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*Journeys in the Pamirs and adjacent Countries.*

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Map, p. 272.

THE region I now wish to describe to you is that lying to the north of Kashmir, which from the height, the vastness, and the grandeur of the mountains, seems to form the culminating point of western Asia. When the great compression took place this seems to have been the point at which the solid crust of the earth was scrunched and crushed together to the greatest extent. What must have formerly been level peaceful plains, such as we see to the present day on either hand in India and in Turkistan, were pressed and upheaved into these mighty mountains, the highest peaks of which are only a few hundred feet lower than Mount Everest, the loftiest point on the earth. It was amongst the peaks and passes, the glaciers and torrents of this awe-inspiring region, and over the plain-like valleys and by the still, quiet lakes of the Pamirs that my fate led me in the journeys which I have now come before you to describe.

Lonely, desolate, and inhospitable as these mountains for the most part are, one may still find secluded valleys cut deep down into the mountain masses where some hardy hill-men till the ground and form villages. Among the most remote of these is the little state which on the Kashmir side is generally known by the name of Hunza, and on the north is usually called Kanjut. Hidden deep in the inmost recesses of these almost impenetrable mountains, this little state long withstood the tides of conquest which have surged around it. Its chiefs claim descent from Alexander the Great, its language is one of the most original extant, and its very name—Hunza—has suggested to some that this secluded little valley must be the cradle of the famous Hun race. Secure among their mountain fastnesses as they have been till they this winter rashly forced the British Government to take action against



them, the Kanjutis have for centuries raided on all the defenceless inhabitants within reach. They have carried into slavery with equal impunity the Kirghiz of the Pamir and the peaceful inhabitants of Baltistan and Gilgit; they have attacked caravans as far off as the road from Yarkand to Leh, and even as recently as last autumn they robbed a Kirghiz settlement on the Pamirs only eight miles below where I was myself at the time encamped. An unusually daring attack on a caravan coming from Yarkand to Kashmir attracted more than ordinary attention, and in the summer of 1889 I proceeded along the road from Kashmir to the spot where the raid was committed, intending thence to find my way back to India by Gilgit. An escort of six men of the 5th Gurkhas accompanied me, and leaving Abbotabad, the cantonment of their regiment in the Punjab, on July 11th, we reached Leh, the point at which we would have to make our final arrangements, on the 31st of the same month.

Then it was that those difficult and embarrassing problems which come as nightmares to explorers as well as to generals—the problems of transport and supplies—had to be solved. Since the days when Shaw and Hayward pioneered the route to Yarkand, that road and some of the country to the westward has been traversed by members of the Forsyth Mission and others, and my own observations when journeying from Yarkand to Kashmir by the Mustagh Pass in 1887, had given me an idea of the sort of country I should now have to travel through. But one point became abundantly evident, that I should be unable to obtain any supplies whatever in the country which lies between the Yarkand road and Hunza; and as I wished not merely to explore the single route to Hunza, but also to see something of the country round—the nature of the glaciers on the northern slopes of the Mustagh, the course of hitherto unexplored rivers, and the trend of the mountain ranges—I had to be prepared to go for many weeks together without reaching any inhabited spots and to be dependent on my own resources for supplies. At Shahidula I calculated upon obtaining from Yarkand territory as much flour and grain as I might require, but beyond that place I could not count on being able to supply myself for seventy days.

Captain Ramsay, the British Joint Commissioner, gave me every possible assistance in making our arrangements, and we left Leh on August 8th. Our first objective point was Shahidula, the spot near which the Kanjutis had committed the raid of the previous year. This place is situated on the trade route to Yarkand, and is 240 miles distant from Leh. The route is well known, and it is only necessary, therefore, to mention that four passes ranging from 17,500 to 18,500 feet above sea-level have to be crossed, and that for 170 miles no supplies are obtainable, and even grass and fuel are extremely scarce. The road is, however, practicable for ponies, and in the autumn months especially is

much frequented by traders between Yarkand and Leh, though the rarefaction of the air causes great distress to both ponies and men, and the route is strewn with the skeletons of animals which have succumbed to the hardships of the road. Near the highest pass—the Karakoram—snow fell heavily, and although we were still in August, when in the plains of India, which we had left only a month before, the thermometer would have been something like 110° in the shade, we found here the cold great enough at night to freeze small streams.

Shahidula was reached on August 21st. Here we halted a fortnight, and then having obtained supplies from the neighbourhood of Kilian, and secured a guide for the road to Hunza, we left again on September 3rd to explore the country up to the Tagh-dum-bash Pamir. The party at starting consisted of 6 Gurkhas (guard); 1 orderly and surveyor; 1 interpreter (an Argoon of Leh); 1 cook (a Ladaki); 2 Balti raftmen (in charge of a mussuck raft); 5 Kirghiz; total 16 men, with 19 ponies (besides those which the Kirghiz rode), and 13 camels.

The route now led up the valley of a river, on which were several patches of fine grazing, and till last year this had been well inhabited, but was now deserted on account of Kanjuti raids. The valley is known by the name of Khál Chuskún. Chuskún in Turki means resting-place, and Khál is the name of a holy man from Bokhara, who is said to have rested here many years ago. The mountains bounding the north of this valley are very bold and rugged, with fine upstanding peaks and glaciers; but the range to the south, which Hayward calls the Aktágh Range, was somewhat tame in character, with round mild summits and no glaciers. The Sokhbulák is an easy pass, and from its summit to the east could be seen the snowy range of the western Kuenlun Mountains, while to the west appeared a rocky mass of mountains culminating in three fine snowy peaks which Hayward mistook as belonging to the main Mustagh Range, but which in fact in no way approach to the height and magnificence of those mountains. They really belong to the Aghil Range, which is separated from the Mustagh Mountains by the valley of the Oprang river.

On the 5th September we made a short march of 11 miles to Kulanudi, a camping-ground called by this name on account of a kúlan, or wild ass, having once been found dead there. The weather at this time was delightful, very clear and bright, neither too hot nor too cold—just perfection for travelling. The route, too, was easy and level, leading down the broad pebbly bed of the Yarkand river. The snowy peaks of the Kuenlun Mountains rose up to a height of 21,000 or 22,000 feet to the north, but the real summit of the Aghil Range to the south could only be seen occasionally in peeps up narrow ravines. Far down the valley of the Yarkand river to the westward could be seen a very prominent knot of peaks, the height of which was approximately fixed by Hayward at 23,000 feet. On the following day we passed the camping-

ground of Chiragh-saldi, and struck the route which I had followed in 1887.

The next day, September 7th, the valley narrowed considerably, and, as the stream runs at places between enormously high perpendicular cliffs, it is necessary to be constantly crossing and recrossing the river, which gets deeper and deeper as streams from either side add to its volume, till it at last becomes too deep to be forded by laden ponies, and we were brought to a standstill at the same gorge where I was delayed two years ago. The river at this point was up to the ponies' backs and flowing with a strong rapid current over a rocky bottom, so that to take our baggage over on ponies was out of the question. We had to halt for the night and wait till the morning, at which time the river is always less deep than during the daytime, for then its volume is increased, owing to the sun melting the snows.

On this march we passed some ruins on a grassy plain called Karash-tárim (i. e. the cultivated lands of Karash, a man who is said to have lived here some eighty years ago). There were remains of half a dozen huts and some smelting furnaces, and there were also signs of furrows where land had been cultivated. This strip of grass and jungle was over half a mile long and 600 yards broad, and doubtless in former times was a flourishing spot. There were evident signs, too, of the existence of minerals; copper and iron, and possibly gold too, in small quantities, may be found, for quartz and pieces of iron ore were abundant. There are many traditions of the presence of minerals in these mountains, and the name of the country Raskam, a corruption of Rástkán (a real mine), clearly shows that minerals may be expected.

I had been exploring a side-valley during the day but overtook my party at dusk, just as they were stopped at the gorge mentioned above. The river was dashing along at a furious rate over huge rocks and boulders, and was quite impassable for the ponies; so we were compelled to halt for the night, and the next morning selected a place where the river bottom was least rugged, and crossed the river on camels, halting a few miles on the other side of the gorge, at a pleasant little camping-ground called Karúl, at the junction of the Surakwát stream. Here there was plenty of thick green grass and shrubs quite twenty feet high; so we remained here the following day also, that the ponies might have a good feed of grass, the like of which they would probably not see for a long time to come.

One of the Kirghiz took me a few miles lower down the river and showed me two equally good camping-grounds. He says there is considerably more pasture in the lower part of this valley than in that of the Kárakásh river, and that in old days the valley used to be populated and cultivated, and merchants used to go to and fro by the Mustagh Pass to Baltistán. Kanjúti raids, however, put a stop to this, and a story is told of a great raid which took place at the gorge. The Kanjútis lay hid on the cliffs overhanging the river, and as a man

called Khoja Mohammed was passing through with his family and a large party, the Kanjútis fired down on them, and afterwards attacked them with the sword, killing all the men, and taking the women and children captive. Since that time the gorge has always been known by the name of Khoja Mohammed.

