

The Tien Shan

The Mountains of Heaven

A Greentours Trip Report

9th – 26th June 2011

Led by Vladimir Kolbintsev and Oron Peri

Written by Oron Peri

Day 1 Thursday 9th June Departure

Departure from London Heathrow at 1450.

Day 2 Friday 10th June Arrival – Tuyuk-Su Gate

Group arrived at 0500 into Almaty airport and was taken by Vladimir directly to Tuyuk – Su Gate. The hotel is situated in the mountains approx. 30 km south of Almaty at 2650m of elevation and is isolated in the middle of the forests in beautiful scenery under high mountains with top still covered with snow. Oron arrived an hour and a half later to join the group at breakfast.

We have spent the day exploring the forests around the hotel where the mountains are dominated by Beautiful, narrowly shaped *Picea schrenkiana*. On the side of the steep path where sun infiltrates the forest many clumps of curly *Gagea filiformis* grow under the pine trees side by side with *Tulipa heterophylla*. Above the tree line on serpentine were *Allium albyspathum* subsp *amblyophyllum*, deep wine- colour *Allium atrosanguineum*, *Papaver nudicaule* in vivid orange, fantastic red flowering *Rhodiola coccinea*, little *Lloydia serotina* and our first *Paraquilegia anemonoides* which some of us walked up a steep slope in order to take a photo. At a certain point we managed to have a good look at a Himalayan Rubythroat, and as we went down the hill we saw a Grey Marmot running to find a shelter. At the hotel we saw a couple of Red Squirrels and a hungry Red Fox not in its best shape, might be a female taking care of young ones. It came to visit regularly during our stay at the hotel. A real good start for the trip.

Day 3 Saturday 11th June Medeo Dam & Chimbulak ski-lift

After an excellent breakfast we headed down to Chimbulak which is a few km down the hill. The

plan was to take the ski lift up to the top of the mountain but for some reason the ski lift didn't work. Vladimir asked around and was told that about 0930 it would start working. As we had time we went around exploring the site to find the other side of the building a large colony of House Martin, while a Eurasian Cuckoo was heard from the nearby forest. Under a group of trees we found a little jewel, *Coralorrhiza trifida*, a small orchid with yellow-green tepals and white lip. There were about ten specimens, while high above we have seen a Lammergeyer.

By the time we got back to the Ski lift station there were many people waiting but after ten minutes the principal came to say that they are not going to open due to technical problems. And so we set for a nice coffee at the local Café and decided to go down to Medeo Dam. The huge dam was constructed in order to protect Almaty from possible avalanche and the main road practically pass on the wall itself.

We crossed the dam and walked on a path directly to the forested area. In the open field yellow *Rosa kokanica* and white-flowering *Rosa albertii* grow side by side, as we approached Corncrake flew away. Under the trees there were two *Paeonia hybrida* (under review at the moment probably *Paeonia intermedia*) in flower and in the sunny area *Euphorbia esula* subsp *tommasiniana* (syn *Euphorbia jaxartica*), beautiful shrubby *Clematis alpina* subspecies *sibirica* (syn *Atragene sibirica*) with white pendulous flowers and blue flowering *Polemonium careuleum*. We went back to our hotel for lunch and in the early afternoon we went to explore a northern slope above the hotel reaching 2900m of elevation and reached the snow line, as we came out of the wood we saw six noisy Himalayan Snowcock escaping from us, while in the same number also Grey-headed Goldfinch sat on a tree below us. In the same spot there were a few amazing *Trollius liliacinus* flowering shortly after snow melts and on the way back a few Frog Orchid; *Dactylorhiza viridis* (syn *Coeloglossum viride*). It started to rain as we have started going down toward the hotel.

Day 4 Sunday 12th June Sarysay, Almaty, and the train

It was grey but dry morning as we checked out of the hotel, heading down under Chimbulak to Sarysay. We stopped at a lower altitude in an area characterized by grassy, steep slopes and in between vast meadows with an amazing selection of plants at their peak time. Tall spikes of *Rheum wittrokii*, beautiful purple *Phlomis oreophila*, tall *Aconitum leucostomum*, *Codonopsis clematidea*, *Aquilegia atrovinosa*, deep yellow *Eremostachys speciosa* and shrubs such as *Eounymus semenowii*, *Berberis illiensis*, and fantastic yellow flowering *Rosa platyacantha*. In the lower area in damp conditions many *Dactylorhiza umbrosa* while on the rocks above lovely *Scutellaria tienschuanensis* and *Sedum hybridum* growing side by side. We also had our first two *Eremurus* on the top of the hills yellow *Eremurus altaicus* and in the lower areas large white *Eremurus robustus*.

After a late picnic we had to go to Almaty in order to take our 4pm train to Tulkubas. The journey on train was fascinating, not only the lovely experience of the train itself but until it got dark we looked at the changing habitats and immense territories, while on the telephone and electricity lines there were many birds such as Rose-colored Starling, European Roller, European Bee-eater and many rookeries with hundreds of Rooks busy feeding the young ones.

Day 5 Monday 13th June Ters Lake and Koksai Gorge

We arrived to Tyulkubas at 0345 AM where we met Yevgeny and were taken to his hotel in Jabagly (Zhabagli) in his minibus. After being shown to our comfortable rooms and unpacking we had breakfast and headed off for a long day. The village of Zhabagli is just bursting with Rose-colored Starlings that nest in every available hole, even under piles of rocks at ground level, walls etc. while Common Myna can be seen in huge numbers.

Our first stop was not far from the village as the area was covered with flowers mainly dominated by three species of *Achillea*, *Echium italicum*, large structural *Verbascum songaricum*, *Centaurea squarrosa*, lovely white hollyhock *Alcea nudiflora* and many more. The area along the road and the nearby stream is dominated by silvery *Elaeagnus angustifolia* and shrubby *Sophora alopecuroides* while in damp conditions farther down large clumps of *Butomus umbellatus*.

We reached Koksai Gorge for our lunch stop. It is a deep seasonal river with interesting formations created by many years of erosion made by water and winds. It is the natural border between Kazakhstan and Kirgizstan. As we approached the gorge a couple of Chukar flew to the other side of the river while many Common Quail were heard from the tall grass occasionally flying away as we explored the area. The habitat is open, windy, grassy slopes with a few scattered shrubs including yellow flowering *Rosa kokanica* and pink flowering *Rosa hissarica*. An amazing selection of plants can be seen here: *Gentiana olivieri*, blue *Allium caesium*, deep cerise colour *Allium barsczewskii*, *Allium trachyscordum*. At a higher point were two *Eremurus*, *Eremurus fuscus* and its hybrids with *Eremurus regelii* and lovely *Ixiolirion tataricum* and large areas carpeted with *Hypericum elongatum*.

We have continued our way to Ters Lake, this time for birds but already on the way we have seen many European Rollers, some near the sandy walls where they nest in holes side by side with European Bee-eaters while on the low trees a few Lesser Grey Shrikes and many Magpies. By the lake are Black-headed Gulls, Caspian Gulls, Northern Lapwings and others. We headed back to Zhabagly and had a tasty dinner at the hotel with typical Kazakh dishes.

Day 6 Tuesday 14th June Kuyuk Pass, Teskol Lake & Berkera Nature Reserve

A very interesting day as we headed east to the much drier part of Kazakhstan, areas seem to have semi-desert conditions and a completely different flora. Our first stop for the day was on the road side in Kuyuk pass where the arid blackish-grey hills are home to some extraordinary plants. The area is dominated mainly by grasses, with very few low growing shrubs such as *Spirea hypericifolia*. The first plant we noticed are the impressive *Eremurus tianschanicus*, tall, yellow flowering *Ferula karataviense* and its smaller cousin *Ferula karatavica*, large white gypsophyla-like *Allochrysa gypsophiloides*, purple *Phlomis salicifolia* a most interesting endemic, *Rhaphidophyton regelii*, a species that has been here since ancient times, and lovely compact growing *Acanthophyllum pungens* in its peak time. Temperatures were already quite high as we continued on our way East.

Our next stop was at a large reservoir not far from Bilikol Lake at 400m. As this area is very dry, semi desert conditions, the water attracts many birds; first we saw a pair of Stone Curlew in the open field and as we approached the water we saw many Northern Lapwing, Little Ringed Plover, Kentish Plover, many Common Pratincoles, a pair of Little Tern, four Black Storks and more. In the water, carpets of *Ranunculus trychophyllus* in bloom and near the water many blue *Anagallis arvensis*. We have decided to leave the site as we felt we disturb the birds of which many were nesting and continued to the Berkara Natural Reserve, as we arrived we had our picnic lunch before entering.

The Berkara N.R. is situated at 500m with a small river that flows between the steep mountains and is practically an oasis in the middle of the dry area. Many trees such as *Celtis australis* subsp *caucasica*, *Fraxinus sogdiana* (syn *Fraxinus potamophylla*), *Malus pumila* (syn *Malus niedzwitzkyana*), *Cerasus mahaleb* (syn. *Padus mahleb*) with its small cherries, *Lonicera nummulariifolia* that reaches tree size and more. We were surprised to find still two flowers of *Tulipa orthopoda* and a few tall *Allium drobovii* so late in the season. We have seen a pair of White-winged Woodpeckers but the highlight of the day were the amazing Paradise Flycatchers including one pair with a female inside a nest and later also White-crowned Penduline Tit with their nest hung on a tall branch above the water, the parents came to feed the youngsters a couple of times. What a site!

