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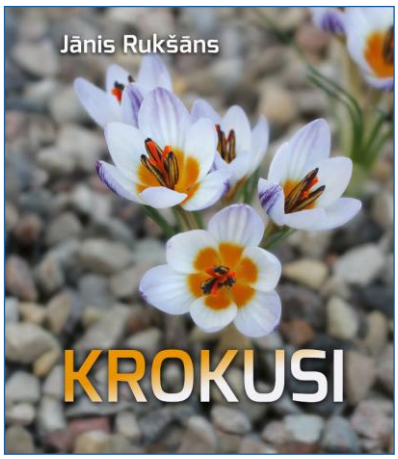
It is the pleasure of IRG to publish an article, naming new species by Dr Jānis Rukšāns, along with some notes made during the expedition with Dr Arnis Seisums, looking for various *Iris* species where Jānis found the two new Geraniums described here. Jānis has made several journeys with Arnis, who is on our cover, and in this issue, JR also describes, with Dr Dimitri Zubov, another new species, named to honour Dr Seisums.

Jānis has also completed another book over the past winter – KROKUSI (Crocus) are the subject once more- but this time in the Latvian language. Please note – while the book is written in Latvian, the plant names are also given in Latin. It is richly illustrated with 160 pages in total, and more than 200 colour illustrations. The cost of the book, to be sent abroad by registered mail, including packaging and postage, is only 30 Euros. Order it from Jānis Rukšāns via janis.bulb@hawk.lv. He will inform you individually how to pay. (The book price in Latvia, including packaging and postal costs, is 15 Euros - this must be ordered from Guna Rukšāne - guna.ruksane@hawk.lv. In person from the Rukšāns farm the book will cost only 10 euros.)



Zeltziedu krokuss. Falakro kalns, Grieķija.

Tipiskais zeltziedu krokuss (*Crocus chrysanthus*) no Ziemeļmaķedonijas.

Tas ir mūžīgais stirds, kuram objektīvs, visaptverošs risinājums nav iespējams. Mani noteikti var pieskaitīt pie otrajiem, lai gan aprakstot paša atklātās sugas, loti skrupulozi raugos, lai tās patiesi būtu atšķiramas no līdzīgajām un vairumā gadījumu ģenētiskie pētījumi apstiprina manu secinājumu pamatotību, lai gan pats vados tikai pēc pirms-gēnu laikmeta botāniķu lietotajām augu morfoloģiskajām pazīmēm.

Zeltziedu krokusu ir aprakstīts no Ziemeļmaķedonijas un manā uztverē tas savvaļā sastopams tikai Balkānos, bet Turcijā to nomaina pavisam citas ārēji līdzīgas sugas. Pazīme, kas ļauj gandrīz nemaldīgi noteikt vai tā ir Balkānu vai Turcijas suga, ir drīksnas novietojums attiecībā pret putekšlociņām. Balkānos augošajiem tā izteikti paceļas virs putekšniciņām, kamēr Turcijas sugām paliek starp putekšniciņām sasniedzot tikai to virsotni. Atšķiras arī Eiropas un Turcijas sugu lapu morfoloģija. Nav izslēgts, ka ar laiku tiks atklāts, ka arī Balkānos augošie "zeltziedu" krokusi būtībā pārstāv vairākas sugas.

Arī zeltziedu krokusa populācijās var atrast augus ar baltiem ziediem, tādi vairāk ir sastopami Eiropas daļā. Nav viegli atšķirt – vai tas ir albīns zeltziedu

Zeltziedu krokusa līdzinieks no Bozdaga grēdas, Turcija.

Ušakas krokuss (*Crocus uschakensis*).

Harpkes krokuss (*Crocus harpkeae*) pie *Kaun* kalnu pārejas, Turcija.

krokusa eksemplārs vai arī cita Balkānu suga – **bālais krokuss** – *Crocus pallidus* Kitan. & Drenk. Bulgārijā, tradicionāli par *C. pallidus* uzskatītās populācijās pa retam var atrast arī eksemplārus ar koši dzeltieniem ziediem. Turcijas Āzijas daļā gan man ne reizi nav izdevies novērot izteiktus albīnus, vienīgi gaišāk dzeltenus eksemplārus.

Lai gan no Turcijas ir aprakstītas diezgan daudzas gredzenkrokusu sugas ar koši dzelteniem ziediem, pieminēšu tikai dažas. Viena no skaistākajām šīs grupas sugām ir **Muglas krokuss** – *Crocus muglaensis* Rukšāns, kas aizņem plašu areālu Muglas provincē Turcijas dienvidrietumos. Tai īpaši krāšņuma piešķir nemainīgi melnās putekšnīcas. Areāla austrumdaļā augošā **Harpkes krokusa** – *Crocus harpkeae* Rukšāns – bumbuļsīpoliem savukārt raksturīgas plānas, papīrveida segzvīņas, kamēr citām šīs grupas sugām tās ir cietas, ādveida. **Ušakas krokuss** – *Crocus uschakensis* Rukšāns – pelnījis ievērību kā viena no šīs grupas sugām ar vislielāko diploīdo hromosomu skaitu – 2n=20. Tai dzīli dzelteno ziedu riktīte ir violeti tonēta zona, ko vislabāk gan var redzēt tikai gareniski pārgriežot ziedu. Šai sugai pieder

Zeltziedu krokuss. Parnasos kalns, Grieķija

Muglas krokuss (*Crocus muglaensis*).

Jānis Rukšāns – dārznieks, žurnālists, botāniķis – neapšaubāmi ir viens no labākajiem dārzkopības literatūras autoriem ne tikai Latvijā, bet arī ārpus tās robežām. Pieredze, kas sākās ar pirmo grāmatu "Krokusi" 1981. gadā, papildinājās ar neskaitāmiem rakstiem periodikā, zinātniskām publikācijām un vairākām grāmatām. Gandrīz vai likumsakarīgi, ka izgājis mūža garumā dažādus līcīšočus, Jānis atkal atgriežas pie krokusiem – grāmatas latviešu valodā. Tas ir uzslavas vērts, jo "The World of Crocuses" (bieza monogrāfija ar pielikumu pēc 5 gadiem) ir izdota angļu valodā, un nu jau ir bibliogrāfisks retums. Neapšaubāmi, ka pasaules auditorija ir lielāka nekā pašmāju, taču dzīvojam Latvijā, un, ja vēl pievienojam skanīgo "pasaulē lielākā krokusu kolekcija", kas šobrīd tiek audzēta Cēsu novada "Jaunrijās", tad slavas dziesma krokusiem grāmatas veidolā tiek iemūžināta 2026. gada martā, tieši saulaino pavasara vēstnešu ziedēšanas laikā.

Grāmata būs vienlīdz svarīga kā zinošiem dārzniekiem, tā arī vienkāršiem ziedu mīļotājiem, jo, neraugoties uz zinātnisko pieeju, tā ir interesanti uzrakstīta. Tajā ir ne tikai plašs izziņas materiāls, bet arī izcils vizuālais noformējums, kurā redzama tik skaisto krokusu daudzveidība un neatkārtojamība.

Guna Rukšāne –
selekcionāre un dārzkopības grāmatu autore

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Our Ukrainian friend and co-author of many new species with Jānis Rukšāns, Dimitri Zubov, recently received a high award from the hands of State President of Ukraine, Volodymyr Zelensky - the National Science Award and the Medal for research in regenerative orthopaedics. All best wishes and congratulations to Dima Zubov!

Two new taxa of tuberous *Geranium* (*Geraniaceae*) from Uzbekistan

Jānis Rukšāns, Dr biol.

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Geranium Tourn. ex L. is a genus of over 400 species. They are annuals, biennials, and perennials, commonly called geraniums or cranesbills [the name is derived from the shape of the fruit capsules of some species, which resemble a crane's head (ovary), and the elongated stigmas that give the appearance of a beak (crane's bill)]. The name geranium is sometimes also used for *Pelargonium*, and in horticulture, the epithet "hardy geraniums" is used to distinguish the true geraniums. They are distributed in the temperate zone, mainly in the Northern Hemisphere.

Local gardeners and Janis Rukšāns (on right) in Sangirsai gorge.

Very few species of perennial geraniums form underground tubers, so gardeners classify them among the "bulbs". They are placed in a separate section *Tuberosa* Boiss. (or subsection *Tuberosa* Yeo). The greatest diversity of the group is found between Turkey and Iran, where six taxa grow, extending eastward to the northwestern part of the Pamiro-Alay in Central Asia. *Flora Europaea* (1968) lists 4 species, three of which are also recorded in the Asian part of the range, and one - *Geranium malviflorum* Boiss. & Reuter - grows in

southern Spain. In horticulture, two different plants with different shapes of underground tuberous parts are common under the name *G. malviflorum* - one of them is reported to have originated in Spain, the other from Morocco on opposite side of the Mediterranean. The tubers of both look different and they could belong to two different species. For many years I also cultivated stock labeled as "*G. macrostylum* Boiss." which I got from Dr Chris D. Brickell, reported by him as collected by P. Davies on Atlas Mountains in Morocco. But *G. macrostylum* is a plant from the Balkans, Crim and Turkey, not known in Morocco. This sample had underground tubers of shape not similar to any other tuberous *Geranium*, but this stock together with some others was completely destroyed by wild boars, who almost completely ate all my tuberous geraniums, at that time grown only on an open field.

Dr Arnis Seisums at Sangirsai.

By 2002, I had been travelling with Dr Arnis Seisums of the Latvian National Botanical Garden to the mountains of Central Asia in search of a little-known species of Juno irises that had not been cultivated before, in order to obtain data for a monograph on Juno irises (to be published this or next year by Kew, with Tony Hall to prepare the final version). During these expeditions, two very peculiar-looking tuberous geraniums were found, specimens of which were collected and observed in detail during cultivation in my collection.

Iris capnoides at Sangirsai.

In 1996, we were looking for *Iris capnoides* (Vved.) T.Hall & Seisums in the mountains east of Tashkent (Uzbekistan) in the Sangirsai Gorge, bordering the Chatkal National Park. There we observed about 30 "bulbous"

geophytes, and among them was a very peculiar-looking geranium that resembled *Geranium transversale* (Kar. & Kir.) Vved ex Pavlov [syn. *G. linearilobum* DC. subsp. *transversale* (Kar. & Kir.) P.H.Davies] in everything but the shape of the leaves.

Leaves of typical *Geranium transversale*.

Pink blooming form of typical *Geranium transversale*.

