



THE

FRITILLARIA

GROUP



The Fritillaria Group of the Alpine Garden Society
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FROM THE EDITOR

Always anticipated with pleasure, the spring bulbs are particularly welcome after a savage winter like this one. The Committee hopes that there will be a good turnout for the Spring Meeting on 20 March and that members will bring fritillaries in flower for the Show. There can be no better advertisement for Group, no more persuasive recruiting officer than lots of exquisite flowers. The public will be able to see them from mid-day onwards, so let's try to put on the best possible display.

This particular journal travels far in space and time. Brian Mathew shares the story of *Fritillaria forbesii* and its discovery by Professor Edward Forbes while recording the natural history of Lycia during the course of an archaeological expedition in 1842. Fast forward 130 years and a young Brian Mathew finds "embarrassingly large quantities" of *F. forbesii* herbarium specimens when rummaging about in the basement at Kew. From Lycia and Kew to Japan, Tokio Naito's 2004 article on the country's endemic *Fritillaria* species provides an overview of plants that are still not widely enough known or grown. Otto Fauser's account of his enduring passion for alpine and small bulbs takes us further still, to Australia and "A Lifetime With Frits – Down Under". Back home, our new Chairman, Bob Wallis, reflects on his bulb-collecting past and his ideas for moving the Group forward. It's a good start to 2011.

FROM THE CHAIRMAN

By Bob Wallis

Dear Everyone,

It is with great pleasure that I have been asked to write a short piece for "Fritillaria" as the new Chairman of the Fritillaria Group but what should I write about? In our highly successful Group we already have many of the experts on the genus in the world and if they haven't joined us yet then I guess it is up to all of us to tell them what we do. So I cannot really tell you any more than you know already, so how about a bit about me?

As most of you know, my background has been in pharmaceutical and biotechnology research, research and general management and latterly as a government advisor on economic development of life science based business. I am now, more or less, retired. Rannveig and I started growing bulbs, and Fritillaries were one of the first genera, in the 1960s and have amassed quite a large collection subsequently. Retirement has allowed me to concentrate on more growing, showing, travelling, lecturing and writing. Moreover, it is great to be able to wander into the greenhouse, in daylight, in the dead of winter and to see what is coming up, germinating or even suffering from some ailment. When I was working, it used to be a weekly, Saturday morning only, careful look at each plant with an insecticide spray in one hand and a fungicide one in the other rather like an unmasked version of the Lone Ranger (he was very big in the 1960s!). Now I can do this in much more timely fashion hopefully to the plants' benefit (and the beasties' detriment).

As chairman of the Group, I am committed to moving us forward into becoming a World class, authoritative, group on the genus. I think that this should include taxonomy and identification,

cultivation, distribution, conservation and maybe one day we can finance or, at least lead, some research projects with the expertise which we have. The demise of botany departments and hence of academic botanical training means that we amateurs have a greater role to play in botanical research and, to me, research is fun so let's do more of it! With our superb newsletter, our stimulating lectures, our weekend conferences, the seed list, the website, our shows and photographic exhibitions, we are already well along this path and this is attracting a lot of attention from growers and researchers in other countries. Long may this continue, so perhaps we can embrace this continuous improvement and think about what else we can do in the future. The Committee is very open to any new ideas which you have so please let us know.

Our Editor, Pat Huff, is always on the lookout for articles, however long or short, for the newsletter so please write about your experiences, observations, travels, thoughts and ideas and send them to Pat. We would be really interested in anything to do with the genus and your photographs are always welcome. Incidentally, please also take time to look at the website. There are a number of species for which we still require photographs, so if you can help us to fill these gaps please send them to Paul Cumbleton, our webmaster.

I hope that 2011 brings you all a successful year.

The website is constantly being updated and
rewards members who drop in on it frequently.

