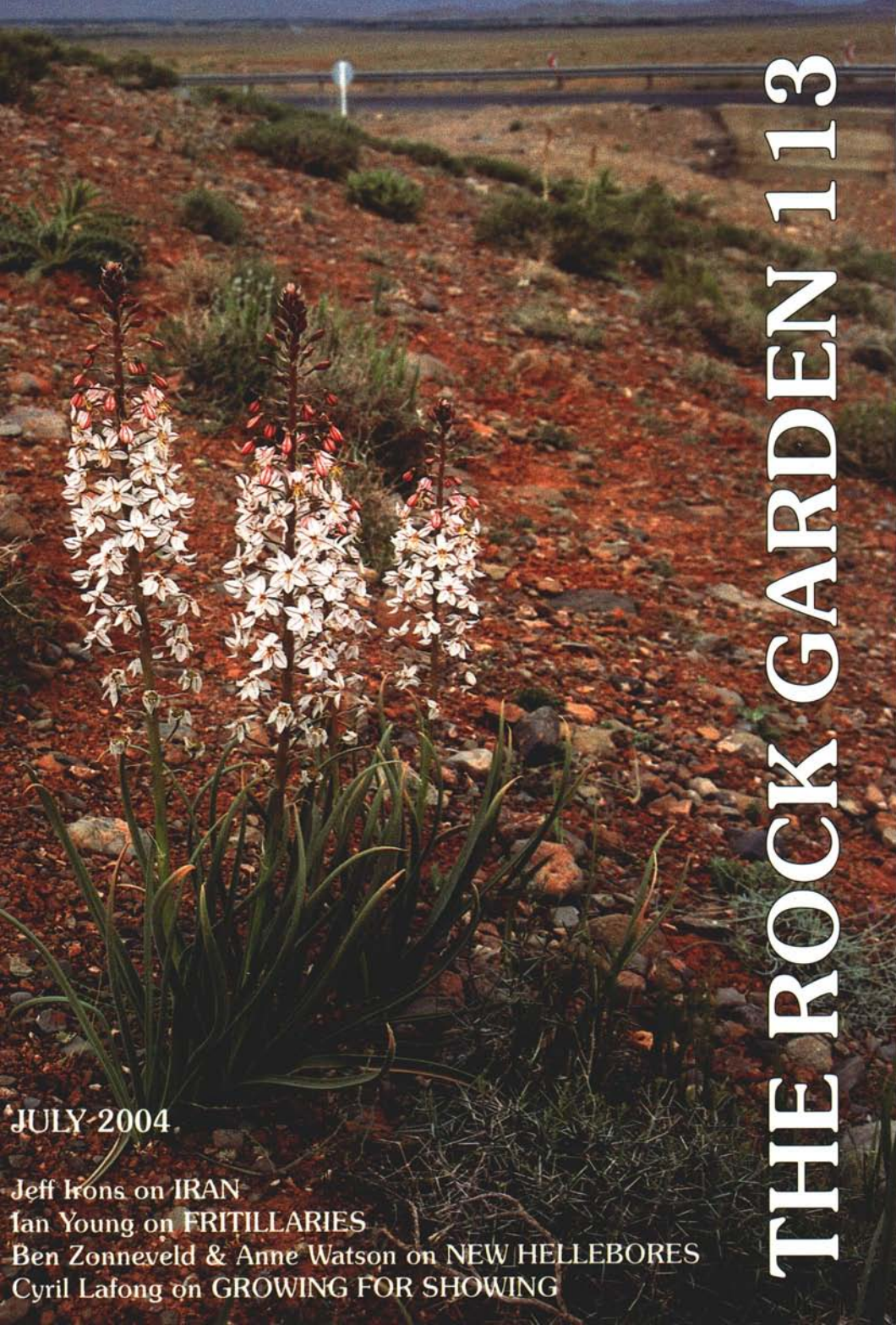


THE ROCK GARDEN 113

JULY 2004

Jeff Irons on IRAN
Ian Young on FRITILLARIES
Ben Zonneveld & Anne Watson on NEW HELLEBORES
Cyril Lafong on GROWING FOR SHOWING

SUBSCRIPTIONS FROM 1 OCTOBER 2004

Members' Subscriptions are payable annually on 15 October each year and provide membership of the SRGC until 30 September in the following year.
Subscription Rates from 1 October 2004

	UK	OVERSEAS including Seed Exchange Fees		
Single Annual Membership	£12	£15	$25	€25
Junior Membership (under 18 on 1 October 2004)	£3	£6	$10	€10
Single Life Membership				
(aged under 60)	£500	£600	$900	€900
(aged 60 or over)	£300	£360	$540	€540
Family Membership				
(Two adults and up to two children under 18 on 1 October 2004)	£14	£18	$32	€32
Each Additional Adult or Child	£3	£6	$10	€10
Family Life Membership				
Two people at one address				
aged under 60	£600	£700	$1050	€1050
one or both aged 60 or over	£360	£450	$675	€675

All payments to the Club must be in GB Pounds Sterling, in Euros or in US Dollars. Cheques should be made payable to The Scottish Rock Garden Club. Where subscription payments are to be made by Visa or MasterCard they can only be accepted if all the following information is given: the number on the card, name of the cardholder as shown on the card, the card expiry date and the cardholder's signature.

Visa or Mastercard subscription payments can also be made via Secure Order Form on the Club's web site at www.srgc.org.uk

Applications for Membership and all subscription payments or authorisations for payment from a Visa or MasterCard account should be sent to:

Alastair McKelvie, SRGC Subscription Secretary
43 Rubislaw Park Crescent, Aberdeen, Scotland AB15 8BT
Alastair.Mckelvie@btopenworld.com

SRGC email - *enquiries@srgc.org.uk*

The ROCK GARDEN

The Journal of the Scottish Rock Garden Club

July 2004

Number 113

COVER: *Eremurus spectabilis* growing by the roadside in Esfahan Province in Iran. (Photo Jeff Irons)

Printed by Wyke Printers, Hull.

ISSN 0265-5500

www.srgc.org.uk

The ROCK GARDEN
is published twice yearly by The Scottish Rock Garden Club
on 31 January and 30 June

Malcolm McGregor
16 Mill Street
Hutton
near Driffield
East Yorkshire, UK
YO25 9PU
tel. 01377 270717
email: mcgregor@cix.co.uk

The Editor welcomes articles, photographs and illustrations on any aspects of alpine and rock garden plants and their cultivation. Articles, if submitted in manuscript, should be double spaced but it is hoped that authors will submit material on disk, either in Microsoft Word or some compatible software.

The deadlines for contributions are 1 November for the January issue and 1 April for the July issue.
These dates also apply for material for the Yearbook & Show Schedules.

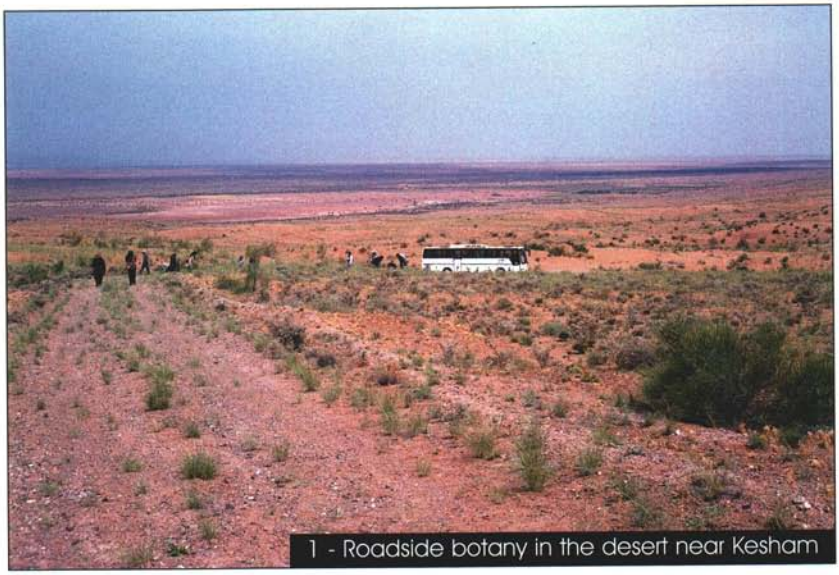
Enquiries about **advertising** to:
Carol Shaw
Delft Cottage
Dyke
Forres IV36 0TF
Tel. 01309 641405
email: cshaw@findhorn.org

Enquiries about **illustrations** to:
John Howes
42 Louis Street
Spring Bank
Hull HU3 1LZ
Tel. 01482 225663 (Evenings only)

Individual copies are available from:
Glassford Sprunt
17 Claremont Drive
Bridge of Allan
Stirlingshire FK9 4EE
Tel. 01786 833607 (Evenings only)
email: glassfordsprunt@aol.com

Two weeks in Iran

Jeff Irons



1 - Roadside botany in the desert near Kesham

THE VOICE ON THE TANNOY at Heathrow airport announced that the Iran Air flight to Tehran was ready for boarding. It was time for my wife, Betty, to cover her hair. The country's insistence that visitors "dress modestly" puts many people off visiting Iran. To us it seemed only common courtesy for people who are guests in another's country to respect its customs. The main reason for our trip was to see some of Iran's plants. Because it was likely that most of our small party would never go there again the itinerary of the hotel-based tour was divided roughly equally between botanizing and sight-seeing.

Our Mr Fixit was to be Ali Homayouni, a graduate in English and Italian. The botanical parts of the trip were accompanied by Vahideh Nazeri, a lecturer from Kerman University. Her husband Reza, a geology lecturer, and their six-year-old daughter also accompanied us. The informal nature of the tour resulted in these three people giving us a considerable insight into the life of ordinary Iranians. We did, for example, visit a holiday village put up by an Iranian factory for its

employees, have an impromptu al fresco picnic on the shores of the Caspian Sea, picnic with local people by the side of a mountain stream, visit an Iranian house (that of Vahideh's sister) and have dinner in the house of our coach driver's sister. Non-Muslim tourists usually go only to the outskirts of the holy city of Qom. We went right up to the gates of the Shrine of Fatima one of the holiest places in Iran, it is barred to non-Muslims. Far from objecting, a mullah asked one of our party to take his photograph and had a chat with her. This was just one example of the way people were genuinely pleased to see us.

Basically Iran is a high plateau about 1500 miles across from north-west to south-east. Although generally thought of as being all desert its climates are in fact very varied. They range from sub-tropical to alpine. Because of the country's huge size we were able to see no more than a small selection of its plants.

Shiraz is known as the city of poets, nightingales and roses. The last of these three are very much in evidence along the drive from the airport to the city centre. The poets' tombs are surrounded by attractive gardens that merge architecture into landscape. As always in the tea-houses tourists are free to mix with and talk to local people. Persepolis, Darius the Third's great palace, is close to Shiraz and while there we were invited to take part in a programme being made for Iranian television. The next stop after Persepolis was Naqsh e Rustam, where there are enormous murals cut into the cliff faces. In this arid site there were convolvulus growing out of the cliffs and eryngiums on the ground. In autumn the whole area becomes a sea of *Crocus speciosus* flowers. Although a public spectacle, the very colourful botanic gardens at Shiraz University provided little of interest to alpine enthusiasts.

Not far away, the National Seed Research Technology Unit had large beds devoted to the production of superior strains of salad and other crops. Iranians eat many more 'leaves' than we do and the station selects crops for flavour, yield and disease resistance. Some of the species grown were familiar, *Foeniculum vulgare, Artemisia absinthum, Calendula officinalis, Crocus sativus, Aloysia citriodora* and *Lepidium sativum* for example. Most were completely unknown to us. A very high degree of technical competence was evident.

Esfahan provided the highlight of the tour. The city proved itself to be a place that should be on everyone's list of 'must sees'. Outside it, we made a whole day trip to the Plain of Fritillaries. Actually a mountain valley, it becomes a sea of Crown Imperials (2) for a short

2 - Crown Imperials (*Fritillaria imperialis)* in the Plain of Fritillaries

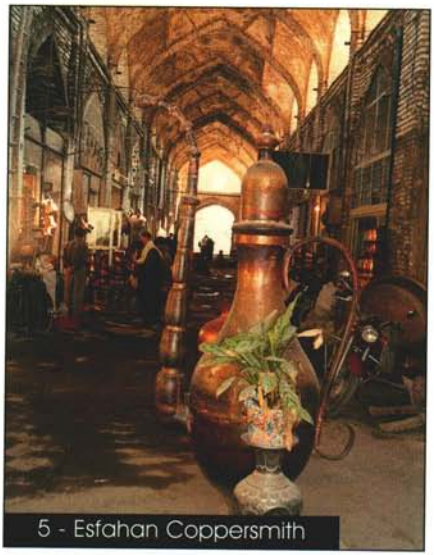
3 - *Capparis spinosa*, Esfahan Province

time in spring. They flower just below the melting snows. Our guide was able to look at seedlings and work out their age from their size. This park is closed to the public, who can only view it from outside the goat proof fence. Escorted by the Director of the National Botanic Garden we were able to wander freely. Not far away we visited the rose water distillery in a mountain village where the roadsides were bedecked with wild capers, *Capparis spinosa* in bloom (3). The ever-helpful Ali arranged a visit to a private garden in this area. All the plants there were familiar, and could have been bought in an English garden centre! They included daffodils, anemones, tulips and many cutting flowers. The only unusual thing was a double line of yuccas along the front path. On the way back to Esfahan the sight of white flowers on the side of a rock cutting caused us to call on the coach driver to stop. These apparently barren slopes were covered with *Eremurus spectabilis* in full bloom (cover). On top of the cutting were several *Astragalus* spp., a nice dark blue *Ixiolirion tataricum,* poppies, daisies, and many other species. Near Keshan an attempt to see halophytes had to be abandoned when the salt crust turned out to be insufficiently thick to take the weight of our coach. Instead we contented ourselves with the xerophytes in the sandy desert.


4 - National Botanic Garden

Situated just outside Tehran, the 350 acre National Botanic Garden (closed to the public) is laid out to represent the various plant regions of Iran. Its rock garden, on a huge scale, was laid out by Will Ingwersen. He spent three winters there, supervising its construction. A few hours there were insufficient to take it all in (4).