The leaflets of the observed plants were very narrow and elongated, without any branching, while in typical *G. transversale* they, although variable, but always are at least divided 2-3 times into short oblong-linear acuminate confluent lobules. Having spent two days in Sangirsai and the adjacent gorges (sai's), we observed only plants with unbranched leaflets, which allowed them to be considered as a new, previously unpublished subspecies of *G. transversale*, which I decided to name as subsp. *linearifolium* Rukšāns.

Fig. A - Leaf shape of *Geranium transversale* subsp. *linearifolium.*

When examining the images of *G. transversale* on the *Plantarium.ru* website among 74 images, I did not find any with leaves similar to those of the taxon described here. In some populations there are plants with linear leaf lobes, but they are always in 2 or 3 lobules (-fid) as characterized in the Flora of USSR.

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Fig. B - Holotype specimen of *Geranium transversale* subsp. *linearifolium.* (early naming was laciniata.)

***Geranium transversale* (Kar. & Kir.) Vved. ex Pavlov subsp. *linearifolium* Rukšāns subspecies nova.**

Type: Uzbekistan, Chatcal national park, Sangirsai gorge 41^{0}12’53” N 69^{0}49’10” E, alt. 1318 m; ARJA-9656, leg. J. Rukšāns & A. Seisums 30-04-1996, ex culturae in horto Jānis Rukšāns, leg & det. J. Rukšāns 22-04-2025. Holotype: RIG II-17838!!

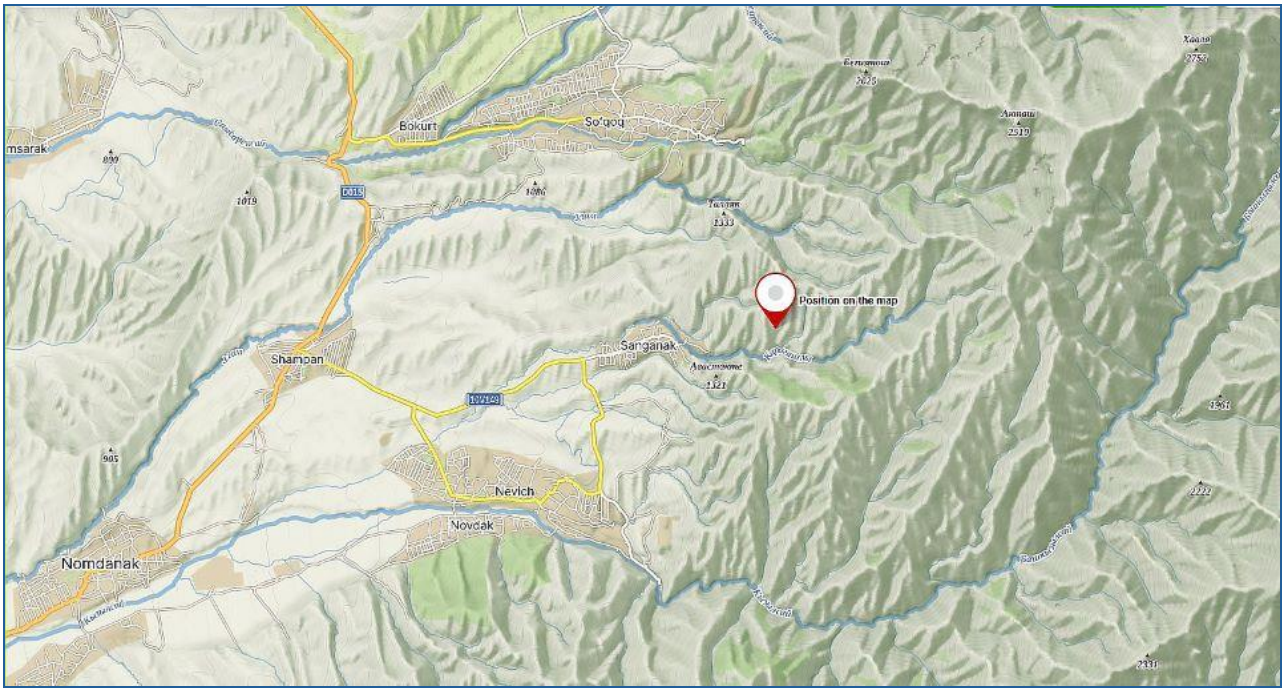
Diagnosis: This new subsp. is similar to *G. transversale* subsp. *transversale* (syn. *G. linearilobum* subsp. *transversale*) but differs in having of very special leaf shape: they have strongly linear lobes without any branching and lobules, which are invariably present in all samples of typical *G. transversale* seen by me in the wild and descriptions of this species in various Floras.

Habitat and distribution – Known from the type locality in Chatcal National Park and its vicinity around Sangirsai and Iransai of main Baschkizilsai basin on dry stony slopes between sparse grass and low spiny shrubs together with *Allium barszczewskii* Lipsky*, Iris capnoides* (Vved.) T.Hall & Seisums*, Iris kolpakowskiana* Regel (inside neigbouring shrubs), *Ixiolirion sp*. Fisch. & Herb. (with unusually curved leaves), very variable by flower colour *Fritillaria sewerzowii* Regel and others where it is blooming in April and May.

Etymology – Named after specific shape of leaves.

Figs. A – C, Map A1.

Figs. C -*Geranium transversale* subsp. *linearifolium* blooming in cultivation.



Map A1. Locus classicus (type localiy) of *Geranium transversale* subsp. *linearilfolium* (map generated using Mapy.cz).

Variability of flower colour of *Fritillaria sewerzowii* in Sangirsai.

In 1998, together with Dr Arnis Seisums, we continued our search for type specimens of several Juno irises. In 1998, our main goal was to find *Iris nicolai* Regel in its type locality in the Chulbair Mountains (in the SW corner of Ghisar Mountain range) above the village of Sina in southeastern Uzbekistan. There are four very similar species separated by Dr G. Rodionenko in the section *Physocaulon* Rodion.

The data given in various keys are quite contradictory and do not always correspond to the characteristics of plants collected in the localities intended for each species. Therefore, we searched for specimens from the *locus classicus* of these species. We found plants that were later used in further studies as typical *I. nicolai* (Vved.) Vved. Another Juno iris species that we searched for and published from the same area was *Iris parvula* (Vved.) T. Hall & Seisums – a representative of another Juno iris group – dwarf and with small very

fragile additional roots. We also hoped to find *Tulipa orithyioides* Vved., which was published from the same mountain range.

Dr Arnis Seisums at Sina heights, where *Geranium charlesii* and *Iris parvula* were found.

Fig. D -Below, left: Leaf shape of *Geranium charlesii* type subspecies from Tahta-Karacha pass.

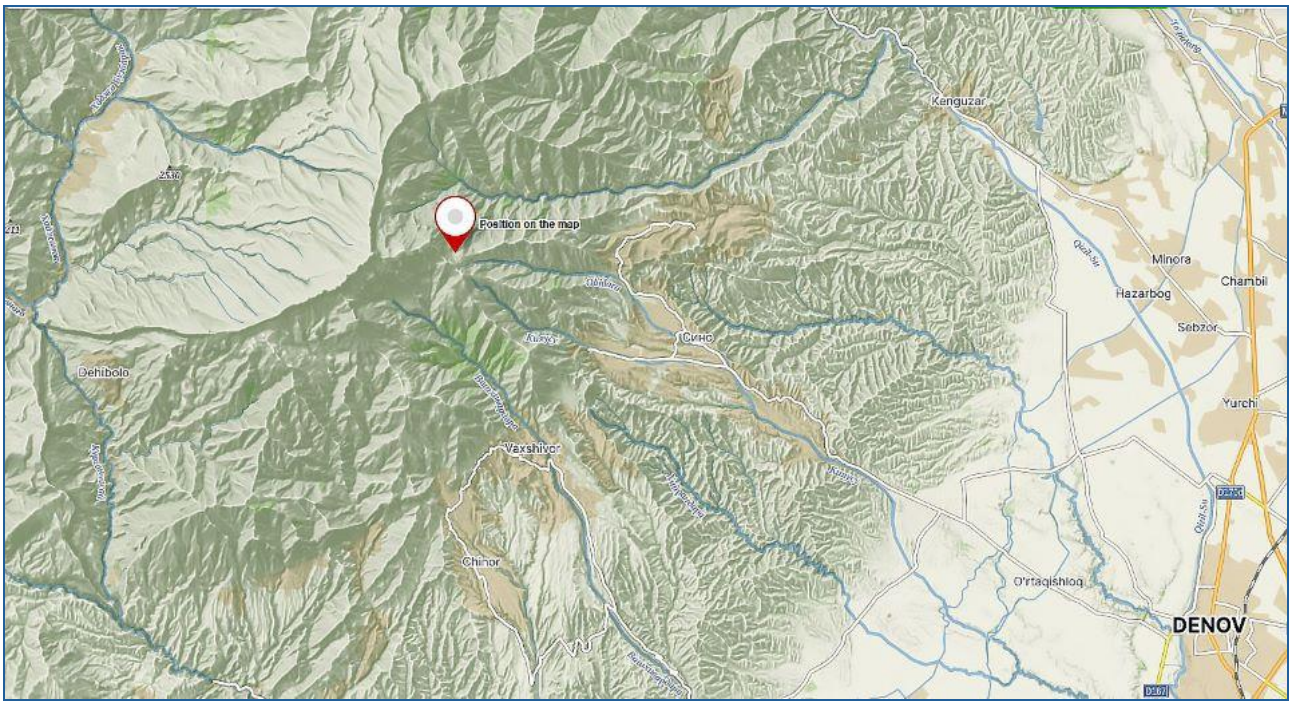
Fig. E - Leaf shape of *Geranium charlesii* type subspecies from Timurlan Gate on Nuratau ridge.

Shortly before reaching the snow line at 3300 m, where we found *Tulipa orithyioides* at full bloom, we found a large population of the sought-after *Iris parvula* and *Geranium charlesii* (Aitch. & Hemsl.) Vved. [synonym *G. kotschyi* subsp. *charlesii* (Aitch. & Hemsl.) P.H.Davis] with a very unusual leaf colouration with dark purple spots where the leaf lobes divide into lanceolate lobules, sometimes purple coloured was also a base of leaf lobes at junction with stalk. Such plants were observed along our trail up to the summit for quite a long distance on both sides of the trail, but mainly on the higher side with less abundant vegetation, often in splits of rocks.

Fig. F - *Geranium charlesii* subsp. *punctatum* at its habitat in Sina.

