

International Rock Gardener

ISSN 2053-7557



Number 89

The Scottish Rock Garden Club

May 2017



So much for “Spring” - as the southern hemisphere moves towards Autumn with changes in foliage colour and the start of frosty nights, in the north nothing seems certain. In the UK we ricochet from warm sun to freezing winds and many areas are already on the way to drought. In Canada there is flooding, in the USA there are hailstones the size of tennis balls and the European continent seems to be just as confused. Having seen pictures in the SRGC Forum of delightful early flowering from so many places it appears that many areas are now at something of a standstill, as the plants – probably with good reason – await more settled weather. This IRG hopes to give you some inspiration for outings in a future year with items about the plants to be found in Rhodes in March and April, as related from last year’s visit by Gerrit and Iep Eikelenboom , who continue to catalogue the orchids and other flowers they find in their Mediterranean travels and Jānis Rukšāns describes a new Crocus, confirmed in April in another visit to Iran.

Cover photo: *Crocus inghamii*, photo Jānis Rukšāns.



***Crocus inghamii* Rukšāns**

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Crocus inghamii Rukšāns – A New Crocus Species from NW Iran

Abstract: A new crocus species from Iran is described; taxonomical value of different morphological features in the determination of crocuses is discussed.

Key words: *Crocus inghamii*, *C. reinhardii*, Iran.

Correspondence to: janis.bulb@hawk.lv

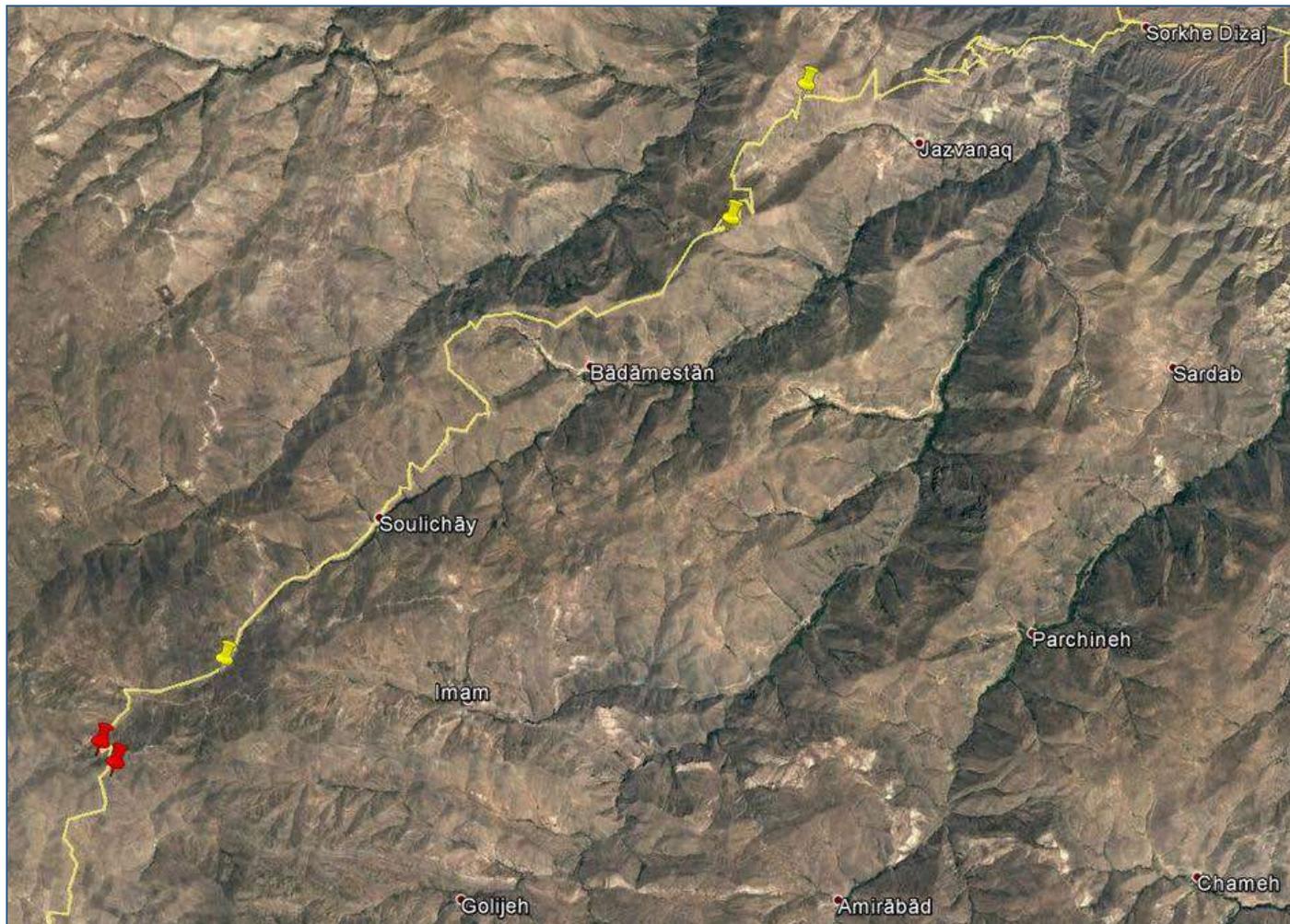
In 1975 when Per Wendelbo and Brian Mathew published the first review about Iranian crocuses they included in it four spring-blooming and five autumn-blooming species. Those listed as spring flowering were *Crocus korolkowii* (actually not a true Iranian species, but occurring within the former “Persia” – in Afghanistan and in the adjacent Tajikistan and Uzbekistan), *C. michelsonii* from the Kopet Dag mountain ridge, *C. almehensis* from Golestan, and *C. biflorus* (as *adamii*) from the W. part of Iran. Later one more species was described, albeit insufficiently, by Iranian researchers – *C. kurdistanicus*.