The littoral plain of the Caspian Sea has an almost sub-tropical climate and as one drives through it rice paddies can be seen mixed in with fields of potatoes and wheat. The whole area is extremely fertile



5 - Esfahan Coppersmith

and productive. Beyond it, the town of Nahar Khoran is a 'popular' summer resort. 'Popular' is in inverted commas because although the town is well known there are only two hotels. Ours faced a hill covered with hornbeams and with a gurgling stream along the road side. An excursion up the hill uncovered many plants familiar to us from British woodlands and one surprise, *Danaë racemosa* grew in total shade, against tree trunks, on their downhill side. These conditions are quite different from those usually given in our gardens. Nahar Khoran was the starting point for a visit to Golestan National Park. Stopping for lunch by the roadside we saw, as always, many unfamiliar plants. The netted seed bladders identified one of the shrubs as a *Prosopis* species. Covering 350 square miles this mountainous park has always been closed. Most visitors are Iranian VIPs. We were the first foreigners to visit it. The rangers, who were overjoyed to have foreign visitors took us right into the centre, at around 10 000 ft, in their Land Rovers. On the way in, just before the mountains reared up, we noticed the bright red flowers of *Glaucium grandiflorum*. Part way up Henbane grew in close proximity to *Ixiolirion tataricum* and *Hypericum androsaemum*. After an early spring most of the alpine flowers were over. Like *Astragalus*, verbascums were plentiful, some of them sporting a trunk (6). Alliums were abundant, ranging from *Allium atroviolaceum* to *A. sarwschanicum*. *Ferula karkalensis* and *F. ovina* were dying down after their display. The purple flowers of *Onobrychis chorassanica* were prominent in the grassy sward as was *Palliurus spina-Christi*. The park does have a Visitor Centre open to the public. Unsigned, it can be seen as a low hut, perhaps half a mile off the road to Mashad. There is an excellent small museum with dioramas and exhibits of the park's animals and birds.

Iran and its people made a great impression on us and we resolved to go there again and see more of both.

6 - *Verbascum* in Golestan NP

7

ORCHIDS

Among the Orchidaceae, Orchis is one of my favourite genera. In particular a clone of *Orchis italica* has performed well for me. It starts into growth very early and the leaves appear at the beginning of September. Leaf growth is quite rapid and at the end of October the leaves are already well developed. It flowers early in the spring and was just right for the Stirling show in 2003 when it was judged best in show. It had also previously been awarded an A.M.

Growing for Showing

The Clark Memorial Lecture

Cyril Lafong

I GROW ALPINES to admire their beauty and to increase my knowledge of these small hardy plants that come from all over the world. It is an intense, absorbing and serious interest, but I have to mention right from the start that I do not grow solely or primarily for showing. Showing is for me a natural progression to growing plants well and is the ideal forum to share the love of plants with like-minded fellow members.

We spend hours preparing our plants for the show. We pack them into the car, get up at 5 a.m. on the day, drive for hours to the show venue, stage the plants, wait until 4.30 p.m. to collect the plants and drive the long way back home. Why do we do this? I put that question to Ian Young, the Aberdeen Show Secretary, one cold, wet, windy morning as I was coming in the hall with my third tray of plants. "Because we love it" was his simple answer and how true that was. There is no obligation on us to do this. Exhibiting may seem a bit insane to other less enthusiastic members but it is very enjoyable and can even become a bit compulsive.

Shows allow us to see an amazing variety of alpine plants together, plants that most of us will not get an opportunity to see in the wild. We can meet friends with whom we share a common interest and discuss the plants' cultivation and attributes. We can exchange seeds, cuttings and plants that would otherwise be very difficult to obtain. There are plants on sale from Club sales and nursery stands and there is a small amount of prize money although this is derisory and certainly not an enticement for showing. Shows are also an important and effective shop window to advertise the activities of the club and are

of vital importance for recruiting new members.

If there are any would-be exhibitors thinking about starting to show, I hope to be able to convince you to take the plunge and become hooked by the bug of showing. It may seem a little daunting at first but ultimately it is a very enriching experience.

When I moved to Scotland in 1987, I attended all the SRGC spring shows and was impressed by the variety of plants on display and the quality of some of the exhibits. It was not until 1995, ten years after I started growing alpines, that I began showing. Before I began showing I wanted to grow the plants well. You do not, however, need to wait for 10 years like I did before showing. Most beginners should be able to exhibit in section 2 after a year or two although there is no reason why they could not exhibit in the open section if they have good plants. The plants do not have to be very large or be of a certain age; the only pre-requisite being that the plant needs to be in their possession for at least 6 months.

Beginning with alpines

I have always been interested in growing plants. When we got our first house in Belfast in 1980, there was a moderate size garden and I started growing a few vegetables and fruits. My interest in alpines started in 1985 when I bought a packet of mixed alpine seeds from Bees seed company. There were 6 different types of seeds of easy plants such as aubrieta, alyssum and arabis and these grew and flowered well for me. This encouraged me to try a variety of other colourful rock garden plants. I bought my first greenhouse 8′ x 6′ at the beginning of 1987 but later that year had to move to Scotland to start a new job. The buyer of our house was not interested in gardening and rather than leaving the greenhouse for which I have paid good money, I decided to take it down and bring it with me to Scotland as I was getting my removal expenses paid for.

I re-erected the greenhouse and there were only 2 panes of broken glass that needed replacement. Soon there was not enough room and I decided to add a bigger greenhouse 12′ x 8′. I was growing


8

These are the two greenhouses in spring 1992, four years after we moved to Scotland. I was not growing any bulbs then and there was a lot of ground to grow alpines. I grew many of the typical colourful alpines such as campanula, erodium, gentiana, and phlox. I was especially keen on lewisias and grew as many species and varieties as I could acquire


9

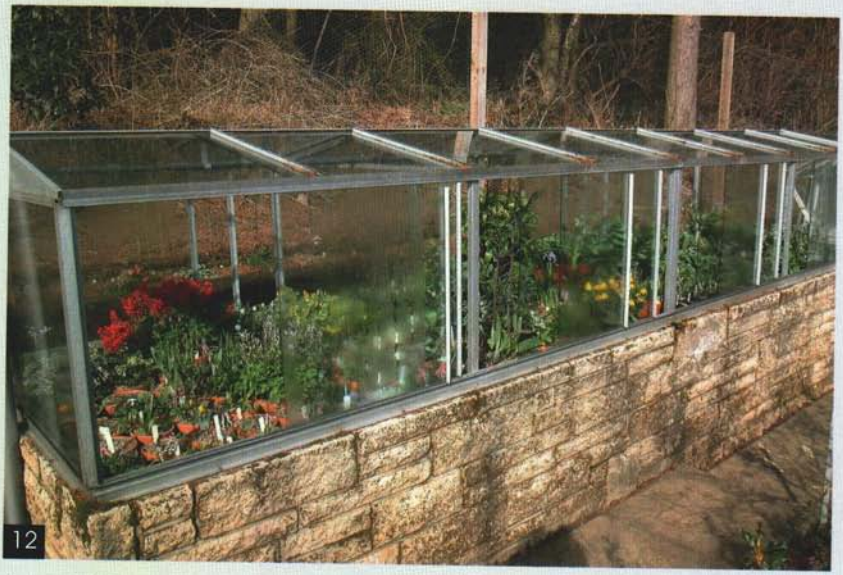
The large greenhouse has been added since then and in here plants are grown in clay pots plunged in sand.


10

The bench staging is 9" deep making it useful for big and for deep pots.

There are many advantages in having an alpine house – plants need attention in all weathers and the staging brings plants closer to eye level so that they can be cared for and admired more easily.


11


12

An alpine house is not essential - plants can be grown in frames and I have acquired a few 'Access' frames

all types of alpines in plastic pots. I still grow and show many plants and dwarf bulbs in plastic pots although I sometimes plunge them in clay pots to enhance their appearance. There are different types of plastic pots on the market and some are more acceptable than others. The orange ones are not much liked by judges but black or dark-green or clay look-alikes are quite reasonable. There is no reason why plants such as cyclamen or foliage plants cannot be shown in plastic pots. I have grown *Trillium rivale* and *Lewisia leeana* 'Alba' (and many others) in plastic pots for years and shown these on several occasions.

Most plants, however, are easier to manage in clay pots and I decided to get a 'proper' greenhouse or 'alpine house' to provide the right conditions for the plants to grow. In the large greenhouse which is 20′ x 12′, plants are grown in clay pots plunged in sand in aluminium staging. One of my ultimate gardening heights is to grow alpines well. I believe that plants are not worth growing unless they are grown well and I grow plants trying to achieve their full horticultural potential, aiming for excellence and perfection. My interests have changed over the years but I still grow a wide range of alpines although I am especially interested in a few genera such as Androsace, Fritillaria, Corydalis, Daphne and Iris. I am always trying new plants. There are now so many expeditions and seed collections and there have been so many new introductions in recent years.

There are many advantages in having an alpine house. In winter and early spring when there is much activity going on, the weather can sometimes be very unpleasant and an alpine house can offer protection to the plants and the gardener. Plants need attention in all weathers and the staging brings plants closer to eye level so that they can be cared for and admired more easily.

Other growing situations

An alpine house is desirable but not essential to grow alpine plants. Many of the best growers do without them. Plants can be grown in frames or covered raised beds or plunged in the open garden and only covered in winter or before flowering. The advantage is that plants

stay in character and not drawn as sometimes happen in the alpine house. Some plants such as *Androsace mucronifolia* and *A. alpina* should be grown outside and only brought in the greenhouse for flowering. I needed the 'hardware' to grow a wide variety of plants. As well as the greenhouse I also acquired a few 'Access' frames. I grow many bulbs in lattice pots plunged outside on a raised bed. These can then be lifted and sunk into a clay pot for showing. Lattice pots can also be used in the bulb frame where they take little space.

Winter protection

I find that a small amount of heat in the alpine house, just enough to provide frost protection during prolonged cold spells is not only beneficial but also necessary. In the winter of 1996, when temperatures in parts of Scotland reached –20°C for several days, many people lost plants that were frozen solid for days and were not able to absorb water. Plants in active growth especially bulbs were particularly vulnerable. With a little heat, my losses were minimal during that winter. I use a fan heater that keeps the atmosphere buoyant by moving the air around. Running costs can be very low if the heater is only used when absolutely necessary.

Ventilation

One of the most important aspects of growing alpines is maximum ventilation provided by open doors, vents, louvres and fans. I leave these open in all but the severest weathers. An open door at each end of the greenhouse is a distinct advantage as it allows the air to flow through. Fans come on and off every 15 minutes throughout the year. The top of the plunge should ideally be level with the bottom of the louvres, which are preferable to vents as they allow a greater volume of air through.

Shading

The greenhouse and frames should ideally be in an open situation to receive maximum light. When we first moved to Scotland, we were

lucky if the temperature in the summer reached 17°C. However, the summers are getting hotter and after this year's record temperatures, I have no doubt that shading is essential during the summer months even in Scotland. The temperature reached 28°C on several occasions this August and on many evenings the temperature was 20°C when I went to bed. A few plants in the greenhouse have been scorched this year. Up until now I have not been shading my greenhouse, but from next year from June to August, I shall be putting white netting on the outside of all the greenhouses and frames. So far, I have moved particularly susceptible plants to a shaded spot, either on the floor of the greenhouse or outside. Blinds, or slats such as those used in the Royal Botanic Gardens in Edinburgh, are an effective way to provide shading. Another alternative is to use coolglass (colour wash) on the outside.

Starting growing

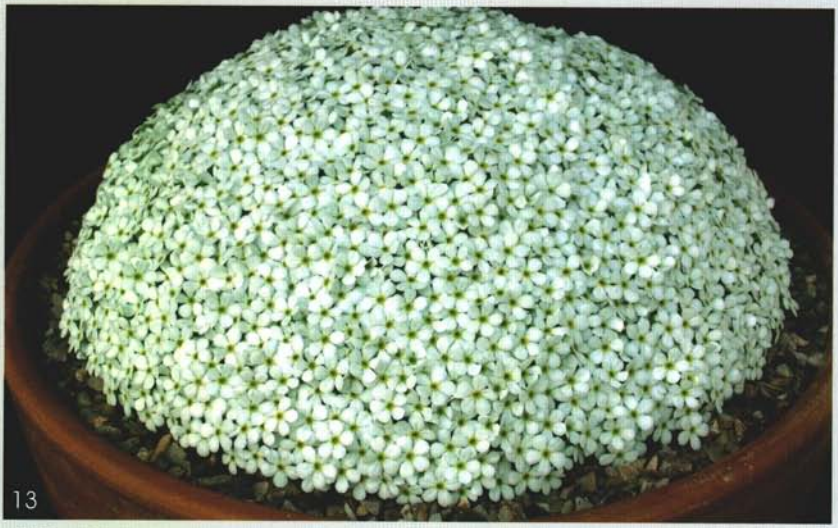
I sow between 200-300 seed pots every year. These come from my own seeds, from the alpine societies or from commercial seed producers and collectors. I also buy plants from nurserymen and there are exchanges of seeds, cuttings and plants that take place every year with fellow members. Seeds, however, are the source of the majority of my plants.

After sowing, the pots are placed in a shaded frame to protect them from excessive rain but space is always short and many pots are left outside totally unprotected. They are only brought in the greenhouse after germination to give the seedlings plenty of light and to keep them frost-free so they can grow away without any check. Damping off can sometimes be a problem especially if the seeds have been sown too thickly. I apply a solution of liquid copper fungicide to susceptible seedlings as soon as germination takes place. I do not rush to prick the seedlings, leaving them to get a good root system before doing so.

Seedlings are pricked into 2" pots when large enough to handle. I grow as many seedlings as possible and select the best ones to grow on

CUSHION PLANTS

Cushion plants make ideal plants for the show bench. It is possible to achieve a degree of perfection difficult to achieve in other plants. Many people admire their symmetry and compactness and some plants can literally cover themselves with flowers so that no foliage is

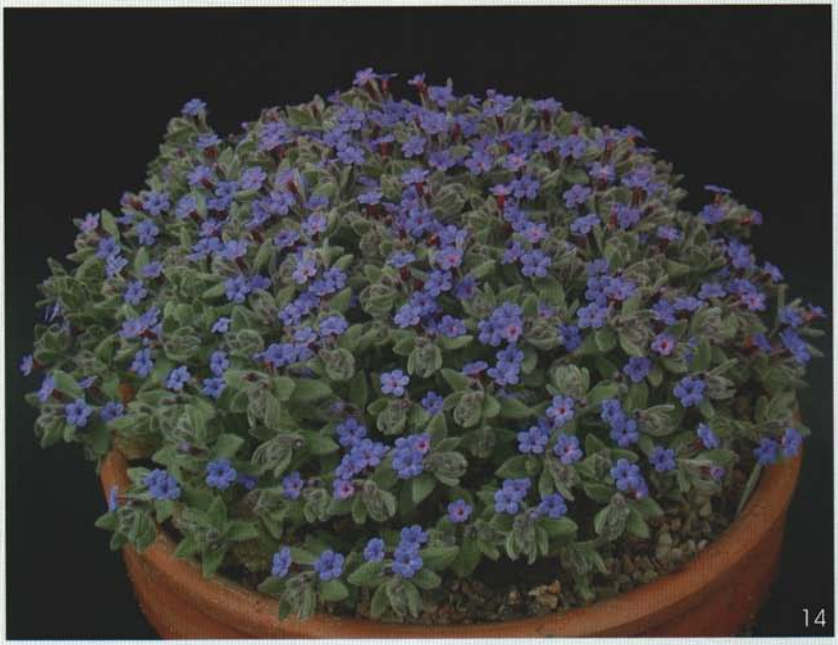


13

visible. Many come from high up on the mountains and are regarded as 'proper' alpines by many enthusiasts. Androsace is one of my favourite genera. *Androsace hirtella* (13) is very floriferous when well grown but the true species is not common as many plants in circulation are hybrids with *A. cylindrica* or other species. These hybrids are also good plants to grow. *A. vandellii* should preferably be grown in the alpine house all year round. It can be grown outside in a sheltered spot with overhead protection but does not flower so profusely. In the alpine house, it flowers reliably and will cover itself with flowers in most years.

