

DERDI AND CHAPURSAN VALLEYS : MOUNTAINS OF N.W. CHITRAL ¹

BY REGINALD SCHOMBERG

THE DERDI VALLEY

THE Derdi valley lies in the extreme N.W. of Hunza between the Kilik and Chapursan valleys and, except for the lower 4 or 5 miles, it appears that no European has ever ascended it, although an Indian subordinate of the Survey of India, Torabaz Khan, who accompanied Major C. J. Morris in 1927, when that officer explored the larger Chapursan valley to the S. of the Derdi, visited and made a sketch of it. The Derdi valley is particularly interesting as it is the real source of the Hunza river. Looking down the valley from about 6 miles above its junction with the Kilik river, the eye sees one continuous and clear sweep of shale hill and valley top, while the mouth of the Kilik is hidden. Indeed, this latter stream is an interloper that has forced its way through a narrow gorge, and has broken down the left wall of the Derdi. The two streams meet at a tumbledown tower known humorously as 'Topkhana' or the 'Gun House' (Artillery), but the Kilik appropriates the name of the combined stream. The reason for this is clear. The Derdi valley leads nowhere; the Kilik is one of the main routes from India to Central Asia.

The Derdi valley differs from most of the valleys of the Karakoram and of Hunza in being very accessible. The valley is really in the Hindu Kush and at the extreme end of that range. The path up the Derdi, first on the left and then on the right, is very easy. The lower part of the valley has several side glens filled with well-grown trees, chiefly birch and poplar. Tamarisks too are abundant and, wherever there is shelter, trees flourish by the main stream. There are some patches of cultivation and a few huts, but except when the harvest is ripe or flocks are pastured, the valley is deserted.

A feature of the lower Derdi was the clear and copious streams gushing out from the inhospitable shale slopes. In one place, known as the Spring of the Bad Cliffs, the ground was purple with *Primula reticulata* growing luxuriantly. Otherwise plant life in July was poor. There was a pedicularis and one or two other common plants. The struggle for life is too much for the Alpine flora as the snowfall of the

¹ The Derdi and Chapursan valleys are both in the Survey of India $\frac{1}{4}$ -inch map, 42 L. The mountains of N.W. Chitral are found on the recently published $\frac{1}{2}$ -inch map, 37 $\frac{P}{S.W.}$, 37 $\frac{P}{N.E.}$, 37 $\frac{P}{S.E.}$, 42 $\frac{D}{N.W.}$, 42 $\frac{D}{S.W.}$. The Tirich Mir Group lies in 37 $\frac{P}{S.E.}$ and $\frac{P}{N.E.}$.—*Editor.*

winter is too slight to provide much water, while as there is little or no rainfall, the aridity of the valley is repugnant to them. The shale slopes, too, are seldom stationary and vegetation has no chance of establishing itself.

We passed a number of old huts and sheepfolds dating from the time when this was a great resort of the nomadic Kirghiz. When, after the Hunza-Nagir war, the British took over the country, the Kirghiz were bidden to keep on the Chinese side of the watershed—to the benefit of nobody. We deeply regretted this order. A Kirghiz camp means mutton and milk, cream and butter and, if need be, shelter in a thick, warm, felt tent. Nobody has taken the place of these nomads and good land is wasted.

Our highest camp was at Urgasht-i-dur or the Home of the Basket. It was not a very attractive place, a mere hut and sheepfold but at least our coolies were sheltered. It lay on the right of the valley, while immediately opposite was a fine, white torrent pouring through a narrow gap in the cliffs on the left of the valley. Above this narrow exit three glaciers coalesced. These glaciers came from three branch nalas at the head of the Derdi, but the glaciers were clearly retreating, or 'drying-up' as my men called it. The greater part of this feature was closed by a high rampart of perpendicular rock to which clung a few fragments of snow. As so often happens in this area, there is no place where the normal snowfall can rest and consequently it is but rarely, in periods of abnormal snowfall, that the glaciers receive an adequate addition of ice to compensate them for their loss in summer.

We now went up the main valley for two miles. The whole of the upper half of its surface was a wide, stony stretch over which the stream rambled. We then went up the snout of the glacier filling the head of the valley. On the left of the end of the glacier immediately above, a steep climb led to the summer pasture of Dil-i-Sang which was also the name of the glacier. Judged by local standards this was a fine grassy stretch, but in Kashmir no herdsman would give it a moment's thought. Above was a belt of purplish-black stone and behind lay the moraine of the glacier in a wide bed, narrow in extent and clearly drying up.

Opposite the mouth of this side glen and on the right of the main valley flowed the only glacier in full vigour; this came from a comparatively minor valley, thrusting out a great white tongue over the grey shale. Its head held a fine snowfield: facing north, its future career is a promising one. Indeed, should it continue to advance, it will block the whole valley in two or three years' time, a lake will be formed and later a flood will come. The local people said that in the past two years it had advanced very much. It ended in a great wall 40-50 ft. high, with particles of ice at the foot. The state of the Dil-i-Sang Glacier, the main source of the Derdi valley, was deplorable. In 1934 its snout had retreated a thousand yards from where it had once been. In its heyday the glacier had filled the entire valley to a height of 200 ft. above the present (1934) lowest level of its snout—*i.e.*

where the main stream poured out of the black, shrivelling ice. The height of this point was 13,660 ft.

On either side of the valley, separated from the drying glacier, lay a fringe of ice, the remains of what had been the above-mentioned ice-stream, at one time 800 to 1200 yards wide. On the right (and shady) side there was more ice than on the left but the abrupt, black ice-cliffs were only too clearly gradually decreasing. This whole face of the glacier—from which the living ice was about half a mile distant—showed every symptom of collapse.

After examining and scrambling over this dreary expanse of dead ice, I ascended part of the glacier on the left of the valley. I was wholly unprepared for the magnificent view that rose before me. The entire head of the valley was closed by a superb barrier of snow and ice, from which rose three peaks averaging 19,000 to 20,000 ft. These presented a glittering and dominating mass of virginal white. Their hanging glaciers and great corniches burned against a background of cloudless blue. A few rock faces appeared as a relief to the whiteness of this cirque.

I had expected the usual rather undignified ending that is the fate of so many of the valleys of the Karakoram and Hindu Kush; and I was indeed rewarded for coming to the head of the Derdi, against, let me add, all local advice. The explanation of all the glacial features which I have described lay, I thought, in the fall of the main glacier. From the foot of the heads where the glacier first formed, to its present snout, there was a considerable drop. I have always noticed that the steeper the gradient, the more difficult it is for a glacier to maintain its full vigour. In these regions the aridity and the heat continue to play great havoc on an ice river exposed all day, as was this Dil-i-Sang Glacier, to intense isolation; and one, moreover, facing a little South of East.

Owing to its steep fall, the glacier was drained at once of its melting ice and there was no regelation. A glacier with a gentle gradient retains much of its melted ice and is less a prey to wastage. It must also be remembered that the flatter the surface of the glacier, the acuter are the rays of the sun, and so the greater is the protection derived from the valley sides. I noticed but one small ablation valley on the left of the Dil-i-Sang.

One more point. Between the lateral, living glacier described above on the right and the main but drying glacier, was another minor tributary also in retreat. If present conditions continue the Dil-i-Sang Glacier must still further retire, unless of course an exceptional snowfall resuscitates it. This minor tributary indicates the difficulty of maintaining the ice-flow at the valley head.

We returned down the right of the Derdi and camped on the same side of the river. The coolies wished to ford the river and camp on the other side, but as we were bound for the Chapursan, we camped below the Kermin Pass (13,000 ft.) leading to that valley, in a charming grove of trees, not a usual experience in Hunza. I found the Derdi

valley in every respect attractive. It was easy to move about in as things go in that region, and is well supplied with wood. I saw several minor explorations which, given the time, might well be made ; but whatever happens, the scenery at the head is ample reward.

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THE CHAPURSAN AND NEIGHBOURING VALLEYS

The Chapursan is the highest and most important lateral valley in Hunza, joining the Hunza river on the right, above the small village of Khudabad. This valley was visited by Major C. J. Morris, a member of the Alpine Club, in 1927, and his account appears in the *Geographical Journal* of June 1928. The valley has also been visited by other travellers.

This paper will endeavour to give an account of certain aspects of the valley, and of the other lesser glens close to it, which have not so far been published.

