

# The Fritillaria Group



Spring 2019

Journal 44

## Spring 2019

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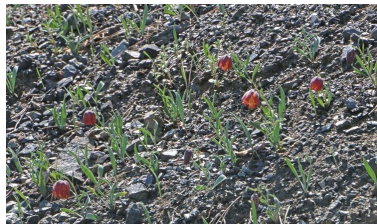
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**Fritillaria Group Spring Meeting & Show  
at  
New Haw & Woodham Community Centre  
65 Woodham Lane, New Haw, Addlestone,  
KT15 3ND  
Sunday 10th March 2019**

- |       |  |
|-------|--|
| 09:00 | Set up   |
| 10:00 | Tea and coffee. Plant display opens.   |
| 10.30 | Lecture: “The Fritillaria Collection at Göteborg Botanical Garden”. Johan Nilsson. |
| 12.00 | Lunch and free time.   |
| 14.00 | Lecture: “Return to Eight-Frit Mountain and Beyond”<br>Pietro Roseo.               |
| 15:30 | Raffle & Close of Meeting.   |

## Chairman's Chatter

A happy 2019 to everyone and welcome to our 44th newsletter. Our new venue in Birmingham Botanical Gardens and the programme of our autumn meeting seems to have been much enjoyed by everyone. So much so, in fact that we decided to summarise the three *Fritillaria* talks in this issue of our newsletter. I hope that you like it.

Owing to the changes in our relationships with AGS which are still on-going, we have decided to publish this newsletter electronically. Members for whom we do not have an email address will receive a printed copy through the post. This is an experiment so please let us know what you think. It is definitely the future of publication and saves a major part of our expenditure which went on printing and the ever increasing postage.

We are now looking forward to our postponed spring event from last year in the hope that the weather doesn't intervene again. It is set up for March 10<sup>th</sup> and will be in the excellent village hall in New Haw which we have used before. This is because the facilities at the RHS Garden, Wisley are currently under redevelopment and are unlikely to be ready for a year or two. It is also our annual show so please bring along plants for display and discussion.

Finally, our decision at the AGM to separate from the Alpine Garden Society is currently being worked on by our Committee and the AGS. I hope that we can bring you news of the situation soon. I hope to bring you news that Frexit happened before Brexit!

## Notes on Some Greek Fritillaries

By John Richards

Depending on one's taxonomy, there are about 24 species of *Fritillaria* found in Greece, although several of these (*Ff. pelinaea*, *rhodia*, *bithynica*, *carica*, *elwesii* and *theophrasti*) are limited in Greece to islands which are phytogeographically Turkish. I shall restrict this brief survey to those relatively few species I have seen in the wild, and in particular I intend to discuss two controversial complexes: *Fritillaria graeca/mutabilis/thessala*; and *Fritillaria euboica/rixii*.

Starting in the deep south, there is only one fritillary: in Crete, *F. messanensis*, where it is widespread. Many reports of *F. graeca* from there probably refer to dwarf forms of the former. The Cretan plant has been separated as subspecies *sphaciotica*, but it seems very similar to the Sicilian type. Curiously, the Grecian population most distant from the type, found in many places in eastern Greece, is also very similar to the type and is regarded as subspecies *messanensis*. Much more distinct is the race from the Adriatic coast, Albania and the Greek Ionian Islands, subspecies *gracilis*. This differs from subsp. *messanensis* in many key features, especially by lacking the characteristic three bract-leaves, and is probably best regarded as *F. gracilis*.

*Fritillaria davisii* is endemic to the southern Mani peninsula. The main characteristics are the bright green rather shiny leaves. Forms of *F. graeca* with similar dark brown-purple bells we have seen above Keratea, south of Athens, are very similar, although with less shiny leaves (Fig. 1). Maybe, *F. davisii* is best regarded as a subspecies of *F. graeca*?



Fig. 1. Dark form of *Fritillaria graeca* from above Keratea, resembling some *F. davisii*.



When visiting the remarkable populations of *Adonis cyllenea* on Saitas in the northern Peloponnesos, we encountered robust populations of *Fritillaria mutabilis* (Fig. 2). With their broad, opposite leaves and relative long corollas, these bear little relationship to typical *F. graeca*. They do however bear a striking resemblance to forms of *F. thessala* subsp. *ionica*. The latter species is not recorded from the Peloponnesos, and is not usually multiple-flowered. Otherwise it is difficult to see how the Saitas plants can be differentiated from *F. thessala*.