Fig. G - Leaves of *Geranium charlesii* subsp. *punctatum* (cultivated plants).

This feature was also preserved in cultivation, and all seedlings of open-pollinated plants [grown without isolation next to typical *G. charlesii* specimens from the Takhta-Karacha (Aman-Kutan) pass and from the Nuratau ridge at the Timurlan Gate with plain gray-green leaves] retained this specific feature - purple-spotted leaves, which allowed them to be considered as distinct taxa at the subspecies level.



Map B 2. Locus classicus (type locality) of *Geranium charlesii* subsp. *punctatum* (map generated using Mapy.cz).

Geranium charlesii (Aitch. & Hemsl.) Vved. subsp. *punctatum* Rukšāns subspecies nova

Type: Chulbair mountains above Sina vil. in SE Uzbekistan, $38^0$23'27" N $67^0$35'30"E at altitudes 2700 - 2850 m; ARJA-9827 - leg. J. Rukšāns & A. Seisums 09-06-1998, ex culturae in horto Jānis Rukšāns, leg & det. J. Rukšāns 30-04-2025. Holotype: RIG II-17836!

Diagnosis: This new subspecies is similar to *Geranium charlesii* subsp. *charlesii* (syn. *G. kotschyi* subsp. *charlesii*) but differs in having deep purple spotted leaves, sometimes even basally deep purple veined foliage, which in typical *G. charlesii* are plain greyish green throughout.

Habitat and distribution – Known from the type locality in Chulbair mountain range along pass to abandoned mine above vil. Sina growing together with *Allium alexeianum* Regel, *Corydalis nudicaulis* Regel, *Gymnospermium sp*. Spach., *Iris vicaria* (Vved.) T.Hall & Seisums (dwarf form), *Iris parvula* (Vved.) T.Hall & Seisums, *Taraxacum sp.* F.H.Wigg. (purple leafed form) and other high alpine vegetation, quite often in splits of rocks where it blooms in May and June.

Etymology – Named after specific colouration of leaves.

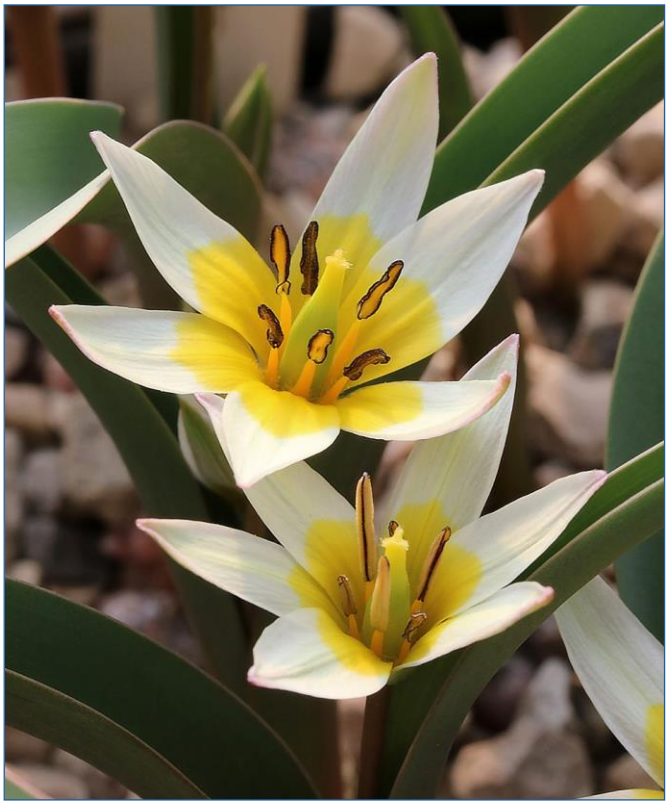
Figs. D- J, Map B2

Fig. H - Leaf and flower details of *Geranium charlesii* subsp. *punctatum*.

Fig. I - Holotype specimen of *Geranium charlesii* subsp. *punctatum.*

Figs. J - *Geranium charlesii* subsp. *punctatum* blooming in cultivation.

Short note about *Tulipa orithyioides* Vved.



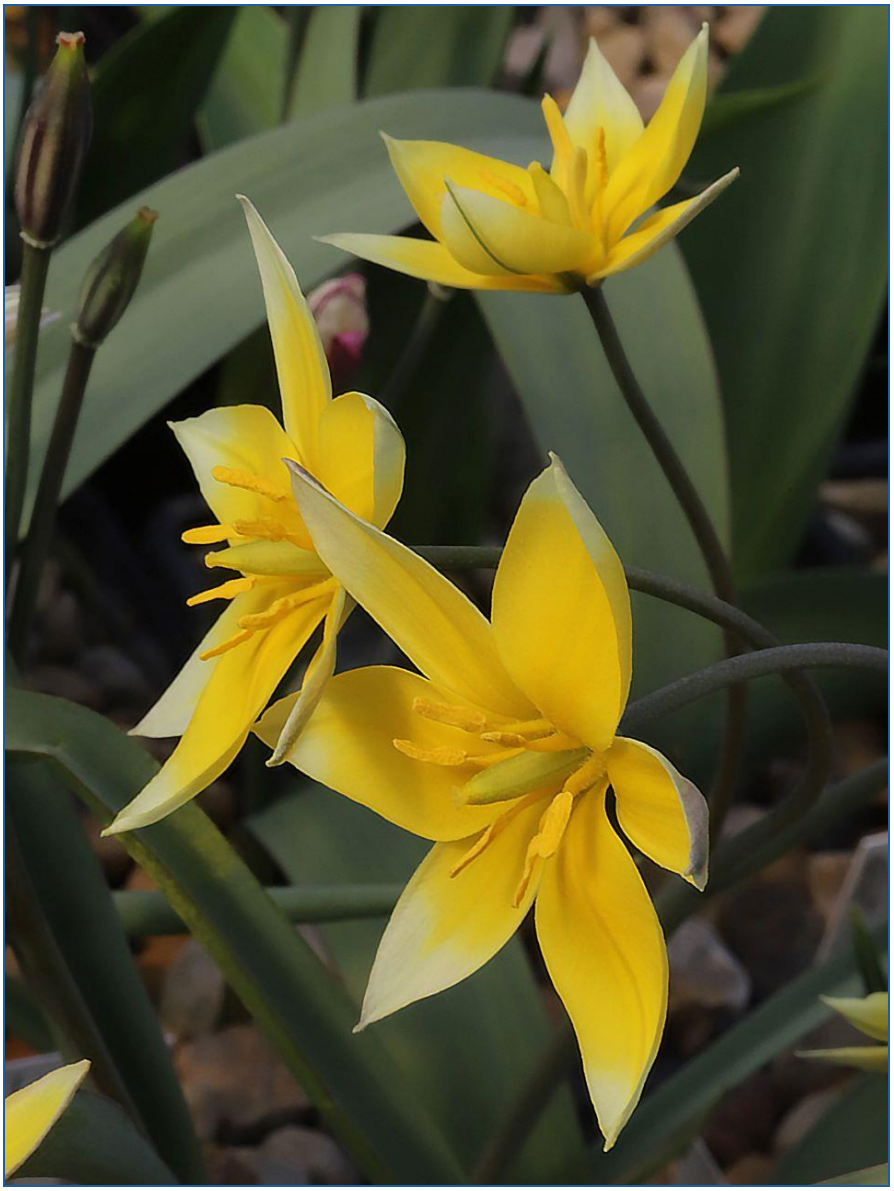
While working on this article and searching for the correct names and authors of species in the International Plant Names Index IPNI (https://www.ipni.org), I was surprised to discover that another tulip species published by Vvedensky – *Tulipa subbiflora* Vved. – is listed as a synonym of *Tulipa orithyioides* Vved. The main feature that distinguishes *T. orithyioides* from other species of the subgenus *Eriostemones* (Boiss.) Raamsd. is the elongated neck between the ovary and the stigma, which resembles plants of the genus *Orythia* Endl., and from this the name of this tulip species is derived.

Above: *Tulipa orithyioides* from locus classicus (type locality) in Sina.

Right: *Tulipa orithyioides* –flower details from locus classicus (type locality).

T. subbiflora does not have such a neck, its flowers are basically yellow (in *T. orithyioides* flowers are basically white). About the finding of *T. subbiflora* Dr Arnis Seisums wrote to me: “I collected *T. subbiflora* in 1994 together with Mart Veerus (Estonia) near the village of Yardana on the banks of the Dugova River. It was from here that Vvedensky described *Tulipa subbiflora* Vved. (1971, Opredelitel Rastenij Srednei Azii, 2: 320 and 108). The type herbarium is kept at TAK. This is a village S of Fergana city, a small enclave/village of Uzbekistan inside Kyrgyzstan; on the N slope of the Alay ridge. GPS measurements could not be available at that time, but in any case, it was high in the mountains. The place name, where the tulip specimen you are interested in (VS 94-35) comes from, is Latinised in various ways, so it is difficult to find it on maps. Several plant species are described from here and each author has chosen their own variant on how to spell the place name. Now I found it “through” Google maps as “Shohimardon”. The collected specimen is one that forms many bulbs, also stolons and rarely blooms (*not so with me – J.R.*). The pictures and data about this tulip in D. Everett’s

book The Genus Tulipa (2013) are incorrect and the photograph of this species included in this book is not from my garden."



Tulipa subbiflora – from *locus classicus* (type locality) in Shohimardon.

Tulipa subbiflora - flower parts, filaments drying turn red.

My observations on *Tulipa subbiflora* (sample VS 94-35) gives the following data: Throat hairy, filaments below boss greenish, higher yellow, boss densely hairy, higher less almost up to anthers, anthers yellow, ovary light green, papillose, especially in upper third, stigma yellow, minutely papillose, positioned below tips of anthers. Flower segments inside yellow turning creamy only shortly below tips. It seems that the botanists who included it as a synonym of *T. orithyioides* never saw any living plants. You can judge about their status from the accompanying photographs, which clearly demonstrate that they are both very different species.

The tulip described and pictured under name of *T. subbiflora* in Jac.J. de Groot's monograph "Tulips and their Natural History" vol. 3 p. 70-71 (2024) has nothing common with true *T. subbiflora.* True *T. subbiflora* is not growing on Tahta-Karacha (Aman-Kutan) pass and looks different [the black tips of anthers, mentioned in original description of *T. subbiflora* by Vvedensky (1971) is not very prominent every season and hides with the dehiscence of pollen].

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Acknowledgments.