Happy with our findings we went down in the afternoon to make another two short stops first in order to see the large graves 'Kurgan' from the seventh century BC where we also found many shrubs of *Salvia sclarea* in bloom, and another stop to look at the incredible *Astragalus alopecias*. We reached the hotel at dinner time.

Day 7 Wednesday 15th June Horse ride to Aksu Zhabagli up to Ulken - Kaindy

We left our luggage at the hotel and took with us smaller bags as we were about to stay for 6 days inside the Aksu Zhabagli Nature Reserve. After breakfast we were taken to the entrance to the reserve where we met our horsemen that would accompany us through all this part of the trip. Horses were chosen for us according to the experience in riding. After half an hour we set off, starting to walk up into the high mountains enjoying the warm sunny weather.

As we walked up the flora became very lush, dominated by a few species of umbels including *Mediasia macrophylla* which seeds are used as a spice and also used in conserving milk. Many clumps of *Iris halophila* var *sogdiana* (syn *Iris sogdiana*), a few large colonies of *Dactylorhiza umbrosa* particularly robust form, tall spikes of pinkish *Stachys betoniciflora* (syn *Betonica foliosa*) the rare *Morina kokanica* which is on the red list and others.

By lunch time we reached a small house that is used by the guards of the reserve, while our picnic lunch was in preparation we went farther down to look at the Sikendi fall. In the rock crevices were many *Campanula olivieri* and in the shady area a few *Codonopsis clematidea* were in flower. During our way up we have seen a couple of Common Quail, Common Pheasant, a lovely

Northern Hobby, four Common Rosefinch and two pairs Red-headed Buntings.

In the afternoon we reached our mountain house, while three of us divided a comfortable Yurta just next to it. In the late afternoon Vladimir found with his binocular a pair of Brown Bear on the top of the snowy mountain above us while on another point we have counted eleven Ibex. In the evening we saw a Forest Dormouse which Vladimir told us visit the house regularly at night. We had a lovely dinner made by Vladimir's wife who surprised us every day with new dishes.

Day 8 Thursday 16th June Upper Ulken - kaindy Valley

After breakfast we started walking up the mountain by foot up to about 2600m high. The mountain is quite steep and in some areas the vegetation was high and so we needed to walk carefully. Soon we have seen three Black Vultures flying above the ridge in front of us. In the lower parts we have found many pink flowering *Linum olgae*, *Rhodiola heterodonta* in its yellow form, low growing *Rosa hissarica* easily recognised by the sticky, highly fragrant buds. In some areas there are serpentines where only a few plants manage to grow, succulent *Allium carolinianum* (syn *Allium polyphyllum*) and lovely *Androscae sericea* with its bicolor flowers. Farther up we crossed a female Common Partridge with a few chicks running after her. Farther up at the higher elevation we found a nice group of *Tulipa greigii* in perfect conditions and not far the very rare *Primula minkwitziae* with round leaves and spikes carrying cerise flowers with yellow centre, this species is on the red list.

Around lunch time the horsemen came up with our meal with excellent coffee and tea. After lunch we went up a bit higher where many *Paraquilegia* in full bloom were growing on a northern wall. The way down took us a couple of hours as we crossed a little stream to take another route. Some nice groups of forget-me-not, *Stephanocaryum olgae* grow between the rocks together with *Viola biflora* and farther down lovely deep blue *Linum altaica*.

In the late afternoon, as we did every day, Vladimir set out his binocular, and soon located a female Brown Bear with her cub while on the other ridge an Ibex with its two young ones crossed a large patch of snow.

Day 9 Friday 17th June Ulken Kaindi Pass

We have started a bit earlier this morning as we had a long uphill walk ahead of us, about 900m. Horsemen prepared the horses very early so that we where all ready on time. It was a lovely morning with clear sky and for the first twenty minutes we could hear a Nightingale singing very loud. At a small serpentine about half way up we found a few *Allium karataviense* in perfect conditions, difficult to see as it blends perfectly with the color of the stones. At about 100m under the top we reached an area where snow has melted only recently, the flowers in this area were stunning and despite the damp conditions we all stayed for a long time to take photos. Thousands of *Allium atrosanguineum* var *fedschenkoanum* where in their peak time farther down where snow

has melted earlier, this form has deep yellow flowers turning red as flowers mature. Above, hundreds of *Tulipa dasystemonoides* and *Gagea liotardii* (syn *Gagea emarginata*) grow side by side while near the small stream many *Tulipa kaufmanniana* were already flowering.

Weather changed rapidly; as we got to the top it was drizzling with strong winds with spectacular views of Bugulutor Mountain with its 4000m peak. Some of us decided to go farther to the end of the rocky ridge, while walking Oron spotted a Haly's (Karaganda) Pit Viper in between the rocks, surprisingly it was active despite the cold weather but we could take his photos from a very short distance. As we reached the edge we found some plants we haven't seen until now, *Lonicera* sp. with pendulous yellow flowers, many tiny *Gagea minutiflora*, spiny *Onobrychis echidna*, and up on the big stones a spectacular *Arnebia euchroma* growing together with *Androsace sericea*, and in the crevices *Paraquilegia caespitosa* in full bloom.

It became stormy soon and so we had to go back down to the valley. In the early afternoon, earlier than planned, we got back very wet to our mountain house, and had a nice rest. It rained the whole afternoon.

Day 10 Saturday 18th June Baidaksay Valley

A lovely sunny morning again. We climbed aboard our horses and headed slowly up again directed to Baidkasay. Soon we found the curious borage, *Solenanthes circinnatus* with coiled heads of dark flowers that reminds us of a hairy caterpillar. Near the small stream that flows from the top of the mountain some lovely clumps of *Tulipa kaufmanniana* including the yellow form and the less common *Tulipa dasystemonoides* in its yellow form as well.

Between the tulips we found three fat Central Asian Toads and as we reached the top Vladimir spotted two Brown Bears running on the side of the mountain in front of us. In the drier slope we found in seed *Iris orchioides* and *Fritillaria seversovii* and in the rock crevices *Thymus karatavicus* with its relatively large flowers and *Dianthus crinitus* subsp. *tetralepis* (syn *Dianthus tetralepis* easily recognised by the petals which are divided into many narrow sections. In the afternoon we have counted thirty-six Ibex with quite a few youngsters playing on the snow high above us and close to the house a curious Red Fox has been noticed near the horses.

Day 11 Sunday 19th June Upper Kshi Kaindy valley

We have started later than usual this morning as it was raining at night and there were still some showers. Sky started to clear up around ten o'clock and we have decided to take the risk and went up the mountain, while two members of the group preferred staying to rest at the house. Riding a horse up the mountain is certainly a good option in this case as the tall grass was wet and in the low areas very damp.

A pair of Golden Eagles flew above us and we could get a good look as the sun lit them. The ride took us a long time as we had to do it very slowly trying to avoid the tall vegetation in the centre

of the narrow valley. On the drier edges we have found *Dracocephalum imberbe*, *Papaver croceum*, lovely small cushions of *Eregomone griffithii* (syn *Arenaria griffithii*) covered with tiny white flowers and a few delicate *Corydalis ledebouriana*. Farther up those who were in front of the group could see just a few meters from us eight mature Wild Boar escaping and disappearing quickly behind the tall shrubs. We crossed the stream to the left side of the valley as it was less steep and sunny and about a hundred meters farther up we saw a Brown Bear just across the valley on the scree above. We suppose that due to the strong wind that came from the west it couldn't scent us, otherwise there is no good explanation for the fact that he didn't even look at us. The bear was searching for food under the junipers and we could follow him for the next twenty minutes until he entered the tall junipers for his day sleep. We were all very excited from it.

The conclusion was: Never stay at the base for a rest... We sat down for our picnic and then split into two small groups, a few of us wanted to go farther up to the snowline to look for other plants, while others started to go down very slowly. In fact it was a good idea as we found a few beautiful *Iris willmottiana* in flower and in the rock crevices some fine plants of *Campanula lehmanniana* subsp *capusii* (syn *Campanula capusii*). We went down and met the rest of the group as they were looking at some fine specimens of *Aquilegia atrovinosa* X *lactiflora*, which according to Vladimir is a natural hybrid, while on the NW facing wall were a few species of *Asplenium* and fine *Viola biflora* in bloom. Happy about seeing all these beauties we reached our mountain house in the afternoon.

Day 12 Monday 20th June The journey down

A lovely warm and sunny morning as we left our mountain house going down to Zhabagly. Vladimir took us on a different route from the one we came up, this time going down through the gorge. Temperatures rise very quickly and we have started peeling off some layers, finally in T-shirts. At the entrance to the deep gorge some very old and structural *Juniperus polycarpus* var *seravschanica* (syn *Juniperus seravschanica*) grow from the rocky walls and the drier parts with some fine specimens of *Hedysarum acutifolium* and large patches of yellow flowering *Galium verum*. Farther down near the stream both *Betula pendula* var. *pendula* (syn *Betula talassica*) and red-barked *Betula turkestanica* grow side by side creating a perfect habitat for both *Poligonathum roseum* and *Poligonathum sewerzowii* and lovely *Pyrola rotundifolia* and *Viola suavis*. In the more sunny parts tall *Codonopsis clematidea* and *Dictamnus albus* (syn *Dictamnus angustifolius*) are in bloom.

After lunch some of us preferred to walk down by foot while others preferred riding. We all met down at the entrance to the Reserve an hour later and bade farewell to our excellent horsemen and horses. Even came to take us with his bus and brought us back to his hotel. The rest of the afternoon was dedicated to making a proper shower and some laundry, while at the end of the day we went out to the main road to see the 'ceremony' of the shepherds bringing back the sheep and cattle from their daily grazing in the mountains while all owners wait in front of the houses to welcome them.