Alkanna sieheana (14) was grown from seed from J&J Archibald collected in 1994. It is considered as the 'turkish Eritrichium'. Alkanna is a genus that includes plants that can be quite shrubby but this is more like a cushion. If grown from seeds, plants are very variable. *A. sieheana* is close to *A. aucheriana* but with greener leaves and deeper blue flowers although the colour can be variable. The selection I named 'Royal Blue' was awarded an A.M. The plant needs a good 'haircut' after flowering to keep it bushy.

Lamium microphyllum (15) could pass for a cushion plant as it makes a compact mat of small green leaves. In spring, over a long period, it produces a succession of flowers that individually do not last but at its peak, the plant makes a wonderful pan. It was awarded an A.M.


14


15

in plastic pots. I repot regularly as necessary, keeping them free from pests. The very best are then grown in clay pots from 4" diameter onwards and plunged where they can be looked after more closely. Some are grown in plastic pots throughout. Bulb seedlings are left in their pots for 2 years before repotting.

Pests

Aphids have to be watched for in all weathers. I use liquid derris or 'Provado' but there are many other insecticides on the market and it is a good idea to rotate different types to prevent resistance building up. I have had severe problems with red spider mites due to the hot dry summers in recent years. Preventive measures, e.g. moving susceptible plants such as *Androsace villosa* type and Daphne outside in a cool humid place, can be helpful. Grey mould or botrytis can be a problem in muggy spells. One has to be vigilant and spray promptly. I use 'Supercarb' as fungicide but there are many other brands on the market that are equally effective. Birds, cats, deer and mice are quite troublesome and are dealt with by physical barriers, ultrasonic deterrents and mouse bait.

Compost

Constituents should be easily and reliably available locally. I use a 1:1:1 mix of JI no.3, peat/cambark, and coarse grit 3-5 mm for almost everything I grow. For seeds, I use finer grit and add an extra part of peat. I find the extra peat results in improved germination, possibly due to a lesser likelihood of the compost drying out. For bulbs, I add half a part of super coarse perlite. Perlite is expanded volcanic rock and has many good properties. It is light, 'opens' the compost, provides extra drainage and holds moisture. The only disadvantage is its white colour, which can be a problem, as the particles look similar to bulblets or rice grains and this makes bulb repotting rather awkward. For high alpines that in nature grow on cliffs or screes, I add an extra part of grit.


16


17

Potting on a large plant into a bigger pot can be quite tricky. I get someone's assistance for this delicate operation. I have constructed a rectangular board made of 4 pieces of wood screwed together, which fits between the plant and pot. After removing the top dressing, I fit the board in place and turn the pot over. The pot can then be easily removed. After placing two overlapping pieces of cloth over the root-ball and an appropriate saucer about an inch thick, I replace the same pot on top. The whole thing is then turned back over. The thickness of the saucer prevents sudden upward pressure on the plant when the pot is turned over. The board is then removed, the plant lifted by the two pieces of cloth and placed into a larger pot with appropriate amount of fresh compost at the bottom. The cloth is then removed and then it is a simple matter of trickling compost down the side to fill the new pot. I only do this for very large plants, e.g. a plant in a 10" pot being repotted in a 12" pot, when there is a danger of the root ball crumbling completely if not handled properly.


18


19


20

Watering

This can only be learnt by experience. Factors that affect watering are the type of pot, plastic or clay, whether plunged, the compost mix, the time of year, etc. It is best to give a thorough watering followed by a drying out period rather that a little bit of water every day.

In winter, I water the plunge about once a month, depending on weather conditions, as there is a significant amount of growth that goes on unseen. Little watering is necessary for 6 months of the year (October - March) except for bulbs, which needs watering proportional to the amount of top growth. The two critical times to watch out for is February and August when too much water can be detrimental.

Repotting

Bulbs are repotted every year or every other year. Alpines are potted on. I tip the plant out, remove some of the soil to loosen root ball and pot on in a larger size pot.

This is my rough calendar guide for repotting particular plants although there is, however, a lot of overlap.

January: Silene, Pleione, Viola (summer-dormant)
February: Ranunculus (? end Nov)
March-July (Aug): alpines usually after flowering
May: *Dicentra peregrina*. Chinese Fritillaria - never really go dormant
June: Cyclamen, *Iris winogradowii*, Cypripedium (June/July)
July: Galanthus, Narcissus
August: Corydalis, Fritillaria, Erythronium, Crocus (autumn-flowering), Mediterranean orchids
September: As Aug + Crocus (spring-flowering), (Iris - oncocyclus and juno)
October: Iris - oncocyclus and juno, Corydalis - lilies, deciduous lewisias, Trillium, (Tulipa), (American Fritillaria?)
November: Calochortus, Tulipa, (Ranunculus)

The summer-dormant American violas, such as *Viola beckwithii*, *V. hallii* and *V. trinervata*, are quite tricky to grow. I grow them in pots when the watering can be carefully controlled. After flowering, I give them just enough water to prevent the roots from shrivelling. No direct watering if grown in clay pots that are plunged. In plastic pots I give a little water from below once in a while from dormancy until January when more regular watering can be resumed.

Silene hookeri subsp. *bolanderi* goes dormant for a long time after flowering and repotting is best left until January just when growth is about to start.

Alpines are repotted as necessary usually after flowering but for summer flowering alpines, this can be done earlier. I aim to complete repotting by end of July, exceptionally until end of August. If left too late, it is best to wait until the following spring, as the plants may not establish in the new compost before the dormant season sets in. Sometimes repotting of a big plant may not go smoothly and especially for cushions, rosettes may start dying back. It is sometimes possible to rescue the situation by prompt removal of the dead rosettes and dusting with sulphur but if the situation is too advanced it is better to give up and start over again.

I rarely do a complete repot. This is done for plants that are not growing at all and the compost may have gone sour. The full repot method is carried out from March to end of June at the latest to give time for the plant to settle in the new compost during the growing period.

Although ideally each plant should be repotted when it is pot-bound at the right time of the year for the particular plant, potting on can be done at any time when the weather is moderate. There are no rules, only results.

Feeding

If plants are repotted at regular intervals, they do not require additional feeding. Old, established plants that have not been repotted

While in nature, there is quite a lot of variability in a particular population of bulbs, judges like to see uniformly in a pot of bulbs on the show bench.

Fritillaria is an increasingly popular genus and fritillaria classes are guaranteed to be well filled at shows. There are many selections of *Fritillaria pyrenaica* including a large flowered clone named 'Cedric Morris'.

21

The Juno irises are among my favourite and most prized bulbs. They tend to flower very early and therefore are not often seen at shows. Their one drawback is that the flowers do not last very long and many plants are at their best for only a few days. As you can see with this *Iris kuschckewiczii* JJA 94 (22) they are beautiful plants.

Iris kolpakowskiana (23) is one of the most attractive but also one of the most difficult in the Reticulata group. It is not often seen at shows as it is very early flowering. The bulb rots easily and it should receive the minimum of water until February when it is well into growth.


22


23

and bulbs are fed about once a week with half strength tomato feed or 'Phostrogen' throughout the growing season. I use a diluter connected to a hose to make the task of feeding easier. Alpines are fed March to August. Bulbs are fed once growth is evident, ideally with a high nitrogen fertiliser (N:P:K, 2:1:1) early in the season to feed the leaves.

Turning pots

Plants should be evenly flowered for showing. Generally throughout the year I turn the pots a quarter turn every week. Nearer showtime, plants, especially cushions may need to be turned more frequently.

Showtime

There are many opportunities for exhibiting as the SRGC run 11 shows and the AGS 22 shows a year both competitive and non-competitive. Most of the shows take place in the spring; late March to middle May as this is the peak flowering season for alpines and dwarf bulbs. All the show details can be found in the show schedules. The paper copy of the AGS show handbook is now only being sent to judges and known exhibitors. New exhibitors and members who require a copy need to apply for one. It is available for download on the website.

Plant preparation

What are the judges looking for?

Make sure the plant is eligible and within the size limit for the class if there is a restriction otherwise it will be disqualified as 'Not as Schedule' (NAS). Do not rely on the marking on the pot. Sizes quoted are usually the internal diameter 1" down the pot. Judges use standard calipers that measure the external diameter.

At SRGC shows there are 2, 3 or 6 pans classes with maximum 17.5 cm external diameter. Other classes have no maximum size. At AGS shows, there are sections for maximum 19 cm and 26 cm

diameter and in the Open Section, the pot size should not exceed 36 cm diameter.

The condition of the plant and the skill in cultivation and sometimes the rarity in cultivation are taken into account. Plants should be healthy and, tight in growth, i.e. in character. There should be no aphids, caterpillars, slugs and snails. They should be well flowered (for flowering plants) but have no faded flowers. There should be no nibbled or dead leaves and the pots should be clean with horizontal labels.

Other classes include 'new, rare or difficult' and 'grown from seed' where plants need not be in flower although it is an advantage if they are; plants for foliage (silver, purple); plants (usually cushions) out of flower; conifers; troughs and cut flowers.

Judging, however, is an inexact science. Sometimes a decision may appear perplexing to both exhibitors and spectators. Fortunately most exhibitors take the attitude that 'You win some, you lose some and there is always another show'. In SRGC, anyone with reasonable experience in growing alpines can be approached to be a judge. Some initially start by shadowing more experienced judges.

Clean pots

Presentation is of the utmost importance. It goes without saying that the pot needs to be clean. Nothing detracts more from the appearance of a beautiful well-grown plant than a dirty pot. I use scourer pads dipped in sharp sand if necessary to remove the lime deposits and moss that have invariably covered the rim of the pots.

It is also important to have a horizontal label to prevent spectators having a cricked neck trying to read the name of the plant. I print the name on white labels and stick them on white plastic labels. I then straighten a paper clip and use 'blu-tak' to hold it in place at the back of the label. Some exhibitors find it more convenient to use a label pin while some simply lay the label horizontally on the surface of the pot.

If a plant is overlapping the pot it can be placed in a bigger pot


24

SHRUBS (and a Viola)

There is no doubt about Daphnes being shrubs. The dwarf varieties make ideal plants for growing and showing. They come in a variety of colours, pink (e.g. *Daphne petraea* 'Grandiflora'), almost red (e.g. *D. petraea* 'Lydora'), pure white (e.g. *D. cneorum pygmaea alba*) and yellow (e.g. *D. calcicola*). *Daphne petraea* 'Lydora' (24) is a recent introduction but already well established. It is slow growing and for me it is the best *D. petraea* selection so far. It has all the potential for the premier award at shows.

Verbascum dumulosum (25) however, is a shrub although when I showed it in the shrub class, the show secretary threatened to cut it to see whether it had a woody base! It is reputed not be totally hardy but can be tried outside against a south-facing wall.

Viola delphinantha (26) is a plant that does not qualify for the shrub class despite being a sub-shrubby perennial viola with a woody rootstock. It is deemed not to be in the spirit of the shrub classes. It comes from Greece and Bulgaria amongst limestone mountain rocks. It requires a very gritty well drained limey compost, full sun and careful watering in the dormant season in winter. It dies back to an underground rhizome in summer when it should be kept dry until January.

25

26

and the gap filled with grit. This sets it off better. Make sure the top of the inner pot does not show, as this is not popular with judges.

Top dressing

This is a matter of personal preference. There are a variety of different grits and chippings that are suitable. Pieces of limestone, moss, bark and dried leaves can all be used and can add greatly to the effect of the exhibit. Small pieces of coal as a top dressing for silver foliage plants can be very attractive.

On the day before the show, if time permits, I put all my exhibits on a table to see the overall effect. This is especially useful for the multiple-pan class when the plants can be arranged to get the right position for maximum visual effect. This is also the time to photograph the plants as some of the plants may have gone over by the time you get back home the next day.

Timing

Nobody is interested in how many flowers there were yesterday or will open tomorrow. You need to get the timing right on the day. Cool sunny days are ideal in that respect. You can hold back a plant for a few days by withholding water and keeping it in the shade and giving it as bright a position as possible. Conversely a plant can be watered and put in full sun to bring it on more quickly. You may need to plan a week or more in advance to get the plant to peak on the day. These methods are perfectly legitimate but should not be overdone as they can spoil the character of the plant. Some plants are only at their peak for a few days, while others can remain in good condition for up to 2 weeks or more. I once showed *Sebaea thomasii* at 3 consecutive SRGC shows over a span of 4 weeks. Similarly, plant for awards are judged on the condition of the plant on the day and not about the potential of the plant. I showed *Benthamiella patagonica* at Stirling show this year with only about a quarter of the flowers open. It is one of the S. American cushions with upturned flowers. I kept it in the shade for 2 weeks and at the Perth show it was at its peak when it got a first prize in the 'new,

rare or difficult' class.

Plants in the open ground

Plants lifted from the open ground are eligible for showing but require more preparation to get in pristine condition. My first two Forrest medals came from plants lifted from the garden a few days before the show. *Jeffersonia dubia* is a delightful Japanese woodlander that seeds around in my garden. If you dig it up, remember that the root ball is much larger than the size of the plant, so you have to be careful not to damage too many roots in the process. It is difficult to get the timing right for this plant as it is at its peak for only a few days. Individual flowers do not last long and the leaves soon elongate to cover the flowers and spoil the show.