We entered the valley by the Kermin Pass (13,000 ft.) which is on the watershed of the Chapursan and its northern neighbour, the Derdi. We proceeded up the valley until we came to the Irshad valley which joins it on the left from the main axis of the Hindu Kush and forms the frontier between Hunza and Afghanistan. There are two passes at the head, both easy, the Kirghiz Uwin on the right or W., and the Kik-i-Uwin on the left or E. Both passes are over 16,000 ft. in height. The passes themselves were of little interest. Two small glaciers flowed from them on the Hunza side, and on the right of the Irshad valley was a fine circle of precipitous reddish cliffs with a glacier at their feet and two small lakes. These glaciers were drying up. We found exactly the same state of affairs at the head of the Chapursan where the valley ends in two almost parallel nalas, holding long and level glaciers. The right or S.W. valley leads to the Chillinji Pass. The left or N.W. ends in a wide, flat and unimpressive mass of snow and ice with insignificant peaks beyond. Indeed, the end of the Chapursan valley is strangely commonplace. Returning from the head of the valley where there was nothing to detain us, we crossed the Yishkuk Glacier, the principal one of the valley and the true source of the Chapursan river. We then reached a smaller glacier, a tributary of the Yishkuk, the Kukkijerab, and ascended it. Both of these glaciers were interesting. The Kukkijerab had retired very considerably and the Yishkuk was also deteriorating rapidly. Besides these glaciers a large ice river, the Koz-i-yaz or Shady Glacier, flows from the S.W., with a considerable mass of ice extending for miles above it. This glacier must be nearly as long as the Yishkuk. It, too, was retreating and had already, in 1934, withdrawn half a mile from its most forward limit.

Its surface was comparatively level, and its disintegration seemed to be slow. We crossed this twice from side to side, and evidences of its decay were manifest.

The Yishkuk Glacier is responsible for the floods that did enormous harm to the Chapursan valley about a century ago. It is remarkable that we did not see a single glacier in the valley that was not retreating. My view is that, with one or two insignificant exceptions, all the glaciers in the area drained by the Hunza river—omitting one or two major glaciers in Shingshal—are drying up. The evidence points to a period of great glacial activity a hundred years ago when probably a cycle of severe winters with heavy snowfalls increased the size and energy of the glaciers, causing great damage to villages which were destroyed by the ice-flow. Since then, snow deposits have been normal, and the glaciers have been unable to replenish their excessive store of ice, amassed during the exceptional seasons aforesaid. In the main Hunza valley there have been several occasional advances during recent years, *e.g.* the Hussaini, the Minapin and others. But the tendency to retreat has been more pronounced than that to advance. The Hosainabad Glacier below Baltit first retired, then advanced so rapidly as to threaten the villages once more, then steadily retreating.

To return to the Kukkijerab. We ascended this glacier, and found that it completely filled its valley. We camped close by at a summer village and pasture. The houses were crowded into a small side nala, chiefly shale, and 17 families lived there. The pasture was on the hill-sides above the glacier.

The next day we crossed the moraine, no easy task. The glacier was most interesting; and must be almost equal to the Yishkuk in length. It rises not far from the head of that glacier, flows E., then N., and then W., thus describing almost a complete semicircle. Like its neighbours, the Kukki is in a high state of disintegration (as has already been mentioned), its ice-flow fails to reach the Yishkuk, while below the snout of the Kukki was a considerable space with no ice at all. The Kukki carried a surprising amount of moraine, mostly large rocks weighing many tons. These great ashlar were now lying lopsided and drunkenly in slime and slush at the bottom of great pits and depressions. The advanced state of decay was very evident. Lakelets, shrunken earth-covered ice, subsidences and black ice were everywhere on the last (lowest) 4 miles of the glacier.

Looking S. up the Kukkijerab the view was striking. There was a high wall of rock holding snow wherever it could. Hanging glaciers clung to what support they could find and about a third of the way from the top of this rampart was a sort of ledge giving some support to the snow and ice where the glaciers bulged and protruded ominously. After crossing the moraine we camped under the pass that led to the Lupghar valley. There were here a few summer huts and some yaks grazing on a small alp. I ascended to a great height to examine the Banufsha or Violet (*i.e.* violas) valley, so called because the violas grow there but I saw no traces of any. We found ourselves on a knife-edge, with black, red and white stone outcrops, while below us precipitously lay the Violet valley, 4 to 5 miles long and utterly desolate. There was no grass and only a glacier, drying up like its

fellows. It had also like other valleys subsidiary minor glaciers, but even these could not keep its main glacier alive.

I was also rewarded for my climb by a fine view of the head of the Kukkijerab and saw the glacier sweeping east from peaks 20,182 and 19,422 ft. It flowed below peak 22,751, the main feature of the great rock and ice massif referred to above, but despite the great height of the peak there was no ice-flow into the glacier at its foot. The peak, in fact, was so steep that no glacier could cling to its side, and so the great wall, 20,000 ft. high, was useless to the drying glacier beneath. As to the Violet valley, there was a little patch of grass just at its mouth but no flowers anywhere, violets or other.

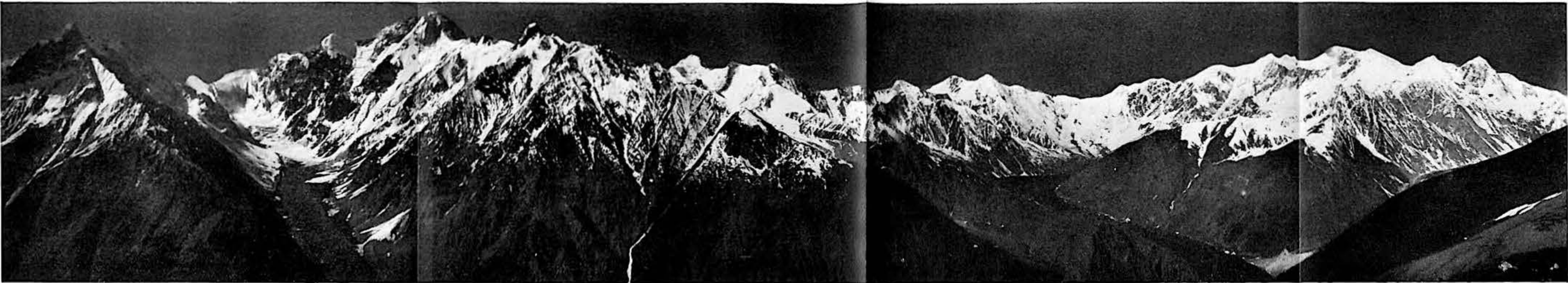
The Kukkijerab had a considerable ablation valley on its right growing into an expanse half-a-mile square at the junction of a minor side nala. Opposite our camp, on the left of the glacier, a fairly large tributary glacier appeared. It too was drying up. During our stay one or two avalanches came down with a great roar; the powdered snow and ice rose like a column of mist.

From the top of the Banufsha I had a good view of the lakelets on the Kukki Glacier, blue, green and dirty grey. I estimated the glacier as about 8 miles long, whilst the Yishkuk was 10 to 11 miles. We left at last and, starting at 5 A.M., wound up a goat track towards the Lupghar Pass. We then entered a steep watercourse, reaching the top of a spur at 7 A.M. This spur most unexpectedly projected into the Banufsha valley. Our yaks made a wide and easy *détour* but our coolies followed us. From the spur we went along the crest of the watershed, below us on one side was the Banufsha, on the other—our left—the Yaz-i-wiyin. After 1200 yards, one of our Wakhis pointed down to the track which descended very steeply into the Banufsha and then rose equally so to the head. There is nothing so exasperating as to climb to a great height, descend, and then do the climb all over again, to no purpose. My Hunza men and I flatly refused to take the orthodox route; we walked along the side of the valley, high above its bed, until at 8.30 A.M. we had reached a second spur projecting into the glen.

My obstinacy was rewarded by one of the finest views that I have had for several years. The left of the valley facing me disclosed a series of superb peaks and glaciers, which its size or that of its glacier would never have led one to expect. I was, in fact, looking at the western end of the range of mountains that runs through Hunza, in other words the watershed of the great Batura and Ishkoman glaciers. Immediately before me, to my left, or S.E., was the Batura; to my right, or W., were those of the Karumbar. No wonder that the peaks in front of me were impressive and entrancing. None was below 20,000 ft.: several over 22,000 ft.

