THE FRITILLARIA GROUP

The Fritillaria Group of the Alpine Garden Society
Journal 35 Autumn 2014

Committee members and contact details can be found on our website:
www.fritillaria.org.uk

The beautiful painting of *Fritillaria imperialis* on the back cover is by Dianne Sutherland. We are grateful that she agreed that we could use the image and hope to see more of her work in the future.

Contents Autumn 2014

A fasciated form of *F biflora* belies its Latin name for our front cover photo. Image courtesy of Jane and Michael Delgado

THE FRITILLARIA GROUP OF THE ALPINE GARDEN SOCIETY

AGM and Autumn Meeting
26 October 2014 at the Hillside Events Centre, RHS Garden, Wisley, Surrey

PROGRAMME

9.00	Doors Open and Coffee. Plants and Bulbs will be on sale during the day
10.00	Annual General Meeting
11.00	Speaker Bob Wallis
"Late Bloomers "	
12.30	Lunch Break
14.00	Speaker: Tom Mitchell "The Accidental Plantsman"
15.15	Raffle
16.00	End of Meeting

All Visitors Welcome

Photographic display in the Main Hall

Membership details are available inside the Main Hall. Subscriptions: £8.00 per annum single membership and £10.00 per annum for family, €10.00 for European membership and £10.00 for world-wide membership. Two newsletters are published each year in February and August and a seed exchange takes place.

Further information can be found on our website

www.fritillaria.org.uk

Chairman's Chatter 2014

By Bob Wallis

The last fritillary of 2014 has flowered and set seed which, of course, we have all collected and sent to Pat Craven for the seed distribution. At the time of writing, we haven't started to repot the Frits yet but I hope that the bulbs will be bigger this year. It has been a much better year with a much longer growth season than during the last few years when cold weather, which delayed growth, was followed by hot weather causing rapid senescence. I raise this because we, as members of the Group, probably hold a large proportion of what is currently in cultivation and with the legal hurdles of introducing new stock from the wild, it is really important that we maintain what we have and distribute it to other members who have the skill to grow it.

It is really good to see that Paul Cumbleton's method of growing in Seramis (or cat litter) has stimulated some interest (see pp 21-22). We have tried it too and after messing it up for the first year we have got better at it and now have our first batch of seed on a potful of *F crassifolia* subsp *kurdica* which was itself raised in Seramis. The secret seems to be frequent watering and feeding with full strength fertiliser (with trace elements) every time. We now keep a bucket of made-up liquid feed under the staging ready for a quick sprinkle whenever we pass.

This brings me on to growing fritillaries outside. We live in a very wet part of the UK with between 1.5 and 2 metres of rain a year which is far from ideal but we still manage several species for more than a few years in the garden without any protection. Our *F meleagris* meadow now numbers at least 500 and it set thousands of seed this year which is happily sowing itself around. I hope our neighbouring farmer doesn't complain about the potential new addition to his silage crop! *F pyrenaica* and *pontica* are usually OK but seem to die out after about 10 years. Perhaps we should dig them up and move them to new soil before this happens. *F imperialis*

normally manages a flower stem or two but the surprise was a colony of *F frankiorum*. We never planted it but obviously some of its numerous bulblets were thrown out with old compost and have found a niche in a bed which is quite wet in winter but, being in full sun and full of other herbaceous plant roots, can get quite dry in summer. It flowers there most years and always much better than in a pot! We would love to hear about what everyone else grows outside so please describe what you do in a short article or even a "Letter to the Editor". It would really help to bring the genus to the attention of the wider gardening public. It is for this reason that I commend Arne Geir Sannarnes's article where he has created better conditions in his garden that seem to work very well in a part of the World where bulbs are definitely aliens! Happy seed sowing.

Success at last!

Image by Mike Denny

In the last journal, Mike Denny concluded his fascinating article on building his own fritillary house, by saying: "Although I have had many successes to date, I have yet to see my *recurva* flower. This year it threw up a giant leaf about 6 inches long and 3 wide, but that was it. Still, fingers crossed for next year." What a difference a year makes!

Growing frits in a northern climate

Words and images by Arne Geir Sannarnes

I live in western Norway just outside Bergen. My garden is located in a coastal area with approximately 1,500 mm yearly rainfall and quite windy. Not too different from parts of Scotland, but a bit colder (all time low -18C) and winter lasts a bit longer. My interest in *Fritillaria* started about 8 years ago. For the last 5 years I have sown between 50 and 100 pots with seeds every year and in addition bought some bulbs. I recognized quite early that I soon had to grow most of my frits outside.