More than 40 years have passed. The political situation in Iran has seriously changed since those peaceful days, described by many Iranians in private conversations as “the nice age before mullahs came to power” but during the last years the situation has much improved and Iran has become more and more open to tourists, travellers and researchers (Israeli citizens are still not allowed to enter Iran, but your passport is no longer checked for a possible stamp confirming an earlier visit to Israel, although tough restrictions are still applied to American visitors and less tough ones to visitors from the UK). More and more scientists collaborate with Iranian botanists. A good example of such cooperation is the marvellous publication of R. Fritsch (Germany) and M. Abbasi (Iran) on the genus *Allium* – “[A Taxonomic Review of Allium subg. Melanocrommyum in Iran](#)” (Gatersleben, 2013) – an excellent illustration of how a modern monograph and keys of a plant group should look. Alas, because of the lack of funds, a [similar monograph about alliums](#) of Central Asia by R. Fritsch is not available in a printed format. I learned much from Reinhard Fritsch when I worked on my crocus monograph (or Encyclopaedia, as someone called it in our correspondence) “The World of Crocuses” and he helped me a great deal in publishing some of my new crocus species, too, and I recognized this by naming one of my new discoveries from Iran as *Crocus reinhardii*.

Pietro Roseo
photographing *Crocus inghamii*



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Location map – red pins *Crocus inghamii*, yellow pins *Crocus reinhardii*

When nine years ago I visited Iran for the first time, I said to myself afterwards that I would never return to that place, since the situation in Iran so much resembled the former USSR. In spite of everything, I brought home several *Crocus* samples and five of them later turned out to be new species and these were published by me. Working on my crocus monograph, I realized that I still needed some data and, as the memories about my first visit had faded with time, in 2016 I made a new trip to Iran. I witnessed such great changes that I repeatedly visited the country again in spring 2017. At present I can recommend a visit to Iran instead of Turkey– it is a much safer and calmer land, with good hotels and plenty of friendly people and foreign travellers, too. One of the crocus species found by me during my first trip was a species that I later named *Crocus reinhardii*. It was described several years after its collection using cultivated plants, because only 5 corms, out of flower, were collected and it took some time before they reached flowering size and several more years before I amassed sufficient data to publish it as a new species. Later R. Fritsch got another sample of this species (Fritsch-2516) that turned out to be identical with my plants but was collected ~15 km from the *locus classicus* at a somewhat lower elevation.

During my first visit to Iran, at another stop, less than 3km distance from the first, a member of our team, John Ingham, separated from our group and climbed higher up the slope towards the melting snow. Crocuses were still in bloom there and he photographed 2 flowers which he shared with me. Although by colour pattern they looked different from the typical *Crocus reinhardii*, in my monograph I included them under *C. reinhardii* with an added epithet aff. (*affinis* – related to) because both localities were very closely located, allowing me to assume that it could be the same species; but still some doubts about their identity remained. During my second visit to Iran in spring 2016, I revisited these localities. After a very long search my colleague and travel partner Dr. Arnis Seisums spotted only two flowering plants.

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This was far too few for a detailed study. At that moment we did not know that the main populations of this crocus were located just on the opposite side of the road and more flowering plants were observed by our travel partners who searched this side. Later I found one more locality of *C. reinhardii* where some out-of-flower corms were collected.



Left above: *Crocus reinhardii* 16IRS-049, right above: *Crocus reinhardii* WHIR-120, below: *Crocus reinhardii*.



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Crocus reinhardii



Crocus inghamii tunic

It was only that evening, while sorting the collected corms, I understood that something was not right. The few corms from the so-called “Ingham’s locality” had much softer tunics than a typical *C. reinhardii* but then it was already too late for a more thorough field research. So I decided in 2017 to visit both localities once again and to try to find more plants for a more thorough comparison of both populations. In 2017 we went to Iran a little earlier than was the case in 2008 and 2016, but this time the spring there was very late, so I was afraid that mountains at altitudes where those crocuses grow would still be under snow. And indeed, the exact place where in 2008 John Ingham and in 2016 Arnis Seisums found only 2 flowering plants each, in 2017 was covered with deep snow, while the opposite side of the

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road was literally covered in crocus flowers. That allowed me to make the first-rate observations about the variability, to collect 30 flowers for fixing in herbarium, and to prepare a good type herbarium of this crocus, which actually turned out to be very different from *Crocus reinhardii* by a number of significant morphological features used in the determination of crocus species.

In December 2016, Kerndorff, Pasche & Harpke published an article “The Genus *Crocus* (Liliiflorae, Iridaceae): Taxonomical Problems and How to Determine a Species Nowadays?” (Stapfia, 105: 42-50) in which they criticised three of the species published earlier by me, among them *Crocus reinhardii*. In the published table regarding *C. reinhardii* my data about 2 crocus species were mixed – *C. reinhardii* and *C. gunae*. In fact, long before the cited publication, I mentioned this mistake in private communication with H. Kerndorff (he asked me to explain those discrepancies), but this was ignored in the later published version. One of the main problems is the secretiveness of Kerndorff & Pasche about the exact localities where their plants were collected. It is not known, whether it really was the “type location”, as was mentioned in the publication (2016-b), or another location in the vicinity. Although I repeatedly inquired about the exact place where the data about *C. reinhardii* published by them were gathered, I received only one answer – “along the road from Zanjan to Sorkheh Dizaj”. Now it has become clear that along this road two species occur, very distinct in their morphological features, so it remains possible that the details published by Kerndorff et al. (2016-b) were taken from plants representing both taxa.

I fully understand that in order to protect the populations exact localities are not published in printed papers or on the Internet, but the absence of this information on type herbariums available only to scientists makes these publications useless for any later research by other explorers. Such an approach pushes us back to the era when only a few species were known and only very approximate localities were reported. A good illustration of this problem is the situation with the Turkish *Crocus isauricus* originally published by Siehe ex Bowles, labelling the type herbarium as “from Isauria” which covers a huge area, within which several *Crocus* species occur. As a result, Turkish researchers, led by Dr. Osman Erol (2014), as the lectotype of *C. isauricus* selected plants growing in an area between the İbradi-Gembos Yayla and Alacabel (from where Kerndorff & Pasche published *C. concinnus* and *C. mawii*), but Kerndorff & Pasche (2014) for the same species as the epitype selected plants from the Sertavul Geçidi, located further to the east. Both represent different species. Future explorers can find themselves in a similar situation with many of the species published by the two German researchers. *Loci classici* of some species published by them are so general that it was impossible to designate even approximate localities on the distribution maps included in my monograph. As a matter of fact, many of those new species are scientifically useless because they are not usable for further studies. This is not only my own opinion. Some of the collected plants have died in cultivation for different reasons and no more living material is available for further research.