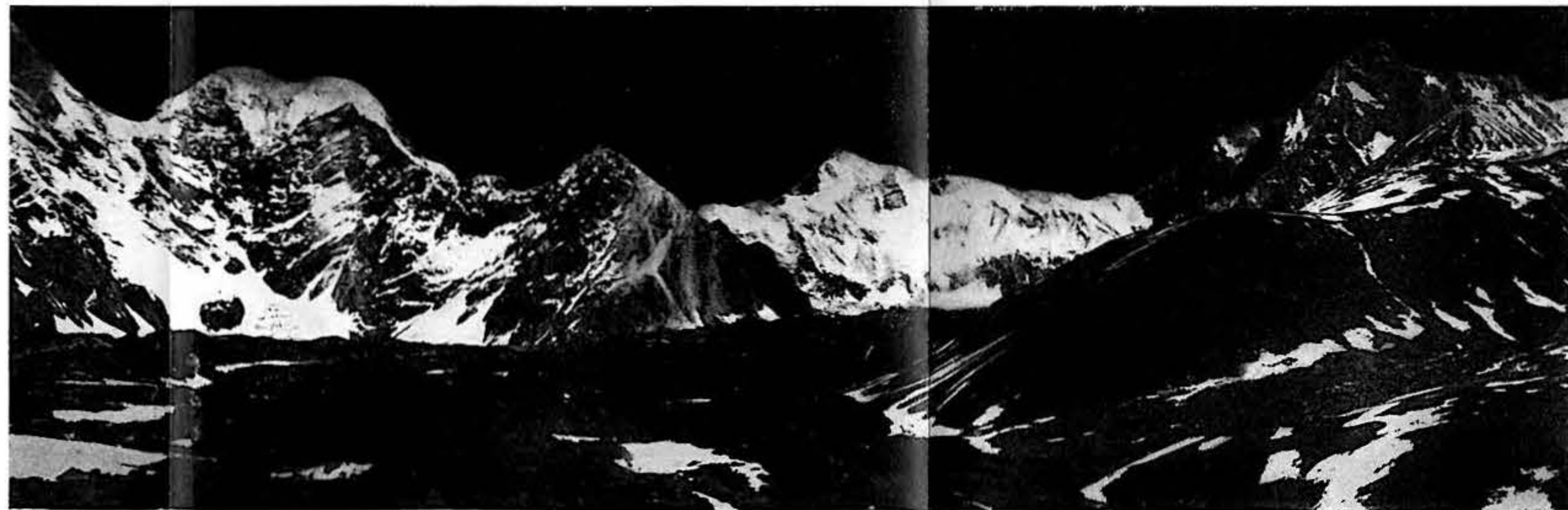
After spending half an hour on this spur, we skirted the shale and snow slopes, and 35 minutes took us to the crest of the Lupghar Pass. The height was considerable.² I took several readings as it was so

² But is not stated.—*Editor*.



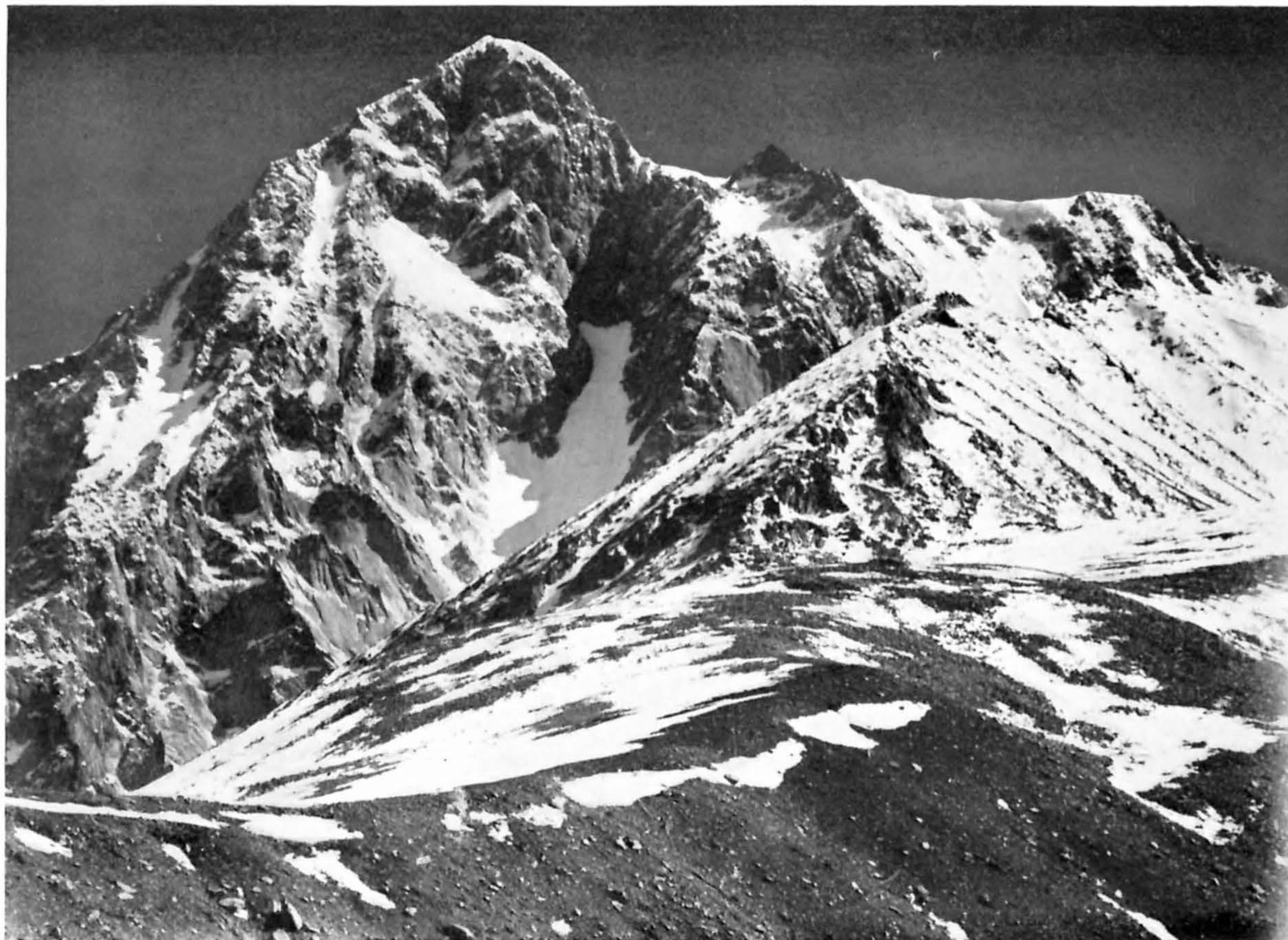
Photo, R. Schomberg.]

PANORAMA FROM GRAMSHAI, CHITRAL. FROM THE PACHAKHUSH GLACIER (ON THE LEFT) TO PEAK 24,100 FT.



Photo, R. Schomberg.]

HEAD OF THE ROSH GOL FROM TUTIRAZ-NO-KUH, CHITRAL.



Photo, R. Schomberg.]