We now had to leave the valley of the Yarkand river and cross the Aghil Range into the valley of the Oprang river. I took the camels on one day's march further to the foot of the Aghil Pass, and then sent them back to Shahidúla to bring on the second instalment of supplies, which I had arranged should be brought to meet me at Chong Jangal, near the junction of the Oprang with the Yarkand river. The ascent of the Surakwát stream towards the Aghil Pass is in parts very difficult, as the valley narrows to a gorge, and at two places we had to spend some hours in building up a staircase to enable the ponies to get round steep rocky cliffs. The numerous boulders, too, with which the valley bottom is strewn, make it very trying work for the ponies; but we eventually emerged on to a small plain, at the further end of which the main summits of the Aghil Range rise up like a wall in front, rugged and uncompromising. Here we passed the same rock behind which, in 1887, I had spent the night lying in the open, as I had always been obliged to do during my passage of these mountains, for fear of attack from Kanjútis should I make my presence known by setting up a tent. On that night my guides, who had not been by the route for many years, had forgotten whether we should ascend a stream to the right, or another one on the left. If we had taken the wrong one we should have been lost in the mountains, as the range is only passable at one point, the Aghil Pass. We fortunately took the proper course, and now again retracing my former footsteps, on September 11th we crossed the remarkable depression in the range which is known as the Aghil Pass.

From here is obtained one of the grandest views it is possible to conceive; to the south-west you look up the valley of the Oprang river, which is bounded on either side by ranges of magnificent snowy mountains, rising abruptly from either bank, and far away in the distance could be seen the end of an immense glacier flowing down from the main range of the Mustagh Mountains. This scene was even more wild and bold than I had remembered it on my former journey, the mountains rising up tier upon tier in a succession of sharp needle-like peaks bewildering the eye by their number; and then in the background lie the great ice mountains—white, cold, and relentless, defying the hardiest traveller to enter their frozen clutches. I determined, however, to venture amongst them to examine the glaciers from which the Oprang river took its rise, and leaving my escort at the foot of the Aghil Pass, set out on an exploration in that direction.

The first march was easy enough, leading over the broad pebbly bed of the Oprang river. Up one of the gorges to the south we caught a

magnificent view of the great peak K 2,\* 28,278 feet high, and we halted for the night at a spot from which a view both of K 2 and of the Gusherbrum peaks, four of which are over 26,000 feet, was visible. On the following day our difficulties really began. The first was the great glacier which we had seen from the Aghil Pass; it protruded right across the valley of the Oprang river, nearly touching the cliffs on the right bank; but fortunately the river had kept a way for itself by continually washing away the end of the glacier, which terminated in a great wall of ice 150 to 200 feet high. This glacier runs down from the Gusherbrum, which is seen in the distance towering up to a height of over 26,000 feet. The passage round the end of the glacier was not unattended with danger, for the stream was swift and strong, and on my pony I had to reconnoitre very carefully for points where it was shallow enough to cross, while there was also some fear of fragments from the great ice-wall falling down on the top of us when we were passing along close under it.

After getting round this obstacle we entered a gravel plain, some three-quarters of a mile broad, and were then encountered by another glacier running across the valley of the Oprang river. This appeared to me to be one of the principal sources of the river, and I determined to ascend it. Another glacier could be seen to the south, and yet a third coming in a south-east direction and rising apparently not very far from the Karakoram Pass. We were therefore now in an ice-bound region, with glaciers in front of us, glaciers behind us, and glaciers all around us. Heavy snow-clouds too were unfortunately collecting to increase our difficulties, and I felt that we should have a hard task before us. On first looking at one of these glaciers it would appear impossible to take ponies up them, but the sides are always covered with moraine, and my experience in the exploration of the Mustagh Pass in 1887 showed that by carefully reconnoitring ahead, it was generally possible to take the ponies for a considerable distance at least up such glaciers. As the one we had now reached seemed no worse than others, and there appeared a gap in the range which looked as if it might be a pass, I took my ponies on, and after three days' scrambling on the ice, reached the foot of the supposed pass, and started at 3.30 on the following morning to find if it was at all practicable. It was snowing hard and freezing hard, while dense clouds overhead hid the moon, so that we had barely sufficient light by which to find our way. On the previous afternoon I had reconnoitred ahead, determined the general line of advance, and the best point at which to attack the pass; so we now proceeded steadily up the névé at the head of the glacier. At first crevasses were frequent, some visible—great staring rents in the ice fifty or sixty feet deep; others invisible, being covered with snow. These last were the dangerous ones, for the snow would suddenly

\* Mount Godwin Austen.

give way under you, and a deep dark hole would be disclosed at your feet. But though this frequently happened we had no accidents, and the higher we reached the less frequent became the crevasses, though the snow was softer, and trudging along, sinking knee-deep at every step, was heavy work.

Day now began to dawn, but the heavy snowstorm did not cease, and we could only see the lower parts of the mountains, while their summits were hidden in the clouds. We were making towards a ravine, which we had made out could be the only possible way to the top of the pass, and were rounding an icy slope forming one side of it, when suddenly we heard a report like thunder, and then a rushing sound. We knew at once that it was an avalanche; it was coming from straight above us, and I felt in that moment greater fear than I ever yet have done, for we could see nothing, but only heard this tremendous rushing sound coming down upon us. One of the men called out to run, but we could not do so, for we were on an ice-slope, up which we were hewing our way with an axe. The sound came nearer and nearer; then a cloud of snow-dust, and the avalanche rushed past us in the ravine by our side. Had this happened a quarter of an hour earlier, we should have been in the ravine and buried by the avalanche. We now continued the ascent of the ice-slope, hoping we might find a road by that way, but we were brought up by a great rent in the ice, a yawning chasm of considerable width with perpendicular walls of solid ice. This effectually put an end to our attempt to cross the pass, for I dared not descend into the ravine through fear of avalanches.

We therefore were obliged to return and give up all hopes of reaching the top; the highest point we reached being just over 17,000 feet. On our way back we saw another avalanche rush down the mountain side, and over the very path we had made in ascending, covering up our actual footsteps in the snow. Seeing how dangerous it was to remain where we were, we hastened on, and very thankful I was when we again reached the open glacier, out of reach of avalanches. Snow continued to fall heavily, and we heard the reports of avalanches on the mountains all around us. My men said that if the sky were to clear, and we could wait a week for the snow to settle, we might find a way over the pass. But in any case it would be a piece of difficult mountaineering, and as, moreover, I could not afford to wait a week in a place where neither fuel nor grass could be obtained, and where everything was buried in snow and ice, I decided upon returning to my camp on the Oprang river, giving up any further attempt at crossing the pass. We accordingly hastened back to our camp at the head of the glacier; the snow continued to fall, and our little camp in the middle of the glacier looked very cheerless in the morning. Ponies, tents, baggage, and everything were covered with snow when we struck camp, and continued our march down the glacier.



We were able to make a double march, as we had the track marked out, and the bad places improved by our march up. That evening we encamped on dry ground, where we could get grass for the ponies, a certain amount of fuel, and smooth sand to lie upon at night, instead of the thin layer of sharp stones which separated us from two or three hundred feet of solid ice on the glacier. The length of this glacier is 18 miles, and its average breadth half a mile; it is fed by three smaller glaciers on the west and one on the east. At its upper part, immediately under the pass, it is a smooth undulating snow-field about a mile and a half in width. Lower down this névé is split up into crevasses, which increase in size the further down we get. Then the surface gradually breaks up into a mass of ice-domes, which lower down become sharp needle-like pinnacles of pure white ice. On each side lateral glacier moraines appear, and other glaciers join, each with its centre of white ice-peaks and its lateral moraines, preserving each its own distinct course down the valley, until some three miles from its termination in the Oprang river, when the ice peaks are all melted down and the glacier presents the appearance of a billowy mass of moraine. It would look like a vast collection of gravel heaps, were it not that you see, here and there, a cave or a cliff of ice, showing that the gravel forms really only a very thin coating on the surface, and that beneath is all pure solid ice. This ice is of opaque white, and not so green and transparent as other glaciers I have seen. The snow at the head of the glacier was different to any I had seen before; for beneath the surface, or when it was formed into lumps, it was of the most lovely pale transparent blue. I must mention, too, that every flake of snow that fell in the storm was a perfect hexagonal star, most beautiful and delicate in form. The mountains on either side of the valley, especially on the eastern side, are extremely rugged and precipitous, affording little or no resting place for the snow, which drains off immediately into the glacier below. The western range, the main Mustagh Range, was enveloped in clouds nearly the whole time, and I only occasionally caught a glimpse of some peak of stupendous height, one of them, the Gusherbrum, over 26,000 feet, and others 24,000 feet. The snowfall on these mountains must be very considerable. It seems that this knot of lofty mountains attracts the great mass of the snow-clouds, and gets the share which ought to fall on the Karakoram. The latter being lower, attracts the clouds to a less degree, and is in consequence almost bare of snow.

I now hurried back to my escort at the foot of the Aghil Pass, and after rejoining them we set out on September 21st down the valley of the Oprang river, and up the tributary flowing from the Mústágh Pass to Sugét Jangal. From here a large glacier could be seen flowing down from the westward, and at the end of it a gap in the main range which I thought might be the Shimshal Pass. I therefore left the heavy baggage under the charge of one Gurkha and a Balti coolie, and

set out for the exploration of the glacier with twelve ponies carrying supplies and fuel for twelve days for my party and escort. On September 23rd we left Suget Jangal, and by midday were again on a glacier, and our experiences there may be better told by making extracts from my diary.