Like many other collectors, I realized that I wanted to try all the species. With the diversity in their natural growing conditions, that's quite a challenge. Luckily, several species usually grow quite easily in the garden. Among them are *affinis*, *pallidiflora, monantha*, *pontica* and *graeca*. The only improvements in garden conditions I give them are some more sand in the soil together with a sunny and warm place. I also have a bed at the south side of a concrete wall. Above the bed I have made a roof which allows much of the light to penetrate. The soil is quite sandy and the ground slopes towards south. The soil starts to get drier in early May and from the middle of June it is dry. By early September it is still dry, and I then start to water. By October the rain in combination with the southern wind takes over and keeps the soil moist.

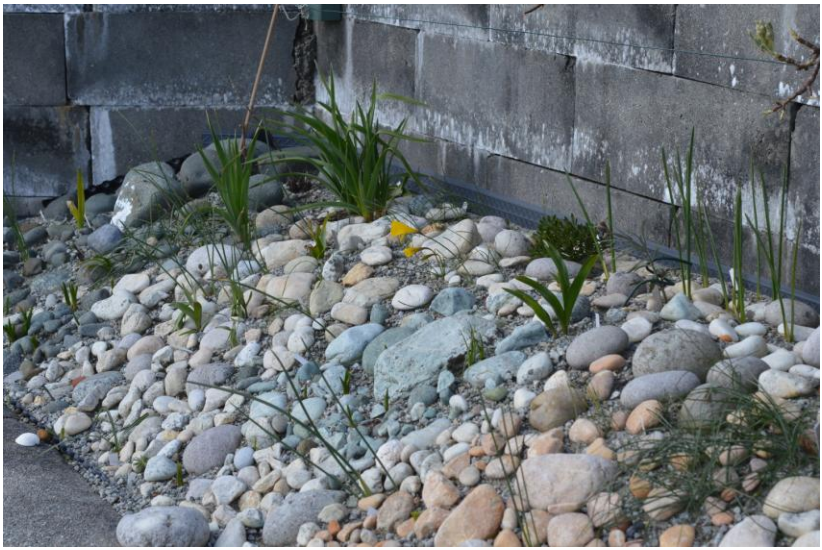
In these conditions I grow several of the dry-loving species (*stenanthera*, *bucharica, aurea*, *kittaniae*, *bithynica*, *minima*, *karelenii, eastwoodii/recurva*, *pudica, glauca*). They enjoy the summer rest and thrive. There are still challenges related to wind and slugs. For some of the taller species I use staking which I make from wire clothed with green plastic, both cheap and easy to make. Against the slugs I use

pellets with iron dioxide (the only allowed in Norway). Unfortunately some birds enjoy these, too (they are not harmful for birds), so I have to put them under either some netting or a flat stone. It is a constant fight, but most of my frits grow well here.

Dry summer bed

At the south side of my garage wall I have made a similar bed. The roof above is higher up and not so far out, so this bed is a bit wetter and not so warm (but still gets dry in summer). In these conditions I have grown *F. yuminensis* for some years. The slightly colder winters keep it below ground a bit longer than in more southern countries, but it still appears too early. It has to be sheltered if there is frost over several days. It is, however, quite tough and has survived so far. In winter I use a wooden board just above the soil, both to keep too much moisture away and to keep the soil colder to delay growth for a couple of weeks. However I have to check regularly as the cover has to be removed at once when the frit starts to grow. To keep out slugs, I have been experimenting with copper-tape around the edge of this bed, and it seems to work quite well. However the glue on the tape has to be strengthened with some adhesive silicon.

A few years ago I visited Peter Korn's garden in Sweden. Inspired by his sandbeds I have made my own at a southfacing wall. This bed slopes towards the south and there is a 30cm layer of sand above the ordinary soil. While Peter used quite a bit of gravel on top of the sand, I use considerably less. My aim is to keep the sand moist enough in spring and, but allow it to dry out in summer (we have quite a bit of rain in summer, too).



The sand bed

I have only had two full years with this bed so it may be a bit early to draw conclusions. The frits (and other bulbs) thrive and flower. The frits get some ordinary garden fertilizer early spring. Still they are significantly smaller than in the other beds (*F. graeca* is about half the size of those in the bed outside the garage). This is similar to what Peter Korn predicts: the plants get smaller with the flowers relatively larger. The great advantage growing in sand is that I do not have to use a roof above and there are almost no slugs. There are also very few weeds in the sand. However I have not yet attempted the most dry-loving frits in the sand bed. When I have "bulked up" more of them, I am going to try.

