

Journal 47 Spring 2020

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Chairman's Chatter

Finally we have now completed our separation from the Alpine Garden Society and we are now an unregistered charity named "The Fritillaria Group". All the money raised by the activities of the old Group has now been transferred to the new bank account. As agreed at the AGM of 2018, you are now automatically members of the new Group and the database of members has been transferred. Welcome to the new Group.

In this unprecedented year, we had to cancel our Spring meeting while we all "self-isolated" and by the way things are looking as I write (in June), our autumn meeting and AGM is in doubt. For this reason, we have not organised anything yet.

Subscription rates will be unchanged in the coming year, which is as ever incredible value. The new Group has a new bank account and details of subscription payment methods will be included in a communication to all members later this year when the fate of our Autumn meeting and AGM have been decided.

The lack of meetings, flower shows and also botanising trips this year has left me very short of articles for the Spring Journal but the fact that we have all enjoyed giving more attention to our plants and gardens there must be many success stories to tell, observations to be made, memories rekindled as we look back over old photographs and wonderful pictures to share with the Group's members. Please let me have anything that you have written even if it is only a few sentences so that I have something to edit!

Bob Wallis

Growing Fritillaria: What I do and Why

Colin Everett [Part 2]

Summary of the talk given to the Fritillaria Group in
November 2019 (George Elder)

Flowers in the greenhouse and garden

In the final section of his talk, Colin demonstrated the wide range of species that he grows and the success of his methods by showing photographs of plants in his collection.



F. aff pinardii (= *F. kittaniae*)(top) & *F. walujewii* (bottom)



Clockwise from top left: *F. eastwoodii*, *F. eastwoodii*, *F. sibthorpiana* subsp *enginiana*, *F. bucharica* ex Razjon Village, Tajikistan.



Top *F. tortifolia*, bottom left *F. verticillata*, bottom right: *F. camschatcensis* (Alaskan Form)

He then described his recent experience with growing *Fritillaria* in the garden.

Bulbs are being planted in two sites: a raised bulb bed and an area of grass that is cut only in August and contains a long-established colony of *Anacamptis pyramidalis*.

Neither site is protected from rainfall that has averaged 23 inches (585 mm) per annum over the past three years. The raised bed was constructed in July 2018 from local stone. Two inches of sharp sand were dug into the base to improve drainage before it was filled with a mix of 40% grit, 40% horticultural sand and 20% loam and top dressed with 50% sharp sand and 50% grit. Some Vitax Q4 was added as fertiliser.



Bulb bed under construction.

The raised bulb bed was planted up with spare and some purchased bulbs during the summer of 2018 so Colin could only report preliminary findings. In the bulb bed *Ff. affinis* dwarf form, *davisii*, *davisii x graeca*, *eastwoodiae*, *imperialis* ‘Early Passion’, ‘Aurora’ and ‘Rubra’, *meleagris alba*, *michailovskyi*, *mutabilis*, *pallidiflora*, *pontica*, *pudica*, *recurva*, and *F. sewerzowii* ‘Black Bear’ have all survived and some have flowered but *Ff. persica*, *persica* ‘Ivory Bells’, *raddeana* and *walujewii* failed to appear. This year the

following species have been added: *F. biflora* var *ineziana*, 2 forms of *F. crassifolia*, *Ff. frankiorum*, *kittaniae*, *persica*, *raddeana*, *reuteri*, *roylei*, *sewerzowii*, *thunbergii*, and *F. whittallii*.



F. sewerzowii & *F. davisii* x *graeca*.

During the summer the bed is planted with *Eschscholzia californica* ‘Red Chief’ and Viper’s Bugloss to remove moisture and receives no watering apart from rain.

Fewer species have been trialled in the grass. *Ff. acmopetala*, *davisii*, *elwesii*, *meleagris* and *F. pontica* have all flowered. Others have survived (*Ff. amana*, *hermonis*, *kotschyana*, *pyrenaica*) but have not yet produced any flowers. Eventually both the raised bulb bed and grass should provide useful information about the long-term viability of *Fritillaria* species in the garden. Perhaps this will be the subject of a future article or talk?

