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*Survey Operations of the Afghanistan Expedition ; the Kurram Valley.*

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Map, *ante* p. 80.

*Introduction.*—In accordance with the desire expressed by the Surveyor-General of India that I should write a short narrative report of the proceedings of the survey party attached to the Kurram Valley field force, I have attempted to draw up the following account, and to keep it as concise as possible, without omitting anything I thought of great importance or likely to be of interest. I feel that Captain Woodthorpe, R.E., would probably have done this duty far better than myself, as he was with the column from the commencement of the expedition, and with it throughout the operations in Khost, while I was not; but he had other duties to attend to, and thus the reporting of our experiences fell on me. He has, however, informed me of all that happened before I joined, and by this information, combined with my own experiences since I have been with the force, I hope I have compiled a report which will answer the purpose required.

The area which has come under survey extends first from Thal up the Kurram Valley to the Paiwar range, being bounded on the north by the mountains of the Safid Koh; next the district of Khost to the south of the Kurram, including the mountains between it and that river; also the country west of the Paiwar range, called the Ariob, not Haliab, as some writers have put it, up the Hazardarakht stream to the Shutar-gardan; and again the country south of this to the land of the Ahmed Khels, Lajhwars, and Chakmannis on the Kurram; besides having sketched some other portions of the country on the south side of this river. We also were enabled to cross the Lakerai Kotal (pass) of the Safid Koh range, for a short distance, and so mapped a

small portion of the valley of the Surkab River north of these mountains.

Altogether the country surveyed amounts roughly to an area of about 4500 square miles; the most eastern point being Thal, lat.  $33^{\circ} 22'$ , long.  $70^{\circ} 36'$ ; the most western the Shutar-gardan Kotal, lat.  $33^{\circ} 56' 30''$ , long.  $69^{\circ} 24' 50''$ ; the most northern the Lakerai Kotal over the Safid Koh, lat.  $34^{\circ} 5' 10''$ , long.  $69^{\circ} 50' 30''$ ; the most southern a point on the watershed between the country of the Waziris and Khost, lat.  $33^{\circ} 12' 40''$ , long.  $70^{\circ} 7' 50''$ . We have not had time at present to work out all our calculations, so these values are not final, but they may be taken as approximately correct, and refer to spots actually visited, though of course we were able to fix many distant points which will be of use to future explorers. The scales used were 4 miles to the inch for the geographical map, and 1 inch to the mile for the route survey.

*Rivers.*—The rivers in our work are nearly all so intimately connected with the Kurram, that in the description of that stream I shall give an account of most of the others that pour into the valley.

The River Kurram is fed by three streams of importance, which flow into and join in the Ariob Valley. They are:—

1. The Smaller Hazardarakht or Ghogazai stream, rising north-east of the Sirkai Kotal, flowing for about 8 miles in a north-easterly direction, and then turning south-west and flowing past the village of Ghogazai to that of Dreikula, where it meets the Hazardarakht stream proper.

2. The Hazardarakht stream rises near the Sirkai Kotal, from a high hill to the south-east of that kotal, called Saratega, and flowing almost parallel with the Ghogazai, meets the latter near Dreikula. On their junction they flow in a south-westerly direction and continue to flow so to Ali Khel, under the name of the Hazardarakht (thousand trees).

3. The third is the Ariob, which rises in the Paiwar range, and flows in a westerly direction, being fed by the Sargal from Ada Khel, the Laridar from the Lakerai Kotal, and the Karchatel from Ali Sangi, and other minor streams, until it meets the Hazardarakht stream at Ali Khel.

The real source of the Kurram River should be considered the second of these, viz. the Hazardarakht, as it is the longest and has the largest body of water. These three streams thus joined flow on under the name of the Ariob—but of course it is really the Kurram River—in a westerly direction (it is fed by small streams, the most important of which is the Dapozai, running down from Saratega, and passing the village of Dapozai, which is on the right bank of the Kurram), for about 12 miles, when it suddenly turns sharply to the south, between very close precipitous rocky sides, a most peculiar formation, the stream not

being broader than about 50 feet. This place is called the Tangi, and is just opposite the villages and in the territory of the Ahmed Khels. Near here the Ariob, or Kurram, as it really is, is fed by a stream which rises near the Surki or Spiga Kotal (not Surkai) on the road to Ghazni, but probably rising *really* in the mountain Saratega, over the Surkai Kotal. This stream is also called the Ghunzai.

From the point where the Ghunzai or Surki meets the Kurram the latter flows a little south, and is met by the Wom on the left bank, and the Ooma on the right, all near Ahmed Khel. From Ahmed Khel the river bends again and flows in an easterly direction past Lajhi, Keraia, &c., to Kurram. It is fed in this part (where it bears the name of Kurram) by many streams; the principal being, the Wom, Mangior, Isteah, Spingawai, and Shaluzan streams on its left bank; and the Ooma, Lajhi, Gabara, Zigor, and Darwazagai on its right bank.

A little below Kurram Fort the Karman River from the Safid Koh flows into the Kurram, and about this point the river takes a more south-easterly direction until the Karmana River from the Mozazai Valley flows into it, when it turns almost due south to Hazar Pir. Here the Jaji Maidan River joins the Kurram on its right bank, and the latter then again flows south-east to Thal; thence to Bannu, and into the Indus at Isakher. From the Shutar-gardan we were able to see the Logar or Logard River in the distance, but I was not able to get near enough to fix or draw it in; in fact, as I explain further on, my visit to the Shutar-gardan was so hurried I could do but little. The name of this stream is written by the Ghilzais as Logar, لوگار, but by the Farsibands or Persian-speaking inhabitants, i. e. the tillers of the land generally, it is written Logard (soft d), لوگرد.

Of the other streams, the Laridar, mentioned above, is important, as it rises by the Lakerai Kotal of the Safid Koh, which is a pass towards Jagdalak and Gandamak, and to get to the pass one has to go up the bed of the Laridar stream. I was able to put in the Surkab River at its source, which flows down from the north side of the Lakerai to the district of Esarak and round easterly to Gandamak.

I notice that Colonel Edwardes, in his account of the Kurram Valley in 1856, speaks of "the ever white Spinghar or Safid Koh," and again, of "the noisy babbling Kurram whose waters are as clear and crystal as the snow from which they come." I can't say I altogether agree with this, for there was no snow on the Safid Koh up to the middle of January, and it generally begins to die away by the middle of June, all having gone as a rule by the middle of July or beginning of August; and again, though the waters of the Kurram are noisy, they are at the same time decidedly dirty, with a great deal of mud and sand in suspension, at least they have been so ever since this Expedition has been

in the valley. The mountain streams are certainly some of them as clear as crystal, but even many of them become muddy and dirty as they near the larger river. Of course the snow remains longer on the north side of the Safid Koh and may be all the year round there, but that is not visible from the Kurram Valley.

In Khost the principal rivers are the Shamil, the Matun, the Zumba, and in the Jaji Maidan territory the Jaji Maidan River. The Shamil rises in the Jadran Hills and flows easterly to Matun, where it is met by the Matun River; it then continues its course, easterly still, until the Zumba or Kam Khost River flows into it near Arun Khel, and about 4 miles beyond this it turns in a southerly direction to Laram, where it again turns easterly and flows into the Kurram near Zaron, south of Thal. The Matun and Zumba or Kam Khost rivers both rise in the Gabar Mangal Hills, and both flow almost parallel in a south-easterly direction; the former joining the Shamil at Matun, the latter at Arun Khel. The Jaji Maidan River rises on the south side of the range of hills between the territory of the Makhbuls and Jaji Maidan, and flows through the latter territory in a south-easterly direction, joining the Kurram River near Hazar Pir.

*Roads.*—There are many roads, none of them very good in a military point of view; and of course there are several over passes only fit for foot travellers, which we do not yet know.

The principal and most important road is that from Thal, now improved by the British; it leads by the village Mandoria along the left bank of the Kurram, and by the Alizai and Shinak to Kurram. The old road from Thal used to cross to the right bank of the river at Kapiunga and continue along that side, and was at first made use of till the British improved the other; it used to pass by Ahmed-i-Shamu and Hazar Pir, and cross the left bank above Shinak and so to Kurram.

From Kurram the road runs across an open dry plain to the village of Habib Killa, a Durani cantonment, and thence up the Paiwar range to the Paiwar Kotal. The walk from Kurram to Habib Killa is the longest march a man can take, i. e. it *seems* so. It is only 13 miles, but going either way you see your destination the whole time, and it seems quite near when you start, and never any nearer for every step you take; it is more tiring to march from one to either, and back, than any other 26 miles I know of.

This same road then passes over the kotal, and running down the western side between pretty wooded spurs it goes by Zabardast Killa, and Bian Khel, to Ali Khel, keeping on the left bank of the Ariob River. Thence a road turns along the Hazardarakht stream, passing Rokian, Dreikula, and Jaji Thana, over the Surkai Kotal, down into the valley on to Kasim Khel, Hazratt Thana, and on to the Shutargardan. Thence the road runs by Dobandi and Kushi, into the Logar Valley, and then northwards to Kabul. This is considered one of the

great roads, and is of course the one that will now be of most importance.