On September 24th we had rather a rough march up the glacier. The way to attack these glaciers is evidently first to keep along the side, on the lateral moraine, close to the mountain. Here there is some very fine going, though also, at times, some nasty pieces, where great, rough, sharp boulders are heaped one on another, like at the mouth of a quarry. Presently the glacier closes in on the mountain side, and you have then to take a favourable opportunity for plunging into the centre of the glacier, and ascending the part of it which is best covered with gravel moraine. Some very careful steering is here necessary to keep clear of the crevasses, and the ponies, and men too, often have a hard time of it, trying to keep their legs in ascending slopes where the gravel barely covers the ice. We took our plunge into the middle of this glacier at midday. Snow was falling, and at 4.35 the clouds became so heavy, and it was altogether so threatening, that I thought it best to halt. Of course, no grass or fuel are obtainable, but we brought two pony loads of wood with us, so were quite happy; though this is not a particularly cheerful looking spot, with the snow falling hard, the great white pinnacles of the glaciers rising all round, the mountains hidden by the heavy snow-clouds, and no place but a very stony hollow to encamp in. The Gurkha havildar had a joke about getting hold of some *narm pattar* (soft stones) to sleep on, which kept him and all the Gurkhas in roars of laughter.

The next morning we set out in a heavy snowstorm, so heavy that even the bases of the mountains on each side of the glacier were at times not visible, and the summits were not seen till midday, and even then only in glimpses. Immediately on leaving camp we were confronted by a series of very bad crevasses running across our path. Things looked hopeless at one time, for it was like finding a way through a maze. The naik and I went on ahead, and by going from one end of each crevasse to the other we managed in every case to find a way across, though to advance a hundred yards we would have to go at least six times that distance. Once we completely lost our front in the maze and the snowstorm, and were wandering up a side glacier, till I recognised we were in the wrong direction by a hill-side appearing through the mist. We finally got clear of the bad crevasses, and then had a fairly clear run for a couple of miles; we were beginning to congratulate ourselves that we had got over the worst of the glacier, when we came upon another series of crevasses of the most desperate description. The ice, in fact, was so split up that, though the whole party explored in all directions, we could find no possible way of getting the ponies along.

I therefore decided upon encamping, and going on the next day with a few men lightly loaded to the pass. I had some tiffin—rather an important point upon these occasions when the time of the real tussle has arrived, and you are feeling rather down with things in general—and then started off to explore a route for the men to follow on the morrow; but although I went in and out everywhere along the whole front, I found it impossible to go ahead. I then returned to camp, set out again backwards to see if we had missed any practicable route, but it was useless. We were in a regular “cul de sac”; ahead were impassable crevasses, and on each side were the main lines of the glacier-peaks of pure ice, still more impracticable than the crevasses.

One does not feel much inclined to admire scenery when its very grandeur has been the cause of bringing you to a standstill, but the glacier here was really very magnificent. A vast sea of ice comes sweeping down from the Mustagh Range to the south, and makes a great bend; it was this bend which stopped us, for it has cracked the ice—just in the same way as the skin is cracked at the bend of the knuckle—and great crevasses have been formed, some so deep that the bottom is invisible. But the finest sights of all are the ice peaks broken into every fantastic shape, with great fringes of drooping icicles hanging from their sides, and ice-caverns, the entrances to which were closed by lines of long beautiful icicles.

On September 26th we started back down the glacier, snow still falling heavily. The Gurkha naik, Shahzad Mir, and myself kept looking everywhere for some way of getting off the glacier on to the mountain side, where it was evident we should find a passable road. Once or twice we got right up to the edge of the glacier, but a few crevasses and broken crags of ice always prevented us from actually reaching *terra firma*. I was on the point of giving up when I saw what seemed to be a practicable route. The others stayed behind, saying it was impossible, but I went on and on, and at last reached the edge of the glacier; only a pond heaped up with blocks of ice and frozen over, separated me from the mountain side. The ice was very treacherous, but by feeling about with my alpen-stock I got across safely, and then going along the side of the mountain for some distance, found a very promising route, which I followed up for some little distance.

The sky had now cleared, and I had a glorious view of the Mustagh Mountains such as I shall never forget. Their appearance, indeed, was truly magnificent as they rose up in solemn grandeur for thousands of feet above me, sublime and solitary in their glory, their sides covered with the accumulated snow of countless ages, and their valleys filled with glistening glaciers. With infinite toil and difficulty I had insinuated my way through the chinks in their seemingly impregnable armour of rock and ice, and my feelings now as I looked on the wonderful scene before me can only be appreciated by one who has himself penetrated the great

mountain solitudes of the Himalayas, and stood alone, as I was then, deep in the inmost recesses of the mightiest range of mountains in the world; separated from the haunts of civilisation by chain after chain of inhospitable mountains, and far from the abodes of even the wild and hardy hill-men of the Himalayas. Alone, where no white men have ever yet set foot, where all was snow and ice, pure, white, and unblemished, and where not even the rustle of a single leaf, the faintest murmur of a stream, or the hum of the smallest insect, rose to break the spell of calm repose which reigned around. I seemed, indeed, to be intruding on the abode of some great, invisible, but all pervading Deity—the Emblem of Eternal Rest; to have risen from the world beneath to higher land, where the trials and troubles of humanity were unknown; where all was wrapt in that stern repose of the mountains—a quiet, calm and deep, and made impressive by the feeling that beneath its placid surface, great and mighty forces were slowly and silently, yet constantly at work. Amid surroundings of such sublimity, the overpowering presence of the mountains, and the profound and solemn silence, produced in me impressions which I shall never forget.

On returning to the lake, I found the naik and Shahzad Mir had followed me, the former having got across all right, but Shahzad had gone through the ice up to his waist. The water was far out of his depth, and he had only saved himself by clinging to a large block of ice close by. On again crossing the lake I also went through twice, but as I thought the ice would be stronger by the next day, I hurried after the rest of the party, whom I had ordered to stop at a certain point. I then brought back my own kit, some supplies, grain for the ponies, and a pony load of wood, to a spot as near to the lake as the ponies could go, while the Gurkhas went back to Suget Jangal. My intention was to try and reach the pass with three men carrying loads. I at first meant to go without a tent, but as it was still snowing hard, and a bitter wind blowing, while at night the thermometer was down to 6°, and at the head of the glacier would probably be below zero, I decided upon taking the small servants' tent, which I used on this detached expedition. We carried the poles as alpen-stocks, leaving the pegs behind, as we could use stones instead, so that the whole weight of the tent was not more than twenty pounds; and we all four slept in it at night. The weather was anything but cheering, and the snow very trying, especially for the men who had to do the cooking in the open air. It was fortunate I brought only hill-men well accustomed to the work. The packs arrived covered thick with snow, and neither my men nor myself had a dry pair of boots; we could only afford a very small fire, which was not sufficient to dry a thing before the falling snow wetted it again. The floor of my tent was snow over a few inches of gravel, and then two or three hundred feet of ice. However, a good comfortable sheep-skin coat helped me to defy a lot of discomfort. Each of the men had

also a good sheepskin with which I had provided them at Shahidula, so we were pretty cheery despite the snow and cold.

On the following morning we started off towards the lake. This is fed from the melting of the glacier, but, as the sun had not appeared for the last few days, the water had diminished several feet, while the layer of ice remained at the top. This layer had now fallen through here and there, and though it was treacherous enough the day before, it was utterly impracticable now, especially for men with loads. I ventured a few yards on to the ice, but seeing it falling through all round me with sharp reports, I hurried back; and we had then to give up all hopes of reaching the pass. We returned to our late camping ground, loaded up the ponies, and started off back towards Suget Jangal. At the time I was much disappointed at not reaching what I supposed to be a pass, but I afterwards found it was no pass at all and did not cross the main, but merely a subsidiary range; even if I had crossed it, I should only have found myself on another glacier with another range before me.

The glacier we did our best to surmount I called the Crevasse Glacier, on account of the great number and size of the crevasses, which were wider and deeper, and far more frequent than I have seen on any other glacier, and this I attribute to the bends. The widest branch comes from the south, and makes a bend almost at right angles at the furthest point which we reached; it is here joined by a longer but narrower branch from the pass. The length is about 24 miles, and the breadth from 1000 to 1200 yards. It ends at an elevation of about 13,000 feet opposite to a stream issuing from a small glacier running down from the second peak on the southern side. Its lower extremity, for more than two miles, is entirely covered with moraine, but higher up it presents the magnificent spectacle of a sea of pure white peaks of ice, with numerous similar glaciers of smaller size running down to it from the lofty snowy mountains on the southern side. On the north only one glacier of any size joins in, and it is evident that the southern range gets by far the greater portion of the snowfall, although the mountains on the north are in some cases very little inferior in height. The Crevasse Glacier seemed to me to be retiring; at any rate, I should certainly say it was not advancing, for the moraine was deposited some few hundred yards in advance of the ice of the glacier, and there were marks of glacial action on the mountain sides far above the present level of the glacier. The small glaciers—those resembling clotted cream—on the mountain slopes were certainly retiring. The glacier was very much lower in the centre than at the sides, where there were remains of successive beds of conglomerate, compact and hard, and level at the top, of a different character altogether from glacial moraine, so that it appeared as if there had formerly been a thick bed of conglomerate filling up the valley, which had now been swept out by the glacier.

