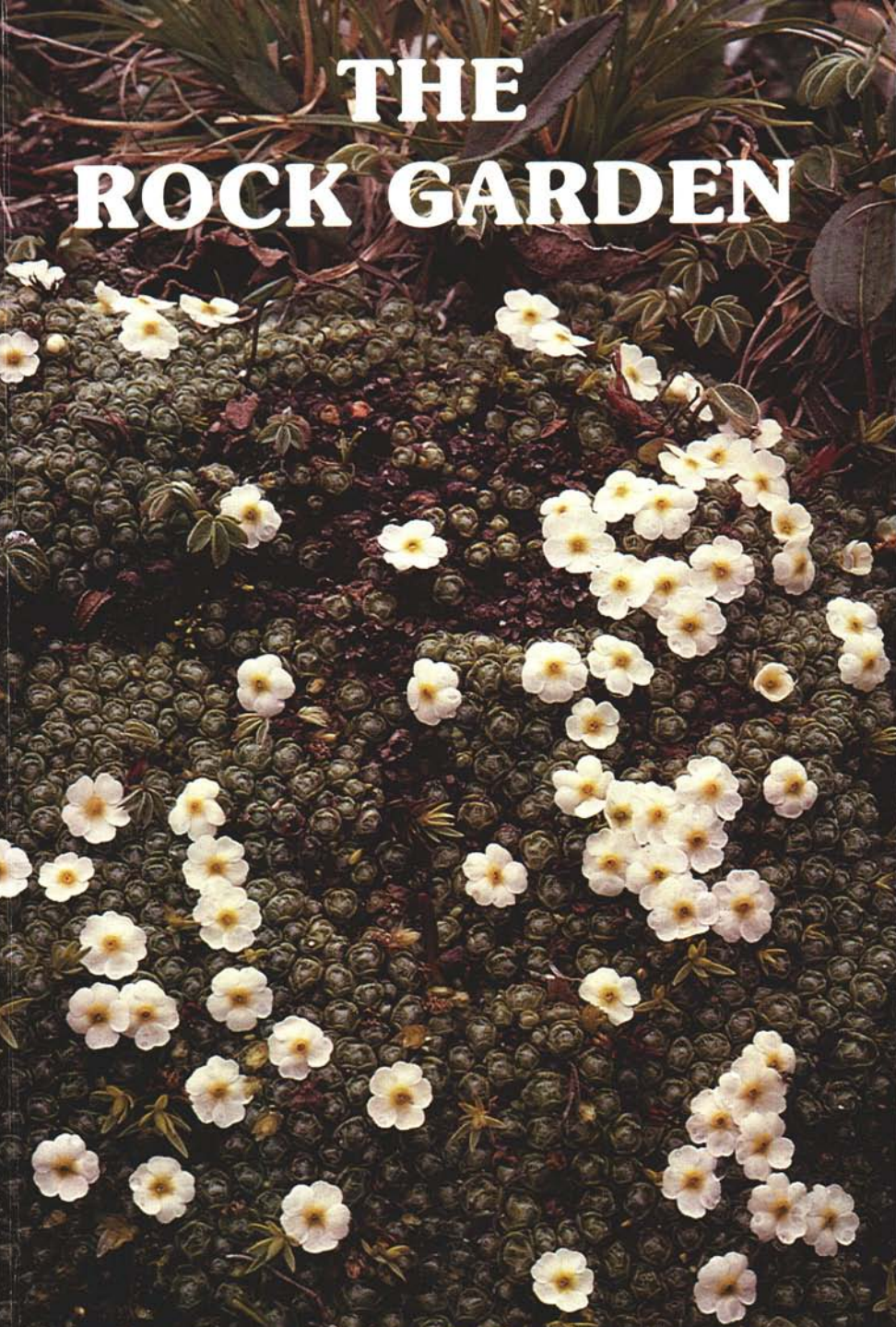
THE ROCK GARDEN



THE JOURNAL OF THE SCOTTISH GARDEN CLUB

Volume XXIV Part 4 Number 97

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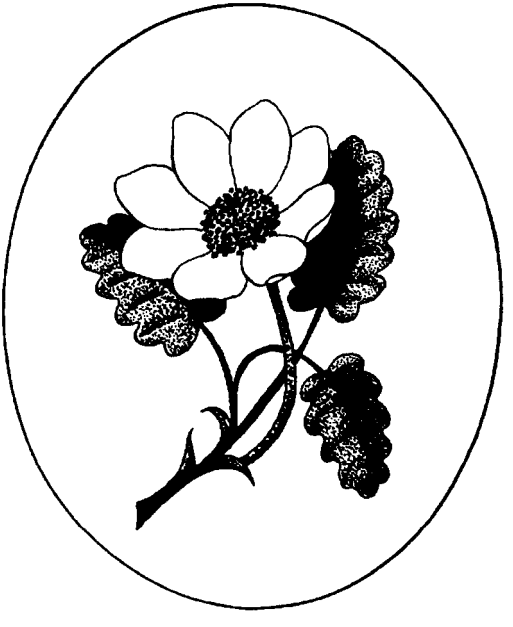

THE JOURNAL OF THE SCOTTISH ROCK GARDEN CLUB

Volume XXIV Part 4 Number 97
January 1996

ISSN 0265-5500

Front Cover : Androsace delavayi
Photograph: Henry Taylor

THE ROCK GARDEN

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

The Editor welcomes articles on any aspects of alpine and rock garden plants and their cultivation. Articles should follow the format of previous issues with colour transparencies and line drawings if appropriate. Articles, if submitted in manuscript, should be in double spacing, but it is hoped that authors will consider submitting material on disk, either on Microsoft Word or on some compatible software.