To return again as far as Kurram, we have another important road, and that is the continuation of the Thal one, along the banks of the Kurram, past Keraia, through the Chakmanni country, by Lajhi to Ahmed Khel, thence up the Ghunzai or Surki River, over the kotal of that name, and on to Ghazni.

After the Surki Kotal is passed, the road branches off to the Tera Gawi Kotal, and thence to Kabul. The first portion of this road near Chakmanni and Lajhi is dreaded on account of the robbers, or otherwise it is the best road to Ghazni. It was by this road, and over the Spiga Kotal, that Mahomet Azim Khan, the old ruler and builder of Kurram Fort, brought the guns to Kurram. The name Altimor is used by General Abbott, and I believe this is the summit, and Tera Gawi the foot of the pass.

To return to Ali Khel again, we find a road along the Ariob River by Karmana, Secunder Khel, and Dapozai, joining the road over the Spiga Kotal, near the Ahmed Khel Tangi of the river.

Let us start now at Ahmed-i-Shamu, on the old road between Thal and Kurram, and we find a road running by Shobakghar and Landiah, on the Shamil River, and up that river to Matun. This continues along the river into Jadran. Again from Hazar Pir a road runs by Jaji Maidan and Jaji Danni, by Bakh, and south to Matun. This is the principal road into Khost. Where the Zumba River cuts the last named, a road branches off to Sabori.

Again, starting from Hazar Pir we have a road passing through the Jaji Maidan country, and then turning north, and crossing the Darwazagai Pass, comes out of the hills, to the Kurram Valley, a little east of Kurram Fort. At Sadar, where the Karmana River joins the Kurram, a road goes along the former stream into the Mozazai Valley; but I cannot say we know anything about it. Nor do we know any more of another road starting from the same place by Dandoghar Mountain, and on to Togh.

There is a road from Kurram by Zeran village, and over the Aghane Pass of the Safid Koh, and on to Jalalabad, which we have only seen as far as the pass. The same holds for the important road running by Bian Khel and Belut along the Laridar River, by the Lakera Kotal, into the Babar Ghilzai territory of Azar and Esarak to Jalalabad.

The Ghogazai route to the Logar Valley passing by Mir Alum's Fort is another road, avoiding the Hazardarakht route and the Surkai and Shutar-gardan kotals, joining the Hazardarakht route at Dreikula. Captain Rennick, the political officer of the Ariob, tells me he thinks the telegraph ought to be carried into Kabul by this route, as it would avoid the snow-drifts of the Akund defile and the storms of the Shutar-

gardan. The portion of this road from Ghogazai to Mir Alum is not good, however, being as bad, if not worse, as that by Dreikula and Jaji Thana, though the remaining portion (as I mention further on) inspected by Captain Rennick and myself, i. e. from Mir Alum to a kotal north of the Shutar-gardan, is excellent.

Besides all these roads, there are several minor or contraband ones, such as across the Mangior Kotal from Ali Khel by Sapri to Keraia on the Kurram River, and that by the Isteah Pass out of the Ariob Valley to Isteah on the Kurram.

*Towns, &c.*—The principal villages (they really cannot be called towns) we have met with are Kurram, Ali Khel, Habib Killa, Sali Mahomet Khan's Killa, and Matun in Khost. These are perhaps a little larger and more important than some of the others, but all are really very much alike, being composed of mud houses surrounded with a mud wall. Kurram, Matun, and Sali Mahomet Khan's Fort, in Chakmanni, have pretensions of being "forts," however. Kurram is the largest. Kurram Fort is a square mud fort, having towers at the corners and in the middle of each side; rooms are built for the garrison all along inside the walls, and there is a place for a bazaar, and an inner square mud building for the magazine. It was built originally by Mahomet Azim Khan, and used to be called by his name. All other forts are, as I say, on much the same principle.

The villages even are similar, and fortified to some little extent. They are, of course, built of mud with thick walls, and the dwellers try their best to make their exits and entrances as difficult as possible. In some places that I have seen, a man has to clamber up some feet, and go through a hole to get to a room. For light and air in their rooms the villagers have holes (about a foot square) made high up in the wall, so as to be out of the reach of a man outside, as they apparently never can be sure when an enemy may be near, and one playful custom is for a man to put his gun through the hole, if he can reach it, and fire into the room at night. I have seen many of these little holes provided with small iron shutters. The villagers light their fires in their rooms, and have no chimneys. I have slept in their rooms under such circumstances, and have experienced the pain the smoke causes to the eyes; but I was told that one soon got accustomed to it, and that the watering of one's eyes was very good for them!

*Climate.*—The climate generally of the Kurram Valley is that of the Punjab, only severer in its extremes. There is a very severe winter—of course, far severer than that of the Punjab, the thermometer having gone down to 5° Fahr. in December last, and having averaged 12° to 15° Fahr. often during the night. Even in April it has been as low as 27° Fahr.; and yet this was not considered a severe winter, but rather the contrary.

The summer is very dry and hot, and the rainfall small. It may

be imagined that in the valleys such a climate must be very trying and I personally have my doubts whether this will be found so healthy a country as many seem to expect. We have been knocking about in tents for some time, and the men, both Europeans and natives, are as hard as nails, and in rude health, so one cannot judge from this what troops will be like when living a sedentary life in a cantonment in these valleys.

Our native followers suffered most from pneumonia during the intense cold, and the Europeans stationed in the valleys would probably suffer more from the heat, if it were not for the grand pitch of training to which they have been brought. There are, however, hills all around, and quite close at hand, and I allow that such air as one can obtain on the Paiwar Kotal and other spots is simply life-giving.

*General Description of the Country.*—The country round Thal is like that of the Punjab Salt Range, the hills being for the most part barren and all vegetation scarce, the mountains having only a few stunted shrubs on them; except in the ravines and the foot of the hills, where, being protected, there are a few trees. This, of course, is to be expected, owing to the severity of the winter and the want of moisture in the air at other times. One large hill, Kadimakt, on the left bank of the Kurram, rises over Thal to about 4900 feet. A little distance out of Thal we begin to get more vegetation, and the hills have a little more scrub jungle on them.

When we arrive at Kurram we find ourselves in a large, dry, open plain. The fort is situated in this plain, so dreary, dry, and ugly, that the mud huts of the villages being almost the same colour as the ground can hardly be distinguished at a short distance, and were it not for the loose stones and boulders lying about, against which one's feet continually knock, and which add considerably to the bootmaker's bill, one might imagine it (as far as the valley is concerned) the plains of the Punjab.

But there is happily something to break the monotony of this scene, and that is the hills around; first among which is the beautiful range of the Safid Koh. At Kurram this range is visible from Sikaram on the west, bearing away to the east, and beyond a fine pointed peak called Keraira, just a little north-east of Kurram, till it is lost to view; but looking back, down the river, we see the hills we have already passed on our way from Thal, and the mountains (one grand fellow among them) of the Zaemukt country, besides other large hills, and one feels oneself repaid for living through the dry heat, the cutting cold, and the dusty storms (we always had one of these at Kurram) by the enjoyment afforded us by the varied beauties of these glorious ranges.

Early in the morning, and at sunset, we always had some picturesque effect to entrance us. Perhaps silver grey and soft shadows, perhaps deep reds and purples, perhaps black angry clouds floating over the tops of the

mountains, with white masses half-way down them ; whatever the state of the weather, whatever the light, we could every day find and enjoy some new beauty in the mountains. Nevertheless, although I admired the hills and loved to look on their ever-changing beauties, I could not but wish that the hideous foreground, which it made one thirsty to look at, could be changed for something more in accordance with my ideas of what the country behind it deserved.

On our way to the Paiwar Kotal we pass a village at the foot of the Safid Koh, called Shaluzan, about 5 miles east of the old Durani cantonment of Habib Killa. I cannot pass this without mentioning it, for it is indeed a lovely spot. Situated at the foot of huge mountains rising over 15,000 feet ; hid among a forest of walnut-trees, with little temples built on the points of the various underfeatures, with many clear-sparkling mountain streams rippling along, and its quaint little mud huts, it is one of the most lovely and picturesque spots I have ever seen. One can sit under the shade of the various trees there, and they are many, and imagine there is no hideous dry, hot plain beyond, for all one sees is pretty, green, soft, undulating ground ; sunlight falling between the trees, glimpses of the snows of the Safid Koh, the sparkle of the crystal water, and perhaps here and there a group of men clothed in their picturesque garb. The inhabitants always look *right*, they are always in the *right* place, they always sit or stand in the most picturesque way, and their natural unconsciousness makes their positions all the more easy and graceful. Their dresses are of lovely colours ; generally they are of a deep, almost invisible blue, with some other shade of the same, or perhaps some other bright bit of colour put in here and there to relieve it. They seem unconsciously always to put in this bit of colour in the right spot, and the dirt with which they are all covered seems but to improve the richness of the hues. Add to this the quaint weapons and strange faces of the men (some really very handsome, like fine old Jewish heroes, others "hang-dog," or crafty), and the fact that, group themselves as they will, they seem always to improve the scene, and it can be imagined what a fairylike spot this seemed to us.

