipton has taken a totally different route from other expeditions. We only saw the map for a short time,

but the way he went to Mount Everest was completely new. All along, he has been through a new line of country, and though he has told us very little about the geographical work that has been done, I am sure that a great deal of most useful geographical work has been achieved in the reconnaissance that he has done this year. For whereas in 1921 we went along, I might say, the valleys, he seems to have been going along the tops of the peaks the whole time. But he has borne out very much what we found out round Mount Everest about climate. We were there throughout the whole summer and until comparatively late in the autumn. We too found that there was that heavy snowfall and that the mountain looks completely different in the autumn from what it does in the spring, when it looks quite black. Then there is that perpetual terrible wind that begins after the monsoon and blows with increasing force the whole time. Clouds of snow blown off from the summit of the mountain render a climb after the monsoon quite impossible. I am glad it has been again established that at that time it is no use attempting to climb the mountain.

I congratulate Mr. Shipton most heartily on his expedition, on the geographical work that he has done, and on the most excellent photographs that he has taken.

Dr. T. LONGSTAFF: I am glad to have the opportunity of paying my compliments to Mr. Shipton. I do not think he has made it evident that during the expedition last summer about as many peaks of over 20,000 feet were climbed in the Himalaya as have been climbed since the days of Adam, so far as I remember the list.

I would also like to say that I am as firmly convinced as ever that his system of sending people up to 20,000 feet and over as often as possible and bringing them down again is the best form of acclimatization that there is; that it is a very much better method of acclimatization than keeping people permanently at a high altitude, and I have no doubt the climbers who were with Shipton will show that that form of acclimatization remains with them permanently. The oftener you go to 20,000 feet the better able are you to go again, but if you stay for a great length of time at a high altitude your general condition degenerates.

I must also congratulate Mr. Shipton on the extremely economical way in which he conducted the expedition. He has always been a shining example in that respect, yet although the expedition's work was executed with great financial economy you will notice that he did not grudge his party 140 eggs a day! If we can manage to collect a team of mountaineers of the technical capacity of Mr. Shipton there is no doubt that Mount Everest will be climbed, given the luck of the weather.

The PRESIDENT: It may interest you before we close this meeting if I let you know the names of those who have been invited and have accepted the invitation to be members of the 1936 Expedition. Mr. Hugh Ruttledge will lead, as you know, and I am very glad to say Mr. Smith Windham will take charge of the wireless; Mr. F. S. Smith, whose climbing reputation you know; Mr. Shipton; Mr. Wyn Harris, who did so well in 1933, coming from Kenya again; Mr. Kempson, whom you have just heard and who well won his spurs on the recent reconnaissance; Dr. Warren, who was with Mr. Shipton; Mr. Wigram and Lieutenant J. M. Gavin, R.E.; Major Morris, a retired officer of the 3rd Gurkhas, who has been in Nepal and is on his way to Darjeeling, and whose business it is to collect the Sherpa porters and run the transport. Finally Dr. Noel Humphreys, whom all of you know by name and who has recently returned from an expedition which he led to Greenland with Edward Shackleton. That makes eleven; there is one more place to be filled.

Now to say a word of thanks to Mr. Shipton. It is an astonishing accomplishment that they should have been able to climb successively twenty-six fine

peaks all over 20,000 feet. This, as Dr. Longstaff put it, is more than the separate climbs that we know of in the Himalayas since the days of Adam. You will agree, I am sure, from what you have heard that it was entirely worth while sending out this reconnaissance. We have learned a great deal from it. Unfortunately two men who were believed to be candidates for the 1936 Expedition were found to acclimatize badly and had to be dropped out. If they had not been tried on this occasion they would have gone on the main expedition and failed at the last trial. Mr. Shipton himself has come back extraordinarily fit and well: all the better for his summer experience, and fit to go again and to attack the summit we hope. I ask you to join me in thanking Mr. Shipton and his companions very heartily for addressing us and in congratulating them on their splendid performance.