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## MUZTAGH ATA

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**T**HE literal meaning of Muztagh Ata is 'Ice mountain Father.' It is said that the mountain received its name in the following way: when Sven Hedin asked one of the Kirghiz nomads in the district what it was called, he received the polite reply, 'It is called "Muztagh," Father.' I was told this by one of the former Swedish missionaries in Kashgar, who may have got it either from Hedin himself or from a member of one of his later expeditions. I cannot vouch for the story and I am not even sure whether it was Sven Hedin who was originally responsible for the adoption of the name. However, it is not an improbable explanation of the fact that no inhabitant of Sinkiang with whom I have discussed the matter has ever heard of the name Muztagh Ata. On the other hand, every ice mountain or range of mountains that I have approached in South Sinkiang is known to the people in its vicinity as Muztagh. As applied to mountains, such names as Kungur and Chakragil, so well known to European travellers, are quite unknown locally. Usually, too, the nearest grazing grounds to the glaciers of a particular range are known locally as Muztagh. The result has been the adoption by western geographers of the name Muztagh for at least four of the major peaks of Central Asia and for scores of rivers, grazing grounds, etc. There have been determined attempts by some influential geographers to change the name of the Karakoram range to 'Muztagh.' I am glad that these were resisted successfully. The use of the name Muztagh is in danger of becoming just a wee bit overdone, while the name Karakoram, however unsuitable (it means Black Rock), has a fine classical ring about it.

For a long time it was thought that Muztagh Ata was the highest mountain in this part of Central Asia. Sven Hedin makes much of this supposed supremacy in his many flowery passages. 'Mus-tagh-ata,' he writes (*Through Asia*, p. 217, published in 1899), 'the loftiest mountain in the Pamirs, towers up to the height of 25,600 ft.' . . . 'The unchallenged pre-eminence of Mus-tagh-ata over the peaks which cluster around it is proved by its name, which means "Father of the Ice Mountains,"' etc. I must say I find it puzzling to account for this confident assumption. A few miles to the N. of, though

entirely detached from it, there lies the huge massif of Kungur. Standing between the two it is difficult to see how anyone could question the superiority of the latter in height. Even assuming a strong prejudice in favour of the former it is impossible to account for the use of the phrase 'unchallenged pre-eminence,' a phrase, moreover, that has not merely been allowed to slip out in the exuberance of descriptive emotion; it is reinforced over and over again in succeeding chapters by the expression of similar sentiments. Apart from the obvious height of several of the peaks of the Kungur massif, the quite exceptional extent of its glaciation would inform any experienced observer that Kungur was among the highest mountains of the world. One possible explanation of the mistake is suggested by the height quoted by Hedin, 25,600 ft. Kungur, whose height is now accepted at about 25,200 ft., must have been observed and its height computed by many travellers in the plains of Kashgar during the 19th century. Anyone who asked from the natives what the mountain was called would naturally be given the name 'Muztagh.' But to accept this explanation merely confronts one with a question still more baffling. How anyone who has seen Muztagh Ata could ever mistake Kungur for the same mountain is quite beyond comprehension. Aside from the fact that they lie 25 miles apart, Kungur is a part of a range comparable with Kangchenjunga, while Muztagh Ata is an isolated peak somewhat resembling a volcanic cone in appearance.

A rare opportunity came my way in the summer of 1947. Tilman joined the Swiss expedition to attempt Rakaposhi and I managed to persuade him to come up and pay us a visit in Kashgar before returning home. The Chinese Government kindly granted him a visa to do so. The war had interrupted an excellent habit we had formed during the 'thirties of travelling together. As the years lengthened towards a decade I had begun to suppose that the thread had been irrevocably broken, and that this easy and profitable partnership belonged only to the past. The prospect of renewing it, even for a brief spell, in a field of unlimited scope was very exciting. I did not even need to take more than a very few days' holiday. I had several just reasons for visiting Sarikol. The various alternative routes to that place led past a hundred unclimbed peaks and a score of unexplored valleys. In Sinkiang one is still in the happy position of having to tour much of one's parish on horseback; even a short tour takes several weeks to complete, so that a few days spent wandering off the route are neither here nor there. It is easy to combine a modicum of business with a great deal of pleasure. We arranged to meet at Tashkurghan on August 6.