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The deadlines for contributions are 1 November for the January issue and 1 April for the June issue. These dates also apply for material for the Yearbook and Show Schedules. These deadlines are important now that The Rock Garden is being type-set in-house.

Enquiries about **advertising** should be sent to the Advertising Manager as given on p 429.

Enquiries about **illustrations** should be sent to:
The Illustrations Manager
F. Carrie
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Individual copies are available from:
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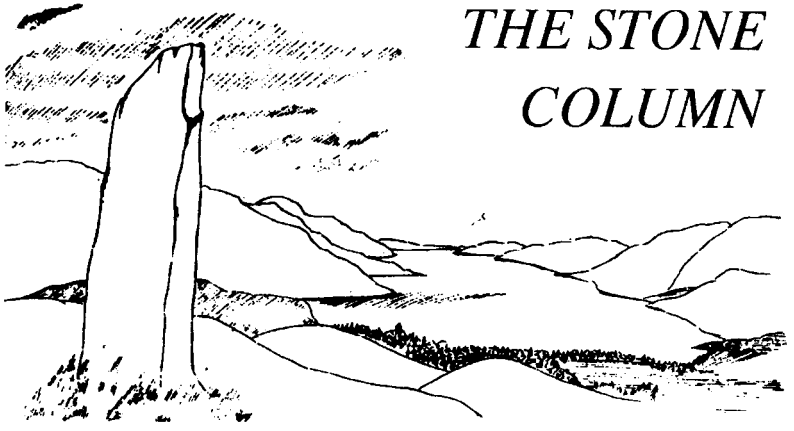

THE STONE COLUMN

A RIVER ROSE IN EDEN

Wherever rock gardeners from all parts gathered in the autumn of 1995 at our annual SRGC Discussion Weekend, or elsewhere, many conversations started with mutual enquiries as to whether many losses had resulted from the heat and drought of the summer just past and how were water supplies holding out? The fact that this question could be asked in all seriousness in a country as well-watered as the British Isles might strike, say an Israeli hydrologist, as more than a little strange. Perhaps we are too blase about water, it's always been readily available, perhaps too readily and people take it for granted. If I could be permitted an analogy: heavy snowfalls can cause traffic chaos down south, but here we expect it to snow in winter. Highland and Grampian Regions have the powerful snowploughs and gritters necessary to keep the roads open. In southern Europe droughts are a fact of life and provision is made to cope with them as was brought home to us on a recent visit to France. With developments at Askival taking rather longer than hoped (don't they always ?) we had decided, fortuitously as it turned out, to stay at home for a second summer. However, we had accepted invitations for a short lecture tour in late October ending up with the AGS Exeter Group. While giving us the opportunity to visit some interesting gardens, in conditions and with styles quite different from our own, the timing did push our autumn break rather later than one might wish. Crossing from Plymouth, Poll's old home town, to Roscoff in Brittany, we worked

our way south through the Massif Central to the Parc National des Cevennes. The latter, together with the English Peak District, is currently on the short list for an international ecological tourism award. Why are there still no Scottish National Parks? Crossing the Rhone in the teeth of a November Mistral, we found the screes of Mt. Ventoux to be frozen solid. The week before it had been raining, so much for the dry blanket of snow theory. After several glorious days spent walking in the almost snowless Alps, we returned north and crossed back to Hull only to be greeted by pouring rain and the sight of roadtankers hauling water on the M62.

While in the south of France we visited the Causse Méjean, an isolated limestone plateau completely surrounded by deep gorges, that of the Tarn to the north and the Jonte with its vultures to the south. There is little or no surface water and centuries of grazing have produced such a good replica of the Steppes that an area has been set aside for a feral herd of Przewalski's horse. In spite of such difficult elevated terrain the scattered farms now have a reliable piped water supply for both domestic and livestock use. Not far away, a 50km aqueduct, including the famous Pont du Gard, was built during the reign of the Roman Emperor Claudius, from the perennial spring at Eure to the city of Nîmes. Now almost 2000 years later a UK water grid is still lacking, so that, for example, a surplus in the Kielder reservoir can not be transferred to areas of Yorkshire threatened with cut-offs. It is easier to blame customers, especially gardeners, for being so presumptious as to actually use water. The Romans carefully sealed their aqueducts to prevent leaks. Are gardeners expected to install their own private supply before being allowed to waste water on plants and is it to be a return to the days of the well in the back garden? On a larger scale than most of us can aspire to, a reliable water supply can make a garden.

Further upstream beside the Gard, just where it leaves the Cevennes, outside the small town of Anduze, lies an excellent example, La Bambouseraie de Prafrance. Purchased by Eugene Mazel in 1855, the 34ha estate, sheltered by steep hillsides, possessed an ideal microclimate and a deep alluvial soil. Although the annual rainfall is some 1000mm, much of this falls in winter or as torrential downpours punctuating the long summer droughts of the Mediterranean. Thus Mazel constructed a canal over 1.5km long which still feeds some 5km of irrigation channels within the garden. For anyone with an open mind and a serious interest in

plants other than just specimens for show, time spent wandering among the centenarian groves, many of which are over 25m high, is well rewarded. The subtle variations in colour of the polished stems, the play of light and shade and the contrast in form provided by self-sown palms, *Trachycarpus excelsa*, add up to a gardenscape unique in Europe. There's far more here than the hundred or so species of bamboo; a conifer collection, a planting of Japanese trees and shrubs, a water garden with lotus and papyrus and a huge *Magnolia grandiflora*, covered in red fruits when we saw it, making those wall-trained specimens appear mere travesties. A large *Ginkgo biloba* was just starting to show the vivid yellow autumn colour for which it is renowned; red tints were supplied by *Cornus nuttallii*, another tree better suited to these southern climes and often short-lived in Britain. There is also a specialist nursery and in the absence of import restictions, we purchased a souvenir in the shape of a *Sinoarundinaria nitida*, a graceful small species (<3m!) which their beautifully illustrated catalogue states is hardy to -25°C. We shall see; it is apparently physiological drought from frozen ground and not low temperature that kills bamboos. All in all, with its combination of a semi-formal hard-landscaped skeleton and naturalised plantings, this is a garden having far more in common with our minimum interference approach at Askival than have over-designed herbaceous borders or collections of cushions in alpine houses.