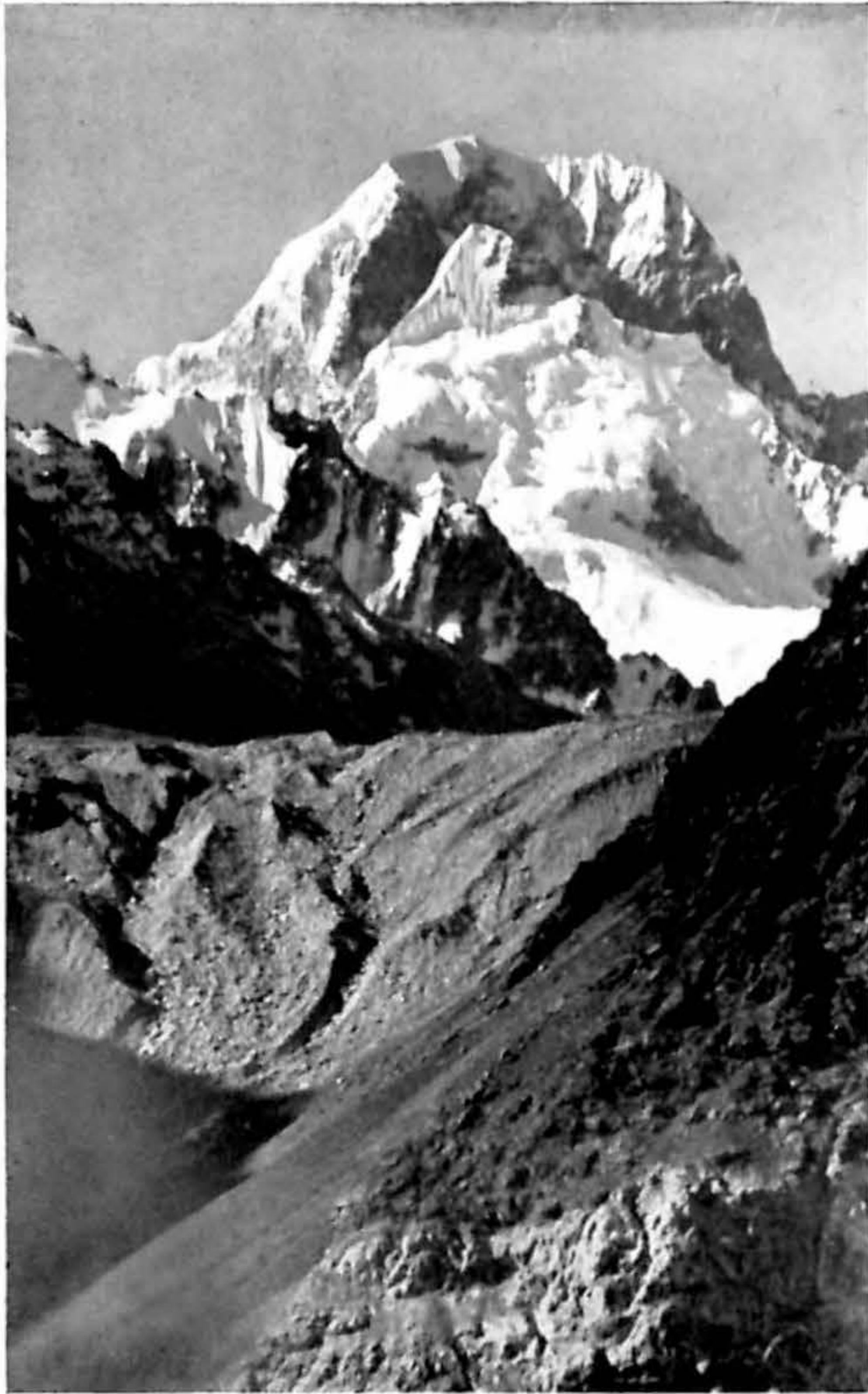
PEAK 23,000 FT. ON RIGHT OF ROSH GOL., CHITRAL.

[To face p. 300A.



Photo, R. Schomberg.]

VIEW FROM LEFT OF THE WARSING GOL—DURU—OF PEAK 24,000 FT. IN ROSH GOL, CHITRAL.



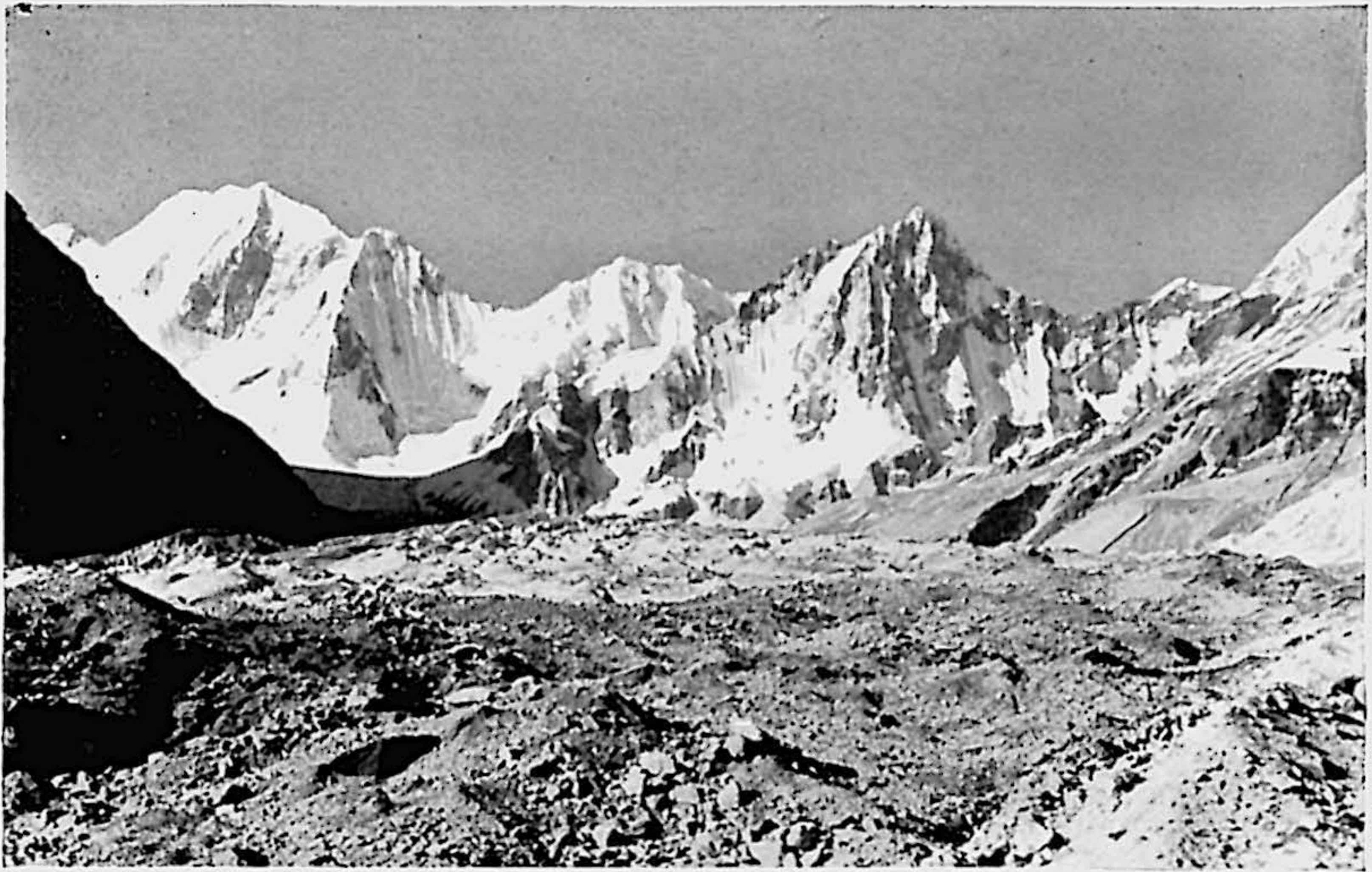
Photo, R. Schomberg.]

KOZ-I-SAR PEAK, CHAPURSAN.



