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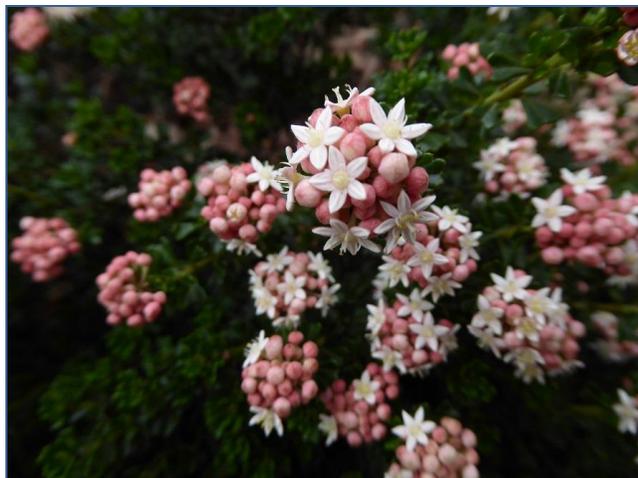
August 2019



Latvian bulb maven Jānis Rukšāns begins our offering this month with a description of a new species of *Puschkinia* from Turkey. Fritz Kummert from Austria clarifies the naming of a plant which has long been mis-identified and lep and Gerrit Eijkelenboom from the Netherlands give us some inspiration for a trip to the Gargano peninsula in Italy in April where they found many orchids and other flowers in bloom.

Cover photo: *Viola heterophylla* subsp. *graeca* – photo Gerrit Eijkelenboom.

---Some August flowers from around the world – photos from SRGC forum members---



Pomaderris obcordata 'Mallee Princess' - Australia - Fermi de Sousa. *Sempervivum marmoreum* subsp. *erythraeum* - Canada - CohanFulford.



Frost on *Eranthis hyemalis* leaves - New Zealand - Lesley Cox. *Gentiana asclepidea* - Scotland - Roma Fiddes.

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---Plant Description---

***Puschkinia kurdistanica* (Asparagaceae) – a new species from the shores of Lake Van in Turkey**

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Summary – Species of the genus *Puschkinia* discussed; a new species *P. kurdistanica* from near Lake Van, Kurdistan described and its differences from *P. peshmenii* characterized. New data given about the variability and the distribution area of *P. peshmenii*.

Key words – New taxa, genus *Puschkinia*, *Puschkinia bilgineri*, *Puschkinia kurdistanica*, *Puschkinia peshmenii*, *Puschkinia scilloides*, Turkey, Iran.

The genus *Puschkinia* was described in 1805 from the Caucasus Mountains. Earlier included within the *Liliaceae* family, this genus is now placed in the *Asparagaceae*, subfamily *Scilloideae*¹. The genus was published by J.M.F. Adams who named this beautiful early spring bloomer after his travel partner A. Musin-Pushkin. Superficially it is fairly similar to the much larger genus *Scilla* sensu lato, but differs in having a distinct perianth tube and flattened filaments that extend into a 6-lobed corona that slightly exceeds the anthers. Because of its superficial similarity to scillas, the species was named *Puschkinia scilloides* (scilla-like puschkinia). Interestingly, there is a *Scilla* (now *Fessia*) named after puschkinias – *Scilla puschkinioides*. Both are so similar that one can separate them only by checking their flower morphology – in scillas the flower segments are either free to the base or joined for not more than 1/5 of the total length of the perianth, whereas in puschkinias the perianth segments are united for 1/4 or more of their length. Later two more *Puschkinia* species were described – *P. libanotica* from Lebanon and *P. hyacinthoides* (hyacinth-like Puschkinia) from W Iran. In Flora of Turkey (1984) J. R. Edmondson merged them all together as *P. scilloides*, concluding that the great variability and lack of correlation between the characters did not allow their maintenance as separate species. *Chionodoxa* is another genus with a distinct tube and flattened filaments, but they lack the corona-like extension; now most botanists subsume them under *Scilla*.



Left: 01 - *Puschkinia scilloides* BATM-148 from Tendurek gec., Turkey; altitude 2650 m.

Right: 02 - *Scilla puschkinioides* from altitude ~2500 m, Sina, Uzbekistan superficially resembles puschkinia.



¹ **Scilloideae** (named after the genus *Scilla*, "squill") is a subfamily of bulbous plants

within the family *Asparagaceae*. *Scilloideae* is sometimes treated as a separate family **Hyacinthaceae**, named after the genus *Hyacinthus*. *Scilloideae* or *Hyacinthaceae* include many familiar garden plants such as *Hyacinthus* (hyacinths), *Hyacinthoides* (bluebells), *Muscari* (grape hyacinths), *Scilla* sensu lato and *Puschkinia* (squills or scillas).

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The best-known and most widely distributed species is *Puschkinia scilloides* Adams (1805). According to the Flora of Turkey it occurs at altitudes from 1500 m to 3500 m [KPPZ gatherings from Tunceli region were collected at lower altitudes - at 1000 and at 1200 m; H. Yildirim (2014) even mentioned 900 m altitude near Bingöl] in a large area from Dagestan and Bestau in the northern Caucasus and eastern Turkey to Lebanon and north-western Iran.



Left: 03 - Dwarf form of *Puschkinia scilloides* WHIR-114 on Kuh-e Sendan Dag, Iran; -altitude 2400 m.

Right: 04 – Cultivated plant, dwarf form of *Puschkinia scilloides* WHIR-151 from Takht-e Soleyman, Iran; altitude 2700 m



It is not surprising that in such a large territory and at such different altitudes plants are variable. As a rule, those from the highest elevations are smaller and with fewer flowers than those from lower places. Typically their leaves are up to 15 mm wide, though near Siah Bisheh in Mazandaran Province, Iran we found a population where the leaf width was even 35 mm (SLIZE-066).



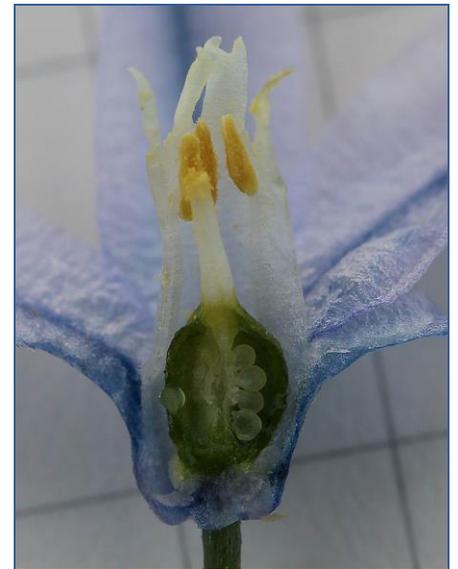
05 - *Puschkinia scilloides* SLIZE-066 from near Sia Bisheh, Mazandaran, Iran; leaves up to 35 mm wide.

A noteworthy fact: in my collection the open pollinated seedlings of this form retain the leaf width. Sample WHIR-151 observed near Takht-e Soleyman (Iran) at 2700 m altitude had only 2-3-4 flowers per spike, while sample WHIR-127 from Kuhha-ye Tales (Iran) at alt. 2100 m was so floriferous (some individuals had even 25-27 flowers on a spike) that it resembled a hyacinth ("*Puschkinia hyacinthoides*"). Unfortunately the latter population now seems to be destroyed due to the extensive construction of villas in the area. Therefore it is no wonder that in the Gothenburg Botanic Garden one sample of *P. scilloides* (KPPZ-221 – from near Tunceli, Turkey, altitude 1200 m) was grown for several years as *Hyacinthus* sp. The name was changed after a thorough examination of the plants.

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06A, 6B -Two gatherings of *Puschkinia scillooides* - WHIR-126 from Kuhh-ye Tales, Iran and KPPZ-221 from near Tunceli, Turkey - both resemble a hyacinth.



Left to right: 07 - *Puschkinia scillooides* from Zangezour, Armenia

08 - Toothed corona of *Puschkinia scillooides* BATM-148, Tendurek gec., Turkey; alt. 2700 m

09 - Flower details of *Puschkinia scillooides* - KPPZ-221, nr. Tunceli, Turkey.

All the samples of *Puschkinia scillooides* have several features in common: their flowers are pale milky blue with a darker midrib and they open widely, like flat stars. Flowers are sideways or upward facing and develop while the leaves are quite short. In 2007 Peter Sheasby published two pictures (figs. 182 & 183 in *Bulbous plants of Turkey and Iran*) of another *Puschkinia* species with very pale blue to whitish flowers that grew together with *P. scillooides* on the Karabet Pass (S of Lake Van, Turkey), but

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differed from the latter in the shape of the flower spike, the spreading leaves (which in *P. scilloides* are upright) and the dissimilar shape of the corona. This information so intrigued me that in 2009 and again in 2011 I organized expeditions to eastern Turkey, including the Karabet Pass on our route.



10 - Karabet pass S of Lake Van from where *Puschkinia bilgineri* was published, alt. 2900 m.



11- *Puschkinia bilgineri* on Karabet pass.

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12,13 - *Puschkinia bilgineri* on Karabet pass.