AND HOW WAS IT FOR YOU ?

There is no doubt whatever that 1995 will go down as one of the infamous drought years, alongside 1976 and 1984. Having kept a garden diary since 1974, it is possible to make an interesting comparison of the three years. One should realise that a drought need not be a period of zero rainfall but a period when evaporation and transpiration exceed precipitation so that, in the absence of atificial irrigation, the soil progressively dries out. Such conditions are common in the eastern half of Britain. At Askival our thin stony soil holds little moisture, some beds must be watered every summer; the three notorious summers differ only in the scale of the task owing to higher than average temperatures and longer dry periods.

The 1976 drought was late in starting up here in the Highlands; May and June were not remarkable and when a temperature of 40°C was reported at Wimbledon on 24 June, heavy rain was falling at Askival. The record high temperatures did eventually

spread north and we recorded 30.5°C on July 2. While restrictions on the use of water were increasing in the south, we were lucky to get a break with several hours of heavy rain on the 9th and again on the 15th (St Swithin's Day). However, the old saying was not borne out as, although weather fronts passed over regularly during the rest of the month, only showers or periods of light rain fell. Hot days returned for most of August then suddenly cold autumn rains started on 8 September, with some snow lying briefly above 750m.

By way of contrast, the 1984 season started with a dry spring, including the hottest April day in Scotland for over 100 years when we recorded 24.5°C. May had more than its usual complement of clear sunny days and frosty nights and we had already started the watering round. Flaming June did not live up to its name, especially the second half, but July was hot at first, reaching 30°C on several days. There were heavy showers on the 12th and an unsettled week at the end of the month provided a respite before a return to high temperatures for much of August. The cumulative effect of five months low rainfall led to the level in Loch Tarf falling below the village intake and our one and only hosepipe ban was applied on 1 Sept. Next day over 70mm rain fell in 24 hours!

1995 was closer to the pattern of 1976; in fact April and May were rather colder than normal with north winds bringing considerable rain, hail and sleet. On 14 May while we were away at Gothenburg with the SRGC party, snow lay in the garden and, as last year, -3°C destroyed all our rhododendron flowers. Changeable weather continued right past the solstice before summer finally arrived at the end of June with temperatures in the range 25-27°C. I have a feeling that seasons have been slipping backwards. Springs come late and autumn lingers longer, giving for example *Eucryphia x nymansay* time to flower properly. We had just started to irrigate when heavy rain fell on 5 July , followed by a changeable fortnight including, as in 1984, a shower on St Swithin's Day. During this period, Ellen Wilde, a prominent member of the American Penstemon Society from Santa Fe visited us only to experience two days of torrential showers, thunder (very rare this far north) and a power cut. Thus are misleading impressions created. The core of the 1995 drought lasted exactly a month, from 24 July to 24 August, quite long enough to give us real problems. A hot and dry August is the common factor in all three years but, by then, nights

are cooler and longer, often down to 8°C with heavy dews to help the plants and shadows are more extensive.

Only those with a small garden and no restrictions or sufficient resources to install a comprehensive irrigation system can face droughts with total equanimity. For us, as with most gardeners, it comes down to priorities. Pots and frames came first, every few days, troughs once a week, then any new plantings, followed by the rain-shadow areas under trees and any beds with important seed plants. In a garden of our size it was inevitable that some plants slipped through the net. One August day I suddenly noticed that the leaves on our three *Magnolia sieboldii* were going brown and falling. I had forgotten that they are surface rooted and also suffer competition from a large ash tree well outside our boundary. In thin soils beware of tree roots spreading further than the height of the crown. At least the magnolias will probably recover unlike a large *Rhododendron chamae-thomsonii*; the south half of its one metre dome is completely scorched. It has never flowered properly in 15 years so out it will go. When watering our older troughs I found that the best way was to damp them down last thing at night, let this soak in, then water thoroughly next morning. Thanks to the wet spring there was no shortage of water; our only problem was lack of pressure caused by repeated bursts in the old village main, long overdue for replacement. The Region made every effort, their men here so often we got to know them quite well and they our concerns.

SHADY GOINGS ON OR SNAKES AND LADDERS

Although one resents the time spent watering, at least while it's dry construction can continue. Two major projects were completed during the summer, the Shade-frame and the 'Snake'. The former replaces the oldest bed in the garden, 'Raised Bed 1'. This was built in 1971 to disguise the pile left when a ruined wall between us and the old Convent next door was replaced with a Lawson cypress hedge. I simply built a rough dry wall round the pile, levelled the inside and covered the rubble with a mixed layer of peat from the local moor, sand from a road cutting, leafmould and a little soil. It was many years before we bought compost materials in bulk. A colleague suggested a visit to Jack Drake where we purchased the original '20' that autumn and the rest, as they say, is history. When we rationalised and extended the original frameyard from 1988 onwards RB1 was converted into a 'temporary' standing area for Poll's bulb boxes (see The Rock Garden 1991,22,139). It remained

in use while the permanent frames in the ex-orchard were under construction, but with the completion of Orchard frame 4 early this year, I could turn my attention to the long-awaited shade-frame. First I had to remove the rubble pile and its crude surrounding wall; the waste went out through the side wicket gate to extend the level area where we cut firewood, but any useable stones were recycled to the Snake bed. Recently (The Rock Garden 1995,24), Lynn Almond described the usual method for constructing a raised bed by building the walls first then filling in. We often do it the other way round, pile up the soil, leave it fallow for a season to settle and to eliminate any perennial weeds, then put a wall round it.

