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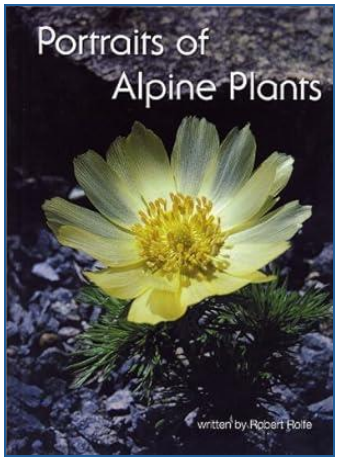
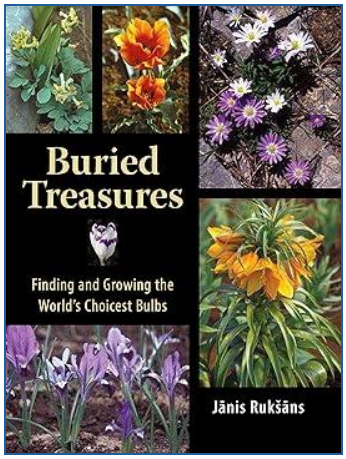
Whether the weather is high summer or chilly winter where you are – we hope that your plants are bringing your pleasure - in your gardens or on your travels. The UK continues with very warm weather and consequent hose-pipe bans for many – the gardeners' life is seldom simple!

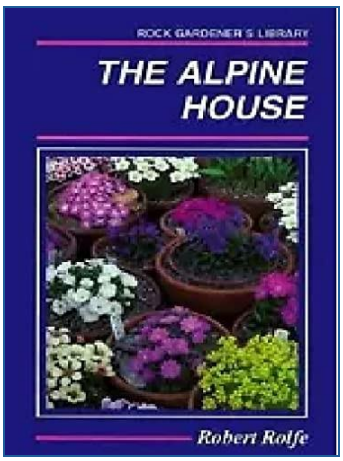
The International Rock Gardener e-magazine has two of the most recognisable authors in the Alpine Plant world today featuring on its pages. The first is that renaissance man, a fellow with a truly encyclopaedic knowledge about the alpine plants of the world, the Englishman, Robert Rolfe. Robert shares with us some investigations he has made on one of the most successful show plants in the United Kingdom, *Androsace villosa.* A plant which is seldom as magnificent in the hills as it appears on the Show Bench but which holds an enduring affection in the minds of many growers.

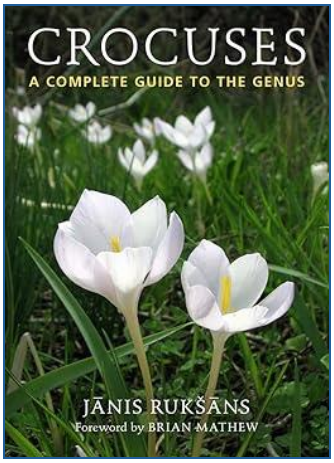
For our second article, we travel once more with the indefatigable Latvian, Jānis Rukšāns, to Iran. As he vowed in the past - only to change his mind - this time Jānis declares that this last trip is indeed his final trip to a country that he clearly finds as attractive as it is exasperating to him.

Some book covers from our two authors this month……




Robert has also shown plants with considerable success in the UK - The award for the best plant in a 19 cm pot at Hexham 2022 went to Robert Rolfe for a 20-year-old *Saxifraga x concinna* 'Ben Loyal' - a hybrid of the Caucasian *S. dinnikii* and the Himalayan *S. cinerea.* Image by George Young ex SRGC Forum.

Cover image: *Allium* species – image Jānis Rukšāns.

# ***Androsace villosa* in Europe and Turkey with observations on identifications in literature and cultivation - Robert Rolfe**

Far more extensively, albeit interruptedly distributed in Europe than any other member of the genus, *Androsace villosa* is the sole member of that cohort also found in the mountains of Turkey. Its taxonomy continues to confound. Very close affiliates such as *A. dasyphylla* (Central Asia, Mongolia), *A. incana* (the Altai east to China), *A. ovczinnikovii* (Central Asia to W. Mongolia/Siberia) and *A. sericea* in Central Asia fall outside this coverage and are not discussed. On the other hand, occurrences in the High Atlas of Morocco are referenced.

*Androsace villosa,* as typically represented in cultivation. Image by Jon Evans.

**A few ground rules**

1. Defining any form of *A. villosa* (even in part) by the way in which the eye of the flower turns first deep pink, this coloration soon tingeing a radius or all of the corolla, is unwise. It's the species' stock party trick. I can't claim to have overseen all the innumerable examples encountered through from breaking bud to maturity (usually taking up to ten days) but know this to be the true in the majority of cases. The pinking is pervasive in certain populations, and has even, tongue in cheek, been ascribed to mineral influence triggered by the local substrate.

2. Mindful of the maxim that there are more questions than answers, when it comes to *A. villosa*, there are more subcategories than can be ascribed with confidence. It's not just that some populations are far from homogenous, nor that originally defined geographical limits have been overridden. Difficult enough to categorise some examples of known provenance; a guessing game at other times. Taking *A. barbulata*, this is given as a distinct species (*Plants of the World Online*), a synonym of the non-Caucasian *A. villosa* subsp. *kozo-poljanskii* Ovcz. (www.gbif.org) and a synonym of *A. villosa* sensu lato (Vojtěch Holubec and Pavel Křivka's meticulously researched *The Caucasus and its Flowers*).
3. Standard accounts aren't infallible and have in part been superseded. In Smith & Lowe's 1997 monograph *The genus Androsace*, the distribution of *A. villosa* is said to include the southern Spanish Sierra Nevada. Yet there aren't any such records from those mountains, witness *Flora Ibérica*, where *A. argentea* (= *A. vandelli*), *A. maxima* and yellow *A. vitaliana* subsp. *assoana* (*Vitaliana primuliflora* to diehards) are listed. Similarly, ascribing Turkish var. *congesta* to *A. dasyphylla* is now rejected.
4. The relevant description in *Flora Europaea* (vol. 3) is provided at this juncture, with a couple of minor amendments, to serve as a benchmark.

"Like *A. chamaejasme* but usually more densely caespitose, with numerous cushion-forming rosettes; leaves in hemispherical rosettes, more or less densely villous, at least near the apex. Rocks and screes, calcicole. Mountains of south and central Europe, from the Swiss Jura and E Carpathians to NW Spain, C. Italy, C Greece [predominantly N], Krym [Crimea]; also at low altitude in SE Russia [sic. SW] and E Ukraine. Plants from SE Europe and Italy are usually more densely villous and tend to have shorter scapes; they have been described as *A. arachnoidea* Schott, Nyman & Kotschy (1854) but probably only deserve varietal status."

5. In cultivation, where field notes have been retained or collectors' numbers kept, these can be more instructive than shifting taxonomic decisions. When the country of origin, the precise locality and altitude are cross-matched with the geographical limits defined for a given taxon, conjectural identities are frequently at odds. Such source details are routinely available for accessions grown in botanical gardens. As an example, accessing https://www.rbge.org.uk/collections/online-resources/ enables you to search the Living Collection Catalogue for the Royal Botanic Garden Edinburgh. At the time of writing (July 2025), a 1983 introduction from Kazbegi, NE Georgia is maintained, along with a 2009 follow-up, and a further 2013 sampling from the Karachayevo-Circassian (Karachay-Cherkessia) Republic.

6. When it comes to plants in commerce and private collections, such information might not be available. Many will have been propagated vegetatively rather than from seed. Smith & Lowe observe: 'All varieties are reluctant to form seed; in fact, in some years there is none set at all'. Growing just one representative of *A. villosa* is a likely factor: obtaining other stock to facilitate cross-pollination is worth trying.

When the foliage is obscured by the mass of flowers, identification can be problematic (this is subsp. *taurica* as represented in gardens).

**Geographical range, including several encounters of the first-hand kind**

My most recent witnessing of *Androsace villosa* en masse was in the Picos de Europa, at c. 1,150-1,300m, immediately north and east of the parador at Fuente Dé, back in mid-May 2025. Here occurred several times a juxtaposition that took me by complete surprise – *A. villosa* and *Ophrys fusca*, an orchid I'd last seen low down in Crete (albeit dubiously differentiated there as O. *creticola* by some). All around, in northernmost Spain, *Scilla verna* was in late flower, as was *Glandora* (*Lithodora*) *diffusa*, occasionally so reduced that it formed part of the sparse turf, as dwarf as the androsace, whose small clumps were seldom over 5cm in diameter. Typical associates included the astonishingly abundant *Teucrium pyrenaicum* (not yet in flower), *Helianthemum oelandicum* subsp. *piloselloides*, frequent massed groupings of *Orchis mascula*

and occasional *O. anthropophora*. Other combinations involved *Ranunculus gramineus* (much dwarfer than in gardens and seldom clump-forming), *Iberis carnosa* and the local trumpet gentian, *Gentiana occidentalis*.

*Ophrys fusca* and *Androsace villosa,* Fuente Dé, Picos de Europa.

In all likelihood this isn't quite the westernmost extent of the species' range. That standing should surely be claimed instead by Morocco. Substantiating this is impeded by a paucity of records from there. I've traced just three. The oldest is a specimen dated 1931, in the French National Herbarium, the holotype labelled *A. villosa* var. *subexscapa* Emb. & Maire*. It's from steep, rocky slopes near the summit of a mountain given as 'Glab', which I can't trace. René Maire wrote the seminal *Flore de l'Afrique du Nord* (1952); Louis Emberger (1897-1969) was a fellow French botanist/ phytogeographer. After that, in 1952, also in the High Atlas, a record from Jebel Rhat; Tizi n' Ferdi, at 3,000m, (nearest city Quarzazate, from where the main road to Marrakesh crosses the mountain pass Tizi n'Tichka, altitude 2,205m). Then, in July 1965, north-east of Tichout n' Saïd Ou Hadi, nearest city Khénifra; a record at 3,500m, the highest in this survey.

* Deemed nowadays a synonym of subsp. *villosa*.

*Glandora (Lithodora) diffusa* and *Androsace villosa*, Fuente Dé, Picos de Europa.

*Galium pyrenaicum* and *Androsace villosa* above Nuria, Spanish Pyrenees.

There are numerous occurrences in the Pyrenees, both sides of the Spanish/French border. *Flora Ibérica* gives an altitude range of 800-2,780m, stipulating plants (in flower) up to 10cm tall, their corollas 8-9mm in diameter. I've seen it above Nuria, nestling among creamy-white, *Asperula*-like *Galium pyrenaicum*, *Helianthemum oelandicum* and intensely dwarf *Daphne cneorum* in all shades from pale to raspberry pink, unusually on the fringes of pine woodland. *A. villosa* is also present to the south-east, not far from Zaragoza, atop Sistema Ibérico, its highest peak Moncayo (2,316m).

Further east from these mountains, due to lack of suitable terrain there is a distributional break through to the Vaud Jura, where (taking one example) its presence on the 1,677m summit of La Dôle is noteworthy insofar as that here it looks down from afar across the south-western extent of the lake to the city of Geneva. I know of only one other such proximate urban/androsace juxtaposition, in Montana, where the crest of Waterworks Hill (1,037m) is in favoured years reputed to glow pink between late March and early May with blooming *Androsace* (*Douglasia*) *montana*, visible from the nearby town of Missoula, population c. 78,000.

*A. villosa* is absent from large parts of the western and central Alps, but has substantial more southerly outliers, from the Maritimes to stations much further east and beyond. For example, it is abundant in parts of the Abruzzo (east central Italy) up to around 2,400m. Seldom mentioned are its scattered occurrences in Greece, as far down as Ossa, further north in the Pindhos (Gramos) and across to Falakron, close to the border with Bulgaria, where Harry Jans photographed it at 1,900m in May 2010.

*Androsace villosa* on Falakron, NE Greece. Image by Harry Jans.

In *Mountain flora of Greece*, vol. 1 (1986), Strid observes: 'All Greek plants are rather densely villous and have short scapes [at most 2cm]'. The altitude range is given as 1,800-2,300m, the time of flowering from the end of May to late July. Those Italian populations just mentioned are also characterised by their pronouncedly silver-grey cocooned rosettes, which Smith & Lowe (op. cit.) ascribe to the 'infrequent and random' var. *arachnoidea*, for all that this is strictly speaking native only to the eastern Carpathians (Romania, Ukraine), at least according to present orthodoxy. Further discussion follows shortly.

From there, for my skewed purposes, an almighty leap across to NW Turkey, where in mid-June 1992, on Ulu Dağ at c. 2,200m, I found an absolutely uniform colony of a variant that in flower and miniature habit (though not foliage, choice of habitat nor geography) looked at first glance like a liberal scattering of small *A. argentea* (*vandellii*) cushions. These nestled in a silver-felted, flat to the ground quilting of the intensely dwarf, straw yellow-flowered *Astragalus hirsutus*. It's from this mountain, once referred to as the Bythnian Olympus, that Boissier described *Androsace olympica*, nowadays equated with *A. villosa* var. *congesta*. Attributing the population to this seems logical. Should the comparison with an Aretian androsace seem far-fetched, I'm in good company. In *Mountain Flower Holidays in Europe* (1979), Lionel Bacon wrote of scrambling on the 'steep shales' of the Albula Pass in the Swiss Engadine, where '*Androsace villosa*… becomes progressively more compact and cushion-like, and seems almost to grade into *A. helvetica* in the rock faces above'.

*Androsace villosa* var. *congesta* with *Astragalus hirsutus*, Ulu Dağ, NW Turkey.