Luckily, we reached the place right at the peak of blooming which allowed us to take a lot of pictures and make observations *in situ*. Although we did not see any typical *P. scilloides* to compare the two *in situ*,

it was undoubtedly a different species. To be sure that they were not the same, later at home I cross-pollinated both puschkiniyas, but no seed was yielded. This encouraged me to prepare its description as a new species, which I decided to name as *P. kurdica* conveying my great respect to the Kurdish people brutally suppressed by the regime governing now in Turkey. My manuscript was accepted for publication already in November 2013, but published only on 13th of March, 2014. Only nine days earlier the same species was published under the name *P. bilgineri* by the Turkish botanist H. Yildirim. Although his manuscript was delivered for publication around 2 months later than mine, according to the priority rules determined by the Code of Botanical Nomenclature, the name given by me now goes into synonymy, for being published later.

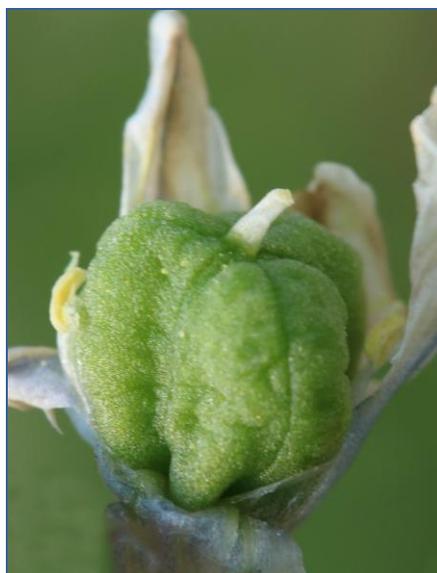
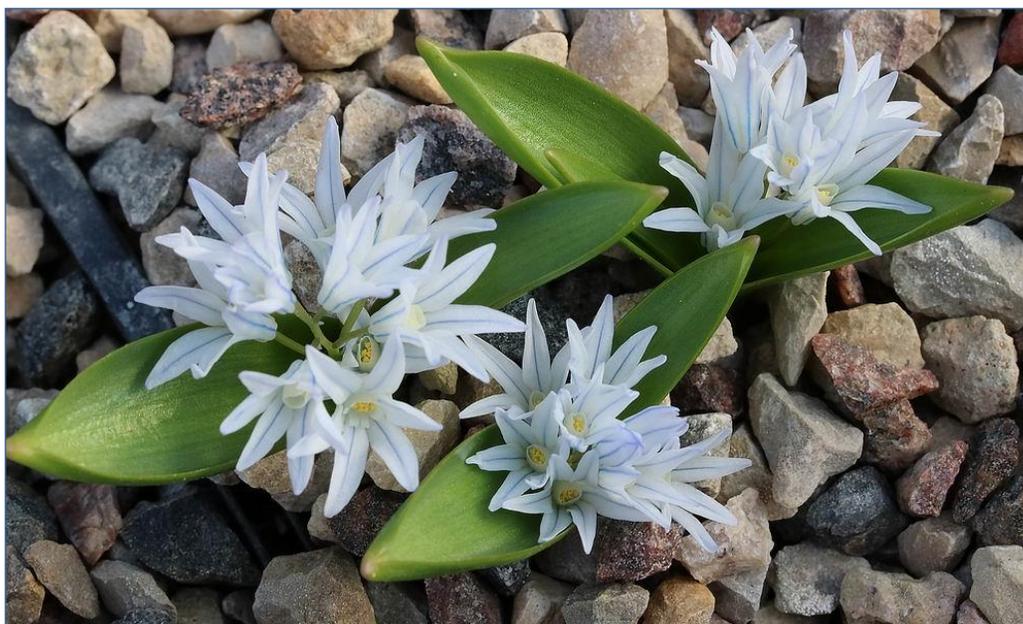


14 - Smooth corona of *Puschkinia bilgineri*.

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The main feature separating *Puschkinia bilgineri* from typical *P. scilloides* is the shape of the inflorescence – it is somewhat corymbose. In *P. scilloides* flowers are arranged in long or rather short but distinctly raceme-like inflorescences and the pedicels are of +/- the same length, in this new find however the spikes are much shorter and flowers are crowded in depressed conical inflorescences. The lower pedicels are much longer and towards the tip of the inflorescence gradually become shorter. Most distinct in the Karabet plants is the corona – it is very short (according to Sheasby, sometimes even absent), with an entire margin; lobes or teeth are completely absent. At anthesis, leaves in these plants are much longer than the inflorescence, and they are spreading, more or less adpressed to the ground. In *P. scilloides* leaves at flowering time are either shorter or equal in length to the inflorescence and are erect, never adpressed to the ground. In flower colour both puschkiniads are fairly similar, except that among the Karabet plants there is a greater proportion of very pale-flowered specimens, with a short or a very light bluish midrib, sometimes almost without one, although there are also plants whose flower colour would be indistinguishable from that of *P. scilloides*. Flowers of *P. bilgineri* are slightly less flared and smaller than those in *P. scilloides* and they are more or less upward facing. The colour of their seed is different – in *P. scilloides* it is yellow, in *P. bilgineri* – black. H. Yildirim found another small population of this species in Hakkâri Province, near Dağlıca. According to H. Yildirim, *P. scilloides* grows in the same locality as well.

15 - Cultivated *Puschkinia bilgineri* in author's collection.



16A, B - Flower details and seed capsule of *Puschkinia bilgineri*.

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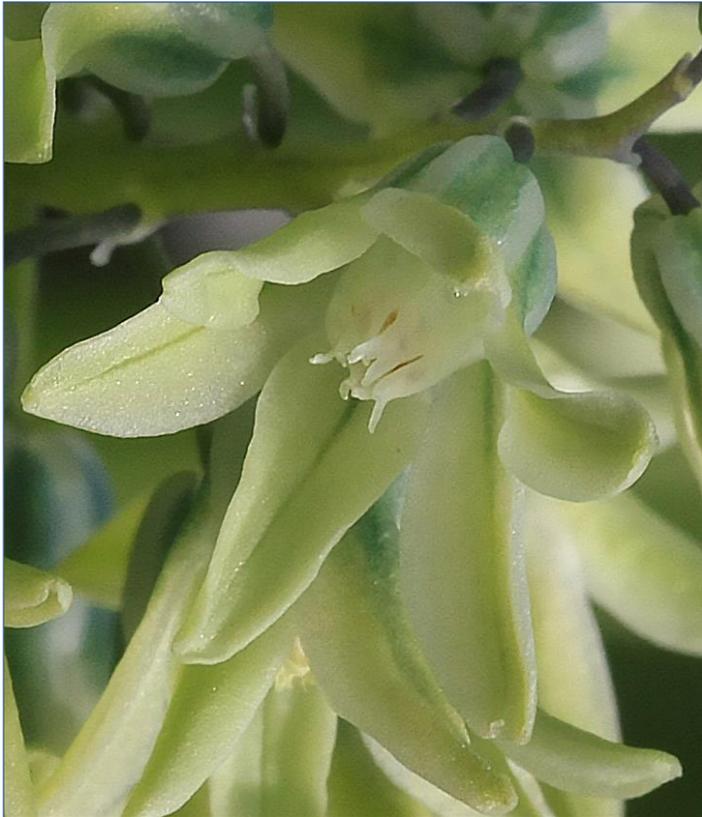
In 2007 Martyn Rix and Brian Mathew published one more *Puschkinia* sp. very different from *P. scilloides* (as well as from the later published *P. bilgineri*) in the shape and colour of the flowers. This new species was reported as originally discovered in 1974 by Dr. Hasan Peşmen on the eastern flank of Pelli Da, in the mountains between Tatvan and Van at the southern side of the lake. Those plants were shown to M. Rix and a few days later in Hakkâri Province, near the Turkish-Iranian border ([Rix & al., coll.no.1926](#)), they discovered a similar small population among dwarf shrubs near Yüksekova, in the gorge leading into the valley from the west. In the description of the new species plants from Yüksekova were used. It was named after Dr. H. Peşmen (who tragically died in a road accident in 1980) as *P. peshmenii* Rix & B. Mathew and was published in Curtis's Botanical Magazine², vol. 24, table 582 (2007). This sample must be regarded as typical *P. peshmenii*. Its progeny is the most widely grown in collections and it reproduces true from seed with no traces of hybridization with differently looking samples from other localities regarded as *P. peshmenii*. Its photo had already been published for the first time in 1981 in "The Bulb Book" (p. 43) by M. Rix & R. Phillips as then an unnamed green variant of *P. scilloides*. In the same area typical *P. scilloides* also occur.



17 - *Puschkinia peshmenii* - type gathering from Hakkari province.

²There are some discrepancies between collecting data published in Curt. Bot. Mag. where new species is described and label on herbarium sheet ([Rix & al., coll.no.1926](#)). According to the isotype herbarium sheet, the sample 1926 was collected in 1972 - two years earlier than this species was for the first time seen by Dr. H. Peşmen (according data published in Curt. Bot. Mag.). The number used for the photo of new species (Rix 1624) in Kew herbarium register belongs to *Fritillaria caucasica* subsp. *syriaca* which was collected in 1970. In Rix & Phillips (1981) for sample 1926 is given May, 1974 and the same picture has collector's number Rix 1926.