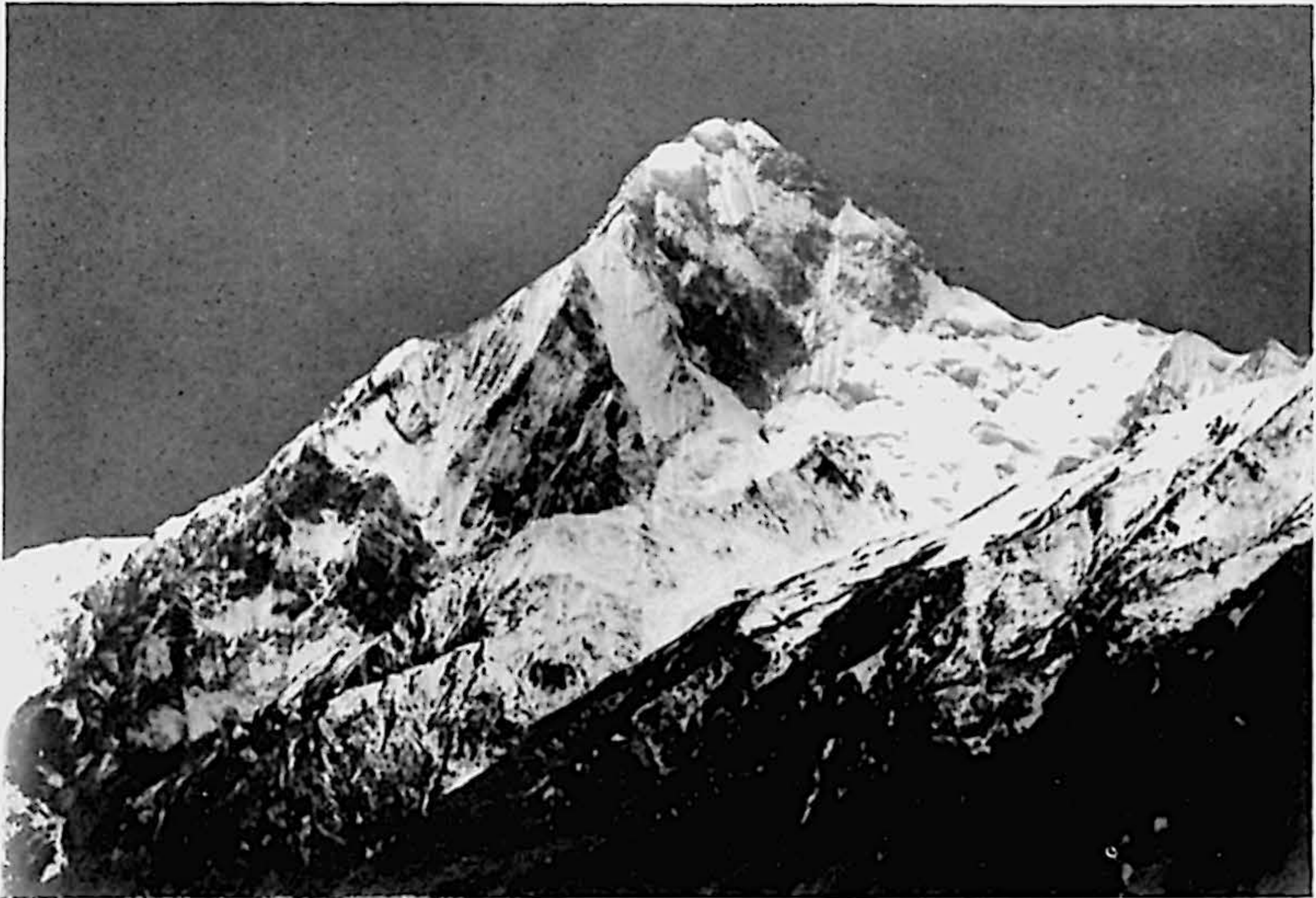
Photo, R. Schomberg.]

LOOKING DOWN THE CHAPURSAN VALLEY FROM
BELOW THE CHAPURSAN PASS.



Photo, R. Schomberg.]

HEAD OF THE KOZ-I-SAR GLACIER AND VALLEY, CHAPURSAN.



Photo, R. Schomberg.]

LAGH SHOR PEAK, 19,000 FT., CHITRAL.



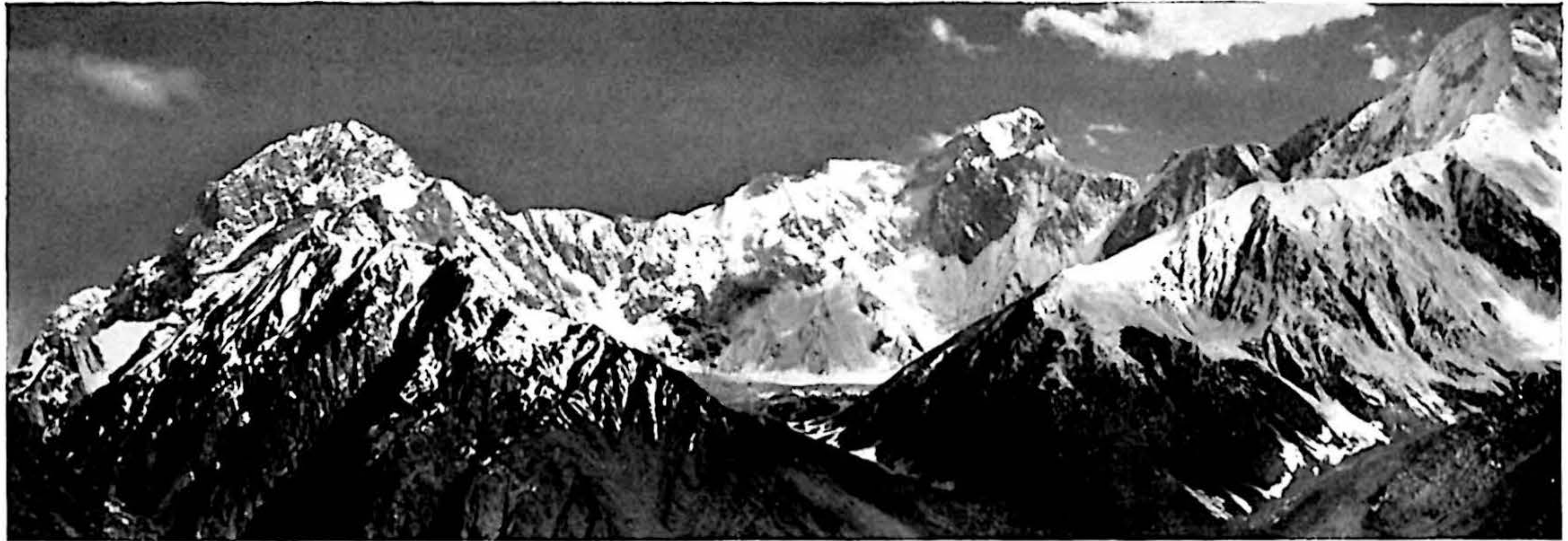
Photo, R. Schomberg.]

ON THE KUKKIJERAB MORAINE, CHAPURSAN.



Photo, R. Schomberg.]

LUPGHAR PASS, CHAPURSAN.



Photo, R. Schomberg.]

MUTRICHILI FROM BELOW DURU, PEAKS 18,000 FT. ; 18,000 FT., 20,000 FT. (ON RIGHT). CHITRAL.



Photo, R. Schomberg.]

LOOKING UP TO DIL-I-SANG, DERDI.

much more than I had expected. My friend, Major C. J. Morris (*G. J.* lxxi. 1928) calls it an easy pass, and so it is, as far as the actual track is concerned. The gradient is severe and the altitude great. Our local Chapursan men were admittedly poor coolies as the Wakhis of the valley are not accustomed to carry loads. Though very lightly laden, they took 8 hours to reach the crest and another 5 to camp—13 hours in all.

From the top of the pass, which was a knife-edge, we descended into the Lupghar valley, the chief tributary of the Chapursan. Below us, a huge glacier poured down the right of the valley—a saddle glacier in fact. The pass was almost free of snow, in spite of its height, and the wind explains this fact. We descended first over a precipitous shale slope, and then over the glacier for about $1\frac{1}{2}$ miles. The timid Wakhis begged us to go round but the ice was safe, with very small cracks. Into one of these, however, our small dog managed to fall, and floundered about in the half-frozen slush until we pulled him out when he soon died in the blazing July sun. Continuing over the glacier, we passed a short side nala on our right with a gorgeous panorama of snow at its head, a continuation manifestly of the view we had already enjoyed.

The Lupghar valley runs parallel to the Batura Glacier, though separated by a vast mass of snow and ice. It was interesting to hear that many years ago a man called Nizam came from Ishkoman, up the Karumbar and then over into the Kukkijerab, leaving afterwards by the Batura. A suggestion that we should do the same was received with horror; and it was pointed out that in those days there was much less ice. The probable date of this exploit was 1810–1820 as local evidence points to the increased glacial activity as at a century or a little more ago.

This side valley, the highest on the right of the Lupghar, had once held a large glacier which had poured across the main valley and had piled itself up on the other side. Now this once continuous mass of ice had become separated, rubbish-covered hillocks and the glacier was in full retreat. Below the glacier, the right of the Lupghar was a broad flower-covered plain, with good pasture. We camped that night at Lupghar itself—the word means big stone—derived, I thought unsuitably, from a low piece of cliff separated from the hillside. There were many more suitable rocks and stones from which the valley might have received its name. There were no Wakhis in this valley which belonged to the Hunza villages of Khaibar and Raminj.