Fig. 2. *Fritillaria mutabilis*, Saitas, northern Peloponnesos.

Parnassos towers above the other side of the Gulf of Corinth. Above the tree-line, fritillaries occur in localised patches; often *F. graeca* and *F. mutabilis* grow together (Fig. 3), with some intermediates, apparent hybrids. *F. mutabilis* here is a different plant from that on Saitas, looking more like *F. graeca*, perhaps due to continued introgression with that species. However it is still distinguished by opposite pairs of leaves which are relatively broad and not twisted; also the corolla is longer. Most of the *F. graeca* here is v. *guicciardii*, the outer tepals having a bold green fascia.



Fig. 3. *Fritillaria graeca* (left) and *F. mutabilis* (right), Parnassos.

Further to the north-west, woods near the Albanian border contain large populations of *Fritillaria thessala* subsp. *ionica* (Fig. 4). It also occurs in the Vikos gorge. Like *F. mutabilis* this has broad opposite leaves and three bract leaves. The solitary flowers tend to be paler and less tessellated. The nectaries are ovate, unlike *F. graeca*, but this does not differentiate them from *F. mutabilis*.





Fig. 4. *Fritillaria thessala* subsp. *ionica*, Bourazani woods.

If *F. thessala* subsp. *ionica* and *F. mutabilis* form a pair, *F. thessala* subsp. *thessala* is more distinct. I have found this at Metsovon in the Pindos, and on Kajmatkcalan on the Macedonian border. It only has a single narrow bract-leaf, and is generally more ‘leggy’ with narrower opposite leaves. Flowers are nearly untessellated; typically the outer tepals are pale chartreuse and the inners chestnut with a broad chestnut

fascia (Fig. 5). They can look remarkably like forms of *F. hermonis amana*. (Ed. Those with alternate leaves and no tessellation are usually referred to *F gussichiae*).



Fig. 5. *Fritillaria gussichiae*, Kajmatkcalan.

*Fritillaria epirotica* is a very distinct and often rather ugly species from high serpentine screes in the northern Pindos. It is often decumbent, fleshy and glaucous, the whole plant reminiscent of fruiting *F. delavayi* from similar habitats in China.

A brief name-check for two species from northern Greece which I have only seen in fruit. *Fritillaria orientalis* (more often known as *F. montana*) grows on the fringes of woodland, and occurs in several well-botanised localities such as the Katara Pass and near Naoussa on the slopes of Vermion. On the MESE Expedition of the AGS (1999) seed was collected several times as possible low-level forms of *F. epirotica*.

In the far north-east, *Fritillaria drenovskyi* occurs on Bulgarian Slavianka (Orvilos on the Greek side) and through Vrondous, Menikio to Falakro. It is a slender plant with a narrow corolla, rather like *F. pinardii*. It is unrelated to the previous species, but possibly a dark cousin of the yellow-flowered species of Evvia.

Four species of *Fritillaria* occur on Evvia. I have not visited *F. obliqua* and *F. ehrhartii* in the south of a very long island. Classic dwarf forms of the yellow *F. euboica* are found high on Mt .Dhifis and were under snow during our late March visit. *Fritillaria rixii* is found in the north of the island at the edges of black pine forest on serpentine. It is a leggy plant with much narrower alternate leaves and smaller narrower flowers than *F. euboica* (Fig. 6). We found it to be locally frequent. However, further to the north-east, but still on serpentine, plants have much wider opposite leaves and larger, wider corollas. These are sometimes referred to as ‘hybrids’, clearly a nonsense as neither putative parent is present. Although ecologically similar to *F. rixii*, the morphology clearly suggests that they are best called *F. euboica*.



Fig. 7. *Fritillaria rixii*, NW Evvia.



## Small flowered Frits in Greece

*Précis of a talk by Martyn Rix*

Martyn Rix took us on an anticlockwise trip around the Aegean Sea starting with a gulet trip from Bodrum, firstly to the island of Samos then on to Chios. *Fritillaria carica* and *bithynica* grow on Samos as a mixed population in grass and higher up on limestone at the top of the pass over Karvouni mountain. They are easily distinguished: *F carica* has yellow flowers and grey leaves whereas *F bithynica* is greener with longer bells. The latter is common all down the nearby west coast of Turkey with a gap in the middle around the Menderes River where it is replaced by *F milasense*. Companion plants include *Iris suaveolens* and *Ornithogalum nutans*.