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18 - Corona of *Puschkinia peshmenii* (type gathering - Rix et al. 1926).

19 - Flower details of *Puschkinia peshmenii* (Rix et al. 1926) showing long straight style.

The flowers of the described variant of *Puschkinia peshmenii* when compared with *P. scilloides* are green rather than pale blue; they are more campanulate to funnel-shaped and semi-pendant. In cultivation this sample blooms later than all *P. scilloides* samples from the Caucasus, Turkey, and Iran. In my collection it is the latest blooming *Puschkinia* sample. Leaves are distinctly erect, appear well before the flowers, and noticeably overtop the inflorescence. Pedicels are short – only 2-7 mm long, flowers are nodding. The same taxon, according to Rix & Mathew (2007), occurs also in western Iran, near Shahpur, north-west of Lake Rezaieyeh, now renamed as Lake Urmia (Mathew & al., coll.no.1340), and in the Elburz Mountains (pictured by John Ingham – 10 km north of the road tunnel under the pass on the Karaj-Chalus road, at an altitude around 2000 m - personal communication). The flower colour of the Iranian plants was not characterized. On the photo made by John Ingham they are white.

Plate 582 drawn by Christabel King that was published together with the description of *Puschkinia peshmenii* in the Bot. Mag.24 (1):56 2007 is somewhat confusing. I never observed in the wild or in cultivation individuals of *P. peshmenii* with such prominently curved, downward-bent spikes as depicted by C. King. In all the gatherings of *P. peshmenii* grown by me (including the type gathering – Rix & al., coll. no.1926) and in plants seen in the wild the scapes were erect, only the flowers were pendant (although at the end of blooming and more noticeably while in seeds the tip of the scape was bending sideways).

In 2017 our small team, while travelling in Iranian Kurdistan, was forced to stop along the road from Saqqez to Marivan, because we had to change the car. We used this involuntary stop to do some botanizing in the surrounding mountains. Inside nearby shrubs I spotted some *Puschkinia*-like flowers, which in everything but the flower colour resembled *P. peshmenii*. The locality (altitude 1500 m) was quite far from the already known spots – around 250 km SSE from Shahpur, and at the same distance from the *locus classicus*. Their flower colour was very variable – from purest cold white with a greenish midrib, soft, even yellowish white with a very indistinct midrib to pale blue – in colour

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almost identical to typical *P. scilloides*. They all had pendant, campanulate flowers on short pedicels, some with even 25 blooms on a scape, and in general, significantly wider leaves. As the other features more or less correspond with the original description of *P. peshmenii*, at present I regard them as the same species (gathering 17IRS-048). It would be advisable to do a DNA check for a final decision.



Left to right: 20, 21, 22 - Variability of *Puschkinia peshmenii* in Iran, sample 17IRS-048, in wild.

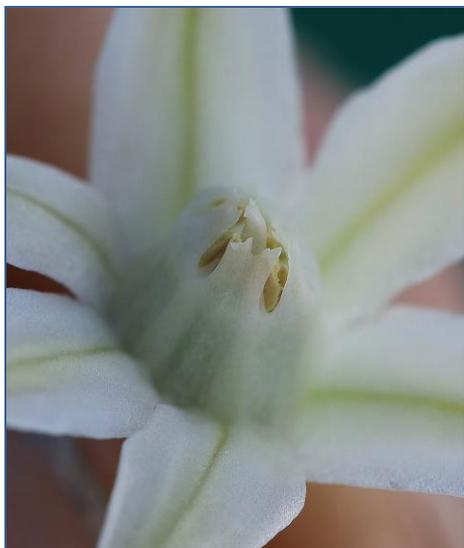


Left to right: 23, 24, 25 - The same plants from Iran cultivated in author's collection.

Our team found similar plants in 2004 around 360 km to the NW from the *locus classicus* of *Puschkinia peshmenii*, some 12 km to the east of Bingöl in Turkey, at an altitude ~1500 m. During the joint Swedish-Latvian Expedition organized by Henrik Zetterlund from the Gothenburg Botanic Garden we stopped by the side of a small road. Henrik and I explored its right side, while Arnis Seisums from the National Botanic Garden of Latvia took his boots off and crossed a small river on its left side. There were dense shrubs with cattle paths on either side of the road. Arnis returned with a few bulbs of an *Ornithogalum* sp. (it turned out to be a new species) and a good amount of seeds, which he regarded as belonging to *P. scilloides* – at the time the sole species in this genus. The seedlings bloomed with us for the first time in 2008 and were identified by us as “a white-blooming form of *P. peshmenii*”. Flowers in this gathering (BATMAN-250) were slightly variable in colour, some plants were somewhat greenish, some creamy and some very faintly bluish. They were all positioned on short pedicels, campanulate, and less pendant than in type *P. peshmenii*. If not for the differences

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in the corona, the longer flower tube and the shorter free part of the segments I would regard them as identical with our Iranian sample 17IRS-048. Whether it is worthy of its own name is difficult to say without checking on DNA level. From around the same locality (a little closer to Bingöl) at an altitude of 900 m H. Yildirim (2014) cited the herbarium of *P. scilloides*, which our plant certainly is not. During this trip we had no GPS, so the exact point and altitude where Arnis collected the seeds remain unknown, but probably it was around 1300-1400 m.



Left to right: 26 - Corona of *Puschkinia peshmenii* (Iran).
27 - Flower details of *Puschkinia peshmenii* (Iran).
28 - *Puschkinia peshmenii* (Iran) seed capsule with remnants of style.

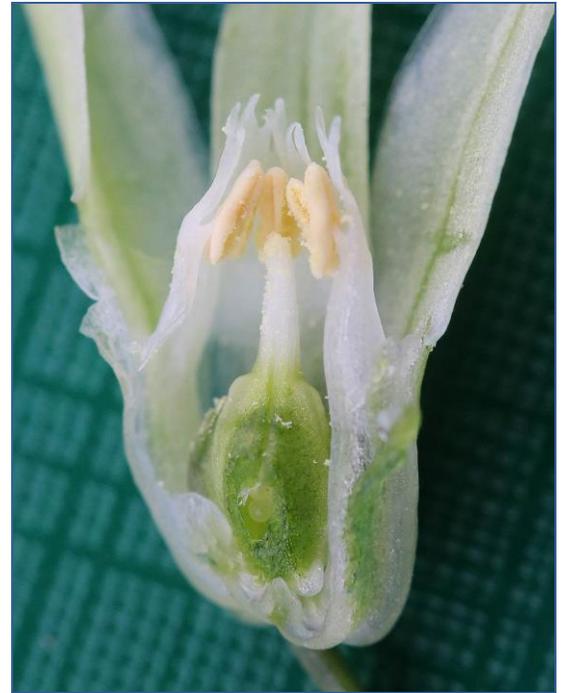


29, 30 - *Puschkinia peshmenii* aff. from near Bingöl, Turkey.

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31 - Corona of *Puschkinia peshmenii* aff. from near Bingöl, Turkey.



32 - Flower details of *Puschkinia peshmenii* (BATMAN-250) showing long straight style.



33 - *Puschkinia kurdistanica* BATM-060 from shores of Lake Van (S coast), showing long pedicels.

During the same trip (BATMAN) near the shores of Lake Van, 19 km after Tatvan on Tatvan-Van rd., we made a stop by a short, very steep gully. We climbed some distance up to a few shrubs where in wet clayey soil under *Juniperus* and *Quercus* bushes and in openings nearby we spotted several still blooming bulbs – we collected 2 *Colchicum* species, *Muscari*, *Bellevalia*, *Iris persica*, *Fritillaria crassifolia* aff. and a *Puschkinia* already in seed, labelled *in situ* as *scilloides*. It got the accession number BATMAN-060 and in 2009 was relabelled as “*P. peshmenii* whitish form” – a few plants had almost white flowers with darker tubes and midveins. Most of them were a dirty bluish shade, though not as light and bright as in *P. scilloides* - the colour was rather greenish, blue, somewhat dull, flowers were positioned on the slightly curved flower stalks, more conspicuous in the bluish-coloured plants.

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Most prominent were the very long lower pedicels, the lowest ones being mostly 30-40 mm long, but occasionally even more than 50 mm long. Flowers for the greatest part were tubular, only opening slightly, arranged in a dense spike.



34 - Corona of *Puschkinia kurdistanica*.

Another feature separating this sample from typical *P. peshmenii* is the style. In *P. peshmenii* it is well developed, around 3 mm long, white and remains attached to the seedpod almost until maturity. In sample BATMAN-060 the style is reduced, less than 1 mm long, the upper part of the ovary gradually narrows towards the stigma and retains this shape until the seeds ripen. Although these plants were collected somewhere in the vicinity from where Dr. Hasan Peşmen reported the plants that later were named as *P. peshmenii*; the plants collected by our team were so different that they undoubtedly needed a name of their own. The seedlings perfectly reproduce the bluish-coloured form.