I would like to thank my long-time travel partner Arnis Seisums, who planned and prepared our expedition routes in Central Asia. I would also like to thank Vladimir Vinogradov from Tashkent, Uzbekistan, former President's gardener, who is now watching us from the edge of the clouds - without his help, our Uzbek expeditions would never have been possible. I

would also like to thank Henrik Zetterlund (Gothenburg Botanic Garden, Sweden) for the interesting and fruitful discussions and arranging of financial support for our expeditions. Many thanks also to Dimitri Zubov (Ukraine), who helped me choose the most appropriate names for the new *Geranium* taxa. Of course, I cannot forget my family, especially my wife, Guna Rukšāne and granddaughter Paula, who always supervised and maintained the collection while I was wandering around.

Allium suworowii was found before entry to children's recreation camp in Sina.

FRAGMENTS FROM JANIS RUKŠĀNS DIARY ABOUT EXPEDITION TO SINA IN YEAR 1998.

The first point of our current expedition is Sina of Chulbair mountain range. Reaching it required us to drive non-stop from 6 in the morning, when we left our friends Volodya Vinogradov' house in Tashkent, until the very evening. We are driven by one of the proudest cars in Tashkent – the latest model "Volvo", which belongs to the Ministry of Foreign Affairs and is used as a guest car – for transporting foreign delegations. Our speed fluctuates between 100 and 150 km/hour, after three hours we are already in Samarkand, then the Aman-Kutan mountain pass, the Tumani pass and the road to Denau, badly damaged by the recent rains, land and mud slides. We are in Sina around five in the afternoon. The road there has been eroded by a river, the bed is so full of stones that our "Volvo" can no longer overcome them. We agree that the car will pick us up in two days at seven in the morning, we put our backpacks on our shoulders and move forward.

Dr Arnis Seisums at Sina heights.

It's not easy. Although the bag is not too heavy this time, the lack of training is noticeable. After half an hour, we take a break for few minutes. But then it seems to get easier, and very soon we are already at the children's recreation camp, which in Central Asian states are always located in the delta of a fast mountain river. There we manage to negotiate that we will be able to leave our belongings at the camp for the day, and in the end we are even allowed to set up a tent on the camp's territory. We go through the entire camp up the valley and at its far end, namely as high as possible so that we have less climbing in the morning, next to the exit gate, under a large walnut tree, we pitch our tent in a beautiful, flat meadow. Then we have dinner and arrange our belongings for tomorrow.

Iris vicaria collected near our camp at bottom of Sina gorge.

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Arnis goes on a short reconnaissance walk, and after a few steps the first call – we have set up the tent only a couple of metres from the first Juno – *Iris vicaria*. A little further on and on. Higher up in the mountains, they might even be blooming. We hope that the *I. nicolai* and the tiny *I. parvula*, for which we have come here, because they were both described directly from Sina, will not hide from us. The first plant has been found! Two species of eremurus also grow here. One with wide leaves is already with ripe seeds, the

other, very narrow-leaved, as its scientific name also indicates [*Eremurus stenophyllus* (Boiss. & Buhse) Baker], has not even started to bloom yet.

Eremurus stenophyllus from Sina.

I take a very short look around the tent, but I don't dare go far. The local children are swarming around our tent like flies. I can't write a diary either, because the "guests" have to touch and look at everything. As a result, in the evening, when we go to bed, we discover

that some canned meat is missing, and since we also generously shared chocolate during the day, we start to worry about whether we will have enough food. Well, we'll somehow make it through two days. The car will be there on the third morning; the rest of the food reserves are left in it. On way back we can also stop at a local *oshan* (canteen). The soup here is very filling and, if you also take bread and salad with you, you can eat quite well.

In the morning, we wake up early, the clock shows five. Right then, the sweetest sleep comes. I make tea, Arnis gets up too, and we have breakfast. Then we will take down the tent, because we have agreed with the management of the recreation camp that we will be able to leave our belongings in the warehouse for the day. We pack everything we can take with us into one backpack, put the rest in another and tie it up in a large bundle, and with quick steps I carry it all down to the entrance to the camp, where the administration building is located. Once again I am questioned about who I am, whether we have permission to be here, whether it has been coordinated with the district. They carefully examine my passport again, even try to scrape off the hologram from the Uzbek visa with their fingernail, rejoicing at how great the "stamp" is, and then they let me go. I quickly head back to Arnis, but I have set too fast a pace. After all, the camp is located in the valley of a rapid mountain river, and the climb up is quite steep. I am not yet sufficiently acclimatized, and I arrive at Arnis completely out of breath.

You can't take your breath away like that. That's why the first section of the route is difficult for me. The climb is also quite steep. We're going up by a short ridge, where higher you can see some remnants of a road. Later we found out that some ore had been found at 3300 m, a shaft had been created, machinery had been brought, a 10 km long road had been built all the way to the shaft itself, but then, realized that about the factory where this ore would be processed was forgotten. The shaft was filled in, and the road was abandoned. So, very prosaic, typically socialist, even though it all happened only three years ago. But for us, such a road is a blessing from God. The beginning is not easy. I'm out of breath all the time, but I get all my strength and only forward, albeit through gritted teeth, but forward. You must not change the pace. If I hadn't rushed with the first run in the morning, there wouldn't have been any problems. Apparently, the euphoria of the altitude is taking its toll, we have reached 2000 m altitude very quickly and we are not accommodated to it yet. Although the road has been washed away, worn away, and slipped down in many places over the years, it makes the climb much easier for us. In many places, there is only an easily visible, sloping path, trodden by the feet of cattle. The main thing is not to be afraid and just go forward confidently, without looking down. I quickly realize that the faster you cross these slips, the safer. The shorter the contact of your foot with the ground, the less chance that your foot will slip. In fact, you have to cross these dangerous sections at a half-run, as soon as your foot touches the ground, you have to immediately push off for the next

step, then you don't have time to slip down. You just have to carefully inspect the entire section first, roughly determining the stepping-off points, and then there are no problems. Later, I count – the road completely goes around 5 large side gorges, each of which seems to be the last. The first two are dry. In the third, a small spring with clean, clear water appears. I rinse my hands and face in it, but I don't drink it. I also pour a hat full of water and then put it on my head. It dries quickly in the hot sun, but it refreshes me quite well. Each subsequent side gorge becomes deeper and steeper, and in places the trail runs along completely vertical cliffs. The streams flowing at their bottom also become richer in water – the higher we climb, the closer we get to the snow, the closer we move to spring – a real time machine. It's scorching summer down below, winter still up above. In the next gorge the water is still clear, but here some amphibian has released its eggs, which are ghostly, swaying in a long ribbon, washed by the stream. It looks very spooky, and I don't particularly want to drink this water. But I have firmly decided not to take any water in my mouth until after lunch, that is, when we have reached the very top. Arnis does take a sip, although he himself whines about it, because drinking only increases thirst. If you hold on, after a while the thirst passes, and it's not so difficult to continue.

In the next (fifth in number) side gully, there is the most the water, but it is very fast, slightly turbid. I washed my hands, and every now and then a pebble would run into my hands. The most difficult places to pass are right in the middle of these side gullies – there, snowdrifts and spring waters have washed away the road the most, exposing the rocky bedrock, while the built road along the ridges has been well preserved. After the fifth side gully, the road begins to wind up in a serpentine pattern along the edge of the slope. The climb is still quite steep.

Iris nicolai from *locus classicus* (type locality) in Sina.

We have reached the arches and small roadside meadows when we see the first specimens of *Iris nicolai* and *I. stolonifera* from series *Regelia*. The latter is not a juno, but it

is very beautiful and, as the name suggests, forms mounds with stolons growing sideways. Arnis even found one flowering specimen. I push it into the rocks and try to take a picture. Arnis says that there will be more to come, there is no need to delay, but I cunningly seize the moment for a short rest, because in order to prepare the cameras, set the exposures, you have to sit down, calm your breathing and only then can you take a picture. So, using a little trick, I managed to rest for a few minutes. In fact, now I have already set a very optimal pace. I have been walking without stopping the whole time, except for short moments to rinse my hands and face, my breathing has also returned to normal, and I no longer feel tired.

Iris nicolai has long since bloomed, the seeds are almost ready. But the soil is very wet. There was rain just a few days ago. In general, this year in Central Asia is cool and very wet. The bulbs are large, ripe, with fat additional roots. Apparently, in the wild, they often receive additional water during the vegetation period, which is why both species grow relatively well even in the open garden in our conditions. We leave the collection of samples aside so as not to have to drag excess weight uphill. Now just go forward. Walking is comfortable. The road here is well preserved. There are already places where it is eroded and washed away, but they can be easily bypassed along magnificent cattle trails. Then we see a simply fantastic eremurus - with large, pink flowers, dense, very long spikes, bright green leaves. It is the brightness of the leaves that allows us to undoubtedly determine the species - it is *Eremurus aitchisonii* Baker ex Aitch.

Eremurus aitchisonii in Sina and below, in cultivation.

In between we also find a specimen of *Crocus korolkowii* Maw & Regel, as well as *Fessia puschkinioides* (Regel) Spetha.

Crocus korolkowii in Sina.

Fessia puschkinioides in Sina.

Suddenly the road disappears. A giant landslide has come from the very top, which has carried the entire path several hundred metres lower. However, cattle trails lead around the

landslide, although very steep, but still passable. Only now can we really appreciate what we have gained with this road. If we had to climb so steeply from the very bottom, we would hardly have reached our goal. We come out of the thicket of arches, and a wonderfully beautiful, relatively flat meadow with large groups of flowering *Iris stolonifera* opens up before our eyes. The most fantastic colour forms. I can only take pictures, Arnis, in turn, collects a sample of various colour forms - for himself, for me and for the Gothenburg Botanical Garden. [*Later I gave many of them a variety name, but afterwards, reducing my collection, I sent them all to America*.]

Iris stolonifera at Sina.









Various colour forms of *Iris stolonifera* from Sina.

We can't wait much longer. Arnis must definitely find a standard specimen of the *Iris parvula*. This group of irises, which unites several similar small species, is still very unexplored. Therefore – forward. Further, the path goes along the crest of a side ridge for a good distance. The climb becomes much flatter, and we move forward at a brisk pace. Suddenly I see a geranium. Judging by the leaves and the tuber, it is definitely a *Geranium charlesii*, but a unique dwarf form, although this could be explained by altitude where we are. In fact, the leaves are more coarsely lobed than the sample from Aman-Kutan, which already grows in my garden. But even more surprising is their colour – they are gray-green with very beautiful, bright purple-violet veins and dots. The density of the dots and stripes varies, but in any case, gives the plant a special charm. Could it be separated as a new subspecies or even a species? We will see in a year's time, when both forms will grow side by side in the garden.