Day 13 Tuesday 21st June Aksu Canyon

After a good nights sleep and fresh for a new day we left after breakfast and headed to Aksu Canyon. This morning Yevgeny decided to take us with his old Russian minibus as it wasn't far a way. Unfortunately the minibus broke down just as we started to enjoy it, only a couple of miles out of the village. We had to wait half an hour until the other minibus arrived, while waiting we entered into a dry field nearby where we found the spectacular *Hulthemia persica* (Persian Rose) with a few flowers and next to it a few *Roemeria refracta* with its deepest red color.

We reached Aksu Canyon and went down half way into the deep canyon, staying on the south facing part. Climate here is hot and dry at this time of the year with a different flora; structural *Helichrysum maracandicum*, *Linum pallescens*, lovely *Scabiosa songorica*, yellow flowering *Onosma irritans*. Few species have adapted to grow in the limestone crevices such as creamy colored *Scutularia immaculata* growing side by side with campanula looking *Sergia sewerzowii* and my favourite yellow *Allium eriocoleum* that reminds me of a firework.

After lunch we visited Irsu which is a typical small Kazakh village with only one large main road and houses on both sides, it seems like a paradise for birds: Lesser Gray Shrikes, Masked and Grey Wagtails, Laughing Doves and more, while going down from the village there was a large nesting area of European Bee-eaters and European Rollers. We reached our hotel earlier as we had to pack and take the night train back to Almaty.

Day 14 Wednesday 22nd June Almaty and journey to Gaish Observatory

Our train arrived to Almaty just before nine in the morning, and we were taken to a hotel in the city for an enormous late breakfast. We left Almaty for our journey up to the Observatory. Our first stop was near a river as we started to walk up in elevation. Large trees of *Betula pendula* and some fine *Sorbus tianschanica* grow near the water, above in the dry part endemic *Oxytropis almaatensis* in full bloom tall *Polemonium caeruleum*, many purple spikes of *Vicia cracca* and quite a few *Dacylorhiza viridis*.

We arrived at Gaish Observatory, situated at 2740m with the main building transformed into a guest house, there where two ladies that received us and shown us our rooms where we left our luggage and went out to explore the area. The habitat is open grassy meadows dominated by *Juniperus pseudosabina* in the higher areas. It was very soon that we have spotted the first Grey Marmot sitting at the entrance to its tunnel and in total we have seen five of them during the afternoon. We also had a good look at a Lammergeyer that flew above us at low altitude and five Common Kestrels were busy, looking for food in the grassy areas.

Some fine species grow here; lovely *Comastoma falcatum* (syn *Gentiana falcata*), structural *Schmalhausenia nidulans*, *Leontopodium ochroleucus*, beautiful *Corydalis gortschakovii* and many others. Going back to the observatory we saw a couple of White-winged Grosbeak feeding on a juniper and on the conifer trees near the observatory we spotted two Red-mantled Rosefinch,

seven Plain Mountain Finches and two Red-fronted Serins.

Day 15 Thursday 23rd June Cosmos Station and Gaish Observatory

We woke to a beautiful sunny morning. We took the minibus and went up to the Cosmos Station situated above 3300m, the station is still active and is a centre for different researches. We parked near the entrance to the station and already saw an amazing sight: Thousands clumps of *Allium atosanguineum* and in between carpets of *Viola altaica* in its two color forms, beautiful *Pedicularis oederi*, a few species of *Erigeron* including the odd-looking *Erigeron lachnocephallus*, many *Tulipa heterophylla* and yellow *Tulipa dasystemon*. After an hour on this site we went higher up to the top of the mountain where snow has melted just a couple of weeks before our arrival. This elevation is home to many alpine plants which we haven't seen until now; Silvery *Saussurea gnaphaloides* is blending perfectly with the color of the rocks, while *Saxifraga oppositifolia* and *Thylacospermum caespitosum* cover parts of the rocks densely. *Beckwithia glacialis* and *Trollius liliacinus* grow side by side with silvery-leaved *Oxytropis chionobia* and *Primula nivalis* var *farinosa*. In the protected side of the horizontal rocks very large plants of *Paraquilegia anemonoides* with many dozens of flowers, all in excellent conditions while near the base we found a few delicate, pale *Corydalis glaucescens* protected between the rocks. We managed to see five Himalayan Snowcocks as they escaped from us, both Alpine Choughs and Red-billed Chough, while three Gldenstdt's Redstarts were seen on the rocks near the base.

We went down again to the Observatory for a late lunch and after some of the group preferred to stay and while the others walked around the observatory to reach the edge of the hill where we could see the Big Almaty Lake down in the valley.

Day 16 Friday 24th June Big Almaty Lake

We set off after breakfast going down the road to Big Almaty Lake. This is the main source of water of Almaty. Water level was relatively low this year as there was not much snow during winter. We stopped at the end of the dam walking south on the left side of the lake. Near the shallow water pink colored *Myricaria squarosa* has been the dominant plant and in the drier areas lovely fuchsia-colored *Epilobium latifolium*. As we got closer to the forested area Vladimir noticed a Turkestan Red Pica that entered under a pile of stones, while not far from there a Grey Marmot had a sunbathe on a large rock and permitted us take a pictures of it. We crossed a damp area flooded by a small stream to create like small meadows with short grass and in between we found two little jewels: *Gentiana prostrata* var. *karelinii* and *Comastoma falcatum* (syn *Gentiana falcata*) growing side by side. Also two species of *Veronica*: *Veronica beccabunga* and *Veronica chamaedrys* and lovely *Pedicularis rhinanthoides*.

One of the reasons to come to the lake was the hope to see a pair of Ibisbill that have been breeding in the site for a few years, at first we haven't seen any but we did see a pair of Ruddy Shelducks. Vladimir insisted to find them and after he walked quite a distance suddenly we have seen one

flying and landing not far away where we could look at it with our binoculars. What a beautiful bird it is, on the way back we found also *Clementsia semenovii* with its unusual spikes. In the afternoon we got back to the observatory.

Day 17 Saturday 25th June Gaish Observatory and Journey to Almaty

After breakfast we went out for a couple of hours walk above the observatory enjoying the lovely sky-blue carpets of *Myosotis asiatica* and some nice clumps of *Aster alpina* and finally we have seen a glorious male Himalayan Rubythroat sitting on one of the pines giving us a wonderful show. We returned to the observatory in order to pack and have an early lunch to then leave on our way to Almaty.

We have settled in the comfortable hotel in the centre of the city and where guided by Vladimir to see the city, visiting a central bookshop, the colourful Cathedral, and the busy covered market where some of us bought some typical Kazakh hand-made crafts. And in the afternoon had a coffee and ice-cream in a nice coffee shop on the main street. We went back to the hotel for a farewell dinner, and went to sleep early as wake up was at four in the morning.

Day 18 Sunday 26th June Departure

We have collected our breakfast boxes at the lobby and left for the airport. Flight left on time at 0700 in the morning.

Systematic List – Plants

(Families in alphabetical order)

ACERACEAE

Acer tataricum subsp semenovii (syn *A. semenovii*) - Berkara

ADIANTACEAE

Adiantum radiannum – Aksu Canyon

ADOXACEAE

Adoxa moschatellina – common at Chimbulak, journey uo from Almaty, Gaish Observatory

AMARYLLIDACEAE

Allium platyspathum subsp amblyophyllum (syn *A. amlyiophyllum*) – Chimbulak & Big Almaty Lake, pink flowers

Allium atosanguineum – Chimbulak, Tjuk-su Gate, Chimbulak ski-lift, Gaish Observatory

Allium atosanguineum var fedtschenkoanum (syn *A. fedtschenkoanum*) - Ulken Kaindy Pass

Allium barsczeweskii – Widespread

Allium caesium – bluish color, Sary-Say, Koskai, Aksu canyon.

Allium eriocoleum – Yellow flowers – Aksu Kanyon

Allium drobovii, tall creamy white – Berkara, Aksu - Zhabagli

Allium fetissoyii – single leaf, pink fower -Chimbulak, Aksu Zhabagli

Allium hyemenorhizum - soft pink, mostly in buds, astonishing numbers, Lower Aksu Zhabagli

Allium karataviense – growing in serpentine, two glaucous leaves- Aksu Zhabagli

Allium karelini – Chimbulak

Allium polyphyllum – Chimbulak, curved leaves

Allium tracyscordum - Koksay

Allium suworowii – Sarysay, Upper Aksu zhabagli

APIACEAE

Angelica brevicaulis – Tuyuk – Su Gate, Gaish, Kosmostation

Angelica archangelica subsp decurrens (syn *A. decurrens*) – Chimbulak

Anthriscus sylvestris – Chimbulak

Carum carvi – Widespread

Conium maculatum – Ulken Kaindy

Ferula akitschkensis – Chimbulak

Ferula karatavica – Sary-Say, Taskol

Ferula karataviensis – Teskol

Ferula penninervis – Koskai, Ulken Kaindy

Ferula tenuisecta – Widespread

Heracleum dissectum – Berkara, Upper kshi-Kaindy Valley

Ligusticum discolor (syn *Paraligusticum discolor*) – Aksu Zhabagli

Mediasia macrophylla – Ulken Kaindy

Prangos pabularia – Widespread

Shrenkia sp. – Ters Pass

Sphenolobium tianschanicum (syn *Selinum coriaceum*) – Upper ulken Kaindy Valley

Torilis leptophylla – Baidaksy Valley
Turgenia latifolia – Koksay

ARACEAE

Arum korolkowii - Taskol

ASPARGACEAE

Polygonatum roseum– Tuyuk Pass
Polygonatum severzowii – on way up to the mountain house