Pulsatilla vulgaris is one of the most easily grown of the pulsatillas. In my garden it seeds around profusely. It is a beautiful sight in the garden but I would now not dream of lifting it up for the show because of the fear of killing it. Pulsatillas have very deep taproots and do not transplant well. I once dug up a plant for the first show I exhibited at Glasgow in 1995. I got a first prize as part of a two-pan class but when I put it back in the garden it languished for 2 years before disappearing. If you want to show pulsatillas, grow them in pots at the outset.

Finally

Have a thought for the poor show secretaries who are liable to become nervous wrecks in the run-up to every show, worrying day and night whether the plants will arrive to fill the benches and grace the show hall. Usually the shows are a success due to the collective efforts of the exhibitors but remember that without the exhibitors, there can be no show. So I hope this will be the turning point for those of you who grow but do not show. Remember, it is the love of the wee plants that bring us together.

SOUTH AMERICANS

There are many new South American plants introduced in recent years due largely to the collecting efforts of Flores and Watson.

27

28

Benthamiella patagonica (27) is one of several benthamiellas that grow in South Patagonia and is the one that has performed best so far in cultivation in the U.K. It forms a firm tight cushion.

Jaborosa volckmannii (28) is a rare endemic of central, southern Chile, typically growing on mountain slopes in loose pumice sand. It is a beautiful and distinctive plant worth every effort to establish in cultivation.

AND FINALLY

The last plant I shall mention is *Penstemon uintahensis*. This small but very attractive plant flowered for me for the first time this year. It was grown from seeds collected by Ron Ratko of Northwest Native Seeds in 1999 in Central Uinta Mountains, Uinta County. It is one of the dwarfest of all penstemons and is rather tricky to grow and flower. I showed it at the Perth show this year in a small (5") pot but it is a plant that has given me and I hope others, much pleasure and makes the effort of growing and showing alpines so worthwhile and rewarding.


29

30 - Blackpool Show - a stunning and natural specimen of *Dionysia curviflora*

Show Reports 2004

EDINBURGH SHOW - March 20th

What's new? The regulars at plant shows all too easily scan quickly over the benches packed with fine plants, seeking out the novelties. So what was different at Edinburgh this year? Not the Forrest Medal plant, Cyril Lafong's *Pulsatilla vernalis*, lifting the top award for the third time; bigger and better than ever, it had about 70 flowers, mostly open but with some buds showing the dusky purple-blue shading on the underside of the petals. Nor three of the entries awarded Certificates of Merit, *Fritillaria davisii*, *Fritillaria aurea* and *Tecophilea violacea*, all belonging to Fred Hunt. It is almost inevitable that collections of this quality and quantity of bulbs will have appeared in earlier years. Fred's *Tecophilea cyanocrocus* and *Tecophilea cyanocrocus* 'Leichtlinii', also parts of his amazing six-pan bulb entry, might also have been awarded Certificates of Merit. In contrast, the fourth Certificate was awarded to *Narcissus* x *susannae*. Although this hybrid of *Narcissus triandrus* var. *concolor* and *Narcissus cantabricus* var. *petunioides* was described long ago, Ian and Margaret Young had been unable to acquire bulbs, so they deliberately made the cross again, and eventually their care and patience was rewarded by a good pot full of flowers, which, not surprisingly, combine the characteristics of their parents.

Welcome newcomers were people, as well as plants. Jim and Janet Paterson not only gained the special award for the best plant shown by a first-time exhibitor, *Fritillaria bithynica*, but they also were awarded more points than anyone else in Section II. The best plant in this section was *Erythronium dens-canis*, shown by Pearl Dale, and Susan Robertson won the R. E. Cooper Bhutan Drinking Cup for the best Asiatic Primula in the show with *Primula whitei*, but in general this section had few entries. We need a continual supply of people starting to enter shows, as Section II exhibitors get promoted to the premier division; perhaps we should introduce relegation as well.

Back in Section I, another new sight was half the joint show

secretary, in the form of Ian Bainbridge, who doubles as club President, presenting a trophy to his other half, Carole, who also moonlights as the group convenor. In their spare time they had managed to produce sufficient quality plants to gain the largest number of points in the section.

In this section, what struck me most was the variety of plants on show. Of 16 Corydalis in three-, two- and one-pan classes, there were 14 distinct varieties. There were over 30 species of Fritillaria on show (and few duplicates), including Andrew Radley's splendid *Fritillaria raddeana* (31). And there were more cushion primulas than I could count, with the *Primula allionii* hybrids showing a trend towards large flowers, far removed from the original species. Perhaps they have a future in council bedding schemes. The variety was also apparent in the non-competitive section, with digital photographs by Ian McNaughton (snowdrops and hellebores) awarded a bronze medal, and by Fred Hunt (Fritillaria); a lovely tray of mosses from Sue and Hector Riddell's garden; an enormous pot full of *Sarracenia purpurea*; and a gold medal display by the Royal Botanic Garden Edinburgh. This included unusual juno irises, *Iris hippolytii* aff., *I. vicaria*, *I. graeberiana* and *I. albomarginata*, and *Rhodophiala phycelloides*, with long, tubular, orange-red flowers on tall stems.


31

Yes, there was much that was different and new. But we should not forget that for most visitors almost everything is new. So we need to continue to grow, and show, familiar plants as well. *David Rankin*.

STIRLING SHOW - April 3rd

The city at the ancient crossing point of the River Forth welcomed exhibitors from North, South, East and West and a' the airts in between.

All SRGC shows depend on the local members who toil away behind the scenes while the show apparently just happens. A great team is indispensable. Our group views the show as our shop window. Local gardeners visit the show and hopefully some will be bitten by the rock plant bug and they will start coming to local meetings. While the Club organises the scrutinising and printing of the show schedules before dispatching them to all UK members with the first journal of the year, the local group organises the plant stall and the catering for all the visitors. This helps to pay for the hire of the hall, local advertising and prize money. Sometimes, some money is left to contribute towards group activities but these days most of the money raised seems to go to the Council.

On the morning of the show the exhibitors stage and exhibit their plants. Nursery owners, many of whom have travelled long distances and who spent most of the previous day organising plants and filling their vans, set out their stalls. The chance to buy good plants from a wide range of nurseries, who all seem to sell different plants is one of the highlights of going to an SRGC show.

The stewards make spaces on the benches five minutes before last entries! The plant stall is set up while just as quickly treasures are being snapped up. Then the judges judge. The stewards now record the prize winners, stick first, second and third prize stickers on the winners' cards, all the while pretending not to hear what the judges are saying. It is my experience that if you do actually hear what judges say about your plant, it serves you right if you hear nothing good! All the while in the tea room dozens of rolls are being prepared and soup heated up. All these local members are busy. This is the joy of the show.

At Stirling we always have a morning talk to keep the exhibitors off the street. This year Ian Young talked about 'The Bulb Log' which is

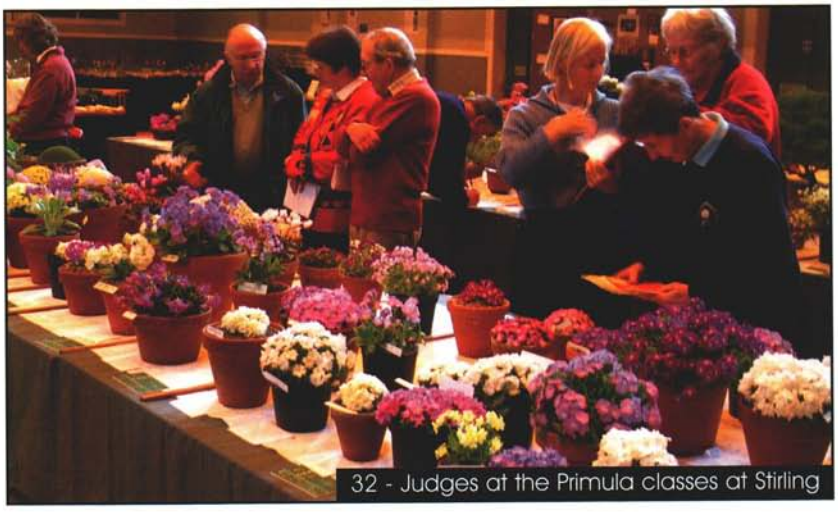
on the Club website and about digital images. Local members miss this talk as they are working. Ian and Maggi were awarded a Gold medal with their extensive exhibit of fritillaries while Ian was bringing technology to the masses. Another Gold medal was awarded to Irene Goodall for her superbly executed paintings. Throughout the day members looked at them, each person wishing he or she had Eileen's skill. Thank you for enhancing the show Eileen!

The show secretary, meanwhile, is relaxing. Peak time for him is before show day. How rewarding it is to see dozens of beautiful plants on the benches, when on the previous Wednesday there were only a few entries. The cooperation between members is what strengthens the links between them. To any group which does not have a show, I would recommend strongly that the members pester their group convenor and get a show. There are plenty of gaps in the current schedule of show dates. No summer show. No early autumn show. Anyway, back to this year's Stirling Show.

Bob Meaden won the Carnegie Dunfermline Trust Trophy for most points in Section I. This was to be his last show before his knee operation. We all wished him well in hospital and hoped he has a quick recovery. Jim and Janet Peterson from Invergowrie swept the boards in section II and took the bronze medal and the Fife County Trophy for most points in the section.

Cyril Lafong reigned supreme again. Cyril took the Forrest Medal and the Institute of Quarrying Quaich for best non-European plant, with Androsace muscoidea 'Dome Group' and the Ben Ledi Trophy for Best European plant with *Orchis italica* (last year's Forrest Medal winner at Stirling).

There were superb bulbs aplenty. Fred Hunt triumphed in both 6 pan classes with12 superb pans of fritillaries. Especially remarkable were his *Fritillaria bithynica*, *F. graeca* ssp. *graeca*, *F. moggridgei* and *F. tubiformis*. Fred has increased single specimens of some of these bulbs into the sizeable panfulls which they now are, by careful cultivation over almost 20 years. Some of the most beautiful fritillaries are slow to increase by offsets and bulb splitting but this is the only way to get the



32 - Judges at the Primula classes at Stirling

uniform panfuls which Fred shows. There were lots of other fabulous Fritillarias on the benches including *Fritillaria meleagris*, *F. karelinii*, *F. olivieri*, and *F. caucasica*. Fred had one of the most startling plants in the show, *Tulipa vvedenskyi*, 20 cm tall with bright red flowers with a startling yellow eye.

Again there were several splendid irises, from Bob Meaden's dainty purple *Iris attica* to the silky *Iris nussariensis*. No matter what the season there are always lots of narcissus at Stirling. Two, which made me pause to look further, were *Narcissus* 'Sennocke' and *Narcissus cazorlanus*.

Primulas are the very essence of a rock garden in spring. Bob Maxwell took the Spiller Trophy for Best Primula with a superb dome of *Primula* 'Aire Mist'. This hybrid is proving to be one of the best introductions of recent years. It seems to stay in good condition for quite a long time, because Bobs plant still looked great at Perth two weeks later. Ray Fairburn is producing good new Primula hybrids one of which, *Primula* 'Allen Queen', took my fancy. This year, as well as many beautiful hybrids several European species proved their worth as exhibition plants, especially when grown and shown as well as these among which *Primula latifolia* and *P. glaucescens* were magnificent.

I cannot resist mentioning that star plant of the late 80s *Primula* x *loiseleurii* 'Lismore Yellow' raised by Brian Burrow and all but unobtainable for a time. Then there were lots of plants but then it seemed to be in decline, until, that is, you spied the fabulous specimen at Stirling shown by Bob Maxwell as part of his 3 pan entry. Bob Meaden showed the Asiatic hybrid *Primula* 'Netta Dennis'. It is one of the few petiolarids to appear regularly these days and what a fantastic plant it is! Are our summers now too hot and arid for most petiolarids to flourish?


33 - Rhododendrons in the late sun at Stirling

Margaret and Henry Taylor showed three plants of *Primula obtusifolia* in different classes. This is a rarely seen Asiatic nivalid primula was originally introduced by George Sherriff in 1940. I suspect the present plants date from a much more recent seed introduction.

Alan Gardiner from Falkirk specialises in dwarf maples. He staged three very different forms which together made a beautiful exhibit: red-leafed *Acer palmatum* 'Otome-zakura', with bright green very dissected leaves *A. palmatum* 'Koto-ito-komachi' and *A. palmatum* 'Murasaki-kiyohime' with red margins to its green leaves.

The afternoon sun at Stirling shines through the west windows and or a few minutes lights up some plants in a most attractive fashion this year *Rhododendron* 'Snow Lady' and *Celmisia spedenii* were shown to their best advantage, several hours after judging!

Once again, many thanks go to everyone who helped, who exhibited and who came along to see and to spend a few coppers.

Thank you also to judges Maggi Young, Lyn Bezzant, Julia Corden, Dave King, Glassford Sprunt and Bob Meaden. The combined efforts of many members brought pleasure to many more. *Sandy Leven*.

34 - Show Hall at Perth

PERTH SHOW - 17th April

The George Forrest Memorial Medal was awarded to Cyril Lafong for his 12" diameter plant of *Sebaea thomasii* CDR 992a. In conversation Cyril told us that this was the second Forest medal won by this particular plant as it also took the Forrest at Stirling a few years ago. The plant is around 4-5 years old. He also advises that it does tend to suffer from summer scorch and should be protected against this - it is shallow rooting - but otherwise likes plenty of sun. In the spring, if it comes though looking yellow, it can be "greened up" with Miracid, and can also benefit from a "haircut" after flowering. We're grateful to Cyril for sharing these tips with us. Cyril was also the winner of the Alexander Caird Trophy with Draba dedeana and *Anemonella thalictroides* as well as the above mentioned *Sebaea thomasii*.

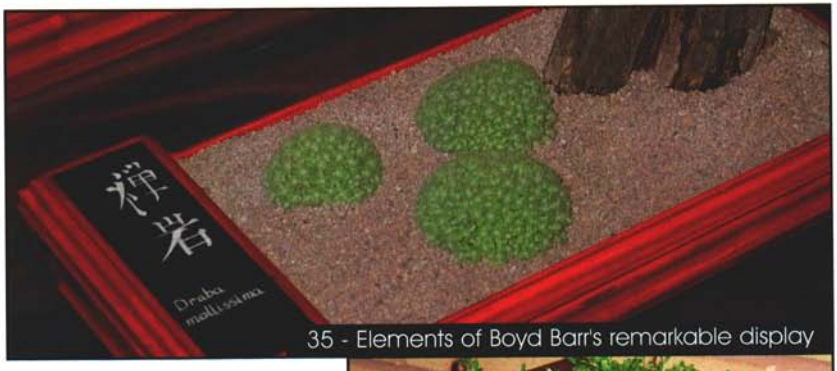
The winner of the Bulb Trophy was Fred Hunt with *Fritillaria pallidiflora* and Fred was also the winner of the Dundas Quaich and the Major-General Murray Lyon trophy, with *Trillium decumbens*.