If *A. villosa* var. *congesta* is infrequent in cultivation, it's not for want of trying. Under the guise *A. congesta*, in Vojtěch Holubec's 1997 seed list this was described as 'The smallest form of the *A. villosa* group. Miniature hairy rosettes forming small cushions 2 x 6cm… sessile flowers.' Four other samplings were offered, including from Ulu Dağ. It's noteworthy that the habitat on Erciyes Dağ at 2,700m was 'fine volcanic scree': *A. villosa* is typically a calcicole. Compliant collections were made on Ala Dağ ('fine limestone scree', 2,300m) and 60 miles away, Bolkar Dağ at 2,900m, only a little higher than *Veronica bombycina* subsp. *bolkardaghensis*, upgraded to the rank of species (viz. *V. bolkardaghensis*) in 2022.

*Androsace villosa* var. *congesta,* Ulu Dağ, NW Turkey (note foliage to the right of the image).

**The present state of play**

In *Plants of the World Online*, *A. villosa* has five infraspecifics (*A. barbulata* is treated separately, as a species, endorsing Ovczinnikov's 1952 description):

var. *arachnoidea* (Schott, Nyman & Kotschy) R Knuth

var. *congesta* Boiss.

subsp. *koso-poljanskii* (Ovcz.) Fed.

subsp. *taurica* (Ovcz.) Fed.

subsp. *villosa*, by far the most widely-distributed taxon, from Europe to Mongolia and the NW Himalaya (Pakistan etc). Some of the seventeen synonyms are easy to accept, such as *A. globifera* Schur 1866, invalidated by the choice of that same epithet 22 years earlier for the Himalayan native. However, the incorporation of *Androsace glabrata* (Trautv.) Hand.-Mazz. in *Notes Roy. Bot. Gard. Edinburgh* 15: 280 (1927) is singularly unfortunate, for reasons stated further on in this account.

***Androsace barbulata***, found throughout the Caucasus, has in my estimation been over-promoted and would be better treated as at most a subspecies. Barbulate is an alternative spelling of barbellate, signifying 'a covering of fine barbs, spines or thorns.' The barbs (hairs) are the diagnostic reason for its separation, though Smith & Lowe note another telling characteristic, 'the formation of underground runners which root and form new plants a few centimetres from the parent.'

*Androsace barbulata* from a seed collection made in the Caucasus, taxonomic status questionable.

A Gothenburg Botanical Garden collection grown at Edinburgh RBG received an RHS Preliminary Commendation in April 1989. I haven't the collection details for this but other

records available are largely from the western Caucasus, several from Mt Fischt in the Republic of Adygea, almost to the 2,850m summit, a 1996 Holubec collection made at 1,900m, the plants (typically growing in limestone crevices), 'forming larger, soft, open mats 3cm high, up to 15cm wide.' Herbarium material at Chicago Botanic Garden represents a sampling made by the 2000 Midwest Plant Collecting Collaborative Plant Exploration Trip to the Republic of Georgia, made in the Algeti National Park, under 40 miles west of Tbilisi. There, at 1,800m, it was found in cattle-grazed meadows just above the tree line in association with an unspecified *Potentilla*, *Muscari armeniacum* and *Veronica gentianoides*.

***Androsace caduca*** has just a toehold in this survey, based on its SE Turkish extremities. From there, I'm aware of a 1993 seed introduction by Josef Jurášek: 'Baskale Dağ, 3,100m, limestone summit scree. Dense, hairy mounds, rosettes to 8mm across… Plant similar to *A. villosa*'. This lies in Van Province. That same year his fellow Czech Vojtěch Holubec harvested seed at 2,600m, on limestone scree, observing that the small mats were on average 6cm across, with disproportionately large flowers. Around this time, seed was also offered from Tajikistan (the species' range extends east to adjacent Uzbekistan and Afghanistan). The flowers are sometimes more or less sessile, at other times held on 2cm stems in umbels comprising up to nine individuals (more than in *A. villosa*, where the headcount is (1) 3-7). When ripe, the flowerheads part company with their moorings (caducous = easily detached) and are dispersed by the wind in the manner of (for example) dryland alliums such as *A. akaka*. This quirk aside, I cannot fathom why it isn't treated as a subspecies of *A. villosa*. This ranking, dismissed as old hat in some quarters, is a useful notifier of indicative allegiances.

***Androsace v.* var. *arachnoidea*** was described from the eastern Carpathians (Romania, Ukraine) but the name has since been applied to similar selections from the Karawanken (Austria, Slovenia), the Pirin Mts (Bulgaria) and possibly the Apennines (Italy). Latterday introductions by Czech seed collectors have focused on the Pirin peak Orelek (Orelyak in some versions) at 1,900-2,000m but also up to 2,200m in the same mountains, witness a 1992 offering by Josef Jurášek, his description specifying 'sunny marble screes… silver woolly rosettes 1-2cm across… stems 1-5cm, 3-7 flowers in small umbels.'

The example illustrated here, from a photograph taken in 2013, is of what was once sold as 'Superba', the flowers larger than usual and the petals so broad that they slightly overlap.** This was a speciality of onetime Gloucestershire nursery Broadwell Alpines. The proprietor, Joe Elliott, raised his stock exclusively from cuttings. I clearly remember seeing wide, shallow

clay pans filled with regimented single rosettes, placed in shade behind wooden cold frames. A run of the nursery's catalogues throughout the 1970s up to the last, in 1985, when the nursery closed, confirms that while he included others of the genus, *A villosa* subsp. *taurica* among them, in the seed list at the end of each one, 'Superba' never once appeared in these. For these reasons, I consider that his 'Superba' was clonal.

*Androsace villosa* var. *arachnoidea*, a plant exhibited by Eric Jarrett in 2013.**

The 1971 catalogue has the following listing: '*Androsace arachnoidea superba* [= *A. villosa* var. *arachnoidea* 'Superba'] The neat half-inch rosettes, greyish and furry, are hidden in spring under a mass of snowy flowers on inch-high stems. Each bloom opens with a small yellow eye which turns to crimson after a few days. A choice and bewitching plant which given sun and good drainage grows and flowers willingly in scree, trough garden or alpine house. 5 for £1.10, 24p each.' The same catalogue has *A. villosa* as a separate entry ('Close tufts of downy leaves and inch-high stems each bearing 6-8 snow white flowers', while by 1975 a third version of *A. villosa* was added, (subsp.) *taurica*, received from E B Anderson. Broadwell regularly listed 'Superba' in the 1970s, just once after that, in 1985 (when *A. mathildae* was also offered. Where could you source either nowadays?)

Ron Beeston exchanged plants with Joe Elliott and both *A. villosa* var. *arachnoidea* and *A. mathildae* are in his March 1998 Bevere list. The previous year, Smith & Lowe wrote confidently that var. *arachnoidea* was 'easily the most widely cultivated' variant, 'frequently seen at flower shows.' That no longer holds true.

** The example illustrated can be traced back to Peter Abery, late of Sittingbourne Kent, who I remember as an expert exponent of micropropagating challenging alpine plants, starting in the early 1980s. Friendly with George Smith, he and his wife Jill joined George on trips to the Himalayas. Smith studied androsaces whenever, wherever he could, making various visits to Europe in addition to his celebrated Nepalese and Chinese ventures. While it's only conjecture, George might be the source of this outstanding selection, still in cultivation despite setbacks (it's a martyr to red spider mite and the plant once wasted away to just a handful of rosettes). This stock, vegetatively propagated, was given to Eric Jarrett by Les Cheeseman, also at the time living in Sittingbourne, who nurtured a specimen, at its apogee (around 2005) occupying a 30cm clay pot, thrown by its owner. See also under subsp. *taurica* for mention of a separate George Smith introduction.

***Androsace v.* var. *congesta*** is from Turkey, extending in some accounts into the Caucasus and NW Iran. Further consideration of its western Turkish occurrences can be found at the end of the previous subheader chapter.

***Androsace v.* var. *glabrata* Trautv.**, described in 1876, was elevated to species rank in 1927 by Handel-Mazzetti. It is presently subsumed within subsp. *villosa*. Puzzling, for plants matched with var. *glabrata* from NE Turkey and parts of Armenia look markedly different from any others, except to observe that in 1993, the taxon subsp. *palandokenensis* was proposed by Holubec and Jurášek in 1993 for representatives from Palandöken Dağ, Erzurum Province at c. 2,800-3,100m. Jurášek's seed list of that year includes the information: 'Igneous rocks and limestones. Dwarf mounds 10cm across, green, slightly hairy rosettes 7-10mm across, flowers sessile, solitary, 5mm across… petals abruptly spathulate.' Fellow traveller Holubec's account from the same year is along very similar lines: 'Differs in [its] larger, green, only sparsely hairy cushions, 6-12 x 2cm'. This and var. *glabrata* are one and the same, which I hope someone will publish as subspecies *glabrata*, or else rehabilitate Handel-Mazzetti's decision. That said, I've to hand a 2001-2002 list that keeps them separate, with var. *glabrata* from nearby Kop Geçidi at 2,950m, not the Palandöken.

*Androsace villosa* (*A. glabrata* in some accounts) with *Alyssum lepidotum* on the Palandöken. Image by Dieter Zschummel.

An emphatically non-villose form of *Androsace villosa*, referable to what has been described as *A. glabrata.* Image by Dieter Zschummel.

***Androsace v.* subsp. *koso-poljanskii* Ovcz**. The spelling *kosopolianskyi* is sometimes seen but the hyphenated specific epithet is correct, referencing Boris Koso-Poljansky (1890-1957), a botanist and professor born in Turkmenistan, his name included in the title of the botanical garden at Voronezh, part of that Russian city's university (VSU). Cultivated plants identified as such should be treated with suspicion: I've traced just one authenticated, 2006 seed collection from Voronezh. Pooling descriptions from the 1988 *Red Data Book of the Russian Federation (plants)* and *Ornamental Plants from Russia eFloras.org*, I deduce it is considered distinct in its rather blunt, less pubescent, firm, lanceolate leaves with a prominent lower midrib the outer ones 5-6 (7) x 1-2mm, strongly tapering towards the base, and margined with silky-white indumentum, the inflorescences 3-7 numerous on stems 2-9cm tall, mainly from May to June but for several weeks in April in southern stations. Recorded from central, north-west and southern European Russia, it should also be recognised from Ukraine, with records from the Kharkiv region (max. altitude 215m) and the upper reaches of river Seversky Donets, these substantially Ukrainian (max. altitude 367m)**.**

Astonishingly, the dramatically low altitudes at which it occurs have been scarcely remarked upon. In the Russian Federation, whether you interrogate records from near Voronezh (at most 206m), Kursk (265m) or Belgorod (227m), these are well below the 800m lower occurrences recorded for *A. villosa* anywhere else. It's tempting to consider these isolated, lowland populations ecotypical, represented by local populations separated from one another but congruent, favouring the slopes and crests of chalk hills and steppe, the grassland often sparse. A detailed study by Snegin, E A, Snegina, E.A. & Novomlinskaya, T.A. 'The genetic structure of populations of the specially protected *Androsace kozo-poljanskyi* Ovsz. species under the conditions of the Southern Central Russian upland based on DNA markers', *Russ J Genet Appl Res* 7, 617–625 (2017) is instructive – a couple of spelling inconsistencies are overlooked to facilitate its download.

***Androsace v.* subsp. *taurica***, now treated as subsp. *taurica*, is strictly speaking only from Crimea (Krym). The mountains east and north-east of Sevastopol, mainly limestone but with volcanic intrusions occasioning areas of marble, entice with their dramatic landscapes of caves and canyons, rock pillars and karstic panoramas. Located in the far south of the country, in places they rear dramatically from the Black Sea to a height of 1,545m (Roman-Kosh), their seaward flanks substantially defining the coastline for some 110 miles. Seventeen others exceed 1,500m, while Ai-Petri (1,234m) is served by cable car. However, before making travel plans, if you have a British or North American passport, travelling there is nigh impossible (and in all probability illegal) at present.

A George Smith introduction, GFS 73, has also been ascribed to subspecies (var.) *taurica*. It's true that the surviving, indeed thriving clone has 'firmer, narrower leaves which are acute' (Smith & Lowe). But this is from SW Bulgaria's Pirin Mts, 700 miles west of Crimea. Remarkable that such individuals can live for decades, one veteran in British cultivation now in its fourth decade. I doubt that any others can rival this.

*Androsace villosa* from a George Smith introduction (Pirin Mts, Bulgaria) ascribed to subsp. *taurica*.

Even so, occasionally I've witnessed spectacular examples of *A. villosa* sensu lato raised from wild-sourced seed, far longer-lived and more opulent than their parent, some over 30cm in diameter and astonishingly floriferous, the like of which I've not witnessed anywhere in the species' native haunts. Neither of those illustrated here had its precise provenance declared but one is certainly from a Dieter Zschummel wild collection. Dieter advises that given the date (2019), this is in all probability from the Romanian Carpathians (Bucegi, Ciucaş Peak, Hăşmaş or Piatra Craiului), if not then the Pirin Mts (Bulgaria).

***Androsace azizsancarii*** Sefali, described in 2021 from Bayburt Province, NE Anatolia, is included in conclusion, given its suggested affinities with *A. albana*, *A. multiscapa* and most significantly, for present purposes, *A. villosa*. It differs most obviously from the last-named in

its larger (to 4cm), often single or few grouped rosettes, the leaves commensurately larger (to 20 x 4mm, compared with 2-9 x 1-2mm) and the campanulate corollas, sugar pink at all stages and akin to N American *A. laevigata* (those of *A. villosa* always white initially and rotate). Named for Prof Dr Aziz Sancar, Nobel Laureate in Chemistry (2015), it has a narrow altitudinal range, as presently known, in moraine at 2,820-2,835m, perhaps explaining why its presence, close to the easily accessible Soğanli Pass, south of Ikizdere has until recently been overlooked.