Some species, like *F. liliacea*, I grow in a pot. It is not frost tolerant enough to be grown outside. I sow frits in pots of ordinary soil topped with 1 cm sand, then the seeds and finally ½ cm grit on top. Those which germinate early get inside my frost free room in my garage and get some light. The plants from seed usually stay 2-4 winters in pots in my garage before being planted outside in a bed (with a few exceptions). My first seed plants started to flower this spring (I use not too much fertilizer). It is always very exciting when something flowers for the first time!

There is also another Norwegian living much further north than me, who grows quite a few frits. He grows them all outside mostly in south-sloping well-drained beds. You can see them here: http://www.aspaker.no/ Some of my efforts may not be necessary after all…. In many ways I am still a novice in growing frits. However I hope my experience so far can help others who are trying to grow frits outside.

Fritilllaria glauca

The hazards of plant hunting

By David Stephens

It is perfectly possible to have a good time seeing and photographing plants whilst on an organized trip or even a package holiday without the slightest danger to life and limb. However, there are a few amongst us who, because we want to see plants in more exotic locations, do get into the occasional difficulty. The vicissitudes of the wild are many and varied but hazards tend to fall into two distinct tranches, natural and man-made.

Natural hazards that have come my way include weather. On one trip I was driving up an unmade road in the mountains when a storm appeared. Within a few minutes the rain was so ferocious that the track turned into a torrent of flood water, mud and rocks and the car started to follow the flow of mud and water downhill. Luckily after a few hundred yards the car got stuck between a tree and a rock, and when the water subsided the local farmer with a tractor dragged us out.

Other natural hazards come from the nature of where you are. It is possible to forget that you have got yourself into a location so remote that it is a hazard in itself. One famous plantsman traveller managed to have a severe nose bleed that would not stop, in a remote spot in the Andes. He and his companion were at least two days travel from any place that afforded help. It was touch and go as to whether he would bleed dry before finding help, but luck was on his side on that occasion. Another friend lost his footing and managed to roll down a mountain slope for several hundred yards, with by pure luck very little injury.

Animals are definitely something to keep an eye on while travelling in remote places. If you are from an urban suburb in the UK you don't

automatically think about bears or boar or snakes, but you certainly should in a lot of locations relatively close to Britain. I have many

times uncovered scorpions while looking at a plant at ground level; I had a jackal jump over my back when I inadvertently knelt in front of its hide, and probably the most painful bite I have ever experienced was from a very large and very cross tortoise while I was on all fours looking at a plant on a Turkish hillside.

Compared to that tortoise, being stopped at machine gun point by the Turkish army is child's play, although some other friends weren't so sure that things would end well when they were surrounded by heavily armed Kurdish separatists, who, it eventually turned out, just wanted to give them some tea.

You obviously expect to get mosquito bites in any warm climate, but if you frequent lorry drivers' overnight pit stops you can expect to meet other biting creatures; on one memorable stop I woke up with mosquito, flea and bedbug bites.

Turkish roads have until recently been unsurfaced tracks. In the last 20 years massive amounts of new road building has been undertaken. However, safety rules governing this work are a little different to our own. New roads tend to follow the route of the old road and traffic flow drives through and around the building works. This includes dynamiting – very good fun as huge displaced boulders come hurtling down the mountain slope toward your car. On another occasion I was driving along the old road and just managed to realise in time that a new road had been bulldozed in front at a lower level; the old road came to an edge with a 10 feet drop.

An obvious threat is food poisoning and funny tummy but this is so common that it won't be mentioned here other than to say that you are mad if you don't travel with several packs of Imodium


1
2
3
4
5
6
7
8
9

A big thank you to all who contributed to the spring show. Above are just some of the Fritillaria exhibited

1 michailovskyi 2 sewerzowii

3 labled as drenovskii large form

4 davisii 5 gibbosa

6 mutabilis 7 rixii

8 ariana 9 bucharica

10 meleagris 11 raddeana

A note from the Chairman: With regards to photo 3, it was "labelled as *F drenovsky* but is probably *F. armena*".

Fritillaria karelinii in cultivation

Words and images by Colin Everett

I will start by saying that I am a grower (murderer at times!) of *Fritillaria* and have no botanical training.