While talking of Shaluzan, I should mention the fact that on the 26th of May, just after the Queen's birthday, and a little before peace was signed, the Commander-in-Chief of the Pattiala Contingent gave a picnic in the name of H.H. the Maharajah, to the General and almost all the officers of the column (i. e. as many as the distance to be got over, or duty, would allow to go). It was a most hospitable and generous act, quite worthy of the liberality of native princes, and a pretty courteous wind-up of the excellent service they and their men have performed as long as they have been with the force. They had most trying and difficult duty to carry out, in keeping our communications open, and escorting supplies ; and it was most gratifying to see the pains



they all took, both officers and men, to do everything in their power to help. The alacrity with which they worked, their zeal, and intense anxiety to please, was noticed and was talked of by every officer from the General downwards. It was their misfortune (at least I expect the men themselves thought so), that there was no more fighting to be done, and considering what a good stock they came from, and what fine, powerful, muscular men they were, I think the enemy would have found them very ugly customers to deal with.

But to return to our picnic. It was no ordinary entertainment, and the expense must have been enormous, when we remember that luxuries of all sorts were in profusion (including champagne, ice, and soda-water), luxuries that were certainly not procurable in Afghanistan. A photograph was taken of the party, and after that we had some wrestling. The two best bouts were between a Pathan and a gigantic Sikh, the latter winning, and being in consequence challenged by another Mussulman later on, but the Sikh again was the conqueror.

We heard that Shaluzan was famous for its lovely women, but as I never saw any of the fair sex at all, it is impossible to pass an opinion on their looks. I am now afraid that the charms of this picturesque spot will soon be at an end, as a military cantonment is being laid out quite near it, which means ugly barracks, hideous houses, cutting down of trees, and generally destruction of all that is lovely as far as it is possible to destroy it.

The Paiwar range, as before mentioned, is really a spur running south from the mountain Sikaram. It is a well-wooded spur rising in one part, north of the kotal, to a point about 9400 feet high, and decreasing in height by a series of small peaks till it arrives at the kotal; from there the range begins to rise again, running south, and being crossed by several passes leading from the Ariob Valley into the Kurram Valley proper, the principal being the Isteah, Strimander, and Drak Algar, and finally ending in one fine hill called Mandeha, about 11,000 feet high, just over the village of Keraia, on the Kurram, and overlooking the Mangior Defile. On the opposite side of the kotal, i. e. the western side, long spurs run down, and the scenery begins to wear a more pleasant aspect, one of these spurs running along parallel with the Ariob, and helping to feed it by many very small streams. From the Isteah Kotal runs down another stream, and on this same bank one more stream also flows, called the Ali Khel, nearly parallel to the last, and both fall into the Ariob before we reach Ali Khel.

From the Mandeha range, as I shall call this southern and high portion of the Paiwar range, runs out a spur on which is the Drak Algar Pass, mentioned above, and this spur rises at the other end to a point about 10,800 feet, visible from Ali Khel. All these hills being thickly wooded, with a large amount of deodar, and in places being steep

and precipitous on the river bank, cause this side of the Ariob to be very pretty and effective.

The country on the right bank of the Ariob, after passing Zabardast Killa, is more open, rising gradually to the foot of the Safid Koh until we pass Bian Khel, when we begin to see the effects of the spurs from Matungeh, a noble mountain, 12,800 feet high, which stands over Ali Khel in a direction nearly due north.

The Safid Koh range from Sikaram runs for about  $4\frac{1}{2}$  miles north-west, and then, the edge ending rather sharply, strikes off into two branches. One spur runs northwards, where it has one or two well-marked peaks, and gradually dies away, forming part of the watershed of the Surkab River, which flows north to Esarak and then east to Gandamak. The other spur continues to drop steadily to the Zera Kandai Kotal and thence to the Lakerai Kotal. The former is a bad pass, and very steep and difficult to climb, while the latter is an important pass about 10,600 feet high, and is the best road across from Ariob to Jagdalak and Gandamak. After this, the range turns southerly somewhat, and begins to get higher and higher until it culminates in the hill previously mentioned north of Ali Khel.

There is a peculiar formation of three plateaus near Ali Khel village, owing to the drainage into the two rivers, Ariob and Hazardarakht, that meet there, surrounded by smaller hills; these plateaus made capital encamping grounds. One of the most exquisite views we have had was from the top of one of these small hills, looking up the river towards Paiwar Kotal.

The village of Ali Khel lies beneath, on the banks of the river which you see winding away in the distance, with small villages dotted about on its banks, and surrounded by green rice fields and orchards. Matungeh stands on your left, black and frowning, with scanty vegetation on its lower spurs, while nearly the whole range of the Safid Koh, from Sikaram, lies before you, its many spurs running out in all directions and taking various hues—lit up here, in shadow there. And again, on the right, the well-wooded ranges from Mandeha to the kotal give a variety of tints in the colour of their foliage. I should be sorry to say how many men have tried to sketch this, and how many have come far short of doing justice to its beauties—failed in fact for lack of power in their brushes, as I feel I have failed from lack of power in my language.

All this part of our course is well cultivated, rich in barley, rich in rice, the villages surrounded by fruit-trees, and most of the fields watered by a most laborious system of irrigation from the river.

Now let us turn up from Ali Khel and look at the country by the Hazardarakht stream. The hill Saratega I should guess to be about 12,000 feet high, lat.  $33^{\circ} 54' 45''$ , long.  $69^{\circ} 31' 59''$ , situated a little south-west of the Surkai Kotal (Red Kotal), on the way to the Shutar-gardan.

The spurs from this high mountain run down for 12 or 13 miles, of course each one forming almost a range of its own. One of these spurs runs down to the Ali Khel, ending in small undulating features; but as we go up the Hazardarakht stream towards Dreikula we find these spurs end more abruptly, forming much steeper banks, and having less vegetation.

The opposite bank is formed by a large spur from Matungeh with peculiar pointed hills and strangely shaped features. Opposite Dreikula village, at the meeting of three streams (as its name "three-mouthed" implies), there is a strange set of rocks standing up like a wall or a series of broken columns, some ending in sharp points. Near Dreikula the pine forests begin again, and all up the Hazardarakht stream, nearly to Jaji Thana, the forest is thick, and both banks of the river steep. On the way from Ali Khel to Dreikula we pass on the right a village, Rokian, famous for its wheat and apples.

From Jaji Thana to the Sirkai Kotal the country is again rather barren and the hills bare. Crossing over the Sirkai Kotal we descend into a green plain and arrive at Hazratt Thana or Kasim Khel, from which we go to the Shutar-gardan Kotal; and all this part of the country is again rocky and very bare; the ascent up to the Shutar-gardan being very gradual on this side, but being remarkably steep on the other side down to Dobandi. From what I could see from the kotal, there was a descent practicable into a rich, fine land; but I had gone as far as I could be permitted.

Let us start once again from Ali Khel, and go down the Ariob River still further. We pass a pointed hill, well wooded, on the left, called Uth Mander, at the foot of which is Mirak Shah's Fort, a person whom I shall have to mention further on; and by this passes the road to Chapri, or Sapri, and over the Mangior Kotal down the defile to the Kurram River. Continuing down the Ariob, we pass Karmana, from which village is another road to Sapri. Then we come to Secunder Khel, an important village, and at about 10 miles from Ali Khel the large village of Dapozai. All the left bank is formed by well-wooded hills, rising between 10,000 and 11,000 feet high, and rather steep at the river edge, but going off into long ranges and spurs, and rising a little again, and then finally dropping down straight, forming steep banks to the Kurram, near Lajhi. The right bank of the Ariob from Ali Khel to Ahmed Khel is formed, like the right bank of the Hazardarakht, by the long spurs from Saratega, only in this case they do not run down so closely to the water's edge, and slope more gradually. These slopes also are wooded some few hundred feet up, but not very much so nearer the bottom and the river.

A short distance beyond we come to the important feature of the river, described before, called the Tangi, and here the country is naturally all rocks, and very barren, the sides being most precipitous,

but the Ahmed Khel villages have fields down on the river side, and many along the Surki stream, all reclaimed by immense labour from the waters.