The address is
www.fritillaria.org.uk

EDWARD FORBES' FRITILLARY AND OTHERS

By Brian Mathew

The story of *Fritillaria forbesii* begins with the arrival of a small ship in south-western Turkey, HM Surveying Ship *Beacon*, which 'visited the coast of Lycia in the beginning of January 1842, for the purpose of conveying away the remarkable remains of antiquity discovered at Xanthus [Xanthos] by Sir Charles Fellows'. Captain Graves, and his crew were charged with the task of excavating and removing the marbles, now in the British Museum. In addition to the crew the ship carried The Rev. Mr E. T. Daniell, who had a keen interest in the Lycian countryside and its antiquities, Lieutenant T.A.B. Spratt the 'assistant surveyor' and a naturalist, Prof. Edward Forbes, then of King's College,



Edward Forbes

London. In the two-volume work by Spratt and Forbes, *Travels in Lycia* (1847) it is noted that 'Although the journey was commenced with sanguine expectations of success, the results exceeded the hopes entertained by the travellers; for no fewer than eighteen ancient cities, the sites of which had been unknown to geographers, were explored and determined, besides many minor sites'. Sadly Daniell 'fell a victim to the malignant malaria fever of the country.....by lingering too long among the unhealthy marshes of the Pamphylian coast' but not before the trio had undertaken some remarkable exploration.

The nearest suitable port selected as the base for this expedition was Makri – now Fethiye. In March 1842 the *Beacon* left Lycia to collect supplies from Malta, leaving behind Forbes, Daniell and Spratt, Forbes to survey the whole region: Forbes to record the natural history, Daniell the antiquities and Spratt in charge of geography and mapping. This they did with enthusiasm and in the two-volume book the two survivors of the trio give an

extraordinarily thorough account of the richness of the region: plants, animals, insects, fishes, seaweeds, Lycian language and inscriptions and of course the ancient sites themselves. From the book it is difficult to pin down exactly where Forbes collected the fritillary that was to become *F. forbesii*. The field notes on the type specimen in the Kew herbarium state: 'in dumetis rupestribus ad Macri', Forbes 626. It was this collection that was studied by the Kew botanist John Gilbert Baker who named the species in honour of Forbes in 1874 (*Botanical Journal of the Linnean Society* 14: 264)



Fritillaria forbesii. Photograph by Brian Matthew.

For several months Forbes and his companions travelled in Lycia, including on May 27th an ascent of the mountain block near Fethiye known as Cragus and Anticragus, now Mendos Dag and Baba Dag. On this mountain range Forbes collected a small squill (which he noted as *S. bifolia*): 'whose exquisitely blue flowers contrasted with the snow masses in the clefts'. This must be the plant that was later named and described by Baker as *Chionodoxa forbesii*, for *S. bifolia* could never be described as 'exquisitely blue' and *C. forbesii* is common on this mountain. A 'beautiful Fritillary of small size, but bearing a large tessellated flower' has been identified as *F. crassifolia* subsp. *crassifolia* (Forbes 672). Near the site of Cybira on the mountain now known as Rahat Dag another 'beautiful little fritillary, with rich orange and brown flowers' can probably be referred to *F. pinardii*. Forbes also saw the species later described (in 1846) as *F. acmopetala*, although this was based on a specimen collected by Aucher-Eloy; he possibly also saw *F. elwesii*, described by Boissier in 1884 after its collector Henry Elwes. Another was noted by Forbes as having flowers 'striped in broad flames, with purple, yellow, and green, but never tessellated'. The expedition recorded a large number of species, quite a number of which were the first collections of the species, for example plants we now know as *Cyclamen alpinum* [*trochopteranthum*] and Forbes's 'beautiful yellow *Trichonema*' which is *Romulea crocea*. It must have been a naturalist's paradise for he notes 'not infrequent in the Lycia mountains is the leopard' and 'bears and wolves are frequent.....Jackalls are abundant and make known their presence by their detestable yelling as soon as the night sets in'.

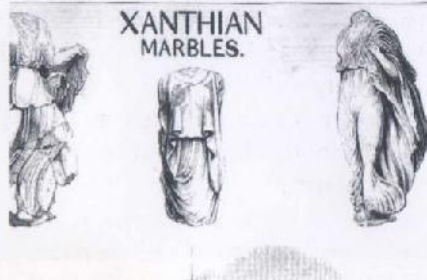
The holotype specimen of *F. forbesii* is well preserved in the Kew herbarium for posterity. In my early days in the 'monocot section', c. 1969, one of the tasks was to clear the bundles of old unmounted specimens from the basement, identify the contents and get them mounted and incorporated into the herbarium.