ASPLENIACEAE

Asplenium ruta-muraria - Upper Kshi Kaindy Valley
Asplenium septentrionale – rocky outcrops, Chimbulak and Cosmos Station
Asplenium tricomanis – Upper Kshi Kaindy Valley
Asplenium viride- Upper Kshi Kaindy Valley

BALSAMINACEAE

Impatiens parvilora – Sary-Say, Berkara

BETULACEAE

Betula pendula (syn *B. talassica*) – Sary-Say, Way to Gaish
Betulla turkestanica – Lower Aksu –Zhabagli

BORAGINACEAE

Anchusa azurea – Ters, Koksai, Aksu Canyon
Arnebia euchroma (syn *Macrotomia euchroma*) – Ulken Kaindy Pass
Arnebia ugamensis (syn *Macrotomia ugamensis*) - Berkara
Asperugo procambens – Ters
Echium vulgare – Koksay, Berkara
Eritrichium villosum – Chimbulak, Gaish, Kosmostation
Lapulla microcarpa – Koksay, Berkara
Lapulla tianschanica – Sary-Say, Ulken Kaindy, Aksu Canyon, Big Almaty Lake
Lindelofia tschimganica – Kaindy
Lithospermum officinale – Ters
Myosotis asiatica – Widespread
Myosotis stricta (Syn *Myosotis micranatha*) – Koksay, Big Almaty Lake
Onosma irritans – Ulken Kaindy, Aksu Canyon
Onosma setosa var dichronotha (syn *Onosma dichronotha*) – Koksay, Taskol
Rindera oblongifolia – Ulken Kaindy Valey
Solenanthus circinnatus – Baidaksy Valley
Trachelanthus korolkowii – Upper Ulken Kaindy
Tricodesma incanum - Taskol

BRASICACEAE (CRUCIFERACEAE)

Barbarea vulgaris (syn *Barbarea arcuata*) – Tjuk-su, Chimbulak, yellow flowers
Brassica rapa (syn *Brassica campestris*) – Sary-Say
Cardamine parviflora – below Chimbulak

Capsella bursa-pastoris – scattered
Chorispora bungeana – Tjuk-su Gate, steep path above hotel at Chimbulak, Gaish Observatory, Cosmos Station, small plant with pink flowers
Erysimum virgatum (syn *Erysimum croceum*) – Tjuk-su, path above Big Almaty Lake
Eutrema altaicum (syn *Taphrospermum altaicum* – Gaish, Cosmos Station, white flowers)
Eutrema pseudocordifolium – Tjuk-su, Chimbulak
Isatis tinctoria – on dam below Chimbulak
Megacarpaea orbiculata – Berkara
Parrya albida (syn *Neurolooma albidum*) – Upper Aksu Zhabagli
Smelowskia calycina – Cosmos Station, white flowers
Thlaspi arvense – scattered
Turritis glabra – Sary-Say, Ulken Kaindy,

BUTOMACEAE

Butomus embelatum – Koskay River

CAMPANULACEAE

Asyneuma argutum – Ulken Kaindy, Aksu Zhabagly, Aksu Canyon
Campanula alberti - Aksu Zhabagly
Campanula glomerata – Aksu - Zhabagli
Campanula lehmanniana subsp capusii (syn *C. capusii*) - Ulken Kaindy, Kshi Kaindy Valley
Codonopsis clematidea – Aksu Zhabagly, Gaish, Sary Say
Sergia sewerzowii – Aksu Canyon

CANNABACEAE

Celtis australis subsp caucasica (syn *C. caucasica*) – Berkara, Aksu Canyon

CAPPARACEAE

Capparis spinosa – Berkera

CAPRIFOLIACEAE

Lonicera hispida – Tuyuk Su, Chimbulak, Gaish, Kosmostation
Lonicera humilis – Gaish, Kosmostation
Lonicera karataniensis - Berkara
Lonicera karelinii – Common at high elevations
Lonicera microphylla – Aksu zhabagli, Big Almaty Lake
Lonicera nummulariifolia – Berkara, Aksu zabagli
Lonicera olgae – Ulken Kaindu Pass
Lonicera tianscanica – Koksay, Baidaksay Valley
Morina kokanica – Lower Aksu Zhabagli

CARYOPHYLLACEAE

Acanthophyllum pungens – Compact shrub, pink flowers, Taskol Pass
Allochrysa gypsophiloides – Taskol Pass
Cerastium cerastoides – widespread
Cerastium dahuricum – widespread
Dianthus karataviensis – Berkara, Lower Aksu - Zhabagli

Dianthus crinitus subsp tetralepis (syn *D. tetralepis*) – Koksai, Berkara, Baidaksay valley
Eremogone griffithii (syn *Arenaria griffithii*) – Aksu - Zhabagly
Herniaria caucasica- Aksu Canyon, Lower Aksu Zhabagly
Minuartia kryloviana – Tjuk-su Gate, Gaish Observatory, Cosmos Station
Minuartia macranatha – Gaish, Kosmostation
Petrohagia alpina (syn *Gypsophila stricta*, *Tunica alpina*) – Aksu Zhabagly at high elevations
Stellaria graminea – widespread
Thylacospermum caespitosum – Cosmos Station & Gaish Observatory, like a green cushion

CELASTRACEAE

Eounymus nanus (syn *Eounymus koopmannii*) – Ulken Kaindy
Eounymus semenovii – Ters

CHENOPODIACEAE

Chenopodium album – Sary-say, Koskai
Rhaphidophyton regelii – Taskol Pass

COLCHICACEAE

Colchicum luteum – In seeds, Aksu Zhabagly

COMPOSITAE (ASTERACEAE)

Achillea filipendulina – Zhabagly, Ters Pass, Aksu Zhabagly, Aksu Canyon
Achillea micranata - Zhabagly, Ters Pass, Aksu Zhabagly, Aksu Canyon
Achillea millefolium - Zhabagly, Ters Pass, Aksu Zhabagly, Aksu Canyon
Artemisia absinthium – Sary – Say
Artemisia dracunculus – Ters pass
Artemisia santolinifolia – Aksu Canyon
Artemisia vulgaris – Berkara
Aster alpinus – Tuyuk-Su Gate, Ulken Kaindy, Gaish, Kosmostation
Centaurea depressa – Koksai, Taskol
Centaurea iberica – Koksai
Centaurea squarrosa – Ters, Taskol, Aksu Canyon
Centaurea turkestanica – Aksu Canyon
Cichorium intybus – Ters, Aksu Canyon
Cousinia fetissowii – Ulken Kaindy Pass
Cousinia karatavica – Berkara
Cousinia minkwitziae – Ters, Aksu Canyon
Cousinia umbrosa – Aksu Zhabagly
Doronicum turkestanicum – Tuyuk –Su, Chimbulak, Gaish, Kosmostation, Big Almaty Lake
Echinops talssicus – Aksu Canyon
Echinops tschimganicus - Zhabagly
Erigeron auraniticus – Tuyuk – Su Gate, Chimbulak, Gaish, Kosmostation
Erigeron cabulicus – Ulken Kaindy
Erigeron chorossanicus ??– Baidaksay Valley, Big Almaty Lake
Filago arvensis – Aksu Canyon
Handelia trichophylla – Ters Pass
Helychrisum maracandicum – Ters Pass, Aksu Zhabagly

Hieracium echinodes – Aksu Zhabagli
Inula macrophylla – Taksol Pass
Leontopodium campestre (syn *L. fedtschenkoanum*) – Kosmostation
Leontopodium ochroleucum – Tuyuk Su Gate, Gaish, Kosmostation, Big Almaty Lake
Ligularia macrophylla – Widespread
Ligularia songarica – Aksu Zhabagli
Pyrethrum pyrethroides – Ulken Kaindy, Kshi Kaindy
Sassurea gnaphaloides – Kosmostation
Schmalhausenia nidulans – Gaish, Kosmostation, Big Almaty Lake
Scorzonera incospicua – Widespread
Solidago virgaurea – Aksu Zhabagli at high elevations
Tanacetum pseudoachillea – Aksu Zhabagly
Taraxacum montanum – Kosmostation
Tragopogon marginifolius - Berkara
Tragopogon turkestanicus- Koksai, Ters, Berkara
Tripleurospermum maritimum subsp inodorum (syn *T. inodorum*) – Koksai, Taskol
Tussilago farfara – Tuyuk –Su, Chimbulak
Xylanthemum tianschanicum (syn *Pyrethrum tianschanicum*)

CONVOLVULACEAE

Convolvulus arvensis – Ters Pass, Aksu Canyon
Convolvulus lineatus – Koksai, Taksol
Convolvulus pseudoacantabricus – Ters, Berkara

CRASSULACEAE

Clementsia semenovii – Chimbulak, Big Almaty Lake
Rhodiola coccinea – Tjuk-su, Gaish Observatory, small
Rhodiola heterodontha – Aksu Zhabagli
Rhodiola linearifolia - Tjuk-su, Gaish Observatory, like the above but much larger
Rosularia aplestris – Tjuk-su Gate, Gaish Observatory
Sedum ewersii – Chimbulak, Gaish Observatory
Sedum hybridum – Chimbulak

CUPRESSACEAE

Juniperus communis varieta sxatilis (syn *J. sibirica*) – Chimbulak, Kosmostation, Gaish
Juniperus pseudasabina – Tjuk-su, Gaish
Juniperus sabina – Chimbulak
Juniperus semiglobosa – common in Akso zhabagly
Juniperus polycarpos var. seravschanica (syn *J. seravschanica*) – Aksu zhabagly