Crocus reinhardii up until 2016 was known from 2 localities – the type locality and the one found by Reinhard Fritsch. During my 2016 spring trip it was found in a third locality situated between the two already mentioned places and it was this finding that made me think about the presence of two different species in the area. As was noted above, the exact locality where “*C. reinhardii*” was seen by Kerndorff and Pasche in 2015 is unknown. In spring 2017 I observed the same population where it was found in 2016. Although at that time the crocus earlier observed by John Ingham and Arnis Seisums (*C. inghamii*) was in full flower, *C. reinhardii* had only its final blooms open, but they were still in sufficient numbers to evaluate the colour variation and to make a herbarium for a detailed examination later at the hotel and after returning home. On a sticky tape were fixed 14 flowers, the others were too old and of too weak constitution – allowing me to measure details but not afterwards be able to fix on sticky tape or in herbarium. The examination confirmed that both gatherings represented two morphologically very different species – they differed in many important features, such as the flower colour pattern, the flower morphology and the corm tunics.

In 2015 and later, in 2016 (a,b), Kerndorff et al. published a list of parameters that are important in the determination of crocuses at the same time criticizing observations on cultivated plants. To verify the

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correctness of this last statement, in autumn 2016 I revisited Crete (where I observed 8 populations of *Crocus pumilus*) and in spring 2017 I especially went to Portugal (to recheck *C. duncanii*) and once again to the Island of Rhodes where our team of four each made his own randomized, independent gatherings of *C. rhodensis* flowers in two localities. All the flowers were fixed on sticky tape and later the same number of flowers of cultivated plants from the author's collection was fixed on sticky tape, too. The results will be published in due course, but even the first quick look showed that there were no significant differences between the cultivated plants and those growing in the wild; flower measurements are much more affected by seasonal fluctuations and the time when samples have been gathered – at the start of blooming, at its culmination or at the end of blooming, and they slightly differ in different populations.

To be honest, it is practically impossible to fully abide by the recommendations given by Kerndorff et al (2015, 2016-b). Following these recommendations you must visit a locality just at the peak of flowering, then during the spurt of leaf growth to get precise leaf measurements (which much depend on the seasonal climatic changes), and a third time when seeds are ripening, to get data about the seed capsule and seeds. It sounds quite simple, but in reality it is practically impossible due to the difficulties (and costs) of reaching remote or distant localities so many times during a season and at the right moment. Because of overgrazing it is almost improbable to find leaves showing their maximum length. Taking into account the costs of such travels, sticking to the “Kerndorff rules” is practically impossible unless you live in the neighbourhood of the observed population.

The following table shows data acquired from comparing the two species occurring at the northern end of Kuh-e Sendan Dagh, between Dizejabad and Sorkheh Dizaj, and the data of “*C. reinhardii*” amassed by Kerndorff & Pasche (Kerndorff et al., 2016-b).

	<i>Crocus reinhardii</i>			New species (<i>C. inghamii</i>)
	Rukšāns, cultivated plants (n=5) (2015)	Kerndorff & al. (2016-b)	Rukšāns, another wild population, 2017	Rukšāns, wild populations, 2016, 2017
Altitude levels where discussed species was found	2105 m (Fritsch-2516 at 1640 m)	unknown	2100 m	2330 -2450 m
Leaves			n=39	n=28
number	(5)-7-(9)	3-5.5-7 (n=46)	4-6.3-10	3-4.9-6
form	not determined	mainly linear	parallely edged (?)***	parallely edged (?)***
width	2.5-3 mm	1.5-1.8-2 mm (n=22)	1.5-1.7-2 mm (at the end of blooming)	2-2.5-3 mm (during peak blooming)
white stripe	1/5-1/2	(1/3) to >1/3 (n=20)	1/4-1/3	1/5-1/4
hair	not determined	none	glabrous	glabrous
ribs underneath	2*	(1)2(3)	(1)2	1-2(3)

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Filaments			n=23	n=30
length	4-6 mm	4- 5.5 -7 mm (n=25)	5- 5.8 -7 mm	4- 5.5 -10 mm
hair	glabrous	not determined	glabrous	distinctly papillose
Anthers			n=23	n=30
length	8-10 mm	7- 10.4 -13 mm (n=25)	6- 9.1 -11 mm	9- 12.4 -17 mm
Style			n=22	n=30
length of branches	not determined	2.5- 5.2 -7.5 mm (n=33)	3- 5.2 -7 mm	5- 7.2 -15 mm
position	+/- around the tips of anthers**	equal (5), longer (25) (n=30)	equal - 10 longer - 10 shorter - 2	equal - 13 longer - 14 shorter - 3
Segments			n=24	n=30
colour pattern (outer segments outside)	mostly with several stripes on a lighter ground	not determined	with striped outside, mostly 3 stripes, reaching tip of segments	light blue with a large dark basal blotch and 1 extended mid-stripe
length outer	25-30	21- 22.8 -27 mm (n=30)	18- 21.9 -27 mm	27- 32.8 -38 mm
width outer	6-9 mm	7- 8.4 -11 mm (n=27)	6- 6.5 -9 mm	10- 13.2 -16 mm
length inner	23-29 mm	18- 21.9 -25 mm (n=28)	18- 23.6 -28 mm	25- 31.2 -38 mm
width inner	7-9 mm	6- 7.7 -12 mm (n=28)	5- 7.4 -10 mm	11- 14.1 -17 mm
segment proportions	not determined	2.7	outer- 3.4 inner - 3.2	outer - 2.5 inner - 2.2
Corm tunics				
main tunic	coriaceous	not determined	very hard, coriaceous	thin, papery
tunic neck	7-10 mm long	not determined	7-8 mm long	5-6 mm long
basal rings	distinctly toothed	not determined	hard, wide, distinctly toothed	thin, narrow, practically smooth-edged

* According to Kerndorff & al. (2016-b) – 3, but it was taken from the description of *Crocus gunae* and is not correct in the case of *C. reinhardii*.

** According to Kerndorff & al. (2016-b) – not determined, but this is not correct.

*** observed too early for an exact determination.

The given data does not allow us to determine which species was observed by Kerndorff & Pasche in spring 2015. Most features look close to *Crocus reinhardii* as it was observed by me in the cultivation and in the wild, but some others are quite dissimilar. This only confirms that the usage of mathematical methods in identification of crocus species is rather doubtful due to the great variations from season to

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season and within populations. They can be used only in exceptional cases when no other morphological features can be found and when DNA shows sufficient differences between the samples (the pairs of *C. neglectus* and *C. neapolitanus* – Harpke et al., 2015; some species in series *Reticulati* – Harpke et al., 2014).