This, however, is only in the lower half, where the mountain slopes are comparatively gentle and formed of shingle; higher up, the sides are precipitous, and there are no signs of the conglomerate formation. The fall of the glacier as far as we went was 2280 feet in 24,400 yards, or about  $\frac{1}{3}$ . Its general direction is N.N.W.

On September 30th, after a good day's rest, we again made our way into the valley of the Oprang river, which I now intended to explore down to its junction with the Raskam or Yarkand river. This part was unknown even to the Kirghiz, and we could not be sure that the stream ever would join the Yarkand river, or where it would lead to, but had to take our chance of its coming out as we hoped it would. We found the river flowing on in a north-west direction over a pebbly bed, varying from one-half to one mile in width. The mountain slopes on each side were perfectly bare, and often precipitous, so that it was impossible to take our ponies along them; we had therefore to march along the valley bottom, which necessitated our frequently crossing and recrossing the river, for the stream would first dash up against the limestone cliffs on one side of the valley, and then be buffeted back to the opposite bank; therefore continually barring our progress. Even now, in the beginning of October, the water was well up the ponies' backs, the current strong, the bottom covered with boulders, and the passage therefore not unattended with risk. Patches of grass and low jungle are occasionally met with, but none of any extent. At three marches from Suget Jangal a stream from the Shimshal Pass, leading to Hunza, joins the Oprang river. It is by this way that the Kanjútis usually raid on the Leh-Yarkand road, and I turned aside from my route to have a look at their robber stronghold, a place called Darwaza, on the northern side of the pass. Ascending the right bank of the stream, and passing by some old huts and fields which had evidently at one time been ploughed, we suddenly came in sight of a tower on the top of a cliff, and, as we came closer, saw that the whole line, where it was accessible, was covered by a loopholed wall, at the upper end of which was a second tower. The cliff was the bank of a deep ravine, which the road crossed, and then zigzagged up to the tower, where there was a wooden gate. This was the den of the Kanjúti robbers, who have for so many years raided on the countries round, and from which, on the previous year, they had attacked the Kirghiz and carried off twenty-one captives. I had no idea what sort of reception I should meet with in trying to penetrate the very inmost haunts of these mountain robbers, so I now proceeded cautiously.

I made the Gurkhas line the opposite bank of the ravine, while I went on ahead with my orderly and the interpreter. I thought that if I took my whole party on at once it might frighten the Kanjútis if they wanted to be friendly, while if they wished to be hostile the Gurkhas were much better situated for covering my retreat on the

top of the cliff, than they would be with me trying to cross the ravine. While I was descending into the ravine, one of the little Gurkhas came running after me, begging to be allowed to come with me. Many weeks before the Kirghiz had been dilating on the dangers of going near these robbers, and had said that the first man who appeared at this fort would certainly be killed. Turning round to one of my Gurkhas, I had said in chaff, "All right, I will send you on first." A broad grin of satisfaction came over his face as he replied, "Yes, mind you do Sahib." And now it was this little man who came rushing after me, saying I had promised to let him go first, and begging me to fulfil my promise. I had descended one side of the ravine, crossed the frozen stream at the bottom, and was ascending the zigzag up to the tower; the door was open, and I thought we were going to have a peaceable entry, when suddenly there came loud shouts from above, the door was shut, and men appeared along the wall and on the tower, gesticulating wildly, and pointing their matchlocks at us. It was not a pleasant situation, as we were close under the wall, and the path to the gate led along parallel to it. I halted, and made signs, beckoning to them to send a man down to us, holding up one finger, and shouting "Bi adam, bi adam!" (the Turki for one man). The shouting on both sides continued for some time, but eventually the door opened, two men came down to us, and we had a long parley, which lasted for more than hour. Fortunately, Colonel Durand who had just visited Hunza from the Gilgit side, had been able to establish friendly relations with the Khan Safder Ali, so that after making sure that I had not an army with me, the commander of the outpost let us through, and then we all collected round a huge bonfire—Kanjútis, Kirghiz, Gurkhas, Ladakis, a Balti, a Pathan, and one Englishman in the heart of these great mountains, where no European had ever before penetrated. These Kanjútis were the first men outside our party we had met for forty-one days, as all the country we had been exploring since leaving Shahidula is entirely uninhabited.

The mountains beyond the place in the direction of Hunza were of stupendous height, and very bold and sharp in their outline. An immense glacier could be seen, from which the stream we were on took its rise, and I had no time to explore it, as I wished to follow out the Oprang river, and afterwards get on to the Tagh-dum-bash Pamir. We therefore returned to this task, and I was fully expecting to meet the Yarkand river almost immediately, but just as I had arrived at the point where I had quite counted on doing so, the Oprang took a turn round in the reverse direction. The volume of the river was increasing at every mile, the mountain sides continued precipitous, and I thought it possible that even if the Oprang joined the Yarkand river, we might be prevented by the depth of the water from following it down. No such misfortune awaited us, however, and on the third day after leaving the Shimshal

Pass stream, while on ahead of the rest of my party, I came across a river of some size, though not so large as the Oprang. It did not strike me that it could be the Yarkand river, because it was so very much smaller than that river had been when we last left it higher up, and the colour of the water was a clear blue, whereas we had left the Yarkand river a muddy brown. But when the Kirghiz came up they at once recognised the spot: they assured me that the river was none other than the Yarkand, reminding me that a month had passed since we had last seen it; with the approach of winter the melting of the snows ceases and the river diminishes rapidly, and losing the muddy deposits, becomes clear and blue.

The Oprang river, which we had thus followed to its junction with what is locally known as the Raskam river, but which we usually mark on our maps as the Yarkand river, might almost be called the main branch of the river which flows by Yarkand. It is true that the more northerly branch is some 30 miles longer; the Raskam river to its junction with the Oprang being about 180 miles in length, while the Oprang is only about 150. But the latter has quite twice the volume of water of the former, on account of its receiving the drainage of the vast glaciers in the vicinity of the Mustagh Pass. Between the Oprang and the Raskam rivers is the range of mountains which is crossed by the Aghil Pass. It runs in a general north-west direction, parallel to and intermediate between the Mustagh Range and the western Kuen-lun Mountains. It is about 120 miles in length and is broken up into a series of bold upstanding peaks, the highest of which must be close on 23,000 feet. Near its junction with the Mustagh Mountains there are some large glaciers like those which fill the valleys leading down from the main watershed, but towards its western extremity these vast *mers de glace* are not seen, and only the smaller kind of glaciers are found on the higher slopes. The mountain sides are perfectly bare, and only the scantiest scrub is found in the valley bottoms. At the junction of the Oprang river with the Raskam is a large stretch of jungle known as Chong Jangal (the great jungle), and both here and further down I saw old huts, signs of cultivated fields, an old smelting furnace, and other indications that the country had been formerly inhabited. In fact, even in recent years the Kirghiz from the Taghdum-bash Pamir have cultivated little plots of land up some secluded side valley where they think they may be free from observation, and in one of these, called the Uruk (apricot) Valley, there are still some apricot trees bearing fruit.

At Chong Jangal we were joined by Kirghiz bearing the second instalment of supplies, and exchanging our worn-out ponies for some camels brought down to us from the Taghdum-bash Pamir we started off for that more elevated valley. It was on the first march after leaving the Raskam river that I met the Russian traveller, Colonel



(then Captain) Grombchevsky, who was on his way from the Pamirs to explore the country north of the Mustagh Mountains and Tibet. He and his companion, M. Conrad, a German naturalist, invited me to dinner on my arrival in their camp, and I spent two very pleasant days with them. It was now two months since I had met a European, and the fact that we were both military officers and both explorers was an additional reason for our fraternising together, and I bear a very agreeable recollection of that first meeting with the Russians in the wilds of Central Asia. At parting I made my Gurkha escort present arms as a salute to the Russian explorer, and Colonel Grombchevsky ordered his escort of seven Cossacks to draw swords in return.

I then left for the Tagh-dum-dash Pamir, and crossing an easy pass 14,600 feet high, named the Kurbu or Ili-su, found myself free of the high cliffs and lofty mountains which shut in the valleys of the Yarkand river and its tributaries; instead I saw before me broad open valleys, very fairly covered with grass, bounded indeed by rugged snowy mountains, but not closed in by them to the same extent as the valleys we had left had been. This was my first sight of the Pamirs. A bitter cold wind greeted us as we descended from the pass, scarcely leaving us for an hour during the whole three weeks we were on the Tagh-dum-dash Pamir, and though the thermometer never fell more than five degrees below zero Fahrenheit, the cold seemed to be just double the intensity of that we had experienced in the valley of the Yarkand river where, at a height of 8800 feet above sea-level, and in the middle of October, the thermometer had fallen to zero, but in a calm atmosphere without wind. Wind, indeed, makes a vast deal of difference, for while it seems to lower very considerably the temperature of one's body it has the effect of raising the mercury of a thermometer. On one occasion especially I remember noticing this. Snow had been falling heavily all day, and a bitter wind had been blowing, but just before sunset both the wind and the snow ceased and a very peculiar phenomenon occurred. The whole air became glistening with particles which I at first thought must be the sun shining on minute atoms of snow; but on holding out the sleeve of my coat nothing seemed to settle on it, and the Kirghiz informed me that this phenomenon often occurred after a snowstorm, and was the presage of great cold to follow. The thermometer soon after fell to five degrees below zero Fahrenheit, but the wind sprang up again and the thermometer immediately rose to zero and did not fall below it again during the whole night.