Three days before my wife, Gyalgen (Sherpa) and I were due to leave Kashgar, I had an attack of influenza from which I did not wholly recover until we reached Tashkurghan, on August 5. This was the first of a number of misfortunes; it may indeed have had a bearing on the culminating one which ruined most of our glistening plans. We travelled by the eastern route by way of Yangi Hissar and the Chichiklik Pass.

Tilman arrived at Tashkurghan on August 6, as arranged. We had a dozen alternative plans to choose from : There were, for example, two extremely attractive peaks, twenty or twenty-one thousand feet high, both within ten miles of Tashkurghan. They were made of solid gneiss, decorated with finely chiselled ice arêtes and precipitous ice-falls ; to climb either would clearly call for all the mountaineering skill that remained to us after so many lean years. We could thread our way back to the N. through the Shiwakte group, connecting up some of its unexplored valleys by passes yet to be found. There was the unexplored valley which apparently leads right up into the heart of the Muztagh Ata massif from the S. The E. face of Kungur has not yet been seen by western eyes.

Our choice was unimaginative, and actuated, I think, by second rate motives. We both had a sneaking desire to see how we would react to high altitudes after an interval of nine years ; we both, I suspect, nursed a secret hope to achieve an easy and spectacular triumph. The western route to Kashgar passes close under the western side of Muztagh Ata. This side of the mountain had been explored by Sven Hedin and it was obvious that there was the probability here of a fairly easy route to the top. We ignored a lesson that we had learnt a dozen years before : that to climb a mountain for its height and fame alone is infinitely less rewarding than to attempt a peak whose form has charmed or to cast a new light upon an attractive mountain range. We agreed that Muztagh Ata from the W. had little to recommend it either in interest or beauty ; but we chose it first from among a score of others.

But there was a second item on our programme. Two or three marches N. of Muztagh Ata, at the point where it plunges into the Gez defile, the western route to Kashgar passes close to the southern side of Chakragil. Though a mere 22,000 ft., Chakragil forms one of the most beautiful sections of the tremendous panorama of snow mountains seen from Kashgar. During two years of exasperating confinement I had drawn solace from the contemplation of its fluted ice ridges, glistening in the early morning sun, floating high above dark storm clouds or silhouetted against the evening sky. With Kungur and the others, it greeted me when I returned four years later. I had the exquisite excitement of introducing it to my wife, and it has formed a major part of our morning walks, winter duck shoots and week end expeditions. We paid it a brief visit last May, and camped for three days among the pine forests and the wide grassy alps at its northern foot. Here, two short glaciers flow between abnormally wide ablation valleys, filled with flowers and fringed with tall pines. Seven waterfalls plunge down from the high crags above. Twelve thousand feet of terraced ice and fluted ridge forms the northern face of the twin peaks. Now there was the chance of getting on intimate terms with this lovely mountain by attempting to climb it from the S.

We left Tashkurghan on August 8 accompanied by a large cavalcade of civil and military officials belonging to the post. As usual it was taken as an occasion for a wild display of horsemanship in which we

took as little part as our mounts would allow. Beyond the five miles for which etiquette imposes upon the hosts the obligation to accompany their departing guests, our escort was reduced to two armed Tajik policemen and two junior civil officials. They were sent for our protection and guidance by the Commandant and the Magistrate. These escorts are one of the bugbears of official travel in Sinkiang and we spend much of our time trying to avoid them. The simple policemen or soldiers are fairly innocuous as a rule and can generally be induced to adapt themselves to our primitive tastes in travel. But the civil officials are very tiresome. In the first place they regard all journeys as evils to be got over as soon as possible. They try, usually successfully, to exercise dictatorial powers over our every action; they choose our halting places during the march; there is a fuss every time we decide to walk rather than ride; they stubbornly oppose our choice of camping sites and force us to impose upon local hospitality; any divergence from the regular route is of course, bitterly resented.