This all started at a Fritillaria Group meeting when Rannveig Wallis asked Martyn Rix to look at some plants labelled *F. karelinii*. I think there were about five pots of which one was mine, labelled "*F. karelinii*?" (picture above). He said none of them were *F. karelinii* but that mine was the most *karelinii*-like. It was probably a cross between *F. karelinii* and *F. gibbosa* - but he was not sure because he did not have a hand lens to look at the stem to see if it was glabrous (smooth) or papillose (warty). So after this, thinking that this was a way to tell

them apart, I would take pictures not of just the whole plant but especially the stem, because with digital photos you can zoom in making it easier to see the warts. However, if you look at the botanical descriptions, both *F. ariana* **and** *F. karelinii* can be glabrous (smooth) **or** papillose (warty). So that put a spanner in my way of thinking.

And it got worse because the pictures above are of the same bulb but in different seasons. On the one on the left you can easily see the warts but in the picture on the right it looks like there are none; but if you enlarge it a lot you can see a few dotted around. This difference occurred I think because I had made a change to my potting mix. In the year shown left it was VERY gritty and did not hold much water; in the year shown right, it was not so gritty a mix and held more water. This now makes me think that wartiness could be an adaptation to their environment to reduce water loss. This could be wrong, it is just an observation. So as a means of differentiating the species, I ditched this line of thought and had to have a rethink.

I then moved on to the leaves. The botanical notes give the measurements listed below (length x width).

F. ariana: Leaves: lowest pair up to 120mm x 12mm
F. gibbosa: Leaves: the lower 30 to 70mm x 12 to 18mm
F. karelinii: Leaves: the lowest 45 to 90mm x 10 to 18mm

This is what would be expected in the wild, but in cultivation this is not always so. So to get round this I used the figures above to come up with a ratio. Take the length and divide it by the width:

F. ariana: 120÷12 = 10
So you get a 1 to 10 ratio of width to length
When you do the same *F. gibbosa* and *F. karelinni* you get the following:-
F. gibbosa: leaf 1 to 2.5/3.88
F. karelinii: leaf 1 to 4.5/5

With these two you get a range because you do not just have one of each measurement. If you use all possible width to length calculations you end up with four ratios below. If the leaf shape is fixed meaning for *F. gibbosa* a length of 30mm gives a width of 12mm you end up with two (above) which would mean all three have different ratios.

F. gibbosa: leaf could be 1 to 1.66/2.5/ 3.89/5.83
F. karelinii: leaf could be anything from 1 to 2.5/4.5/5/9, which means the range of *karelinii* almost completely encompasses the range of *gibbosa*.

The same was done to the tepals:

F. ariana: the outer 25 x 10mm; the inner wider unspotted
F. gibbosa: around 15 x10mm the outer slightly narrower spotted/marked
F. karelinii: 8 to 18 x 3 to 8mm usually irregularly spotted

Using the figures again to get a ratio you get:

F. ariana: tepals 1 to 2.5 outer
F. gibbosa : tepals 1 to 1.5 inner
F. karelinii: tepals 1 to 2.25/2.66 (could be anything from 1 to 1/2.25/2.67/6)

With the tepal measurements you have the problem that for *F. ariana* the measurements are for the inner tepals, for *F. gibbosa* the outer, and for *F. karelinii* they do not say! So you are not comparing the same things on the three.

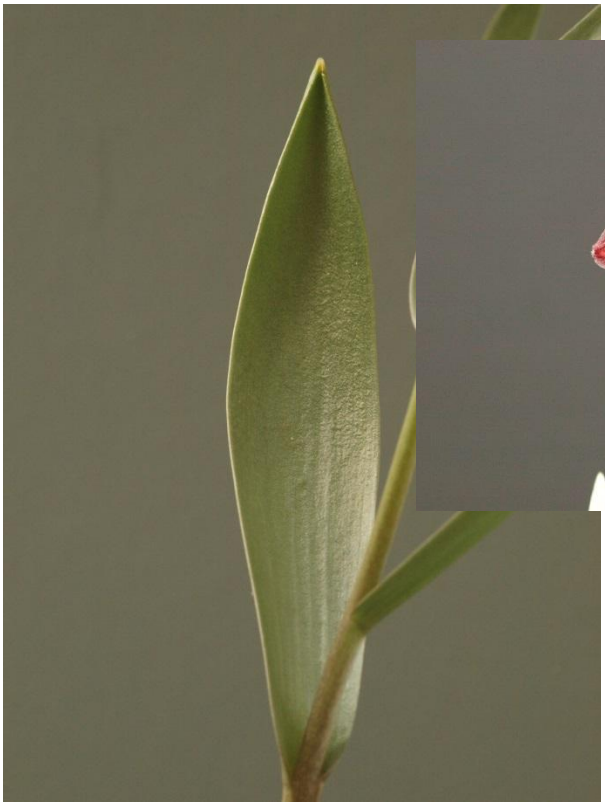
With the capsule you do not have measurements that can be converted into ratios:

F. ariana: 15mm without wings but with teeth on the upper corners
F. gibbosa: 14mm with 6 teeth, 1-3mm long and 6 narrow ridges
F. karelinii: without wings but sometimes with small horns

When you start putting this data to plants grown from cultivated seed things start getting interesting -- or confusing depending on you mind-set. Taking a look at some of my plants, trying to identify them, you will see what I mean. Again, I tend to take digital pictures and as long as you do not alter the picture ratio (height and width) you can enlarge the image and this makes taking the measurements easier.

Example No.1 – a plant labelled *F. gibbosa*

This image when opened on my computer gives me a leaf length of 20cm and a width of 5cm. So you get a 1 to 4 ratio which falls in between *F. gibbosa* and *F.karelinii* (or could be either *gibbosa* or *karelinii* as the ranges of these two overlap when you use all possible ratios).



So looking at the leaves you have ruled out *F.ariana* ; you now need to look at the flower.

Again when I open this image and measure the tepal, I get 5cm long and 3.5cm wide. That gives a ratio of 1 to 1.428. The best fit is now *F.gibbosa* (which is what is on the label). However, it has no spots, a feature which is attributed to *F.ariana*. But if you use the all possible tepal ratios it can come out as *F. karelinii* (as 1 to 1.428 is just outside the range for *F.gibbosa*).

I have also tried to get a capsule on it but none has developed beyond this picture, which does not really help me much:

Incompletely developed pod

So, depending what you look at, this plant has some features attributed to *F. ariana*, some to *F. gibbosa* and some to *F. karelinii*. So what is it?

Example No. 2 – Raised from seed ex *F. ariana*

Ex *F. ariana* capsule 1

Ex *F. ariana* capsule 2

The ex. *F. ariana* pictures are all of my own seed raised plants from one capsule (open pollinated). The tepals give a ratio 1 to 2 which is possibly closer to *F. karelinii* than *F. ariana*, yet if you look at the capsules pictured one appears to have no wings (1) but (2) has the suggestion of wings or something at the bottom. *F. ariana* is said to "without wings but with teeth on the upper corners" not the bottom.

Ex. *F. ariana* leaf

The leaf gives me 20cm long 2cm wide which gives a ratio of 1 to 10 which is *F. ariana*. So this plant on some counts comes out as *F. ariana*, on others it is more like *F. karelinii*.

I could keep giving examples that give confusing results using this approach, but I think I have made my point. The reason for all of this is to point out that I think that many of the plants in cultivation are hybrids, which is why it is difficult to attribute them to the correct species. This is especially likely where plants have been grown from seed produced in cultivation and donated to exchanges. Most of this seed is likely to have resulted from open pollination. So the possibility of hybrids occurring is quite high. A further complication is that we do not know how long this has been going on and just how mixed up the cultivated population is!

Fritillaria Group Seed Exchange

By Pat Craven

After a much kinder winter than in recent years we hope there will be more seed produced this year and that this will be reflected in the Group's exchange. Details of this year's exchange will be emailed to all members for whom we have an email address, and are also on the Group's website. If you don't have access to this, and wish to receive the information and/or the seed list in printed form, please contact me by email, phone or letter.If you are unsure that we have your email address, or have changed it in the last year, please email patcraven24@gmail.com

KEY DATES

Deadline for donations : 27 August 2014 (If your donation will be later than this, please send details of species and whether it is seed or bulblets)

List publication: 1 September 2014 (If you want a list, but have not received one by 4th September please inform Pat Craven).

Seed Manager: Pat Craven, 24 Leven Road, Yarm, TS15 9JE, UK

Email : patcraven24@gmail.com Tel : 01642 780109

Seramis Substitute

By Jack Meatcher

Members of the AGS Fritillaria Group will be aware of Paul Cumbleton's articles on the use of Seramis as a seed germination medium. He highlighted the fact that Seramis is not so easy to come by and is rather expensive. Because of this, he proposed exploring the possibilities of substituting cat litter - the pink grade of which is somewhat coarser than the type intended for kittens and thus having greater permeability and air spaces.