Leaving my escort at the upper part of the Tagh-dum-dash Pamir I now pushed on rapidly to Tash-kurgan to meet Major Cumberland and Lieutenant Bower, who had started from Leh just before me, and had explored the outlying northern spurs of the Western Kuen-lun Mountains, from Kilian to Sarikol; they had met the Russian expedition under Colonel Pievtsof on the way. After reaching Sarikol they

had wandered up the Tagh-dum-bash Pamir to shoot *Ovis Poli*, and had been successful in bagging eleven of these magnificent wild sheep. They had here parted company with that adventurous French traveller M. Dauvergne, who had accompanied them from Leh, and who afterwards returned to India across the Baroghil Pass, and down the Karambar valley to Gilgit, making some very interesting observations on the way. I could only spare one day with Cumberland and Bower, for winter was rapidly approaching, and I feared we might be prevented by snow from crossing the passes into Hunza. I accordingly rapidly retraced my steps up the Tagh-dum-bash Pamir, while they went off to Yarkand. Tash-kurgan was visited by Colonel Gordon and some members of the Forsyth Mission in 1874, and more recently by the Russian travellers Grombchevsky and Grum-Grijmailo, and I can add nothing to the accounts which these have given of the place and its interesting inhabitants, who cannot be far removed from the original stock of the Aryan race. The Tagh-dum-bash Pamir, however, is less well known, and a description of it is necessary. The name signifies, the supreme head of the mountains. It is divided at the upper extremity into two branches, one coming down from the Wakhjirui Pass, the other from the Khunjerab Pass. Its greatest length is 35 miles, and the breadth varies from one mile at its upper portion to four or five miles at its lower end; its height above sea-level, commencing at 10,300 feet, rises to 15,500 feet. It is inhabited both by Kirghiz and Sarikolis, and a few fugitive Wakhis may be found inhabiting secluded side valleys in the lower part, where they make attempts to cultivate the ground in spite of their having frequently to reap their crops before they have ripened. Near the junction of the two branches of the Pamir is the old fort of Kurgan-i-Ujadbai, and a mile or two below is another ancient fort built high up on a rock on the left bank. Both these are now unoccupied and the inhabitants of the Tagh-dum-bash Pamir live in tents only. Rejoining my escort I proceeded by the Mintaka Pass into Hunza. Snow had fallen heavily on it, as we were now in November, but the yaks of the Kirghiz carried our baggage over without difficulty. The height I calculated to be 14,400 feet, and in summer it is quite free from snow. There are heavy boulders on the summit, and the route passes for a mile and a half over a glacier on the southern side, but with the mountains rising to such a stupendous height all round, one feels thankful to find so comparatively easy a pass to cross the range by.

We were now in Hunza territory, and were met by a deputation from the Chief Safder Ali Khan, offering us every assistance. On the following day, after passing through some narrow defiles where one looked up at cliffs rising, to all appearances perpendicular, thousands of feet till they ended in snow-capped mountain peaks, we reached the first village Misgah. This, like all the villages in Hunza, is walled, and is in fact a

fort. The walls of these fort-villages are always made of stone; they are from 10 to 15 feet in thickness, and layers of wood are placed at intervals up them to strengthen them and keep them together. The inhabitants are a hard determined-looking lot, with a firmer character than the people round. But, withal, I should not call them a really warlike race, such for instance as the Pathan tribes on our frontier. The raids for which they are so famous are usually got up by their chiefs; the people are driven to them, and, curiously enough, shared very little in the spoils. The Kanjútis, however, may certainly be called bold, and they possess a large amount of what I cannot express better than by the slang word "cheek." Shut up in their secluded valley, and constantly successful in raids on their weaker neighbours, they have never realised that any one more powerful than themselves exists, and the cool effrontery with which they have demanded blackmail, not only from the Kirghiz of the neighbouring Pamirs, but also from the distant valleys, almost up to Kugiar, is something very remarkable.

The road down the Hunza valley had been previously traversed by Colonel Lockhart's mission, as well as by Colonel Grombchevsky. Throughout the scenery is very striking, and Major Barrow has calculated that there are more peaks over 20,000 feet in this state than there are over 10,000 feet in the whole of the Alps, while a few reach even to 25,000 feet; as to the road, Colonel Grombchevsky has said that even he, an experienced hunter in the Turkistan mountains, had to be helped along in parts. But with our heads turned once again towards India, and with the air growing denser at every step down the valley, and putting new life into one after breathing the rarefied atmosphere of the higher regions for so long, we thought little of the difficulties of the road. After passing through a succession of small villages with cultivated grounds on the long fan-shaped deposits of alluvium which run out from the side gorges, and after crossing the end of yet one more glacier, which terminates at the height of only 8000 feet above sea-level, just above the village of Pasu, we reached Gulmit, where the chief Safder Ali Khan was waiting to receive me. I was welcomed by the roar of cannon, which a deputation sent out to meet me informed me was intended as a salute, and at which, therefore, I must not be afraid. I was then conducted between two long rows of rough, wild-looking men with matchlocks and swords to a tent in which Safder Ali Khan received me. This interesting person had a few years ago murdered his father, poisoned his mother, and thrown his two brothers over precipices, and then announced his deeds to his suzerain the Maharaja of Kashmir in the following terms: "By the grace of God and the decree of fate my father and I fell out. I took the initiative and settled the matter, and have placed myself on the throne of my ancestors." I was surprised to find him a fair-complexioned man with

reddish hair and a type of features very European in appearance. He was not unintelligent, but very conceited, and rather childish and impracticable. On my asking him whether he had ever been to India he said that great kings like himself and Alexander never left their own country. According to the last accounts from India, however, he has recently left his country rather rapidly, though not in the direction of India.

Time does not permit me to describe at length my interesting visit to Hunza. After staying a week with Saffder Ali I pushed on to Gilgit, where I found Col. Durand, the newly-appointed British Agent, just establishing himself. I reached Kashmir in the middle of December, and then parted with my gallant little Gurkha escort. As I was saying good-bye to them they told me that before leaving their regiment the head native officer had had them up, and told them that if anything happened to me on this journey not one of them was to return alive to disgrace their regiment. I can well believe that they would have stuck to me through anything and everything, and I feel assured that if a British officer has a few of the 5th, or indeed any other Gurkha regiment, at his back, he will never find himself in want of support when the time for action comes.

The summer of 1890 again found me wending my way northward through Kashmir. On this occasion I was unaccompanied by any escort, as I should be travelling through a country where the personal influence and prestige of a British officer was of as much protection as many soldiers. But I was fortunate enough to have a companion, Mr. Macartney, a proficient Chinese scholar, who not only proved an agreeable companion but was very useful in interpreting with the officials of the country. Passing rapidly through Kashmir, Macartney and I reached Leh towards the end of July, and here we were joined by two sportsmen, Messrs. Beech and Lennard, who having shot over nearly the whole of India, were in search of fresh fields for conquest in Chinese Turkistan and the Pamirs. Again I have to thank Captain Ramsay, the Joint Commissioner at Leh, for all the assistance he so willingly gave. On August 2nd my companions and I left Leh to follow that same dreary route across the Karakoram Pass to Yarkand, which place we reached on August 31st. We had heard, on arriving in Chinese Turkistan, that Col. Grombohevsky was in the vicinity on his return from Tibet, and a few days afterwards he also arrived in Yarkand.

After a rest of two or three weeks at that place Macartney and I left our companions and started for a trip round the Pamirs. Approaching this interesting region from the plains of Kashgaria, one sees clearly how it has acquired the name of Bam-i-dunya, or Roof of the World. The Pamir Mountains rise apparently quite suddenly out of the plain from a height of 4000 feet above sea-level at their base to over 25,000 feet at their loftiest summits—a massive wall of rocks, snow, and ice.

Mounting this wall the traveller comes on to the Bam-i-dunya, which would perhaps be better translated as the "upper storey" of the world. Houses in Turkistan are flat-roofed, and you ascend the outer wall and sit out on the roof which thus makes an upper storey, and it appears to me that it was in this sense that the Pamir region was called the Roof of the World. The name, indeed, seems singularly appropriate, for once through the gorges which lead up from the plains, one enters a region of broad open valleys separated by comparatively low ranges of mountains. These valleys are known as Pamirs—Pamir being the term applied by the natives of those parts to a particular kind of valley. In the Hindu Kush and Himalayan region the valleys as a rule are deep, narrow, and shut in. But on the Roof of the World they seem to have been choked up with the debris falling from the mountains on either side, which appeared to me to be older than those further south, and to have been longer exposed to the wearing process, in many parts, indeed, being rounded off into mere mounds, reminding one very much of Tennyson's lines—

"The hills are shadows, and they flow  
From form to form, and nothing stands;  
They melt like mist; the solid lands,  
Like clouds they shape themselves and go."