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Interestingly the seedlings from BATMAN-250 and from Rix et al.coll.no.1926 retain the colour and the general habit of the mother plants just like the newly described species (BATMAN-060) here, although they grow in the greenhouse side by side without any isolation at blooming time, so are able to hybridize freely. Their blooming slightly overlaps, though the Rix et al. sample is the latest of them all. We have been growing the most variable Iranian sample only for 2 years, so no seedlings are big enough to flower yet.



35 - Flower details showing reduced style of *Puschkinia kurdistanica*.

36 - *Puschkinia kurdistanica* BATM-060 - seed capsules keep the specific characters of the style.

I decided to name this new species as *Puschkinia kurdistanica*, after the part of Turkey inhabited by the Kurds, where it was discovered. (See Distribution map #37)



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---Species description---

Puschkinia kurdistanica* Rukšāns *species nova

Type: plants from E Turkey, S coast of Lake Van, 19 km after Tatvan along the Tatvan-Van rd., 38°28' N and 42°29' E; alt. apr. 1670 m., leg. Rukšāns, Seisums & Zetterlund 26th of May, 2004 as BATMAN-060. Holotype GB (Gothenburg) ex culturae in horto Jānis Rukšāns, 05-04-2019.

Habitat and distribution: known from the type locality, where it grows at the bottom of a steep gully under shrubs of *Juniperus* sp. and *Quercus* sp. together with *Colchicum* sp., *Ficaria*, *Fritillaria*, *Umbilicus*, *Delphinium*, etc. It blooms there soon after snowmelt.

Bulb: slightly elongated, round, 25 mm in diameter and up to 29 mm high, the outside blackish brown, inner scales soft white; roots white, unbranched, lasting one season.

Leaves: 2, dark green, channelled in the lower part, higher up becoming flat, slightly ribbed, the lower leaf 19-40 mm wide in the widest part.

Scape: one, up to 15 cm long, green, ends below the tips of the leaves with a distinctly sideward and downward-bent tip; because the upper part is curved the scape at the highest point is around 11 cm above ground.

Flowers: 3-11(-18), dirty lilac with a greenish midrib or whitish rarely with a dirty bluish tube and a greenish blue midrib, campanulate, slightly opening at the mouth.

Pedicels: green to greyish green, lowest pedicels 30-40(-50+) mm long, upright, slightly curved in the upper part; uppermost – up to 7-10 mm long.

Bract: cup-shaped with upturned angles and mostly with a smooth upper rim, sometimes irregular, in the lowest part a small bluish zone that becomes pure white higher up.

Flower segments: tube dirty bluish green, up to 3 mm long; segments up to 8 mm long and 3-4 mm wide, the outside light lilac to whitish, with a triangular, at the base greenish or bluish midrib, reaching the tips of the segments; the inside whitish to somewhat dirty blue with a greenish midrib.

Filaments: expanded into a 6-lobed whitish corona, lobes up to 2 mm deep, irregularly edged to bilobed at the top.

Anthers: creamy, on approximately 1 mm long stalks, pollen yellow.

Ovary: dark green, around 5 mm long and 4 mm wide.

Style: very short (less than 1 mm long to practically reduced), gradually narrowing from the top of the ovary, at the base green, higher up becomes whitish.

Stigma: positioned below the tips of the anthers, occasionally level with them.

Capsule and seeds: capsule rounded, up to 8-10 mm in diameter, locules concave, indistinctly ribbed, without wings. Seeds rounded, up to 2 mm in diameter, yellowish.

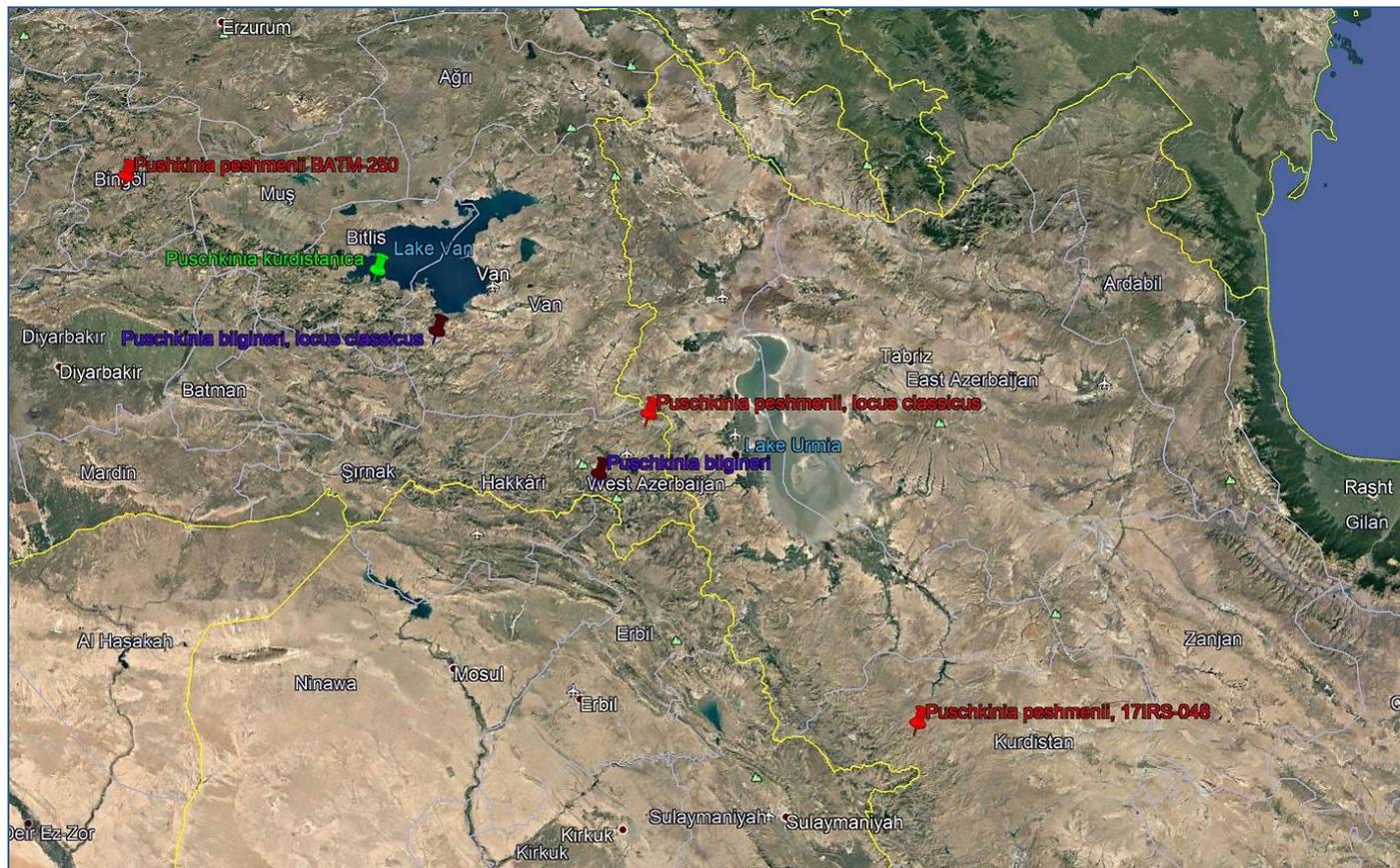
Etymology: named after Kurdistan, where it was found.

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For a better comparison of all the known *Puschkinia* species, the main features are included in the table below:

<i>Puschkinia</i>	<i>scilloides</i>	<i>peshmenii</i>	<i>bilgineri</i>	<i>kurdistanica</i>
Bulb size tunic colour	ovoid-globose, 2 cm in diameter. Dark gray to greenish gray	2 cm in diameter Rix-1926 - slightly greenish gray BATMAN-250 - whitish to marbled gray.	17-27×10-22 mm Light to dark brown	25 x 29 mm blackish brown to marbled gray
Leaves: number shape size colour	2(-3), linear 3-15(-20) x 0.2-1.3(-3.5) cm dark green, channelled	1-2, linear, 13-22 x 0,5-1.5 cm dark shining green, channelled	2(-3), linear 10-16×1-2.7 cm dark green to green, spreading canaliculate	2, linear 15-21 x 1.9-4.0 cm green, at the base channelled
Scape: size shape	(2-)5-20 cm long erect	13-20 cm long Rix – slightly curved; Iran – erect	4-7 cm long erect	15 cm long distinctly curved, reaching 11 cm from the ground
Inflorescence its length to leaves number of flowers	lax to dense, erect level or over-topping the leaves 1-27 flowers	Lax, erect ends below the tips of the leaves (2-)4-9 flowers (Iranian up to 25)	dense, erect 2-4.5 cm long, overtopping the leaves (1-)3-30 flowers	very dense, pendant ends well below the leaf tips 3-11(-18) flowers
Pedicels	up to 6 mm long, spreading	2-7 mm long, pending	lowest 40 mm, upper 5 mm long erecto-patent	lower from 30-40(-50+) mm long, upper 7-10 mm long, erect to slightly curved
Bracts: shape colour	rudimentary	minute, irregular white, at the base lilac	1-2 mm, lanceolate to oblong white to pale purple	small, cup-shaped mostly white
Flower position Perianth and segment size colour	sideward to upward facing 17 mm long 10 x 6 mm bluish-white	nodding 8-15 mm long 7-10 x 3 mm green	upward facing 6-10×1.5-2.5 mm pale blue to white; midrib darker	upward to sideways facing 11-13 mm long 8 x 3-4 mm bluish to lilac-blue
Floral corona size upper margin	lobes 2-3 mm long, shallowly to deeply 6-fid	6-lobed, up to 3 mm long, lobes at the top toothed	2-3×2-3 mm, conical, white the apical margin entire	6-lobed, lobes +/- pointed to irregularly edged
Ovary	4 x 3 mm, dark green	3 x 3 mm, dark green	1.5-2×2-3 mm, dark green	3 x 5 mm, green
Style	erect, 2-3 mm long, white	erect, 3 mm long, light green to white	erect, 1-1.5 mm long, white	very short, reduced, gradually narrows from the ovary
Capsule	round to only very slightly elongate, 8-10 mm x 10-11 mm	ovate, with short wings between locules, 8 mm in diameter, keeps the long style at the top	4-6×6-8 mm, flattened round, greenish, with craggy ('crooked') surface	round, with triangularly elongated tip, 8-10 mm in diameter
Seeds	ovoid, 3 mm long, yellow	Ovoid 2-3 mm large, pale yellow	2-3 mm, ovoid to globose, black, glabrous	Up to 2 mm large, yellow