CYPERACEAE

Blysmus compressus – Chimbulak, damp places
Carex nigra – Sary-Say, Ulken Kaindy
Luzula pallescens (syn *L. pallidula*) – Tuyuk-su Gate, Kosmostation

DRYOPTERIDACEAE

Dryopteris filix-mas – Under Gaish, Big Almaty Lake

ELAEAGNACEAE

Elaeagnus angustifolia (syn *A. oxycarpa*) – Ters, Koksai, Berkara

EPHEDERACEAE

Ephedra equisetina – frequent

Ephedra intermedia – Koskay

EQUISETACEAE

Equisetum arvense – Sary-say

Equisetum fluviatile – Lower Aksu- Zabagli, Taskol

Equisetum ramosissimum – Big Almaty Lake

ERICACEAE

Pyrola rotundifolia - Aksu Zhabagli

EUPHORBIACEAE

Euphorbia humilis - Kaindy Valley & K. Pass

Euphorbia jaxaratica – Chimbulak, Koksay

Euphorbia thomasoniana (syn *E. tianschanica*) – Tjuk-su, Gaish Observatory

FUMARIACEAE

Corydalis glaucescens – Gaish Observatory, pink flowers, under large tree

Corydalis gortschakovii – Gaish Observatory, yellow flowers

Corydalis ledebouriana – Ulken kaindy Pass, Upper Kshi Kaindy Valley

Cysticarydalis fedtschenkoana – single none flowering plant, Cosmos Station

Fumaria vaillantii – Koksai

GENTIANACEAE

Centarium pulchellum - Berkara

Comastoma falcatum (syn *Gentiana falcata*) – Gaish, Kosmostation

Gentiana prostrata var *karelinii* (syn *Gentiana karelinii*) – Gaish, Big Almaty Lake

Gentiana olivieri - Widespread

Gentianella turkestanorum (syn *Gentiana tuekestanorum*) – Aksu Zhabagli

Swertia varaiabilis – Baidaksay Valley

GERANIACEAE

Geranium albiflorum – Tjuk-su, Shimbulak

Geranium collinum – Ulken Kaindy

Geranium pratense - Widespread

Geranium rectum – Tjuk-su, small pink flowers

Geranium robertianum – Chimbulak

Geranium saxatile – Tjuk-su, Gaish Observatory, large purple flowers

GROSSULARIACEAE

Ribes meyeri – Tjuk-su Gate, steep path behind hotel at Chimbulak, Big Almaty Lake

HYPERICACEAE

Hypericum elongatum - Widespread

Hypericum perforatum - Widespread

Hypericum scabrum – Widespread

IRIDACEAE

Crocus alatavicus – Gaish, in seeds

Iris halophila var. *sogdiana* (syn *Iris sogdiana*) – Aksu Zhabagli

Iris songorica – Koksay

Iris willmottiana – Aksu Zabagli, Taskol Pass, Gaish

Iris orchoides - Ters, Aksu Zhabagli, - in fruits

IXIOLIRIACEAE

Ixiolirion tataricum – Koksay

LAMIACEAE

Betonica foliosa – Taskol, Zhabagli

Draconocephalum grandiflorum – Tuyuk-Say, Chimbulak, Gaish

Draconocephalum imberbe – Aksu Zhabagli at high elevations

Draconocephalum integrifolium – Aksy Zhabagli

Draconocephalum nutans – Widespred

Draconocephalum stamineum – Big Almaty Lake

Eremostachys karatavica – Berkara, in seeds.

Eremostachys speciosa – Sary-Sai, Ters, Koksay, Aksu Zhabagli

Lagochilus knorringianus – Aksu Canyon

Lagochilus occultiflorus subsp *occultiflorus* (syn *L. tianschanicus*) - koksai

Lamium album – widespread

Lamium amplexicaule – Aksu – Canyon

Mentha aquatica – Berkara

Mentha longifolia var. *Asiatica* (syn *M. asiatica*) – Sary-Say

Nepeta mariae – Aksu Zhzbagli at high altitudes

Nepeta nuda subsp *nuda* (syn *N. pannonica*) – Aksu Zhabagli, Aksu Canyon

Origanum vulgare – Sary-Say, Ters

Origanum vulgare subsp *gracile* (syn *O. tyttanthum*) – Ulken Kaindy Pass, Aksu Canyon

Phlomis oreophila – Tuyuk – Su, Gaish, Kosmostation

Phlomis pratensis – Sary – Say

Phlomis salicifolia – Berkara, Aksu Canyon

Salvia deserta – Ters, KOKSAI, Berkara, Aksu Zhabagli, Aksu-Canyon, Gaish

Salvia sclarea – Taskol Lake, Berkara

Scutellaria cordifrons – Aksu – Zhabagly

Scutellaria Kurssanovii – Ters

Scutellaria sieversii (syn *S. transiliensis*) – Sary-Say

Stachynopsis oblongata – Aksu Zhabagli at high elevations

Thymus karatavicus - Widespread

Thymus seravschanicus – Sary – say, Gaisk, Kosmostation

Ziziphora clinopodioides subsp *bungeana* (syn *Z. bungeana*) – Sary-Say, Koksay, Taskol

Ziziphora tenuior - Koksay, Taskol

LILIACEAE

- Fritillaria stenantha* (syn *Rhinopetalum stenanthum*) – on way up to the mountain house
Fritillaria swerzowii (syn *Korolkovia severzovii*) - way down from mountain house seed pods only
Gagea dshungarica– Koksai Gorge, Ulkun Valley & Ulkun Kaindi Pass
Gagea liotardii (syn *Gagea emarginata*) – Ulken Kaindy Pass, Kosmostation
Gagea filiformis – widespread
Gagea minutiflora – Ulken Kaindi Pass
Lloydia serotina- Common at high elevations
Tulipa dasystemon - Kosmostation
Tulipa dasystemonoides – Aksu Zhabagli
Tulipa greigii – Aksu zhabagli
Tulipa heterophylla – Tuyuk-su Gate, Chimbulak, Kosmostation
Tulipa kaufmanniana - Koskay and common in Aksu – zhabagli
Tulipa orthopoda – Koskai, in seed
Tulipa ostrovskiana– Sary-say, in seed
Tulipa turkestanica- Kuyuk Pass in seed

LEGUMINOSAE (Fabaceae)

- Astragalus alatvicus* – Gaish Observatory, yellow flowers
Astragalus alopecias – Taskol
Astragalus alpinus – below Chimbulak
Astragalus andaulgensis Ulken Kaindy, Kshi Kaindy
Astragalus sieversianus – Sary-Say, Ters
Astragalus ugamicus – Ulken Kaindy
Cicer songoricum – Gaish Observatory, Big Almaty Lake, purple flowers
Hedysarum acutifolium – Koskay
Hedysarum alopecorus - Taskol
Hedysarum cephalotes – Aksu Zhabagli
Hedysarum neglectum – over bridge in afternoon at Chimbulak, large red spikes
Hedysarum sulphuresens (syn *H. flavescens*) - Kosmostation
Lathyrus pratensis – widespread
Lotus tenuis - Berkara
Medicago lupulina –Ulken Kaindy
Onobrychis chorassanica – Ters
Onobrychis echidna – Ulken Kaindy Pass, Baidaksy Valley
Onobrychis arenaria subso arenaria (syn *O. sativa*) - Ters
Orobus luteus – lots on roadside below Chimbulak
Oxytropis albovillosa – Ulken Kaindy Pass
Oxytropis almaatensis – Chimbulak, Sary-Say
Oxytropis brachycarpa – Big Almaty Lake on dam
Oxytropis chionobia – Gaish Observatory, silver leaves purple flowers
Oxytropis talassica – Aksu Zhabagli
Oxytropis trichocalycina – Ulken Kaindy Pass, Baidaksay Valley
Sophora alopecuroides (syn *Vexibia alopecuroides*) Ters, Taxol
Thermopsis alpina – Tjuk-su, Gaish Observatory
Trifolium pratense – widespread

Trifolium repens – widespread

Trifolium campestre (syn *T. karatavicum*) – Aksu Zhabagly at high elevations

Vicia cracca – Chimbulak, Gaish Observatory, Baidaksy Valley

Vicia sepium – Tjuk-su, on way up to Gaish Observatory

Vicia tenuifolia – Aksu Zhabagl

LINACEAE

Linum altaicum – Ulken Kaindy

Linum olgae – Aksu Zabagly

Linum palescens – Sary-Say, Aksu Canyon

LYTHRACEAE

Lytrum salicaria - Berkara

MALVACEAE

Alcea nudiflora – At lower elevations, White flowers

OLEACEAE

Fraxinus sogdiana (syn *Fraxinus potamophila*) - Berkara

ONAGRACEAE

Epilobium angustifolium (syn *Chamerion angustifolium*) – Kaindy, Baidaksay

Epilobium latifoilium (syn *Cameron latifolium*) – Big alamaty lake

Epilobium tianschanicum - Ulken Kaindy

Epilobium hirsutum – Ulken Kaindy

ORCHIDACEAE

Corallorhiza trifida -Shimbulak

Dactylorhiza umbrosa – locally abundant in wet flushes

Dactylorhiza viridis (syn *Coeloglossum viride*) – Chimbulak, Gaish

OROBANCACEAE

Orobanche kotschyi – Aksu Zhabagli

Orobanche uralensis – Koksay

PAEONIACEAE

Paeonia hybrida – Chimbulak

PAPAVERACEAE

Glaucium fimbriigerum - Berkera

Glaucium squamigerum - Upper Ulken Kaindy valley

Papaver nudicuale (syn *Papaver croceum*) – Tjuk-su Gate, yellow flowers, Gaish, Kosmostation