There had been a thick dust haze over the country for the last two days, and as we made our way up the wide Tagharma valley we saw little of our surroundings. The dust haze often persists for weeks at a time, even among the high mountains, and can utterly ruin the enjoyment of a journey. It is far more exasperating than bad weather, which though it may obscure the hills and interfere with plans, rarely reduces the scene to one of such monotony and indeed often provides some of the most spectacular views. However, the haze had disappeared by the morning of the 9th, and as we made our way round the southwestern flanks of the Muztagh Ata massif the mountains were clear.

The quarter-inch map, No. 42 N., of the Survey of India marks two points, 22,956 ft. and 22,240 ft., on a long ridge running gently down to the S. from the summit of Muztagh Ata. Actually these two points are entirely separate peaks, isolated from the main mountain and from each other by cols several thousand feet deep. There is a similar col, though less profound, between Muztagh Ata (24,388 ft.) and a northern summit, indicated on the map by a 24,000 ft. contour ring. From each of these two summits a broad, unbroken ridge descends to the W., separated by a deep trough containing the Yam-bulak Glacier. On his first and second attempts on Muztagh Ata in 1894, Sven Hedin chose the northern of these two ridges. This is surprising, because, although it is the easier of the two, the descent to the col from the northern summit would be a laborious business, while to climb to the main summit from the col would, even by modern standards, be exceedingly difficult, if not impossible. On the second occasion Hedin estimated the highest point he reached at 20,600 ft.

For his third attempt Hedin chose the other ridge, that comes down from the main peak. He reached a height of 18,500 ft. 'Evening was coming on, and I was again constrained to beat a retreat, for it would have been useless to wait till the next day and then try to find another passage [through the crevasses]. It was plainly impossible to venture upon Mus-tagh-ata from this side without special appliances which

were not at our disposal. Above us towered the loftiest summit of the mountain, and down its precipitous sides glided the eternal ice, streaming in part to the collecting basin of the glacier; and where declivities were convex and the ice mantel was checked by the relief of the underlying ground, it built itself up into veritable terraces, walls, towers, and solid blocks of enormous dimensions. To get past these seemed, so far as we could judge from the spot where we stood, altogether beyond the reach of human power.' The ice may have changed a great deal in the last fifty years; even so I am inclined to think that this last sentence was a considerable exaggeration. Nevertheless it is not surprising that he did not persist, seeing that he had not even a rope. The remarkable thing is that he attempted the mountain at all 'without special appliances.'

He made a fourth attempt (August 16, 1894), this time reverting to the northern ridge which leads to the northern or lower peak. He camped at the highest point he had reached before (20,600 ft.), but did not proceed further on account of a strong wind. In July 1900, Sir Aurel Stein ascended this same ridge to 20,000 ft. On the previous day his two Hunza 'guides' had reconnoitred the ridge to a point about 1500 ft. higher and had found the way barred by a difficult notch.

We made a longer march than we had intended on August 9, and for a very unusual reason: our transport ponies went so fast and got so far ahead of us that we could not catch them up in time to prevent them crossing the Ulugh Rabat Pass which we had intended to leave until the following day. We followed wearily behind and reached the pass about sunset. A great mass of dark cloud, streaked with deep crimson, hung over the Kungur massif, beneath which the lower fringes of its vast ice cap showed cold and gloomy. The rest of the world was flooded in a gentle mauve light. We camped in the wide alluvial plain beyond the pass.

We were now due W. of Muztagh Ata and in full view of the mountain so that we could lay our plans for climbing it. Without much hesitation we chose the ridge forming the southern flank of the Yam-bulak Glacier, and leading direct to the summit. The alternative was the parallel ridge leading to the minor northerly peak. Before we had seen the western side of the mountain, I had assumed, from Hedin's description, that this would be the best route to follow, partly because it seemed to offer the possibility of using local transport up to a considerable height and partly because it avoided the tangled icefall of which he has given such a lurid account. But one look at the face of the mountain overlooking the northern peak was enough to dispel this idea.