The main **morphological** features separating both species are:

- the pattern of colour on the outer segments that in *C. reinhardii* is mostly distinctly striped (usually with 3 stripes, sometimes confluent) over lighter or darker blue, whereas in *C. inghamii* flowers are mostly whitish to light blue with a large dark basal blotch in the middle, extending like a longer or shorter mid-vein, sometimes reaching the segment tips, but usually ending not higher than the middle of the segments;
- the filaments – whether they are nude (*C. reinhardii*) or hairy as in *C. inghamii*;
- the pattern of corm tunics and basal rings, which are very different in both species. I observed spring-blooming species with annulate tunics in Iran in around 20 populations, but only *C. inghamii*, published here, had such thin and papery tunics.



Crocus inghamii - thin, papery tunics

All these features allow very easy separation of both species, which occur on the same mountain ridge at a distance of only 2.5 km. It cannot be ruled out that their areas can even overlap somewhere as the mountain ridge where they grow is very little researched. A few corms of *Crocus inghamii* were

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already collected in 2016 at another population, but then *in situ* they were identified as “*C. speciosus*?” because of its very thin papery tunics (plants were out of flower at the collecting time). The mistake was corrected in spring 2017, when the collected plants bloomed for the first time in cultivation. Indeed, one plant from the type locality (collected already in 2008) by the flower pattern looks something similar to *C. inghamii*, although by other features it is a typical *C. reinhardii* (picture in my monograph, at p. 420, first on the left). It seems that *C. inghamii* is distributed at something higher altitudes than *C. reinhardii*.

After having collected sufficient wild material for the type herbarium and detailed characteristics on sufficient number (according “Kerndorff rules”) of individuals in spring 2017, I decided to publish this beautiful new species.



Crocus inghamii

Crocus inghamii Rukšāns species nova

Type: Iran, N end of Kuh-e Sendan Dagh, between Dizejabad and Sorkheh Dizaj, 36° 41.491'N; 48°44.227'E; 17IRS-008, leg. J. Rukšāns, 11-04-2017. Holo: GAT.

Habitat and distribution – open mountain meadows and rocky hillsides, where it blooms near melting snow together with *Corydalis verticillaris*, *Iris reticulata* s.l. and some other bulbous plants at altitudes from 2100 - 2450 m.

Flowering time – April.

Corm – 10-15 mm in diameter, slightly elongated, globose.

Tunics – thin, papery, not coriaceous, split at the base into 1.5-3 mm wide strips, rarely wider, splits reach 1/4 to 1/2 (rarely) of the tunic length, subsplits almost absent.

Tunic neck – 6-10 mm long, formed by widely based triangular, sharp splits of the main tunic.

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Basal rings – several, narrow (up to 2 mm wide), with uneven, but practically smooth edges without teeth, if some present then so small that observable only under great magnification (see the attached picture).

Prophyll – absent.

Cataphylls – (3)4, whitish, in the upper part occasionally tinted slightly greenish.

Leaves – 3-5-6, dark green (the leaves of *C. reinhardii* when compared side by side, although dark green, too, look more glaucous), at blooming time 2-2.5-3 mm wide, white stripe 1/5-1/4 of leaf width, lateral channels with 1-2 ribs (3 in one of channels in one of 28 observed individuals), reaching the base or occasionally even the tips of flowers at anthesis.

Bract and bracteole – distinct, well-developed, silvery, ending around 1 cm below the base of the flower, bracteole somewhat smaller.

Perianth tube – striped lilac on a white ground.

Throat – glabrous, yellow, with a diffused edge.

Filaments – (4)5-6(-10) mm long, yellow, distinctly papillose, even slightly hairy.

Anthers – (9-)12-13(-17) mm long, yellow, with short basal lobes.

Connective – white.

Style – yellow, papillose in the upper part, divided into three 5-7-15 mm long papillose branches, at the tips expanded somewhat trumpet-like and with a fringed top, mostly exceeding to equal to the tips of the anthers (n=30: longer – 14; equal – 13; shorter – 3).

Flower segments – almost equal in size, only the inner segments usually slightly shorter and wider than the outer ones, obovate, with rounded or less often subacute tips, mostly lighter or darker bluish (always on the lighter side of the colour, but in the herbarium the colour darkens) with a large dark basal blotch. Only one pure albino was spotted at the *locus classicus*.

Outer segments – 27-33-38 mm long and 10-13-16 mm wide. The outside light blue with a large, rhomboid, dark basal blotch, at the top extending into a narrow mid-vein, mostly going up to around the middle part of the segments, rarely reaching the tips of the segments. No distinct lateral veins observed. Sometimes the basal blotch with a large lighter to somewhat greyish greenish blue, occasionally even dirty yellowish central part, only edged dark blue, in 1 out of 30 fixed flowers the dark blue edge was absent. The inside of the same light blue colour or slightly lighter blue.

Inner segments – 25-31-38 mm long and 11-14-17 mm wide, of the same colour on both sides as the inner side of the outer segments. The basal blotch of the same pattern as that on the outer segments, but slightly smaller and often with a yellowish edge, especially in the lower half. The mid-vein less prominent, but in darker forms can reach the tips of the inner segments.

Capsule and seeds – not observed.

2n = unknown.

Etymology – named after John Ingham, traveller and nature lover, who was the first to spot and photograph this beautiful crocus on the slopes of Kuh-e Sendan Dagh already in 2008.

The new crocus species is easily separable from its neighbour *Crocus reinhardii* by the thin corm tunics, the colour pattern, the papillose filaments and the stigmatic branches, and some other features as well (see the table and description).

Acknowledgments.

First of all I must express my thanks to John Ingham, who spotted this crocus and insisted that I do further research on it. Next I must thank my travel partners of the 2016 trip lead by Jill White, who waited for a full hour longer than was agreed upon for my descending from the mountaintops where I searched for this crocus and to Arnis Seisums, who spotted it and showed me during this trip. I also must say thank you to Pietro Roseo and Norman Stevens, who organised the 2017 trip and agreed to include along the route the road through Kuh-e Sendan Dagh where this crocus was spotted. Of course, my thanks go to my permanent language corrector Mārtiņš Erminas. And I am especially thankful to my family and my wife Guna in particular, for the hard work at the nursery during my absence while in the mountains.

J.R.