*Fritillaria carica*



We then move northwards to the island of Chios where close to the 11th century Byzantine church of Nea Moni grows a good yellow form of *F carica*. The colony grows in coarse pines with *Euphorbia rigida* on top of the limestone ridge. Recently, a second species, *F pelinaea*, was found on Mt Pelineion. It grows amongst small shrubs including *Acer monspessulanus* on very dry looking, bare screes. This species has very broad shiny green leaves, the style and stamens are very like those of *F bithynica*, of which it may be an alpine offshoot. It grows with *Galanthus graecus*, *Aubrieta deltoidea* and a *Ballota* species.



*Fritillaria pelinaea*

Four *Fritillaria* species grow on the large island of Evvia (Euboea). In the south, the hillsides of schistose rocks look relatively green thanks to the ground cover of the spiny *Sarcopoterium spinosum*. On barer patches next to the roadsides, *F ehrhartii* grows. It looks like a purple *F bithynica* sometimes with yellow tips – a feature it shares with *F zagrica*: probably a case of parallel evolution and not a genetic relationship. Unlike *F. bithynica*, the capsule is unwinged. It can also be found on the adjacent islands of Andros, Skiros and Tinos.



*Fritillaria euboeica*

Mt Dirfis is a steep cone-shaped mountain in the centre of Evvia. Steep south-facing limestone screes are the home of *F. euboica*, a dwarf species (a feature that it retains in cultivation) with broad green leaves and bright yellow flowers. One striking orange and yellow possible hybrid with *F. graeca* was recorded and drew gasps of appreciation from the audience. *F. graeca* does not grow on Dirfis but there are populations a few miles away and within range of the honeybee pollinators; there are hundreds of hives nearby in the Sweet Chestnut forests.



*Fritillaria* hybrid *euboica* x *graeca*



*Fritillaria rixii* is another yellow flowered species but it is tall and has narrow leaves. It grows on the Kandilion range which has a north-south orientation in the east of the island. Access to the mountains is gained by using the roads up to small mountain churches. These are used only on saint's days but the roads are kept open – very handy for plant hunting. The species was described by Zachorov, using specimens from lower altitude Mt Xirion. Although it is a good species there is evidence of intermediates with *F euboica*. It grows in the spaces between junipers and *Buxus*, and in grassy slopes under pines.



*Fritillaria rixii*

In 2017, a paper by Kamari described a new species to the peninsular south of Pelio on Mt Tisseon. This is a yellow flowered species with broad bells and a deeply divided style. It has been named *F phitosia*.

Martyn has also found it on the opposite peninsular near to St Dimitrios.



*Fritillaria phitosia*

The furthest north that Martyn took us was to Mt Falakron to see *F drenovoskyi*. It has narrow leaves and narrow brown and yellow flowers on a lovely arching petiole.

*Fritillaria obliqua* used to be abundant in the hills around Athens but is now only common in the Marathon area. It is also found in one locality on Evia. The open black bells, which are sweetly scented, are produced in early March. Very similar plants growing on the islands of Kithnos and Serifos and most likely Kea are now considered to be a subspecies namely *F obliqua* subsp *tuntasia*.

*Fritillaria conica* is a localised species. The green-leaved plants have yellow flowers which, as its name suggests, are a conical shape. Like *F*



*euboica* and *F phitosia*, it has a divided style. It grows on the western peninsular of the Peloponnese near Aghios Nicholas and Eliochori and the nearby island of Sapienza. In the olive groves where they are found, they are often accompanied by plants of *Iris cretensis*. Apparently they



*Fritillaria conica*

are long-lived plants as evidenced by the fact that his original collection made in 1967 is still around in cultivation.

The eponymous *F rhodia* is confined to the island of Rhodes. Martyn first searched for this in 1969 and found only capsules by the road. 20 years later, it was found on Profitas Elias growing amongst *Paeonia rhodia* and *Cyclamen rhodium*. It has been recorded from all over the

island, but we completely failed to find it in March 2017. This is another species with long thin leaves and a narrow green yellow bell and like *F bithynica* a long thin style.

In general the above species do not show much variation in flower colour and are relatively well- defined species. As Bob Wallis went on to show, this is not always the case.

## Fritillaries of Greece: but what are they?

*By Bob Wallis*

I am going to concentrate on those species which have a broadly bell-shaped flower which can be defined as those where the nectary is more than 3mm from the base of the tepals. This protrudes somewhat at the back of flower resulting in the characteristic shoulder and the broad bell. It is convenient to start with the *F graeca* group, many of which have been subsumed within the *F graeca* name at some point but which can be distinguished (albeit sometimes with difficulty and a bit of guesswork) from each other but often the boundary between species is quite blurred.