The next morning we moved up to a grazing ground known as Yam-bulak, near the foot of the mountain. Most of the Kirghiz had already moved down to lower pastures, but one family remained with its round felt tent (*akoi*). They had intended to go down the following day, but they kindly volunteered to stay while we were there to supply us with milk, cream and butter. The Kirghiz of course had little

interest in the rapidly inflating Chinese currency. We always travel with a sufficient supply of tea, cloth, rice and mirrors to distribute among them. Not that they ever expect any payment for their liberal hospitality, and they are always overcome with a gratitude out of all proportion to the gifts. We managed to get rid of our escort, who seeing that we could not be shaken from our incomprehensible intention of going up on to the glacier, shrugged their shoulders and left us with evident relief.

Our hosts provided us with a yak and a driver. We hoped that the beast would carry our loads to a point on the ridge, about 17,500 ft. high, where the rock disappeared for good under the ice and where we proposed to put our first camp. Sven Hedin had taken yaks to considerable heights on the mountain on each of his attempts. He had never had any trouble with them except when he took them on to the ice. Load carrying was our principal worry. I had not done any since 1939; Gyalgen had done very little during the last few years and none since June last year; Tilman had had some practice that summer, but nothing like enough to get back to a reasonable degree of proficiency. Going unladen to 17,500 ft. would certainly be a great help, but we did not relish the prospect of carrying all our stuff beyond that unaided, particularly if the snow proved to be bad. We had no spare boots, so that we could not recruit local help for work on the ice; but even if we had I do not think we could have induced any of the Kirghiz to come with us.

We started at 8 A.M. the next morning, the 11th. My wife came with us and we also took a Turki youth, Roza Beg, whom we had brought from Kashgar, to accompany her on the way back from our first camp. We had about an hour's walk to the S. to the Yam-bulak Glacier. It is very broken and be-pinnacled throughout most of its length, particularly in its lower reaches, so that to cross the valley we had to keep below its snout. From there another hour's gentle climbing took us to the foot of the ridge, at about 15,000 ft.

The ridge was a very broad affair and throughout most of its length offered a variety of routes. For the first 2500 ft. it presented a rock slope set at an ideal angle, divided by two deep gullies which contained ice on their upper portions. Once on the mountain we had no means of gauging our height except for Hedin's estimate of the point where the rock of the ridge disappeared under the ice. We were very careful to note our climbing time, in order to reach as accurate an estimate as possible of our vertical progress by dead reckoning. We climbed steadily at a good 1500 ft. an hour for spells of half an hour each. From the outset the yak made very heavy weather of it, despite energetic exhortations by Gyalgen, Roza Beg and the driver. By the time we had completed our second half-hour spell, we had left them far behind, out of sight. We waited for an hour and then went down to see what was happening. We found that the yak had given up about 500 ft. below, and the driver was lying on his face gasping out the information that he was dying. Evidently yaks are not what they

were. We divided up the loads and plodded back up the slope, whereupon the driver revised his plans and set off down at a brisk speed. My wife insisted on carrying some of the baggage, which noble gesture I did not resist too strongly.

At about 3.15 P.M. we reached the end of the rocks. My wife and Roza Beg went down and we pitched our tent and brewed tea. Later in the evening Tilman and I went forward to reconnoitre. The rock disappeared immediately under a moderately steep ice slope which obscured the view of the mountain beyond. We cut steps to the top of this, from where we could see the next couple of thousand feet. We were confronted by a wide icefall, not particularly steep but so broken that we were doubtful whether we could find a route through it. On the extreme right there was a high ice ridge, gentle and unbroken, which ran down to a point opposite to where we were standing. If we could reach it we could avoid the icefall altogether. But to do so we should have to climb a very steep ice couloir about 300 ft. high. The ice was obviously very hard and it would involve several hours of cutting. Also the couloir sloped up from the edge of a high precipice above the Chat-tumak Glacier which bounded the ridge to the S. It would be an unpleasant place to negotiate with loads, and there was not time that evening to prepare the way. So we decided to have a closer look at the icefall. We climbed on for about 800 ft. The ice sheet covering the ridge formed, along its northern edge, a hanging glacier above the Yam-bulak Glacier. This presumably accounted for the fact that it was split by an unusually large number of crevasses running both up and down the slope and across it. Though the thin covering of snow was very hard we had a certain amount of trouble in finding a safe route, for it was difficult to avoid both being on the same crevasse at the same time. This intricate structure was reflected in the icefall above, which made it remarkably complicated. However, it was wide enough to offer a considerable choice of routes, and although we still could not be certain of finding a way through, we returned to camp having decided to take the chance. On the way back we found two heads of *ovis poli* embedded in the ice.