Stella and David Rankin were the winners of the L.C. Middleton Challenge Trophy by having the most first points in Section I. They supported the show by bringing a large number of plants. One unusual species exhibited by them was a pan of the delicate little primula, *Primula bella*. This was grown from seed collected from 13000 ft in China - the habitat was in open wet meadows. It is very shallow rooted, presumably because of this constant moisture availability in the wild, so it is grown in a mossy peaty compost with sphagnum added. David says that lifting and dividing at least once a year is essential for success with *Primula bella*.

The best plant raised from seed, which received the Joyce Halley award, was the unusual nivalid primula from the north-west Himalayas, *Primula obtusifolia* grown by Margaret and Henry Taylor. Margaret Taylor tells me that a few of the previous year's seed pods were seen by them, whilst photographing plants in the remote Kinnaur area in 2000, and that these contained enough seed to raise the original few plants. These were cross-pollinated giving rise to the current progeny and seed which was distributed to a number of nurserymen. This is therefore a new introduction of the plant which was first introduced by Ludlow and Sheriff, from the same area, in 1939. The progeny of the original introduction were grown at Jack Drake's nursery until 1976 when the species was lost there. In the wild this species grows in cool conditions under shady moist cliffs, making it very sensitive to warm dry conditions and a difficult show plant. Thanks to Margaret for this information.

The E. H. M. Cox Trophy for the best dwarf Rhododendron was won by Viv and Anne Chambers with a specimen of *Rhododendron* 'Pintail' (Class 31). Susan Band won the R.S. Masterton Trophy for best Asiatic primula with a magnificent pot of *Primula calderiana*. Susan was also a joint winner of the Perth Trophy along with other Perthshire group members - Jens Nielsen and Barry and Cathy Caudwell.

We were pleased to have new exhibitors in Section II, in the form of Jim & Janet Patterson. Their large pot of *Fritillaria pontica* won the John Duff prize for the best plant in section II. Jim and Janet were



35 - Elements of Boyd Barr's remarkable display

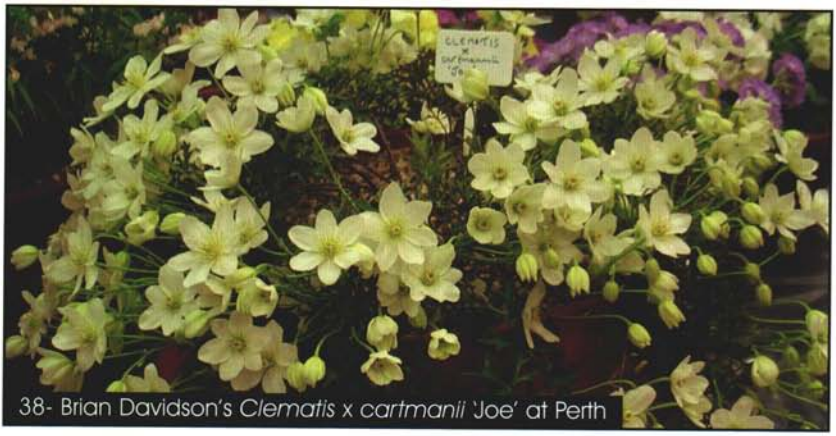
also awarded the Perth Salver and a Bronze medal.

In the junior section, congratulations to Peter Thomson, who was awarded the Georgina Blackwood Trophy for his *Primula denticulata* and an Auricula raised from seed.

This year's show was also enhanced by the unusual "personal interpretation of the amalgamation of alpines and japonism" staged by Boyd Barr. This display incorporated alpines with hand-carved containers, in a way not seen at an SRGC show before, and created plenty of interest (35-37). Gold medals were awarded to both Boyd's exhibit and a large display of bulbs, mainly Fritillarias and


36


37



38- Brian Davidson's *Clematis* x *cartmanii* 'Joe' at Perth

Erythroniums which were kindly brought along by Margaret and Ian Young. We'd also like to thanks the judges and everyone who made the show such a success, particularly Julia Corden who was managing her first Perth Show, after taking over as Show Secretary this year. *Cathy Caudwell.*

INVERNESS SPRING SHOW - 24th April

This was our second year of holding the show, which is not yet fully part of the official circuit, in the Old High Church hall and we are now settling down in the venue. Our band of helpers on the door, in the show hall, the tea sales and the plant sales were familiar with the requirements of the hall, set tables, chairs etc. up very rapidly and everything flowed very smoothly.

Last year the show secretaries were taken by surprise at the number of entries presented on the day, and so this time were prepared with extra tables. Entries were just one pan down on 2003 and the standard of plants was again high, If Ronnie Loveland had been well enough to exhibit we would have had rather more entries than in 2003 - sadly he was not able to show and we all missed the chance to look at his super plants.

Group Convener, Bob Mackie, brought along a selection of his excellent plants and went home with the Culloden trophy for the best

primula; an excellent, large, cushion of *Primula* 'Aire Mist'. Not satisfied with this Bob then pleased the judges enough that they awarded his *Tropaeolum tricolor* the Askival Trophy for the best bulb in the show. This was a wonderfully presented specimen and one of three in the show.

Probably one of the most intriguing contests to watch was that for best plant in the show. Initially the judges pulled five plants off the benches for consideration but quickly reduced that number to three. Next to go was Olive Bryer's *Veronica bombycina* leaving the final two. One of these was *Ramonda nathaliae* again showed by Olive and this was up against a *Daphne petraea* 'Grandiflora' shown by Davie Sharp. Now the judges had a challenge - if there had been a speck of dirt on either pot then the contest would have been over. Eventually, a tie not being allowed, they awarded the Wier Trophy to Olive's Ramonda by the

39 - Olive Bryer's three- pan entry

finest of margins. The excitement was not yet over, however, as the judges then requested that the Inverness Group award a Certificate of Merit to Davie's plant, the first time that this has happened at an Inverness Show. Well done to both for two excellent plants. Olive also took the Highland Trophy for most points in Section I.

Of course, these were not the only notable plants in the show. Leslie Amour placed a delightful specimen of *Larix kaempferi* in the conifer class, its fresh green foliage fairly sparkling in the light of the hall. Leslie also had a pan of very pert, smart looking *Narcissus cazorlanus*

in the bulb class. Many of the best plants in Section I were to be found in the three pan class. As well as the three already described in the battle for best plant in show a venerable *Clematis marmoraria* flowed over the side of its pot to such an extent that exhibitor Bob Mackie raised the pan on top of an upturned pot to keep the flowers above the bench.

In other classes Carol and David Shaw's *Primula latifolia* was seen at its best with five stems of fully open purple flowers and they also lifted a fine large *Cassiope* 'Randle Cooke' from the garden to win the Ericaceae class.

One notable difference between the Inverness Show and the others we visit is the enthusiasm of members to enter in Section II where there were almost as many entries as in Section I. Most points in section II were collected by Jimmy McDonald from Elgin and amongst his firsts was a nice yellow flowered specimen of *Primula* x *kewensis*, *Androsace cylindrica* x *pyrenaica* which made a very nice neat cushion and a nice looking primula grown from the seed of *Primula* 'Wharfdale Village". Tina Finch might have taken a trophy for best plant in section II, if there had been one, for her *Leptinella* 'Platt's Black' whilst Win Behan entered a pan of the neat *Lithodora diffusa* 'Picos'. As always it is not possible to list all the super entries we had at the show. Come along next year and see them for yourselves! Altogether this was a very satisfying show to have organised, exhibited at and to have viewed. *David Shaw.*

GLASGOW SHOW - 1st May

Another lovely day, another lovely show! First impressions were that the benches were filled with trilliums and rhododendrons. There were many more of these eye-catching plants than we've seen recently and we must be grateful to last year's good weather for setting such an abundance of buds and to everyone who made the effort to show these spectacular heavyweights. A detailed look at the entry revealed lots of other treasures.

Cyril won class I, the second 6-pan class, with a selection of impressive plants that included a perfect dome of *Androsace hirtella* x *cylindrica*. It gained a Certificate of Merit, as did his other equally perfect *Androsace hirtella*. He also won both classes for new, rare or difficult plants - who can resist the rosulate *Viola columnaris* - and the trophy for best plant in Orchidaceae with a pan of the hybrid *Dactylorhiza majalis* 'Alba' x *sambucina*. And that's not all - his large, evenly-flowered pan of *Fritillaria glauca* was an outstanding Forrest

40 - Cyril Lafong's outstanding Forrest Medal winner - *Fritillaria glauca*

Medal winner. The combination of yellow bells and broad, blue-green foliage makes this a stunning plant (40).

In the Crawford Silver Challenge Cup race for most first prizes in Section I honours were shared by Cyril Lafong and Stella and David Rankin with equal points, and between them they gained most of the

other major awards in the show. The Rankins won Class A with 6 small pans of Asiatic primulas and arisaemas. One of their plants, a mat of the tiny *Primula bella*, gained the Joan Stead Prize for best primula in the show. They also took the Don Stead Prize for most points in the bulb classes.

Brian Davidson won Class 3 with memorable plants of *Rhododendron calostrotum* 'Gigha', *Clematis* x *cartmanii* 'Joe' and *Phlox caespitosa*. His *Dryas octopetala* was gained him the Ian Donald Trophy for the best plant native to Scotland.

This year a class for Arisaema was introduced in Section I and was well-contested. These recently popular plants are still unfamiliar to many people - Anne and Viv Chambers put on a small non-competitive display of some early-flowering species including seedling pans to provide information. It was awarded a Silver medal.

For once there were no complaints about the Section II entry - this year it was nicely filled and Martyn Lamb gained the James A. Wilson trophy for most points. And a "well done" to first-time exhibitor John Di Paola whose *Rhododendron* 'Ginny Gee' got the best plant Special Prize.

Jamie Taggart of the Linn Gardens, Cove took the awards in the section for cut rhododendrons. *Anne Chambers*.

ABERDEEN SHOW - 15th May

The mixed weather early in the year confused a lot of our plants, some flowering early and others never going to make it to the show bench. Nevertheless on a fine sunny Saturday in Aberdeen, not a contradiction of terms, plenty of excellent exhibits were placed on the benches. Readers should be grateful that a time and word limit were put on me for this report or I could have been off into volume two describing all the wonders that I saw.

Working the benches in numerical order the spectator was halted as soon as he started, Bob Maxwell's' six pans in Class 1 being stunning; *Arisaema amurense* and *Fritillaria camschatensis* at the back and a

lovely *Daphne petraea* 'Grandiflora' at the front immediately caught the eye. Next was the Diamond Jubilee six pan class with six super plants entered by Bob Maxwell followed by the three pan Class 2 which was won by .... Bob Maxwell again. In this entry Bob showed a huge *Trillium grandiflorum* 'Flore Pleno' (41) and an excellently flowered

41 - Bob Maxwell's *Trillium grandiflorum* 'Flore Pleno'

Clematis x *cartmanii* 'Joe' supporting what was to prove the Forrest Medal winning massive pan of *Fritillaria pontica* with every stem in flower. By now even the casual visitor might have guessed that everything was going well for Bob and indeed, he went on to take the trophy for most points in Section 1. Also worth mentioning were a second *Trillium grandiflorum* and his lovely pot of *Erigeron* 'Canary Bird' with its soft yellow flowers.

Of course, the other usual suspects were there as well with Cyril Lafong bringing along plants carrying his expected mark of quality. *Sebaea thomasii* was not in fact the one exhibited at Stirling and gaining the Forrest at Perth but a sister of almost equal merit with its super dome of yellow flowers. A regular entry at Aberdeen is Cyril's *Silene hookeri bolanderi*. I am not sure if this is the Forrest Medal winner of the past two years or an impersonator but its mass of deeply dissected white petals created the usual interest. This year Cyril chose to enter it as grown from seed and Rule 14 forced his growing secrets out of him. For those not at the show I can reveal that the seed was sown in 1994 and is now grown in an equal mix of John Innes 3, peat and grit. It is summer dormant when it should be kept just moist and Cyril says that it should not be too difficult, even for me, under glass. Another Cyril 'eye catcher' was *Daphne aurantica* ssp. *calcicola* 'Gang Ho Ba' (an area of Sichaun where it may be found) which had visible stems between dark green leaves and carried lovely yellow flowers. Sorry to keep going on about Cyril but I cannot leave him without mention of *Ranunculus parnassifolius* 'Nuria'. This bore two thick stems each carrying three flowers, the petals of which were possibly white but the pronounced mauve veining made them look almost pink.

The Oxalis class was won by Ron Smart with a lovely *Oxalis enneaphylla* 'Sheffield Swan' (42) which was a super plant with large green and white tinged trumpets of flowers. My attention was also caught by two entries of *Oxalis laciniata* 'Seven Bells' (43) that I had never seen before having dark purple flowers with yellow centres.

The Rhododendron trophy was won with *Rhododendron sargentianum* x *trichostomum* 'Sarled' entered by Carol and David Shaw. The plant had been liberated from a trough three weeks before the show and every one of its daphne-like white flowers was open. The Shaws' also won the foliage effect class with their unusual *Aeonopsis cabulica* which, as everyone knows, doesn't win prizes!

Margaret & Henry Taylor showed a lovely little *Leucogenes neglecta* which they had raised from seed; a dainty little New Zealand edelweiss with a yellow centre.

42 - *Oxalis enneaphylla* 'Sheffield Swan'

43 - *Oxalis laciniata* 'Seven Bells'

Ian and Carole Bainbridge had a couple of notable entries one being of two arisaemas, *Arisaema sikokianum* and *A. peninsula* of such a size to indicate that they had been around for some time. I was also interested in their *Primula takedana* with umbels of three white flowers on 6 inch stems over dark green palmate leaves. Ian and Maggi Young brought along a venerable *Raoulia eximia* now forming several domes and filling a 9 inch pot. This was grown from seed sown in 1989.

Nowadays, Glassford Sprunt doesn't enter many plants in the shows but I was delighted to see his *Shortia soldanelloides* var. *ilicifolia* on the bench. This plant, perfectly presented, has shiny pale-green going on reddish-bronze leaves with pink frilled flowers on 4 inch stems. Later I was to hear a visitor at the plant sales table asking if they had one! He should be so lucky.