In 2013, the white Lily of the Valley (*Convallaria majalis*) in my garden produced some ripe seed pods and I thought these might be suitable for a trial. A bag of Sophisticat Pink was purchased and the seeds sown. This Spring several seedlings appeared and are thriving (see picture). Ignore the few bits of grit on the surface. These are odd bits that fell on to the pot when I tripped one day. The bulk of the "compost" is Sophisticat Pink.

Rather foolishly, I didn't conduct a truly controlled experiment, eg., counting the number of seeds sown (but I know it wasn't many), depth of sowing, etc. The pot was left outdoors through the Winter without any protection. The seeds themselves were fresh at the time of sowing – dehisced and sown.

The downside? As Paul points out, neither Seramis nor cat litter contain any inherent nutrients so this technique is comparable with hydroponics and Phostrogen (or similar) solution is required to sustain the seedlings once they've emerged. On the face of it, there doesn't seem to be much advantage in using inert media for seeds. However, they could be useful if a sterile environment is required for delicate and vulnerable seeds. Has any other AGS CB or Frit Group member had a go?

Jack Meacher: "I use a really coarse grit to ensure free drainage for my Frits in pots."

Some Recent Literature

Reviewed by Bob Wallis

The Genus *Fritillaria* L (Liliaceae) in the Cordillera Cantabria (Spain). Paz Canuria et al. Candollea 66: 383-395 (2011) (in Spanish)

The authors provide morphological evidence to redefine the differences between *Fritillaria pyrenaica* L (they resurrect the name *F nervosa* Willd for this, of which more later) and *F lusitanica* in the mountains in the north west of Spain and provide keys to be able to distinguish the species and subspecies defined. In so doing they maintain the 1983 name *F legionensis* (Llama & Andres) for those specimens with a whorl of three bract leaves. They provide photographs of it and of *F nervosa subsp falcata*.

1. Upper leaves in a whorl = *F. legionensis*
   All leaves alternate (rarely any opposite) ……2

2. Nectaries oval or rounded 2 – 7.5 x 1.2 – 5.5 mm,
   apex of tepals generally revolute ……..3
   Nectaries linear lanceolate, 6 – 18 x 1 – 3 mm,
   apex of tepals not revolute ……..4

3. Leaves lanceolate, falcate and
   conduplicate =*F. nervosa* subsp *falcata*
   Leaves lanceolate or linear lanceolate,
   straight and flat = *F nervosa* subsp *nervosa*

4. Leaves lanceolate or linear lanceolate, the lowest
   2.5 – 10 (-15) in width. The uppermost up to 5 mm
   in width. Scape glabrous or papillose. Capsule oblong,
   subtruncate. = *F lusitanica* subsp *lusitanica*
   Leaves linear, the lower ones 1 – 3 (-4) mm
   In width, the uppermost up to 2 mm in width. Scape papillose.
   Capsule ellipsoid, truncate. = *F lusitanica* subsp *stenophylla*

F legionensis occurs over quite a restricted area on the south side of the Cordillera Cantabrica in the provinces of Leon and adjacent Palencia growing at 1200 – 1700m and flowering in May – June. The presence of the whorled bract leaves which are not found on the other two species seems to be sufficient to separate it as a taxon in its own right. Otherwise all the other characters fit with *F nervosa.*

F nervosa is the name used by the authors for Linnaeus's *F pyrenaica* on the argument that Linnaeus used cultivated material of unknown origin for his original proposal. However, there have been enough new specimens seen over the centuries to assure us of what he meant, i.e those plants with an oval or rounded nectary which occur in the area and foothills of the Pyrenees and the Cordillera Cantabrica. So I don't agree that we should change the name on our labels just yet!

F lusitanica is distributed over the whole of the rest of Spain with *subsp stenophylla* confined to the south western part (The Algarve) and *subsp lusitanica* overlapping considerably with *F pyrenaica*.

A problem with this treatment is that *F nervosa subsp falcata* was only known from well south of the Cordillera Cantabrica in Salamanca Province and has been lumped into *F lusitanica* by most authors. However new sites have now been found in Leon Province very near those of the other species described in this paper. It also happens to be where the authors are from so it is a well botanised site. So we have a very confusing mixture of taxa in this particular area with characters of both *F pyrenaica* and of *F lusitanica*! In order to sort this out, I think that a lot more specimens need to be looked at. Fancy a holiday anyone?

£3.50

www.fritillaria.org.uk