Appendix (Added by Colin after his talk)

Tesco no longer sell a cat litter suitable for horticultural use. However exactly the same material is still available, sold as granules for absorbing chemical spillages. Like cat litter, spillage

absorbent granules can be made of various materials so you need to get the right type. Two that are the correct type are:

"All Purpose Absorbent Granules" which is sold by Euro Car Parts, who have branches all over the country and also sell online - see <https://www.eurocarparts.com/p/euro-car-parts-absorbing-granules-20ltr-542770770>.

The second is "New Safety Tread Industrial Spillage Absorbent". This is available from several sources; the cheapest we have found is <https://www.racking2go.co.uk/safety-tread-granules.html>. Both these are a smaller granule size than Sanicat cat litter or Seramis.



Annuals help to moderate moisture in the bulb bed in the summer.

The Rhinopetalums

Rannveig Wallis

This subgenus of *Fritillaria* is a distinct and easily recognisable group. It is characterised by one or more bowl-shaped nectaries which manifest on the outside of the flower as raised bumps or noses hence the name rhino (Greek: a nose). Three of the species have zygomorphic flowers where either one or three of the bumps are more prominent than the others. In the others the nectary bumps are all equal, or actinomorphic. I will deal with the zygomorphic species first. All three are species of the Asian steppes from Armenia and Iran in the west and Xinjiang Province of China in the east. They are however very similar to each other and have been interpreted as a single polymorphic species by some authors. I will deal with them separately.



Note the single nectary bump on the dorsal tepal of *F. karelinii* (left) but on all tepals in *F. gibbosa* (right).

Fritillaria karelinii is the only one with a single prominent nectary bump which is always on the dorsal tepal. The other five tepals have either much smaller or non-existent bumps and have no nectar.

Ff. gibbosa and *ariana* have three large nectary bumps on the outer tepals and smaller ones on the three inner tepals. There are also differences in the leaves which can be diagnostic.



F. gibbosa has different colouration in Zagros Range (left) and in Kopet Dag Range (right) both in Iran.

Fritillaria gibbosa has the most westerly distribution taking in Iran and Armenia. It grows in the drier regions of the two countries and is a frequent find on the southern and therefore drier slopes of the Elburz, on the eastern slopes of the Zagros and in the Kopet Dag ranges. There are odd records of specimens from both Afghanistan and Pakistan which we have been unable to verify and which may be errors of identification. *F. gibbosa* is a very variable plant and seems to fall into three basic colour forms in the wild. Those in southern Zagros tend to have white tepals overlaid with greyish or purplish patterning of spots or splashes. They grow at high altitude often over 1800m and share the slopes with other geophytes like *Anemone biflora*, *Fritillaria zagrica* and *Tulipa biflora*. This is very much Dionysia country too and the cliffs can be dotted with beautiful cushions such as *D. mozzafarianii* or *D. bryoides*. Plants from the northern part of the range in Armenia and Iran tend to

have a pink tepals with darker markings. Common cohabitants are *Iris meda* and *Rosa persica*. Moving east towards the Kopet Dag, the plants have more solid coloured tepals which can vary from deep pink through lovely shades of salmon and apricot through to yellow. Here they grow in dry mud flats which often have salty deposits visible. It grows here with the strikingly beautiful *Iris fosteriana* through small thorny bushes. These plants tend to be more robust with many flowers and are more common in cultivation having arisen from Paul Furse and other introductions made during the great plant expeditions in the 1960s. This species is long lived in cultivation and although natural division of the bulbs is almost non-existent they are easily raised from seed. For example a potful shown in the AGS Kent Show by John Kemp in 2016 was raised from seed from the original introduction by Paul Furse. It was only after Iran opened up in 1999 that new stock became available. Such as the Zagros form gathered as seed near Arak by Jim Archibald in 2001 is now starting to appear.



A wonderful potful of *F. ariana* which won an AGS Certificate of Merit for Martin & Anna Sheader (photo: Jon Evans).