We started the next morning at 7.15. We found a way through the icefall without any loss of time, though we had to do a certain amount of step-cutting. Beyond, for the next two hours, the route finding continued to be fairly difficult, and, though we met with no serious obstacle, it would have been very difficult indeed to find the way back in thick weather. At about 11.30 we reached a conspicuous hollow which we had seen from below, and beyond which the route was perfectly straightforward. Thus far the snow conditions had been perfect and we had made very good time; so good indeed that we decided, there and then, to have only one more camp instead of two as we had originally anticipated.

Beyond the hollow we ran into soft snow and the going became more laborious. By tradition Gyalgen was carrying the largest share of the load and Tilman and I took it in turns to kick steps. It was obvious that

Gyalgen was getting tired and, to lighten his load, we dumped some surplus food and kerosene—surplus, that is, assuming one more camp and not two. At 3.30 P.M. we decided that we had done enough, and pitched camp. While the evening meal was brewing we reviewed our decision to attempt the summit from there. We estimated our height to be at least 20,500 ft., though we had no means of checking it. This left us with rather less than 4000 ft. to climb, which did not seem excessive given reasonably good snow conditions. We assumed that the soft snow we had lately encountered was the result of melting; by starting at six we could count on at least 4 hours of frozen snow. The climbing was devoid of difficulty and we could surely count on making at least 800 ft. an hour. The weather was good, though it seemed to me that there were cloud signs suggesting a change. I confess that the idea of taking up another camp, with all the toil and paraphernalia involved, seemed like breaking a butterfly on a wheel. Tilman agreed, though I think with less conviction.

We started brewing tea long before dawn on August 13. Tilman had a bad headache and was obviously not feeling too good. 5 A.M. is not a good time for making decisions; morally as well as physically human beings are at their lowest ebb. It is clear now that we should have reversed our decision of the day before, spent a comparatively gentle day taking our camp higher and giving Tilman time to recover. Certainly I did suggest it, but probably without enough force, and Tilman was not going to agree to it lightly. He had had a headache the morning before, which had disappeared, as such headaches often do, when we had emerged from the stuffy tent and got going. I thought the same might happen today. Whether he thought so too I do not know.

It was beginning to get light by 5.30 (*i.e.*, 4.30 sun time. For some reason the time we keep in Kashgar is one hour ahead of sun time.) We were off by 6.15. The snow was excellent and we climbed a good 1000 ft. in the first hour. Then things began to go wrong. We ran again into soft snow. It was about calf deep and had a slight crust which demanded a sharp kick to penetrate, though it would never bear our full weight. This by itself, although disappointing, was not a serious factor, nor was it wholly unexpected. At extreme altitudes in the Himalaya there is so little melting during the day that the surface snow never consolidates. In the Everest district for example, we had often found that the monsoon deposits always remained soft above an altitude of 23,000 ft. Two attempts I have made to climb the North Peak have been frustrated by this factor. Muztagh Ata is 10° N. of Everest, and it seemed reasonable to expect similar conditions at a much lower altitude, though our experience of the day before had been reassuring. However, we could go on for at least 8 hours more before turning back, and, unless the snow became very much worse, it seemed inconceivable that we could not climb the remaining 3000 ft. in that time.

Tilman's condition did not improve. He could follow in the tracks, but could not lead. The weather was very clear, but there was a strong

wind blowing from the S. across the ridge. At first it did not seem to be very fierce or unusually cold, but it must have been peculiarly penetrating, for whenever I paused for a rest I started to shiver as violently as if I had been standing naked in a wind after a cold plunge. Admittedly I had no windproof trousers, but I was wearing thick, long Shetland pants and four sweaters, while the skirt of my windproof smock came down almost to my knees. Gyalgen was the only one of us who kept tolerably warm; he was wearing one of the padded suits worn by the Kashgar Turkis in winter. Tilman and I later agreed that we had never been so cold before while actually climbing. The sun reached us about 8 A.M., but it seemed to give no warmth, either then or at noon. Though the ridge was several hundred yards wide it was now smooth and the surface of the snow provided no irregularity behind which we could shelter. We could not stop for a moment to rest, and so we plugged on, as much in a race to get warm as to make height.