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37 - Distribution map of *Puschkinia peshmenii* (red), *P. bilgineri* (brown and blue) and *P. kurdistanica* (green). Locality of John Ingham's sample (*P. peshmenii*) left out of map as too uncertainly located.

Acknowledgments

Firstly, I want to express thanks to my travel partners Arnis Seisums and Henrik Zetterlund for the support in collecting the plants in Turkey and later in Iran. I am also thankful to my colleagues and the guides during our Iranian trips, without whom these travels and discoveries would have not been possible. I am very thankful to Tony Hall (Kew) for his unfailing assistance in getting the necessary literature, and to Tony and Henrik for the generosity in sharing and exchanging the treasures from our collections. As always, Mārtiņš Erminass corrected my English. Margaret Young (IRG/SRGC) as usual sent me her suggestions and included my "last-moment" amendments in the manuscript. And last but not least – my biggest thanks go to my family, especially my wife Guna, for always supporting me in my researches.

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---Plant Portrait---

Tanacetum haradjanii versus *Tanacetum densum* subsp. *amani*

Fritz Kummert

We have known for many years that the naming of *Tanacetum haradjanii* in our gardens is wrong, unfortunately this mistake cannot be eradicated.

I myself published corrections to this false designation in German horticulture and Gartenpraxis at the beginning of the 1980s, so I would like to point this out once again.

Since the late 1950s, plants of the pretty, drought-loving *Tanacetum haradjanii* hort., coming across from England, were also known to us in Austria and southern Germany. Since that time, the weather has actually become drier and warmer, so that the species is today certainly hardy and persistent in many areas.



Tanacetum densum subsp. *amani* with *Erica carnea*

Peter Hadland Davis (born 1918 in Weston-super-Mare, died in 1992 in Edinburgh) was a British botanist specializing in the taxonomy of the plants of Kurdistan, Turkey, Russia and the Middle East. As we now know in retrospect, he, the publisher of the Flora of Turkey, noticed the pretty shrub, and he is said to have taken the plant to Scotland. In 1979, volumes 1 to 6 of the Flora of Turkey appeared, followed by two volumes in 1982 and 1984. Since then, countless new species have been found and described in Turkey, with a new edition and many complementary publications.

Since it was not simple in 1980 to be able to read such a work - I only had access to the copy in the university in Graz - let alone possess it, it struck me only in 1982 that the illustration of the leaflet shapes of *Tanacetum haradjanii* in the flora of Turkey did not agree with those of the plant that was

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under cultivation under this name. Fortunately, Jim Archibald offered wild collected *Tanacetum haradjanii* seed in his 1987 list, JCA 940,900, collected in the province of Adana, north-northwest of Saimbeyli, 1100 metres above sea level. This made it possible to cultivate this species and to cultivate both the plants in question side by side. Both could be determined without any problems with the key of the flora and confirmed that the plant widely cultivated by us was *Tanacetum densum* subsp. *amanum*. But the false naming has persisted to this day.



Tanacetum densum subsp. *amani* (often written as subsp. *amanum*).



Tanacetum haradjanii

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Tanacetum densum subsp. *amani* herbarium sheet from Denver Botanic Garden.



Tanacetum densum subsp. *amani* growing in the Denver Botanic Garden.

In retrospect, it should be noted that the true *Tanacetum haradjanii* is much more delicate than *Tanacetum densum* subsp. *amanum*. It requires fully sunny locations, stony substrates and all-year rain protection from heavy rainfall.



Tanacetum haradjanii

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I no longer cultivate *Tanacetum haradjanii*, my pictures show the species as grown previously in my rock garden. Old windows can be re-purposed to raise a cover to protect even larger stocks of the plants. In such a spot it may even be possible to cultivate the most beautiful parasitic plant in Turkey, *Diphelypaea tournefortii* !



Diphelypaea tournefortii – a plant which is parasitic exclusively on *Tanacetum* species - photo from [Viranatura](#), Chris and Basak Gardner.

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---Plants in the Wild---

Orchids and other species of Gargano, Italy by lep & Gerrit Eijkelenboom

The Gargano peninsula is situated on the east coast of Italy in the province of Puglia. It is an isolated area, mountainous till 1066m, surrounded by vast plains. In geological history Gargano was an island. It is well-known by orchid-lovers, because of the presence of so many orchids.



Photo taken from the aeroplane flying over Gargano, looking from east to west, with the town of Vieste at the east coast.

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We visited the peninsula from April 14th to April 20th 2019. Our residence was near the little town of Mattinata in the heart of orchid-territory. I can recommend our house, [Villa Fralu Mattinata](#), a nice cottage in an olive yard, with all comforts you wish.



We start with the orchid with the name of the peninsula. ***Ophrys garganica***. The most distinguishing feature is its broad undulate petals, even larger than the sepals, in the most striking colours. This species was formerly considered as a subspecies of *Ophrys passionis*, but the two are separated now. *Ophrys passionis* is a variety of *Ophrys arachnitiformis* and occurs in the south of France and the north of Spain. *Ophrys garganica* is not an endemic species. It is rather widespread and is found from Tuscany to Sicily.



Ophrys garganica





The next species carries the name of the province of Puglia:

Ophrys apulica.

It is a very beautiful species, with a large complicated lip, together with the purple perianth (meaning the sepals and petals together) which give this orchid its spectacular appearance. It is not difficult to find, since they form clusters.



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Ophrys promontorii



The mountain range of Gargano, Promontorio del Gargano (promontorio means "cape") has given the name to the next orchid ***Ophrys promontorii***. We did not find many of this species, so it is rather rare, most frequent at Mount Gargano. The petals are the most eye-catching feature, often very large, broadly lanceolate, with undulate margins. The shape of the lip is narrowly oval, dark brown to blackish-purple, velvety, with prominent swellings, hairless on the innerface. The marginal hairs are long and dense, in the same colour. The speculum in the middle of the labellum is simple.



Ophrys archipelagi (Its name refers to the Dalmatian archipelago) It is an early flowering species. We found it on April 14. And they were almost gone. It is a robust and slender plant. The sepals are green to greenish-white. The margins are broadly shaped and undulate. The lip is olive-green to reddish-brown, sometimes with a yellow edge. The speculum with markings in the shape of a broad and thickened **X** or **H**, is complicated by ocelli and often fragmented.