A twenty-year-old *Androsace villosa*, raised from a Dieter Zschummel gathering, probably made in the Romanian Carpathians.

**Suggestions**

The present status quo, as given in *Plants of the World Online*, is inconsistent. I advocate:

species *barbulata*: at most consider as a subspecies or else refer to subsp. *villosa*

species *caduca*: better treated as subsp. *caduca*

subsp. *koso-poljanskyi*: maintain

subsp. *taurica*: maintain

var. *arachnoidea*: maintain

var. *congesta*: upgrade to subsp. *congesta*

*glabrata* (several versions, incorporating subsp. *palandokenensis*): treat as subsp. *glabrata*

*Androsace villosa*, forming a mat whose dimensions are seldom equalled in wild specimens.

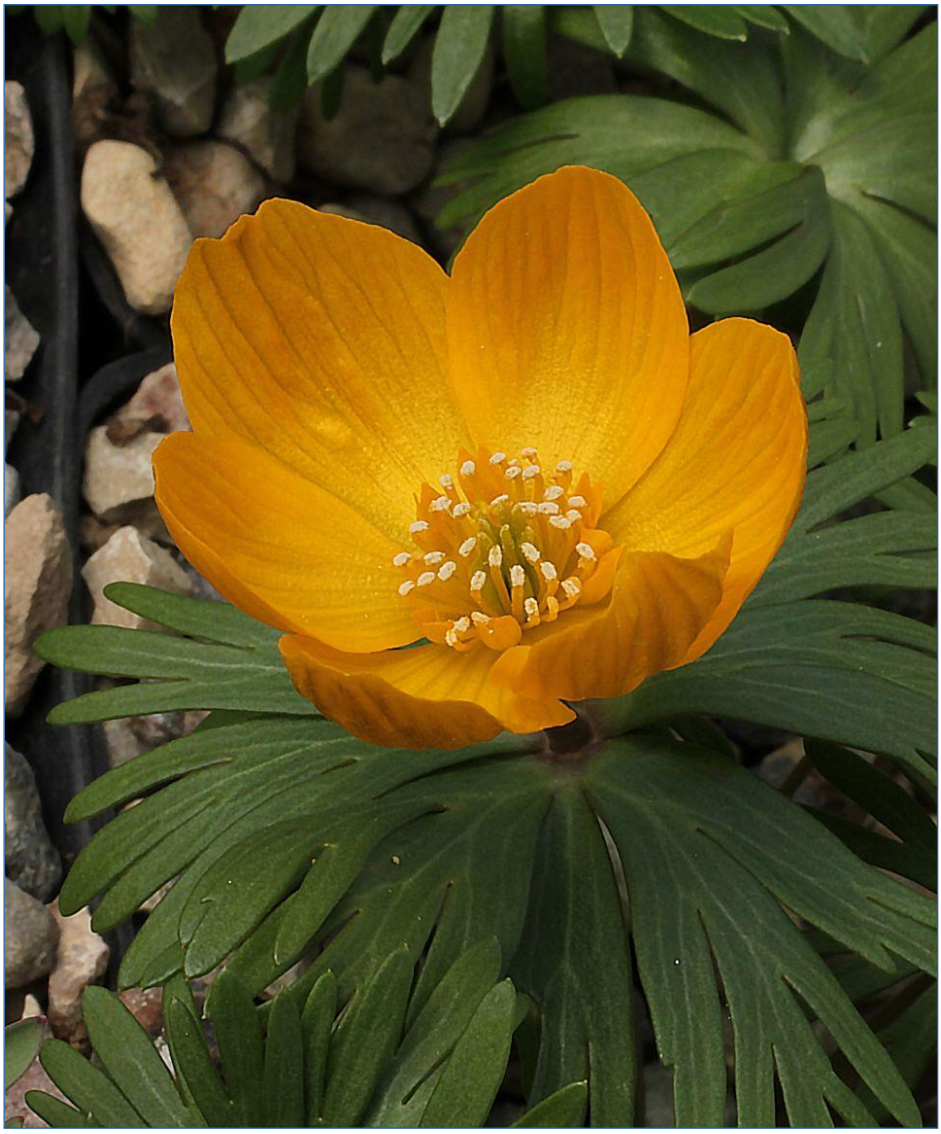
**Acknowledgments**

This survey has benefitted from advice given by Les Cheeseman, Harry Jans, Eric Jarrett and Dieter Zschummel.


ED: From the SRGC Forum: The Forrest Medal (best in show) winning *Androsace villosa kosopolyanskyi at* Hexham Show 2024, grown and shown by Frank and Barbara Hoyle. This plant was also recommended for an Award of Merit and a Cultural Commendation from the "Joint Rock " RHS committee. Image Alan Gardner.

# MY LAST AND VERY LAST TRIP TO IRAN - Jānis Rukšāns, Dr. biol. h.c.

Since the 1982 expedition to the Kopet-Dag Mountains in what is now Turkmenistan, the Kopet-Dag Mountains have always attracted me. And then there were the stories from friends about the fantastic Iranian bulbous plants that grow exclusively in the mountains there, so when in 2008 I received an offer to join an English group that went to Iran, I accepted without much thought. After this trip, the article “My Dream Land, Iran” was written. As a result of this trip, I described three new species of crocuses, and together with the Swedish botanist H. Zetterlund – a new species of *Eranthis*.



*Eranthis iranica* Rukšāns & Zetterlund.

But the hotels, the food, the constant document checks, once they even wanted to take away my cameras – made me conclude the article with the words – Iran? Never again! I have enough memories of the USSR... Eight years had passed, the unpleasant memories had already faded considerably when I again received an invitation to participate in an English-organized expedition to Iran, and then it began - for three years, every spring, two weeks were spent in the mountains of Iran. Many new species were discovered - the flora of Iran has been studied so little, you can find something new in every mountain range. Every year, the conditions and attitude

towards foreign tourists improved. The only inconvenience - a visa could be obtained at the Iranian embassy in Stockholm - with that came additional flights to Stockholm and back. But the international situation and relations with the "world's first" Islamic Republic of Iran are getting worse and worse, and English insurance companies refuse to insure trips to this country. Again, I took a break from traveling to Iran. I spent time studying crocuses in the Pyrenees, the Apennines, the Balkans, and the Greek islands. I have been denied entry to Turkey – initiated either by Turkish botanists or by my articles in which I praised the Kurds and wrote about the oppression of this people in Turkey. The reason is not explained. And then Iranian botanists contact me, offering to visit their country and participate in a joint expedition, although I have to cover all the expenses myself. Now you can get a visa upon arrival at Tehran airport – you have to request it with time to spare at the Iranian Ministry of Foreign Affairs (this service is provided by an Iranian company for a mere 30 Euros), which sends a visa approval letter. True, a visa at the airport is almost twice as expensive (this year 90 Euros) than getting it at the embassy, but still, when you factor in the additional costs of a flight to Stockholm or courier service – it is cheaper. Since there is another free seat in the car, my Czech friend and travel partner Václav Jošt joined us, so the requested payment was divided in half. Then the costs were not too high – it is already more expensive than travelling through the Balkans and renting a car yourself, but it is still Iran. Albeit a very cheap country, for a European to rent a car there and try to drive – on the first evening (if you survive) you will feel the need of a darkened room to recover.

And so, three spring trips to Iran followed – each ten days long.

This spring I spent ten days in Iran in total plus two days on the way there and back via Istanbul. I flew with Turkish Airlines, where the weight limit for checked baggage is 30 kg. I brought with me everything I need for the herbarium, spare clothes, some chocolate, canned fish, rye bread, medication for every occasion (and they came in handy when our driver's leg was seized by nasty cramps) and including 4 kg of Latvian traditional milk candies, which Iranians really like – 3 x 1 kg for gifts, and 1 kg to use by ourselves during the trip. In total, my bag weighs around 25 kg. The main goal is to find a unique crocus with yellow flowers from the very border of Iran and Iraq, which should bloom around mid-May. Spring turned out to be early, so we effectively didn't see crocus flowers in most places, but other plants were blooming, so I definitely wouldn't be without pictures.

The beginning of the journey was not easy – four hours of continuous travel through what looks like a semi-desert, after a sleepless night on a plane. I chose Alvand as the first stop. I had already been there in 2016, but then we traveled by minibus and did not go too far into the mountains, and of all the things I found then, I was only interested in *Tulipa humilis*. But

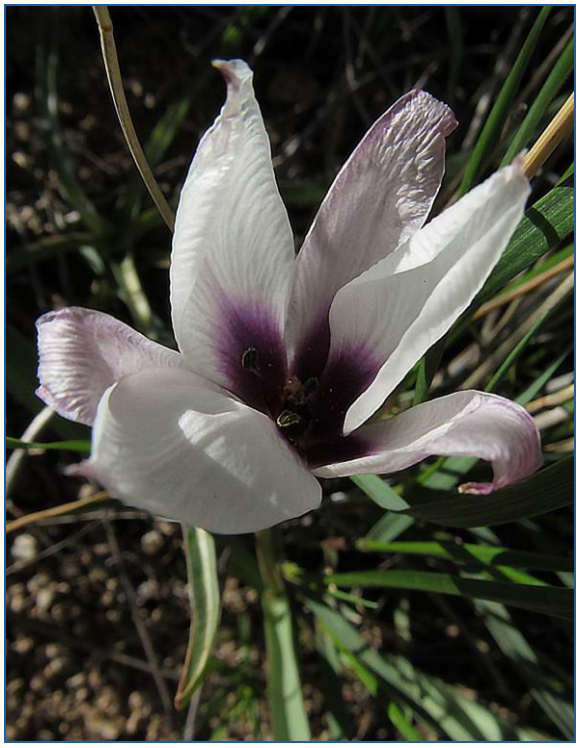
intuition tells me that there must be crocus there too, and this time we drove much deeper into the mountains with our semi-jeep.

The habitat of our first point – mountains behind village of Alvand, Zanjan Province.

This *Oncocyclus* iris is found near Alvand. It resembles the dwarf *Iris meda* Stapf., so could be *I. pseudomeda* Salimb. & H.Seidi, although it was found far from its area.

While my colleagues climbed upwards, I stayed below and, having seen *Colchicums* at a somewhat lower altitude, I went to collect a few of them for my friend. And there are already crocuses there. There are no flowers but looking at the leaves

and corm tunics (basal rings), it seems that I have found *Crocus zanjanensis*, which was described by Helmut Kerndorff and Erich Pasche (HKEP). Although not a new species, it was not yet in my collection. In the meantime, my Czech friend Václav had found a beautiful *Oncocyclus* iris, which, by flower, looked to be *Iris pseudomeda*, although it is quite far from Kurdistan where this species was found to grow. We couldn't find the *Tulipa humilis* form that we saw in 2016, but it is already in the collection, and I did not look for it too much. *Muscari neglectum* was also blooming.

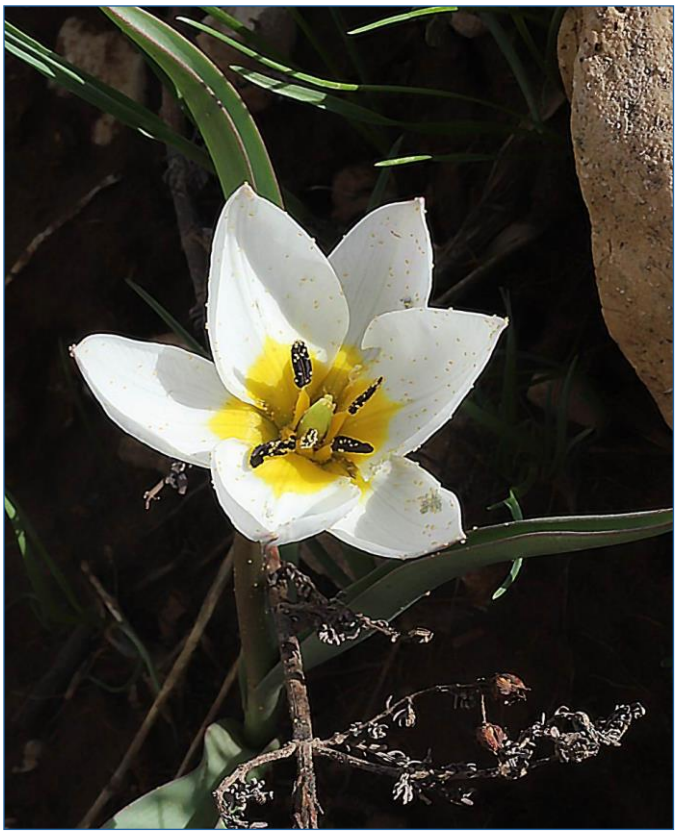


This *Tulipa* cf. *humilis* Herb. was already found slightly lower in mountains near Alvand in 2018 – in wild and a cultivated sample.

The widely distributed *Muscari neglectum* Guss. ex Ten. from Alvand.