The valleys have thus been filled up faster than the rainfall has been able to wash them out, and so their bottoms are sometimes as much as four or five miles broad, almost level, and of considerable height above the sea. The Tagh-dum-bash Pamir runs as low as 10,300 feet, but on the other hand, at its upper extremity the height is over 15,000 feet, and the other Pamirs vary from twelve or thirteen to fourteen thousand feet above sea-level. That is, the bottoms of these Pamir valleys are level with the higher summits of the Alps.

As might be expected, the climate is very severe. I have only been there in the autumn, and can therefore speak from personal experience of that season only; but I visited them on three successive years and have seen ice in the basin of my tent in August; I have seen the thermometer at zero (Fahrenheit) at the end of September, and 18° below (that is 50° of frost) at the end of October. The snow on the valley bottoms does not clear away before May is well advanced. June and July and the beginning of August are said to be pleasant, though with chilly nights, and then, what we in England might very justly call winter, but which, not to hurt the feelings of the hardy Kirghiz who inhabit these inhospitable regions all the year round, we will, for courtesy's sake call autumn, commences. Cultivation in such a climate is naturally impossible, and the Kirghiz are dependent for the few supplies they consider necessary upon the lower parts of the valley which lead down from the Pamirs on either side—on the one hand to Sarikol, and on the other to Shighnan. Grass, however, is plentiful in

certain localities, and where it is met with is of excellent quality and affords very fine pasturage to the flocks and herds of the Kirghiz. But it covers quite a small proportion of the valleys only, and the mountain sides are practically barren, the coarsest scrub being the only kind of vegetation met with on them. Trees are never seen on the Pamirs proper, and I do not recollect having come across even a bush of any size. The inhabitants are therefore dependent for fuel upon roots or dry dung. These inhabitants—the Kirghiz—are a nomadic pastoral people, living in the round felt tents which are here called akoes, and which in the Turkoman country are called kikitkas. Their principal food is milk, curds, and cheese; occasionally they kill a sheep for mutton, but bread of any description is eaten only as a luxury. They are hardy, not very intelligent, inclined to be independent in their ways, though not very warlike; given occasionally to robbery when they think they can do so with impunity; hospitable, and by no means so exclusive and frightened of strangers as the inhabitants of the shut-in valleys of the Hindu Kush and the Himalayas.

I cannot refrain from remarking here on the influence of the natural surroundings upon the character of the people of a country. It has been my fortune to travel in very varied descriptions of country—in the dense gloomy forests of Manohuria; over the bounding grassy steppes of Mongolia; across the desolate wastes of the Desert of Gobi; and among the mountain valleys of the Himalayas and Hindu Kush. Each different type of country produced its own peculiar impression upon me, and has enabled me to appreciate perhaps more keenly than I otherwise should have done its particular influence upon the inhabitants. The forest produces a feeling of indescribable depression—one seems so hedged in and hampered about, and longs to be free of the endless succession of trunks of trees and be able to see clear space in front. Far preferable, in my opinion, is the desolation of the desert, which, depressing as it may be, in some way produces also a feeling of freedom; and on the open steppes an irresistible desire to roam and wander seems to come over one, which I can well understand was the motive power which caused the Mongol hordes under Chenghis Khan to overrun the rest of Asia, and part even of Europe. Again, with these Mongols of the desert and the steppes a stranger is always hospitably received, and there is little of that dread of people from the outside, so frequently met with among barbarous nations. The Kirghiz of the open Pamirs, too, have something of these characteristics. But directly one enters narrow shut-in valleys such as are found on the southern slopes of the Hindu Kush and the Himalayas, one finds the ideas of the people shut in too. They have a dread of strangers, they desire above all things to be left to themselves, and unless forced by over-population to do so, or led away by the ambitions of a chief, seldom leave the particular valley to which they belong.

But while I have been making this digression Mr. Macartney has been delayed at the foot of the hills waiting for me to come with him on to the Pamirs. Together we advanced up those long gravel desert slopes which lead out of the plains of Turkistan, and then through the lower outer ranges of hills covered with a thick deposit of mud and clay, which I believe to be nothing else than the dust of the desert, that is ever present in the well-known haze of Turkistan, deposited on the mountain sides; then over the Kizil-dawan, Kara-dawan, and Torat Passes, through the narrow defile known as the Tangitar. Here one has to force the ponies up a deep violent stream rushing over huge boulders between precipitous rocky cliffs, in which we noticed large square holes pierced, suggesting to us that in former days this, the high road between Eastern and Western Asia, was probably improved by having a bridge over this difficult and dangerous part; then over the Chichiklik and Kok-mamak Passes, and the Tagharma Plain till we reached the neighbourhood of Tash-kurgan, the northernmost point of my explorations in the previous year.

A few days' halt was now necessary to lay in supplies of flour for the men, and grain for the ponies, and then on October 3rd we left for the Little Pamir, by way of the Neza-tash Pass. On the third day, descending on the western side, we saw before us a plain, about four miles wide, bounded on the north by comparatively low rounded mountains, whose summits were not covered with snow. This valley was the Little Pamir, and near the debouchment from the pass is the rock called Ak-tash, in the vicinity of which were five or six Kirghiz tents and the headquarters of a local beg. The Little Pamir is generally spoken of as ending here, though why, it is hard to say, for the valley of the Ak-su river continues wide and open as before, right down to, and for a few miles below, the junction of the Ak-baital river. We did not follow it down, however, but struck across the round gravel hills to the north, into the valley of the Istigh river, forming the eastern extremity of the Great Pamir, and from there we moved towards the Alichur. I now observed that the mountains which in the eastern portion of the Pamirs are low and much worn down, commencing a little east of Lake Victoria, became considerably higher and more bold and rugged in their outline. It was near the foot of these more lofty mountains, to the north of Lake Victoria, at a place called Ak-chak-tash, that we found a hot spring of some size, the temperature of which exceeded 140° Fahrenheit, the highest point to which our thermometer registered.

We struck the Alichur Pamir near Chadir-tash at its eastern extremity, and from there looked down a broad level valley, averaging four or five miles in width, to some high snowy peaks overhanging Lake Yashil-kul at its western extremity. The range bounding this Pamir on the north is free of snow in summer, but that separating

it from the Great Pamir is of considerable height, the summits always covered with snow, and the passes across it difficult. Traces of ancient glaciers are very frequent, and the western end near Lake Yashil-kul is choked up with their moraines, forming a sea of gravel mounds, in the hollows of which numerous lesser lakes may be seen. On the borders of Yashil-kul, at a place called Somatash, we found the fragments of a stone bearing an ancient inscription in Turki, Chinese, and Manchu. This interesting relic, as far as I have been able to get the rubbings I took of it translated, refers to the expulsion of the two Khojas from Kashgar by the Chinese in 1759, and relates how they were pursued to the Badakhshan frontier.

We found very few inhabitants on the Alichur Pamir, perhaps because, except near Somatash, there is little good grass to be found. But on returning up the Pamir and descending into the valley of the Ak-su we found twenty or thirty Kirghiz tents pitched, the climate very much milder (though even there the thermometer fell to zero at night), and good grass by the river banks. The Ak-su was here 40 or 50 yards wide, and deep as a rule, but fordable in places. From here we ascended the sterile valley of the Ak-baital, which at this season of the year (October) has no water in it, and visited Lake Rang-kul. On the edge of this lake is a prominent outstanding rock, in which there is a cave with what appears to be a perpetual light burning in it. This rock is called by the natives Chiragh-tash, i. e., the Lamp Rock, and they account for the light by saying that it comes from the eye of a dragon which lives in the cave. This interesting rock naturally excited my curiosity. From below I could see the light quite distinctly, and it seemed to come from some phosphorescent substance. I asked the Kirghiz if any one had ever entered the cave, and they replied that no one would dare to risk the anger of the dragon. My Afghan orderly, however, had as little belief in dragons as I had, and we set off to scale the cliff together. By dint of taking off our boots and scrambling up the rocks, very much like cats, we managed to reach the mouth of the cave, and on gaining an entrance found that the light came neither from the eye of a dragon nor from any phosphorescent substance, but from the usual source of light—the sun. The cave in fact extended to the other side of the rock, thus forming a hole right through it. From below, however, one cannot see this, but only the roof of the cavern, which, being covered with a lime deposit, reflects a peculiar description of light. Whether the superstitious Kirghiz will believe this or not I cannot say, but I think the probability is that they will prefer to trust to the old traditions of their forefathers rather than the wild story of a hare-brained stranger.