The sides of the Surki stream are well wooded, and on the left bank are formed by the spurs from Saratega Mountain, and on the right bank by spurs from the high hills behind the Ahmed Khel villages. But, as I said previously, the country round the Tangi and on to Lajhi is, on each side of the river, very bare, rocky, and wild; the banks being very precipitous and the river very narrow and winding considerably. Passing Lajhi, and getting into the country of the Chakmannis, or Chamkannis, we begin again to get into a well-wooded and fertile land, and so on to the mouth of the Mangior Defile, and by Isteah back to the foot of the spurs from Mandeha and the end of the Paiwar range. In going along this route we pass two rivers on the right bank, up which I have been, one the Gabara River rising in the Gabar Mangal Hills, and flowing into the Kurram opposite Keraia, which is full of villages, and most excellently cultivated for some 8 or 9 miles, until we begin to leave the Chakmanni country and enter that of the Gabar Mangala, where we get more rocky, hilly country, and naturally wilder. It is curious to notice how, with few exceptions, these independent, wild robbers seem to live in the most difficult country.

The second river we passed was the Zigor, which rises in the Makhbul country, but which is not nearly so well cultivated. When we went with the General and his staff up this river on a reconnaissance with a cavalry escort, we found it difficult to get any water for the horses; though at last the villagers showed us some black stuff they *called* water for the quadrupeds, and many of us bipeds drank boiled milk brought from the village. We had not long to complain of want of water in the Makhbul country, for a tremendous thunderstorm broke over us, and we were all well soaked before we got home. Disagreeable as it was, however, when the yellowish-green light from between the black clouds lit up a few peaks here and there, and the lightning, now and then quite dazzling, was followed by a clap of thunder that was taken up by the echoes and rolled along from hill to hill for some minutes, I thought the Makhbul country a far finer bit of territory than I had in the early morning, when all looked dry and uninteresting.

Khost lies to the south and west of the Kurram River, and behind the range of hills on the right bank of the Kurram. It is bounded on the north by the Jaji Maidan and Gabar Mangal hills; on the south by the Waziri Hills; on the east by a range between it and the Hasan Khels and Darwesh Khels, and on the west by the Gabar Mangal and Jadran Mountains. Khost is also split up by low ranges of hills running across from east to west, dividing it as it were into three principal valleys, which are flat, and the soil alluvial. About Matun the country is very well cultivated, a good deal of irrigation being

carried on, but the natural growth on the hills is spare, being small scrub jungle.

*Peaks and Places of Interest visited by the Survey.*—The principal peaks visited by Captain Woodthorpe and myself have been, Bodin, 14,000 feet, lat.  $33^{\circ} 58' 57''$ , long.  $70^{\circ} 15' 8''$ ; Matungeh, 12,800 feet, lat.  $34^{\circ} 0' 29''$ , long.  $69^{\circ} 45' 7''$ , this on two occasions; the Lakerai Kotal on the Safid Koh, 10,600 feet, lat.  $34^{\circ} 5' 10''$ , long.  $69^{\circ} 50' 30''$ ; the Shutar-gardan, 10,800 feet, lat.  $33^{\circ} 56' 30''$ , long.  $69^{\circ} 24' 50''$ ; Sikaram Peak, 15,600 feet, lat.  $34^{\circ} 2' 21''$ , long.  $69^{\circ} 56' 35''$ . I trust before this is read that Sikaram will have been ascended a second time, and also that Keraira, a very pointed peak over Kurram, and on the Safid Koh, also will have been observed on. We have had an idea for some time that this last point was higher than Sikaram, but since we have been up the latter we have abandoned the notion, although it cannot be far below the same height: this point, Keraira, is in lat.  $33^{\circ} 58' 26''$ , long.  $70^{\circ} 16' 42''$ .

This will make six ascents of the Safid Koh by the officers of the Survey with this column, those to Bodin, Matungeh, and the Lakerai having been made, as far as I know, before any other officers of the army had attempted them. The honour, however, of being first on the top of the highest point, Sikaram, lies with Mr. Scott of the Survey Department attached to the Peshawur division.

As some of our trips may be interesting, I will briefly give an account of one or two.

Captain Straton of 2nd battalion 22nd Regiment, in charge of the signalling (he relieved Captain Wynne, 51st Light Infantry, who was in charge of the signalling formerly, but went home), has accompanied us on all our trips of any importance or where there was a likelihood of danger, in order to keep up communication with the troops. While mentioning signalling, it is strange more men do not know it. We have used the heliograph under the name "heliotope" for many years in the Survey before it ever came into use in England, and for triangulation it was very useful. It cannot be expected that in England the heliograph will be as useful as in this country, but considering how much can be done with it, and how much we have to do with Eastern countries, we ought certainly to have many more officers and men, not only *able* to communicate, but able to talk with ease. A 5-inch heliograph has been used to communicate at a distance of 75 miles out here, and there is no reason why a 6-inch heliograph should not be read at 100 or 150 miles. Captain Wynne on this expedition has kept up communication with a 3-inch Mance heliograph at 34 miles. Captain Straton also has read a 3-foot flag at 25 miles with a good telescope. We certainly have found this on many occasions of great use to us.

One of the 72nd Highlanders, Corporal Eason, an excellent signaller,

a first-rate shot, and good walker, has been with us also on every occasion of importance, and on every ascent of the Safid Koh; except when we visited the Lakerai Kotal, when no one but Captain Woodthorpe and myself went, as the General wished our visit to be kept as secret as possible.

The second trip to Matungeh was made on the 24th of April from Ali Khel. Major White, of the 92nd Highlanders, Captain Woodthorpe, Captain Straton, and myself, accompanied by Corporal Eason and three signallers of the 72nd Highlanders, started from the village at about 5 A.M. Ali Khel is about 7300 feet high, so we had a climb of about 5500 feet before we reached the top, and we were not very near the foot of the hill, and so had some little distance to travel before our work began. We had had very severe storms for a day or two before, and the thermometer went down to 27° Fahr. at Ali Khel. These storms had prevented our going before on the 20th as we had originally intended. It was very cold therefore on the 24th, but perhaps not so bad as a few days previously. Toiling along a spur, we managed to reach the top in about five hours. For the last 1500 feet we had snow of some depth, but which luckily was only frozen in one steep place, and this certainly was a nasty little bit to get over; otherwise, except for the fact that making steps and so on delayed us, and the sinking of our feet in the snow where soft tired us, there was nothing dangerous. Perhaps the most trying thing was the glare off the snow, the sun being very bright; at least the next day I suffered rather from sore eyes. The cold at the summit was very great and the wind most cutting. Captain Woodthorpe took the observations with a 6-inch subtense transit theodolite by Troughton and Simms, which was a trying and annoying piece of work, for there being several feet of snow, the legs of the instrument would sink as the day wore on, making frequent readjustment necessary. I did the plane-tabling, but found it was no easy matter to draw with fingers that continually lost their feeling; and from standing still in the snow I was not aware of the existence of my toes. However, we had a good day and got through plenty of work, returning to the camp at Ali Khel comfortably tired and healthily hungry to enjoy commissariat rations in the evening.

On April 30th Captain Woodthorpe and myself, with thirty Gorkhas of the 5th, went to Belut, a village on the Laridar River, preparatory to starting up the Lakerai Kotal; as the General required a reconnaissance to be made of that route. We kept it as quiet as possible, and under the charge of Sarwar Khan, son of Mahomet Amin Khan of Gandeab, and a baddraggar (guard of villagers) of most cutthroat-looking villains, and leaving a few of our Gorkhas to take care of our camp, we started on our journey the next morning, the 1st of May.

A Pathan, one of the 5th Punjab Native Infantry, a havildar, by name Hazratt Shah, had been kindly sent with us by Major McQueen,

of that regiment, and he was most useful, having been along the route before, and being able to act as interpreter for us with the baddraggar. The first part of our journey was along the bed of the Laridar (or Lalidar) stream for 7 or 8 miles, and between thickly wooded spurs of the mountains; the river, like all mountain streams in this country, being full of boulders against which to skin one's shins. The road then turns a little to the left over a low spur, and following this up arrives at a small saddle. Here we halted for a few minutes to collect our men who had begun to straggle.

We had by this time begun to reach the snow which was about a foot or two deep in some places. The scenery of this portion was exquisite and quite Alpine in many parts. In the midst of a deep forest where the sunlight fell between the trees, the lower underfeatures of various colours were lit up in places by the sun, while in others they were rich in deep-coloured shadows, the dark pines all around and above looking blacker and blacker as you gazed upwards, in contrast to the snowy, glistening range of the Safid Koh behind them; the grandeur of the scene caused us to stop, and excited mingled feelings of awe and admiration. But what could one do? Even if I had the power to sketch such a scene, I had not the time, for speedy observation was necessary if we intended to do work and return in safety.