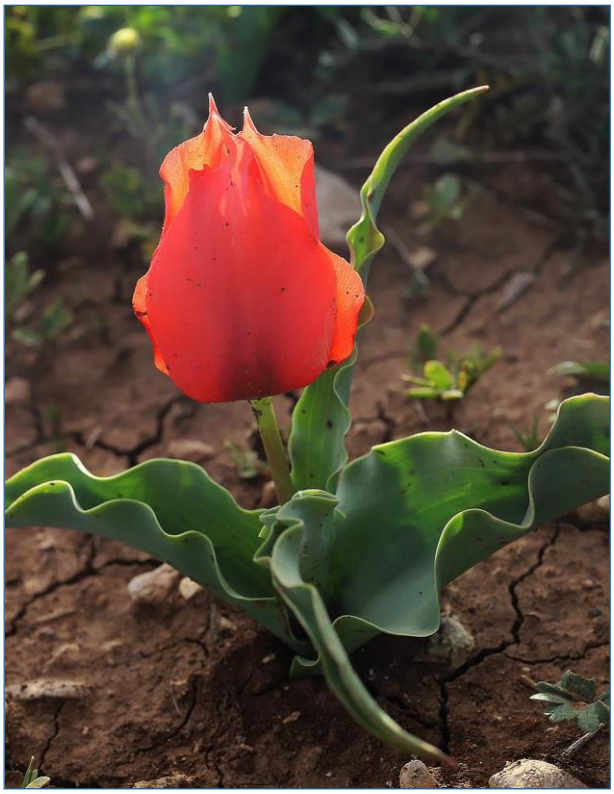
*Crocus zanjanensis* is reported as being from the Quedar area south of Zanjan, but I have been there twice before and have never managed to find it, which is typical of some colleagues – who give very imprecise and only very approximate indications of the places where they discovered their finds. This was the third time I had been to the Quedar area. Narrow streets lead to the city garbage dump, but beyond it our as yet untried path winds into the

mountains. I noticed some white flowers on the roadside slope. It turned out that it was not a crocus, but again a white-flowered form of *Tulipa* cf. *humilis*.



*Tulipa* cf. *humilis* growing near Quedar has a yellow throat and black anthers.

For allium flowers we are too early, but even the foliage of them is attractive – *Allium* sp. near Quedar.



Another red *Tulipa sp.* growing at same locality near Qedar.

Further in the mountains I also saw one bright red tulip. I have not determined its species, its bulbs are very deep in the soil, but I managed to collect three, for later identification: the bulbs are covered with a thick woolly covering, which protects them from excessive heat in summer. There are also some subg. *Melanocrommyum Allium*, some *Fritillaria* (already out of flower) but this time we didn't find any crocuses in the Quedar area either. But then it was already evening, and we had to go to the hotel in Zanjan.

We always ask for a European-style toilet in the hotel room, not an oriental-style squat hole in the floor. Although this hotel has such rooms (we know this from previous trips), this time they said that they are already occupied, although we didn't notice that anyone else was staying there. Obviously, the rooms had not been cleaned. However, they gave us folding toilet seats that imitate European style toilet seats. Great progress. Incidentally, we later came across such seats and in the end the "boss" of our trip – our Iranian partner - also bought one, and it accompanied us on the way forward and was even used once!

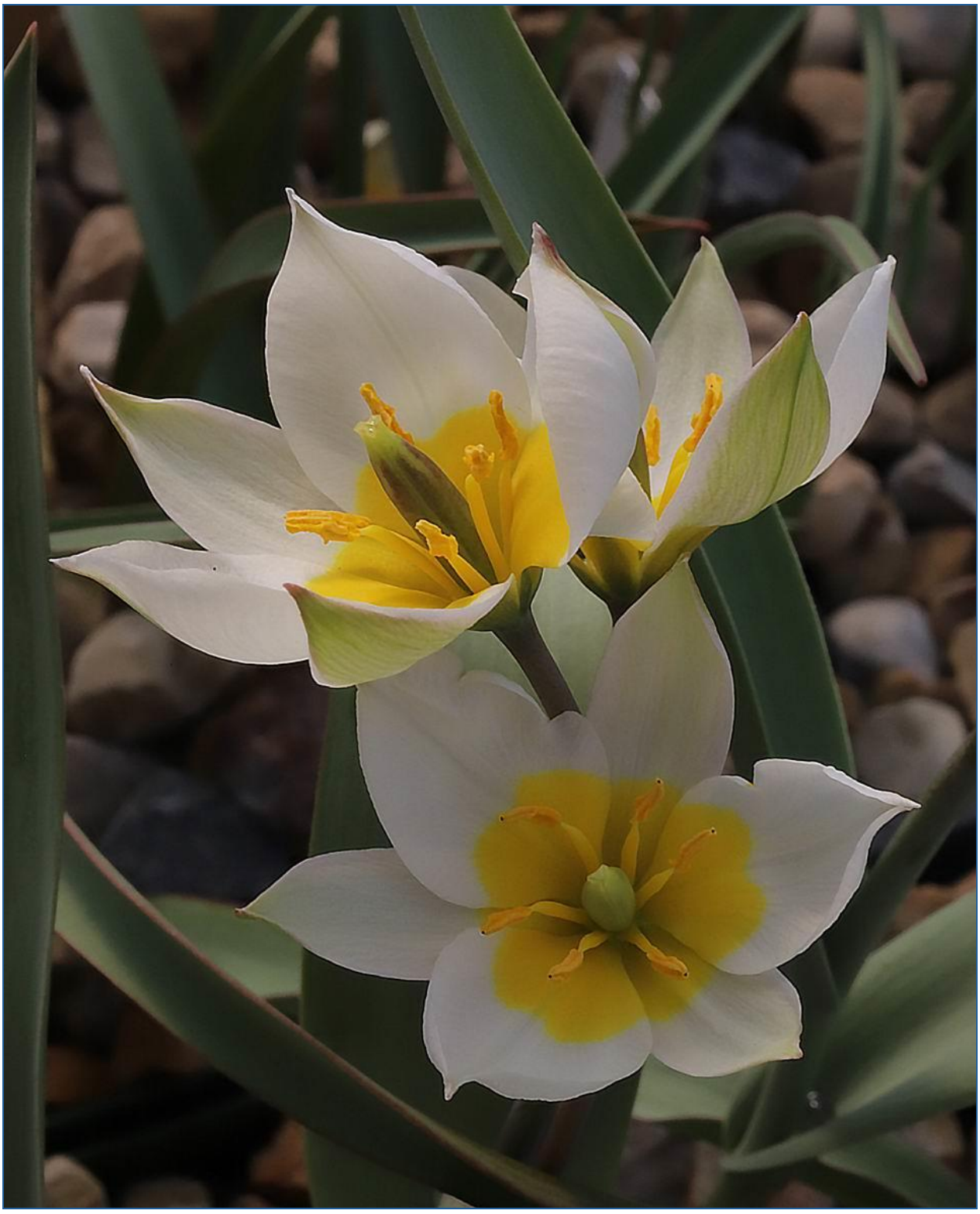
A lengthy route was planned for the next day – first to the slopes of Kuh-e-Sabalan Mountain and then to Agh Dash Mountain, in the East Azerbaijan Province. The trip would be very protracted, and after discussing priorities, we decided to abandon Kuh-e Sabalan Mountain. I had already been there: no crocuses were found, only the reticulated iris, *Iris* cf. *hyrcana* and, apparently, *Colchicum* cf. *szovitsii*. I have also been in the Agh Dash area, but I have a special interest there. In 2022, a new crocus was found there, which we collected and it was published in the May issue of IRG as *C. evae-petrovae* Jošt, Rukšāns & Zubov.

*Crocus evae-petrovae* in cultivation.

Floral details of the new *Crocus sp*., published in IRG May issue (2025) as *Crocus evae-petrovae* Jošt, Rukšāns & Zubov.

Habitat where *Crocus evae-petrovae* and a tiny *Eriostemones* tulip were found. Light dots on the picture are some spring blooming *Colchicum* sp.

On the first mountain pass ascending Agh Dash Mountain, near the village of Kagnalag, in 2022 this tiny tulip was found – smallest ever seen by me – only 5 cm high at blooming time.



In cultivation this tiny *Tulipa sp. nova* [subgen. *Eriostemones* (Boiss.) Raamsd.] is more floriferous and increases in size.

But I am most interested in one miniature tulip there, which I had not noticed the previous time, when I was fascinated by the search for crocuses. It is truly unique – only 6 cm long, with a 6-7 cm long and 1.5 cm wide lower leaf. It was found by my Czech friend Václav, who gave me his bulbs when I saw them later in our hotel, but I wanted to see this tulip in nature, take a picture,

and make an herbarium specimen of it. But this time I was blind too. I couldn't find any myself. My colleagues were more successful, and brought me several specimens, already with large seed pods. The sizes at seed time have have significantly increased, and cultivated plants grow larger than wild ones during flowering.

*Iris acutiloba* subsp. *lineolata* Foster just started blooming near Ahar.

On the way to Agh Dash, near the city of Ahar, we found beautiful groups of *Iris acutiloba subsp. lineolata.* Soon we reached the first mountain pass where the new crocus was found in 2022.

A dirt road guides us up to almost the highest points of Agh Dash.

There was also no shortage of the quite variable *Iris* cf. *reticulata* and some tiny spring *Colchicum*. When we had thoroughly explored the area searching for this tulip, we decided to go further into the mountains. We were approaching the next mountain pass, when my intuition struck again, and I said - let's stop here, and already taking the first step out of the car, I almost trampled a crocus. We are 500 m higher, having reached a high-altitude plateau - an altitude of 2500 m. The crocuses have already bloomed, but there are a lot of them. Again, the ubiquitous *Iris* cf. *reticulata* and the first *Pushkinia* sp. on this trip. I won't try to identify the species, though.

*Puschkinia* sp. just started blooming here.

Every now and then some rain disturbs us, so Václav is wearing a bright raincoat while he checks plants.

The weather was very bad, every now and then large raindrops fell and a dozen thunderclaps rang out. My colleagues are wearing raincoats; I'm staying in my white shirt. I've already earned the nickname "yeti" (iceman). When I'm looking for plants, I don't feel the cold and my shirt dries quickly in the car. We spent the night in a hotel in Tabriz. So, another very successful day passed.

This *Iris* cf. *reticulata* has white anthers, so it was registered as *I. hyrcana* Woronow ex Grossh., although the flower colour is not typical for *I. hyrcana*.

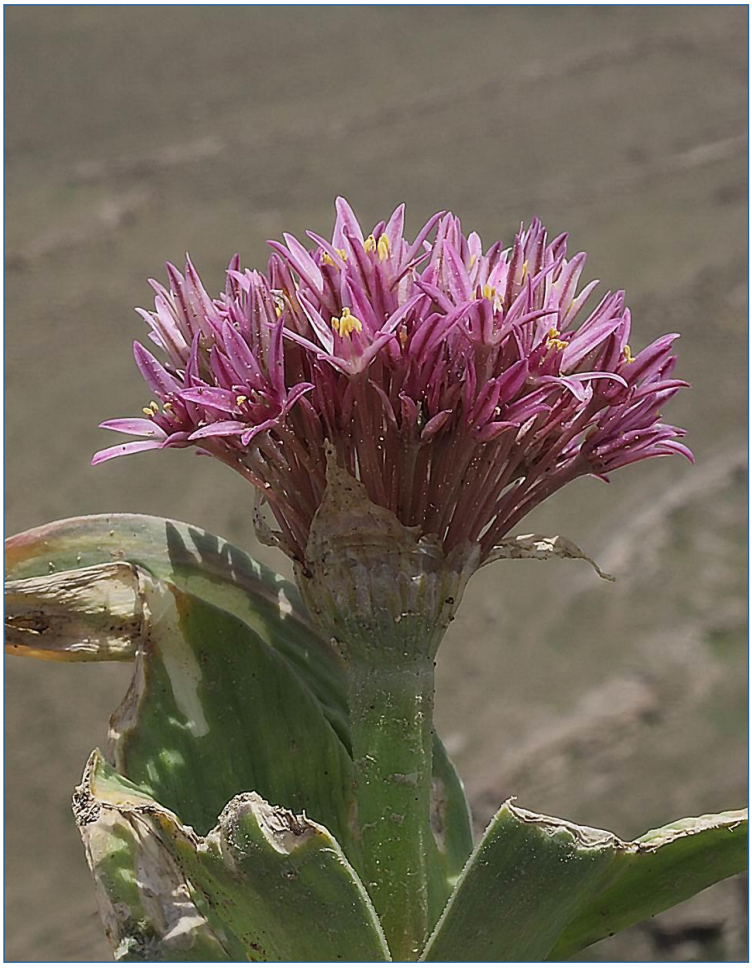
*Iris* cf. *hyrcana* on Agh Dash.

We couldn't fall asleep in the hotel until midnight. In the evening, some Iranian (local?) football club had won a competition (the game was on TV screens everywhere that evening), and lines of cars drove past our hotel windows until midnight, continuously signaling with shouts, waving flags, and pyrotechnics in between. And so it went on for two hours... The next day we headed to the very west. We want to find a crocus that H. Kerndorff and E. Pasche had previously found but hadn't described as a new species (sample 1631). Trusting their data, we had marked on the map the point where this crocus should grow according to the mentioned localities and altitude. It had been raining intermittently since the very morning, though nothing too serious, but yesterday's rain had soaked the ground thoroughly and after a while our feet were covered with a thick layer of clay. Every now and then we had to scrape off our thick "soles" to maintain stability on the steep slopes. We did not find anything similar to the crocus we're looking for (from *Crocus adamii* group) - only the autumn-flowering *C. damascenus*, that is found almost everywhere in this region, which the locals eat by frying it in a pan, similar to how we roast nuts. There were also a couple of species of *Colchicum* (flowering both in spring and autumn) and a couple of *Bellevalia*. We halted at several places, but without results.

Between Orumiyeh and Silvana we were searching for *Crocus* sp. listed as *C.* cf. *roopiae* by H. Kerndorff and E. Pasche, but all what we found at the appropriate altitude was *Crocus damascenus* Herb. and other geophytes.