Roemeria refracta – Ters Pass, Zhabagli

PINACEAE

Picea schrenkiana- Common at higher elevations

PLANTAGINACEAE

Plantago lanceolata – Sary Say, Upper Ulken Kaindy Valley

PLUMBAGINACEAE

Acantholimon albertii – Ulken Kaindy Pass

Acantholimon aulieatense – Taskol Pass

POACEAE

Aegilpos cylindrical – Lower Aksu Zhabagli

Bromus inermis (syn *Bromopsis inermis*) – Lower Aksu Zhabagli

Bromus japonicus – Aksu Canyon

Calamagrostis epigeios – Aksu -Zhabagli

Festuca valesiaca - Common in Aksu Zhabagli

Hordeum bulbosum – Koskay, Taskol

Poa alpina – Kosmostation

Poa angustifolia - Lower Aksu Zhabagli

Stipa caucasica – Koskay, Ulken – Kaindy, Lower Aksu Zhabagli

Stipa karataviensis – Berkara

POLEMONIACEAE

Polemonium careuleum – Chimbulak, Gaish, Big Almaty Lake

POLYGALACEAE

Polygala comosa (syn *Polygala hybrida*) – widespread

POLYGONACEAE

Oxyria digyna –Cosmos Station

Persicaria alpina (syn *Polygonum alpinum*) – Aksu Zhabagli

Polygonum ellipticum (syn *P. Nitens*) – Tjuk-su, Chimbulak, common

Polygonum cognatum (syn *Polygonum rupestre*) Big Almaty Lake

Polygonum coriarum - widespread

Rheum maximowiczii – Taskol, Aks- Zhabagli

Rheum wittroeki – Tjuk-su, Gaish Observatory

Rumex acetosa – Shimbulak, Gaish, Kosmoatation

Rumex crispus - widespread

Rumex thianschanicus – Chimbulak, Tuyuk-su Gate, common

PRIMULACEAE

Anagalis arvensis – Berkara, Taskol Lake

Androsace akbajtalensis – Tuyuk –Su Gate, Gaish

Androsace fedtschenkoi – Widespread

Androsace maxima - Ters

Androsace septentrionalis - Gaish

Androsace sericea – Ulken Kaindy

Cortusa brotheri – Tuyuk –Su, Chimbulak, Kosmostation.

Cortusa matthioli subsp turkestanica (syn *Cortusa turkestanica*) – Aksu Zhabagli

Primula algida – Tuyuk – Su Gate, Ulken Kaindy Pass

Primula minkwitziae – Aksu Zabagli at high elevations
Primula nivalis – Kosmostation,
Primula nivalis var *farinosa* (syn *P. turkestanica*) – Tuyuk su gate, Kosmostation

RANUNCULACEAE

Aconitum leucostomum – Tuyuk Su Gate, Chimbulak
Adonis aestivalis- Ters Pass
Anemone protracta – Tjuk-su Gate, common elsewhere
Aquilegia atrovinosa – Tjuk-su Gate and Chimbulak, Gaish Observatory
Aquilegia atrovinosa x lactiflora – Upper Kshi Kaindy Valley, a natural hybrid
Beckwithia glacialis (syn *Oxygraphis glacialis*) – Cosmos Station, like a lesser celandine
Callianthemum alatavicum– Tjuk-su, Gaish Observatory
Clematis alpina subsp *sibirica* (*Atragene sibirica*) - Tjuk-su Gate and Chimbulak, Gaish Observatory
Delphinium confusum – Aksu Zabagli
Isopyrum anemonoides (syn *Paropyrum anemonoides*) – Tjuk-su Gate, Gaish Observatory, white flowers
Paraquilegia anemonoides – Talgar Pass and Cosmos Station
Paraquilegia caespitose – Ulken Kaindy
Pulsatilla campanella – Gaish Observatory
Ranunculus alberti – Gaish Observatory
Ranunculus grandifolius – Tuyuk-Su Gate
Ranunculus longicaulis – Big Almaty Lake, large leaves, in damp conditions.
Ranunculus peltatus subsp *baudotti* (syn *R. trichophyllus*) – in water resevoirs.
Ranunculus rubrocalyx – Aksu Zhabagli at high elevations, Cosmos Station
Ranunculus sewerzowii – Ulken-Kaindy Pass
Thalictrum simplex – widespread
Trollius altaicus – Aksu Zhabagli at higher elevations
Trollius dschungaricus – Tjuk-su Gate, Gaish Observatory
Trollius lilacinus –Chimbulak and Cosmos Station

RESEDACEAE

Reseda lutea – Ters pass
Reseda luteola – Sary – Say

RHAMNACEAE

Rhamnus catharica – Lower Aksu Zabagli, Aksu Canyon
Rhamnus coriacea - Aksu Canyon

ROSACEAE

Agrimonia eupatoria subsp *asiatica* (syn *Agrimonia asiatica*) – Taskol Pass
Alchemilla retropilosa – Baidaksay valley
Alchemilla sibirica – Tjuk-su, Gaish Observatory
Cerasus mahaleb (syn *Padellus mahaleb*) – Berkara, Aksu Zhabagli at low altitude.
Cerasus tianschanica – Koksay, Berkara, Ulken Kaindy
Cotoneaster karatavicus – Berkara

Crataegus pontica – Aksu Canyon
Crataegus songarica – Chimbulak
Crataegus turkestanica - Berkara
Geum urbanum – scattered
Geum rivale – by stream below Chimbulak
Hulthemia persica (syn *Rosa persica*) – Zhabagli, Taksol, Aksu Canyon
Malus pumila (syn *Malus niedzwetzkyana*) – Berkara
Malus sieversii – Widespread
Pentaphylloides phyllocalyx – Tjuk-su, Gaish Observatory
Potentilla chrysantha (syn *Potentilla asiatica*) – Tjuk-su, Gaish Observatory, red stem
Potentilla hololeuca – Aksu- Zhabagli at high altitudes
Potentilla nervosa – Tjuk-su, Gaish Observatory
Potentilla orientalis – scattered
Potentilla pedata – Widespread.
Potentilla songorica – Kosmostation
Pyrus regelii – Berkara
Rosa albertii – Tjuk-su, Chimbulak, Gaish Observatory
Rosa corymbifera – Berkara
Rosa fedtschenkoana - Widespread
Rosa hissarica – Koksay, Ulken Kaindy
Rosa kokanica – widespread
Rosa maracandica – Baidaksy Valley
Rosa nanothamnus – Aksu Kanyon
Rosa persica – see *Hulthemia persiaca*
Rosa plantycantha – Chimbulak, Sary – Say
Rubus caesius - Berkara
Sanguisorba minor subsp muricata (syn *Poterium polygamum*) -Scattered
Sanguisorba officinalis – Chimbulak
Sibbaldia tetrandra –Cosmos Station
Sorbus persica – Lower Aksu Zhabagli
Sorbus tianschanica – Tjuk-su and Chimbulak, Gaish Observatory, Kosmostation
Spiraea hypericifolia - Widespread
Spiraea lasiocarpa – Chimbulak, Sary-Say
Spiraea pilosa – Ulken Kaindy
Spiraeanthus schrenkianus – Taksol Pass

RUBIACEAE

Asperula karataviensis (syn *Galium karataviense*) - Berkara
Galium verum – Aksu Zhabagli
Rubia regelii – Ulken Kaindy Pass

RUTACEAE

Dictamnus albus (syn *Dictamnus angustifolius*) – Chimbulak, Ulken Kaindy Pass, Lower Aksu Zhabagli
Haplophyllum perforatm - Taksol

SALICACEAE

Populus tremula – by road below Chimbulak

Salix alata – Big Almaty Lake, by road below Chimbulak

Salix alba – Sary-Say, Koksai, Berkara

Salix capusii (syn *S. niedzwieckii*) – Berkara, Ulken Kaindy, Aksu -Zhabagli

Salix cinerea - Big Almaty Lake

Populus talassica – Aksu Kanyon

SANTALACEAE

Thesium alata – Chimbulak, steep grassy slope below

SAXIFRAGACEAE

Chrysosplenium nudicale – Kosmostation, Chimbulak ski-lift

Parnassia laxmanni – Gaish Observatory

Saxifraga alberti – Ulken Kaindy Pass

Saxifraga macrocalyx – Tjuk-su, Chimbulak ski-lift, steep path behind hotel at Chimbulak, Gaish Observatory, Cosmos Station, yellow flowers