The next misfortune occurred when it transpired, at about 9 A.M., that Gyalgen also was not feeling too good and declined an invitation to take the lead. Why, at that point, we did not turn back I find it difficult to explain. It was certainly entirely my fault and I can only summon the lame excuse of cold-befuddled wits to mitigate my stupidity. I think the reasoning, such as it was, was something like this: that it was now too late to return, collect the spare food and kerosene which we had dumped the previous day and then to move our camp higher that day; that as, apart from the cold, I was feeling very well it was a pity not to use at least the morning by stamping a trail which we could follow with much less effort the next day; that soon we would be warmed by the sun and would be able to contemplate the situation; and, finally, that the good weather would not hold. This line of thought later changed imperceptibly into the feeling, shared more wholeheartedly by my companions, that we must be getting so close to the summit that we might as well go on and finish the job.

I can recall nothing of the next three or four hours except dull, plodding monotony and intense cold. We were prevented by the width of the ridge from seeing the other peaks of the massif; we avoided going to the left for fear of getting too close to the edge of the ice cliff overhanging the Yam-bulak Glacier, while to the right the ground was somewhat crevassed. The snow neither improved nor deteriorated; the force of the wind neither increased nor slackened; the sun seemed to become no warmer. Early in the afternoon a small, swiftly moving cloud attached itself to the ridge a few hundred feet above us. This seemed to show that we were getting very close to the top, and I now had very little doubt that we would reach it.

By about 2.30 P.M. we had reached a point where the slope eased off into what was obviously the gentle summit dome. We reckoned that we must be at least 24,000 ft. high, for apart from the change in the slope, we had now been climbing steadily for more than 8 hours, the first of which had been at a very good pace. This estimate was I think

confirmed by the views of the mountain we had later from the N. But having seen the peak only from the W. we had no idea of the extent of the summit plateau. It was now a question of distance rather than height, and we were depressed by the thought that we might have to go trudging on for hours before finding the highest point in this wide expanse of snow. And yet we might find ourselves suddenly upon it. We decided to give it another hour. At 3.30 we were still not on the highest point though we can have been only a very few feet below it.

When we started down I realised for the first time that I was very tired indeed. I had once or twice to call on the others to halt, and once I got sick. But we reached camp in such good time that one more regret, that we had not persisted for just half an hour longer, was added to our contrition. When I removed my boots I found that the toes of my left foot were very obviously frostbitten. This was most unexpected, for although I had been so cold all day I had not suffered from cold feet, and I had imagined that I could feel my toes by moving them about in the boots. The boots were old and had let the water in the day before, but they were very large and I had to put on three pairs of dry socks that morning.

We waited for the sun to reach us before starting down the next morning. We stopped to make a brew of jam soup at the site of our first camp, and reached the foot of the ridge in the middle of the afternoon. We could not face humping the loads across to Yam-Bulak, so dumped them under a rock and went on with the object of sending ponies back for them. But we saw a flock of sheep grazing nearby and Gyalgen thought it prudent to stay to guard the loads until the ponies arrived. He did not get in until after dark and was so exhausted that he could not even drink a cup of tea.

The condition of my foot excluded the possibility of attempting to climb Chakragil. Tilman might have tried it with Gyalgen, but, typically, he was more concerned that I should get back to Kashgar as soon as possible to have my foot treated. Both he and Gyalgen had had their toes touched by frost, and Tilman had at least one sleepless night as a result; but beyond a blackening of the tips of the toes they suffered no lasting effects. Our Kirghiz hosts insisted on wrapping my foot in a poultice of cheese mixed with ash from their yak dung fire. This is the universally accepted remedy for frostbite in these parts. Unfortunately I cannot testify as to its effectiveness, for, being a man of little faith, I abandoned it after the first day in favour of sulphonamide.