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Crocus inghamii – location by snow bank



Iris reticulata blooming alongside *Crocus inghamii*

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Variations in *Crocus inghamii* and below right, *C. inghami* corm





Crocus inghamii - basal rings enlarged



Corydalis verticillaris, growing and flowering at the same time and place as *C. inghamii*

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Crocus inghamii habitat

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---Island Flowers---

Orchids and other species of Rhodes by Gerrit & Iep Eijkelenboom

Rhodes is the largest of the Dodecanese islands. These islands lie just off the coast of Turkey. Chios, Samos and Lesbos belong to this group. Most people visit the islands to enjoy the sunshine and the high temperatures. We did not. We visited the island at the end of March and the beginning of April, in order to search for orchids. The period was chosen well. Most orchids were in flower. The weather was excellent, only the strong winds made photographing difficult.

Rhodes is mainly uninhabited. The only large town is situated in the very north, the capital. Along the coastline towards the south there are the touristic settlements. The more south you drive, the less hotels and apartments you find. The interior of Rhodes is completely empty. From the north till the southernmost point is 70km and from east to west about 30km.

For us, it was important to find a strategic place to stay, halfway along the east coast. We have found an apartment in the small village of Pefki, deserted in March. Another suitable place to stay is the village of Lardos, somewhat further in the interior, with some shops.

The roads across the island are excellent. Asphalted and maintained well. The few dirt roads in the interior are easy to ride - even with a rental car, category A.

Rhodes is mainly covered with hills. The mountains reach the height of 1200 m.

Map of Rhodes

Where to find the orchids?(Our favourites!)
Let me suggest the following trips.

1. From the tiny village of Laerma in the middle of the island, to the east. Make as many stops as possible, to examine the surroundings.

2. From Laerma to the south you will find a dirt road till Profilia.

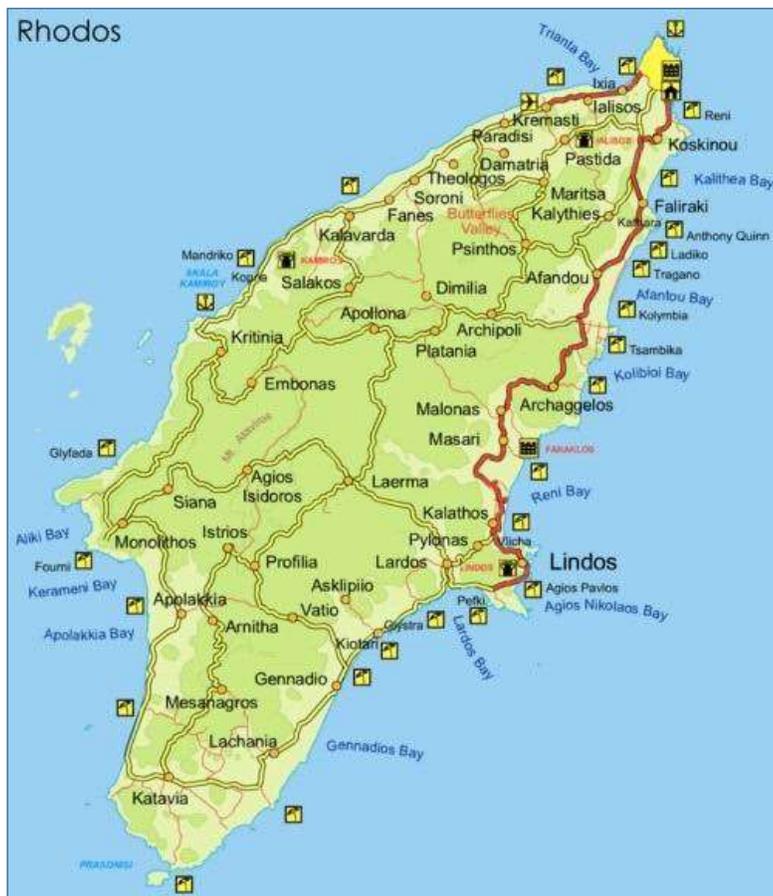
3. From Laerma to the north. Along this road there are many findspots. Go till you see two bridges across a small river and after this, go back.

4. From Laerma to the west. First you should examine some meadows at your left, just leaving the village of Laerma. About a few hundreds of meters, before reaching Agios Isodoros, there are many hillslopes with fine findspots for orchids.

5. The southern part of the island: Just before Kattavia, leave the asphalted road and turn to the south in the direction of the sea. After passing a new power plant, you will find hillslopes with rare orchids. Those orchids grow in depressions in the landscape formed by waterstreams. After this, go back to the main road at Kattavia, take an unpaved road to the north, towards the mountains. Keep going on, eventually you will come on the asphalted road at the west coast. In the mean time you will enjoy a fabulous scenery.

6. A trip to Profitis Ilias is a must, maybe even two trips. An asphalted road leads over the rim of the mountain chain. On both sides of the road you will find in the woods orchids and the stunning *Paeonia clusii* subsp *rhodia*.

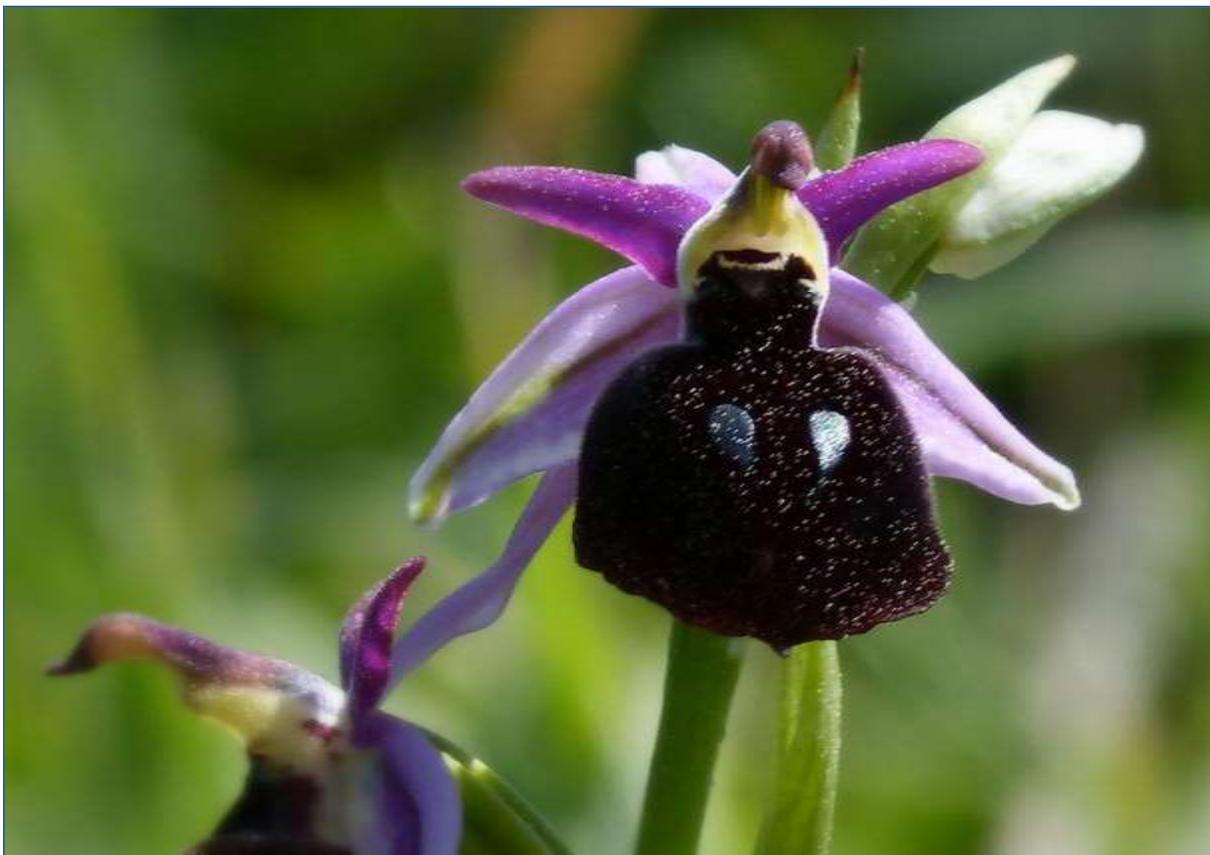
7. A trip to the westcoast, to Attaviros mountain.