Type specimen of *Fritillaria forbesii*

Imagine my surprise when a bundle of surplus Forbes specimens emerged, particularly when *F. forbesii* proved to be among them, in embarrassingly large quantities – a conservative estimate would be 50-100 individuals. These isotypes (duplicates of the type) were duly despatched to various other herbaria as gifts or exchanges. Fortunately many did not have bulbs attached and it seems that the species suffered no ill effects and can still be found in the Marmaris and Fethive area!

As a postscript to the story, it was found that the *Beacon* was not large enough to transport the Xanthos marbles and two other ships, the *Monarch* and the *Medea*, were called in to complete the removal.



JAPAN'S ENDEMIC *FRITILLARIA* SPECIES

By Tokio Naito (Kyoto, Japan)

Translated and edited by Yoko Otsuki

Introduction

Some 100 species of the genus *Fritillaria* are known from temperate regions of the North Hemisphere. In Japan, the most familiar species is *Fritillaria thunbergii* Miq., known in Japanese as Baimo. This is widely cultivated and has long been used in floral arrangements and container plantings, especially associated with the decoration of rooms for the tea ceremony. *Fritillaria thunbergii* is not, however, strictly native to Japan, but is a naturalized escape that was introduced from China many centuries ago as a medicinal herb.

Of Japan's native fritillaries, *Fritillaria camtschatcensis* (L.) Ker-Gawl (Kuro-yuri 'black lily') belongs to *Fritillaria* Section Lilliorhiza, as is evinced by its bulbs which are composed of stalked scales, and its seeds which are depressed like those of true lilies. This species also occurs outside Japan, in Northeastern Asia and the far American Northwest.

By contrast, Japan's endemic *Fritillaria* species (known as Kobaimo, 'little fritillaries') belong to Section *Fritillaria*. Of these *F. amabilis* Koidzumi (Hosobana-kobaimo) belongs to Subsection *Olostyleae*, and *F. japonica* Miq. (Mino-kobaimo) to Subsection *Trichostylae*. They are found in the Kanto, Cubu, Kinki and Chugoku Districts of Honshu, Shikoku and Kyushu, where they grow in the lower reaches of mountainous areas, sometimes near villages.

Only three of these endemics (*F. japonica* found in Mino District, *F. koidzumaniana* found in Hokuriku District and *F. amabilis* found in Shikoku, Kyushu) had been known to science

for any length of time. Then a leading authority on *Fritillaria* in Japan, Dr. Naohiro Naruhashi of Toyoma University, re-examined and divided them into 6 species and published his study in a horticultural journal some 30 years ago.

In addition to these 6, *Fritillaria ayakoana* (Izumo-kobaimo) was found in 1974. If a further new species *F. tokusimensis* nom. nud. (Tokushima-kobaima) were accepted, then it could be said that 8 species of *Fritillaria* are endemic to Japan, all of them in Section *Fritillaria*. To these we may yet have to add a recent discovery, possibly a new species, which appears to be intermediated between *F. muraina* and *F. shikokiana*. It is found at altitudes of between 10 and 50 metres on a mountain in Shikoku. The two established species that it resembles also grow there, sometimes just 80m apart from each other.

General characteristics of Japanese *Fritillaria* Sect. *Fritillaria*

The bulbs are globose with 2 white vertically joined scales. The stems emerge from the middle of the bulb at its apex. They are 15 – 20 cm long, and bear 3 whorled narrow leaves at their summits, and 2 wider opposite leaves 1 – 4 cm below them. Five in all, these leaves are lanceolate to linear. Produced terminally in March and April from the centre of the 3 whorled leaves, the flowers are solitary, campanulate and nod on a 3 – 8mm long arched pedicel. They consist of 3 petals in the inner whorl and 3 sepals in the outer whorl – since these perianth segments are mostly similar, in the descriptions below they are termed ‘tepals’. Toward the base of the interior of each tepal, sited within the ‘shoulders’ of the flower, is a nectary, a distinctively coloured glossy or glandular patch. The ovary is pale green. The style is usually white and 3-fid. The stamen filaments are white, and the anthers range in colour from dusty white to purple-brown or blue depending on the species.