We went down to the main valley and spent a whole day at a large Kirghiz settlement at Subashi. There were scores of akoiis, some simple and rough, some most decorative, culminating in that belonging to the Beg, in which we were entertained. Early the next morning we rode swiftly down the wide grassy valley to the Kara-Kul, 7 miles away. We chose a flat promontory on the western shore of the lake and settled down to enjoy one of the finest views in Central Asia. It was a clear, still day, and the glassy surface of the lake, 4 or 5 square miles in extent, was very blue. It is at the centre of a complete semi-

circle of ice mountains with a radius of about 20 miles. To the N. and N.E. there is an uninterrupted view of the Kungur massif, with its two 25,000-ft. peaks, so laden with ice that throughout its length there is hardly any rock to be seen. To the E. there is a long line of peaks of the Shiwakte group. The huge mass of Muztagh Ata fills the southern arc; from here, at last, it showed us a form and character consistent with its size. Wide grassy valleys intersected by rounded hills filled in the middle distance. Flights of geese and duck passed over the lake. In the late afternoon we rode over to the northern lake of Basik-Kul, set in a deep hollow in red and yellow hills and fringed with meadowland of vivid green. We returned to camp in time to watch the sunset colours kindle upon the great cirque of ice peaks.

The next day we marched on to the N. down the Kara-tash Jilga. Immediately after leaving the region of the lakes, the valley becomes barren and forbidding, in sharp contrast to the soft, gentle country that we had been travelling through almost all the way from Tash-kurghan. Bursting its way over the wide barrier of ancient moraine deposits, which mark the former extension of the great ice sheet covering Kungur, the river plunges down into a conglomerate ravine. The flooded river bed forced us to follow a route high up on the W. side of the valley, and we did not reach Bulun-Kul, where there is a Chinese military post, until late in the evening. The commander of the small garrison had died that day. A week before the bolt of his rifle had burst back into his face while he was shooting *ovis poli*, and had penetrated his skull. My wife, who had spent much of her time while we were on Muztagh Ata ministering to sick Kirghiz who came to her from far and wide, had received a deputation from the garrison asking for medicine for the unfortunate man. Misunderstanding what was said, and in any case quite unequipped to deal with such an emergency, especially at a distance of thirty miles from the patient, she had sent a piece of adhesive plaster and some antiseptic. This had been accepted by the emissaries with full confidence in an immediate cure.

The lake of Bulun-Kul has almost completely disappeared and its bed is now covered with grass. Immediately N. of Bulun-Kul there is a large sandy plain, six miles long and a mile and a half wide marking the site of a recent lake. This lake was obviously formed by the damming back of the waters of the pre-existing Gez and Kara-tash rivers by the comparatively recent rise of the Chakragil-Kungur massif about them. The resulting formation of the remarkable Gez defile is similar to that of the Arun and other Himalayan gorges. If the modern theory regarding the recent rise of the Himalaya be accepted, cannot the rise of the Kashgar range (Chakragil, Kungur, Muztagh Ata, etc.) also be explained as the readjustment of isostatic equilibrium resulting from the erosion of the Pamir plateau? The drying up of the lake seems to indicate that the cutting action of the combined rivers is now at least keeping pace with the rise of the mountains. It has also resulted in a remarkable feature of the landscape. The country around the entrance of the Gez defile is subjected to exceptionally violent windstorms which

appear to blow up the defile itself. Since the drying of the lake bed enormous quantities of sand have been blown from it up on to the hills which flank it on the W., completely filling all the nalas and forming immense dunes which bury the hillsides for a thousand feet above the floor of the valley. The dunes look remarkably like the undulating and broken snow slopes on, say, the northern side of Mont Blanc. It would be interesting to know when these dunes began to form. I can find no reference to them by Hedin or Stein who visited the area in 1894 and 1900 respectively (I have no access to the account of Stein's later journey), and I cannot believe that they could have been passed unnoticed. Moreover, the 1925 edition of the Survey of India, Map No. 42 N., which was compiled in this area from Stein's survey, marks the lake bed in question as a swamp; it also shows the area of the Bulun-Kul lake as about two square miles, while, as I have said, this lake has now almost entirely disappeared.