We also took side roads - there we found a fairly abundant population of a small *Juno* (it could be *Iris pseudocaucasica* or *I. hymenospatha*) alternating with *Allium akaka*.

Searching for this crocus we took some side roads over a deep gorge.

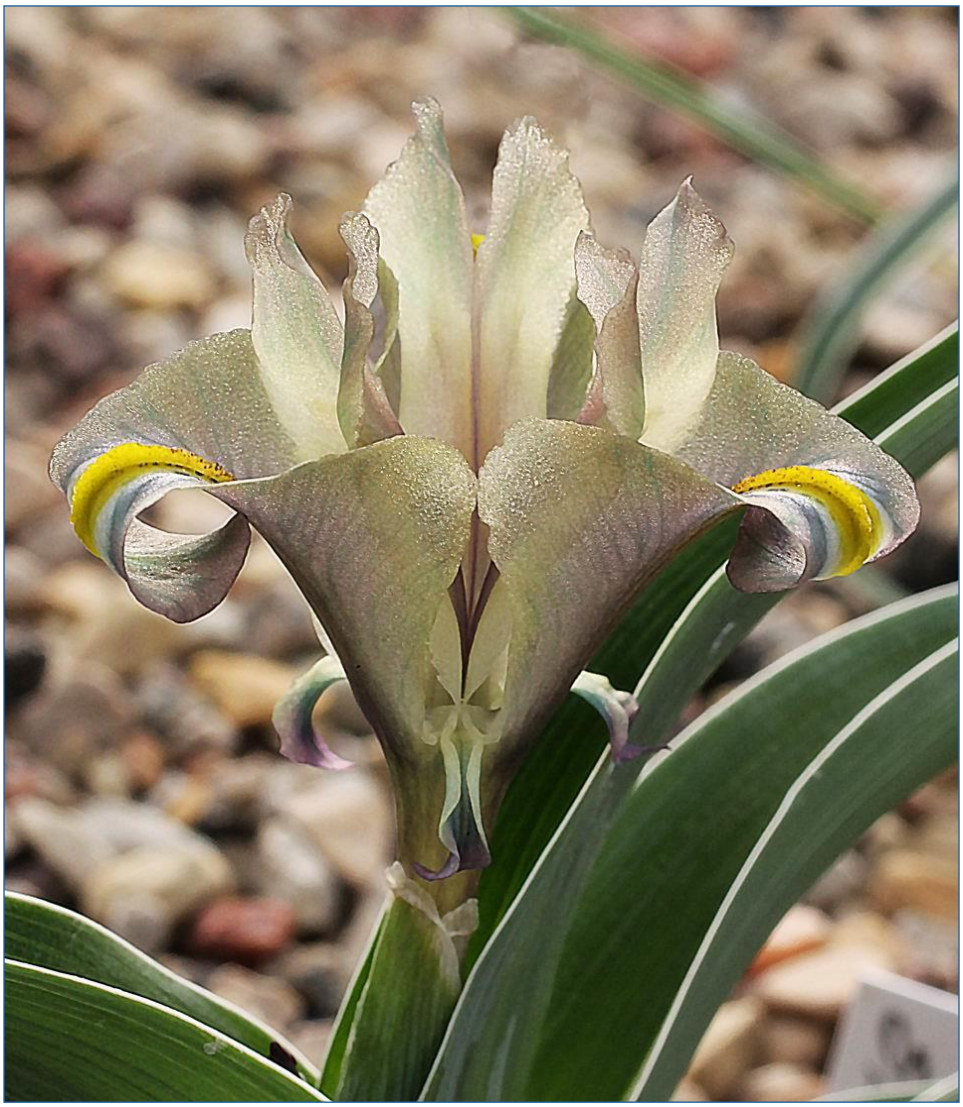


The Juno already had almost mature seeds, but *Allium akaka* (left) was just starting to bloom.

Despite my diabetes, I ate half of a wonderfully delicious melon - and my blood sugar level remained within acceptable limits. This is what physical activity in the mountains gives! That was all for this day. We spent the night at the Tourist Hotel in the city of Ourumiyeh. Currently the best hotel, arranged by Iranian partners, although the air conditioning doesn't work, and the street next door is so noisy that you can't keep the window open.

My travel partner Václav Jošt and Iranian botanist coming down from mountain slope.

We found there some *Juno* iris already with almost ripe seeds. Most likely it is *Iris hymenospatha* B.Mathew & Wendelbo, so here are 2 pictures from other trips, showing its variability.



An alternative could be *Iris pseudocaucasica* Grossh. – this sample was gathered in Iran at the beginning of the Millennium during the Swedish-Latvian-Iranian-Zagros-Expedition – abbreviation SLIZE.

The next day we repeated yesterday's route, only at the furthest point did we turn in the opposite direction - we went to Dalampar Mountain. From here, *Colchicum kurdicum* has been described, which supposedly stretches into Turkey all the way to the mountains around Lake Van, but my Ukrainian friend doubts that it is the same species, so we need to collect a sample from the *locus classicus*, that is, from the place where the species was described, so that we can then compare it with other samples. We drove guided by the navigation on our Iranian partner's smartphone. It worked quite well, only we often lost contact with the Internet in the mountains and then we had difficulties changing direction, etc. Through several villages we got to a place where the real road ends. Yes, it does continue, but not for our car. A guy on a motorcycle drives up… Our driver went to negotiate with the locals. It turns out that the navigation has shown the shortest, but not the best, route. We have to go back, a few more kilometres ahead, and then an asphalt road will enter the mountains all the way to the top of the Dalampar. We did so and indeed – a good quality asphalt road went into the mountains until we reached a crossroads again.

By a still partly asphalted road we go to Dalampar mountain –the place from where *Colchicum kurdicum* Stef. was described.

In the distance – peaks of Dalampar. Photo Václav Jošt.

Our ascent is stopped by snow-belts which closed road up and didn't yet melt.

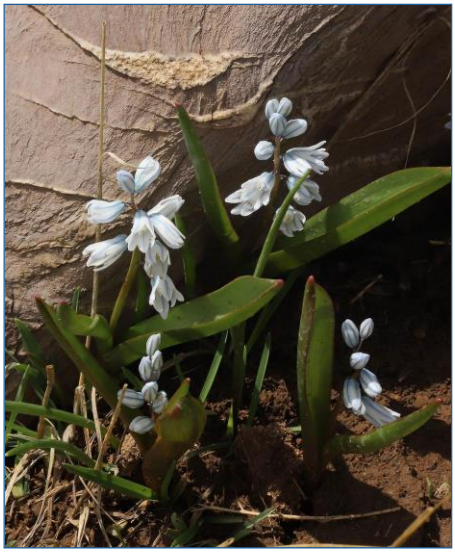
There seems to be a road going up to the left, but there is no asphalt, the asphalt leads down to a village. We have to ask passersby again; it turns out that ours is the one without asphalt on the first ascent. Yes, this road to nowhere was really asphalted, probably even before the Islamic revolution, during the Shah's reign. In places it is quite bearable, although furrowed with cracks, in other places in endless holes, but in others it has disappeared and then we had to manoeuver between furrows washed out by spring waters. In one place we even had to back off to pick up speed and overcome a steeper cloggy climb. When we reached an altitude of 2700 m, the road was further closed by the last winter snow. I had a silent hope – maybe there will be a sought-after yellow crocus here, but I was surprised to see *Crocus dolatyarii* blooming, the range of this species turns out to be much wider than I thought when I discovered and described it in 2022.

A great surprise there was the finding of *Crocus dolatyarii* Rukšāns – just at start of blooming.

After a long search, a pair of *Colchicum kurdicum* were finally found.

Everywhere we find another tiny spring blooming *Colchicum* sp.

After a prolonged search, I also managed to find a couple of much-needed specimens of *Colchicum kurdicum*, another species of small-flowered *Colchicum* grows here, and also another species I discovered – *Puschkinia avromanica*, which I published together with my Ukrainian friend D. Zubov in IRG 160, May 2023 . Its bulbs grow very deep in the ground and form sideways-growing stolons, so it is usually found in small groups.



It seems that stoloniferous *Puschkinia parvula* Rukšāns & Zubov grows here.

*Corydalis oppositifolia* Czerniak only started blooming here.
Photo Václav Jošt.

Some species of *Gagea* are very pretty, but I never tried to cultivate them.
Photo Václav Jošt.

A little lower down, again in the company of *Pushkinia* and *Crocus dolatyarii*, a beautiful. bright blue *Scilla* (?) bloomed. Turkish botanists have recently described a new species from the eastern border of Turkey – *S. hakkariensis*. Is it ordinary *Scilla sibirica* Andrews or newly described *Fessia hakkariensis* (published as *Scilla* by Firat & Yildirim)? This could be determined after seeing its seeds.

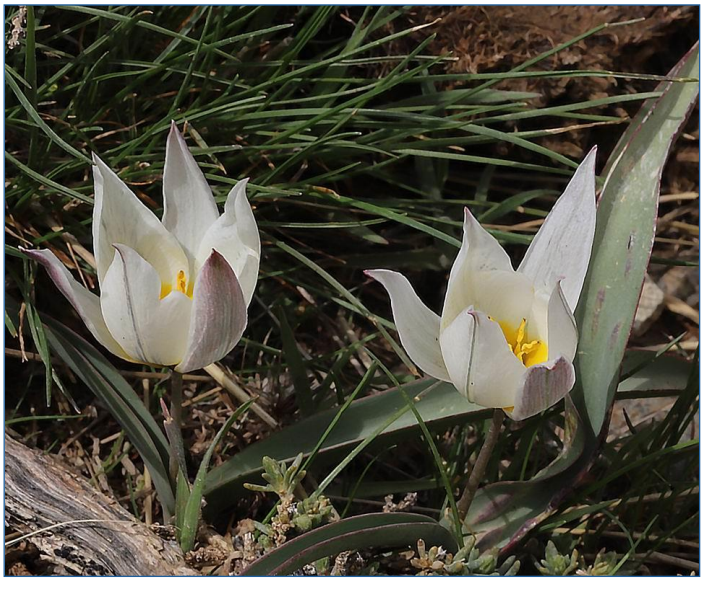
In any case, it is not *Scilla*, but *Fessia*. What is the bluebell growing here – you will only be able to tell by looking at the seeds, so I carefully dug up a small group with a lump of earth to preserve it and plant it at home in a pot with the hope of getting some seeds for research. Then will be able to tell what it really is – *Scilla* or *Fessia*.

Our next target after Mount Dalampar was to go after the main goal of this expedition. It is a yellow-flowered crocus, photographed by a mountaineer. These pictures were sent to me by

an Iranian botanist who had gone in search of it, but heavy rains did not allow him to continue his journey. I went in search of it in 2022, when *Crocus dolatyarii* was discovered on the way.

The main target of our expedition – a new yellow flowering *Crocus* sp. from borderland between Iran and Turkey. Photos made by some mountaineer and kindly sent to me by Prof. Alireza Salami from Iran.

At that time, about 6 km before its possible location, an avalanche of snow several metres thick blocked the road, but the Islamic Guards soldiers we met (who guard the border from alcohol smugglers, but upon learning that we were Europeans, they immediately offered to buy alcohol for us) confirmed that such a crocus really grows there and blooms around mid-May. That is why I organized the expedition later than usual this year. Indeed, the way up was free of snow, and we drove up along a relatively good dirt road. Again, on the roadside cliff I saw white flowers, and this time it was *Tulipa* cf. *biflora* quite similar to the one I saw before near Qedar, but different in its yellow stamens and having only two leaves per plant.



On the way up to the “yellow” crocus we are stopped by a population of *Tulipa* cf. *biflora.*

*Tulipa* cf. *biflora.* Photo Václav Jošt.

Habitat of *Tulipa* cf. *biflora*.

But there are also crocus leaves nearby. Judging by the bulb tunics, it seems to be the same *Crocus dolatyarii,* but something seems different. I had great hope that maybe it will turn out to be what I am looking for. The *Oncocyclus* iris also grows here, but it is not blooming yet, so I cannot determine the species. We had almost reached the highest point, where vegetation was just beginning. 500 metres further on is the Turkish border and an army post.

Here we indeed found the same *C. dolatyarii* again – just starting to bloom and with it another *Pushkinia – P. avromanica* (but maybe a different species?). Its bulbs are very shallow in the soil and form clumps. But here it does not form stolons as usually is done by *P. avromanica.*

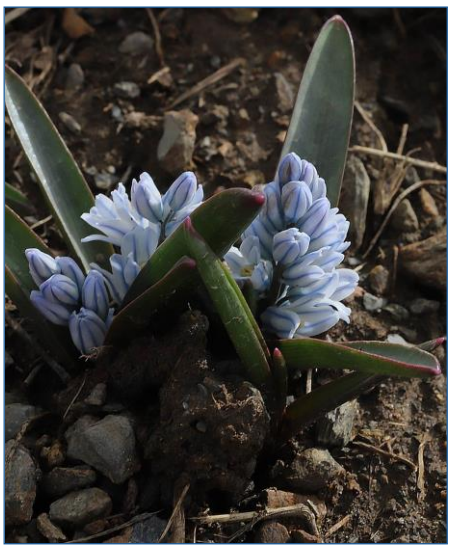
As almost everywhere, *Corydalis oppositifolia* was also in bloom.

At highest altitude reached (around 3000m), when there was only around 500 m left to reach the border with Turkey, we found only *Crocus dolatyarii* just at very start of blooming.

Together with crocus which were fantastic everywhere, clump forming *Puschkinia parvula* Rukšāns & Zubov started blooming. Comparing with stoloniferous *P. avromanica,* the bulbs of *P. parvula* lie very shallow in ground.