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Ophrys regis-ferdinandii: named after Ferdinand I, King of Bulgaria. As *Ophrys speculum*. An extremely small orchid, and not easy to find. A peculiar species, which resembles an insect. Trip 1.



Ophrys ferrum-equinum



Ophrys ferrum-equinum: In a meadow in the vicinity of Laerma, in a depression, difficult to detect, we saw this stunning orchid for the first time. Later we found more, it is not a rare species on Rhodes, but one of the most beautiful of all, in my opinion. The lip is almost black with a blue, sometimes pink horseshoe on it. Trip 4.

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At the same findspot, a few metres downhill, a pool was formed. The wet conditions allowed numerous specimens of *Anacamptis (Orchis) laxiflora* to establish there. Tall and slender plants with **unspotted** leaves and numerous unmarked purple flowers, whitish in the middle. The edges of the lobes folded down. The spur is straight or slightly curved upwards. Trip 4.



Ophrys reinholdii: named after Reinhold, an Athens doctor. A species, rather abundant in his stations. Easy to recognize. The lip is dark, velvety, bordered with fine silver hairs. The speculum with white drops, a white band or sometimes a horseshoe on it. The sepals and petals are mostly pink, but sometimes white, with a green vein in the middle. Found all over the island. Trip 4.

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Ophrys phryganae: As *Ophrys lutea*.

O. phryganae seems to replace *Ophrys lutea* by the eastern Aegean Sea. The latter is much larger. The lip is strongly kinked at the base as you can see on the picture.

Keep this in mind and you will not confuse not change the two species *O. phryganae* and ***Ophrys sicula***.

The lip of *O. sicula* is not kinked and points upwards. Trip 3.



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Ophrys basilissa: A spectacular species because of its dimension. The lip is almost 3 cm wide and broad. Much larger than *Ophrys omegaifera*, which is its 'look-alike'. Also distinguished by the latter through its lateral lobes, who are not turned down under the lip. The lip with slate-grey hairs, dense with silver reflections as you may see on the photograph. Across the middle of the lip, there is a broad white "omega". This orchid from the omegaifera-group is perhaps misidentified. Maybe a new species, [*Ophrys apollonae*](#), comes into its place on Rhodes. Trip 5 & 7.



***Anacamptis papilionacea* var. *papilionacea* var. 'rubra'**: The most significant differentiating feature is the lip. The markings, stripes and dots are absent or hardly visible. The lip is pale-pink or pure white.

Of course the "normal" ***Anacamptis papilionacea*** below, is present too.



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Ophrys

leochroma is a newly described species. The former *Ophrys villosa* turned out to be the same species as in Spain. So we call it now *Ophrys tenthredinifera*. *Ophrys leochroma* is a purple variation. It is easy to see on the picture. The sides of the lip turn down and somewhat under. In the future *Ophrys tenthredinifera* will probably be split off in new subspecies, because of its enormous variation. Trip 1.



Ophrys candica: The sepals are white to pink, the lip quadrangular, with a complete submarginal band of dense long hairs. The speculum, remarkable violet-purple, glossy and marbled, quadrangular, broadly edged, white or yellow. Trip 7.



Ophrys candica* subsp. *minoa, above right. As *Ophrys candica*, but with 2 pointed swellings, hairless on the innerside, elongate. Trip 7.



Ophrys mammosa: With two large swelling on the lip, hence its name. Two parallel longitudinal lines, sometimes like an H, on the lip. Trip 2.

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Now two species, growing from bulbs, first, ***Fritillaria rhodia***, above, a beautiful endemic species. This tiny plant is hard to find, because it is so small, and the yellow-green colour is easy to overlook, Trip 3. Next is ***Gladiolus italicus***, below, colonising vast areas in the south as shown on the picture. Trip 5.



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We found two stunning *Astragalus* on Rhodes, *Astragalus sprunerii*, a prostrate species growing on hot and dry places, Trip 5 and *Astragalus astro-aegeus*, below, growing under trees on a steep hillslope. Trip 3.



In the next part I will tell you about the many ophrys from the "Scolopax-group".

Ophrys umbilicata is an orchid from the eastern Mediterranean. The dorsal sepal bends down completely onto the column. The three sepals are mostly white, to whitish green. The lip is divided. The lateral lobes are conical pointed and directed forwards. The lip with brown hairs, with 1-3 central ocelli. Trip 4.

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Right: ***Ophrys rhodia***: (*O. umbilicata* subsp. *rhodia*): Tall plants with many small flowers. The three sepals and the two petals are green. The green sepals are spreading, and recurved forwards. The lip is near horizontal and 3-lobed. The lateral lobes are small and pointed.

The speculum brownish-blue, glossy, broadly edged, whitish, very extensive and several ocelli. Trip 4.

