

they are lower and more uninteresting. The highest points in the border chain south-east of Kelly Inlet are about 3000 m. or so in height. Under precarious conditions I measured the altitude of the highest, which is probably identical with Cerro Arenales, and obtained a height of about 3200 m.

In the coast Cordilleras, too, there are a number of interesting peaks, but they are too low, not attaining more than about 1000 m. in general. The immediate neighbourhood of the sea renders many of them imposing enough, the forms being sometimes very bold.

On the whole it may be said, as a final mountaineering opinion, that many interesting first ascents remain to be made here, some of them of the highest class, but that climatic conditions are so trying that they place extraordinarily great obstacles in the way of real mountaineering. In my opinion they should therefore be carried out in conjunction with scientific work, so much of which remains to be accomplished within these areas. An inventory of the natural resources of the country has not yet even been made, and thus, to take a more popular example, it is not known whether the fairly considerable gold resources of Tierra del Fuego, which appear on the island of Chiloé also, may crop up again here in some unknown corner. Only by means of combined scientific and mountaineering work will a result be reached which can be of lasting value.

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THE UPPER AGHIAS, CENTRAL TIEN SHAN.

BY REGINALD SCHOMBERG.

THE great peaks of the southern Tien Shan lie between Khan Tengri on the Russo-Chinese frontier and the watershed of the Yulduz, and by means of the two tributaries, the Aghias and Koksus, the Tekes river drains this area very completely.

The Aghias valley has been visited by Professor van Merzbacher, who has left, at least in English, a too brief account of his travels in the Tien Shan generally.<sup>1</sup>

In 1931 I was able to visit the source of the Aghias, and an account may be of interest. Leaving the town of Ili (Kulja) and crossing the Ili and Tekes rivers, we proceed to the BURUL

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<sup>1</sup> See Merzbacher, *Central Tien Shan* (John Murray, 1905).

Pass (height 11,925 ft.) which brought us over the Tekes-Aghias watershed. This was a most tiresome pass, as it consisted of a glacier covered with about a foot or two of snow, and split into small crevasses, into which the ponies promptly fell and



got jammed. It is well to make it clear that in the Tien Shan coolies do not exist: nor can they be improvised, and I hazard the opinion that their introduction would be a risky experiment in a country where nobody ever walks, least of all on the mountains, unless compelled to do so.

We had to reach the Aghias river the same day as there were difficulties of fuel and grazing, and it was foolish to halt at a high altitude when a little exertion would ensure a comfortable



*Telephoto, R. S. F. Schomberg.]*

PANORAMA FROM ASHUTUR DAWAN (PASS) LOOKING EAST.

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night for man and beast. It was very late when we reached the river, but we were well repaid for our trouble, although this achievement was only obtained after constant abuse of the most sulphurous kind. The Turki has many virtues, I daresay, but he is apt to become a non-co-operator when difficulties arise.

I let the party have a rest the next day, and took a Hunza man, Daulat Shah, with me up the right side of the Aghias. It was an easy climb, though extremely steep, at first over a grassy 'alp,' and then on to moraine with rocky peaks above. We were able to have a fine view of the upper Aghias, and I saw a series of short lateral valleys, steep and even precipitous, with hanging glaciers at their head, draining into the main river. The actual source of the Aghias was not visible, as the river turns at a right angle due S., so next day we moved camp to this bend. We had to ford the Aghias river twice, and by starting early, before the river had risen, managed to accomplish this.

The rivers of the Tien Shan are a great problem, and only a month previously I had had to forgo a cherished exploration in the northern part of the range near Manas, owing to unfordable rivers. The Aghias is not a stream, but a strongly flowing icy river, though fordable as there is a blessed absence of boulders in the bed. The left bank of the river was so overgrown that progress was difficult. On reaching the bend or corner, we re-crossed with some trouble to the right side. We reached the limit of conifers here, but there was plenty of brushwood and other fuel.

Looking S. I could see up to the source of the Aghias. The stream spread out fan-wise as it issued from two parallel nalas, and turned the whole broad valley bed into its channel.

The next day we left camp early and set out for the junction of the two valleys, which is known as Qarasala, and proved (as so often happens) to be a great deal further than we had imagined. We found that the left or westerly tributary had forced its way through a narrow gorge, whilst the right or eastern one flowed in an open river bed. We had to climb several thousand feet to enter the western affluent, as the gorge was impassable. It took hours, and we were too far from our starting point to accomplish anything, and finally reached camp very late and wet through. Next day we again went up the western valley but ordered the whole camp to move up to Qarasala. We found that the stream ran from a glacier through a chasm, so narrow that falling rocks had covered it over in several places, and formed a bridge beneath which the river

roared. The head of the valley consisted of a cirque with two glaciers uniting in an icefall which subsequently degenerated into a large dirty glacier completely filling the narrow valley. It seemed to me that the lower glacier had slipped from the right to left of the valley, and after being stationary for some time, was again advancing. It would be interesting to know what will happen if this movement continues. The glacier has now approached the gorge, which is only a few feet across, and there are no means of future progress for the ice unless it piles up and flows over the natural bridges. Even this will be awkward owing to the contraction of the valley.

We spent a good while in the western affluent which was much the more interesting. Its right side was apparently easier, as we found that when crossing either the glaciers or natural bridges we had to shoot down two chimneys in a very awkward fashion, and so a climb of some thousands of feet every day to reach the glacier was preferable to tumbling down the hillside with a heap of stones for company. The real objection was that late in the evening the river at Qarasala was too formidable an obstacle to face with any peace of mind. Fortunately we had some Kirghiz ponies, unshod, unkempt brutes, which managed the ford far better than our Turki animals. The latter would always try to cross with the current and not against it. They found it naturally easier, but unless a horse's head is kept well against the stream, the animal is swept off its feet. The only way to cross was to trust to a local pony, and even then it was not an easy matter.