*Puschkinia avromanica* Rukšāns & Zubov – above and below.

We searched persistently, but we still did not find anything yellow. It was getting late, and we had to go back to the hotel. On the way, we hesitated at *C. dolatyarii locus classicus*, from where I described it.



---International Rock Gardener---

*Crocus dolatyarii*

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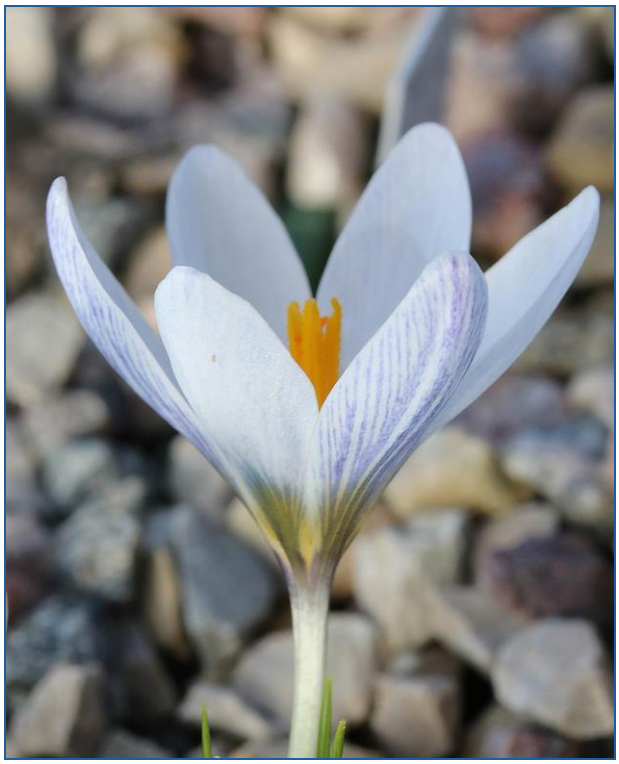
I can't even recognize the place anymore; everything seems to have changed compared to 2022. Not a single crocus, nor *Iris reticulata*, nor spring *Colchicum*, which bloomed here abundantly 3 years ago, but on the roadside there are two very large groups of red tulips, an autumn-blooming *Colchicum* sp., also *Ixiolirion* sp., but from crocuses I can only find the autumn *C. damascenus*. The group of *Tulipa* sp. is incredibly rich, it seemed that someone spilled a large bag full of tulip bulbs on the roadside. There were 2 such dense groups of similar size. Their bulbs lay very deep in ground, but our Iranian partners with their ice-picks soon reached some of them and kindly shared them with us. The search continues for that yellow crocus.

No crocus was seen there, but we found incredibly dense group of bright red blooming tulip. May be a stoloniferous form?

Bright red tulip. Photo Václav Jošt.

On this slope (above) *Crocus chiaicus* Dolatyari & Rukšāns was found in 2022 (and in a short distance from here it was found already in 2018).



*Crocus chiaicus* in cultivation, from type gathering.

The next morning began with heavy rain and a thunderstorm. We were woken up by thunder. We went to bed late – we had to sort out notes, herbarium, plant samples – tedious and slow work. We had nothing particularly new planned for the day – we wanted to visit the place from which I have described *Crocus chiaicus*. There was a rich variety of bulbous plants there and I am interested in *Tulipa* cf. *biflora* (?). I had already collected some bulbs of it in 2022, but the sample did not grow well, and I wanted to add a few bulbs to it. It is practically no different from what I saw the day before – the same yellow throat and yellow anthers.

*Iris aucheri* (Baker) Sealy from same locality has very light blue flowers (picture from 2022).

*Tulipa* cf. *humilis* is also growing side by side ……

…. with some red *Tulipa* sp.

After that, we planned to go to two places from which pictures of crocuses were sent, to find out what grows there. Both sites are located somewhere between *C. chiaicus* and *C. dolatyarii* localities – from the pictures of the flowers taken, it seems that there will be *C. chiaicus*, but that is not enough to determine the species, so we must visit those localities. It rained every now and then, but when we arrived at the right place, the rain ceased for a moment, but the clay was just as sticky, and the soles of our boots have to be scraped of the “growth” again quickly. The crocus has almost ripe seeds. In soft clay, of course, it is easier to dig them up than by digging in brick-hard, dry soil, but after a while it started to hail and rain, my back was wet again, and my shovel was covered with a thick layer of clay, and I still didn’t get any tulips. They had already bloomed, and I didn’t feel like looking anymore – the previous day’s failure with the yellow crocus had definitely dampened my spirits. However, I did collect one specimen of Iris *aucheri* – I didn’t collect it in 2022, now I’ve corrected my mistake. It was raining harder and harder, but when we reached the next point, the rain finished. After a long search among the thorn bushes on the relatively steep slope, we also managed to find some crocuses.

Another locality where *Crocus chiaicus* was found.

An examination of the leaves and corms confirmed that it is indeed *C. chiaicus*. In addition, we also found one iris of the reticulata group at this place – *Iris bakeriana*. Unlike the common *Iris*

*reticulata*, which has a square leaf in cross-section, *I. bakeriana* has an almost round one with eight ribs. Otherwise, in terms of the flower, both are similar.

Here *C. chiaicus* grows together with *Iris bakeriana* Foster.

And then again the rain, with hail, forced us to hide in the car. We drove to the next place. And then we saw that over a large peak rose a kind of huge, wide cloud of dark “smoke” – it looks as if a volcanic eruption has begun. And then real hell began – a terrible wind and hail the size of beans. The car's roof and windshield rattled so loudly that you couldn’t even talk. The driver pulled over onto a side road, turning the tarpaulin at the back of the car towards the hail, thus skipping the craziest moment. And then the rain started. Waterfalls the colour of coffee with milk

cascaded down the roadside cliffs and from farmers' fields: the roadside ditches had become raging mountain rivers. Soon the road had turned into a rippling river with rocks not only the size of your fist but also much larger ones. The water reached the car's doorstep. I would be afraid to drive on such a road, but the local drivers continued their journey splashing water on the sides. Finally, we were through the city and heading uphill again and then our car's engine "died". The driver opened the hood – inside all was covered in mud - and started wiping all available electrical contacts. Nothing worked, then he checked the fuses. So, one was broken, it's good that there are spares and we could continue our journey to the city of Saqez, where we would spend the night. The weather was so bad, everything was covered in mud, so I only took a couple of pictures to record the coordinates of the place and the height above sea level (my Canon camera has a built-in GPS receiver, which adds the coordinates of where it was taken to each picture).

Since we were in the city of Saqez, at the foot of which I found a new species of crocus, which I named *Crocus iranicus*, during my first Iranian expedition in 2008, we decided to visit this place as well – my Iranian colleagues want to add it to their collection.

*Crocus iranicus* Rukšāns was previously discovered by me in 2008.

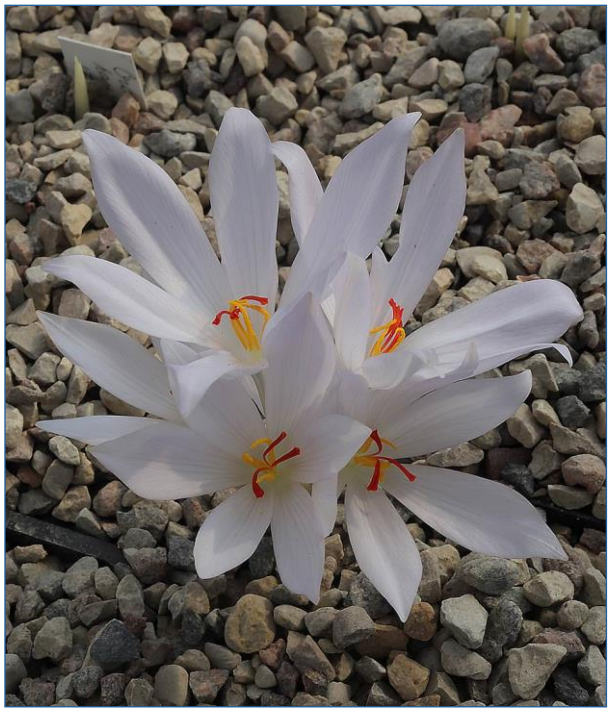
17 years have passed, everything has changed so much, new roads have been built so that even if we know the coordinates, we cannot immediately find what we are looking for. The apparent road leads to a small village, where it ends. We take a small side road, but there are only grain fields and orchards all around, except for a red-flowered tulip on the side of the road again – using the earth torn up by the bulldozer, which has exposed about 3 bulbs that have not yet had time to "burn" in the sun, I also got this tulip specimen.

And then again, on the side of the new highway, something similar to what I remember from the distant year 2008 seems to be there.

Only instead of a meadow, an orchard has been planted, and little is left of the apparent ravine, but there is also the crocus we are looking for – again with almost ripened seeds.

Just 500 m from its locus classicus, *Crocus iranicus* grows alongside the darkest Iranian wild *Gladiolus*: *G. atroviolaceus* Boiss. as were the two species of autumn-flowering crocuses that are typical for this area – *C. damascenus* and *C. haussknechtii*.

Another *Crocus* sp. here is *C. haussknechtii* Boiss. & Reut. ex Boiss., but it blooms in autumn. (Shown in cultivation)



Later, already at home, I put on the map all the points where this species was first found and where we were looking for it this time – it turns out that the real place was only about 500 m away, by a path that we simply did not notice when we drove past. But that is of no great importance. The species is the same.

One of the goals of our expedition was also to verify the discoveries of H. Kerndorff and E. Pasche who have described three species of crocus from Iran. One of them – *Crocus sanandajensis* was found by my Czech friend Václav back in 2017, when I had separated from the group and gone by taxi to look for another crocus, a picture of which I had seen on the Internet but never found. It seems that we found *C. zanjanensis* on the first day of this expedition. We probably found two nameless specimens in 2022, but we still couldn't get to two of them. Now there is a third species they described – *C. zagrosensis*, which is only mentioned "west of Divandarreh". On the Google-Earth map, we look for a road to the west that leads through the appropriate altitude mentioned in the publication, and where the crocus we are looking for could grow. At first, asphalt, then a good quality dirt road leads us into the mountains, and then around the bend, a shocking sight awaits us – our road ends – in a water reservoir, only to reappear after some 50 metres from it. Yesterday's rain had filled the reservoir and closed the road that was passable a few days ago (this is evidenced by the tire tracks). Well, let's go back to Divandarreh and look for the way to Marivan, where we plan to spend the night.

Following the Iranian navigator, we head into the mountains on a narrow but good-quality asphalt road. We stop at one place, but everything there is grazed, it smells like sheep manure, so many of what we call "four-legged botanists" have been here, that we have nothing left to look for. We are already quite far into the mountains when something grabs my attention, and I ask to stop.

Gentle slopes on which most likely *Crocus zagrosensis* Kernd. & Pasche was found W. from Divandarreh.

The two Iranians and Václav go up the steepest slope on the right, but my leg hurts and I slowly drag myself to the flatter cliff on the left side of the road. And up there it is - the crocus which could be *C. zagrosensis*. I will see after it blooms in cultivation, but it may even be something new? It was not easy to find the plants: the flowers had long since disappeared and the grass-like foliage of crocuses is not so easy to notice. There are also *Oncocyclus* iris, *Iris* cf. *reticulata* and autumn-blooming crocuses here.

The crocus was growing side by side with this *Iris pseudomeda*.

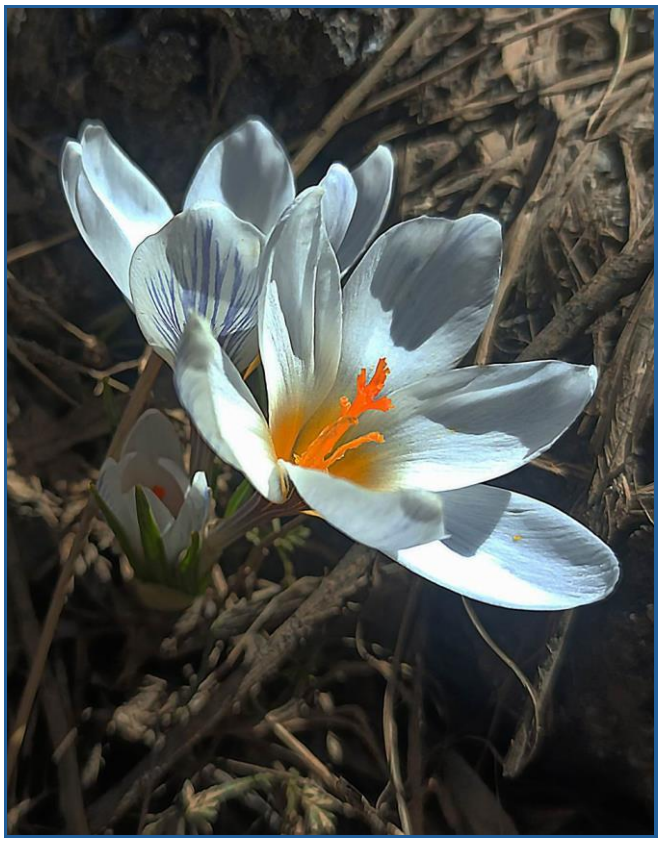
After a while the asphalt suddenly ends (it seems that the provincial border has ended and with it the funding, but the neighbouring province has not included such a road in its plans) and a dirt road begins. At the crossroads we are again waiting for a passerby who “pleases” us by saying that the road only leads to the village, but beyond that there is only a trail... So back to Divandarreh and Saqez. It is more than 200 km, and then to Marivan. Evening and darkness were approaching. The mountain roads of Iran are not the most pleasant for driving at night. Oncoming drivers consider it their duty to shine their full headlights in your eyes, and in general the traffic rules here are written only on paper. It's a wonder that during these days we only saw 3 cars that were slightly "scratched", one limousine that has turned into an iron "hamburger" and one truck that has overturned on its side, but which still allows cars to pass it, and it is cleverly regulated there so as not to block the mountain road.