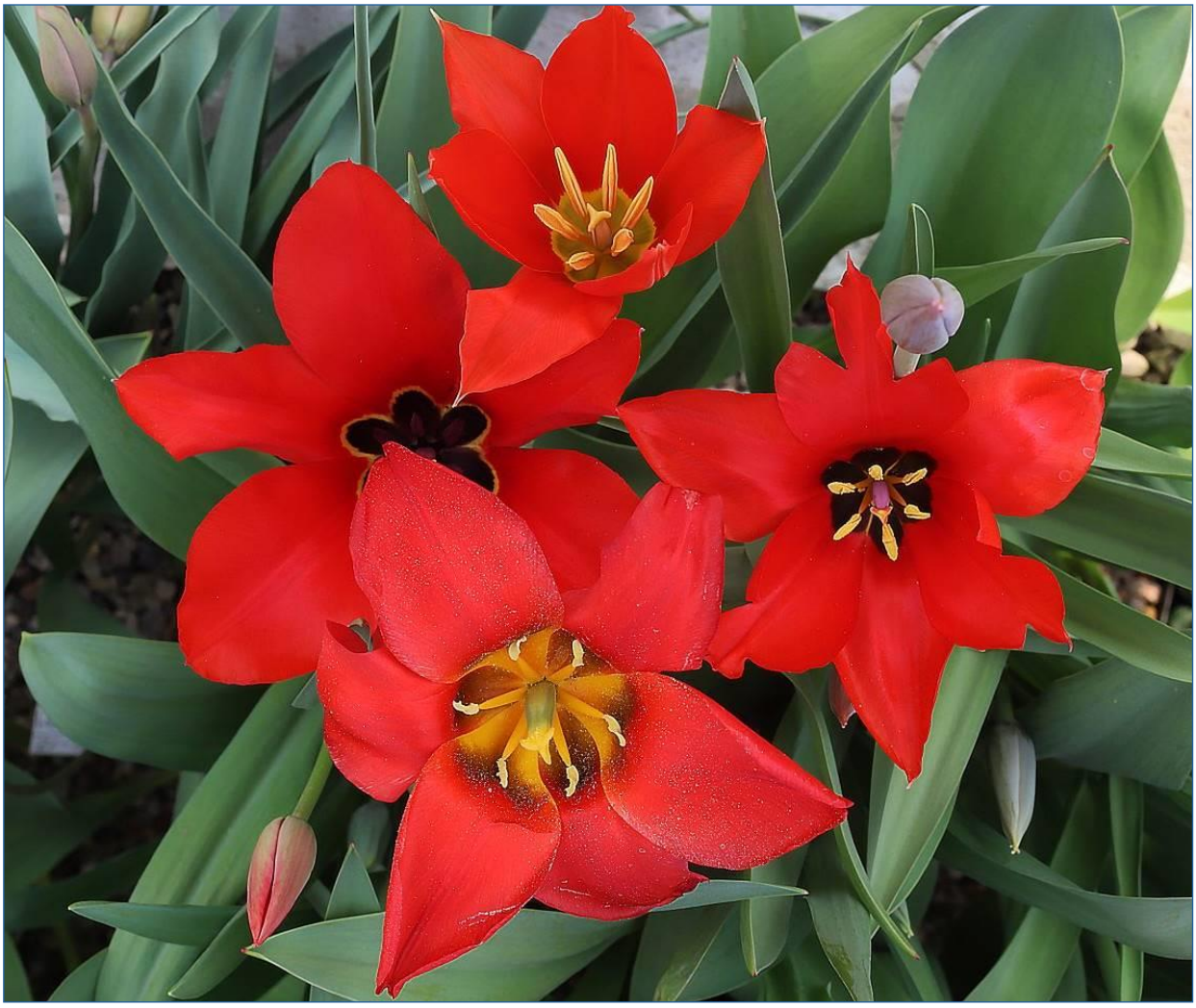
Right: *Geranium charlesii* subsp. *punctatum* in its habitat in Sina.
Below: Cultivated *Geranium charlesii* in full bloom.

In any case, I will not let this plant pass me by and I collect a specimen of it. It is everywhere along the slope, especially on left side of our pass. While I collect geraniums, Arnis climbs the rocks a few metres higher and shouts victory: – Yes, yes, *Iris parvula* found! In seed, but there must be flowering specimens higher up, – so assures Arnis.
We continue our walk up. The path is very easy, moderately steep. We walk easily and smoothly. Simply luxurious conditions.

Iris parvula at Sina.

And then we see the first tulips. Bright red, some distance below us, on the slope. This tulip has quite large flowers, the throat colour varies from yellow to black, the colour of the filaments also varies. It is *Tulipa carinata* Vved.

Tulipa carinata at Sina. *[Pictures from wild are from scanned old slides, so quality is not so perfect as author would prefer.]*



Tulipa carinata from Sina, in cultivation.

There are also specimens of the tiny *Iris parvula* blooming here - it is quite large here – about 20 cm tall. Overall, it is beautiful, although the flowers are tiny, they harmonize well with the delicate foliage and slender stature. [*Such a pity; it is not easy to keep in cultivation, and I lost my stock later.*]

Iris parvula from Sina, in cultivation.

Now the road goes along the other side of the ridge, and we have actually arrived at the next gorge. Here the road is in relatively good condition and up and up again. We come to a beautiful spring with a waterfall. We decide to have lunch there. We eat a Snickers bar, some nuts and raisins and refreshing with albeit slightly muddy, spring water. When we again start our ascent, after some 50-100 metres we come across a spring with crystal clear, ice-cold water. It is a pity that we did not see it before the meal. Interestingly - the higher we climb, the more *Iris parvula* plants that have propagated vegetatively, which creates a dilemma - which ones to collect - the high-altitude forms will reproduce better, but the bulbs below are much more mature, because they are already in summer, while it is still early spring up there.

Iris parvula habitat.

I walk forward and suddenly see a very beautiful flowering specimen of *I. vicaria*.

Iris vicaria at Sina highland.

The most interesting is this arrangement – *I. vicaria* at the bottom of our ascent, then a strip of *I. nicolai* comes, then *I. parvula* appears and then *I. vicaria* joins it again, although at the very top only *I. parvula* remains.

Then suddenly – what is it – a beautiful group of *I. vicaria*, but the leaves all have yellow stripes, then more and more – it seems to be a pronounced viral infection. Arnis tells me that out of the three bulbs of *Allium aflatunense* B.Fedtsch. collected by us in Kugart last year, two have shown a viral infection this spring.

Now we can see that we have climbed quite a bit higher. In many places the snow has just melted, and the yellow shoots of *Colchicum luteum* Baker are just starting to pop out of the ground, usually they are one of the first flowers after the snow melts.

Colchicum luteum at Sina.

We also find a very interesting tulip with small flowers and relatively wide, crinkled leaves. It is *Tulipa orithyioides* – a species of the subgen. *Eriostemones*, which is distinguished by its low stature and a stigma, which is distanced from the ovary by a long neck. Such a neck is characteristic of the genus *Oryithia*, hence the name – the *orithia-like* tulip. We have reached the end of the road.

Tulipa orithyioides at highest point reached by us.

Tulipa orithyioides in cultivation. Easy observable is the specific long “neck” between ovary and stigma.

We are glad that we practically do not feel tired, although we have climbed more than 1,500 metres during these hours. The last stage was relatively easy, the road safe, the climb very moderate. Only a slight headache indicates that we have exceeded the 3000 m

mark and confirms the difference in altitude made during the day. We have climbed about 10 km. Time to go back. In fact, everything important has been found.

Sina gorge shortly below highest point reached by us.

The return walk goes very smoothly. Having reached the backpack we left below, we eat some raisins and nuts again. Arnis has a ravenous appetite, I don't really want to eat. But the return journey is much longer than it seemed at first. Arnis is already starting to think that we will have passed the place where *Tulipa carinata* grows. But it's still a long way ahead. There we catch our breath and continue forward again. We see very interesting dandelions - with purple-violet leaves. I almost want to pick some - but there are plenty of weeds at home already growing. Later I regret that I didn't pick a sample after all. Then we notice the remains of a *Corydalis* leaf. At first, we think that it could be *Corydalis ruksansii* Liden, but later we conclude that it most likely is just *C. nudicaulis* Regel. We collect a few seeds and 3-4 tubers.

Corydalis nudicaulis found going down to our camp.

At the same time, a couple of perennial tubers roll out, and it can only be *C. ledebouriana* Kar. & Kir. A lot of it is growing here, too.

And forward again. Now the descent is steeper, and I'm starting to feel my legs a little, but I'm not particularly tired yet. Behind the mountains, in the nearby gorge, a storm is raging. I'm a little worried - will it reach us too, but the mountains still hold back the clouds. The clock is already going towards evening. We try to go down as quickly as possible, but already now the descent is very steep, and we immediately start to feel the calves of our legs. Arnis still shortens the path here and there, taking the ends of the straight serpentine bends. Finally, we reach the side gorges, where the path can no longer be shortened. Far, far, below, a camp is visible with people like tiny ants. Oh my god, what a long road ahead! Now comes five side gorges, each of these bends will take us much lower, but fatigue is also making itself felt. If in the morning I crossed the sloping landslides of the road without any worries, now my legs are shaking a little, and I try not to look down. I take one step after another carefully. But I don't feel comfortable. A couple of times my foot slips down a little, but Arnis dictates a fast pace. I remember our trip in Kugart when we searched for *Iris winkleri* Regel. True, none of these places can even be compared to Kugart – here it is a “promenade”! Finally, we reach the last gorge - it is the steepest. My legs are already hurting wildly; I almost have to groan.

Finally, we are at our camp place. I still have to go to the warehouse to get the tent and other things. It is seven o'clock. It turns out that we have to wait until the warehouse manager reads the *ramazan* (Muslim prayer). In the meantime, the director of the recreation camp is conducting another survey - who, from where, why, who gave permission, etc. Finally, at half past seven, I got our bag and tent. The path up with the tent and bags seems endlessly long. I walk up slowly, calmly. I am again accompanied by a whole group of children. They look at me like a museum exhibit. I feel very uncomfortable but finally, one of the adults berates them, and the children disappear. We quickly set up the tent, Arnis runs for water. I cook soup. The wind is so strong that we have to put up a screen so that the gas stove doesn't fall. The soup is just ready, although the potatoes are still a bit on the tough side, I put tea to boil in a large mug, and we start dinner.