The valley now degenerated into a narrow gorge, bounded by high cliffs of the usual local type, arid and forbidding. There was, however, a good deal of juniper in some places, and birch trees near the river bed. It was a great disadvantage that there was no fuel at all near the upper pastures, not even the common scrub found on most of these parched hillsides. Raminj was a newly-settled village, and our coolies clamoured to go there. It is not easy to earn money in Chapursan. Although most of these men were in debt, they could not face any

more work. They were generally well-built men, pleasant, decent folk, but not able to face work. We found them timid and awkward on the hillside. By instinct, the Wakhi is nomadic, and he was originally an immigrant into Chapursan, though now long established there. The people of Chapursan are undoubtedly far below the standard of even an indifferent mountaineer.

From Raminj we soon regained the main Hunza valley.

MOUNTAINS OF NORTH-WESTERN CHITRAL

The mountain system of North-western Chitral depends on two long valleys: the Turikho, with the river of the same name, and the Atrak or Ataq valley, with the Tirich river flowing through it. This valley joins the Turikho a few miles before the former joins the Mastus or Chitral river near Khosht. Running into the Atrak and Turikho are tributary valleys, but these descend from the highest peaks of the main axis of the Hindu Kush. From Tirich Mir in the S. stretches northward an unequalled series of noble, unnamed peaks. On the frontier or Afghan side of the range, the Hindu Kush drains into the Oxus, but it is noteworthy that the glaciers and streams on that side of the watershed are very insignificant both in size and length. The Oxus itself is in many places only 8 to 12 miles away from the main watershed.

In June and July 1935 I was fortunate in being able to visit this area; a brief account of the mountainous features should be of interest.

We crossed over from the main Chitral valley by the very easy Zani-an Pass (12,750 ft.), from the top of which we saw Tirich Mir (25,200 ft.) and part of Istor-o-Nal (24,200 ft.) or 'The Horse Shoe.' This latter mountain lies 9 miles N.N.E. from its great neighbour. We descended into the Atrak Gol, and so steep was the descent that it was only when we had nearly reached the valley bed that we were able to see the abundant cultivation and hamlets that lie on both sides of the Tirich river.

We camped near Shogram, the highest permanently inhabited village; but immediately the weather broke, and we were held up by heavy rain and driving mists for three nights. The natives here say that whenever visitors come, the fairies send bad weather and that there is never any exception to this unfortunate rule. On the third morning, although the weather was far from promising, I was bundled off by my Hunza retainer, Daulat Shah, who was thoroughly bored with Shogram and still more with its inhabitants. Leaving all the surplus kit behind, we set out with tents, bedding and food. We went up the valley, on the left of the Tirich river for about 2 miles, and then turned right or N. up the Udren Gol.

We camped that night at Shong-o-lasht, a pleasant place but not high enough. The Chitralis of the Tirich district were not more troublesome and disappointing than their countrymen elsewhere. They were supple liars and steadily declared that there was no other

suitable site higher up. So far as I know, the head of the Udren Gol has not been previously described—or even cursorily visited. I was particularly anxious to ascend the valley as I felt sure that I should have a new and hitherto unrecorded view of Istor-o-Nal.

We left early and went up the right of the valley, passing, to our chagrin, two excellent camping grounds. We had not yet learned never, under any circumstances whatever, to trust a Chitrali. After about 2 miles we reached the snout of the glacier. We continued up the right side of the valley for another mile, and then struck diagonally across the moraine for 3 miles. The glacier was here in the last stage of desiccation. The moraine was very thick, with much earth and soft débris. Indeed, quite high up, and a considerable distance from its snout, vegetation was abundant, thus indicating the lifelessness of the glacier and complete lack of movement. Our walk was without any danger or difficulty, but it was very slow and tedious. At last we reached the left side of the Udren valley where there were barren slopes of black shale and, working up an ablation valley full of this shale, we reached a point where opposite us, on the right side of the valley which we had left some 3 to 4 miles below to cross the glacier, was a small tributary valley; and above it, at its end, was what I expected to see, Istor-o-Nal. The view was not complete but it was encouraging. We resumed our ascent of the valley over the moraine, and reached a high mound in the midst of the desolate yellowish-grey mass of stone and silt. Istor-o-Nal was about 7 miles away, on a bearing of 240° magnetic.

The appearance of the mountain on this side was extremely interesting, as it presented a complete precipice. The long, almost level, shoulder running N.E. proved to be a knife-edge, with a series of corniches facing us, dropping to an abyss. The head of the mountain was also precipitous, with outcrops of black rock. Any ascent from this side was out of the question, and even an attempt was impossible.

As to the head of the Udren valley, the moraine continued up to the junction of that glen with a side one that came in on the right. There were some fine snow peaks, notably a smooth dome-shaped one, on the left of the valley and at its end. A feature of the Udren was the fine mountain, Lagh Shor—no one knew the meaning of the word and the question aroused astonishment; this peak stands between the Tirich river and the right of the Udren. Our first camp was under its slope, but it was not until after going some distance up the Udren valley and looking back that we realized what a lovely peak it was. True, its height was just short of 20,000 ft., and I fear that many of us sacrifice our sense of beauty to our admiration of altitude. Here, with a peak rising to over 25,000 ft. and several of above 23,000 ft., it was a temptation to ignore other mountains, merely because of their lack of height. Looking back at Lagh Shor, I recognized what a perfect mountain it was, symmetrical and graceful, set in charming surroundings and worth going far to see.

We managed to reach our camp the same day. I should have

liked to stay longer, but there were difficulties, among which was the problem of the coolies. I decided regretfully to abandon further examination of the Udren Gol and, as the weather was magnificent, to visit the Tirich glaciers under the most favourable conditions.

Tirich Mir³ is famous for having its head in a perpetual cloud which made me more than anxious to see it under what promised, if this brilliant weather held, to be ideal conditions. The Tirich river flows from a series of glaciers of which the chief is the upper Tirich Glacier. This mass of ice flows N. from the foot of the Tirich massif, turns E. and ends. The lower Tirich Glacier flows E. from the E. face of the massif, but does not join the larger glacier owing to that considerable ice stream having become so desiccated that it fails to unite with its chief tributary. Between these two glaciers is a much smaller unnamed glacier which affords the best view of Tirich Mir. None of the views is satisfactory. The peak can be seen, but much of the higher parts of the massif are hidden by lower but considerable spurs. Almost opposite to the Tirich Mir massif, rising straight up on the left of the valley, above the main upper Tirich Glacier is Istor-o-Nal, 24,200 ft. high. Thus, ascending the head of the Tirich river, Tirich Mir lies on the left hand, while on the right is Istor-o-Nal. Descending the Udren Gol we crossed both it and the Tirich river, halting the first day at Bandok, a summer settlement, with considerable cultivation and some huts. It was still untenanted.

I should have liked to go on, as it was a short march, but the coolies declared that they were exhausted. This was quite untrue. The coolies of this area are about as useless a lot as any traveller can meet. They are lazy, lying, wholly untrustworthy; the experience of the Survey of India confirms this. The Chitrali coolie is everywhere a flabby creature, but his simple cowardice and lack of endurance cannot be catered for. I dwell on the matter of coolies, as on them all mountaineering expeditions depend. Anyone who wishes to climb or explore in Chitral should take coolies from elsewhere. The much-despised Kashmiri is a lion compared with the Chitrali, whose fault is not that he can't but that he won't.⁴ Accordingly we had to halt at Bandok and waste a day.

The late Lieut. D. N. B. Hunt, R.E.,⁵ who had been to Bandok and beyond to reconnoitre his proposed climb up Istor-o-Nal, had told me of the poor quality of the coolies here.

My party consisted of nine coolies, all (except one) with light loads. We left Bandok the next day and ascended the right of the valley, passing Sheikh Niak—a corruption, I believe, of Shighnani—where, centuries ago, was a battle between marauders from Shighnan and the men of Tirich; these men have manifestly declined since that time.

Sheikh Niak is the last place with abundant fuel, that is, firewood from trees, but we found burtza and other roots a long way up the

³ For a view of Tirich Mir see *A. J.* 47. facing 368.