Fritillaria ariana superficially looks very similar but is distinguished by having narrower lowest leaves than *F. gibbosa*. It tends to be a taller, more willowy, plant with more open flowers but can be very difficult to recognise in some specimens especially since it readily hybridises with *F. gibbosa* in cultivation. There are few records of it in the wild. Paul Furse collected the original plants in no-man's land between Iran and Afghanistan. It is also known in the dry steppes of Turkmenistan where it grows in sand dunes. The pictures which I have seen show tall plants up to 60cm bearing 15 flowers or more growing in dry scrub in Turkmenistan. This is a site which it shares with the sumptuous *Tulipa lehmanniana*.



F. ariana near Badklyz, Turkmenistan (photo: Diane Everett).

The third member of this grouping, *Fritillaria karelinii* has a very wide, scattered distribution from north of the Caspian Sea through

central Asia and into NW China. This vast area, 4000 km west to east and 2000 km north to south, contains few roads to enable detailed botanising so *F. karelinii* is almost certainly under reported. Once seen it is easily recognisable by its pale pink spotted narrow tepals. It flowers very early in the season, usually in March, as soon as the snow melts on these low altitude steppes and before the underlying poor soil dries up. Unlike the other two species in this small grouping the tepals are marcescent i.e. they are retained below the seed capsule. It is a short plant even when it is in seed.



In the Ili Valley, *F. karelinii* flowers in March and is in advanced seed by mid April (Left photo by Kurt Vickery).

Most growers of these three species grow them in pots in a cold greenhouse in a well drained, humus free compost. The secret seems to be to start watering them very late, say December, after their summer dormancy. They then grow immediately and as long as sufficient water is given, the flowers don't abort – a particular problem with *F. karelinii*, and they flower in February (*F. karelinii*) or March (*F. gibbosa* and *F. ariana*).

The remaining two *Rhinopetalums* are actinomorphic i.e. the nectary bumps are all the same size so the flowers are rotationally symmetrical. These are both mountain plants which do not have such an arid summer.



F. stenantha flowers in snow melt water in the Chatkal range, part of the Tien Shan of Uzbekistan.

Fritillaria stenantha distribution is centred on the west Tien Shan range with one paradoxical outlier in Afghanistan of which more later. It has flowers in varying shades of pink occasionally with attractive dark centres. We have seen it in the Chatkal Range, part of the Tianshan where it inhabits steep gritty soil which is surprisingly wet with snow melt water at the time of flowering. Here it grows with plants like *Rheum ribes*, *Tulipa chimganica*, *Corydalis darwasica* and *Fritillaria sewerzowii*. There are often a few shrubs around such as *Lonicera* nearby providing root action to balance soil water in the summer when these bushes are in leaf and the bulbs are dormant.

The one report of *F. stenantha* from N Afghanistan is a puzzle but this introduction has resulted in a fine vigorous form which in George Elder's hands multiplies vegetatively profusely and produces huge panfuls (see following article by George Elder). Three Farrer medals have been won by him for this striking form.



A many flowered form of *F. bucharica* occupies a shady rock ledge in the Zerevshan Range of Uzbekistan.



F. bucharica has fewer but larger flowers on the Khaburabot Pass, Tajikistan.

It was grown from JJA Seeds with the quoted origin being from S of Mazar-i-Sharif. This is about 600km south of any other reported site and I do wonder if this is mistake. The seed would have been donated to the Archibalds but I do not know the source (cf P 21.)

The range of *Fritillaria bucharica* is in the Pamirs, the westward extensions (Zerevshan and Baisuntau) and in northern Afghanistan, from where the first introductions to UK were made. The flowers are always white with or without a dark centre. It seems to grow in acidic grit largely derived from soft granite on steep slopes and rock ledges. It is quite variable in the wild. Some populations notably those from the Zerevshan range south of Samarkand, have many small rather cup-shaped flowers whereas others have rather narrower leaves and fewer, larger more open flowers. There are many wonderful geophytes in these areas which make a trip at the right time extremely worthwhile. In the Zerevshan, cohabitants include *Iris magnifica*, *I. warleyensis* and *Tulipa fosteriana*. Near to Dushanbe in Tajikistan there are huge stands of *Iris bucharica*, *Iris vicaria* and *Tulipa carinata*. Some of the cliffs are studded

with cushions of *Dionysia involucrata* and rock ledges support fine orange red Tulips and *Fritillaria eduardii*.