Aberdeen often has a busy Section II and this was the case again this year thanks to Janet and Jim Paterson making possibly their penultimate appearance in the section again taking the Bronze Medal for most points. Their stock included the unusually squat *Arisaema lobatum*, two fine Epimedium and *Trillium rugelii* with white petals backed by green sepals. It was noticable that most of their plants could be classed as bulbs. On the local front Rosemary Lupton entered a smashing six pan selection to win the Diamond Jubilee Award. There was *Vaccinium vitis-idaea* var. *minus* with both tiny pink flowers and dark reddish-purple fruits and Rosemary's favourite of the collection *Dryas octopetala* 'Harry Bush' looking in excellent condition with a great spray of flowers.

In the display section of the show there were Silver Medals for both Brian Hammond and Ian Young. Brian brought along 18 different sempervivums in a variety of appropriate containers and Ian had a display of fish box troughs. As well as stone effect troughs Ian is now making his own lumps of rock from polystyrene. What next? Surely polystyrene grit is taking the Aberdonian ethos a little far?

The innovative Aberdeen Group are always looking for ways of attracting new exhibitors. This year they took a trough workshop to a young peoples group and drew four of them to the show. In typical Ian

& Maggi style the judges were obliged to nominate a first, second and joint third. Also at the beginning of the winter season the group obtained some plants from a local nurseryman which were given to group members on the condition that they were returned, properly presented, to a few special classes in the show and this again introduced a good number of their members to showing for the first time. Hopefully some were encouraged enough to show in Section II next year.

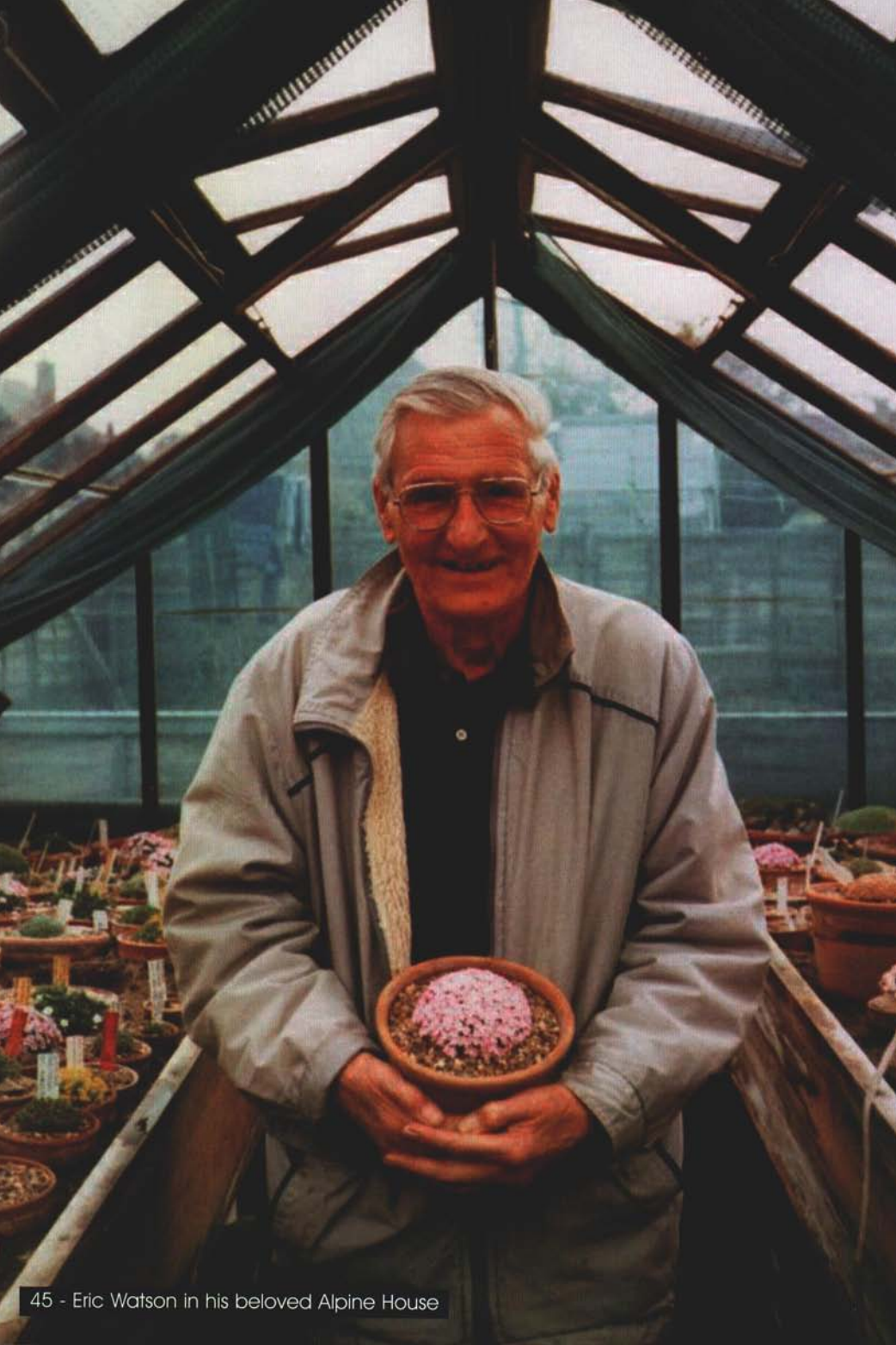
A good show, enjoyed by exhibitors and visitors alike which left the secretaries tired but happy people. *David Shaw*.

Unfortunately reports from the Joint Shows at Blackpool and Hexham were not received at the time of going to press.

44 - *Dionysia gaubae* at Hexham Show

Photographs by Sandy Leven, Ian Young, Graham Wenham, David Shaw and Glassford Sprunt

---



45 - Eric Watson in his beloved Alpine House

Eric Watson - Obituary

ALTHOUGH BROUGHT UP in Derbyshire and living and working for much of his life in Newcastle upon Tyne, Eric's interest and active involvement in the Scottish Rock Garden Club spanned many years, culminating in his period as President from 1986 – 88.

He will long be remembered for the magnificent plants he brought to our Shows, particularly the Dionysias which he grew to perfection. Great care and attention to detail was his hallmark and the many choice and rare plants exhibited gained him ten Forrest Medals between 1975 and 1995. He won his Scottish Bronze in 1974, Silver in 76, Gold in 78 and further Golds in 82, 85 and 94. In total he had 233 firsts at Scottish Shows, some record.

Eric loved to grow plants and as well as an alpine house full of treasures his back garden consisted of raised beds, screes, troughs and shady corners full of rare Saxifraga, Daphne, Trillium, orchids and bulbs. Bulb frames were crammed with Crocus, Fritillaria and Iris and every visitor went away amazed and inspired by the new plants they had seen. Eric and his garden were featured on television.

Eric loved to propagate plants and always had all sorts of rarities rooting in pumice filled trays. The collections in the alpine houses at The Royal Botanic Garden Edinburgh and at the Botanical Gardens in Gothenburg would be much poorer without access to his plants. Eric loved to come up to the RBGE where he would work alongside the staff at the alpine house, preparing cuttings, potting seedlings and talking about plants all day. He would depart with bags full of cuttings and return in a few weeks time with pots filled with the rooted plants.

Eric and his late wife Nan often attended the Discussion weekends and occasionally he lectured on the cultivation of alpine house plants, most listeners were astounded by his attention to detail in his quest for perfection.

Book binding was another of Eric's interests, again the attention to detail and quality of work has to be seen to be believed.

Eric's interest in the Club, its members and alpine plants remained until his death on 10th February at the age of 81. He is survived by his daughter Ann. *Ron McBeath.*

46

Fritillaries 2

In this photo-essay **Ian Young** picks up the thread from the Chinese species with which he ended his last essay (*The Rock Garden* 109 page 340).

There are quite a lot of new species coming from China recently and ***Fritillaria yuminensis*** is one of the stars from among these. It can vary in colour from off-white through pink to blue and it is the only flower that I have seen that could be described as both pink and blue at the same time. It is quite unusual in having a delicious scent.

Fritillaria tortifolia is a vigorous plant producing stems of around 50 cm which can bear several flowers of the most stunning shape and colour, white on the outside with varying degrees of blackcurrant spotting and staining on the inside. It is increasing by bulb and seed as is *F. yuminensis*.

Some forms of ***Fritillaria pallidiflora*** have blackcurrant spotting on the inside but the flowers are a pale yellow. It has been in cultivation for a long time and has proved to be a good garden plant. This suggests to me that many of these Chinese species will do well in our gardens if the correct conditions can be found.


47


48

Ever since hearing the account of Ron Mcbeath and Chris Grey-Wilson finding ***Fritillaria delavayi*** growing high up in an extreme scree in north-west Yunnan I was keen to get my hands on it. This is the form that we grow and I have seen several forms showing a wide variation growing at Gothenberg Botanic Gardens. It likes cool growing conditions and dislikes excessive drying out in the summer.


49

Fritillaria hupehensis flowers on stems about 30 cm tall and is another Chinese Fritillaria. We have grown it in a plastic pot in an outside frame for a number of years. The bulb has not produced any off-sets so increase is by seed which it produces most years.


50

Fritillaria thunbergii (often mistakenly called *F. verticillata*) has been in cultivation for a long time but this is a form that came from China about five years ago. We grow it in pots plunged in an open frame, bringing it under glass when it produces these lovely stems covered in flowers, which it does every year. It has never set seed for us but the bulbs double themselves every year when it is growing well.

Fritillaria ussuriensis from far eastern Russia and into China has stems up to 50 cm with tendrils on the leaf tips so it can twine onto scrub for support. It has a beautiful graceful charm and it is right up there among my favourites. The ripe seed pods are held on stalks at right angles to the flower stem which is one of the diagnostic features of this species, it can also be increased vegetatively as it is a rice producing bulb.


52


53

Flowering on stems of around 15 to 20 cm this came labelled ***Fritillaria puqiensis***. This does not appear to be a valid name and I have been unable to correctly identify it so far. It is an attractive plant that has been slow to increase for us and has so far refused to set any seed.

We grow many forms of ***Fritillaria cirrhosa*** and I have yet to see one that I did not like. This first one we raised from SRGC seed and represents the forms that have been in cultivation for some time.

This well-marked form is one we grew from wild collected seed (ACE 2252) as ***Fritillaria* aff. *cirrhosa.*** It is interesting to note that this species has branched roots as do many of the other Chinese species shown here.

Branched roots are also one of the characteristics of the central Asian species ***Fritillaria sewerzowii***. This is the dwarfer form of the ones we are growing.

Some Eastern botanists separate *Fritillaria sewerzowii* into another genera of Korolkowia as the petal shape and nectary place it close to Lilium.

We got this form of ***Fritillaria bucharica*** from Harold Esslemont. It is a more delicate bulb that is both smaller and more difficult to please in cultivation than the larger Duchambe form that is commonly seen on the show benches.

Fritillaria stenanthera is closely allied to *F. bucharica,* both belonging to the Rhinopetalum group, but with stunning pink flowers.

Although it has been in cultivation for a while ***Fritillaria chitralensis*** is still a very rare plant, only in the hands of a few growers. For a number of years we have had a single bulb that just gets bigger - it has not yet shown any signs of splitting. It has however set seed for us a number of times and it will eventually get around the enthusiast growers of fritillaria although I suspect that it will always be a scarce plant. This too has a pleasant scent.

One other species here from central Asia is ***Fritillaria raddeana*** a tall plant that produces pale straw yellow flowers. This plant does grow outside and it will survive a fair degree of frost but we always keep a few in a pot just in case.

Moving eastwards we come to ***Fritillaria camschatensis*** which can be found from Japan through Siberian Russia and across into Alaska and Canada. This is the **Siberian form** of *F. camschatensis* which has flowers that are so dark that they can appear to be black.


64

The North American forms I have seen of this species, have a mixture of green and brown flowers, which can be seen in this **Alaskan form**.


65

There are a number of **yellow forms** of *Fritillaria camschatensis* to be found but I have yet to see one that can compare to the beauty of the dark *Fritillaria camschatensis* flowers.

Moving on into Western North America we find the very variable ***Fritillaria affinis***. I show two forms of this easily grown species that can be found from British Colombia. south to California and east to Idaho.

The form most commonly seen on our show benches is ***Fritillaria affinis* var *tristulis*** with its dark reptilian-like petals. Because of the large quantities of rice on *Fritillana affinis* bulbs, which can be easily removed and grown on separately, it should remain a regular contender on our displays.

About ten years ago we raised the plant that is now called ***Fritillaria* 'Craigton Cascade'.** We consider this to be a hybrid between *F. recurva* and *F. affinis*. It is a lovely plant with many beautifully marked flowers.


72

Fritillaria 'Craigton Cascade' has proved to be fertile and it regularly produces seed for us. The first of these seedlings have now flowered - they are very similar to their parent and I show two here with the **original 'Craigton Cascade' in the centre**.


73


74


75

Fritillaria recurva has a stunning flower that is pollinated by humming birds in the wild and so it should come as no surprise that the flowers are scarlet and drip a delicious sweet nectar when they are open.


76

The small-flowered ***Fritillaria phaeanthera*** (sometimes called *F. eastwoodiae*) is also thought to be a naturally occurring hybrid between *F. recurva* and *F. micrantha*.

And finally, perhaps the most beautiful of all is ***Fritillaria pluriflora***.

Fritillaria pluriflora is a rare plant both in the wild and cultivation. We have had a good crop of seed for the last few years and the bulbs slowly increase so we can hope to see more of it around in years to come. *Ian Young.*

Correspondence

Is this plant true to label?

IN NOVEMBER 2002 a plant I had grown from SRGC seed flowered for me and I would thoroughly recommend it to all growers of alpine plants. It is growing outside in the rock garden and it came through a wet winter without damage even though its dormancy looked permanent. 50 mm across x 25 mm high, it is a tight silver bun made up of many tufty rosettes with leaves 8 mm x 1 mm. A pale mauve stemless campanula-like flower sits upright on each rosette, there were over 30 flowers at one time with the odd one still opening in mid-December. I tried a cutting and it rooted so 5 more cuttings

have gone into the cutting box. I think it is a perfect trough plant. By now you are wondering what is the name of this treasure? I can only say it came as *Edraianthus owerinianus* but from two batches of seed, only one plant has this tight silver form. As there are bracts under each flower it conforms with the Edraianthus name but without further information I cannot guarantee my plants are true to that name. If anyone can give me more information I would be glad to hear from them. The other plants from these two batches of seed have a longer, looser leaf form and are yet to flower. The accompanying photos were taken in November 2003. Its flowering period started late October and it is still flowering on Christmas Day. I would appreciate any information on the identification of this plant.

Merv Holland, 15 Zephyr Terrace, R D 1 Lyttleton, New Zealand.