The water of Rang-kul is salt, and the colour is a beautiful clear blue. The mountains in the vicinity are low, rounded and uninteresting, though from the eastern end a fine view of the great snowy Tagharma



peak may be obtained. Before leaving these parts I was anxious to see the largest of the numerous lakes which stud this elevated region. I accordingly made a flying visit to the Great Kara-kul, and was well repaid for my trouble, for I have seldom witnessed a scene more impressive in its wildness than that which here met the eye. A violent storm was raging, the whole lake was lashed into a mass of foam, and heavy snow-clouds were sent scudding along the frowning mountain sides, but above all rose the great snowy peak, Mount Kaufmann, calm and serene amid the warring elements raging at its base. This lake has at present no outlet, and is now at a lower level than it formerly has been, for I noticed distinct signs on the mountain sides of its having, at one time, risen higher up. I left the vicinity of the lake by the Kara-art Pass, and travelling down the Markhan-su, and then over the outlying spurs of the lofty snow-clad range which forms the eastern parapet of the Pamirs, reached Kashgar at the end of October. Here we went into winter quarters, and though the months we spent seemed somewhat long and dreary, at times we had a little society to enliven us. First there was the Russian Consul and his wife, M. and Madame Petrovsky, who, with the secretary, M. Lutsch, have been established at Kashgar for some eight or nine years. M. Petrovsky takes the keenest interest in all scientific subjects; he has there a very valuable library, and a fine collection of instruments of all kinds, and it is sincerely to be hoped that he may one day publish to the world the careful investigations he has made in many branches of scientific enquiry. Another resident in Kashgar is the Dutch missionary, Père Hendriks, a man of divers accomplishments, who interested us much by his accounts of travels in many lands in the past, and schemes of missionary enterprise for the future. We were fortunate also to have several visitors from the outside—from M. E. Blanc, a French gentleman who had been travelling round Russian Turkestan; from M. Sven Hedin, a Swedish geologist, who only paid a flying visit, but who intended to return and explore Lob Nor; and, lastly, from M. Dutreuil de Rhins and his companion, M. Grenard, who were setting out on a very interesting journey in Northern Tibet. M. de Rhins was indefatigable in making astronomical observations at Kashgar, and the result of his scientific mission ought to prove of much value, while his companion is likely to give us very graphic descriptions of the country they pass through. Another visitor to Kashgar was Mr. Jones, who recently read an interesting paper before the Society of Arts, but I was unfortunately absent from Kashgar at the time of his visit. Our old companions Beech and Lennard returned from their shooting trip in time for us all to spend Christmas together, and in February Beech made a trip to Tashkend, where he was very hospitably entertained by the Russian Governor-General. On his return he and his companion started off to shoot on the Pamirs, and succeeded in bagging seventeen *Oris Poli* between them.

It was not till the end of last July that I left Kashgar. Just before leaving I was joined by an adventurous young subaltern, Lieut. Davison, who, having obtained a few months' leave from the regiment, was seized with an irresistible ardour to explore the Mustagh Pass, although he had previously seen nothing higher than Primrose Hill. However, a British subaltern is not easily frightened off when "on business he's intent." Davison did not succeed in crossing the Mustagh Pass, for in the months of May and June, when he attempted it, the melting of the snow makes it quite impossible to get anywhere near it. But he did succeed in crossing the Karakoram Pass, marching the whole way from Kashmir on foot, and getting his baggage ponies over the pass by throwing down felt for them to cross the soft snow on. He further marched along the valley of the Yarkand river to the Khoja Mohammed gorge, and it was only after making an unsuccessful attempt to swim the river there with a rope round his waist, after three of his ponies had died on the passes, and after two of his men had deserted with most of the supplies, reducing him almost to starvation, that he gave in and made his way to me at Kashgar.

Before leaving Kashgar the hospitable Chinese officials, who had shown us much friendly attention during our stay, entertained us at a round of dinners, and we finally left on July 22nd to return to India by way of the Pamirs and Gilgit. The most direct route to the Pamirs lay up the Gez defile, but there was still much water in the torrent which flows through it, and we were compelled to cross a succession of low but difficult passes leading over the spurs running down to the right bank of the river. Emerging from the defile we came upon a fine grassy plain, perhaps ten miles wide in places, and to the left saw a large lake. This was not marked on any map I had, and I was further puzzled to see quantities of sand-drifts covering the lower parts of the low rounded mountains on the opposite bank. As the water of the lake there came right up to the mountain side, it was difficult to see where the sand could come from; but I found that the lake was only a few feet deep, and when the melting of the snows has finished, it dwindles down to a mere marsh, exposing also large deposits of sand, which the wind blows on to the mountain sides.

At Lake Bulun-kul, the next march westwards, Davison parted with me for a time, travelling towards the Alichur Pamir, while I made my way to Tash-kurgan. On reaching the Little Kara-kul Lake, a piece of interesting geography, which I believe had been first noticed by Mr. Ney Elias, on his journey through these parts some years ago, presented itself. Captain Trotter, of the Forsyth mission, saw from the plains of Kashgar a stupendous peak, the height of which he found to be 25,300 feet, and the position of which he determined accurately. From Tash-kurgan or its neighbourhood he also saw a high mountain mass in the direction of the peak he had fixed from near Kashgar; but

weather prevented his determining the position of this second peak, but he thought there was no doubt that the two were identical. Such, however, is not the case. There are two peaks, about 20 miles apart, one on either side of the Little Kara-kul Lake. That seen from Tash-kurgan is the true Tagharma Peak, and cannot be seen from Kashgar; while that seen from Kashgar cannot be seen from Tash-kurgan. There appeared to me to be very little difference in height between the two. Both are remarkable not only for their extraordinary height, but also for their great massiveness. They are not mere peaks, but great masses of mountain, looking from the lake as if they were bulged out from the neighbouring plain, and one sees far more distinctly than is usually the case, the layers upon layers of rock which have been upturned like the leaves of a book forced upwards. It struck me too, especially from the appearance of the rocks in the neighbourhood of the northernmost peak, that these must have been upheaved far more recently than the worn-out-looking mountains in the centre of the region of the Pamirs. The appearance of these two great mountain masses rising in stately grandeur on either side of a beautiful lake of clear blue water is, as may be well imagined, a truly magnificent spectacle, and high as they are, their rise is so gradual and even, that one feels sorely tempted to ascend their maiden summits and view the scene from the loftiest parapets of the "Roof of the World." Leisure to do this was, however, not available, and I marched down to Tash-kurgan, then retraced my former footsteps up the Tagh-dum-bash Pamir, and crossing the easy Wakhjruj Pass, first explored by Colonel Lockhart's mission, travelled down the Pamir-i-Wakhan to its junction with the Little Pamir at Bozai-Gumbaz. The Pamir-i-Wakhan was uninhabited at the time of my visit, but during the winter it is frequented by Wakhis on account of its right bank facing south and consequently receiving the largest amount of sunshine. There are no houses at Bozai-Gumbaz, but a small mud dome marks the spot where a Kirghiz chief named Bozai was murdered; the only inhabitants at the time of my visit were a Pathan and a Wakhi family living up a side valley to pasture their flocks and herds.

I found, however, ten Russian soldiers encamped at this place, and Colonel Yonoff with twenty more arrived a few days later. Our first meeting was of a friendly character, and after the Russian Colonel and his staff had had tea and wine in my tent they asked me to dinner in their camp and we spent a very jovial evening together. I was as much struck by the simplicity of their camp arrangements as, from lately published accounts, they, and Colonel Grombehevsky also, seem to have been by the luxury of mine. They had tents only big enough to sit up in, while mine was large enough to stand upright in; they had to sit and lie on the ground, while I had a chair and a bed to rest myself on; and finally I had the crowning luxury of a table. Such was

the difference of style between the pampered British officer and the Spartan-like Russian. I do not know if I ought to be ashamed of all this luxury, and I can only say that I go on the principle of making myself as comfortable as circumstances will permit, and the conditions of travel on the Pamirs are not so hard but what the little luxuries I have named above may be carried with one. When necessity to do so arises, I, like every other British officer, can rough it on very little, and I have no wish to boast when I say that I do not believe that even Russian explorers have gone through more hardships than I had to undergo when, in 1887, I crossed the entire breadth of the Himalayas from Yarkand to Kashmir, without a tent, sleeping in the open air, even on the glaciers of the Mustagh. My good friend Colonel Yonoff, I am sure, never grudged my simple luxuries, but I make these remarks in case there may be misguided British officers who think that in order to explore they must make themselves as uncomfortable as possible. If such there be, let me give my opinion that more roughing than is absolutely necessary should always be avoided on principle. It not only makes one less fit physically when the time for real action arrives, but also, if continued for month after month, on long explorations, degrades the mind and makes one forget that he belongs to a civilised portion of the human race. It gradually obscures the brightness of the intellect, which, if one wishes to enjoy travel in any way, to appreciate the new scenes and effects of nature which one meets with, and to observe truly, must necessarily be kept as keen and clear as possible.

After a short stay at Bozai-Gumbaz I returned to the Tagh-dum-bash Pamir to the very valley, opposite the Kilik Pass, where Beech and Lennard had in the spring shot so many specimens of *Ovis Poli*. Perhaps those that were left had become wilder; at any rate, though I saw several herds of them, I only succeeded in hitting one of these splendid animals. Here I encamped for six weeks at an elevation of 15,000 feet; throughout September snowstorms were constant, and the thermometer gradually fell lower and lower, till it just reached zero. My companion Davison rejoined me on October 4th, and we left together the following day to explore an interesting little corner of Central Asia, the point where the two watersheds—the one between the Indus on the south and the Oxus and Eastern Turkistan rivers on the north, and the other between the Oxus on the west and the Eastern Turkistan rivers on the east—join. If any point can be called the Heart of Central Asia, I should think this must be it. Here on the Oxus side of the watershed are vast snowfields and glaciers, and among these, with three of its sides formed of cliffs of ice—the terminal walls of glaciers—we found a small lake, about three-quarters of a mile in width, out of which flowed the stream which joins the Panj branch of the Oxus at Bozai-Gumbaz.