Combined with this, there were our ruffianly-looking baddraggar in their dark blue lungis, and with their quaint weapons, who at every halt cast themselves about in most natural and picturesque groups, always improving rather than spoiling the scene; so different from the European dresses of myself and companions, which made us appear out of place and more like barbarians than our guides were. Continuing our way along the spurs, we began to leave the vegetation as we got higher and into deeper snow, until we arrived at last at the kotal, about 10,600 feet. The northern side had very deep snow on it, and on asking how much there was generally in winter, one of our guides in explanation placed his hand as high as he could above his head. On this occasion it was about 2 or 3 feet deep. I did some plane-tabling and found it quite as cold as on Matungeh, but the villagers had brought some wood with them, and we lit a nice fire by which at intervals I warmed my fingers. We then went a short way down on the north side, so as to get a good view of the valley and the villages. There are some Mangal villages there, on the banks of the Surkab River, viz. Taghan, Langiar Killa, Sirket, and Nasir Mahomet, and our guides began to get anxious and begged us not to go too far; so, as we had a long walk back after having gone about a mile and a half down, we began our return journey. In the Laridar nuddee I forgot to mention one spot called Baguchina, a pretty green place with many springs of delicious water; and here we were told that bodies of armed men always encamped, and we rather disgusted our baddraggar by stopping here, as they said no one tarried

along the road between this place and the mountains, as it was a great place for robbers.

A short time after we had left Belut in the morning, and a short distance up the river, a shot was fired at us from the heights (it was amusing to see how our Gorkha guard "woke up," if I may so use the expression), but we sent the baddraggar up to crown the heights and continued on our way, finding no one and meeting with no other adventure. We took the same precautions coming back, and reached Belut quite comfortably, having had a most pleasant walk of about 22 miles through charming scenery, new country, and performed a satisfactory day's work.

Our trip to the Shutar-gardan on the 5th of May was not so satisfactory. We were rather a large party, with political officers (Colonel Gordon and Captain Rennick), and a large baddraggar mounted on squealing ponies. At the Sirkai Kotal I was able to do some plane-tableing, but after that, when we left Hazratt Thana and arrived at the Shutar-gardan Kotal I was not able to do much. I went up a small hill on one side, and Captain Woodthorpe intended to go over the kotal for some little distance to examine the eastern side, but I had only just fixed my position and begun work when I received a message to come down at once, the position apparently not being considered safe; thus I was able to do hardly anything in the way of topography. The slope on the eastern side is steep to Dobandi, and near that village the country appeared well cultivated, but all the country round the pass itself is very dry and barren, with very little snow, and none on the kotal itself at the time we were there, it lying but thinly on the adjacent hills. We slept that night on the ground of an upper room in a house in Hazratt Thana, and though I suppose I slept soundly enough, still I would not wish my best friends to have to do the same. I could dream of nothing but hopping, crawling, and voracious creatures, and often awoke imagining all sorts of horrors in that way; but we could not have brought our tents with us, and it would not have been safe to sleep outside, so there was no help for it but to try to sleep, and trust something would be left of us by the morning. On our return to Ali Khel the care we took not to let any of our blankets go into our tents previous to careful examination was as necessary as it was nasty, though perhaps amusing to those not personally interested. On our return journey, on the 6th of May, I took a small circuitous route with Captain Rennick and an old malik (headman of a village), to see the road to another kotal, north of the Shutar-gardan. The road to this, between it and Mir Alum Fort, is simply excellent; it is all springy turf, on which I galloped, but I could not go to the kotal to see the other side. The old malik said the road on the other side "was like the palm of one's hand," but of course I cannot vouch for the truth of this statement. If this is the case, however, it is simply a kotal that turns the Shutar-gardan, and I am sorry I was not allowed to survey the country all about.



The road from Mir Alum's Fort to Dreikula by Ghogazai is very bad indeed, but that between Hazratt Thana and Mir Alum is a good one; so that though I do not think the road to the northern pass could be used by troops until they had passed the Sirkai Kotal, yet it seems to me it might perhaps be of use after they had done so, for I think men could be marched back from Hazratt Thana to Mir Alum and sent by the other kotal without the defenders of the Shutar-gardan seeing them, and their attention could be riveted on their front defence; or again, anyhow, the offensive party showing that they had the knowledge of this route, would make the defenders inclined to weaken their force at the Shutar-gardan, in order to defend the other pass, as it leads to Dobandi, and attacks their rear; and, lastly, in any movement to concentrate force in one spot or the other, those in the attacking force would be able to move more rapidly and more secretly in the valley than the defenders could on the hills from pass to pass.

We did not always get off without a shot or two at us, and a little excitement. On one occasion, the 15th of June, General Roberts and his staff, accompanied by ourselves, with a few native orderlies, went on a reconnaissance up the Kurram, from Keraia village, intending to reach the Ahmed Khel villages, near the Tangi. Captain Woodthorpe, Captain Straton, and myself, under the charge of the Malik of the Ahmed Khels, were to sleep at their village that night, in order to work on some hills near there the next morning, while the rest returned to Keraia. For this purpose it was necessary we should go along the Kurram River by Lajhi where the Lajhi Mangals dwell. Lajhi, both villages and river, are on the south bank of the Kurram. The Mangals have always been independent, and have levied a tax or toll on whatever passed along that road, or robbed the whole. Political manipulation had, however, brought in many independent tribes, the Gabar Mangals among others, and just before the reconnaissance the Lajhi Mangals, or as they are properly called, Lajhwars, had sent in a Jirgha. Thus when we started some of the head men of the tribe of Lajhwars were actually detained at Keraia as hostages for our safe conduct through the Kurram.

We all started with a baddraggar, composed of Chakmannis, Mangals, Ahmed Khels, Makhbuls, Hasn Khels, &c. Troops, however, were not taken to Lajhi, but some were left some two miles short of that place in our rear. Our small party therefore advanced quite contentedly until, arriving at the mouth of the Lajhi, we found the Mangals jumping about like monkeys on the hills, and barring our passage. They at last fired into us, but shot badly. After some further talking (which had nothing to do with me, so I did not attend to it) the General determined to retire. We were not allowed to return their fire, and I dare say wisely, or I think we could have picked off a few of them. Soon after they saw us retiring they began to shoot at us, and as we went down the river they ran along the hill tops to follow us up.

At one time we cannot have been more than 120 yards from them, and how they missed us I cannot understand, certainly I allow their bullets came quite close enough to be uncomfortable, as far as we were concerned, but still it was very bad shooting on their part. Luckily no one was killed, two native orderlies and one of the baddraggar being wounded, and two animals hit; but had the General's or some other valuable life been taken this affair (which we have all laughed over since) would have been far more serious. I believe there is no doubt now that some of our own baddraggar amused themselves by firing at us. The Lajhwars, like the rest of the Mangals, have always been independent, and as long as they liked to be so, and fight it out, they could only be admired, but when they send in men as hostages, and are apparently willing to receive the party in a friendly way, and then on their arrival (in a narrow part of the river) begin to fire on them, their behaviour is hardly what can be called noble. I hear that other tribes say they consider it disgraceful conduct, and a breach of all their rules of baddraggar, but I do not know whether because they say so, it follows that they think so. I hear that they have since sent in a sum of money and sheep, and sworn to be our allies, and to keep the road open along the Kurram for us, but I suppose time will show the value of these oaths. Anyhow it is certain that our subjects must be allowed to proceed unmolested along the Kurram, if the valley is to be ours, and if our neighbours do not choose to let them, they must be taught by a lesson they can understand. Before peace was made they might have been fighting for their soil, but men such as the Mangals doing this after peace is declared and signed, means highway robbery.

On one other occasion, when two other officers were with Captain Woodthorpe and myself, and two signallers of the 72nd and six sepoy accompanying us, for survey on a hill near the Mangior Pass, some of these same Lajhwars and a few Ahmed Khels, in all about two or three hundred men, came into the valley below. Luckily these men had been firing on some grass-cutters just before, who were on the hills between us and our camp at Ali Khel, and had thus betrayed their presence. Here the heliograph came in useful, for General Cobbe warned us of this from Ali Khel, and told us he was sending out four companies of Gorkhas to our help. Soon after the enemy had seen us on our hill and got pretty near us, the Gorkhas arrived in the valley below, and so they took themselves off after firing about fifty shots at us, nearly all of which went over our heads, while we had the grim satisfaction of knowing afterwards that they had lost one man for their pains.

*Ascent of Mount Sikaram.*—We went to Sikaram (15,600 feet) on June 26th. I have endeavoured to find out the real name of this mountain, but without success. Some say the name is Sheik Harm, others say there are no sheiks, and never were any here, and that it is not its name;

others call it Setaram, but I think the generally received name is Sikaram, as they say it was given by the Sikhs.

The night before the ascent we encamped at Sirgal, a village northwest of Zabardast Killa, and about 5 miles (as the crow flies) from the hill top. We had intended to go part of the way up the first day, but owing to our being delayed at the Ali Khel, and not arriving at Sirgal till late, we had to stay at that village for the night. We also had some little difficulty about getting villagers to carry up our bedding the first portion of the journey; and *en passant* I may remark this is the worst country I have ever visited in which to get a man to carry anything; not even a water bottle. They certainly are ready, on payment, to help in a way, but their gun, their pistol, and knife are the only things they apparently consider they ought ever to pick up.