PS. As an Overseas member, I read about the "Highland One Day Workshop 31 July 2004 creating and planting alpine troughs and dishes". A write-up of this day would make the type of article many members want to read in the journal. An observer with pen and paper or a tape recorder and a camera would make many of those unable to attend, very happy.

Regards, Merv Holland, N.Z.

Highland Discussion Weekend Elgin 2004

1st to 3rd October 2004
Eight Acres Hotel, Elgin, Moray
'America, South Africa, China and Hame'

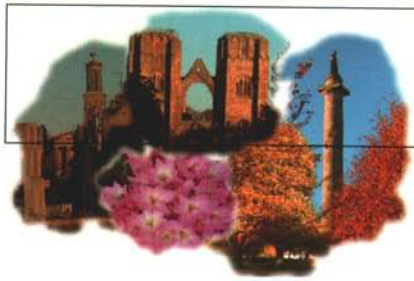
Once again the Moray and Inverness Groups bring the 2004 Highland Discussion Weekend to Elgin, the capital of Moray. The City and Royal Burgh of Elgin is on the main A96 road, almost equidistant between Inverness and Aberdeen. There are rail links from Aberdeen and Inverness. By road it is accessed from the A9 via Aviemore and Strathspey. The nearest airports are Inverness and Aberdeen.

Elgin has historic links with the past e.g. the Cathedral, Spynie Palace (the Bishop's Palace), Ladyhill. Elgin is at the entrance to Speyside's whisky industry and has two distilleries (a visit has been arranged). There is good High Street shopping and a Saturday farmers' market as well as two 24-hour Tesco and Asda supermarket. Of garden interest are the Cooper Park, the unique Biblical Garden and nearby (5 miles approx) Blackhills Rhododendron Garden.

The hotel itself is set in 8 acres of manicured grounds on the western approaches (A96) to Elgin. Facilities include a pool, spa-bath, sauna, gymnasium and squash courts, all to be found in the leisure club.

Those who attended this year know to book early if they want a room at the Eight Acres Hotel. Once again the overflow will be accommodated at the sister hotel, the Ramnee Hotel in Forres. Transport will be laid on so delegates can participate in the full programme.

Due to requests from the 2003 delegates, the programme format, including the optional activities, will remain similar, with one or two subtle changes to the Saturday evening dinner.



Elgin 2004 Programme

FRIDAY 1st OCTOBER

4:00 Registration
7:45 President's welcome Address
8:00 The Bulb Group Lecture - Tony Rymer (Yorkshire)
"Growing hardy orchids - Are terrestrials tameable?"
9:30 Small Bulb Exchange

SATURDAY 2nd OCTOBER

8:00 Registration
8:00 – 09:30 Setting up plants for show
9:00 Optional Activities including Distillery Tour
11:15 Rod Saunders (South Africa, Silverhill Seeds)
"South African Bulbs from higher altitudes"
12:30 Show Opens
2:00 – 4:00 The Harold Esslemont Lecture
Ian Christie and Ron McBeath on their 2003 seed-collecting trip to China
7:15 Dinner
10:00 Plant Auction and Raffle

SUNDAY 3rd OCTOBER

09:00 Registration
09:30 The William Buchanan Lecture
Rod Saunders (South Africa, Silverhill Seeds)
"Alpine plants from South Africa"
11:00 Tony Rymer - "Puzzling Penstemons, Luscious Lilies and other Pacific North West gems"
2:00 The John Duff Scottish Lecture
John Christie – Rhododendrons at Blackhills

All accommodation at the Eight Acres Hotel will be in double, twin or single rooms. If single members prefer to share a room, it will be greatly appreciated if , before booking, they could arrange this between themselves. Tell us the name of the person with whom you will be sharing. Otherwise, we will use our best judgement when allocating single delegates to the twin rooms. Extra nights on the Thursady night before and Sunday night after can be booked at a specially negotiated rate of £45 per person per night, sharing a twin room to include breakfast. Tell us on the reverse of this form if you need this extra accommodation and we will book it for you. There is no ground floor accommodation available, access to accommodation is by stairs.

Star attractions will be the PLANT AUCTION, RAFFLE and 50-50 PLANT SALE, PLANT SHOW, and HOLIDAY PHOTOGRAPHIC COMPETITION. Details are in the Year Book.

Please use the booking form enclosed with the Secretary's Page.

Members should make sure that the form and remittance reaches Lorna not later than 10th September 2004.

The Registration Secretary, Mrs. Lorna Milnes, Dunbarney, Myrtlefield Lane, Westhill, Inverness IV2 5BP (Tel. 01463 791605)

Members wanting further information should write to
Davie Sharp, Kincraig, 4 Walker's Crescent, Lhanbryde, Elgin, Moray IV30 8PB. (Tel. 01343 843111)

RESIDENT	
Friday Dinner - Sunday Afternoon Tea	£165
Saturday Lunch - Sunday Afternoon Tea	£110
NON - RESIDENT	
Saturday (morning coffee, lunch, afternoon tea)	£30
Saturday Evening - Dinner	£21
Saturday (morning coffee, lunch, afternoon tea, dinner)	£51
Sunday (morning coffee, lunch, afternoon tea)	£30

80 - The classic *Helleborus* x *ericsmithii*

New fertile *Helleborus* hybrids

Ben J M Zonneveld
Anne Watson

Fertility of hybrids between *Helleborus niger* and *Helleborus* x *sternii* (*argutifolius* x *lividus*) demonstrated by their nuclear DNA content.

Abstract

It was investigated whether or not it was possible to raise further generations of the supposedly sterile hybrid between the white flowering *Helleborus niger* and the green flowering *Helleborus argutifolius/lividus*. As both parents differ in nuclear DNA content, flow cytometry was used to investigate the offspring. It was proven that indeed further generations were obtained. This offers the possibility to obtain a new group of cultivars different from the well known *Helleborus orientalis* hybrids e.g. *Helleborus argutifolius/lividus* type plants with pure white or pink flowers.

Key words: *Helleborus niger* hybrids, Fertility, DNA Content.

Introduction

Helleborus niger will cross easily with *Helleborus argutifolius*, *Helleborus lividus* and *Helleborus* x *sternii* (*H. argutifolius* x *H. lividus*). This seems remarkable because *Helleborus niger* is acaulescent, with flowers on leafless stems, whereas the other two parent species are caulescent with leafy and woody flowering stems. This morphological distinction is usually considered to indicate a distant relationship between *Helleborus niger* and the other two species. However, achieving the hybrids *Helleborus* x *nigercors* (*H. niger* x *H. argutifolius*), *H.* x *ballardiae* (*H. niger* x *H. lividus*) and *H.* x *ericsmithii* (*H. niger* x *H.* x *sternii*) is not too difficult.

81 - One of the new hybrid F3 seedlings - *Helleborus* F3-3

Moreover, *H. niger* has, just as the two caulescent species, seeds with an elaiosome, a structure that attracts ants. *H. lividus* and *H. argutifolius* are viewed as closely related species, or even subspecies (Ahlburg, 1993; Rice and Strangman, 1993; Matthew, 1989). This close proximity between the two plants is supported by flow cytometry, which finds no appreciable difference in the amount of DNA per nucleus between *H. lividus* and *H. argutifolius* (Zonneveld, 2001). Moreover, the hybrid of both species is fully fertile, although they appear visually very different, and behave differently in the garden. Also the hybrids produced when either is crossed with *H. niger* appear reasonably distinct. It means that we must view *H.* x *ballardiae*, *H.* x *ericsmithii* , and *H.* x *nigercors* as very closely related. Most regard all three hybrids as very generally sterile (Ahlburg, 1993; Rice and Strangman, 1993; Mathew, 1989). They

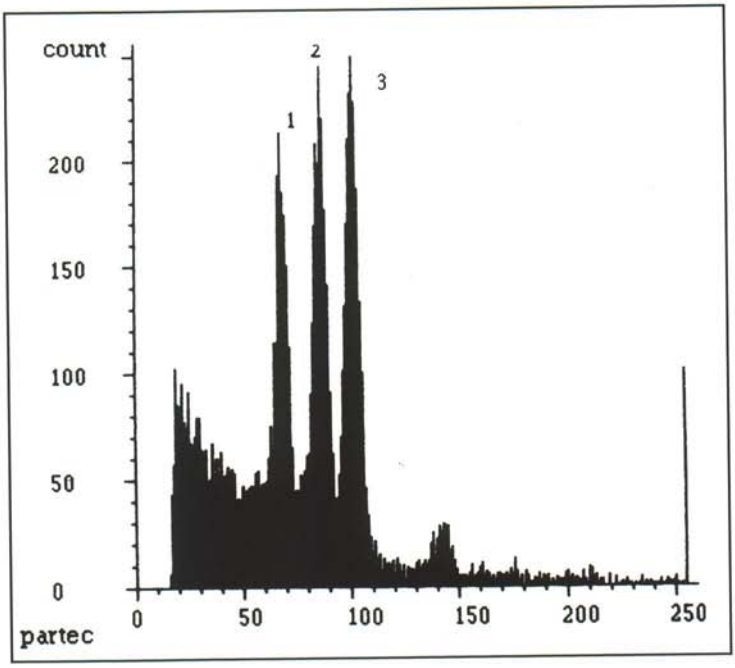


Fig 1. Histogram of fluorescence intensity of total 9354 nuclei from leaf tissue of Helleborus showing a value for the hybrid, intermediate between the parents. 1. *H. argutifolius*, 2. *H.* x *nigercors*, 3. *H. niger*.

Three of the new *Helleborus* hybrid seedlings F3-2 above, F3-3 below and F3-4 opposite.

become available in plant nurseries because breeders repeat the relevant crosses each year, or divide plants vegetatively. Plants are usually expensive because either process produces only low numbers, and is reasonably laborious. If fertile forms could be produced, these attractive plants would become more widely available. Occasionally some texts suggest fertile hybrids have occurred. Helen Ballard (Schmiemann and Westrich, 1997) stated she developed self fertile forms of *H.* x *ballardiae* in appreciable numbers. However, these were not verified and seemed now to be lost.

Now however, reasonably fertile forms of certain *H. niger* hybrids have been produced at Ashfield Hellebores in Yorkshire. These have been verified for the first time by measuring their nuclear DNA content and may be the basis for producing more fertile hybrids in the *H. niger* x (*H. lividus*, *H. argutifolius*, *H.* x *sternii*) group.

Materials & Methods

Two F2 Plants originated from seeds which germinated from a bee pollinated plant of *H.* x *ericsmithii* growing in open ground. These two plants eventually died, but not before six F3 plants had been

85 - Closeup of flowers of *Helleborus* F3-4

Table 1. Nuclear DNA content (2C) and other characteristics of F3 plants of *H. niger* x *H.* x *sternii* and their parents.

Plants	F3-2	F3-6	F3-1	F3-4	F3-5	F3-3	*H. niger* (1)	*H. lividus*	F1 hybrid
DNA in pg per nucleus (2C)	26.3	26.4	26.5	22.9	23.1	23.5	28.3	18.9	23.6
plant height (cm)	25	15	15	33	31	31	20	45	30
size of largest flower (cm)	7	6.5	7	7	6.5	9	11	5	8
Number of flowers	5	2	1	20	40	15	15	30	20
Leaf colouor	green	green	green	veined	veined	green	green	veined	veined
Number of leaf divisions	7	7	5	5	5	5	9	3	6
Number of seeds	58	11	5	8	11	0	many	many	few
Seeds per flower	11	6	5	0.5	0.3	0			

(1) Four strains of *H. niger* were measured and the average given here.
Pink Strain = 28.3 pg; St Brigid Strain = 27.1 pg; Potters Wheel Strain = 28.1 pg and WMC9113 wild coll. = 28.9 pg.

86 - New hybrid seedling *Helleborus* F3-2

produced after self and interpollination between the two F2 parent plants. In 2000 these six plants similarly produced about 20 seeds (F4), fifteen of which germinated. In 2001, 93 seeds were produced again after self and interpollination of the six F3 plants.

The leaves of a fertile groups of plants considered to be *H. niger* hybrids were tested for nuclear DNA content (for more extensive description see Zonneveld and Van Iren, 2001). About 0.5 cm^2 of leaves chopped in buffer were immersed in 2 ml propidium iodide solution to stain the DNA in the nuclei. The suspension was filtered and the fluorescence of the nuclei was measured in a Partec CA-II flow cytometer. Data were then analysed using DPAC software. This method measures the total amount of DNA per nucleus. The more DNA, the higher the intensity of the fluorescence. As an internal standard a small piece of *Agave americana* with 15.9 pg (2C) was chopped together with

the leaf sample. *A. americana* was used as it is permanently available. It was calibrated against human leucocytes with 7 pg of DNA. Approximately 5000 nuclei were measured twice for each leaf sample and two separate leaf samples were used.

Results and discussion

Despite the fact that all species of Helleborus are diploid with the same chromosome number 2n=2x=32 there is more than a factor two difference in the total amount of DNA per nucleus (Zonneveld, 2001). This means that the species with the highest amount of DNA has chromosomes that are twice as large. If two DNA values coincides this could indicate they are the same species , but this is not necessarily so. However, if two plants have different amounts of DNA they are likely to be different species (excluding polyploids) (e.g. Zonneveld et al., 2003. Zonneveld and Duncan, 2003).

H. lividus and *H argutifolius* both have about 19 pg of DNA in each nucleus. The total amount of DNA per nucleus (2C) for *H. niger* just exceeds 28 pg. A specimen of *H. niger* x *H. lividus/argutifolius* will produce a reading of about 23.5 pg i.e. intermediate between the 19 and 28 pg for the parents. This is shown in Fig. 1 and Table 1. A similar value was found for the cultivar *H.* 'Bulmers Blush' (*H. niger* x *H. lividus*). If the chromosomes of the two original F1 parents were divided at random in the F2 one would expect any value between 19 and 28 pg in the F3.

However, there are clearly two sets: F3-3, F3-4 and F3-5 have, with about 23 pg, DNA amounts very similar to that of the F1 (Table 1). The most simple explanation is that these are the results of growth of non-reduced egg cells (apomixis) and results in offspring similar to the original F1 parent plant. This also assumes that the two lost F2 plants had a similar DNA value and a similar origin, which seem possible. This suggest that not only the F1 but also the F2 and even three plants of the F3 have still a full set of chromosomes of the original parents: *H niger* and *H.* x *sternii*. If the formation of non-reduced egg cells is indeed the proper explanation for these three plants it cannot be said that these are sexual offspring. Moreover, it

87 - Another classic hybrid *Helleborus* x *nigercors*

might be that application of pollen still is necessary to get the development started, without the pollen actually contributing any genetic material.