In our lower garden there used to be a a strip of grass about 3-4m wide sloping between the Middle bed and the Ex-larches terraces. Partly shaded, it had always been prone to infection with ineradicable blue-green algae or 'squidge', so when a very important AGS visitor slipped and fell flat in the slime we decided that enough was enough and sprayed out the grass. A long narrow pile of surplus soil was built up here in 1994, retained by the more solid turves, and the entire contents of the oldest compost heap spread on top to free the pit for that winter's clear-up. The final stone edging was added last August, a wall some 0.5m high on the downhill (Middle bed) side, but only a single row of large stones on the other. We ended up with a narrow S-shaped bed, about 16m long but only 1.5m wide and so easily weeded from the paths on either side. As soon as the weather broke at the end of the month we planted it up with gentians, meconopsis, the larger primulas from the ACE collections in China and other small herbs. It's years since we tried an autumn planting so it will be interesting to see how they do.

The structure of the shade-frame itself follows our standard raised pattern and is six bays or nine metres long. This site, however, slopes slightly from end to end so I put in a concrete foundation first, in a trench at one end, raised by shuttering at the other, before building two courses of concrete blocks. In the past we have always filled in with material from within the garden e.g. from the backtrack steps site described last time, but time was pressing so I rang our local contractor. We calculated that it would take six cubic metres to fill in the box I had made and the said quantity of graded forest-roadmaking material was duly tipped on the drive. A week later I had moved it all to the frame, helped by the young guitarist next door, mortared on the top course of blocks,

erected the shading and spread the final capillary sand layer. The frame was ready on 8 July before the worst of the hot weather.

The shading of alpines has always been controversial with some growers saying that it should not be necessary. I would agree for true alpines and moorland plants in the open ground but pots and containers can heat up excessively in the sun and alpines detest warm roots. Not having time to plunge, we shade any exposed sides of pots with bricks or wooden boxes placed alongside the frame. Additionally we grow a great many woodlanders, species from shady cliffs, arctic-alpines and other plants happier with some protection from the sun. Poll has felt instinctively for some time that the shade-nets on our frames are too close to the plants. As G.H.Berry points out in 'Gentians in the Garden' (p.51) the inverse square law applies. The shade-nets absorb the sun's energy and re-radiate it in the infra-red i.e. as heat. If the net is twice as far away from the plant it will only receive a quarter of the heating from this source, three times,a ninth and so on. In hotter climates many nurseries have a fixed walk-in shade structure over their frames, rather like a dense fruitcage. In our normally changeable climate, this would draw the plants during periods of dull weather, so we devised a movable system. At each corner of the frame a tall fencepost was concreted in, the same width apart as the walls but 0.5m beyond the end and a 3m horizontal crossbar bolted to the tops of each pair. The uphill bar was 2.2m above the ground, the other a little bit more. Thus the seven 2mm wires running from one to the other along the frame are above head height but within reach. One end of each wire is secured to a large eye-screw in the crossbar, the other to a ringbolt through the bar at the far end so that they can be individually tensioned. Two 3m wide shade-nets, each slightly longer than half the frame, were slung below the wires on simple plastic cable-ties. One end of each net is fastened to a crossbar, the free ends to 3m battens hanging from the wires. When the nets are over, the two battens hook together halfway along the frame; when drawn back the battens hook to the crossbars, the nets hanging in folds clear of the frame. Thus if it rains, drips from the nets do not fall on the plants. As the cable ties are expendable, the nets can be taken down for the winter. So effective was this system and so quick and easy to use, that we hope to extend it to some of our other frames as soon as time permits. During the hottest days even the gardeners took refuge under its cooling canopy. The plants loved it, what more need be said?

FORWARD THE RETREAT
PART 2

The garden begins to take shape and the plants we have moved have established well

by LYNN ALMOND

WALL-FRAMES-HERBACEOUS BORDERS

The railway between Perth and Dundee runs along the north side of the garden. I felt I wanted to make the garden more private. I instructed my man to build a two metre brick wall with trellising set in halfway down every 2 to 2.5m. I wanted the trellising partly to allow views through to the fields and the Sidlaw hills beyond. The wall is not, of course, high enough to hide the trains (they tower three or four metres above it), but it does hide the track. This wall is about 25m long and has recently been extended by another 10m behind a projected paved area with low raised beds. I suggested a single brick wall with pillars set in it to buttress it and I said I wanted frames behind it for my plants in pots, seed pots and maybe a bulb frame with lattice pots.

The final product is a magnificent feat of engineering and perseverance – and a great labour of love. Because of the considerable vibration from the occasional goods train, which actually shakes the house, M decided it should be very well buttressed. The buttresses are on the railway side and start 1.5m out and taper upwards for 1.5m and thus form the sides of the frames. The frames are 2m wide and alternate between having trellis 70cm up and full wall behind them. There are four trellised sections and nine frames altogether. The frames without trellis are used for plants which do not need too much light eg bulbs and shade-loving plants. One frame has been mouse-proofed with a close fitting lid with wire mesh on it. I had not had any previous problems with mice but suddenly in spring 1993 my pots of crocuses were devastated. The frames were not built then so I put all the pots in a large tray and wrapped it in wire mesh. The following spring I was heartened to see that quite

a few of the pots had shoots. Plans to plant out my special crocuses in basket pots in the raised beds had to be revised.