The night passes restlessly, it's hard to sleep, my sides are pressing, I have to toss and turn all night. Towards morning, sleep finally takes over, but at six I wake up - shepherds are driving their cattle past to the mountain pastures. Although just now sleep is coming, I have to get up. We decide to split up, one stays to guard the tent, the other goes to the mountains. I go first. I plan to return around three, and then Arnis, in turn, will explore other places. I don't leave until around eight, first I rub my feet with special cream and take a couple of analgesic tablets. In fact, only the first steps are difficult, and they have to be

taken along the most difficult part - along the steep ridge to the remains of the mine road. The weather is hot, but I go with very light equipment. This time, I only have a pair of Snickers bars and a couple of handfuls of raisins and nuts in my photo bag, a plant bag and an icepick in my hands. Weather is warm, even hot. I take a very steady pace. One step every second. I calculate that my steps are only 60 cm long instead of my usual metre. And so, after an hour and 50 minutes, stopping only three times at each of the springs along the way to rinse my hands and face, as well as picking up the bag with juno seeds I forgot there yesterday at the third spring, I finally reached the place of the big slide, where the road passes into the cattle paths. I decide to relax for 15 minutes to normalize my breathing. I strictly adhere to my resolution not to drink water.

First, I descend a steep cliff to a huge specimen of *Eremurus aitchisonii*, seen already yesterday. Next to it are small seedlings, which I then collect. The roots are unusually thick, but bluntly short. So, it was very easy to collect some. Let it be a good grower. [*Later it turned out that at least in the greenhouse this species grows really well.*]

Eremurus aitchisonii growing well in cultivation.

Thunder begins to rumble above, which makes me hurry, because if it starts to rain, the path will get wet, and then the places where the slides are will be almost impassable or in any case will become much more dangerous. Under the trees I see the remains of funny leaves, so I decide that it is obviously a *Corydalis ledebouriana*, and besides, I am already quite tired, I do not even try to look at it closer. It turns out that this was a mistake. Later Arnis collects *Gymnospermium darwasicum* (Regel) Taht. here and then

mocks me for being blind. It is true, *C. ledebouriana* does not grow under such trees. [*This Gymnospermium has recently been given a new name – G. vitellinum M.Kral.*]

Gymnospermium vitellinum found at lower altitudes.

After collecting some *Iris nicolai* seeds I hurry down and catch the first drops of rain, but the most dangerous part is already passed. My mood has “slumped”; a kind of slight

depression has taken over. I don't know why, but I want to get home as soon as possible – even if it's just to the tent. Since so many juno irises have almost ripe seedpods, I decide to collect them, and soon a large paperbag is full. At the last spring I eat my daily Snickers dose and some dried apricots and then quickly walk down. All that remains is the last, steep, difficult descent to the tent. As I go down, my foot bends and strains my muscles, which is why my calves hurt a lot.

Arnis is already waiting at the camp. We eat nuts and raisins lightly, and Arnis is ready to go up the riverbed. There is a very beautiful waterfall there, and even higher up there are seven stone pillars, about which an ancient legend says that they are seven sisters, whom their parents decided to slaughter and eat during a famine (after all, the male here must survive). The girls overheard the conversation and seeking salvation, went to the mountains and asked them for help. Then the gods took pity on them and turned them into stone pillars. The locals told Arnis about this while I was in the mountains.

I'm guarding our tent from endless "attacks" by local children. We are an exotic interruption in their daily routine. I bring water and prepare everything for dinner – I peel potatoes, open last canned meat, cut onions, and, seeing Arnis coming down in the distance on the ridge of the mountain, I light a fire and put the soup to boil. Arnis says that on the other side of the ridge he found also *Eminium alberti* Engl., had seen *Allium rosenorum* R.M.Fritsch in wetter places, but it was surrounded by such steep cliffs that he could not get to it. While waiting for the soup, Arnis runs off to collect some more *Iris vicaria* seeds, but then the locals again disturb him, who are watching in amazement what these crazy people are doing here.

On way back we drive along the valley of the Pulkhakim River. Beautiful rock outcrops on the sides. We decide to stop. Arnis takes an icepick, I, the fool, just a camera. At first, it really seems like there is nothing here. I take pictures of some plants, including the very beautiful *Capparis herbacea* Willd. – with large, white flowers and wild thorns.

The locals use its fruits for delicious jam.

Capparis herbacea.

Then Arnis calls me that *Fritillaria karelinii* Baker is in full bloom here. I climb a little higher and see the first seed pods, although they have fallen to the ground. The rain has been so strong that it has washed away the stems, but the higher up the slope, the less water there is, and some remains are still left. I have never seen so many fritillaries of this group together, except for *Fritillaria bucharica* Regel in Khodzha Obigarm, Tajikistan, but even there the population density seems to have been lower. I can't help myself and try to dig up a bulb with my fingers (the car where my icepick left is so far down that I don't have the courage to climb down for it). The ground is so wet and soft that I miraculously manage to collect few.

In cultivation - *Fritillaria baisunensis.* *F. baisunensis* found on way back to Tashkent near Pulkhakim.

Then I notice a few exposed bulbs, the soil covering them has been washed away by the water currents, but the roots have still held the bulbs in place. I start walking along the slope, looking for just such specimens. It's a good thing that it rained just recently (most likely a day before) and the weather hasn't been too hot and sunny since then, so the sun hasn't had time to bake the bulbs. I also collect a lot of seeds.

[*After several years (in 2019) I described this frit as a new species – Fritillaria baisunensis* Rukšāns *well distinguishable from the related F. bucharica by its curled leaves and black anthers, although grown side by side in cultivation both can hybridize*.]

Iris narbutti from Baisuntau ridge.

Allium baissunense from Baisuntau ridge.

Tiny, but with large flowerhead – *Allium verticillatum* from Baisuntau near Shurab.

Allium gypsaceum from Baisuntau near Shurab.

Iris warleyensis from Tahta-Karacha (former Aman-Kutan) mountain pass.

An *Iris warleyensis* clump together with its albino mutation on Tahta-Karacha mountain pass.

A few more stops along the way back, where we collect several very interesting *Allium* species, *Iris narbuttii* O.Fedtsch. and then, before returning to Tashkent, we spend the night at the Takhta-Karacha (Aman-Kutan) mountain pass, where *Iris warleyensis* Foster grows, but that's another story.

***Puschkinia seisumsiana (Asparagaceae: Scilloideae)*, a new species from Eastern Turkey**

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Summary. A new *Puschkinia* species from Eastern Anatolia region of Turkey is described and illustrated; the differences between a new species and related *Puschkinia* species are discussed. Photographs, and distribution map are provided.

Key words: geophyte, *Puschkinia, Scilloideae* subfamily, Eastern Anatolia.

During the BATMAN expedition in 2004, our team stopped by side of a small road some 12 km to the west from Bingöl city in Eastern Turkey at *c.* 1300 m elevation. Henrik Zetterlund and Jānis Rukšāns explored its left side, while Arnis Seisums from the National Botanic Garden of Latvia took his boots off and crossed a small river (Osman Creek) on its right side. There were dense shrubs with cattle paths on either side of the road. Arnis returned with a few bulbs of an *Ornithogalum* L. *sp.* (it turned out to be a new species, not yet published) and a good number of seeds (an accession no. BATMAN-250), which he regarded as belonging to *Puschkinia* cf. *scilloides* Adams the only species officially recognised in the genus at that time.

When its seedlings grew up and bloomed in our collections for the first time, it happened that it was closer to *Puschkinia peshmenii* Rix & B.Mathew (published 3 years after BATMAN expedition) than to *P. scilloides*. Now in the trade that *Puschkinia sp*. from Bingöl vicinity is offered under the name of *P. peshmenii* 'Jim Archibald' and according to the seller's information, it was found for the first time during another earlier trip (already in 2003) by Stevens, Archibald & Seisums (an abbreviation – SASA expedition). Jim Archibald apparently showed great surprise at Arnis's interest in it at the time. It has gorgeous pure white flowers without any blue or greenish hue, except flower segments midribs and tube. At the base of the midribs of the buds as they are opening, is there a blue-green tint. The flowers were positioned on short pedicels, being campanulate, side-looking and less pendant, than in typical *P. peshmenii*. If not the differences in the staminal corolla structure, the longer flower tube and shorter free part of a perianth, we would regard them as more similar to our Iranian acc. no. 17IRS-048, growing further to the east, in Iranian Kurdistan, and later described by us as *P. advayana* Rukšāns & Zubov.

It is noteworthy that H. Yildirim cited the herbarium specimen [10-04-1998, *L. Behçet* 58829 (VANF 11247)] from the forest nearby the same locality we visited in 2004, but a little closer

to Bingöl, 10 km from it at 900 m elevation. The VANF 11247 specimen was determined and labelled just as *P. scilloides*, a species that is not common to that region. Although we didn't see that herbarium specimen, but according to the habitat (the forest) and locality where that sample was collected, we can assume that this is the same species of *Puschkinia* described by us here below. We decided that this *Puschkinia* is sufficiently different from above mentioned species (*PP. scilloides, advayana* and *peshmenii*) and deserves its own species name.

Taxonomic treatment

Puschkinia seisumsiana Rukšāns & Zubov ***sp. nov.***

Type: Turkey, Eastern Anatolia region, Bingöl Province: 12-13 km NWW from Bingöl, on roadside from Bingöl to Elaziğ behind small river/stream, at *c.* 1300 m elevation, 38.55 N; 40.22 E.[1], seeds leg. A. Seisums, 02 June 2004; cult. (specimen grown from seed in J. Rukšāns' garden, Latvia), *fl.* 04 Apr. 2024, *Rukšāns & Zubov* s.n. Holotype: RIG16512!

Bulb – dark greyish brown, elongated, up to 15 mm in diam. and 20 mm long; adventitious roots white, unbranched.

Leaves – 2, erect, canaliculate, soft green, at basal part turning light brownish purple, exceeds flowers at anthesis; basal leaf up to 28 cm long and 30 mm wide, gradually widening up to half of length then turns parallelly edged, at very top shortly narrowing to pointed tip, second leaf distinctly narrower, up to 18 mm wide, gradually widening up to half of length and then gradually narrowing to pointed tip, ending at ±the same level as bottom leaf.

Scape – 1, 18-25 cm long, ±erect, soft light green, at junction with pedicel and around bract narrowly diffusedly violet toned.