Aids to identification

Superficially these 8 (or possibly 9) species are very similar to one another, but they can be readily distinguished by the following characters: form and size of tepals; the location of the nectaries; anther colour at or just prior to dehiscence; chromosome count. It is generally and often rightly believed that flower colour is not a safe character for identifying species, and this may appear to be especially so in the case of plants such as these fritillaries, which are so alike in hue. However, the flower colour and patterning of these fritillaries are both distinctive and consistent for each species and can provide good aids to identification if one becomes conversant with their subtleties and nuances.

Ecology and life cycle

These plants favour a damp substrate composed of leafmould, small stones and shingle. For the most part they inhabit the fringes and interior of mixed woodland at the foot of mountains. Their preference for slightly lower altitudes brings them into contact with human habitations, and these plants are found near villages and sometimes on the ridges of paddy fields. They also grow in alpine meadows and in bright sparse woodlands at about 1000m. Although they are small and somewhat subdued, if you look around patiently near ground level in such places at the right time, you will soon spot bell-shaped flowers.

Like other bulbous Japanese alpine species such as *Erythronium japonicum*, *Eranthis pinnatifida* and *Tulipa edulis*, these fritillaries start sprouting between the end of February and the middle of March, except, that is, in districts with heavy snowfall where they appear later. They bloom and bear fruit in spring (end of March to early May), and the seeds ripen between late spring and early summer (by June). The aerial part of the plant then withers. Below ground, new root activity begins around the end

of September. Within the nascent flowerbuds the pollen and embryo sac develop as early as November in readiness for the following year.

The seeds germinate in autumn, producing an acicular to lanceolate leaf at ground level. In the following year, the seedlings produce a solitary cotyledon-like leaf similar to that found in *Lilium*. The developing bulbs remain single-leaved for between 3 and 5 years, enlarging and storing nutrition. Only once the bulb is large enough will it produce an aerial stem with cauline leaves and, eventually, flowers.

The better-known endemic Japanese fritillaries are favourites of long standing among alpine enthusiasts and proponents of traditional Japanese horticulture which draws chiefly upon native plants and especially those with quiet charm and grace. Advances have been made in their cultivation using d-glucose, and propagation from seed is now a widespread and welcome practice among Japanese alpine plant lovers.

Key to Japanese species of *Fritillaria* Sect. *Fritillaria*

1. Anthers blue-purple just prior to or at dehiscence...*F. shikokiana*
Anthers otherwise coloured...2
2. Anthers brown or purple-red...3
Anthers rusty white to cream or yellow...4
3. Tepals with distinct overall purple-brown chequer markings...*F. muraiana*
Tepals with obscure marking fading from base to apex...*F. tokusimensis*
4. Tepals more or less entire...5

Tepals distinctly fimbriate...*F. koidzumiana*

5. Flowers narrowly campanulate, nectaries at base of tepals...*F. amabilis*
Flowers broadly campanulate, nectaries slightly above base of tepals...6
6. Tepals distinctly spotted or chequered throughout...*F. japonica*
Tepals with broken or faint markings...7
7. Nectary a green spot...*F. ayakoana*
Nectary a yellow-green, claw-shaped streak...*F. kaiensis*

Species descriptions

[In the descriptions below, the botanical name is followed by the Japanese vernacular name in brackets. **Kobaimo**, meaning 'little fritillary', is the general name for these endemic Japanese fritillaries in Sect. *Fritillaria*. **Ko** means 'little' and **Baimo** itself is *Fritillaria thunbergii*. This non-native plant has been known in Japan since antiquity, and its vernacular name can do double duty by signifying both the species itself and *Fritillaria* in the generic sense. The names of other species were then formed by contrast with this primitive 'type', as happened with many English plant names.]