On October 13th we reached Gilgit in safety, and after being most

hospitably entertained there by Col. Durand and the officers of the British Agency, pressed on rapidly to Kashmir. Heavy snow had fallen on the passes, but we crossed them without mishap, and from the summit of the last, the well-known Tragbal Pass, looked down once more upon the smiling fields, the calm, peaceful lake, and the beautifully wooded mountain sides of the lovely vale of Kashmir. Descending rapidly through the pine forests, and discarding our heavy fur coats as the climate grew milder and milder, we reached the shores of the lake in the evening, threw ourselves into a luxurious Kashmir gondola, and were paddled smoothly and quickly over the still lake towards Srinagar. All dangers, difficulties, and anxieties were now over, and after an absence of seventeen months I was returning once more to the pleasures of civilisation and intercourse with my countrymen and friends; and seldom indeed do there occur in one's lifetime moments more to be looked back to than that quiet sunset hour on the tranquil lake when one could rest, and rest, and rest, and feel that all the dark was left behind, and hope that all before was bright.

The PRESIDENT in introducing Captain Younghusband to the Society said this was hardly necessary, as most of them would remember that two years ago they had the pleasure to give him one of the gold medals on account of a very valuable and adventurous journey he made from Manchuria and Peking right across to the Mustagh Pass, and so to India. Only a fortnight ago he was good enough to come to the Society and make some interesting observations with respect to the paper which had been read by Mr. Campbell, he having approached the mountain, the principal object of Mr. Campbell's journey, from the other side, and having had the good fortune Mr. Campbell did not have, of reaching its summit. On this occasion he was going to give an account of two journeys he made from India through the very core of Central Asia.

The following discussion ensued after the reading of the paper :—

Sir RICHARD TEMPLE: I think I should be only speaking your sentiments if I convey to the reader of the paper our cordial and hearty appreciation, not only of the interesting narrative he has given us, but of the literary skill and cultured phraseology in which he has couched his observations. I am sure in this hall you often have heard papers marked by great beauty of diction, but I am sure you have seldom heard a more beautifully worded paper than that to which we have just listened. But not only is the paper given with all this charm of literary manner, there is also the manly simplicity and vigour of sentiment that are peculiarly British. This is not the first time perhaps that the mysteries of the Pamir have been explored, for the last generation witnessed the remarkable journeys of Wood, whose name is imperishably connected with this elevated plateau; but Wood and his companions approached it from another direction, i. e. from the direction of Afghanistan. Captain Younghusband and his little party entered it from the south-east; they gradually approached the extreme elevation of the plateau, the most elevated of its kind in the world, by the valley of the Oxus, and so reached the source of that memorable river. But these explorations of which you have heard the account of to-night, are remarkable from the fact that they enter the Pamir from the lower plateau of Yarkand, and I presume that the mountain peaks of which we have just heard a description almost as brilliant as the peaks themselves, are great *horns* of ice and glacier which separate this plateau from the

lower one of Yarkand. That great wall of mountains stretching upon the eastern side of the map, which separates off the plateau of the Pamirs from that of Yarkand, is, I believe, the mighty barrier to which our lecturer has alluded this evening. Further, you will notice on the map hung on the wall the point where this great range impinges upon the Himalaya. It is from about that corner that I trust the British Imperial jurisdiction is considered to extend. I trust you will all keep your thoughts steadily fixed upon that, and remember the broad geographical description given of it this evening. I hope other speakers will supplement the expression of thankfulness I have ventured to present to you. I hope also that our lecturer has found in this country that repose which he has already found in Kashmir. I am myself well acquainted with that lily of the valley, that rose of geographical scenery, Kashmir, and can readily understand how, after that journey, he looked upon the range on range extending to the north, and thought of all the mighty associations and the magnificent scenery that lay behind.

Mr. HOWORTH: The only justification I have for addressing you is that, like my friend Sir Richard Temple, I have tried to qualify the dubious reputation of a politician by writing some books, very different to his, however, as mine are unreadable. In these I have tried to discuss the history, ethnography, and geology of portions of this district. I cannot begin without supplementing my excellent friend's remarks in regard to the modesty and literary excellence which have conveyed to us the story of the pluck and energy of this English soldier who has disclosed to us the hidden secrets of the Pamir. I might remind you that in the beginning of the sixteenth century, when Baber was writing those delightful memoirs of his, a cousin of his, a prince of Kashgar, wrote another series, full of admirable detail, in which he describes, in the most graphic way, the troubles he had in campaigning in this very country. He describes the roads, lakes, and rivers, with great detail, and his story would interest you were it made available. It is a curious thing that the race occupying these hills, and which gives the topography its Turkish character, namely, the Kirghiz, were not there until they were driven down from the far north by the Kalmucks in the early sixteenth century. The accounts, some of which I have published, of the wars and struggles of Chinghiz Khan's descendants, one of whom reigned in Kashgar and one in Bokhara, contain very interesting details of the topography of this country. But if we go back beyond the Mongol dynasty, we must go back a long way indeed before we get any reliable details at all. It may be that the Hunzas are descended in some distant way from the Huns described by Kosmas Indicopleustes in the seventh century as having an enormous realm stretching right away to the Indus, but we have really very little information about it. At the earliest possible point we can reach, we find this region right away to the Caspian occupied by tribes of the Persian family, nomads, who under different names occupied the whole southern borders of the great Central Asiatic steppes, and if we stretch the historical telescope still further we shall find that the old story which made the Pamir the original home of the Aryan race called Indo-European no longer holds good. We can no longer trace it from here, but we have every reason to believe that it came from the west, from the country round the Caspian, for we now know that from Mesopotamia, right away to the borders of China, there was in very early times a continuous occupation of the country by those yellow slant-eyed races which we sometimes call Turanians and sometimes Mongolians. One word upon a great geological problem. Nearly all this Central Asiatic plateau is really a huge elevated saucer surrounded by high hills, the Tien Shan on the north, the Pamir on the west, the Himalaya on the south. North of this is the great plain of Siberia. All over this plain we find, wherever the ground is sufficiently hard frozen, the remains of mammoths, &c., preserved very fresh, so that the wolves and bears can feed upon their remains.

These great mammoths have been found, not in one, but in many places all over the country, from the east, right to the Obi. They are found under conditions which make it certain that they could not have lived unless the surroundings and climate were entirely different. We have the remains of the plants on which they fed, and southern contemporary shells all found with the remains, pointing to climatic conditions which do not exist any longer. Now what was it produced a change in these conditions? I believe myself that this vast plateau is one of the most recent features in the physical geography of the world, and that its rapid elevation caused the tremendous change of climate which has enabled the bodies of these great beasts to be preserved intact as we find them. Unless these animals had been frozen immediately they died, and remained frozen to this day, they would certainly have decayed and disappeared; a single Siberian summer sun would have destroyed them completely, and consequently we have a huge problem to face in which I am much interested, and which I have discussed at some length in my book on 'The Mammoth and the Flood.' It would be a great addition to our knowledge if a traveller were to bring back some of the evidences we need as to the exact age of the deposits on the crest of the plateau. We know that further east the bones of great animals have been found 17,000 feet above the level of the sea, under conditions which Falconer declared to be absolutely incompatible with their mode of life. Being a heretic, I am most incorrigible, but I will not be burned for any view I hold. Short of being burned, I am prepared to fight for my opinion in favour of the recent origin of the Pamir. I cannot conclude without expressing my warm personal thanks to the reader of the paper, although I cannot do so in the graceful way my friend Sir Richard Temple has done.

Mr. D. FRESHFIELD: Both as a mountaineer and as one of the Secretaries of this Society, I should like to add a few words of thanks to the author of the paper just read. Captain Younghusband has introduced us to the north side of the great glacier range that extends from the Karakorum Pass up to the Tagh-dum-bash Pamir, and the easy and strategically important passes that connect that region with Hunza and Gilgit, of which he has verified the existence and ascertained the heights. On the northern flanks of the Karakorum he has visited many hitherto unmapped glaciers. In exploring these without having gone through any Alpine apprenticeship in mountain-craft he had a difficult task, and in one sense he was heavily handicapped. To cross a glacier pass is often not easy: to force ponies across one is always difficult. One general remark of Captain Younghusband's, a remark previously made by another great traveller, Mr. Johnston, I should like to endorse. It is very important that young travellers should be disabused of the notion that there is any merit in incurring needless hardships. I would say to them: "Be ready to rough it when called on; but don't, particularly on rough journeys, rough it more than you need." The more a man takes out of himself physically, the less for the moment is left in him mentally. One last word. We have kept off our hand-map, you may notice, all political boundaries. But you must on no account consider that the political boundaries laid down on other maps recently issued, which display an extensive so-called neutral zone, are correct. This zone is not to be found in any treaty or document of which we have any knowledge.

The PRESIDENT: Your feelings have been so well and so vividly expressed by three speakers, Sir Richard Temple who has treated more especially the literary side of Captain Younghusband's performance, Mr. Howorth who has had to say a good deal about his ideas on geology, and Mr. Freshfield who has spoken as a mountaineer, that I do not think it is necessary for me to do more than formally to express your thanks to Captain Younghusband.

Captain YOUNGHUSBAND acknowledged the vote of thanks.