Pedicels – greyish-green or lilac tinted, at bottom flowers horizontal or slightly curved down up to 12 mm long, higher horizontal to up-turned, gradually shortening from 10 mm up to 5 mm at the very top; *bracts* white, bilobed, at junction with scape surrounded by narrow and diffused purplish violet zone.

Flowers – 10-15, *raceme* ±dense, 10-14(-18) mm long and 10-13 mm wide, narrowly campanulate, side-looking to subnodding.

Perianth segments – up to 18 mm long and 3-4 mm wide, fused in tube of *c.* 1/2 of length, soft creamy white with greenish midrib, sometimes cold white, then midrib bluish shaded; *staminal corolla* of the same colour, deeply divided almost to the base, each segment bilobed and shortly dentate at the top.

[1] At that time, we hadn't GPS tracker, so spots marked on attached map are approximate, distances are measured by our car's odometer driving by old road from Bingöl to Elaziğ.

Androecium – *stamens* 6; the bases of the stamens flattened and closely clustered in the ±middle of a perianth and connate to form a conical, white, 6-lobed staminal corolla, 3-4 mm long; corolla lobes (alternating with stamens) markedly dissected almost to the corolla base, irregularly and shortly dentate at the top; *filaments* obsolete, white, less 1 mm long; *anthers* epipetalous, adnate adaxially at the base of a staminal corolla and reach half the length of the corolla, subsessile, dorsifixed, versatile, introrse, ±ovoid, *c.* 2 mm long, straw-yellow; *pollen* straw-yellow.

Gynoecium (ovary and receptacle) – syncarpous, tricarpellate; *ovary* superior, sessile, rounded, indistinctly 3-ribbed, dark green, 3-4 mm in diam.; placentation axile, ovules several per locule; *style* shortened, erect, 2-3 mm long, light greenish-creamy-yellowish to white in upper part, at junction with ovary darker shaded, style slightly below or to the base of the anthers and staminal corolla; *stigma* small, white, capitate.

Fruit – a membranous, loculicidal *capsule*: 13-17 mm long and 9-11 mm in diam., ±subglobose, slightly 3-ribbed with a little beak at the top, straw green with persistent faded perianth and style.

Seeds – light brown, ±ovate, up to 3 mm in diam., with prominent raphe; *testa* minutely papillate. **Figs. 01-15**

Recognition – from morphologically similar *Puschkinia peshmenii* it differs by free part of a perianth of the same length as a perianth tube; the anthers adnate at the base of a staminal corolla and reach half the length of the corolla; the lobes of the staminal corolla shortly dentate in *P. seisumsiana* (*vs* free part of a perianth at least twice, usually 3 times longer than a perianth tube part; the anthers adnate at the base of a staminal corolla and reach 2/3 the length of the corolla; the lobes of the staminal corolla markedly attenuate, subulate in *P. peshmenii*).

From morphologically similar *P. advayana*, it differs by flowers ±side-looking at anthesis; the anthers adnate at the base of a staminal corolla and reach half the length of the corolla; style shortened, slightly below or to the base of the anthers and staminal corolla in *P. seisumsiana* (*vs* pendant flowers at anthesis; the anthers adnate at the base of a staminal corolla and almost equal in length or slightly shorter than a corolla; style elongated, ±equal to or slightly overpassing the anthers in *P. advayana*).

From morphologically similar *P. kurdistanica*, it differs by a scape ±erect; flowers ±side-looking on ±subnodding pedicels at anthesis; pedicel length – lower ones up to 12 mm, upper ones *c.* 5 mm; style shortened, 2-3 mm long, slightly below or to the base of the anthers and staminal corolla in *P. seisumsiana* (*vs* arcuate scape; flowers ±nodding on arcuate pedicels at anthesis; pedicel length – lower ones 30-40(-50+) mm, upper ones 7-10 mm; style obsolete, less 1 mm long, ±equal to half the length of the anthers in *P. kurdistanica*).

Distribution – Western Asia: Turkey, Eastern Taurus Mountains; possibly a local Doğu Anadolu endemic (**Map 1**).

Specimens examined – Turkey, Eastern Anatolia region, Bingöl Province: 12-13 km NWW from Bingöl, on roadside from Bingöl to Elaziğ, behind small river/stream, at *c.* 1300 m elevation, 38.55 N; 40.22 E.[2], seeds leg. A. Seisums, 02 June 2004; cult. (specimen grown from seed in J. Rukšāns' garden, Latvia), *fl.* 04 Apr. 2024, *Rukšāns & Zubov* s.n. (holotype: RIG!). The exact locality of *P. seisumsiana* has not been documented here for fear of unlawful plant collecting.

Habitat – on stony-hard clay soils, in shade under *Quercus* L. *sp.* forest, NWW from Bingöl, up to Kuruca Pass, at 1300-1800 m elevation; accompanied by *Allium cardiostemon* Fisch. & C.A.Mey., *Biarum carduchorum* Engl., *Ornithogalum* L. *sp.*; and below Kuruca Pass - with *A. shatakiense* Rech,f., *Bellevalia leucantha* K.Perss., *Colchicum* cf. *kotschyi* Boiss., *Crocus* cf. *pallasii* Goldb., *Fritillaria minuta* Boiss. & Noë, *Iris sari* Schott ex Baker, two different *Ornithogalum* spp.

Conservation status – the preliminary conservation status of *P. seisumsiana* was not assessed due to the insufficient data, but it could be informally evaluated between Vulnerable and Endangered by known number of its locations in the wild (**Map 1**).

Phenology – flowering in the wild: April; fruiting in the wild: May – early June.

Etymology – named after Dr Arnis Seisums from National Botanic Garden of Latvia, partner of many our expeditions to Balkans, Turkey and Iran. He always paid great attention not only to the genera *Allium* and *Iris*, which are his main subjects of research, but also to the genus *Puschkinia*, always emphasizing that several different, not yet recognized species are hidden under the names of *PP. scilloides* and *peshmenii*. He was the first who found the here described species in 2023 and brought our team to its type locality in 2024. Dr Seisums collected its seeds during BATMAN expedition in the Eastern Anatolia region of Turkey and shared between all participants of that expedition.

In cultivation *Puschkinia seisumsiana* does well in fertile, well-drained soil in full sun but tolerates also some shade. Must be kept dry in summer.

Fig. 01 - *Puschkinia seisumsiana* flower colour variability.

[2] At that time, we had no GPS tracker, so mentioned coordinates are approximate, distances are measured by our car's odometer driving by old road from Bingöl to Elaziğ.

Figs. 02, 03 - *Puschkinia seisumsiana*.

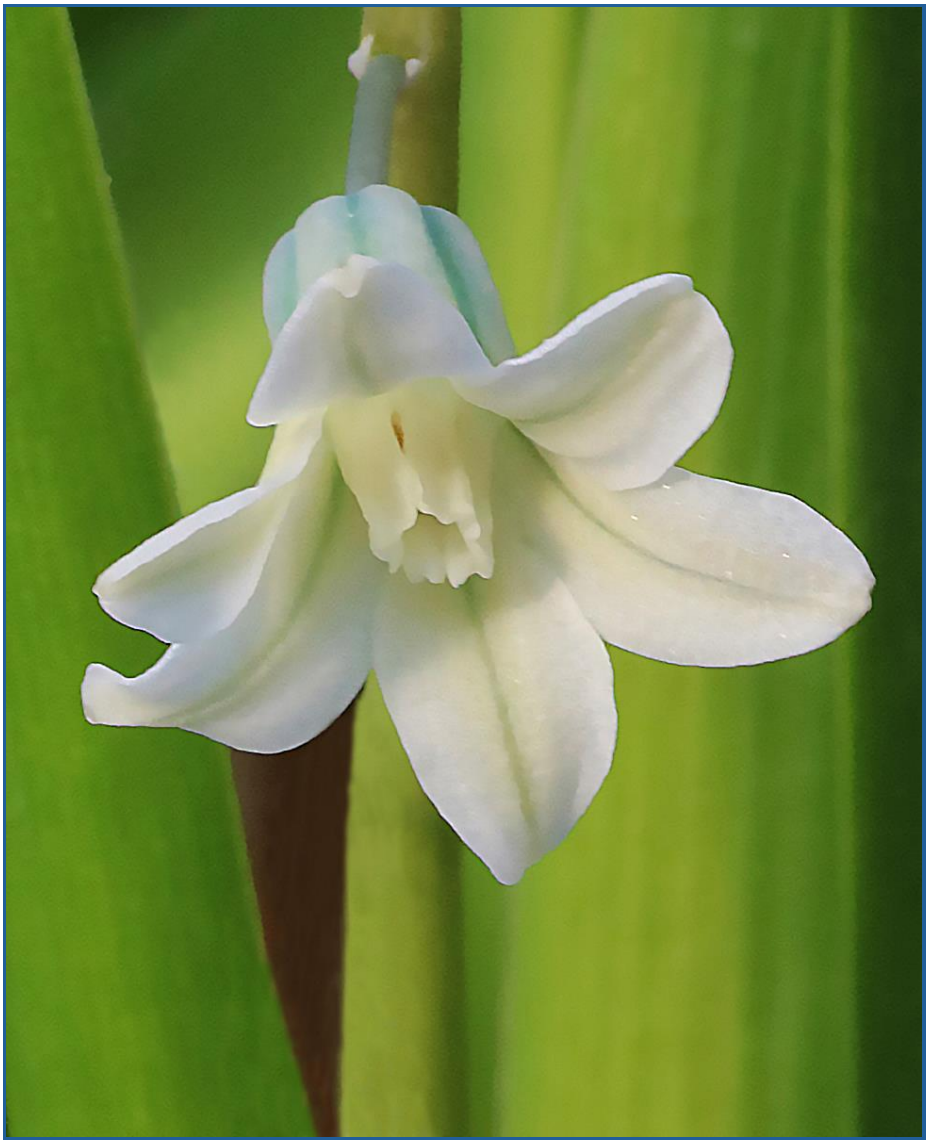
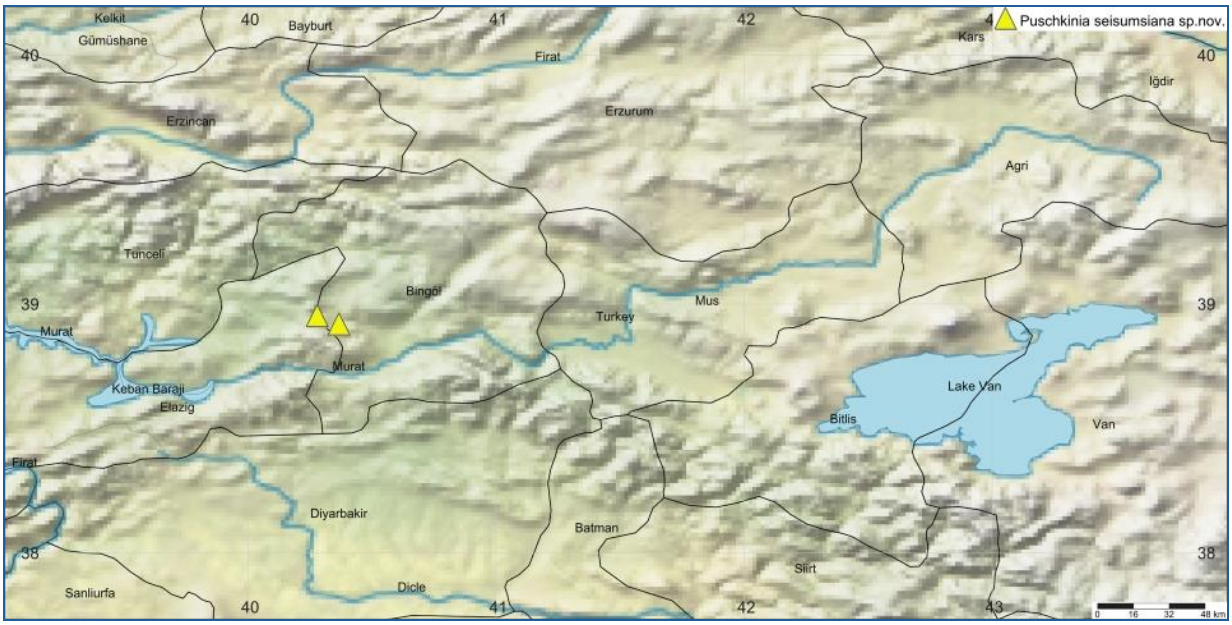