One thing I had not realised is that the frames would stay so cold and that the snow stays longer there than in the rest of the garden. I do not know if this will be a problem but I am considering installing soil warming cables to keep the plunge for the crocus, hardy frits and marginata-type primulas above freezing, probably from the end of January onwards. I had lost quite a lot of bulbs before the frames were built, especially in the second winter we were in the new house. The first winter I had covered the pots but in the second one I did not bother. It was interesting that most of the frits survived but the bulbocodium type narcissi rotted. In summer, conversely, they get quite a lot of sun because it sets in the NW. This causes problems with the sand plunge drying out.

BEHIND THE SCENES

The 'behind the scenes' part of the wall is of the most interest to rock gardeners. The bed in front, 20 x 4m, is mainly filling up with the larger herbaceous plants which I did not have room for in the older garden. Items of interest here are the front edging of the much maligned London Pride, *Saxifraga umbrosa.* This was already elsewhere in the garden and in its present position is proving to be a good aid in preventing the blackbirds kicking the top-dressing off the bed. The other main plant of note is the 1.5m wide bush of *Daphne retusa* planted near the house for its lovely perfume in spring. I had to leave an even larger plant in my old garden but I did not have long to hunt for a replacement. When a friend wanted to get rid of a *D.retusa* and " Would I like it ?", I said "Yes". Daphnes, of course can not be moved, but this one had been in lovely leafy soil and lifted easily in Nov.1993. It did not turn a hair and is still flourishing. The wall itself will have slightly tender shrubs planted against it, including tree peonies. Why, oh why, do gardening magazines continue to feature the lovely *Paeonia suffruticosa* 'Joseph Rock' when it is unobtainable? Please notify me of any sources !

DWARF RHODODENDRON BED

Despite the dry atmosphere and sandy soil in the old garden, dwarf rhododendrons especially the smaller leaved ones, did well in the north-facing front garden. The new bed is situated almost in the centre of the side garden and is an area of 10 x 6m.

This seemed to be the most pleasing position for the bed but unfortunately it does not have much shade from existing trees. I have planted a couple of cultivated hazels as recommended by James Cobb to provide some shade in the summer eventually.

I weed-killed this area and also that for the Japanese garden in the spring of 1992. We have a photograph of it as M was digging it a few months later with one metre high cow parsley round the brown dead patch. Others have said that weed killing first made preparing the beds easier but in our case it was probably more trouble than it was worth. We now just cut the turf off about 3-4cm deep and pull out any pernicious looking roots (very few other than cow parsley and couch) as we double dig. The level of the bed facing the lime tree was raised by burying spoil from the pond under the good top soil. This edge of the bed has been faced with dry stone walling brought from a small semi-circular bed at the old garden – we did not realise that there was so much stone in it.

MORE RHODODENDRONS

The rhododendrons were planted together mainly at the SE quarter of the bed. Over the years many have lost their labels. I now use the black labels which you scratch the name on and tie them on with wire. Rhododendrons from the old garden which I remember the names of are 'Tessa Roza', a rich pink one which grows about one metre high with a twiggy habit and flowers early and often again in the autumn, as does *R. russatum* – a small flowered deep purple one with glossy leaves. 'Euan Cox' is a fine compact yellow one while 'Lavendula'- a hybrid between *R..russatum* and *R. saluenense* has attractive aromatic foliage and covers itself in large rich lavender flowers. Grown for its spiky leaves is *R. roxieanum oreastes*. I was sorry to lose my plant of 'Snipe' which has large lilac pink flowers; I lifted it for a show and it did not re-establish properly. Recent acquisitions have been 'Alpine Gem', a tiny *R. ferrugineum* hybrid with deep pink flowers. For their wonderful leaves I have bought *RR. bureavii* (Fig.73 p.337) and *pachysanthum.* I saw them both in the Murrel garden in Fife and could not decide between them. Both have thick indumentum on the young leaves (that on *bureavii* is a rich rusty red) and will grow about two metres high so are not for very small gardens. Smaller ones I have acquired are 'Reuthe's Purple' with deep purple flat-faced flowers and dark foliage, *hanceanum* 'Canton Consul' with

creamy white flowers in late May and bronze new leaves and 'Lucy Lou' which is white with black stamens, similar to *leucaspis* but hardier. I passed on my *leucaspis* when it got too big for my previous garden, only to be told it was the hybrid 'Snow Lady'.

Between the rhododendrons and towards the edge on the east side I planted *Roscoea alpina, R. longifolia* and *R. scillifolia*, all pink or purple ones, hepaticas in blue, white and pink, *Primula sibthorpii* – the deep purple Turkish form – and *P.* 'Gigha", a white primrose which multiplies rapidly. I made the mistake of planting *Fragaria* 'Pink Panda' here; I find it attractive with its deep pink strawberry flowers but it needs to be placed where its runners can not do any harm. Bulbous plants here include *Corydalis transylvannica* (the pale pink form which multiplies well), *Fritillaria pallidiflora, Cyclamen coum* and *C. hederifolium.* Dwarf Ericaceae include *Kalmiopsis leachiana, Phyllodoce empetriformis, Polygala chamaebuxus* and a large plant of x *Phylliopsis hillieri* 'Pinocchio' from a generous friend.

At the foot of the drystone wall on this side I have planted moisture loving primulas especially *P. denticulata.* They have done well partly because the overflow from two baths holding special goldfish has been channelled into this area. I plan to have an area for the taller candelabra primulas elsewhere.