***Ophrys archipelagi* x *Ophrys garganica*.** Both parents were seen nearby.

*Ophrys
biscutella*

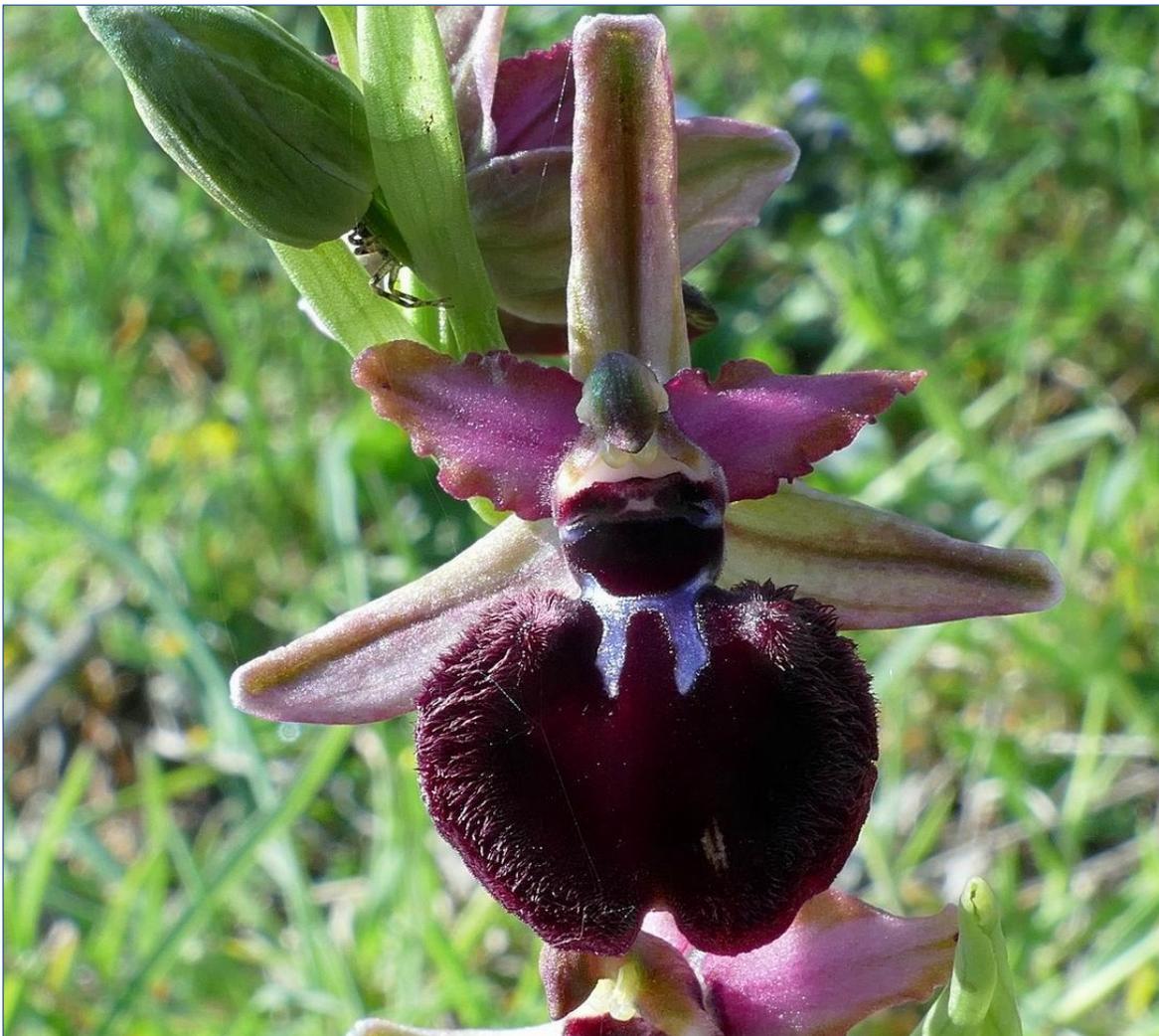


***Ophrys
biscutella***

(means with 2 shields) is a spectacular orchid, which makes the journey to Gargano worthwhile. Mostly we found species with a dark purple perianth, although a whitish perianth exists. The rounded, or trapezoid labellum is large and has a dark reddish or blackish-brown colour. In the middle you will see the speculum, with many different markings, two shields indeed, as in its name, but also various lozenges (diamonds), sometimes contiguous (connected). *Ophrys biscutella* is an enthusiastic gene sharer and there are so many hybrids, that it is unclear (for me) what exactly is the most pure form.



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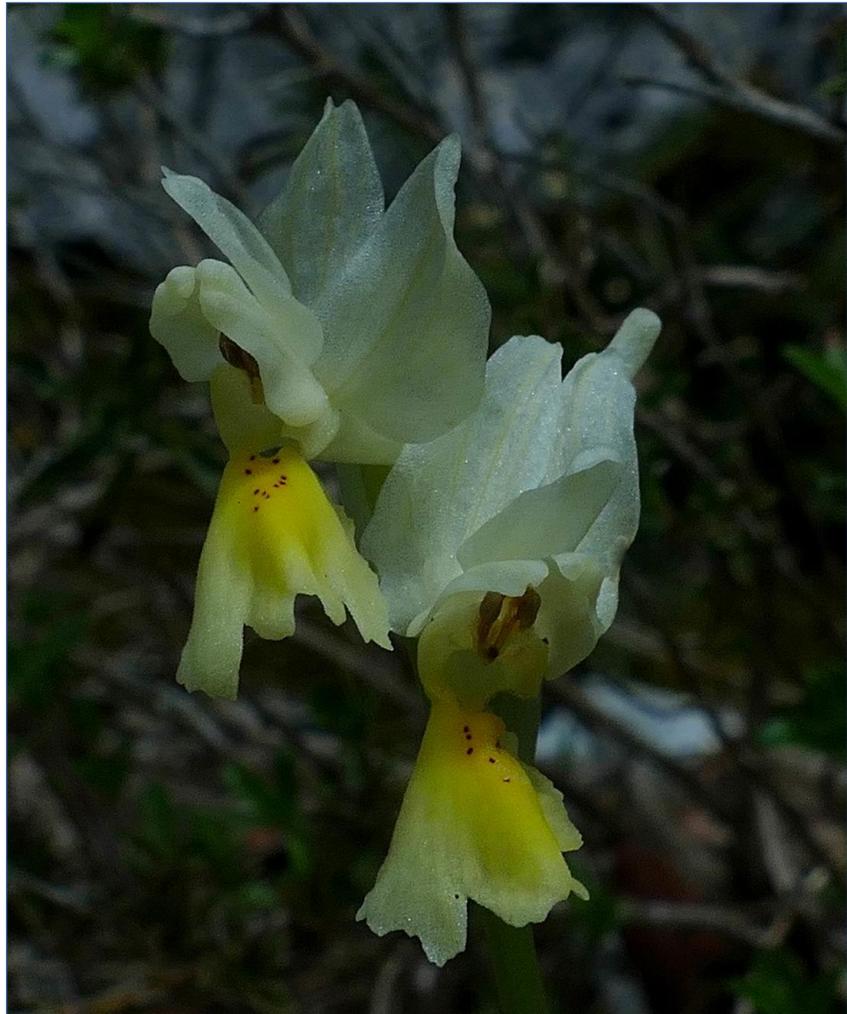
Ophrys sipontensis
(from Siponto, a coastal town in Gargano)
Together with the previous *Ophrys biscutella* it is the largest and most spectacular ophrys of Gargano. Sepals may be white or dark reddish-purple. The petals are the most striking feature of the orchid: large, undulate and very colourful. The lip is large, very dark blackish-brown, velvety, and the margins are

covered with dense long blackish hairs. The glossy blue speculum is formed by two thick parallel vertical lines, forming an **H**. This species, endemic to Mount Gargano, is not rare and widespread.

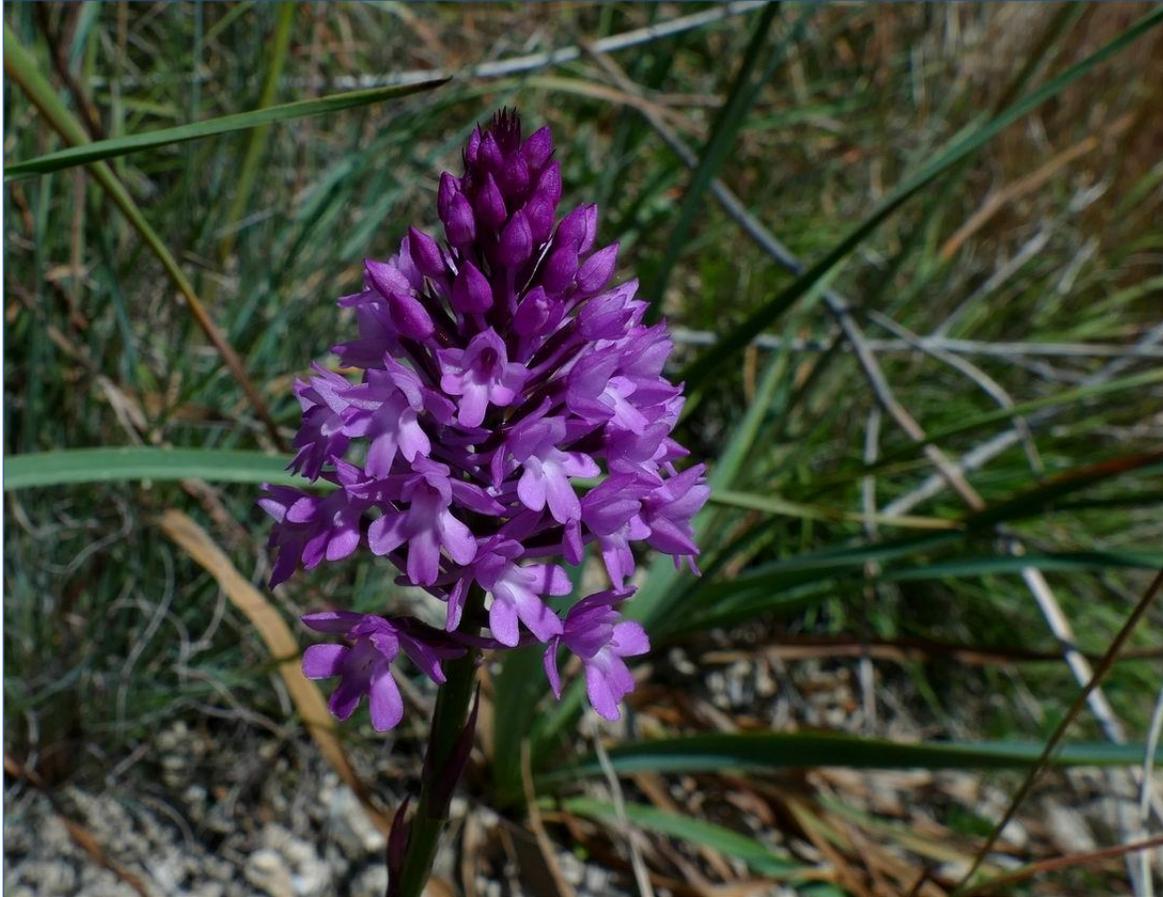


Ophrys incubacea
(means: With a small size) is a species restricted to western and central Europe, with Italy in the east. We did not find many. The dark brown almost black lip has very prominent swellings, directed forwards, and a submarginal band with straight and dense hairs, brown to blackish-purple. The glossy speculum forms an H.