As the chance of fighting with the Amir became less and less, officers were continually asking leave to go with us on our expeditions, so we often had company. On the present occasion we had a large party, for, being the biggest hill, there were many who wished to make the ascent. It consisted of Major White of the 92nd Highlanders (an officer who, whenever duty or distance from his work did not prevent him, always tried to get leave to accompany us for his own pleasure, and very good company he was), Captain Straton; our two selves, seven other officers, and the Rev. J. Adams, the Chaplain of the force. There were also four men of the 72nd, four of the 92nd, and two of the 67th. These were all the Europeans of the party. Besides these there were our men carrying the instruments, natives from different parts of India. These men did not all reach the top, and among them, I am sorry to say, the man with our lunch.

My plane-table was carried up excellently by a man who has been with us everywhere, a native of Ghazni, and the best walker among our native followers. Of the Europeans, all reached the top except two officers and one man, who were not in the same good training as ourselves. Major White, the first of the party, reached the top at 9.30 A.M., having left Sirgal at about 4 A.M., and the others came in at various times afterwards. Considering that Sirgal was 8800 feet, leaving 6800 feet direct ascent, and that there was a small range to be climbed and descended before the final ascent commenced, I do not think this was very bad work, especially for men who were not practised mountaineers. But especially good was the day's performance for the soldiers, who brought up their rifles, and twenty rounds of ammunition per man.

A good deal of marble strewed the beds of the streams at the foot of the mountain, and near the top there was a quantity of loose shale, most disagreeable to climb; but the wind up of all consisted of crag climbing, broken here and there by a sloping bit of snow, which had to be crossed. In many places this was frozen, but there was always enough surface of snow over the ice to give one a footing. Thus, except that it

was a very tiring, long climb, it was not so formidable as it promised to be from below. The north side of the mountain had much more snow on it, and went off in long slopes, nothing near so steep as the southern side.

Unfortunately we had not a very good day; we could certainly see the Hindu Kush, but not very clearly; the Kurram Valley had a mist over it which hid the furthest hills in the direction of Thal. We were in hopes of being able to see the mountains north of Kashmir near Gilgit, but on such a day of course they were not visible. We did what work we could however, though not so much as we had expected, and left about 3 p.m., all arriving at Sirgal again in time to get over our meals comfortably, and turn into bed. We can only hope our next visit to this mountain and to Keraira will be more fortunate, though I fear we run the risk of most days being hazy now.

*Vegetation and Vegetable Products.*—It may be expected that, with a climate of such extremes as I have described, vegetation is scanty. Kadimakt, for instance, the hill above Thal mentioned before, would be far better clothed if it were in the Punjab Salt Range; and towards Kurram the nakedness of the land increases.

The olive is rare from Kurram to Shaluzan, growing only near houses and holy places; its place at Thal is taken by the *Reptonia buxifolia*, which bears a remarkable resemblance to it. The scrub jungle from Thal to the Ariob consists of daphne, sophora, and cotoneaster, the latter being found among most of the pines at 10,000 feet. The chief Punjab forms are soon lost ascending the valley, and at Ahmed-i-Shamu *Acacia modesta* and *Dahlbergia Siroor* are last seen. *Periploca aphylla*, however, is found up to Kurram, and is used as fodder for camels. *Pistacia integerrima* and a small Rhus are also found.

Trees occur near houses, and where irrigation is largely employed, as at Hazar Pir. We find in such situations fine specimens of *Platanus orientalis*, olive, celtis, and the chamærops palm-tree, which increase in size going up the river; but the last gradually disappears, except near the Darwazagai Pass, where it forms a thick, dense, olive-like scrub jungle. When this palm is not cut, it forms a thick, branching tree, from 15 to 16 feet high, and this is especially so near holy places; there is an example of it within the walls of Peshawur, near one of the gateways. It also extends largely into the Khost country, and in the Kurram Valley the fibre of the leaves is usually the only source of rope, it being made from leaves brought from Khost. Where the rivers leave the hills and there is protection, as at Shaluzan, vegetation is most abundant; the trees there grow to a considerable size, and are also healthy, for owing to the dryness of the climate they are not affected by the numerous lichens and fungi as in Kashmir. There are chunars (*Platanus orientalis*) at Shaluzan and in the neighbourhood with a girth of 14, 16, 18, 25, and one of 35 feet.

Dr. Aitchison (who was appointed as botanist to the force, and whom I have to thank for all my botanical information) says that the walnut-trees near Shaluzan are finer than any he has ever seen, many trees being upwards of 10, and some 17 feet in girth. The amlok (*Diospyros Lotus*, L.) is very numerous, and is a good tree, its fruit being considered next in value to the walnut. Apricots, plums, apples, pears, grapes, elæagnus, a few peaches, quince, pomegranate, and almonds are found here. Mulberries are grown for feeding silkworms with, and are not very numerous, though they are fine trees; they seem to me to be more numerous in the Ariob Valley. A cypress of great girth and age is seen growing on the side of a hill close to Shaluzan. At 6 feet from the ground its girth is 6 feet, and the tree is visible at a great distance.

The scrub jungle between Kurram and Shaluzan consists of daphne, cotoneaster, sophora, some berberis, species of Labiates and Compositæ, and artemisia in plenty. *Convolvulus lanuginosus* is profuse, growing on small hummocks, all the way from the Punjab Salt Range to Ali Khel. Dr. Aitchison says that many of the Astragali found here are Tibetan in type. On the hills with a southern exposure, the first thing met with is *Quercus ilex* at 7000 feet as a thick bush; higher up it is more like a tree, and we have deodar, *Pinus excelsa*, and *Abies Smithiana* gradually forming a dense forest, when *Abies Wilkiana* appears, mostly near the ridges, at about 11,000 feet, and then the forests thin off and gradually cease. At 9000 feet *Quercus ilex* is pushed out by *Quercus semicarpifolia*, the latter often driving out the pines, and forming a forest of its own. East of Shaluzan we get *Juniperus excelsa* and *Pinus Gerardiana*, the tree from which the chiolgoza nut is obtained.

Dr. Aitchison remarks he has seen no *Pinus longifolia*. *Pinus excelsa* is called in Pashtu, "makhtar," and *Taxus baccata* in the Ariob district is called "serap" or "serpah." The deodar is very fine, forming splendid forests, this tree being quite three times as numerous as any other. It is curious to notice how the forest of pines is directly got at through the *Quercus ilex*, there being no intervening forest as in the Himalayas. As already mentioned, the forests extend to about 11,000 feet; but here they are less dense and a few shrubs of rhododendron, the gooseberry, a currant, with a bush juniper (not *excelsa*), some willows, and honeysuckle (*loniceras*) fill up the vacant spaces. At higher elevations still the bush juniper with the birch (*Betula Bojputra*) alone remain, to be afterwards superseded by rhubarb, eremuri (allied to the Asphodel, having a pretty spike of yellow flowers), also tulips (*Fritillaria*), Cruciferæ, and rushes (*Carices*), with some grasses. Vegetation on this southern exposure is not stopped by perpetual snow, but it is kept down in altitude by want of moisture in the soil and in the air; but, as Dr. Aitchison says, if snow existed all the year round, the vegetation would ascend higher than it does at present. The same

authority also states that between Thal and Shaluzan he has seen only one fern, the *Adiantum Capillus-Veneris*.

On the northern exposure we find the pines descending to form a natural forest much lower down than on the southern side, and deodar and *Pinus excelsa* occur at 6500 feet. The forests are thin, with a great deal of scrub and underwood. We find at first the daphne, sophora, cotoneaster, berberis, the *Fothergilla involucrata* (a Kashmir type), coleaster, several roses, Buddleia, a small tree like the almond, several large Astragaloid Leguminosæ, another large berberis, jasmynes, honeysuckles (*Loniceræ*), and the pomegranate, all mixing with *Quercus ilex* and a profusion of grasses.

In the Strend Toi stream Dr. Aitchison found the walnut as a fruit-tree quite wild and perfectly natural, as proved by the fruit. At altitudes between 8000 and 9000 feet the rhododendron, eleven species of ferns, with podophyllon, and quantities of *Hedera helix* were met with.

Now let us advance towards the Paiwar Kotal. On the ascent of the kotal, at the base, we meet in the valley near Turai village a dense jungle of *Quercus ilex* (which is covered with a species of mistletoe), but mixed here and there with *Juniperus excelsa*, which last, a little further on, is found as a tree. We also find the same daphne, cotoneaster, and sophora as before, and the small yellow rose and Buddleia. Ascending, the deodar becomes numerous and the oak has become a tree, and *Pinus excelsa* with *Abies Smithiana* forms the forest. Here also we find the ash. When fairly in the kotal woods, we meet with *Abies Webbiana*, but not before. In these woods, except the two oaks as bushes, *Quercus ilex* and *Quercus semicarpifolia*, there is no undergrowth. *Pinus Gerardiana* is not met with here until we arrive at the lower edge of the forest with a northern exposure, and there it is plentiful.