I am hoping the autumn gentians will do well for me here and I have planted quite a few different ones. 'Bernardii' and 'Blue Heaven' have definitely survived and *G. ternifolia* is prospering. There is little sign of the others. The dwarf rhododendron/azalea beds in the RBG, Edinurgh look stunning with their carpets of blue in the autumn so I hope in time I will be able to produce a similar result.

LILIES AND MECONOPSIS

Both the Himalayan and the Chinese forms of *Cardiocrinum giganteum* have been planted together with beer traps for slugs. I planted on the west side the few lilies and meconopsis which I already had. *M. betonicifolia* was the only one which thrived in the drier conditions of the old garden. I have a rich blue form and a few white ones. A few sickly *Meconopsis grandis* (?) struggled especially in the long drought of 1994 and it remains to be seen if they will survive. A plant of M. 'Jimmy Bain', a strong growing form of *M. x sheldonii*, has flourished. Other mecs

being tried here are M. 'Slieve Donard' and *M. wallichii,* an ice-blue *regia* type. Ericaceous plants here are *Kalmia latifolia, Enkianthus campanulatus*, which should have good autumn colour and *Menziesia multiflora.*

I have not planted any heathers in this bed as they don't seem to fit. The winter flowering ones, which were the only ones to survive in the old garden, have been planted on the roadside verge outside the gate, as has one rhododendron whose roots were infested with the mouse plant, *Arisarum proboscideum.* This was one plant I was not wanting to transfer to the new garden as it was taking over an increasing area and was impossible to eradicate. Other plants I hoped to leave behind were *Crocus speciosus* which seeds itself everywhere but some are well embedded in rhododendron root balls. Other rapid seeders which I had hoped to eliminate were chionodoxa and scilla while I hope to confine *Anemone blanda* to a shrub border where there are no precious plants. Perhaps these thugs seem more overwhelming in a small garden but if allowed to spread have vastly more scope in a larger garden.

JAPANESE GARDEN

Do I hear cries of 'why are details of a Japanese garden being included in The Rock Garden'? This is not in fact the first time the subject has been mentioned. In the SRGC Journal 1959, 6, 339, there is an article discussing mostly the philosophy of this garden form. I take a more pragmatic view. In the old garden I had a lovely Japanese lantern by the pond and the 'folly' of a Japanese gate at the top of the steps down to the lower half of the garden.

Japanese gardens usually contain many of the plants we like to grow – dwarf azaleas, camellias, pieris, attractive conifers – and they have attractive rocks and are covered with coarse sand or gravel (scree !).

The area is 8 x 8m. It was sloping down towards the herbaceous border so I had to level it out as well as digging it over. I have not made it exactly true to Japanese garden principles. For example I have used gravel (approx. 4t) which does not need to be raked to keep it tidy. The back is screened from the railway with a two metre high bamboo fence. There is a small raised area in the far left corner as you look at it through the gateway at the entrance. This has 'waterfall' falling into a 'pool' which then forms a 'stream' which meanders to the right of the garden

before leaving it in the near right hand corner. We were lucky to to find some steely blue rocks like two cm thick slates which we have used to imitate the waterfall and the stream. Largish rounded cobbles have been put in the 'stream' to create the feeling of movement. Along the streamside are ornamental grasses while mossy saxifrages have been planted instead of mosses. My Ericaceae include pieris, dwarf evergreen azaleas and a large camellia. Conifers include *Pinus mugo pumilio* which is not very small but which I keep in check by candling. This is the technique of breaking the young shoots in half before the needles have expanded. There is also *Chamaecyparis obtusa* 'Templehof' with twisted fans of dark green leaves. I did have a plant of *Sciadopitys verticillata* with whorls of stiff leaves like umbrella spokes. It survived the rabbits' attentions last year but now appears to be dead. I also moved a 75cm high *Acer palmatum* 'Aureum' from the old garden and it seemed appropriate to plant it here. Luckily it is sheltered enough to prevent the leaves being scorched by the wind. A few hostas have been planted along the right hand edge including 'Blue Angel' with large blue leaves, 'Frances Williams' an attractive one with cream edges to its blue leaves and *venusta*, a small leaved one which spreads well and has 15cm high violet flowers.

I have had unfortunately to fence the area with wire mesh this winter. Perhaps the Japanese got the idea of the neatly pruned azaleas from some zealous rabbits; my plants will be neat buns for some time. The rabbits, of course, loved the grasses as well. I may have to keep mesh over the mossy saxifrage as the blackbirds almost destroyed my clumps of it.

PS. I have mentioned that we brought various things from the old garden. We had added these to the garden over the years and knew that the stone especially would be of use. All these were moved and the garden made good before we put the house up for sale.

Fig. 73 Rhododendron bureavii (p.333) Lynn Almond

Fig. 74 *Gentiana* 'Donald Lyle' (p.352) I McNaughton

Fig. 75 *Gentiana veitchiorum* (p.344) I McNaughton

Fig. 76 *Gentiana sino-ornata* in wild (p.343) I McNaughton

Fig. 77 Gentian with hover fly pollinator (p.348) I McNaughton

Fig. 78 *Gentiana ornata* Gosainkund 4000m (p.342) Fred Carrie

Fig. 79 Evelyn Steven's garden in winter (p.367) Evelyn Stevens

Fig. 80 Evelyn Steven's garden in summer (p.367) Evelyn Stevens

AUTUMN GENTIANS

Part 1: Their introduction and improvement through breeding and selection

by I. H. McNaughton

The Asiatic or autumn-flowering gentians belong to the Section Frigida of the Series Ornatae (according to the 1937 Classification of Marquand). Their taxonomy and that of their hybrids has been the subject of much controversy. Anyone with a particular interest in taxonomy is referred to an article by James Cullen, formerly of the RBG, Edinburgh (Cullen 1978). Part 1 of this present article describes species and hybrids and breeding systems while Part 2 deals with cultivation and propagation.