Orchis pauciflora (means: few-flowered) is present too. It is rare and local, but a single species is discovered at once, because of the bright yellow colour. Confusing it with other species is not possible.



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Anacamptis pyramidalis is eye-catching too. We use it as a signal-plant. It is a widespread European species, from the Atlantic to the Caspian Sea, from the Netherlands and the Baltic countries in the north to Morocco.



Iris pseudopumila

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We were surprised to find so many *Iris pseudopumila*. We knew this species from Sicily, where a huge slope in the Madonie Mountains is covered by purple and yellow iris. But in the Gargano mountains one will find them everywhere. And in many combinations between blue and yellow.



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Iris lutescens is a low growing iris, mostly in yellow, but sometimes in violet. Many dwarf cultivars come from this wild form.



What you see on this photo and the next is *not* *Ophrys iricolor*, but its look-alike from Gargano and the Adriatic coast to Brindisi, where it is endemic. It is ***Ophrys lojaconoi***. It is an early species and we had luck to find a last one behind a crash barrier. *Ophrys iricolor* is much more widespread

and is an oriental species from Kefalonia eastwards. Confusion with other taxa is not possible, because of the bright blue colour of the speculum.



Ophrys lojaconoi



Ophrys lucifera

Ophrys

lucifera is a species growing in central and south Italy. The easiest way to make sure you have the correct determination is to look at a demarcation by a transverse line of red to brown in the stigmatic cavity. (see picture) Other features are the long and horizontal lip, only slightly convex transversely, and without a longitudinal curve. It gives the lip a straight appearance. The edges of the lip are yellow, which turn into red after aging, as you see on my pictures, and unfortunately the blue colour of the speculum has been faded.



The third *fusca/lutea*-like orchid (***Ophrys melena***) is a controversial one. John and Gerry, the authors of the marvellous website **Orchids of Britain and Europe**, wrote: '*Its possible presence in the Gargano peninsula is being studied. Thislocation would seem unlikely and may well refer to ... a new taxon....*' And they were definitely right. In the latest edition of 'Delforge' its name is ***Ophrys pseudomelena***, endemic to Puglia. They are very small plants, hardly longer than the grass they grow in, with very small flowers, held horizontally or slightly pendant, the lip not kinked at the base, the sinuses open and short, the macula short as well, grey or greyish blue. The margins of the lip are reflexed.



Ophrys pseudomelena



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It is a short step to the yellow members of the *Ophrys fusca/lutea* group. The members of this group have recently been arranged. ***Ophrys sicula*** (means: from Sicily) The lip is horizontal or even pointed upwards. The base is not kinked. The central axis descends to the sidelobes where it forms a zone of orange dilution, The side margins are yellow and reflexed.



*Ophrys
sicula*

Ophrys lutea (means yellow) occurs in Italy. It is an occidental species, where it finds its easternmost border in Puglia. The lip makes an acute angle at the base of approximately 45 degrees. The sides of the lip are large. The speculum is shiny bluish-grey.





Ophrys phryganae The lip is strongly kinked, almost 90 degrees. It is a small orchid, about the same size as *Ophrys sicula*.

Mount Calvo, 1060m, is the highest peak in the Gargano mountains. We did not climb the summit, but a road leads to a pass and in the vicinity we found a heaven on earth..... A wonderful forest with many clearings, the trees only slightly in leaf, the ground covered with numerous ***Anemone appenina***.



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Between the anemones, *Corydalis solida* was in flower.



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A nice violet sprang to our notice, *Viola heterophylla* subsp. *graeca*. We found it in yellow and blue.





Narcissus poeticus



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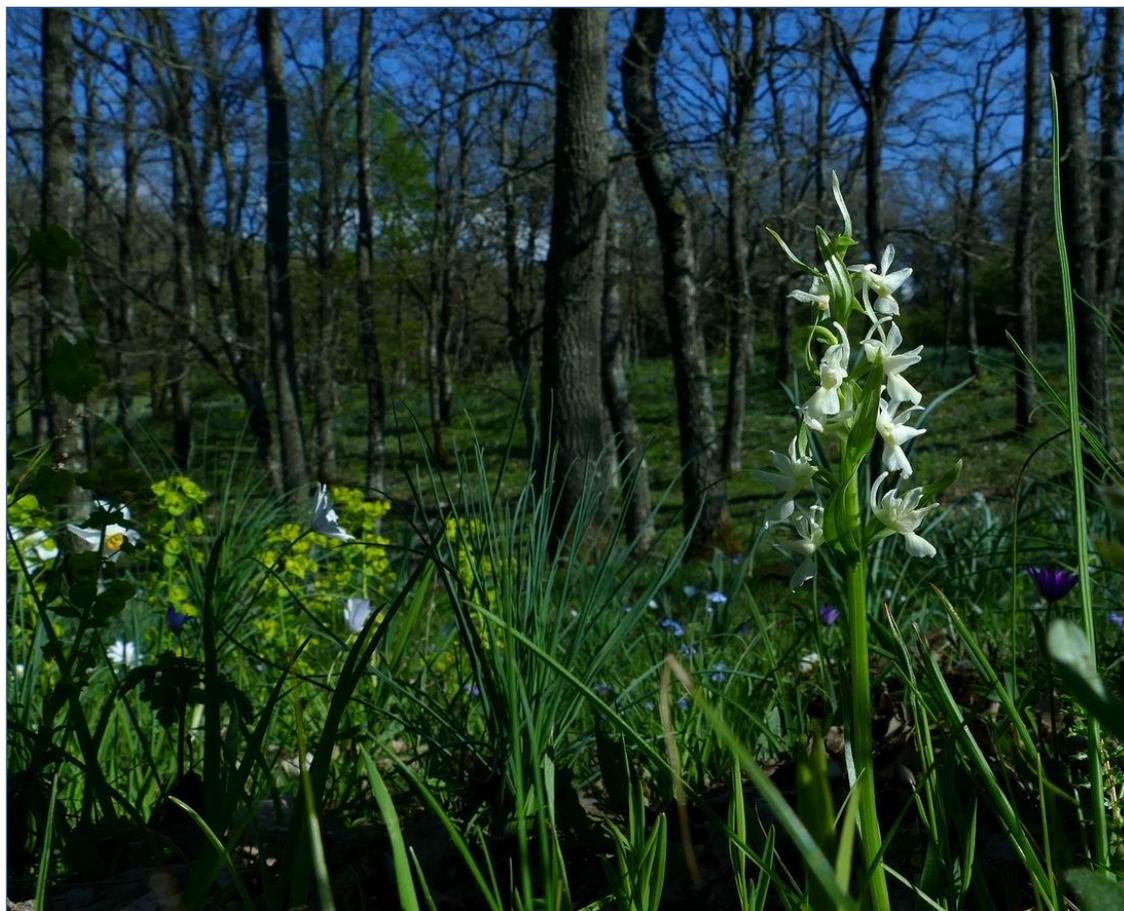
Somewhat further on an high hillside, with fewer trees we perceived the white flowers of a daffodil.

Narcissus poeticus. The plants stood alone, swaying in stately fashion in a gentle breeze.

In this forest two orchids were present.

Dactylorhiza markusii and ***Dactylorhiza romana***.

Two species, near equal, but often growing together. Let me explain the differences. *D. markusii*: Inflorescence not very dense, bracts long, longer than the flower. Sides of the lobes slightly convex, a little spreading. Spur narrow. *D. romana*: Inflorescence very dense, bracts shorter, hidden between flowers. Sides of the lobe vertically down. Spur thick. With regret we left this poetic place in order to return to our residence.



Dactylorhiza markusii



Dactylorhiza romana

Herorchis picta is the most common species in Gargano. Perhaps because cattle avoid them. (It may be toxic?) This is not *Herorchis morio*, I think, albeit near equal. The central lobe of the lip is a bit shorter at *Herorchis picta*. This is not very clear, I know. As a matter of fact, it is impracticable and confusing. *Herorchis picta* originates from the *Orchis morio* family. The major characteristic they share are the green veins in the sepals. The second picture is a hypochrome variety. It is understandable, many hybrids with *Herorchis picta* occur.