It was not that late when we reached the city of Marivan in complete darkness. Our Iranian chief called three hotels that I remember from our previous stays in Marivan, but there were no

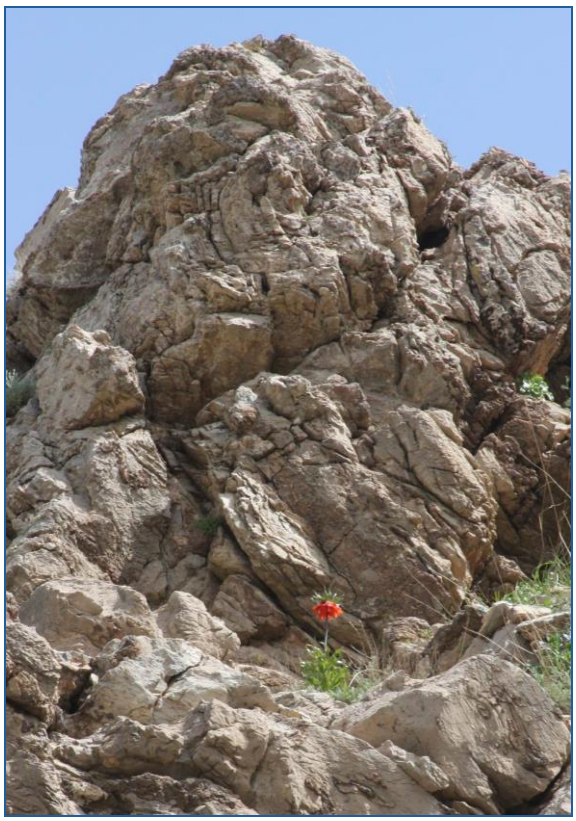
available rooms anywhere. It's no wonder that the trip is organized and led by an unprofessional person who, only upon entering the city, starts looking for a place to stay instead of booking a hotel in advance, as we would have done in Europe, although Iran also has a hotel reservation system. Finally, after navigating through complicated labyrinths of city streets, we arrived at a hotel decorated with 3 stars. The room is on the 2nd floor, the elevator works, but when we enter our room, we discover - there are no sheets - only a mattress and a blanket, no towels and soap, the insect screen on the window is torn. At least there is a large table in the centre on which to put bags, and good lighting - the brightest room during this trip. After all, we only have to spend one night there... We will survive without any amenities, but what are these 3 stars for? The restaurant where we have dinner is good. The kebab I ordered is delicious, but Václav 's chicken kebab is a bit peculiar - pieces of chicken meat with all the bones on a skewer. In the morning, we decide not to risk our health and don't even try the breakfast offered by this hotel. We went to Dezli, which is famous for its special scones, which are baked only in this city. We arrived too early, but we found a bakery where a large tea stove is already smoking and in 15 minutes the first scone would be ready. These saucer-sized scones are really very delicious, and while drinking tea, we enjoyed a great breakfast.

*Crocus avromanicus* Advay & Rukšāns was described from vicinities of Dezli. On picture is its habitat.

Let's go back a little towards Marivan, to the place from where I have described a new species of crocus – *Crocus avromanicus*. Amazingly, I recognize the place, although it has been 8 years since I was last there, when I found this new crocus. This crocus is mostly found in the shade of trees among the peculiar small oaks – *Quercus brantii*. In more open places, *Iris* cf. *reticulata* and a large autumn-flowering *Colchicum* also grow. I have also collected *Ornithogalum persicum* here before, but this time I don't see any.



*Crocus avromanicus*



At same locality in 2018, I pictured beautiful tall *Ornithogalum persicum* Hausskn. ex Bornm. Just on border with Iraq was a location very rich with geophytes. Being a popular weekend picnic place, *Fritillaria imperialis* L., was completely destroyed there even on rocks.

From here I published *Puschkinia avromanica*. Not one was seen this spring.

It is the locus classicus of *Iris avromanica* Rukšāns – I only saw three small clumps this spring.

The next stop was at the very border of Iraq, a place from where I have described *Iris avromanica* – a beautiful species of reticulated iris with light bluish-white flowers. I had previously found 5 or 6 species of fritillaries there, and I have also described *Puschkinia avromanica* from here. Václav went to the fritillary hill, but since I was not particularly interested in anything there, it was drizzling and the wind was cold, I didn't go far. I was very surprised to find only three small clusters of irises and one *Pushkinia* clump. Václav came back completely shocked - there used to be gorgeous *Fritillaria imperialis* stands here, now not even a single leaf, let alone the tiny fritillary species. This is a popular picnic spot, and the townspeople mercilessly pick the beautiful flowers to decorate their cars. Over the years, the population has been completely destroyed.

No wonder the lack of plants if *Fritillaria imperialis* is used to decorate limousines.

We then headed into the Zagros mountain range to visit the local "botanist" Mahfooz Advay. When I came into contact with him, I had deep doubts about the application of this designation, although I have even named one species of *Pushkinia* in his honour as *P. advayana,* and we have also described *Crocus avromanicus* together, using photographs of this species that he took in the wild. In the winter, having learned that I was planning to go to Iran, he asked me to buy him a used but good camera. When I had bought it, he wrote back that he had no money

and offered to pay for the camera with bulbs. I agreed, and shortly before leaving I received a a message that the plants requested by me were ready.

The road is long, winding and leads through many “tourist villages”. They are truly beautiful, they sell local products, Kurdish folk costumes and decorations everywhere, but we drive without stopping. The road to his village is long-drawn-out. It turns out that his family owns several properties here, but they accommodate us in a beautiful place, on the shore of a mountain lake, on the third floor of the house, the base “floor” is formed by a steep mountain slope one floor high, along which a typical stony mountain path leads up, and then concrete steps begin by outside of house – each of its own height and width, in places without railings. Now I understand why alcohol is prohibited there – climbing such stairs while drunk, it is easier to break your neck than to get to the door of the accommodation, where we leave our shoes. The rooms are a bit shocking – the only furniture – a table and a few chairs. The view from the balcony is fantastic – the lake, the valley, the houses on both banks.

We passed one night in house of local “botanist” in village Selin, deep in Avroman ridge.

We have been persuaded to spend the night here so that we don’t have to go to a hotel. But... again, there are no towels, no shower, we use a folding toilet seat that we bought ourselves. Dinner at a local village restaurant(?) – very tasty – minced lamb fried with chopped tomatoes

and rice with butter. In the evening, we receive a thin mattress, blanket and pillow. Since we are very tired, we fall asleep without any problems, despite the hard bed.

I was given a heavy, sealed box with plants. After distributing all the gifts we brought for our host, our Iranian “chef”, and the driver, I manage to stuff this box into a suitcase. The next evening, when I opened the box at the hotel, I was shocked to see that most of it was heavy, wet mountain clay soil, in which plants were stuffed and then placed in thick polyethylene bags. Nothing corresponds to what was requested and promised. Some of the bulbs have rotted from the excessive moisture, instead of spring crocuses, there are only autumn-blooming ones, which I absolutely do not need; the bag labeled “tulips” actually contains *Pushkinia*, but the one labeled “*Puschkinia*” contains reticulated irises.


You can judge about the knowledge of this “botanist” by those *Iris* cf. *reticulata* bulbs labelled by him as *Puschkinia* sp.


“*Tulipa sp*.” sensu Mahfooz Advay.

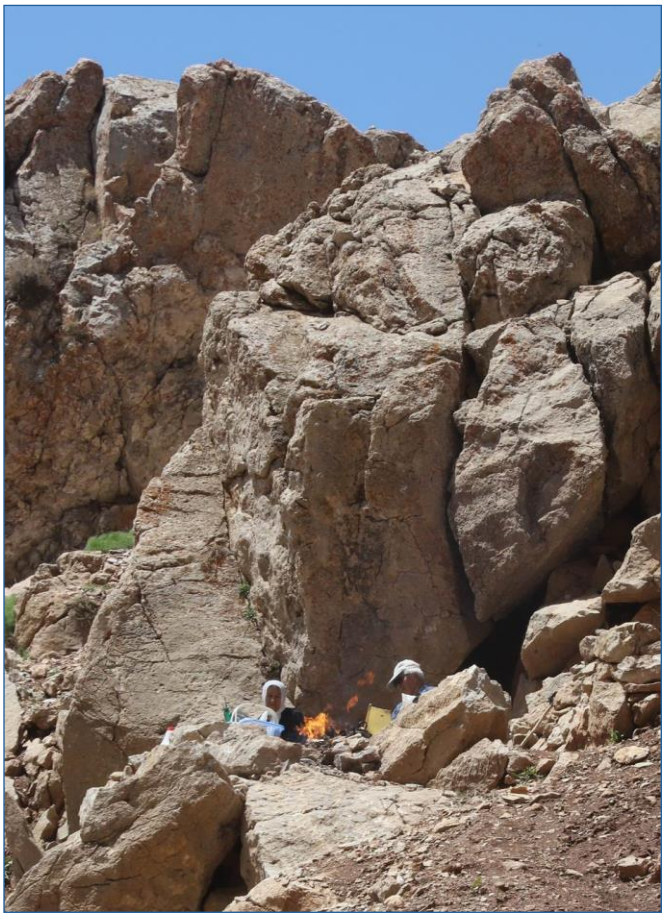
My wife Guna wrote to me in an e-mail – is this the first time you, who naively trust everyone, are being mocked... That's how it is. When I write down a complaint – I get a question in return – but how can I distinguish autumn-blooming crocuses from spring crocuses (their corms are as different as day and night). Here you have a “botanist” who is preparing (by his words) a monograph on the bulbous plants of the Zagros Mountains...

With this, we can say that the fruitful part of our expedition is over. The next day we headed up Shaku Mountain, where a good road leads to the summit. Along the way, here and there we saw *Fritillaria imperialis* blooming on the tops of the roadside cliffs, but there are practically no places that would tempt us to stop. We gave up at an altitude of 2950 m - further on from there it seems to be only bare rocks. From the rapid climb, I felt a little dizzy, here you can already feel the lack of oxygen and a little acclimatization is needed. The slopes are also too steep for

my unstable knees. But our Iranian chef digs me some *Puschkinia sp*. bulbs; it seems that it will be the same *P. avromanica*.

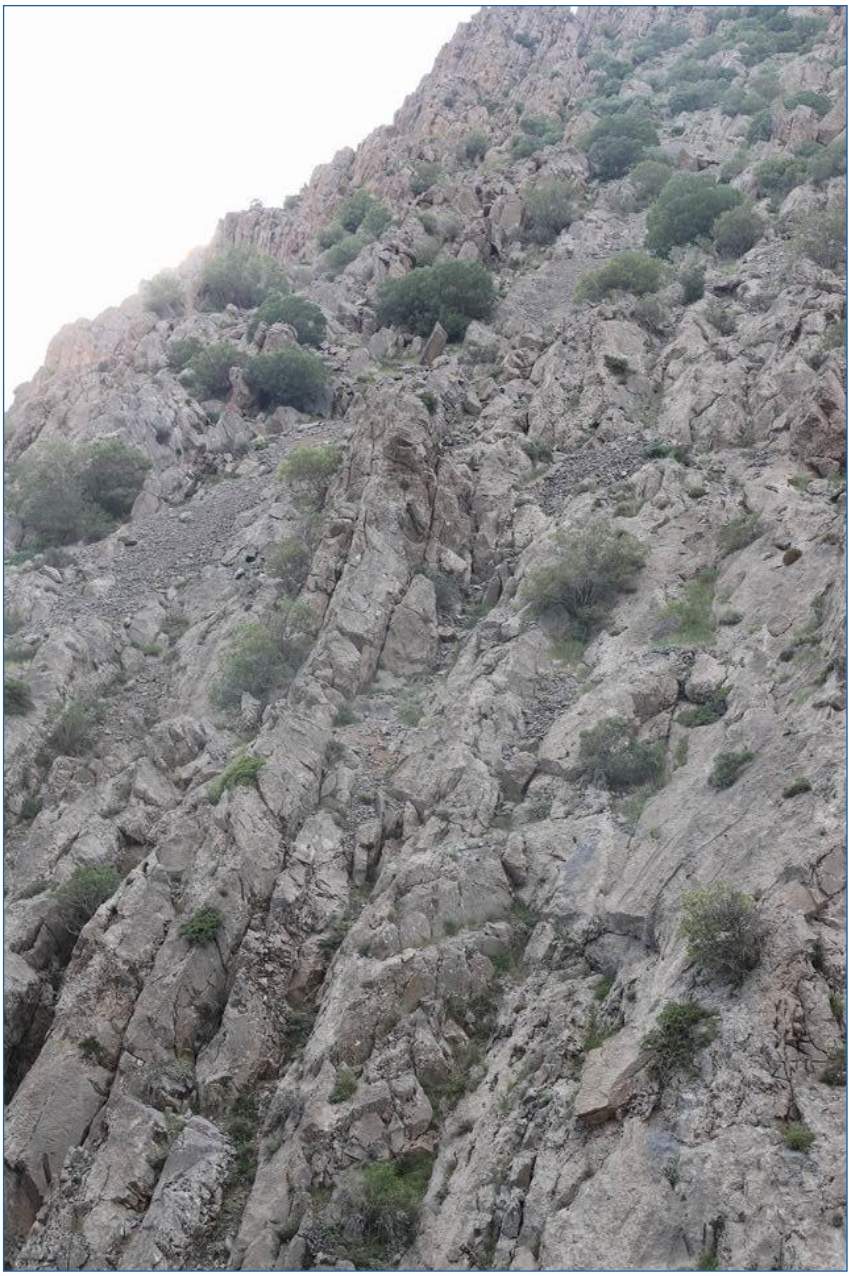
The day before last we go to Shaku Mountain, hoping that it will not be too late.