*F pontica* grows in Turkey and the NE of Greece reaching about as far west as Thessalonica. It is characterised by its broad mainly opposite leaves, with a whorl of three bract leaves subtending the flower. It

prefers to grow in deciduous forest or where it is shaded in summer by large herbs. A little further west, we can find the quite distinct *F*



Figure 1: *Fritillaria gussichiae* growing amongst herbage near Pisoderi, northern Greece.

*gussichiae*. It has a few quite broad leaves arranged alternately and only ever a single bract leaf. Like *F pontica*, it has no tessellation but sports lovely reddish brown flowers with a marked green fascia. It is distributed along the northern border of Greece. Although it grows in quite open, often south-facing sites, in the two places I have seen it, it has a covering of bracken or other quite vigorous herbaceous foliage in the summer. (Figure 1)

Further west again and all the way southwards through the Pindus range we find *F thessala*. Like *F pontica* it has quite broad, oppositely arranged, leaves and a whorl of three bracts. However, unlike *F pontica*, the flowers are slightly, to quite markedly, tessellated. The tessellation seems to increase as one progresses southwards and has



Figure 2: *Fritillaria thessala* subsp *reisseri* is distinguished by its dark brown flowers and mainly opposite leaves.

resulted in its separation into subspecies: subsp *ionica* occurs on Corfu and in the northern part of the range; subsp *thessala* occurs further east and south but the most conclusive difference is in the shape of the nectary being almost circular in subsp *ionica* and oval in subsp *thessala*. A third subspecies grows in the far southwest of mainland Greece (i.e. the Attic peninsular) and on just a couple of islands. This is the fabulous deep brown flowered *F thessala* subsp *reisseri* (Figure 2). It inhabits almost impenetrable, sea level phrygana on steep limestone

slopes which it shares with *Lilium candidum*. Sadly the goats find it much easier to penetrate than us botanists and the only time I have ever seen it, every seed capsule had been eaten leaving just the stalks.



Figure 3: *Fritillaria mutabilis* on Mount Parnassus seems intermediate between *F thessala* and *F graeca* with no consistent leaf arrangement.

Well that was the easier bit! Now, as we progress southwards, we come to Mount Parnassos. This is an easy mountain to access along the roads which are provided for skiing. Near to the ski areas we find another species which is called *F mutabilis* – “mutating” which justly describes its inconsistent leaf arrangement and flower colours. Here are some photographs of what we found there early this year (Figure 3). The leaves are often green rather than glaucous and the number of bract leaves can vary from a single one to three. The lower leaves can be opposite, nearly opposite or alternate. It is a matter of opinion whether



this is genuinely different enough from *F thessala* or more appropriately *F graeca* to warrant taxonomic distinction. My feeling is that I could not with any confidence say that we had found *F graeca* there at all.

This now brings me another conundrum: those Fritillaries which are growing on Mt Othrys. Mt Othrys is an outlier of the Pindus range being some 50km north of Parnassus and not far from the east coast. There is a large colony of *Fritillaria* growing on the north – facing rocky and slightly shrubby slope. There is an incredible variation of flower colour, leaf arrangement and vigour of the plants there and as far as I can see they are indistinguishable from the Mt Parnassus *F mutabilis* (Figure 4).



Figure 4: The fritillaries that grow on Mount Othrys are very variable and are probably attributable to *F mutabilis*

In 1986 Zacharov, using 11 different characters to calculate differences in the *F. graeca* group, found that the Othrys fritillaries stood out and referred to these as *F. graeca* subsp. *thessala* var. *othria* to capture their difference from typical *F. graeca* subsp. *thessala*. This nomenclature predates the description of *F. mutabilis* by Kamari (1991), and indeed the raising of the status of *F. thessala* to a species, so I feel that we should now include these in the Kamari name (*F. mutabilis*) as a better solution.

Approaching Athens, we come across “typical” *F. graeca*. It is on all the mountains around the city, Evvia island and then all over the mountains of the central Peloponnese and the Taygetos range. It is a delightful dwarf little plant with an opposite or almost opposite pair of glaucous leaves at the bottom of the stem and a single bract leaf. The flowers are brown and usually have a green fascia, giving the striped appearance with which we are most familiar. It grows in the open or in sparse pine woods on north-facing slopes.