Fritillaria amabilis Koidzumi (Matsum. Ic.Pl. Koishikav. ii. 21, t95, 1914)

Hosobana-kobaimo

The flower is tubular-campanulate, pendulous and dusty white. The tepals are slender, broadly linear to linear-oblong, entire and patterned with peach-tinged purple-brown flecks that form broken vertical lines. In some plants the tepal tips are recurved. The filaments and the style have fine processes; the stigma is usually

unbranched. The nectaries are located 1/7 to 1/9 from the base of the tepals. The anthers are rusty-white. $2n=22$

Found in hills and mountains in Okayama, Hiroshima, Yamaguchi, Fukuoka, Saga, Oita and Nagasaki Prefectures. To judge from its habitats, it prefers limestone-based substrates. Sometimes its white-flowered variant can be found (*F. amabilis* f. *albiflora*).

The specific epithet means 'lovely'. Hosobana-kobaimo means 'slim-flowered little fritillary'.

Fritillaria ayakoana Maruyama et Naruhashi (J. Geobot., 26 (4): 88 1979)



Fritillaria ayakoana. Photograph by Laurence Hill.

The flower is campanulate and opens like an umbrella. The tepals are entire with a pointed apex. They are dusty white throughout and lightly tessellated mostly with peach-purple on the exterior with purple-brown veining showing as longitudinal lines and suggesting shading on the interior. The style has fine processes, and the stigma is usually not branched. The nectaries are located 1/4 from the base of the tepals. The anthers are almost white. $2n=22$

Found in Shimane Prefecture from mountain bases to 200m altitude.

The specific epithet commemorates Ayako, the wife of Iwao Maruyama, who first discovered this species. Izumo-kobaimo refers to the place, Izumo (present-day Shimane Prefecture), where he found it.

Fritillaria japonica Miq. (Ann. Mus. Bot. Ludg. Bat. Iii 158)
Mino-kobaimo

The campanulate flower appears in early spring; the shoulders of the perianth are squared and somewhat outward-pointing with deep purple spots. The tepals are entire, dusty white and tessellated with brownish or ochre spots or flecks; the other tepal tips are usually recurved. The nectaries are located 1/3 – 2/5 from the base of the tepals. The anthers are creamy white to pale rust. $2n = 22$

Found in Gifu and Fukui Prefectures, Chubu and Kinki Districts and W Okayama.

The specific epithet means 'Japanese'. Mino-kobaimo refers to Mino-Kuni (present-day Gifu Prefecture), where this species was discovered.

Fritillaria japonica* f. *albiflora (nom. nud).

Shirobana-Mino-kobaimo (Shirobana means 'white-flowered') has white tepals with yellow-green nectaries and cream anthers.

Fritillaria kaiensis Naruhashi (J. Geobot., 26 (4): 90 1979)

Kai-kobaimo

The flower is campanulate and rusty white faintly checkered with rusty peach colour; the shoulders are usually patterned with dark brown lines or dots. In shape the tepals are similar to or slightly narrower than those of *F. koidzumiana*, but they are entire or only obscurely toothed or fimbriate. The nectaries are located 1/4 from the base of the tepals. The anthers are rusty white. $2n = 24$.

Found in Yamanashi, Shizuoka and Tokyo Prefectures.

The specific epithet and vernacular name refer to Kai (present-day Yamanashi Prefecture) where this species was found.

Fritillaria koidzumiana Owhi (J. Jap. Bot xiii. 44 1937)

Syn. *Fritillaria japonica* var. *koidzumiana* (Owhi) Hara et Kanai
Koshi-no-kobaimo

The flower is campanulate and yellow-white; the perianth shoulders are slightly pointed and usually green or sometimes rusty peach. The tepals are loosely but distinctly fimbriate and marked with scattered dark purple-brown spots. The nectaries are located 1/3 from the base of the tepals, surrounded by loose fimbriae. The anthers are dusty-white. $2n = 24$.

Found from the border of W. Fukushima and Yamagata Prefectures to the Japan Sea side of Echigo-Hokuriku District, Nagano, N. Gifu and N. Aichi Prefectures, and the Pacific Ocean side of Shizuoka Prefecture, where it is confined to one isolated locality.

The specific epithet commemorates Professor Gen'ichi Koizumi (Koidzumi) of Kyoto University, who collected the plant. The vernacular name means 'little fritillary of Koshi' – the area on the Japan Sea side of Honshu that includes Echigo-Hokuriku.



Fritillaria koidzumiana. Photograph by Bob Charman.