At almost 3000 m altitude we found only *Puschkinia avromanica*, but lower were also some *Colchicum sp*. and *Fritillaria imperialis*. On this picture our Iranian partner is collecting some *Puschkinia* bulbs.



An old local couple, (the lady used walking-stick) climbed up high on very steep slope to find a very isolated spot for their picnic.

On the way down we stopped at a couple more places where large *Colchicum* sp. grow and even lower down I collect some *Iris aucheri*. This species has a very variable flower colour - from white to almost black, so it will be interesting to find out what colour is found in the respective population.



Further are only bare rocks, so we turn back.

We spent the night in the proudest hotel of this trip – in Hamedan. If Václav and I joked earlier that each subsequent accommodation is distinguished by lower standards than the previous one, now we laugh that our bosses want to atone for their mistakes by placing us in a 4-star hotel, which, more or less, meets the standards of a hotel of this level. In the morning, we went up the mountains again to the Genjameh mountain pass. There in 2008 I collected the beautiful *Allium breviscapum* (which is no longer so magnificent in culture) and in the notes it is noted that there is also some *Tulipa* cf. *humilis*, but I have not registered the colour of the flowers. After a tiring search, I still managed to find one clump and collect 3 bulbs of this tulip.

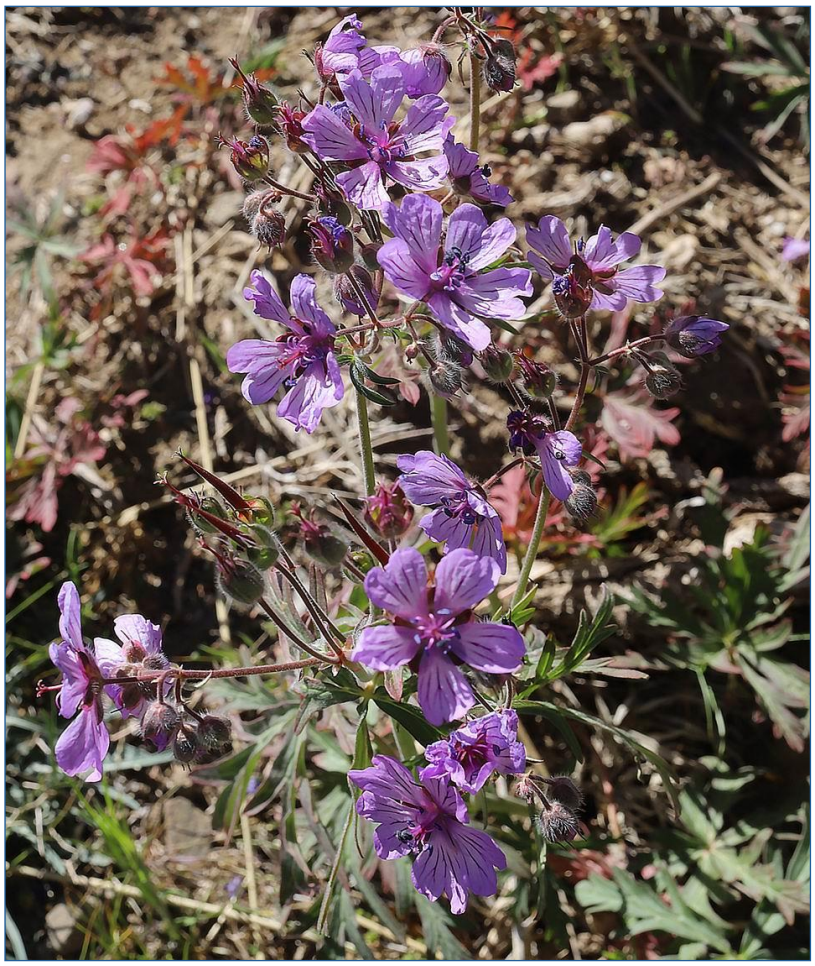
And then the continued journey through the mountains to the last accommodation in Aligudarz began.

The final locality visited is Ganjnameh Pass over Hamedan. *Allium breviscapum* grows there, having very nice leaves in the wild.

*Allium breviscapum*
in the wild.

In cultivation *Allium breviscapum* Stapf. loses its curved leaves but very pretty flower-heads appear.

Everywhere some tuberous *Geranium* sp. was in flower. I didn't check tubers, so I can't determine species.



Our road back to Tehran begins.

To Tehran.

The village of Sefid Dasht seem to be “pressed in” between high rocks, but there is a railway!


Near the entry to every village, one met a gallery of portraits of this village's "Islamic martyrs", who lost their lives fighting against “unbelievers”.

The late evening sun colours the last mountains on our road.

On the way, I wanted to collect *Tulipa lorestanica*, another species that I had described myself, but whose bulbs were eaten by a rat a couple of years ago. The road was long, we spent too long at the Ganjnameh Pass, and on top of that the driver missed the right turn, losing time again. It was already getting dark.

*Tulipa lorestanica*, Rukšāns & Zubov published by me and my Ukrainian friend Dimitri Zubov Unfortunately it was too late to find any plant this time.

*Allium haemanthoides* Boiss. ex Regel was also growing here side by side with *Tulipa lorestanica* but now we couldn't find it.

On the opposite side of the road, there was a different form of *Tulipa* cf. *humilis* growing.

Although I had already driven this road at least twice, the area seemed completely unfamiliar and in the end I decided that we were driving on the wrong road, since it had been eight years since the last time I was here. There is no internet connection in the mountains either and we could not check our position. Every now and then I pressed the camera button to record the coordinates of the place, and when I got online I could see where we went wrong. Reaching the last mountain pass before descending into the valley, it suddenly seemed that we were in the right place. We paused and in the twilight we examined the slope of the corresponding hill, where this tulip and also one species of *Allium* was observed before. But there is no sign of any tulips on the slope and there are no *Allium* leaves anywhere to be seen. I guessed there must only be a similar place.

A little lower could be seen also *Fritillaria imperialis*, but now it was too dark, and most likely too late in season as well.

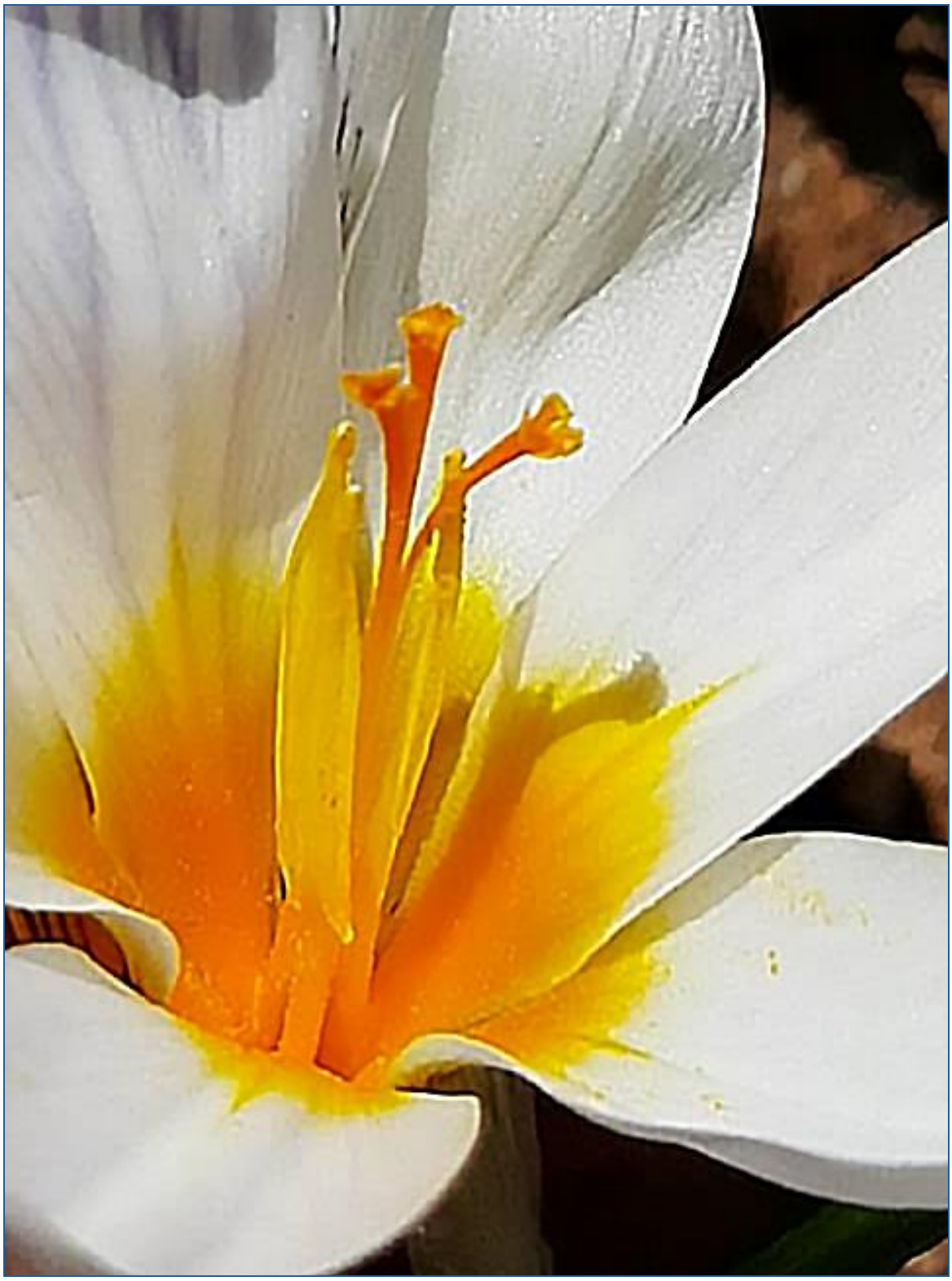
Already at home, putting all the points on the map, it turned out that we have been to the right place, only much too late to find anything. But in eight years everything had changed so much that you could not recognize anything - where there was an empty valley with a beautiful river, now a village with a large fish farm has appeared, and so on. It's no wonder that I no longer recognized the road. The hotel has also been renovated over the years, now there are beautiful comfortable rooms. True - there are no longer European-style toilet bowls, but there were folding toilet seats provided.

An extended, tiring drive through the semi-desert to the airport followed. Hot as hell. The windows were open in the car, and I arrived home sneezing, with a sore throat and a cough. But maybe I caught them on the crowded Turkish Airlines plane.

There was a pleasant surprise at the airport, though. Last year, we went east from Tehran on an expedition and the last stop was for a very beautiful crocus, photographed by a mountaineer. Judging by the pictures, it was almost certainly a new species. We didn't manage to reach it – rain, hail, and a crazy wind made the road so slippery that it was dangerous to continue. We quit about 6 km short of our goal. The next day, the sun is shining brightly, we try to reach the place we are looking for from the other side, but the road is covered in ice at the top – there was frost at night, and we were left empty-handed again, now about 10 km short of what we were looking for. But now our Iranian partner has arranged for the locals to collect this crocus for us, send them to Tehran by bus-post and deliver them to us at the airport via a taxi driver. I get half of the crocuses sent.

The unknown *Crocus*.

The last pleasant surprise at the airport – here I got certainly new species of crocus, collected for me East of Tehran by a local enthusiast. Photos Hassan Ghelichnia.



Close up of new crocus.

I don't know how much it cost our Iranian, but considering the wild and unreasonably high fee they asked us for this expedition, he certainly didn't lose out.

I had already returned home when I received an e-mail from our Iranian “partner” claiming that he had underwritten the cost of our trip.  Let's not even talk about the fact that our boss used

my knowledge of plants and their localities, I planned the route, and together, he and the driver collected much more than Václav and I had done. Once I even ran ahead of them, tearing off the tulip flowers, so that at least something in this population remains intact. Thus, it turns out that Václav and I have paid for this scientist's expedition to replenish the institute's collections. From correspondence with other Iranian scientists, I learn that our boss had actually gone on an official business trip, as part of the institute's research programmes, the driver works at the same institute, and all expedition expenses are paid by their place of work, but our payment goes straight into the pocket of this "philanthropist"... In fact, the only advantage that made us cooperate with this Iranian "scientist" was the official cover letter that we were collecting plants officially with permission for research purposes.

But I once again solemnly promised myself that I would never go to Iran again.

**Acknowledgments**

I express my greatest thanks to my very long-time travel partner who shared with me all the joys and difficulties of our common travels to Iran and not only there – Václav Jošt from the Czech Republic. I also express my gratitude to my Ukrainian friend, Dr Dimitri Zubov, with whom we participated in many expeditions (before the Russia started war in Ukraine), including to Iran, for checking this manuscript and making corrections to the names of some plants and geographical locations. Of course, I can't forget all other companions of our trips to this beautiful country, which every year becomes more and more open for visitors, more and more comfortable. I would also like to thank Jill White (UK) for arranging of several trips to Iran and to our Iranian guides who accompanied our group during those trips. And I'm especially thankful to my wife Guna for her help in garden and patience during my trips and preparations for publications.

Jānis and Václav in one of Jānis' crocus houses in Latvia.