Saxifraga oppositifolia – Cosmos Station, purple flowers

Saxifraga sibirica – widespread

SCROPHULARIACEAE

Dodartia orientalis – Ters Pass, Aksu Canyon

Euphrasia pectinata (syn *Euphrasia tatarica*) – Aksu Zhabagli, Koksai

Lagotis integrifolia – Gaish, Kosmostation

Leptorhabdos parviflora – Gaish

Linaria popovii – Aksu Canyon

Pedicularis alata – Tuyuk – Su Gate, Kosmostation

Pedicularis dolichorrhiza - Widespread

Pedicularis macrophylla - Widespread

Pedicularis oderii – Big Almaty Lake

Pedicularis olgae - Kaindy

Pedicularis rhinanthoides – Kosmostation

Pseudolysimachion spicatum (syn *Veronica porphyriana*) – Baidaksy Valley

Pseudolysimachion spurium (syn *Veronica spuria*) - Aksu Zhabagli

Rhinanthus glaber (syn *R. songoricus*) – Aksu Zhabagli

Schrophularia incisa – Baidaksai Valley, Kshi Kaindy Valley, Big Almaty Lake

Verbascum songoricum – Aksu Zhabagli, Sary-Say, Berkara

Verbascum blattaria – Berkara

Veronica beccabunga – Sary-Say, Ulken Kaindy Valley, Big Almaty Lake

Veronica chamaedrys – Sary-Say, Berkara

Veronica porphyriana see *Pseudolysimachion spicatum*

Veronica spuria – see *Pseudolysimachion spurium*

Veronica tianschanica – Ulken Kaindy Pass

Veronica verna – Ulken Kaindy Pass

SOLANACEAE

Hyoscyamus niger – Ters Pass

TAMARIACEAE

Myricaria squamosa – Big Almaty Lake

Tamarix ramosissima - Berkara

ULMACEAE

Ulmus pumila – Berkara

URTICACEAE

Parietaria judaica – Baidaksay vally

Urtica dioica – widespread

VALERIANACEAE

Valeriana fedtschenkoi – Ulken Kaindy

Valeriana dubia (syn *V. turkestanica*)– Chimbulak, Sary- Say, Gaish

VITACEAE

Vitis vinifera – Berkara

WOODIACEAE

Cystopteris fragilis – common

VIOLACEAE

Viola acutifolia – steep path behind hotel at Chimbulak, yellow flowers

Viola altaica – Tjuk-su, Chimbulak ski-lift, Gaish Observatory, flowers purple/yellow

Viola biflora – Tjuk-su, up steep path behind hotel at Chimbulak, small yellow flowers

Viola rupestris – Chimbulak ski-lift, on way up to Cosmos Station, purple flowers

Viola suavis - Chimbulak, Berkara

Viola tianschanica – Cosmos Station, purple flowers

XANTHORRHOEACEAE

Eremurus altaicus – Sary-say

Eremurus cristatus – Koskay

Eremurus fuscus – Koskay

Eremurus lactiflorus – in seeds - Taksol, Aksu- Canyon,

Eremurus regelii – widspred

Eremurus robustus - Sary-Say

Eremurus tianschanicus, in buds – Berkara, Ulken Kaindy

Systematic list No. 2 Birds

Written by Vladimir Kolbintzev

Great Crested Grebe	<i>Podiceps cristatus</i>	4 in Berkara
Great Egert	<i>Egretta alba</i>	One in Taskol
Grey Heron	<i>Ardea cinerea</i>	4 in Ters, 4 in Taskol Lake
Black Stork	<i>Ciconia nigra</i>	One at Sary-Say
Ruddy Shelduck	<i>Tadorna ferruginea</i>	Variuos Water reservouirs, total 8 in number
Marsh Harrier	<i>Circus aeruginosus</i>	3 in Taskol Lake
Northern Sparrowhawk	<i>Accipiter nissus</i>	1-Chimbulak, 1- Sary-Say, 1Aksu Canyon
Longe-legged Buzzard	<i>Buteo rufinus</i>	1-Chimbulak, 1- Sary-Say, 1Aksu Canyon
Short-toed Eagle	<i>Circaetus gallicus</i>	1- Sary-Say, 1 Berkara, 1 Aksu Zhabagli, 1 Aksu Canyon
Booted Eagle	<i>Hieraetus pennatus</i>	1 in Gaish
Golden Eagle	<i>Aquila chrysaetus</i>	2 in Upper Kshi Kaindy Valley, 1 in Gaish
Lammergeier	<i>Gypaetus barbtus</i>	1 in Chimbulak, 1 in Gaish
Black Vulture	<i>Aegyptius monachus</i>	Total 4 in Aksu Zhabagli
Northern Hobby	<i>Falco subbuteo</i>	1 – Berkara, 1 Ulken Kaindy, 3 Aksu Canyon
Common Kestrel	<i>Falco tinnunculus</i>	Common, seen everyday
Himlayan Snowcock	<i>Tetraogallus himalayensis</i>	6 – Chimbulak, 5 Kosmostation
Cuckar Partridge	<i>Alectoris chukar</i>	2 in Koskay, 2 every day in Aksu Zhabagli
Grey Partridge	<i>Perdix perdix</i>	2- Upper Ulken Kaindy Valley, 2 Baidaksay Valley, 2-Upper Kshi Kaindy Valley
Common Quail	<i>Coturnix Coturnix</i>	2 – Koksay , many in Aksu Zhabagli
Common Pheasant	<i>Phasianus colchicus</i>	1 in Ulken Kaindy
Corncrake	<i>Crex crex</i>	1- Chimbulak, 1 Koksay
Coot	<i>Fulica atra</i>	Berkara
Stone -curlew	<i>Burhinus oediconemus</i>	2- Taskol Lake
Little Ringed Plover	<i>Charadrius dubius</i>	2 – Taskol Lake
Kentish Plover	<i>Charadrius alexandrinus</i>	2 – Taskol Lake
Northern Lapwing	<i>Vanellus vanellus</i>	5- Ters, many at Taskol Lake
Black- winged Stilt	<i>Himantopus himantopus</i>	2 – Sary- Say
Ibisbill	<i>Ibidorhincha struthersii</i>	1- Big Alamaty Lake
Common Sandpiper	<i>Actitis hypoleucos</i>	1- Big Alamaty Lake
Common Pratincole	<i>Glareola pratincola</i>	Many in Taskol

Black-headed Gull	<i>Larus ridibundus</i>	Many in Ters
Caspian Gull	<i>Larus cachinnans</i>	2- Ters, Many in Taskol
Gull-billed Tern	<i>Gelochelidon nilotica</i>	1- Taskol Lake
Caspian Tern	<i>Hydroprogne caspia</i>	1- in Ters
Little Tern	<i>Sterna albifrons</i>	2 – Taskol Lake
Woodpigeon	<i>Columba palumbus</i>	Widespread
Stock Dove	<i>Columba oenas</i>	Many in Sary- Say & Koksay
Rock Dove	<i>Columba livia</i>	Widespread
Collared Dove	<i>Streptopelia decaocto</i>	2 – Ters, 4 – Taskol, 2 – Upper Ulken Kaindy
Turtle Dove	<i>Streptopelia turtur</i>	2 – Sary- Say, 4- Koksay
Rufous Turtle Dove	<i>Streptopelia orientalis</i>	Widespread
Laughing Dove	<i>Streptopelia senegalensis</i>	3-Ters, 2- Berkara, 2 – Upper Ulken Kaindy, 1- Aksu Zhabagli, 2- Aksu Canyon
Eurasian Cuckoo	<i>Cuculus canorus</i>	Widespread
Eurasian Scops Owl	<i>Otus scops</i>	1- Koksay, 1- Berkara, 1- Upper Ulken Kaindy
European Nightjar	<i>Caprimulgus europaeus</i>	1- Berkara 1- Ulken Kaindy, 1- Upper Kshi Kaindey Valley
Eurasian Swift	<i>Apus apus</i>	4- Tuyuk – Su Gate
European Roller	<i>Coracias garrulus</i>	Common in Drier habitats
European Bee-eater	<i>Merops apiaster</i>	Widespread
Hoopoe	<i>Upupa epops</i>	4- Aksu Zhabagli, 2- Aksu Canyon, 2- Gaish
White-winged Woodpecker	<i>Dendrocopus leucopterus</i>	1- Berkara
Barn Swallow	<i>Hirundo rustica</i>	Widespread
House Martin	<i>Delichon urbica</i>	Many at Chimbulak, 2- Teskol, 2- Ulken Kaindy, many at Big Almaty Lake
Crested Lark	<i>Galerida cristata</i>	3- Ters
Calandra Lark	<i>Melanocorypha calandra</i>	Many at Koksai & Ulken Kaindy, 1- Aksu Canyon
Skylark	<i>Alauda arvensis</i>	Many at Koksay, 1 Berkara,
Tawny Pipit	<i>Anthus campestris</i>	1- Berkara, 1- Aksu Canyon
Tree Pipit	<i>Anthus trivialis</i>	1- Sary- Say, 2- Chimbulak, 1- Ulken Kaindy Pass
Water Pipit	<i>Anthus spinoletta</i>	3- Ulken Kaindy, 1- Gaish, 1- Kosmostation
Black-headed Wagtail	<i>Motacilla feldegg</i>	1- Taskol Lake
Grey Wagtail	<i>Motacilla cinerea</i>	1- Chimbulak, 1- Upper Ulken Kaindy, 1- Upper Kshi Kaindy Valley, 2- Big Almaty Lake