Fritillaria muraiana Ohwi (Acta. Phytotax & Geobot., xi. 150
Tokyo 1937)
Awa-kobaimo

In *The Flora of Japan* (1965). Ohwi treats this species as a synonym of *F. japonica*. It differs, however, in several marked

respects. The campanulate flower has tepals that are shorter than those of *F. japonica* and which stand apart from each other at intervals along their lower and median margins. Their tips are not recurved but downward-pointing and the shoulders are rather pointed. The exterior of the tepals is vividly checkered with dark pink to dark purple-brown coloured spots on a rusty peach background; their inner surfaces are irregularly spotted dark purple-brown along the green veins. The nectaries are located 1/3 to 2/5 from the base of the tepals. The anthers are red-purple. $2n = 24$.

Found in Shikoku in deciduous woodland.

The specific epithet commemorates Mr. Murai, who found the plant in Takakoshi-yama in Tokushima Prefecture. Awa is the old name for Tokushima.

Fritillaria shikokiana Naruhashi (J. Geobot., 26 (4): 88 1979)

Tosa-kobaimo

Similar to *F. amabilis* which is also found in Shikoku and Central Kyushu and from which this species was split by Dr Naruhashi. Unlike *F. amabilis*, its tepals are tessellated but not lined with purple-brown. The filaments and the style have fine processes, and the stigma is slightly 3-fid. The nectaries are located in the same position on the tepals as in *F. amabilis*, but – most distinctively – the anthers are not rusty white but shift in colour from blue-purple to purple-brown. $2n = 24$.

Found in limestone areas in Shikoku District and Miyazaki, Kumamoto Prectures.

The specific epithet and Tosa in the vernacular name refer to Shikoku, where this plant is found.

Fritillaria tokusimensis Akasawa et Katayama (nom.nud.)
Tokushima-kobaimo

The flower is tubular-campanulate with the shoulders lightly pointed. At the base of the rusty white tepals there are conspicuous purple-brown dots, which fade and disappear towards the apex. The tepals are broadly linear or linear-oblong and entire with the nectaries located near their bases. The style lacks fine processes, and the anthers are reddish purple-brown. $2n = 24$.

Found in Tokushima Prefecture by Mr Katayama, and described as a new species in the Japanese journal *Minehana* (no. 48, 2001), although as yet awaiting valid publication.

The specific epithet and vernacular name refer to Tokushima Prefecture where this plant was discovered.

References

- Makino's Illustrated Flora in Colour* (Hokuryu-kan)
- Illustrated Encyclopaedia of Flora in Japan* (Hoiku-sha)
- Index of Herbal Plants in Japan* (Inoue Shoten)
- Wild Flowers in Japan* (Heibon-sha)
- Shin ka-ben* no. 78 (Takii Seeds)
- Garden Life* (Seibundo-shinko-sha)
- Minehana* no. 48 (Minehana-kai)

A LIFETIME WITH FRITS – DOWN UNDER

By Otto Fauser

My earliest memory is of wildflowers, not frits, but the red and blue flowers of *Anemone coronaria*, although I did not know their name at the time. Born in a German colony in Jerusalem just before the war, I was interned with my family at the outbreak of war and the anemones were growing on the other side of the wire fence, just out of reach. My mother rescued me before the guards saw me trying to crawl under the fence to get to them. In 1942 we were expatriated back to Germany as part of a prisoner exchange and I grew up in the foot hills of the Bavarian Alps. By the time I was 15 and my family migrated to Melbourne I was passionate about alpinines and small bulbs, especially fritillaria and crocus and was dismayed to find how few were available in Australia. The only frits grown were *F. pontica*, *acmopetala* and *meleagris* and these were not easy to obtain. Situated in the Dandenong Ranges to the east of Melbourne, The Ferny Creek Horticultural Society had the reputation as the best garden club around and had special interest groups including a rock garden group. Joining put me in touch with many knowledgeable people growing many interesting plants but I soon realized that if I wanted to grow a wider range I would have to source the seed overseas.

My first seed came from Wilhelm Schacht, Director of the Munich Botanic Garden. Then I bought Christabel Beck's book and started writing to her. She very kindly sent me seed whenever she had some spare and also gave me valuable hints on how to grow it.