The deodar forest, from the Spinghar Kotal, and for many miles, is superb; almost unlimited in extent, and capable of being made great use of. Descending the Ariob, the right bank is well cultivated, and the left is nearly bare until we arrive at Ali Khel. The plane-trees and vines do not grow just here, and the walnut at this spot is rare as a tree. In the bed of the stream is the willow (*Salix Babylonica*), which with a naturally wild *Salix* is cultivated to protect embankments for irrigation purposes. Hippophaea is cultivated as a hedge, elæagnus is common, and apricots, plums, apples, and a few pears are found. Also as before we have daphne, sophora, two species of cotoneaster, the single yellow rose, a sort of gooseberry, a species of coleaster, and lastly a very handsome laburnum (like *Astragalus*), called jirril. The bark of this cut off in rings is employed by the natives to put round the sheaths of their knives in place of brass. The fern chiefly met with in the Ariob Valley is the *Asplenium ruta-muraria*. The forests would probably grow down to the water's edge, but for the fact of their being cleared for wood and for irrigation purposes.

The cultivated trees are *Populus alba* and the before-mentioned *Salix Babylonica*, besides a species of poplar new to Dr. Aitchison. In the Kurram Valley two crops are grown during the year; the first barley, wheat, and a kind of clover; the second rice, maize, millets, tobacco, peas, a little opium, and some cotton. Most of the villages also have orchards.

In the Ariob only one crop is grown (except in Ahmed Khel where there are two), and this one consists of wheat, barley, maize, rice, millets, pulses, and clover. Tobacco is occasionally planted, some vegetables, a little opium, oil seeds, and some peas. Hasn Khel and Ahmed Khel produce the best grapes, but the people are so poor and so greedy they never let them ripen. Rokian has by report the best wheat and apples.

In actual gardening little is done; onions, a white radish, and some members of the melon tribe are sown, and flowers are raised for ziarats and holy places. These include the red damascene, white and double yellow Persian roses, an iris, a mallow, and an elæagnus, for the sake of its sweetly scented flowers and its fruit.

Dr. Aitchison, to whom I again express my acknowledgments, has of course compiled a full and scientific botanical report of his own work, which I presume will be published, and which will necessarily be very interesting, especially to botanists and those peculiarly interested in the subject.

*Inhabitants.*—The people are agricultural, and their irrigation works show immense labour, but how many generations it has taken to bring them to their present state it is impossible to say. Their manufacturing industry is limited to guns (topak), long-barrelled weapons, very heavy, and bound round with brass, with a stock cut out in a curve; pistols (kesai) and knives (charras) in Khost, Shaluzan, Zeran, and other places; the Khost knives being considered the best. Some of the guns are rifled, and some of the men have old Enfields, the stocks of which they have cut down to the same shape as their own; this preference appears strange, as of course the whole balance of the weapon is spoilt. I noticed that all the better sort of guns were English made, and where not entirely so, the lock generally was; even their flint locks were mostly English, and I have not seen one gun with hammer and nipple that was not marked "Tower."

Their pistols are great, heavy, clumsy things, some handsomely inlaid, having large bell mouths, others being straight in the barrel. I was informed by them that the bell-mouthed one was for use when near an enemy, as they put in three or four balls, and it made a large wound, so the man could not recover, while the straight barrel was for shooting at an enemy when a little distance off. Their knives are about two feet long, about one inch and a half deep at the hilt, and about a third of an inch thick at the back near the hilt. They take a deep edge, are always

kept very sharp, and taper off to a very fine point, which has a little curve upwards. It may be imagined what a terrible gash is given by such a knife. The handles of course (like all Eastern swords and knives) are small, in fact much too small for Europeans to take a good grip of them, and I have not seen a single knife, even among the best of them, without a flaw in the metal. They make baskets of very open work, and also chaplis or grass shoes, the best things to climb hills in when accustomed to them.

The women make a very coarse stuff out of sheep's wool, and make the men's large loose trousers (*rog*) and their own (*jerob*), which latter are tighter than the men's below the knee. A shirt (*khat*) also is made by them of wool or cotton, which hangs down from the neck to the ankles. A loose description of *chogha* (or *choga* as English people call it), called *sharre*, is also made in the villages; it is very coarse.

*Tribes—Turis, Jajis, &c.*—The Kurram Valley from Thal to the eastern foot of the Paiwar range is inhabited mostly by the Turis; a strong, sturdy people, who like all these hill men are filthy in person. This part of the country originally belonged to the Bangashes, but they have been driven out by the Turis till they have only a few villages such as Shaluzan and Zeran left. The Turis were very dissatisfied with the Durani rule, and have hailed the advent of the British with delight. They are of the Shiah persuasion of Mussulmen, and this did not tend to make them look on the rule of the Durani Government very favourably even had it been good, they being Sunnis. Although reported to be a brave race, they did not appear in very good colours during the attack on the Paiwar Kotal. They, however, have been useful to us in many ways during the campaign in providing carriage, &c. The Turis are divided into sections, the Gundi Khels, Alizai, Hamza Khels, Mastu Khels, and Dapozai.

The Bangashes, who are also Shiahs, inhabit the Miranzai Valley, on the east of the Kurram, and the country round about Kohat.

The next people we come to are those inhabiting the Ariob, and as these are the people who have given us most trouble throughout the war, and are likely to be the cause of most anxiety in the future, I will dwell a little longer on them; the more so as we knew nothing about them previously.

The valley of the Ariob is principally inhabited by the great tribe of Jajis, with a few hamlets belonging to Mangals and wandering Ghilzais, called Ham Shayahs, who have been allowed to settle on small portions of land which the Jajis themselves did not care to cultivate, the latter at first being only tenants, but with the lapse of time acquiring vested rights, and also helping to protect the Jajis from excursions made by the Mangals.

The Jajis are a tribe of some 25,000, the fighting strength being



about 6000. There are twelve sections in the tribe, four of which are not in Ariob and eight are. The four outside the Ariob are:—(1) Jaji Maidan, on the borders of Khost; (2) Jaji Danni, near the former; (3) Jaji Isteah, in the country at the foot of the Isteah River and on the Kurram; (4) Jaji Algarh, in the country about the Drak Algarh Pass. Of these I suppose the Jaji Maidan and Jaji Dannis are not likely to come under our rule. The remaining eight, in the Ariob Valley, are as follows:—(1) The Ada Khels; (2) the Lehwannis, who are considered the bravest of the Jajis and their best swordsmen; they opposed us to the very last in the attacks on the 28th of November and 2nd of December on the Paiwar Kotal; (3) the Ahmed Khels, Bian Khels; (4) the Petla Ali Sangis; (5) the Ali Khels; (6) the Shamu Khels, who are the most powerful, numerous, and wealthy of the Jajis; (7) the Hasn Khels, the poorest and the most dreaded of all the tribe, being the most independent and most daring robbers in the neighbourhood. In fact, no man dared to kill a Hasn Khel, even if he caught him in the act of house-breaking. The Amir used to pay them a regular subsidy to prevent them robbing along certain roads leading into Kurram, Khost, and the Logar. There is a story told of one of our promising new subjects, an old gentleman, who having been paid for some service he had performed, remarked with disgust, "That he could steal more than that in a night!" Lastly, (8) the Ahmed Khels of Kara, the most bigoted in their religion of all the Jajis (living near the Tangi), and also perhaps the most well to do.

*Religion, Marriage Customs, &c.*—The religion of the Jajis is that of the Sunni sect of Mahomedans, and they are mortal enemies of the Turis. They claim down to the eastern base of the Paiwar Kotal range as their territory. They are supposed to have originally come from Nital, in the district below Hangu, between Thal and Kohat; at least they have retained to this day some customs which are neither Sunni nor Shiah, amongst others the bad practice of buying wives. The betrothal and purchase of wives leads to more bloodshed than any other transaction. When a girl attains the age of seven or eight years, and sometimes earlier, she is betrothed to a lad, who is allowed the entry of the house of the girl's parents, no one else daring to propose to her. She is allowed to grow up in close intimacy with her intended husband until she arrives at the age of puberty, when the man is called on to pay a preposterous sum, varying from 100 rupees even to 400 rupees, before he can marry her, and in case of refusal he is forbidden the house. The result invariably leads to a fight, as in nine cases out of ten the girl simply runs away with her lover, and then her father either murders his would-be son-in-law, or what probably satisfies him as well, some one of his near relations. The other family then seeks revenge, or as they calmly call it, an exchange (*badli*), and so it continues. If the girl is a very obedient one, and is reluctant to leave

her home or disobey her father, then her lover murders her father and takes her off to his house. A fight from this cause at Karmana, not far from our camp, was kept up all night, from house to house, and three persons were wounded. Marriages are celebrated with a good deal of firing, and dancing with swords, both on the occasion of the bridegroom going to the bride's house and on his bringing her to his own.