Finally we took a little bedding with us, and slept beneath a ledge of rock. As always in the Tien Shan, the incessant wet was a great hindrance. There was a peak at the head of the western Aghias, which seemed to be the *rendez-vous* for every cloud, and it was rarely that we found it clear, while we noticed that the rain would always fall there, when the rest of the Aghias was quite fine. We went up to the top of the rocky left side of the valley, but were disappointed in the view, as we found that the massif between the two branches of the Aghias blocked one view and also the valley itself was only a subsidiary watershed of the main one. During our stay in the western Aghias we spent hours drearily (and uselessly) flattened against a rock by the edge of the glacier wondering whether the rain would ever cease.

The right or eastern Aghias proved less interesting. It flows from what is probably the same icefield running into the heads of both affluents. A great difficulty about this eastern branch



*Photo, R. S. F. Schomberg.]*

APPROACH TO BURUL PASS FROM N.



*Photo, R. S. F. Schomberg.]*

VIEW S.E. FROM POINT ABOVE ASHUTUR PASS, AGHIAS-KOKSU WATERSHED.

*[To face p. 82.]*



*Photo, R. S. F. Schomberg.]*

MOUTH OF THE W. OR LEFT AFFLUENT OF THE AGHIAS.



*Photo, R. S. F. Schomberg.]*

EASTERN AFFLUENT OF THE AGHIAS.

was the river crossings. We found that to get along at all, it was necessary to cross the river several times before reaching the eastern glacier, and this was a slow matter as well as a very awkward one. I speculated much which branch of the Aghias carried the great volume of water, but even now I am uncertain. I think, probably, the western one, but nevertheless the eastern stream was difficult—the boulders, the current, and the width were complications, while the crossing meant a ducking. Thus it was that our exploration of the right Aghias was rather sketchy, but enough to realize that it was not so interesting. On descending this eastern source the river flowed gently from the southward, but half-way down on the right bank was a narrow gorge through which a tributary stream roared. High up, poised above it, was a glacier leading through grassy slopes, and the sight was a very lovely one.

After spending a very pleasant ten days in the Aghias we had to leave. Personally, I wished to stop a month, but the food question was becoming acute. It seems impossible to carry enough food in the Tien Shan, although I thought I had guarded against this contingency. The trouble is that, except in the towns, bread or flour is unobtainable, and no one except a nomad can live for long without it. One can, therefore, only rely on what is carried with one. Often the news comes that in such a place flour is to be had, but if the report is true (which it seldom is), it only means that the flour is bad, and that some enterprising aboriginal hopes to palm it off on the unsuspecting but wealthy foreigner.

There is, coupled to the ration worries, the loss of time due to wet days, and the consequence of this double dilemma is hurry over exploration.

During the winter the snow in the main valley of the Aghias is reported as light, and the temperature is mild. Presumably the standard of temperature is that for a Central Asiatic, and not for a European, but the fact remains that during the winter months the flocks are pastured in the valley. Owing to the steep sides of all Tien Shan valleys, there is not the danger from avalanches that would exist in Kashmir, and I have never heard of animals or encampments being destroyed.

The Aghias valley in July and August was at its best. There was ample grazing, and masses of gentians, both blue and white, were found everywhere, while the Alpine flora was very rich. There was a pleasing absence of man. We were the first in the field, and silence held the mountain sides. When the nomads and their flocks enter the valley, peace departs at once.



Moving the camp down from Qarasala to the bend of the Aghias river, which was just below the Ashshutur pass, I decided to yield to circumstances and leave the Aghias. With deep regret we moved up to just below the Ashshutur Pass, a short march but a very trying one for the laden animals. The manœuvre is an old one, and as well-known as it is sensible.

At the extremity of the pasture, just where the pass began, we spent the night. As the track was quite unknown, I had sent a man two days previously to reconnoitre, select a camping site, and dump firewood. We crossed the pass the next day, and were now out of the Aghias valley and into the drainage area of the Koksu.

From the summit of the pass there was little or no view, but on going some half-mile S. and climbing 800 ft., I was rewarded with a magnificent panorama of nearly the whole southern Tien Shan.

Looking down on the Aghias, I realized how little I had seen of the upper valley. The small nalas which I had ignored as insignificant water-courses in the valley sides, turned out to be the modest drainage exits of great glaciers. Behind our camp at the river bend had been a fine boulder-filled torrent bed, and now I saw that it came from a regular ice-field with glacier lake complete.

Immediately in front, to the E., were the unnamed heights of the Tien Shan, with its twin Muzdamas peaks conspicuous in the background.

The nomenclature of the mountain features of the Tien Shan is most exasperating, and is either incredibly indefinite or wholly absent.

The two affluents of the Aghias were known indifferently as the Muztau or 'Snow Mountain' valleys, and that in a district where every valley leads to some 'Snow mountain.'

It is consequently impossible to identify many important features, and when the day does come to map the country, names will have to be improvised.

Nomad though he is, the Kasak and Kirghiz of Central Asia manœuvres in a very restricted area. A certain part of the country is allotted to him, and he seldom leaves his beat, and being neither imaginative nor original, confines himself to the most common and comprising terms to establish the few places he must know.