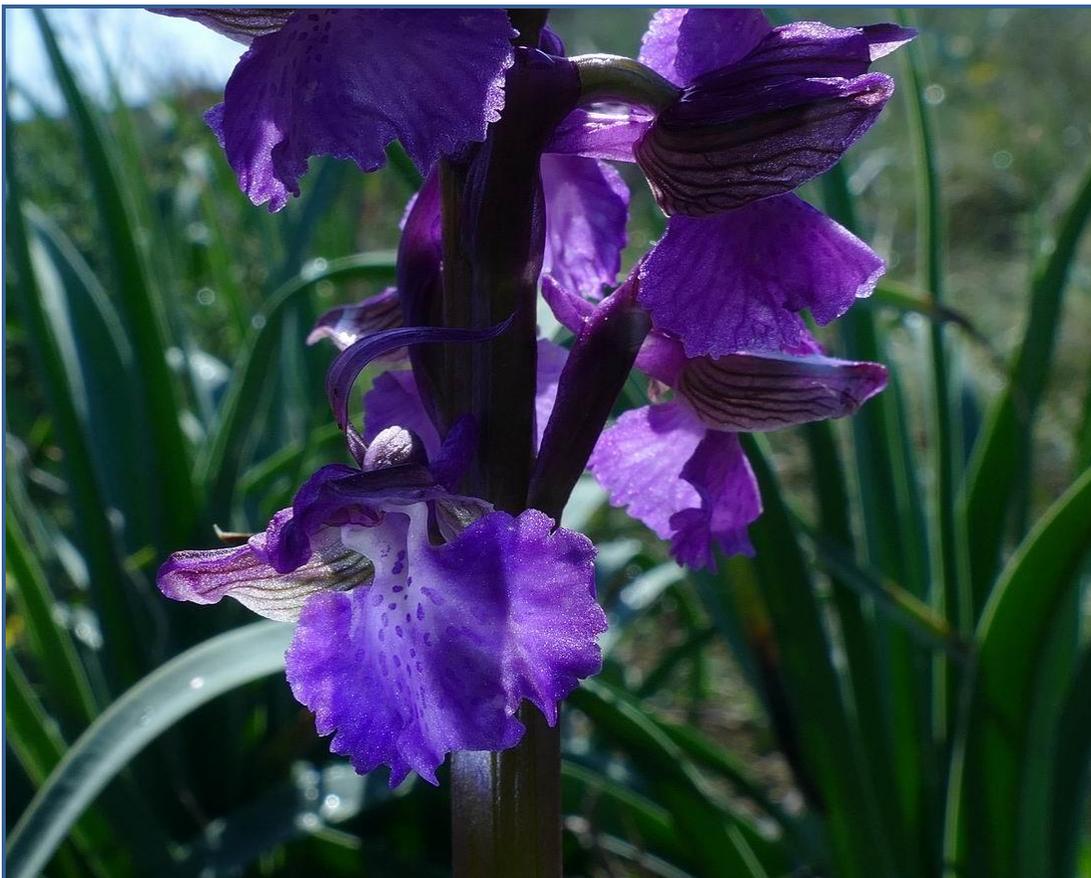


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Herorchis picta,
hypochrome
variety

On the picture
below you may
see a nice
cross with the
butterfly orchid.
The name:
***Herorchis
picta x
Vermeulenia
papilionacea
var. vexilifera.***



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Orchis anthropophora, and below, an individual with some fasciation.



A sad looking *Ophrys bombyliflora*, with tears.

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Neotinea lactea, The *milky orchid*.
The most important features for determination are the green coloured veins inside and outside the helmet.



Left above, and below: ***Neotinea ustulata***, is a very small orchid, with a distinctive tip, dark red, which give it the common name "Burnt-Tip-Orchid". It is a widespread species, from the Faroe Islands, from Britain only in England, from Sweden to the Mediterranean and all the way to western Siberia, but strangely enough not in the Netherlands and very rarely in Belgium.





Ophrys neglecta (means forgotten, overlooked) and indeed, it is easy to be overlooked. Most plants are in their beginning not over 5 cm and hidden in the grass. Later with more flowers at the spike it is easier to recognize. Its size is the first distinguishing feature, the second is the prominent tuft of hairs above the appendage.

We found a number of hybrids between *Ophrys neglecta* and other species.

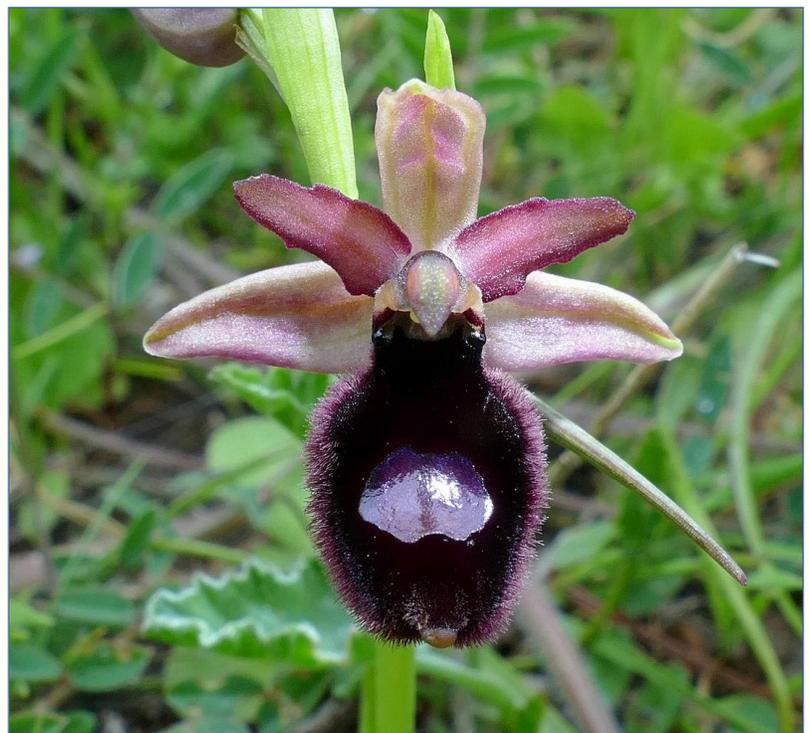


At first sight you may think: this is not a *Ophrys neglecta*, look at the petals, they are large just like *Ophrys garganica*, and the dark colour and the speculum. No, it is a hybrid: ***Ophrys neglecta* x *Ophrys garganica***.

Here we see *Ophrys neglecta* x *Ophrys bertolonii*. The influence of *Ophrys bertolonii* is clear by the shield-like speculum.



Ophrys bertolonii (after A. Bertoloni, Italian botanist) and *Ophrys bertoloniiformis* are present in Gargano. The latter is endemic to the peninsula and the major distinguishing feature is the green perianth. *Ophrys bertolonii* has a reddish perianth. Morphologically the two are near equal.



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***Ophrys
bertoloniiformis***

After the year 2017 *Anacamptis papilionacea* has been reclassified. Before this year, this genus was rather easily to recognize. Numerous new taxa have been formed and for me it is not feasible to give you the right names. I am sorry for this failure.



This is the only species of which I can give you the name with certainty: ***Vermeuleniana papilionacea* var. *papilionacea* f. *rubra***. This form has a dark red hood. The pale, sometimes almost white lip is unspotted, sometimes with fading stripes or dots. Distribution of this butterfly orchid is on the Italian peninsula.

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The genus of *Serapias* is not very popular amongst orchid-lovers. It is not easy to distinguish them from each other. ***Serapias apulica***, is endemic to the coast of Gargano to the very south at Lecce. It is not difficult to determine, because it is the first flowering of the serapias. (found on april 15) The plant is thickset and robust. The hood is horizontal bent over the lip, which is elongated, orange-red with long reddish hairs.



Serapias bergonii

Serapias bergonii and *Serapias vomeracea* are closely related. The differentiating key is: ***Serapias bergonii***: The bracts are twice as long as the hood. ***Serapias vomeracea***: The bracts are three times as long as the hood. "The upward rising long bracts (of *Serapias vomeracea*) is reminiscent of church spires rising over a city sky line". These poetic words and the clear and straightforward explanation are from **John and Gerry, orchids of Britain and Europe**. *Serapias bergonii* is prone to hypochromy. There is a low production of anthocyanin (pigments who cause the purplish coloration in plants) which leads to pale or yellow coloration.

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Serapias vomeracea



West of the town of Mont St Angelo there is a vast plain with green fields of wheat. We perceived large yellow spots there: it was ***Tulipa sylvestris***, the wild yellow tulip.





Orchis purpurea is a widespread but a rather rare species.

Books:

P. Delforge:
Orchids of
Europe, North
Africa and the
Middle East.
2006



P. Delforge:
Orchidées
d'Europe,
d'Afrique et du
Proche Orient.
2016.

Orchids of
Britain and
Europe [Website:](http://www.orchidssofbritainandeuropetest.uk/)
<http://www.orchidssofbritainandeuropetest.uk/>

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