A little to the west of Dushanbe one crosses the border into Uzbekistan and very near to this border in the Baysuntau Range, Janis Ruksans collected a short, white flowered *Rhinopetalum* which was originally allotted the name *F. aff karelinii*. It has equal nectary bumps and broad tepals so it is clearly not this species and is much more like *F. bucharica*. There are however minor differences in its stature, the stem being much shorter than other *F. bucharica*, the leaves are a slightly different shape and the anthers are black rather than yellow. Ruksans described this as a new taxon in 2019 (International Rock Gardener (IRG) 114 June 2019, pages 3-20): *Fritillaria baisunensis*. I still ponder the question as to whether these differences are enough to warrant a new name and how consistent the differences are. Those in cultivation do look quite different but having looked at our photographs of plants in the wild from different parts of the range the differences are less obvious, there are flowers in the Pamir with black anthers but the



A smaller form of *F. bucharica* from the Basuntau Range has been called *F. baisunensis* Ruksans

leaf differences will need a much larger cohort of specimens and probably a statistical analysis before we can satisfy ourselves of the need to separate it. Perhaps subspecies level would be a more useful way to name it so that we can await a more detailed analysis.

On one trip in Uzbekistan, a few years back, we found large numbers of this fritillary around the village of Pulkhakim and in several other places in the Baisuntau mountains including much further west on the Tally Pass, south of Dekanabad. Sadly it had been a dry year and all the flowers were finished. It was growing here on a bare north-facing hillside with the wonderful dwarf yellow *Iris svetlanae* and *Corydalis popovii* both also going dormant at the time. Thank goodness we could recognise the leaves! Have I just talked myself into another trip?



F. bucharica can also be found in the Panj River gorge which separates Tajikistan on the left from Afghanistan on the right.



F. baisunensis in fruit on the Tally Pass, Uzbekistan

Growing a Farrer Medal winning Rhinopetalum

George Elder

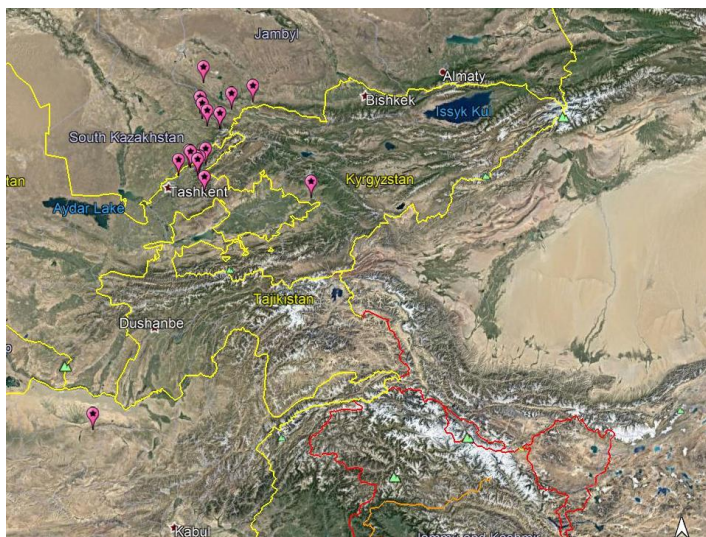
A Farrer medal is awarded at each AGS Show to the best plant in the show (provided it reaches the required standard). Bulbs were not eligible until 1970. The first *Fritillaria* to win the award was *F. pudica* in 1976 and since then *Fritillaria* species have been successful at over 30 shows. In the league table of Farrer medal winning genera for the past 20 years, *Fritillaria* is now third, being just ahead of *Campanula* but below *Dionysia* and, in top place, *Cyclamen*. Three Rhinopetalum species have won the award: *F. bucharica* (Rod and Jane Leeds, 1998), *F. ariana* (Martin and Anna Sheader, 2005, 2006, see page 11) and *F. stenantha* (2014, 2016, 2019) while *F. gibbosa* grown by John Kemp has come close on at least one occasion.