Figure 5: *Fritillaria rhodocanakis* is common on the island of Ydra.

In the Argolian peninsular and its adjacent islands, there has been some speciation in this group, none more so than the fabulous yellow edged, brown flowers of *F rhodocankis* (Figure 5). This is only known on the island of Ydra and one or two nearby islets. The leaf arrangement is just like that in *F graeca* but the flowers are always quite different, the only variation being in the size of the yellow tepal tip. Some specimens are completely yellow. There is a large number on Ydra and it puts in an appearance just above the town and coats the north-facing slope which it shares with *Muscari commutatum* and a large array of *Ophrys* and *Orchis* species in March.

The fritillaries on Spetse and Poros islands and in many places on the main part of the peninsular are somewhat intermediate between *F rhodocankis* and *F graeca* and have been given two names. The priority name is *F rhodocankis* subsp *argolica* Zacharov 1987. The second name, *F x spetsiotica* Kamari 1991, therefore becomes invalid. If we raise the former to species level then the name becomes *F argolica* which reflects pretty accurately its distribution. The flowers are predominantly blackish brown with or without a narrow yellow margin. We have also seen one or two with a green fascia which then approach *F graeca* and one fully yellow one as with most of the brown-flowered fritillaries. Typical habitats would be old orchards, olive groves, rocky slopes or under tall pines. It makes a particularly wonderful site on Poros where it shares the sloping orchard with bright red *Anemone pavonina*.

Finally within this group is *F davisii* which is confined to the Mani peninsular. It has notably very green rather grey-green leaves and adark brown flower. It is a low altitude species occurring on north-facing grassy slopes. I have heard of areas where it grows with *F graeca* but have never witnessed this myself. Some years ago we inherited a pot



Figure 6: *Fritillaria argolica* is widespread on the Argolian peninsular and on its offshore islands such as Poros and Spetse

of a yellow-flowered form from the late Jim Archibald and it proved straightforward to grow until we made the mistake of overwatering it immediately before a snap cold spell and it keeled over with a root rot. We made a mental note to look at the long term weather forecast before watering in future!

In late April, we were investigating the flowers of Mt Vermion. We were trying to get high up to see the spectacular displays of *Crocus cvijicii* but took the wrong route. We ended up at a dead end but being undeterred tried to find a way upwards. As we came out on to a less wooded grassy slope we found a fritillary in bud. It started our minds whirring! The leaves were narrow and alternate with a single bract leaf. The flowers looked as if they would be green and a bit tessellated. We searched around and found many more and eventually in a sunnier position we came across a beautiful green tessellated one which had opened. Still none the wiser, we continued our search and there was a dark brown one looking typical of *F montana*. So that was it: we had stumbled upon a very variable colony of *F montana* (figure 7). This featured quite a lot on our trip. It is very common around Metsovo with



Figure 7: *Fritillaria montana* is not always deep brown. On Mount Vermion it is much more variable than in many colonies.



an equal variability yet it is entirely brown flowered in a clearing on densely wooded slopes north of Deskati. Oh, and yes, we did find *Crocus cvijicii* in countless numbers when we turned back and ascended by a better route.

Finally, the gem of the Greek flora, *F. epirotica* (Figure 8). It has everything that one wants of a fritillary – dwarf habit, deep-coloured flowers, very glaucous leaves and a habitat where it is uncrowded by anything else. *F. epirotica* grows on high serpentinite screes on some of the mountains near and north of Metsovo. It flowers quite late depending on altitude and we were fortunate to be able to see it in flower one April on two lower altitude slopes. One of these, to the north of Eptachori, was quite hard to reach with an ill-defined (or no) path up the steep slope through dense forest until at 1800m we came across clearings where the screes were so steep and mobile that trees could not retain a root-hold and there were our goals – hundreds of tiny glaucous-leaved fritillaries with orange-brown flowers. This was a wonderful find on our trip and will stick in the memory for years.



Figure 8: *Fritillaria epirotica* inhabits serpentinite screes in the northern Pindus range.

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The images on the front and back covers are by Bob Wallis.

The front cover picture is of *Fritillaria mutabilis*.

On the back cover is *Fritillaria camschatcensis* var *lutescens*,  
Which grows exceptionally well in Gothenburg Botanic Gardens

The Spring Meeting will tell all about  
these wonderful  
*Fritillaria camschatcensis* var *lutea* –  
don't miss out