Below left: ***Ophrys dodekanensis***: A small, scolopax-like orchid. The dorsal sepal, curved. Sepals and petals in the same colour. The lip is strongly 3-lobed, velvety blackish-brown. The extremities on the lateral lobes are curved outwards. The speculum is glossy bluish-grey, edged yellowish or whitish, with a complete ocellus in the centre and branches encompassing the swellings. The appendage is prominent, rather thick, 3-toothed, yellowish-green and directed forwards. Pseudo-eyes black, shiny (hard to see on the picture) Trip 1. Endemic to Rhodes.



Ophrys cornutula: above right, a species with many small flowers. The lip is spindle-shaped. The speculum is complex and extensive, often reaching the submarginal band of hairs above the appendage.

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Ophrys polyxo, left and above: A newly named species. A very slender median lobe with long pointed lateral lobes. The petals are very long and purple. This orchid is endemic to Rhodes and quite common.

Citinus is a genus of parasitic plants.

The species ***Citinus hypocistis*** is red and yellow and occurs on Rhodes, parasitic on *Cistus*, hence its name.



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Citinus hypocistis* var. *rubra is red and white. Strange plants, hidden underneath the shrubs which they depend on.

*In the next part I discuss orchids within the *Ophrys fusca*-complex.*

***Ophrys attavira*
(*Ophrys fusca*
subsp. *attavira*):**

A fusca-like orchid with large flowers. The sepals + petals are green. The lip is long and almost flat longitudinally. The base of the lip is white, yellowish and ocre, as you may see on the photo. The speculum is often drab, but shiny and blackish-blue. The two crescents at the tip are clearly demarcated and contrasting, divided by a slight groove. There is a broad zone along the speculum, hard to be seen on my picture. The 2 lobes are short and turned down, The median lobe is elongated. The border of the lip is yellowish and on the picture reddish (hard to see, but present) Trip 3.



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On our trip to the southernmost point of the island, we were very happy to find this rare fusca-like orchid. Endemic to the south of Rhodes, ***Ophrys parvula* (*Ophrys fusca* subsp. *parvula*)**: It is a small orchid, with green sepals and petals. The lip is short and almost flat. The lateral lobes are spreading, rounded and the sinuses (gaps) between them and the median lobe are narrow. The speculum is dark blue to pale bluish. In the middle there is a broad groove. The base of the lip and the throat of the stigmatic cavity are with dense white hairs. Trip 5.



***Ophrys blitopertha* (*Ophrys fusca* subsp. *blitopertha*)**

This fusca-like orchid appears from the Cyclades east, to southwest Anatolia. The sepals and petals are (olive) green. curved forwards. The lip has a straight appearance, short and almost flat. The sinuses (gaps) between the lateral lobes and the median lobe is hardly increased. There are no longitudinal prominences (swellings). The lip is blackish-brown and is bordered by a broad, very obvious, regular yellow band. The spreading sides of all lobes are reflexed. The central groove is absent. The stigmatic cavity is large. Trip 3.

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***Ophrys persephoniae* (*Ophrys fusca* subsp. *persephoniae*):**

Named after Persephone, queen of the underworld. A more brightly coloured species than *Ophrys blitopertha*. The lip is horizontal, appearing a little less straight and somewhat more convex in the centre. The lip hairs denser, much darker. The speculum is blue or blackish-blue. There are 2 pale blue crescents at the tip, forming a large **W**. See picture above left. Trip 3.

***Ophrys cressa* (*Ophrys fusca* subsp. *cressa*):** Perhaps a controversial determination. Because of its complete transverse reddish line, demarcating the stigmatic cavity, I decided to give this orchid his name, but I am not quite sure. Trip 3.



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***Ophrys cinereophila* (*Ophrys fusca* subsp. *cinereophila*)**

A small orchid. The lip is longitudinally and transversally convex (rounded). The sides are reflexed (upwards). The 2 lobes are kinked. The lip is edged with a very narrow reddish zone, hardly visible. The border is yellow. The speculum is blackish-blue. The bisecting groove is absent. Unfortunately the lip is covered with dust. Trip 3.



***Ophrys iricolor* (*Ophrys fusca* subsp. *iricolor*)**

An orchid with large flowers. Sepals are green, with margins reflexed. Petals also green but sometimes brownish (like here on the picture). Lip horizontal. The base of the lip is wedgeshaped with often crimson (reddish) on the edges. The base, with a deep V-shaped groove and long white hairs. The lateral lobes rounded. The speculum, bilobed is bright blue and large. The **underside** of the lip is **entirely purple** (left). Trip 5.



Another orchid, growing in the south is the tiny ***Anacamptis fragrans***.

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A highly recommended trip (5) leads into the mountains at the west coast. The gravel road starts at Kattavia in the very south, heading to the north as the road branches and easy to do with your cheap rental car. Drive slowly and there will be no damage. You will have stunning views and see beautiful flowers. Arriving on the highest point, you suddenly are able to see the entire west coast. The mountains are covered by the blue *Lithodora hispidula*, below, an amazing sight.



Maybe you will see the shepherds, roaming around in these blue mountains. Explore the slopes and you will find many orchids. Another blue cushion is *Alkanna tinctoria*, above. Eventually you will arrive at the coast, where you can take the paved road to your further destination.

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Profitis Ilias, Trip 6, is the next destination. It lies in the northwestern part of the island. On the summit, at 798 m, you will see a hotel. The vast woods with *Pinus brutia* are home to the beautiful ***Paeonia clusii subsp. rhodia***, above. The flowers are very popular with the Rhodians, who pick them and use them as a cut flower. Initially I did wonder, when taking photos, why so few plants were in flower but it was still an unforgettable sight to see them flowering.



In those woods you will find huge numbers of ***Orchis anatolica***. Mostly with pink, purple flowers, rarely white as on the picture. The narrow sepals are strongly veined. The lip is 3-lobed, wedge-shaped with 2 rows or purple spots. The spur is long, conical, horizontal to nearly vertical.

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Orchis provincialis,
left: Leaves are blotched. Pale yellow flowers have fine red spots; the spur slightly curves upwards. Grows between the vast fields of *O. anatolica* in the woods of Profitis Illias, clearly visible from the road on the embankment.



At the same location there is also ***Neotinea maculata*** - synonyms are: *Orchis intacta*, *Neotinea intacta*, *Aceras intacta*. A species with a wide distribution, even into Ireland. Flowers usually self-pollinating, even cleistogamous (self-pollination without flowering) On the picture, above right, a pink variation.