Masked Wagtail	<i>Motacilla personata</i>	2- Ters, 2- Taskol Lake, 1- Ulken Kaindy, 2- Aksu Canyon
Long-tailed Shrike	<i>Lanius schach</i>	1- Koksai, 1- Berkara, Aksu Zhzbzgli, 1- Aksu Canyon, 1- Gaish
Lesser Grey Shrike	<i>Lanius minor</i>	Widespread
Golden Oriole	<i>Oriolus oriolus</i>	3- Koksai, many Taskol, Ulken Kaindy, 1-Aksu Zhabagli
European Starling	<i>Sturnus Vulgaris</i>	Many in Sary-SAY, Ters, Koksai, Taskol
Rose-coloured Starling	<i>Sturnus roseus</i>	Common at lower altitudes mainly in villages
Common Maina	<i>Acridotheres tristis</i>	Common at lower altitudes mainly in villages
Magpie	<i>Pica pica</i>	common
Spotted Nutcracker	<i>Nucifraga caryocatactes</i>	2- Chimbulak, 2- Sary-Say
Red-billed Chough	<i>Pyrrhocorax pyrrhocorax</i>	4- Upper Ulken Kaindy Valley, 4- Ulken Kaindy Pass, 2 Kosmostation
Alpine Chough	<i>Pyrrhocorax gracilis</i>	Many at Ulken Kaindy Pass, 22- Baidaksay Valley, 3- Kosmostation
Jackdaw	<i>Corvus monedula</i>	In large numbers in Sary- Say, Ters, Koksai, Berkara, Gaish
Rook	<i>Corvus frugilegus</i>	In large numbers in Sary- Say, Berkara, Gaish
Carrion Crow	<i>Corvus corone</i>	Common
Hooded Crow	<i>Corvus cornix</i>	1- Sary - Say
Common Raven	<i>Corvus corax</i>	2 – Tuyuk – Su Gate, 1– Sary – Say,
White-throated Dipper	<i>Cinclus cinclus</i>	1- Sary-Say
Brown Dipper	<i>Cinclus pallasi</i>	1- Upper Kshi Kaindy Valley
Northern Wren	<i>Troglodytes troglodytes</i>	1- Tuyuk – Su Gate, 1- Gaish, 1- Kosmostation, 1- Big Almaty Lake
Brown Accentor	<i>Prunella fulvescens</i>	1 - Upper Kshi Kaindy Valley, 1- Gaish, 1- Kosmostation
Black-throated Accentor	<i>Prunella atrogularis</i>	1- Tuyuk – Su Gate, 2- Gaish, 1- Sary- Say, 1- Gaish, 2 - Kosmostation, 2- Big Almaty Lake
Grasshopper Warbler	<i>Locustella naevia</i>	1- Sary- Say, 1- Big Almaty Lake
Whitethroat	<i>Sylvia communis</i>	1- Sary- Say, few in Aksu Zhabagli
Hume's Lesser Whitethroat	<i>Sylvia althaea</i>	1- Koksai, few in Aksu Zhabagli

Greenish Warbler	<i>Phylloscopus trochiloides</i>	Many in Tuyuk – Su Gate, Sary – Say & Chimbulak
Hume's Warbler	<i>Phylloscopus inornatus humei</i>	Many in Tuyuk – Su Gate, Sary – Say , Chimbulak & Big Almaty Lake 1- Ulken Valley, 2 – Gaish, 2- Kosmostation
Asian Paradise Flycatcher	<i>Terpsiphone paradisi</i>	6 – Berkara, 1- Aksu- Zhabagly
Spotted Flycatcher	<i>Muscicapa striata</i>	Many in Berkara, 1- Aksu- Zhabagly
Siberian Stonechat	<i>Saxicola torquata</i>	In total 13 at Aksu - Zhabagli
Pied Stonechat	<i>Saxicola caprata</i>	1- Ulken Kaindy, 1 Aksu Canyon
Northern Wheatear	<i>Oenanthe oenanthe</i>	1- Kosmostation
Isabelline Wheatear	<i>Oenanthe isabellina</i>	2- Ters
Nightingale	<i>Luscinia megarhynchos</i>	2- Koksay, Many in Berkara , 15 in Aksu Zhabagli
Himalayan Rubythroat	<i>Luscinia pectoralis</i>	1 - Tuyuk – Su Gate, 1- Kosmostation, 1- Big Almaty Lake
Blue-headed Redstart	<i>Phoenicurus caerulecephalus</i>	4 - Big Almaty Lake
Guldenstadt's Redstart	<i>Phoenicurus erythrogaster</i>	3 -Kosmostation
Blackbird	<i>Turdus merula</i>	Widespread
Mistel Thrush	<i>Turdus viscivorus</i>	Widespread
Blue Whistling Thrush	<i>Mylophoneus caeruleus</i>	1 in each: Tuyuk – Su Gate, Sary – Say , kosmostation, 4- Aksu Zhabagli,
White-crowned Penduline Tit	<i>Remiz coronatus</i>	2- Berkara, nest in Ulken Kaindy & Upper Kshi Kaindy Valley
Rufous-naped Tit	<i>Parus rufonuchalis</i>	Two in Lower Aksu Zhabagli
Yellow–breasted Azure Tit	<i>Parus flavipectus</i>	2- Ulken Kaindy, 1- Lower Aksu Zhabagli
Azure Tit	<i>Parus cyanus</i>	1- Big Almaty Lake
Great Tit	<i>Parus major</i>	2 in each: Tuyuk – Su Gate, Chimbulak, Sary-Say
Turkestan Tit	<i>Parus bokharensis</i>	1 - Koksay, 1-Berkara
Coal Tit	<i>Parus ater</i>	1 in each: Tuyuk – Su Gate, Chimbulak, Sary-Say
Common Treecreeper	<i>Certhia familiaris</i>	1-Tuyuk – Su Gate
House Sparrow	<i>Passer domesticus</i>	1- Sary-Say, 1 Gaish
Indian Sparrow	<i>Passer indicus</i>	1 – Ters, 2- Berkara, 1 - Lower Aksu Zhabagli, 1- Aksu Canyon
Spanish Sparrow	<i>Passer hispaniolensis</i>	Many at Berkara
Tree Sparrow	<i>Passer montanus</i>	1- Koksay, 2- Berkara, 1 - Lower Aksu Zhabagli

Red-fronted Serin	<i>Serinus pusillus</i>	2 at each: Gaish, Kosmostation, 3- Big Almaty Lake
Grey-headed Goldfinch	<i>Carduelis caniceps</i>	2- Tuyuk – Su Gate, 6- Chimbulak, 8 -Sary-Say, 1-Aksu Zhabagly, 2- Gaish, 2- Kosmostation, 6 - Big Almaty Lake
Linnet	<i>Acanthis cannabina</i>	1- Chimbulak, 1- Aksu Zhabagly, 1- Big Almaty Lake
Plain Mountain Finch	<i>Lecosticte nemoricola</i>	7- Gaish, many in Kosmostation, 1 - Big Almaty Lake
Common Rosefinch	<i>Carpodacus erythrinus</i>	Widespread
Red-mantled Rosefinch	<i>Carpodacus rhodochlamys</i>	2- Gaish, 1- Big Almaty Lake
White-winged Grosbeak	<i>Mycerobas carnipes</i>	4- Gaish, 3- Kosmostation, 3 - Big Almaty Lake
Corn Bunting	<i>Emberiza calandra</i>	Many in Koksay, 4- Taskol, 1- Aksu Zhabagly
White-capped Bunting	<i>Emberiza stewarti</i>	One in Aksu Zhabagli
Rock Bunting	<i>Emberiza cia</i>	1- Ulken Kaindy, 2 – Baidaksay Valley, 1- Upper Kshi Kaindy Valley, 2- Lower Aksu Zhabagly
Red-headed Bunting	<i>Emberiza bruniceps</i>	Widespread

Systematic List No. 3 Reptiles & Amphibians

Central Asian Toad	<i>Bufo pewzovii</i>	1 – Berkara, 1- Baidaksy Valley
Marsh Frog	<i>Rana ridibunda</i>	3- Ters
Stepperunner	<i>Eremias arguta</i>	1- Ters
Desert Lidless Skink	<i>Ablepharus deserti</i>	1- Sary -Sai
Alpine Lidless Skink	<i>Asymblepharus alaicus</i>	Many at Upper Ulken Kaindy Valley, 1- Baidaksay Valley, 5- Upper Kshi Kaindy Valley
Orsini's Viper	<i>Vipera ursinii</i>	1- Koksai
Halys's Pit Viper	<i>Agkistrodon halis</i>	1- Ulken Kaindy Pass

Systematic List No. 4 Animals

Grey Long-heard Bat	<i>Plecotus austriacus</i>	1- Baidaksy Valley
Pipistrelle	<i>Pipistrellus pipistrellus</i>	3- Koksai
Turkestan Red Pica	<i>Ochotona rutila</i>	1- Big Almaty Lake
Red Squirrel	<i>Sciurus vulgaris</i>	2 in each: Tuyuk-Su Gate, Chimbulak, Sary- Say
Grey Marmote	<i>Marmota baibacina</i>	1- Tuyuk-Su Gate, 5- Gaish, 1- Kosmostation, 2- Big Almaty Lake
Forest Dormouse	<i>Dryomys nitedula</i>	1- Ulken Kaindy, Upper Ulken Kaindy, 1- Baidaksay Valley, 2- Upper Kshi Kaindy Valley
Turkestan Rat	<i>Rattus turkestanicus</i>	1- Berkara
Wood Mouse	<i>Apodemus sylvaticus</i>	1- Ulken Kaindy, 1- Upper Ulken Kaindy Valley
Red Fox	<i>Vulpes vulpes</i>	1- Tuyuk-Su Gate, 1- Koksai, 1- Baidaksay Valley
Brown Bear	<i>Ursus arctos</i>	2 - Upper Ulken Kaindy Valley, 2- Ulken Kaindy Pass, 2- Baidaksay Valley, 1- Upper Kshi Kaindy Valley
Stoat	<i>Mustela erminea</i>	1- Big Almaty Lake
Wild Boar	<i>Sus scrofa</i>	8- Upper Kshi Kaindy Valley
Ibex	<i>Capra sibirica</i>	12 - Ulken Kaindy, 11- Upper Ulken Kaindy Valley, 2- Ulken Kaindy Pass, 37 - Baidaksay Valley, 37 - Upper Kshi Kaindy Valley, 6 – going down from Aksu Zhabagli