To describe the taxonomy of the autumn gentians as a minefield is no exaggeration. The species of autumn gentians described here are restricted to those normally grown in gardens or from which cultivars have been obtained, either directly as seedlings or following inter-specific hybridization. For a newly discovered plant to be described as a species, a diagnostic, unique herbarium specimen must be provided, called the type specimen. For introductions to the UK, type specimens are kept at either the RBG, Edinburgh or at Kew Gardens. It is not unusual for the specimen to be accompanied by field notes describing the plant and its geographical location, altitude and terrain. Sometimes these are written by the actual finder.

The morphology of a new species must be accurately described by a specialist taxonomist (the descriptor) in Latin and in English, and the results published in an appropriate journal, before it can officially be recognised. The descriptor's name is usually abbreviated, eg Balf. (I.B.Balfour). A new species is named according to the Linnaean system. The name first given to a new plant is the only correct one and always takes precedence over subsequent ones.

DISCOVERY OF SPECIES IN THE WILD

G. ornata (G. Don.) Grisb.

The first Asiatic species to be discovered and named was *G. ornata*; it was found in 1820 by the Danish-born Nathaniel Wallich in Nepal. Surprisingly it was not in cultivation until 1930 when it was re-introduced by T. Hay, according to Cullen (1978). Other species had, in the interim period been introduced as *G. ornata* but had been wrongly named. *G. ornata* is a compact grower with short-stemmed dumpy flowers (Fig.78 p.339) which are normally pale blue, although there are darker coloured forms. I would consider it more a plant for a trough or alpine house rather than the peat bed. It is not readily obtainable. New variants of *G. ornata* were found during a 1995 expedition to Nepal and these will be described by Ian Christie, a member of the expedition, in a later issue of The Rock Garden.

G. ornata has been an important parent in hybridisation and it has contributed its pale blue character to several fine cultivars. Inter-specific crosses with *G. farreri* produced 'Devonhall' (from *G.ornata* x *G. farreri*) and 'Farorna' from the reciprocal cross. 'Drakes Strain' arose as seedlings from 'Farorna'.

G. ternifolia. Franch.

G. ternifolia was brought back from Yunnan in 1882 by Pere Delavay and was officially described by M.A.Franchet in 1884 but was not grown in gardens until almost 100 years later. Plants, supposedly *G. ternifolia,* were collected in 1981 by the Sino-British Expedition (SBEC) to Yunnan. Two clones were given the names 'Cangshan' and 'Dali'. I am not sure that these plants are true *G. ternifolia* since they do not comply fully with the original description of Franchet. They were discussed in an article in The Rock Garden by Christie and McNaughton (1989).

I have found that 'Cangshan' and, particularly, 'Dali' are rather difficult to grow and do not flower well; other people have had the same experience. However, there are excellent floriferous clumps of these gentians at the RBG, Edinburgh where they have settled down well over the last 10 years.

'Cangshan' and 'Dali' hybridise with other species without much difficulty. Offspring include a 1991 Forrest Medal winner

'Margaret' derived by Henry Taylor from a three-way cross involving three species; *G. ternifolia, G. sino-ornata* and *G. farreri.*

Plants more closely resembling the original *G. ternifolia* were brought back in 1991 by the Chungtien, Lijiang and Dali (CLD) expedition to the same general area.. The clone CLD 1406 appears to have consistently ternate leaves. The situation should be clarified by a proper taxonomic study.

G. sino-ornata Balf.f.

G. sino-ornata was discovered in NW Yunnan in 1904 by George Forrest. It is regarded as one of the finest of his many introductions. I will not attempt to describe the species as it is very variable in many characters such as flower colour, growth habit and leaf morphology. Several new introductions of *G. sino-ornata* were brought back in 1991 by the CLD expedition. These plants are late flowering and have shown a a range of flower colour from deep blue to almost white. The large rather narrow flowers are usually borne singly on long trailing stems. They are quite unsuited to pot culture (perhaps more suited to hanging baskets?) but they associate well with other plants by scrambling through them. The flowers are attractive and, with their long stems, make good cut flowers for table decoration. All these new acquisitions of *G. sino-ornata* were found growing on wet boggy ground (Fig.76 p.338), never in dry areas. It is also worth noting that they differ considerably in growth habit and leaf morphology from the clone(s) well established in our gardens since first brought back by Forrest over 90 years ago. It is possible that the original plant no longer exists in cultivation.

It is probable that inter-crossing with other gentian species shas occurred accidentally in gardens or nurseries, thus altering the genetic constitution of so-called *G. sino-ornata.* In view of the inherent variation within the species it is of interest that in 1967 R.N.C. (Bud) Lyle of Grange Nurseries, Alloa raised three cultivars of different colour from a bed of *G. sino-ornata*, which I am assured was well isolated from other gentians.

G. oreodoxa H.Smith

G. oreodoxa inter-grades with *G. sino-ornata* in its geographical distribution and is morphologically similar (Cullen 1978). *G. oreodoxa* was grown for many years at the RBG, Edinburgh as

G. sino-ornata 'Troughs Form' (sometimes wrongly spelled 'Troggs' or 'Trugs Form'). It grows vigorously and is a good garden plant with large mid-blue flowers. A numbered clone has been maintained at the RBG, Edinburgh. These plants are, however, quite different from the type specimen of *G. oreodoxa* at edinbirgh. This is a much smaller plant in all its parts, with short leaves resembling *G.ornata.* It is attributable to H.F.v. Handel-Mazzetti who collected it in 1915 on the Inter Sinense Expedition to Yunnan. It may not be in cultivation. Forrest may have found *G. oreodoxa* earlier but did not provide the type-specimen.