In the woods on some isolated areas, you will find ***Anacamptis picta* (synonym *Anacamptis morio* subsp. *picta*)**. We knew it should be there, but only found it after a long search. From a distance it resembles *Orchis anatolica*. Keep searching, it is worthwhile. *Orchis picta*, another synonym, is more spindly than *Orchis morio*, the inflorescens more pyramidal and not so dense. The fine spur is strongly curved upwards. The green innerside of the lateral lobes reminds us of *Anacamptis morio*.

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Also present on the slopes of Profitis Ilias was ***Neotinea lactea***. Confusion with *Neotinea tridentata*, which we did not see on Rhodes, is possible, but there is one easy point of identification. There is green in the centre of the sepals and green veins of *N. lactea*.

Profitis Ilias is home of numerous ***Mandragora officinarum*** (*autumnalis*) below. Of course we did not expect flowers, because it is an autumn-flowering species, hence its name, but we were lucky to find one specimen with its stunning flowers.



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The following species are members of the group *episcopalis*



Ophrys oreas: This is a recently described species; before 2009 it was called *Ophrys heterochila*. *Ophrys oreas* grows in the vicinity of pines, where it finds some shade. The lip is very convex (rounded), reddish to dark blackish-purple, with a complete submarginal band of brownish, on the photo white hairs. The swellings are divergent, pointed and conical. The margin of the lip, hairless, greenish-yellow bent under or spreading and then reflexed a little. The speculum appears like an X, with yellow lines, surrounding some ocelli. The appendage is long, pointed, with 3 teeth, inserted in a notch. The 2 pseudo-eyes are clearly visible on the picture. Trip 7.

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Left above: ***Ophrys calypsus*** The lip appearing oval to nearly quadrangular, with the sides turned down and under. A submarginal band of hairs, dense and long and above the appendage. The speculum, extensive, complex, broadly edged ivory-white. The appendage is 3-toothed, horizontal. Trip 7.

Right above: ***Ophrys calypsus* var. *pseudoapulica*** The very large lip (up to 16mm long) of this species is distinctive. The sides initially recurve behind the body of the lip and then reflex out and forwards. Trip 1.



Ophrys 'maxima'
A species with an extremely large lip, up to 18mm long, trapezoid to broadly oboval, slightly convex. The sides spreading and recurved forwards. There is a band of submarginal hairs.

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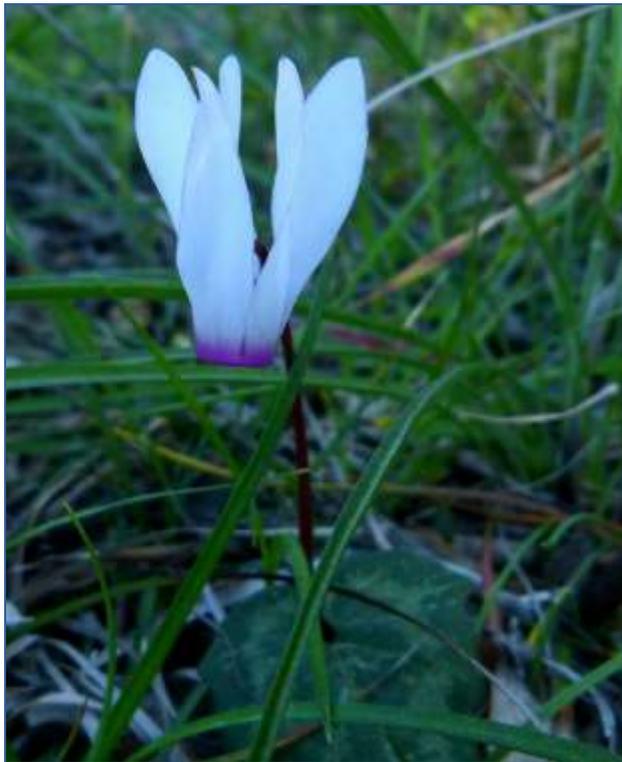


Ophrys episcopalis : Rather widespread on Crete, rare on Rhodes. Lip pendent, appearing trapezoid or square, with a complete submarginal band of dense rather long hairs. Margin of the lip spreading and then reflexed, strongly on the distal half(below). Speculum greyish-blue, bordered yellow, sometimes forming an x , extending by lateral branches, forming ocelli, which are often fragmented. Two shiny pseudo-eyes are present, as you may see on the picture.

Trip 7. Into the Attaviros mountains. These mountains are the highest of Rhodes. A promising “findspot” for orchid-lovers. There is a new road leading towards some wind-turbines which brings you up to 1200 m. From Stella or Siana on the west-coast, take the road towards the north-east. After some 5 kilometres, there is a three-forked road, leading to Ebonas in the east. At this bifurcation, a narrow and steep but asphalted forest road, with stunning views on the sea, brings you to a large forest.

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This forest is home to many beloved orchids. For instance the blue *Limodorum abortivum*, below, which I described in the report "[Orchids and other plants of Sicily](#)" in IRG 84.



Park your car and walk into the forest which has many clearings. When you are lucky, the soil is covered by thousands and thousands of flowering *Cyclamen rhodium* above left. This species with not very interesting leaves, has white flowers with a pale-lilac nose. I strolled through the forest and suddenly my eye was hit by a pink specimen. A lonesome one, who dared to be different: *Cyclamen rhodium* pink (above right). When the trees come to an end, the asphalted road ends and a dirt road begins. You should go on, it is easy and safe.

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The sides of the road and the slopes must be examined, because many orchids are growing between thorny bushes. I found there this peculiar *Anacamptis pyramidalis* - not pyramid-shaped at all and white.



---International Rock Gardener---



***Anchusa* sp.:** On a slope in the Attaviros Mountains at 1200m, we found this *Anchusa*. After I returned home, I tried to identify this species. I made an appeal on the SRGC-forum and the VRV-forum, with no result. I think perhaps it is a new species, not yet described. Maybe, after reading this article, someone will have an idea. Please write to gerriteijkelenboom@hetnet.nl



***Hyoscyamus aureus*:** After seeing this stunning but poisonous plant on the walls of the fortresses of Heraklion, I saw it again on the walls of Rhodes-town. This plant, originally from Egypt, is naturalised and finds a home on those old crumbling walls. G.E.

References: P. Delforge 'Orchids of Europe, North Africa and the Middle East'
Website: [Orchids of Britain and Europe](http://www.orchids-of-britain-and-europe.com)