In 1959 I joined The Alpine Garden Society and The Scottish Rock Garden Club and had access to a wide variety of seed. When I attended the 1961 International Alpine Garden Conference in London I met Paul Furse and he invited me to stay with him and his wife Polly and see his extensive collection. We

corresponded for the rest of his life – I still have a large bundle of his letters – and he sent me seed from his expeditions. He also gave me advice on where to see frits and other bulbs growing in the wild. When I attended the 1971 Conference I travelled overland from Nepal to London looking for bulbs. I have an abiding memory of thousands of *F. raddeana* flowering in the Golestan Forest in N.E. Iran. After the Conference I stayed with Paul and Polly again and he gave me two of his paintings, one of *F. hermonis* and the other of *Crocus michelsonii*, which I treasure. Many of the bulbs I grow today came originally from the seed he sent.

Others with whom I corresponded and exchanged seed in the 1960's were E.B. Anderson, Jack Elliott and Brian Mathew in England and Wayne Roderick in USA who sent me seed of American frits. Later I obtained seed from Jim and Jenny Archibald. I am deeply indebted to them all. For the last 15 years Marcus Harvey in Tasmania has imported bulbs and collected and grown seed and I have been able to obtain bulbs from him but for the first 40 years almost every plant in my garden was grown from seed by me.



Fritillaria ehrhartii

Fritillaria graeca ssp. *thessala*

Photographs by Cynthia Sladen.

My seed sowing techniques are pretty standard. I sow the seed in a gritty mix in early autumn, cover with grit and leave outside. Most germinate in the first or second spring. The seedlings are left in pots for 2/3 years and fed every 2/3 weeks in the growing season with half strength liquid fertilizer. All are then planted into the open garden. They are not artificially watered and they get a complete fertilizer plus dolomite in autumn. I find that most flower in 3-6 years from seed.

My garden comprises about ¼ acre and is the Dandenong Ranges, 45km east of Melbourne GPO at an altitude of 500m. The area is designated temperate rain forest with the dominant species being *Eucalyptus regnans*, known as the Mountain Ash, *Acacia melanoxylon*, the Blackwood, and *Acacia dealbata*. Under story plants include Victoria's floral emblem *Epacris impressa* and several native terrestrial orchids. I had to clear the land of blackberries and buttercups when I bought it. The soil is a volcanic, chocolate brown loam, ph 6 and drains well. The garden slopes steeply which gives even better drainage.

Rainfall used to be about 1400mm per year but we have had a severe draught for over 10 years and in some years the rainfall has been as low as 800mm, still much higher than in suburban Melbourne. Temperatures tend to be 5 - 6°C lower than Melbourne but we still get the occasional day over 40°C. Last year, for example, there were 19 days when the temp was over 30°C and 3 days when it was over 40°C. The highest was 42°C on February 7th, the day that Victoria had devastating bushfires and the temp in Melbourne reached 47°C. I rarely get a frost.

Under these conditions most frits grow reasonably well. Some of the easy ones have naturalized and others, such as *F. aurea*, have persisted for over 30 years. At any one time I have between 70 and 80 species. Slugs and snails can be a problem but the main enemy is the weather. Even in summer we can get a heavy downpour, the next few days will be hot and the poor bulbs are

stewed. As might be expected the ones I lose are the Rhinopetalum series. I should probably grow these in pots under cover but I have neither the time nor the room. The frits share the garden with many dwarf rhododendrons that a friend and I imported several years ago, lots of alpinas and a large variety of small bulbs. I am especially fond of galanthus – over 80 varieties, crocus, cyclamen and Juno and Oncocyclus iris.



Fritillaria aurea. Photograph by Cynthia Sladen.

What next? I still think that *F. meleagris* is one of the most beautiful species but I would like to try some of the new Chinese ones. Unfortunately they are never on the seed lists. Also, I seem to have been waiting for ever for Martyn Rix to publish his *Fritillaria* book. I despair of it being in my lifetime. WHERE IS IT, MARTYN?



Scenes from the Autumn Show. Photographs by Jon Evans.



£3.50