There are three F3 plants with DNA values closer to *H. niger* and well around 26 pg (Table 1). These plants are also closer to *H. niger* in leaf colour and number of leaflets, and produced more seeds in 2001 than the F3's with 23 pg. All flowers resembled those of *H. niger*, albeit some were slightly more greenish. The DNA amount per nucleus found in this second group can be explained in several ways.

1. The F2 was inadvertently fertilized by *H. niger*. The values are actually in between the values for the F1 (and presumably the F2) and *H. niger*. This can be calculated as follows: *H. niger* (28.3 pg) + F1/ F2 hybrid (23.6 pg) divided by 2 = 25.9 pg for the F3.

2. All species of Helleborus are diploid with the same chromosome number, i.e. 2n=2x=32. This has not been checked in these F3 hybrids. So, a second explanation is that they are aneuploids .

3. Another explanation is that only gametes in the F2 plant with a fixed but higher number of *H. niger* chromosomes have a chance to

survive and to result in fertilization. The same explanation could be applied to the three F3 plant with DNA values around 23 pg. It would result in plants with DNA values similar to the balanced situation as found in the F1 plants! The attractivity is here that a single explanation can explain both sets of F3 plants and non-reduced egg cells are not necessary as an explanation.

Irrespective which explanation is preferred, the DNA values of 26 pg for these three F3 plants shows for the first time unequivocally that the F1 and the F2 of crosses between *H. niger* and *H.* x *sternii (argutifolius x lividus)* are at least partly fertile.

A single F4 plant measured recently, produced from mixed seed of interpollinating all the F3 plants, has 26.1 pg, similar to the second set of F3 plants.

How does the occurrence of reasonably fertile forms of *H. niger* x *H.* x *sternii* accord with the view that *H. niger* hybrids are generally not seen as fertile?

We think that some specimens of all three hybrids may increase in fertility with age. Not all six F3 plants have produced seed each year. As young plants none of the six seemed fertile, and very little pollen if any was produced, but in 2000 the group produced about 20 seeds, 15 of which germinated. Pollen production certainly increased over the years, and in 2001 only one plant seemed to produce no pollen, and as Table 1 depicts in total 93 seeds were produced.

Therefore as young flowering plants, hybrids with *H. niger* may quite rightly be found to be sterile. However, as older plants, a proportion may well become fertile as shown here unequivocally. This offers the possibility to obtain a new group of cultivars different from the well known *H. orientalis* hybrids e.g. *Helleborus argutifolius/lividus* type plants with different coloured flowers.

References

Ahlburg, M.S. 1993: *Hellebores*. Batsford Ltd. London.

Matthew, B. 1989: *Hellebores*. Alpine Garden Society, Woking, UK.

Rice, G. and E. Strangman, 1993: *Gardeners Guide to Growing Hellebores*, Timber Press.

Schmiemann, G. and J. Westrich, 1997: *Helen Ballard*, in: Art and Nature

88 - *Helleborus* F3-4

Zonneveld, B.J.M. 2001: Nuclear DNA contents of all species of Helleborus (Ranunculaceae) discriminate between species and sectional divisions. Plant Syst. and Evol. **229**:125-130

Zonneveld, B.J.M. and F. Van Iren, 2001: Genome size and pollen viability as taxonomic criteria: Application to the genus Hosta. Plant Biol. **3**: 176-185.

Zonneveld, B.J.M. , Grimshaw, J.M. and A.P. Davis. 2003: The systematic value of nuclear DNA content in *Galanthus*. Plant Syst. and Evol. **241**: 89-102.

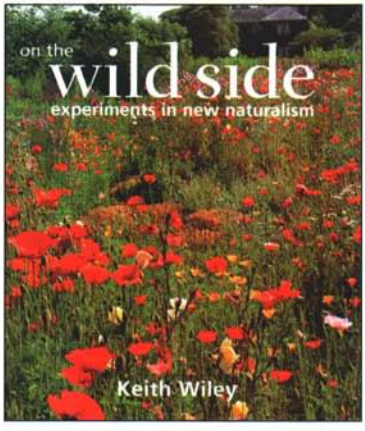
Zonneveld, B.J.M. and G.D. Duncan. 2003: Taxonomic implications of genome size and pollen colour and vitality for species of *Agapanthus* L'Heritier (Agapanthaceae). Plant Syst. and Evol. **241**: 115-123.

Ben J.M. Zonneveld, Clusius Laboratorium, PO box 9505, 2300 RA, Leiden, The Netherlands. Email: Zonneveld@rulbim.leidenuniv.nl

Anne Watson, Ashfield Helleborus, Yorkshire, England
Ashfield House, Austfield Lane, Monk Fryston, Leeds, LS25 5EH

Photographs by Malcolm McGregor

Book Reviews



ON THE WILD SIDE - Experiments in New Naturalism

Keith Wiley

ISBN 0 88192 636 1
Timber Press
256pp with 200 colour photos, £19.95

For many gardeners Keith Wiley's book would come as a revelation. Although not aimed at rock gardeners to any great extent this is a book which encapsulates many of the trends towards natural gardening which have been contending with the old formalism. The distinction between lawn, border and rock garden which are so much part of the normal expectation are blurred and even denied by Wiley.

The book is divided into two broad sections on "The Plants" and "The Garden Landscape", preceded by a lengthy Introduction. The longest section of the book is "The Plants" which surveys a range of habitats and discusses the plants found in them and the way in which these landscapes are made up and might be used by the gardener. There are chapters on bulb meadows and woodland floor; deserts and semi-arid landscapes; mountain, coast and clifftop; meadows; prairie, scrub and grasslands; woodland; as well as more garden orientated chapters on "Impressionism with perennials", "Inspiration from the wild woods", and "Shaping plants for effect". The final three chapters constitute the second section of the book "The Garden Landscape" and although these are interesting they are not the heart of the book.

Throughout the book Wiley's photographs are a wonderful accompaniment to the text and illustrate the way in which he has brought his own version of what he finds in nature into his gardening style. Despite some very interesting garden plantings what the wonderful photographs of wild flower landscapes do is to show just

how rarely we are able to match up to natural spectacle. And many of the wild flower landscapes that are shown are truly spectacular. The photographs are overwhelmingly beautiful and a wonderful resource of planting ideas with useful captions interfacing effectively with the text.

So many books on gardening are books to dip into rather than to sit down and read. Add the fact that this is very lavishly illustrated and the expectation that this is a book to dip into is heightened. However this is a book to read properly with a text that interweaves observation and experience in a very nice mix.

This is not a book of recipes - it does tell you how the author has done things but more than that it involves you in seeing what plants do in the wild and thinking about what this might mean for the gardener. Well worth a look.

SIBBALDIA - An occasional series of horticultural notes from the Royal Botanic Garden Edinburgh

Edited by David Rae

ISBN 1 872291 44 9
80 pages, £4.99 (plus £1.20 p&p from RBGE)

This is the first issue of a new "occasional series" which it is intended will appear every 12 to 18. As is pointed out in the Foreword the RBGE's four botanic gardens in Edinburgh, Dawyck, Benmore and Logan have between them the second largest collection of wild origin material of plant species in the world. Inevitably therefore the material in any one issue will be somewhat arbitrary but it has behind it the enormous reserve of knowledge and experience which should make these papers so valuable. The first issue has a range of articles which help give a good impression of the role that the RBGE sees itself as fulfilling today. Four articles are broadly related to conservation, two

articles are on cultivation, and one specifically on the management of the collection at RBGE.

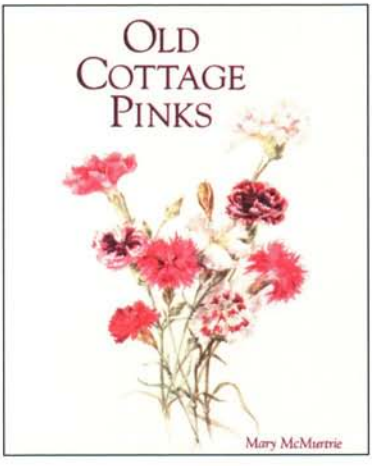
The four on conservation again show the range: two are on the roles played by the RBGE in helping the recovery and reintroduction of rare species - in Scotland and England of the rare fern *Woodsia ilvensis* and of rhododendrons back to China which I found fascinating; one on the Global Strategy for Plant Conservation; and one on the management of conservation status species in the botanic gardens.

Of the two articles on cultivation, one is of particular interest to Club members since it looks at cultivation techniques for six alpine species: *Androsace tapete*, *Daphne cneorum var. pygmaea*, *Helichrysum montanum*, *Lilium souliei*, *Primula dryadifolia* and *Stellera chamaejasme*.

I can only wish David Rae every success. He is quite right that there needs to be a forum in which the knowledge of the RBGE's work can be disseminated. *Malcolm McGregor.*

Although I've not actually seen a copy of Mary McMurtrie's Old Cottage Pinks, I'm sure members will be pleased to know that this volume, which was mentioned in her obituary in the last issue of THE ROCK GARDEN, is now available.

OLD COTTAGE PINKS
Mary McMurtrie
ISBN 1 870673 50 6
Antique Collectors' Club
£19.95



NOTICES

SEED EXCHANGE 2004
Seed Exchange Manager: Prof G Stuart Pawley,
Acres of Keillour, Methven, Perth PH1 3RA.
email: gsp.srgc@tesco.net.

Requests for seed to Dr Alan J Hayes, 31Liberton Brae,
Edinburgh EH16 6AG
Donations of seed to Prof Pawley.

EDITORS NOTE
In the Editorial in the January 2004 issue of THE ROCK GARDEN the plight of the National Botanic Garden of Wales, which faced imminent closure, was highlighted. The garden was effectively closed to the public for something over two months but appears, since the middle of April, to have secured its financial future. It's back on my list of places to visit regularly.

INDEX for issues 110, 111, 112 and 113

INDEX for issues 110, 111, 112 and 113

Entries in bold represent illustration numbers.

REAL-TIME GARDENING

FOR SCOTLAND AND THE NORTH

REGULAR ALPINES AND ROCK GARDEN ADVICE

ESSENTIAL GUIDE TO HARDINESS

NEWS AND EVENTS PLANT FOCUS GARDENS OPEN

AVAILABLE MONTHLY FROM MARCH 2004 THROUGH ALL GOOD NEWSAGENTS, SELECTED GARDEN CENTRES AND BY SUBSCRIPTION

visit www.thenortherngarden.co.uk or telephone 01382 540 287

WHY NOT ADVERTISE IN THE ROCK GARDEN?

Full Page £168, Half Page £92, Quarter Page £54, Small Ads. 54p per word. Full colour available at no extra cost.
All prices include V.A.T.

Orders should include the advertiser's name and address and must be accompanied by the remittance. An order for the same advert in consecutive issues - 10% discount. Payment may be made by VISA or Mastercard - quoting name as it appears on card, card number and expiry date and your signature.

For full details contact:
Carol Shaw
Advertising Manager
Delft Cottage, Dyke, Forres, Moray. IV36 2TF
Tel: 01309 690582 (day)
01309 641405 (evngs.)
Fax: 01309 690036
email: carol@findhornpress.com

Dutch International Rock Garden Conference of Alpine Plants

• 13 - 17 April 2005 •

Wageningen, the Netherlands

To celebrate the 20th Anniversary of the **Dutch Alpine Garden Society** a large-scale conference is being organized.

On 13, 14 and 15 April lectures will be held and an extensive Plant Sale will take place at the Botanical Garden of Utrecht, with many foreign growers present. On 16 and 17 April you will have the opportunity to visit the world famous Dutch bulb fields, magnificent private gardens and interesting nurseries.

The lectures will be given by 13 well-known speakers:
Panayoti Kelaidis, Ron McBeath, Ian Young, Chris Grey-Wilson, John Richards, David Haselgrove, Philip Cribb, John Birks, Vojtech Holubec, Erich Pasche, Ger van den Beuken, Marijin van den Brink and Eric Gouda

The above mentioned speakers guarantee a wealth of information on all aspects of alpine plants. Among them are specialists ranging from bulbs, the North-American flora to orchids and constructing gardens.

At this conference English will be the official language, but all participants will be given the proceedings in Dutch, German or English beforehand, in order to make all the valuable information available to everyone.

Sponsorship has enabled us to keep the cost of admission as low as possible so that everyone has the opportunity to attend.

The event will take place at the WICC at Wageningen. This conference centre offers all the facilities one can imagine and is easy to reach by car and public transport.

For more information contact the Bookings Manager:
Martijn Jansen, Tondensestraat 5, 6975 AB Tonden, The Netherlands
martijnjansen@zonnet.nl
or visit our website **www.rotsplantenvereniging.nl**

Quality Garden Tours 2004

Brightwater Holidays are the UK's specialist Garden Tour Operator. Our fully inclusive itineraries combine the famous and grand gardens with small and private gardens - most tours also visit specialist nurseries. Travel by coach, air and rail from a variety of local pick up points throughout the UK.

Tours include: Tresco and The Eden Project, Art & Gardens combinations including Cornwall, Norfolk and Northumberland with the Alnwick Castle Garden, Dutch Bulbfields Cruise, Gardens & Architecture of Andalucia, Italian Garden Holidays including Ninfa, regional garden tours throughout England, Scotland, Wales and Northern Ireland, Scottish Island Holidays, Big Tree Tours, Botanical and Cultural Explorations of the Mediterranean, Rhine Cruise and long haul destinations such as Japan, California, Uruguay and China.

If you have your own group and are looking for a tailor made itinerary we are happy to work to suit your interests and budget. Please contact us for full details.

For a full brochure and information contact Brightwater Holidays Ltd, Eden Park House, Cupar, Fife KY15 4HS. Fax: 01334 657144 Email: info@brightwaterholidays.com

Investor in People

ABTOT

01334 657155

BRIGHTWATER holidays

Website:
www.brightwaterholidays.com

JACQUES AMAND

International

Below are photos of just a few of the plants and bulbs available from our two full colour catalogues published in January and July each year. See us in Edinburgh in June at Ingleston Showground. Visitors welcome to the Nursery.
Many treasures not listed also available. To obtain our catalogues write to:
The Nurseries, Clamp Hill, Stanmore, Middlesex. HA7 3JS
or phone 020 8420 7110 or fax 020 8954 6784
or e-mail bulbs@jacquesamand.co.uk or www.jacquesamand.com

Arisaema saxatile

Asarum splendens

Arisaema sikokianum

Cypripedium formosanum

Cypripedium reginae

Trillium pusillum

Paris polyphylla

Nomocharis meleagrina