⁴ See, however, p. 118, where the Chitralis are praised!—*Editor.*

⁵ Pp. 118–23, 166.

nala and, generally speaking, there is little need to worry about fuel. It is never far away. After crawling about 4 miles, our coolies declared that they could do no more. We had perforce to halt, wasting a glorious day in the grilling sun. The next day the weather broke, heavy mists surged up the valley, and we moved to another camp about 3 miles on where Hunt had left some wood.

I estimate that to this camp, our highest, the distance from the village of Shogram would be *one* march for a Kashmiri, Balti, or Gilgiti—certainly for a Sherpa—with an average load. The local Chitrali required three days and a very light load, although the track was generally easy. The waste of time, money and, above all, opportunity, can hardly be estimated. I fancy that the reason so little climbing has been accomplished in this country is because of the poor sort of creatures who inhabit it. I should indeed be alarmed at having to depend on these folk in an emergency.

At our highest camp the weather suddenly changed at 3.30 A.M. Clouds gathered in on what had been a cloudless sky. It began to snow, mists rolled up and all was dark and dismal. We had to spend the whole day there, but, mercifully, the sun came out in the afternoon; by next day the weather was perfect and I could see the valley properly. There was no question about the magnificence of the scenery. Ascending a good way, we reached a point in the centre of the upper or main Tirich Glacier. There were huge craters in the ice, with small lakelets. The lower part of the glacier was covered with coarse brown moraine: higher up with black shale. In 1935 this glacier was retreating. The snout of the glacier was very dirty and stood alone, quite isolated from its fellows. The head of the valley from which the upper Tirich Glacier flows is formed by the subsidiary valleys. That on the N.W. flows from the same massif as do the glaciers in the lower Gazikistan valley, described in the paper on the Lutkuh. The valley on the N.E. has really two branches: one, on the right, coming in wellnigh due E. from the Upper Gazikistan massif, whilst its left or major artery is, spectacularly, comparatively insignificant. Both these valleys are filled with glaciers, with prominent and beautiful icefalls.

It was up this left tributary of the Upper Tirich Glacier that there used to be a route to Gazikistan and direct to Badakhshan. When, however, the period of intense glacial activity began, in my opinion about 120 to 150 years ago—though Chitrali tradition puts it at about 200 years—all these routes were closed. A man might still pick his way over some of these passes, where in years gone by caravans travelled, but it would be a troublesome, dangerous and fruitless adventure. To cross these closed passes would be a mountaineering feat and the people here are no mountaineers.

There are two great features of the Upper Tirich Glacier, or rather of the head of the Tirich river. As we stood in the midst of the glacier looking up it, on our left, rising in one plane from the bed of the valley was 'The Horse Shoe,' Istor-o-Nal (142). This name was felicitously given to this lonely mountain by the late Lieut. Burn, R.E. From this

side it was difficult to identify Istor-o-Nal with the mass of snow and hanging glacier that we had seen from Udren Gol. We soon, however, with our field-glasses found marks of identification. The shoulder, for example, could not be ignored and we saw, to the S. of the massif, a reddish-brown rock which we had especially noted on the other side. Istor-o-Nal, nevertheless, was too close to us to be appreciated properly. We sat, however, gazing up at this wonderful massif that soared so abruptly upwards. We had, indeed, to bear in mind its real height, as it hardly looked what it was.

The lower Tirich Glacier flows, as I have mentioned, from one of the faces of Tirich Mir. Just above it, on the same (right) side of the valley, was a small nala and glacier; and, there, at the head, we had an admirable though incomplete view of that elusive mountain. There is no question about it: the nearer one approaches to Tirich Mir the harder it is to see, and this fact does justify the superstition already mentioned in another article in this JOURNAL, that the mountain recedes as man approaches it. We did indeed enjoy good views of the actual summit, but nowhere was it possible to see the whole mountain, as some of its lower spurs were thrust out into the main valley, thus obscuring the general shape of the mountain.

We had by now seen Tirich Mir from every aspect, and this last view confirmed what has already been said—that the mountain is, in my opinion, unclimbable. Let me repeat that it is the precipitous cliffs, corniches and hanging glaciers surrounding the main peak on all sides which must prove the great obstruction.

We left the Tirich region satisfied with what we had seen. Unquestionably, there can be few places in the world where mountain scenery of the highest order is so accessible. From the summer village of Bandok, one march brings the traveller into the heart of the Tirich snows and glaciers. But I must repeat the advice that I have already given, and that is, any visitor who wishes to climb or examine this beautiful region must be entirely independent of Chitrali labour. This proviso means much expense, but it means more to ignore it. Disappointment will assuredly result.

We left Tirich and went down the main Atrak valley until we came to the mouth of the Rosh Gol, which joins the Tirich river on the left. This proved to be a beautiful valley, well wooded, grassy, full of flowers and clear springs and with ample wood. The glen was not so neglected by the Chitralis as are most of these valleys. We reached Duru in one day and camped on its springy turf covered with purple orchids. With its groves of birch and willow and abundant limpid water, we were inclined to spend several days. There was, too, a merciful absence of flies in this delectable spot. The Rosh Gol, like so many of the valleys that run into Chitral from the Hindu Kush, was once a regular route to and from Badakhshan much to the advantage of all concerned. Now, as elsewhere, glaciation has closed the route.

From our camp at Duru, we ascended the left side of the main valley. In $1\frac{1}{2}$ miles we reached the snout of the Rosh Gol Glacier which was

black and decaying, badly indented and pitted with numerous lakelets. Immediately opposite, on our left and on the right of the valley, due W., was the Nohbaizon Glacier with a low and comparatively easy saddle at its head which would lead to the Udren. It was, however, an Alpine excursion with a fair amount of step-cutting. I think lightly-laden coolies could be taken over, but the whole route demanded previous preparation and reconnoitring.

On the left and N. of the Nohbaizon was the prominent peak, 19,000 ft., seen so clearly from the Atrak or Ataq valley at the mouth of the Rosh Gol. Behind this again and due N. was another beautiful, domed summit, from which a tributary of the Rosh Gol Glacier flowed. At the head of the Rosh Gol proper was a wall of snow, running E. and W., almost level on the top, with a fine peak of not quite 21,000 ft. on its western extremity.

Below this peak flowed, as stated previously, the real Rosh Gol Glacier, from the head of what is called the Kotgaz Pass, now a pass no more. This pass, as I have said, has been destroyed by glaciation. In olden times the Kotgaz was an easy and frequented route as was proved by the 'Darband' or fortifications in the lower part of Rosh Gol valley, built to resist raids of the people of Badakhshan. Due E. of the old route, in what may be described as the N.E. of the valley, was a rock peak, 23,000 ft. high, while $2\frac{1}{2}$ miles due S. of it, opposite me as I write these lines, lies a great ridge or wall of snowless brown rock rising to a height of 24,000 ft. So near was this great mass that its true proportions were not appreciable.

The Tutiraz-no-kuh or 'Valley of the Snow Cock' ran up and ended abruptly below this lofty mass. Unfortunately, all the snow cock had long ago been killed and eaten by the voracious Chitralis. Lower down the Rosh Gol, on the right or W. side was the magnificent cirque of Mutrichili—called after the plant, mutrich, which grows there. Three peaks, two of 18,000 and one of 20,000 ft., adorned the crest of this great battlement rising from a flat surface of snow. Its own glaciers were drying up and ran into the Lutbaison valley or 'Good Hunting' which flowed below.

After completing our visit to the Rosh Gol, which had rewarded us with such beautiful scenery, we returned to the Tirich river, continued down it, crossed over a low pass, and descended into the Turikho river and valley—the chief affluent of the Tirich, but perhaps the converse was the case. Here above the junction of the Tirich and Turikho rivers were two parallel valleys, the Ziwar, the longer and westerly, and its neighbour the Uzhnu. Both these valleys drained the more easterly and northerly part of the mountain groups which we had just visited, and a description is appropriate here.

The Ziwar as we entered it was very narrow indeed, but it opened out after we had passed opposite the famous hot springs on its left side. It took us two days to reach Gram—the word means only 'village'—at its head. In former days this was a flourishing settlement, the ruins of houses and the sites of fields were still visible. That was in the days

when up this valley, also, ran a frequented and easy glen to Badakhshan. The story here is the same tale that we had heard all along the valleys of the Hindu Kush. As a matter of fact, although Gram was utterly abandoned, it was a very attractive place which could be resettled easily if not by the fundamentally lazy Chitralis.