We were prevented from travelling down the Gez defile by the volume of water in the river, so we turned N.W. and followed the Gez river upstream along the southern flanks of the Kashgar range. Chakragil was beautifully clear and we saw that there was a possible route to the summit from this side. It was extremely galling to have to pass it by, and once more I went through an agony of regret at my carelessness and stupidity. The valley was wide and green, interspersed with lakes and swamps and well populated by large Kirghiz settlements. Since leaving Tashkurghan, except for two riding ponies that we brought from Kashgar we had been picking up the transport we needed as we went along: a practice to be avoided if possible. At Kunti-imes, which we reached on August 19, our Kirghiz hosts were most reluctant to provide us with the animals we needed to cross the difficult Ulugh-art Pass (16,610 ft.). At length, however, after a great deal of argument they produced five ponies and two donkeys, with three beardless youths to tend them. (Travelling officially one is unfortunately compelled to carry a disgusting amount of baggage.) It was generally agreed that, although the way was long and hard, the pass could be crossed in a single day. We started early and were by no means indolent. By noon we reached the crest of a preliminary pass. From here we had a fine view of Mount Stalin (known to our fathers as Mount Kaufmann), the culminating peak of the Trans Alai, a hundred miles away. We made our way up a long, desolate, stony valley, past some side glaciers which appeared to be advancing. The path then wound for several miles above a long glacier which came down from the main watershed, repeatedly crossing steep, deep side valleys cut by glacier torrents now dangerously swollen by the afternoon sun. It was 7 o'clock when we reached the foot of the final slope leading to the pass. The light was beginning to fade when the leading animals were still 400 ft. below the top. The slope was very steep and the exhausted creatures were making painfully slow progress. There was nothing for it but to return to the foot of the slope and settle down to a makeshift camp beside the glacier.

It was a cold night. The next morning my pony died before he had gone, unloaded, 100 ft. up the slope. The Kirghiz thereupon declared that their five ponies would also die before reaching the pass and refused to allow them to go any farther. They were driven off by one of the youths, leaving us with the two donkeys and our second private pony which was so weak that it could not carry anything. The entire day was spent relaying the loads across the pass, a laborious operation in which I could take no active part. The next day we managed to make another five miles, to the junction of a large side valley. A mile or so up this valley there was a small Kirghiz settlement known by the discouraging name of Yamen (Bad) Serai. We sent Gyalgen to lay our sad case before the inhabitants and to hire from them four yaks to take us down to Yolchi Moinak at the northern foot of the range. Though he was unarmed they mistook Gyalgen for an official come to commandeer some of their flocks. Before this dread invader the male population fled into the mountains with their faster animals, leaving the sheep, the women and children to his mercy. Gyalgen followed them for a weary day and at length managed to half persuade them of his innocent intentions. Even so they would not trust themselves to his assurances; instead they handed over a large herd of yaks, telling him that he might take them to Yolchi Moinak and leave them with their relations there. At Yolchi Moinak we managed to hire two camels to take us across the thirty miles of waterless desert to the Opal oasis where, once more in a land of plenty, our troubles were at an end.

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## RAKAPOSHI

BY H. W. TILMAN

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**I** MIGHT have saved face by calling this paper 'Rakaposhi Reconnaissance,' but I always think too slowly. Donkin sent me a reply paid wire asking for the title of this paper which arrived when I was busy in the kitchen with an elegant soup, so that I scribbled the word Rakaposhi and thought no more about it.

Rakaposhi lies up in the extreme N.W. corner of India in what was until recently the Gilgit Agency. It is only about 25 miles N. of Gilgit itself from which it is easily reached in a mere three days. Happily it is almost without history. Conway explored the Bagrot nala to the S. of it in the almost prehistoric year of 1892, and we next hear of it in 1938 when Messrs. Secord and Vyvyan explored the western approach to the mountain and climbed a 20,000 ft. bump at the extremity of the N.W. ridge.<sup>1</sup>

<sup>1</sup> See *A.J.* 51. 231, *H.J.*, vol. xi. 156, in which account I think the heights are all over-estimated by about 2000 ft.