F. gibbosa grown by John Kemp (photo: Jon Evans)

The form of *F. stenantha* which has been awarded three Farrer medals was grown from seed (JJA 503.209) obtained from Jim and Jenny Archibald and sown in January 2000. The seed was listed as coming from ‘Afghanistan, Balkh, S of Mazar-i-Sharif. 2000m. Grassy hillsides.’ As the distribution map for *F. stenantha* shows this is a long way (about 600 km) south of other sites for this species. Jim Archibald did not visit Afghanistan but Paul Furse did and never found *F. stenantha* there. So the origin of this seed remains a mystery.

Plants from this seed have some characteristics that make them easy to grow and show. First, although there is some variation in flower colour, the best have a clear pink colour. Second, the plants are vigorous but have a tendency to produce fasciated flower stems as reported previously by the Sheaders for robust forms of this species (The Fritillaria Group Journal, 16;15-17, 2005).



Distribution map for *F. stenantha*. The site at Balkh in north-east Afghanistan is shown in the bottom left-hand corner. (Courtesy of Google Earth for base image)



F. stenantha JJA 503.209



Bulbs at repotting after two years growth showing a two and a half-fold increase.

Third, and perhaps most importantly, the bulbs have a rapid rate of vegetative increase, almost 3-fold in two years with some of the newly formed bulbs already at flowering size. This allows plants with poor colour or other defects to be weeded out without unduly diminishing the stock.



Growth appears above ground in late winter

Bulbs are potted every two years at the end of October into a mixture of two parts John Innes 3, one part coarse grade perlite and one part 6mm grit to which I add 2g/L of bulb fertiliser. The bulb fertiliser is one recommended by Paul Cumbleton in his Wisley Log on the AGS website. It contains superphosphate, dried blood, dolomitic limestone and sulphate of potash (2:1:1:1, by volume). The John Innes compost is home-made using a rather sandy sterilised loam from a local supplier. In the past I have used various loam-based commercial composts and bone meal in place of bulb fertiliser. But it is most important that the final mix drains rapidly. Bulbs are planted about halfway down in either clay or, for reserve stock, plastic pots and the pots are top-dressed with 2-3 cm 6mm grit. Newly planted bulbs are watered by standing pots in water and

then, after draining for a day or two, plunged to within a few centimetres of their surface in damp sand in a well-ventilated Access frame or greenhouse. No further water is given until growth emerges in late winter.

Once growth is clear of the surface, the plunged pots are given a thorough soaking using a hose. As growth proceeds, frequent watering is continued, usually about once a week, unless the weather turns cold. The plants appear to require a lot of water at this stage to prevent floppy flower stems and promote vigorous growth. In the wild, snow melt may have the same effect. I struggled to prevent my plants from flopping over until Rannveig Wallis suggested this watering regime as a remedy. It is certainly not advisable for other *Rhinopetalum* species. Watering is gradually decreased once the flowers begin to open and pure water is replaced by a half-strength solution of a high potassium fertiliser such as Tomorite. As the flowers begin to fade only occasional watering with a dilute solution of sulphate of potash (1g/L) is required and this is stopped when the foliage starts to become brown. When the foliage has died down, and any seed pods have ripened, pots are removed from the plunge and placed under the staging in a well-ventilated and partially shaded greenhouse until late October when the cycle restarts.

Over the years I have given away or put into the raffle at our meetings several bulbs of this form but I have yet to see any of their progeny on the show bench.

The information about Farrer medals comes from McGregor J. AGS Bulletin 67:447-448, 1999 and the AGS website.