From Gram we went a considerable way up the valley. Two miles above Gram the Nuroghi Glacier from the S.W. comes in on the right. Part of the snout of this glacier ends in a wall of black ice, about 90 ft. high. Originally this glacier would have flowed at right angles across the Ziwar valley, but the main glacier of the valley, known as the Husko, meaning straight or direct, deflected the Nuroghi and compelled it to turn right and S. and follow the main direction of the valley. The Nuroghi—the word means curving—does curve considerably: the Sorlawi Glacier, so conspicuous whilst ascending the Ziwar Gol, is one of its chief tributaries. In 1935 the Nuroghi Glacier appeared to be stationary and, although barely self-supporting, is amply fed by its affluents.

At the head of the Ziwar Gol and immediately beyond this glacier is the Husko running almost due W. in a straight line. On its right was a very deep ablation valley. Between this and the main glacier lay a great tongue of old moraine with a second trough beyond. The left of the glacier showed much the same features though rather less marked, as a certain amount of shade from the hillside reduced the insolation. This glacier has sunk very much and is retreating. On its left it receives the Shorghordok Glacier, now (1935) drying up and hardly reaching the Husko. At this point, however, the Husko comes to life. On the right of its retaining valley, the Shorghordok has some magnificent peaks. This right wall, part of the main watershed of the Hindu Kush, extends for 7 miles with summits averaging 22,000 to 23,000 ft. in height. It may be surprising that such a lofty and extensive range contributes so little to the vitality of its glacier. The reason appears to be that which is commonly the case throughout the Hindu Kush, the wellnigh perpendicular sides fail to retain the snow. The head of the Husko Glacier was, spectacularly, very disappointing. There is a peak of 20,000 ft. at its head. The glacier itself was a long, undulating and monotonous expanse of ice, while its side glaciers were inconsiderable. It is difficult, looking at its flat surface, the comparatively low sides of its valley and the insignificant contributions of its affluents, to understand how the Husko Glacier ever reached its present size—a size which it is unable to maintain.

The cumulative effect, however, of a period of heavy snow and intense glaciation would bring about this effect. When, so to speak, the Husko and its tributaries were working at full pressure, the ice supply must have been enormous. Now it consists chiefly of a mass of wasting ice. It is also an unsheltered glacier, for its sides are low so that it is very vulnerable to the heat, its great ablation valley confirming this. In former days the way to Badakhshan lay to the S. of the black peak above the glacier.

From Gram we went across to the Uzhnu by the Ishkokht-o-an, a pass of about 14,500 ft. It lay beyond the watershed between the Ziwar and the Uzhnu. Looking down on the Ziwar Gol on our way up to the pass, from an elevation of about 13,000 ft., a further impression was gained of the construction of this valley. The black sweep of the Nuroghi Glacier was seen. To the N. of this glacier the massif, 23,000 ft. high, described in the account of the Rosh Gol, rose from black cliffs at its base. Except in this one place, however, this massif descended in a long gentle spur to the snout of the Nuroghi, between that glacier and the Husko.

On the right and below the Nuroghi was the Gramoghari Glacier, with some fine but not very high peaks at its head. Below this again and on the same side lay the Pachakhush Glacier, extremely short, drying up, moribund and descending in a black tongue to the Ziwar Gol. Just above this glacier the Ziwar stream flows in a narrow gorge a few feet wide so that a glacier like the Gramoghari ends high above, pouring its melting ice down a narrow watercourse which has deeply eroded the rock. From the same spot we had a fine view to the E. of the mountains of Chitral beyond the Yarkhun river. These were the northern extension of the Hindu Raj range, the square top of the Thui peak being very prominent. From the top of the pass we looked down into the Chikar valley, the chief affluent of the Uzhnu. The view from the crest was indeed a noble one. The eastern range was hidden by the trend of the watershed, but the Sar-i-rich (20,000 ft.), the local Matterhorn visible from almost everywhere, stood before us. Looking up the Chikar Gol we beheld a conical peak on its extreme left, 23,000 ft. To the right or N. of this, sloping up and then suddenly dropping, was a peak of just 22,000 ft. The main massif was 23,000 ft. high. One mile to the left or N. of the Chikar Glacier stood the peak of Noghr Zom (a common name). 'A' peak we identified as such at the head of the Shorghordok Glacier, 23,000 ft. high.

We had a good view of Shahgolzom ('The black valley mountain') with a narrow ridge along its crest of brown rock; below in singular contrast spread black slopes. On the right of this ridge was a square peak with a flat head, 21,500 ft. high. In front of this ridge lay the Kotgaz Glacier. On the right or E. was a peak 22,500 ft. high connected by a long ridge to another of about the same altitude.

We descended from the pass, skirted the edge of the Chikar Glacier and came to Palut-o-ghari at the junction of the Chikar with the Uzhnu Gol. Here the Uzhnu stream, which through most of its course flowed in a deep and narrow canyon, was crossed by a snow-bridge. My object was to see the Kotgaz Glacier or source of the Uzhnu. By crossing over to the left of the valley and climbing to a great height, I hoped to have a view of this glacier, 12 miles long. We failed, however, to do so. We then descended and went up the left of the Uzhnu valley to a point where the Shahgol stream joins. This unfordable stream, a powerful mountain torrent, rushed down into the narrow gorge which held the Uzhnu river. All we could see was the

lower part of the Kotgaz Glacier. There was nothing to do but to return frustrated. Had we been able to cross the stream all would have been well. I had, however, only Chitralis with me; they contemplated the water in mournful silence. One went so far as to dabble his stick feebly in the current and to murmur 'It is very fast.'

So I failed to see the Kotgaz in all its fullness. It would have meant a stay of three days, and I reluctantly came to the conclusion that it was not worth it, being aided in my decision by the threat of bad weather and the wails of the coolies who declared that they had no food. We accordingly descended the Uzhnu river to its mouth, joining the main valley a few miles above the point at which we had left it.

On the right side of the river, the Kotgaz Glacier, extremely short, with some fine but not very high peaks at its head. Below this again and on the same side lay the Pachtakush Glacier, extremely short, dipping up, moraine and descending in a black tongue to the Uzhnu. Just above the glacier the Uzhnu stream flows in a narrow gorge a few feet wide so that a glacier like the Gungahari ends high above, pouring its melting ice down a narrow watercourse which has deeply eroded the rock. From the same spot we had a fine view to the E. of the northern base of Chitral beyond the Yarkhan river. There were the northern extension of the Hindu Raj range, the square top of the Tind peak being very prominent. From the top of the pass we looked down into the Uzhnu valley, the chief affluent of the Uzhnu. The view from the crest was indeed a noble one. The eastern range was hidden by the trend of the watershed, but the Sar-i-tich (20,000 ft.) the local glacier-crest visible from almost everywhere, stood before us. Looking up the Uzhnu we beheld a conical peak on its eastern side, 27,000 ft. To the right or N. of this, sloping up and then suddenly dropping, was a peak of just 22,000 ft. The main summit was 27,000 ft. high. One mile to the left or N. of the Chitral Glacier stood the peak of Nighi-kon (a common name). A peak we identified as such at the head of the Shargolok Glacier, 27,000 ft. high.

We had a good view of Shargolok ('The black valley mountain') with a narrow ridge along its crest of brown rock; below in singularly curious great black slopes. On the right of this ridge was a square peak with a flat head, 27,000 ft. high. In front of this ridge lay the Kotgaz Glacier. On the right or E. was a peak 22,500 ft. high connected by a long ridge to another of about the same altitude.

We descended from the pass, skirted the edge of the Chitral Glacier and came to Bahar-oghan at the junction of the Chitral with the Uzhnu. Here the Uzhnu stream, which through most of its course flowed in a deep and narrow canyon, was crossed by a snow-bridge. My object was to see the Kotgaz Glacier or source of the Uzhnu. By crossing over to the left of the valley and climbing to a great height, I hoped to have a view of this glacier, 12 miles long. We failed, however, to do so. We then descended and went up the left of the Uzhnu valley to a point where the Shargolok stream joins. This unfortunate stream, a powerful mountain torrent, tumbled down into the narrow gorge which held the Uzhnu river. All we could see was the