The Jajis bury their dead on the nearest hill, and erect kangahs or shrines to the memory of all travellers killed by robbers, whom they raise to sanctity. The women assist in the burial as much as the men, but they mourn for their dead all by themselves in a separate place.

The arrival of a young Jaji into the world is celebrated by a regular fusillade and rejoicing, at whatever period of the twenty-four hours, night or day, the event may take place.

*Assessed Revenue.*—The assessed revenue was so much per each Jaji section, viz., 680 rupees, except the Hasn Khels who paid 500 rupees, besides kharwars (mule-loads) of 80 maunds each. Out of this, 32,000 rupees were paid to the maliks (headmen of villages), inamdars (men holding gift-lands), and mollahs (priests); and the balance of 35,000 rupees was paid to the Kabul Government, making the total 67,000 rupees. Of the kharwars (mule-loads of grain) there were collected 35 altogether; out of these, 12 kharwars 52 maunds were paid to the maliks, &c., and the remaining 22 kharwars 28 maunds to the Durani Government. All professions and trades were taxed, which naturally extinguished any small spirit of enterprise that might otherwise have existed.

*Remaining Tribes.*—The remaining tribes who have been directly or indirectly concerned in the campaign, some of whom will be British subjects and others neighbours for the future, are as follows:—On the north and north-west and over the Lakerai are the Azar Khels, Akbar Khels, Sacfoodeen Khels (sword of religion), and Babar Ghilzais, who have always been independent of the Kabul authority. These Ghilzais, Captain Rennick tells me, are neither marauders nor kooches, and they will probably be very unobtrusive and peaceful neighbours.

To the west and south-west are the great tribe of Ahmedzai Ghilzai, consisting of the Zaman Khels, Amram Khels, Kasim Khels, Machalgu, Tota Khels, and Bago Khel Ghilzais. The three last-named sections of this tribe are to it what the Hasn Khels have been to the Jajis, i. e. robbers by training and profession. These tribes, though nominally independent, are yet somewhat under the influence of Padshah Khan, now Wazir to the present Amir, and who is the head of the great Ghilzai clan, about and west of the Shutar-gardan.

South of the Ariob are the Sohaks or Kohsimwars, or Zurnat Ghilzais. Also south of the Kurram and on its left bank, holding the

country about the Lajhi River, are the Lajhwars, who are Mangals, and these Lajhwars are divided into three clans; the Fattahkekhul, the Agarkhul, and Andazkhul. These Lajhwars are the men who behaved so treacherously, and fired on us when we went to Lajhi.

Again, on the right and left bank of the Kurram, coming next to the Lajhwars, on the east, are the Chakmannis, or Chamkannis, holding the country about Keraia, on the Kurram to Lajhi, to Makhbul Land, and up the Gabara River to the Mangal country. Next the Chakmannis, to the east, are the Makhbuls in the country between Jaji Thana and the Kurram.

All these tribes are independent, but I have no reliable information as to whether any or how many of these will come under British rule. Khost is inhabited by Khostwals who are Sunnis, and whose chief, Akram Khan, gave in his submission to the British at once; they were under the Kabul Government. To the west and north-west of Khost are the Jadranis and Gabar Mangals, both independent. South of Khost and Kurram is a powerful tribe, the Waziris, who are divided into the following clans: Luli, Mahsud Waziris, Gurbuz Waziris, Ahmedzais and Utimanzais.

The Mangals are scattered all over the country, and there are many divisions of them. They are robbers and ruffians generally. There are Mangal villages near the Mangior and in Khost, and even to the east of the Paiwar. Some are found also on the north side of the Lakerai Kotal in the Surkab Valley, and in fact wherever they can get a piece of land. Whatever portion of this robber tribe may come under our rule, it is to be hoped they will learn that there is a difference between "meum and tuum."

The dress of all these hill men consists of a large, loose pair of trousers (partuk), a loose sort of coat, called a khat, a turban or puggree (usually dark blue), called rumeal, a long shawl or scarf about the body, usually dark blue, and then called a "lungi," and sometimes a white sort of scarf called a "tekrai." When the weather is cold they wear the coarse chogha I mentioned before, and some wear poshteens made of sheepskins. When it is wet the hair is worn outside, at other times the leather side (sometimes very well worked) is outside. They all walk about armed with a gun or rifle, a knife, and two pistols.

The women wear trousers and a jacket, and a long shawl, generally all blue with a little red here and there, with which they cover up their bodies and faces, no matter how old or hideous they may be. I have never seen any *young* women; there have been some fearful hags sometimes outside the villages, but that is all.

While at Keraia the Chakmannis gave us an evening entertainment of dancing and singing. In their war dance there were an inner ring of young men dancing round the fire and an outer ring, outside of which

again men were running as fast as they could go. They all brandished knives at the imminent risk of cutting off one another's heads; but the dance was neither interesting nor picturesque.

They showed us, however, a marriage dance, which was better. There was an inner and an outer ring made round the fire. The inner was composed of men with long hair, who at a distance looked almost like women. When I asked who they were, I was informed they were young men who wore their hair long because the ladies liked it; but, being amused at this reply, I remarked they were not all young, to which I got the curious reply, that nevertheless the ladies were very fond of those men. Those with long hair moved round the fire at a somewhat slower pace than the outer ring, keeping time with the tom-tom which, of course, was being beaten. They did not seem to sing much, being apparently more intent on making their long hair swing about in time to the tune. This they did by leaning forwards towards the fire, and swaying their heads about from right to left, backwards and forwards, and round and round, with such energy that their wiry hair moved about, keeping quite straight out on end, without a wave in it, by the force of the motion. I don't know if they suffered from headaches the next morning, but they certainly *ought* to have felt very ill. The outer ring was composed of males of all ages, from young children to toothless old men, and these in the meantime went through a most quaint dance.

This outer circle was divided into three parts (three arcs as it were), those composing one of the portions singing together some words, which seemed to proceed from their nasal organs, all the rest then joining in a chorus, that sounded as if it came from the bottom of their throats, and appeared to be something like "Ach ah—Ah oh—Wuh ah—Wuh ho." At the same time they all clapped their hands and bowed to the fire, turned round to the right, raising their hands over their heads, turned back again, and clapped their hands again; then turned to the left and back again, and bowed to the fire and clapped their hands again; this they did several times, and then the next portion of the circle sang a verse followed by the chorus again, and so on. Their feet also did a step, a most decided step, something between a Highland fling and a Christy minstrel breakdown. All the time they were also gradually moving round the fire. The tom-tom was beaten, and as it grew louder and quicker, so did the song and dance go louder and quicker (the men's heads in the middle also moving more rapidly), until at last they got very excited, made a great noise, and looked very wild. There were clear indications of an air in this song, and certainly most marked time. With their picturesque dresses, quaint faces, and wild gesticulations (all made more grotesque and savage by the fire-light), it formed a most curious and interesting scene.

After these dances they began some solos, quartetts, &c., but these

were too dreadful. A boy screeched as if he wished to break a blood-vessel, and not being able to stand this part of the performance, I retired to my tent and fell asleep.

*Conclusion.*—Of all the tribes that will come under our rule none will be of so much importance to us as the Jajis, and none will probably feel the change more; but I think they already begin to perceive that the advent of the British has been a godsend to them. Before then they had been driven nearly wild by the heavy taxations of the late Amir Shere Ali. They had also suffered much from the floods in the spring of last year which carried away nearly 15 per cent. of their cultivated lands. These floods were very severe, and for more than four months there was over 7 feet of ice in the Ariob Valley. In February and March there was as much as 3 feet of snow. But the Jajis are now flocking back to their villages; even those who had gone as far as the borders of Kafirstan are returning to their ruined homes, and the waste lands are being brought under cultivation with great vigour. This they are doing in spite of the numerous other occupations the British provide them with, and which they seem fully to appreciate. They are apparently beginning already to see that peace and security have made them richer than they were; and that the money thrown into their hands for transport, grass, timber, road-making, &c., means the power to reclaim from the river the lands they have lost.

I have endeavoured to be as brief as possible, but I am afraid this paper will be thought too long. A new country is always interesting, and one is so afraid of leaving out anything which, apparently trifling, may be of importance, that the description grows to greater length than was at first anticipated. So I conclude with the hope that the example of willingness to be a peace-loving folk, at present set by the Jajis, may be followed by the other tribes in turn, and that this behaviour is not the lull before the storm, with the secret design, after their crops are collected and stored, to begin their reckless ways again, but is a firm determination to become an orderly and contented race. They will require, of course, placed over them a man of strong will and great courage who will rule them kindly, but firmly; a man whom they will feel they can trust as one who will never deceive them, but who is as quick to punish as he is quick to give assistance and reward. If such a man is put to rule them, and they are in earnest themselves, there seems every prospect of a bright future in store for these newly-made subjects of Her Most Gracious Majesty the Queen and Empress of India.

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