Fig. 04 - *Puschkinia seisumsiana* flower.

Fig. 05 Flower details of *Puschkinia seisumsiana*.

Figs.06 -07- 08 – Flower details of *Puschkinia seisumsiana*.

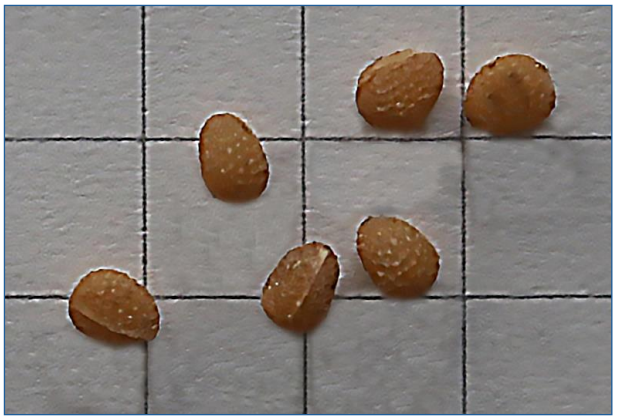
Fig.09 - Flower details of *Puschkinia seisumsiana*.



Map 1 – Distribution of *Puschkinia seisumsiana* sp.nov. in Eastern Anatolia, Turkey [retrieved from http://www.simplemappr.net. (Accessed 16 Feb. 2026)].

Thus, taking into account the newly discovered species from Eastern Anatolia, the current number of *Pushkinia* species for today is nine (Ciscaucasia, Caucasus, Transcaucasia, Taurus, Talysh, Alborz, Zagros, Armenian and Iranian Plateaus, Near East/Levant): *P. scilloides* Adams, *P. peshmenii* Rix & B.Mathew, *P. bilgineri* Yildirim, *P. kurdistanica*

Rukšāns, *P. avromanica* Rukšāns & Zubov, *P. latifolia* Rukšāns & Zubov, *P. parvula* Rukšāns & Zubov, *P. advayana* Rukšāns & Zubov, *and P. seisumsiana* Rukšāns & Zubov.



Figs. 10, 11 - *Puschkinia seisumsiana* seed capsules and seeds.

Figs. 12 A,B - *Puschkinia seisumsiana* bracts and pedicels.

Fig. 13 – Holotype specimen of *Puschkinia seisumsiana*.

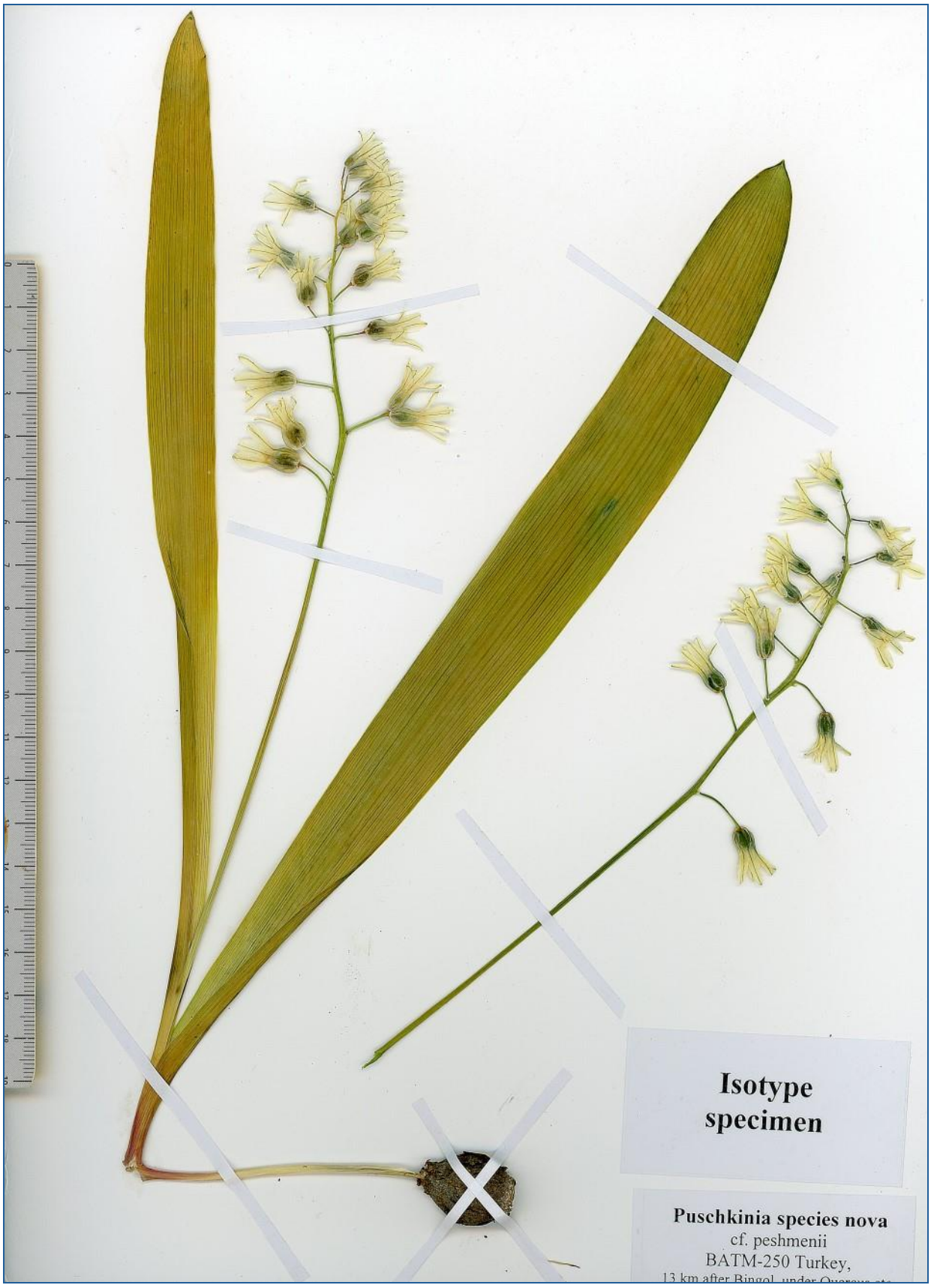


Fig. 14 – Isotype specimen of *Puschkinia seisumsiana*.

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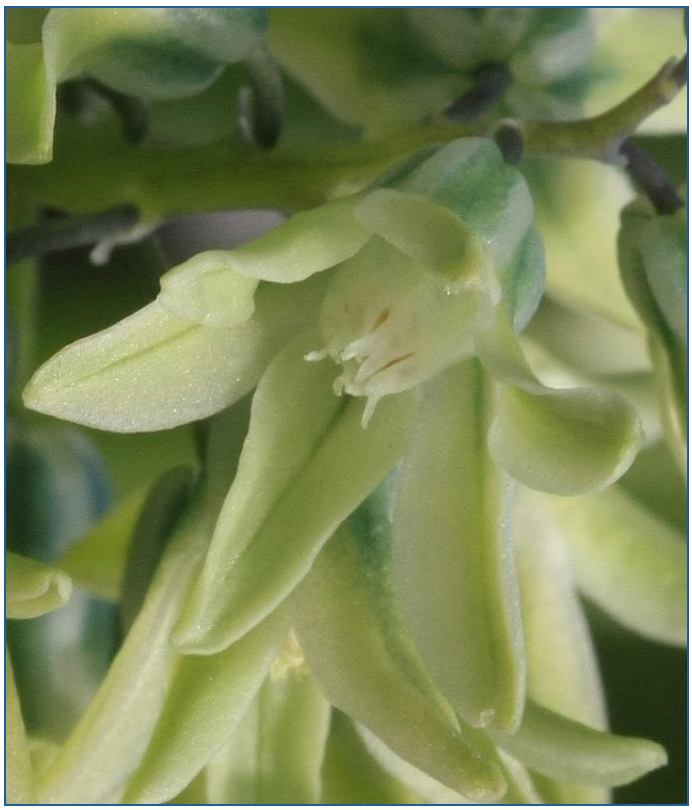
Fig. 15 – Flower scapes, left to right: *Puschkinia seisumsiana* BATM-*250, P. peshmenii* RIX 1926, and *P. advayana* 17IRS-48.



Figs. 16, 17 – *Puschkinia peshmenii,* Rix form – scape and flower.

Fig. 18 - *Puschkinia advayana* – scape

Fig. 19 – *Puschkinia advayana* –flower detail.

Fig. 20 – *Puschkinia kurdistanica*.

Left: Dimitri Zubov and Jānis Rukšāns.

Right: Arnis Seisums.