G. lawrencei Burkill

G. lawrencei is an interesting species which has been described as resembling a weaker growing more delicate *G. farreri.* It was found by a Frenchman, Jules Brocheral, in 1905 in Mongolia, far to the north of the habitats of other Asiatic gentians. It has recently been reported by the Chinese to be common throughout Northern China in Qinghai, Gansu (Kansu) and Xizang (formerly Tibet). *G. lawrencei* is probably no longer in cultivation. I have not seen it or met anyone who has it. It has made a contribution to our gardens as a parent of the attractive *G.x carolii* (from *G. farreri x G. lawrencei).*

G. veitchiorum Hemsl.

G. veitchiorum is a very important species. It was discovered in 1915 in Szechwan by Ernest Wilson, more famous for introducing many outstanding trees and shrubs. The expedition was sponsored by the seed firm of Veitch, hence the specific name. It has dark, royal blue flowers (Fig.75 p.338) distinctively marked with purple. Its leaves are fairly short and broad and it has a compact habit. The original species is now extremely scarce. Some plants offered for sale may not be correctly named. A later introduction of *G. veitchiorum* was made in 1942 by Ludlow and Sherriff; a clone of this (L&S 13321) was maintained at Jack Drake's Nursery for many years but recent information is that they no longer have it.

Several new collections of *G. veitchiorum* have been made by the 1990 CLD and the 1994 Alpine Garden Society (ACE) expeditions to China. Some of these plants have been made available to nurseries by Polly and Mike Stone of Askival Alpine Nursery, Fort Augustus. There seem to be differences in growth habit and leaf characters between plants obtained by these expeditions, perhaps

indicative of natural variation within the species. Flower colour, however, is consistent and characteristic. A white-flowered form has been found in the wild .
G. veitchiorum has been a parent of several important hybrids notably 'Inverleith' (with *G. farreri*) and *x stevenagensis* and *x bernardii* (both with *G. sino-ornata*). Virtually all dark blue gentians have *G. veitchiorum* somewhere in their ancestry. Several cultivars have arisen as open-pollinated seedlings of the original introduction.

G. prolata Balf.f.

G. prolata was found in 1914 by R.E. Cooper, then employed by A.K. Bulley of Ness Gardens, Cheshire. This usually small flowered species is rather shy flowering and the flowers do not open fully but do so sufficiently to reveal attractive spotting within the corolla tube. A larger flowered form has been offered by Drake's Nursery and a fine form was introduced by the late Len Beer. *G. prolata* has seldom been used in hybridisation and its contribution to garden cultivars has been minimal. Only two hybrids involving *G. prolata* have been recorded to my knowledge. One, named 'Edina',was obtained in 1937 from the cross *G. ornata x G. prolata*. It was said then to be a weak grower and now seems defunct. *G. prolata* and *G. ornata* have often been confused; they grow together in the wild, for instance in Nepal. and are thought to produce natural hybrids. A hybrid named *x davidii* was obtained from a cross with *G. lawrencei.* It probably no longer exists either.

G. hexaphylla Maxim. ex Kusn.

G. hexaphylla was introduced into cultivation by Farrer from Kansu in 1914, although it had been found in 1894 by the Russian, G.N. Potanin. This plant was not then properly described and so could not be officially named. The leaves of *G. hexaphylla*, as the name implies, are normally in fairly dense whorls of six and the flowers have six petals instead of the usual five. *G. hexaphylla* has proved difficult to maintain and is now scarce. Its hybrid with *G. farreri, G. x hexa-farreri*, is much more amenable, a case of hybrid vigour perhaps. It in its turn has given rise to several cultivars (seedlings from it).

G. farreri Balf.f.

The discovery of *G. farreri* and what has happened to it subsequently merits an article itself. It was first found by Reginald Farrer and William Purdom in the Da-Tang mountains during the 1914-15 expedition to North Kansu which also brought back *G. hexaphylla.* The intense excitement of its discovery is graphically described by Farrer in The Rainbow Bridge (Farrer 1926). To quote " *in the fine turf that crowned the top of a sloping boulder there stared at me a new gentian, a gentian that obliterates all others of its race! I gave tongue for Bill and, together, in reverent silence, we contemplated that marvel of luminous loveliness.* He goes on to describe it as having " *a subtle swell to the chalice, that is streaked outside in heavy lines of black and purple that divide long vandykes of dim periwinkle blue, with panels of Nankeen buff between: inside, the tube and throat are white but the mouth and the wide bold flanges are so luminous and intense a light azure that one blossom of it will blaze out at you among the grass on the other ide of the valley. It literally burns in the alpine turf like an electric jewel, an incandescent turquoise."*

What a pity that colour film was not available in 1914 to record the wonderful sight. However, even with the best modern films, gentians are notoriously difficult to photograph to show their true colours.

Farrer attempted to send back living plants but, unfortunately, as he found out later, none survived; the Trans-Siberian journey killed them all. He was devastated to think he had lost the newly discovered gentian but luck was with him. *G. hexaphylla* was known to occur in the same general area having been discovered by an earlier expedition.. So Farrer sent porters to collect seed. On sorting through this material he found a few capsules that were different from the others and, as a precaution, gave them a different collection number, still, presumably labelled *G. hexaphylla.* All the seed was sent back and eventually germinated at Edinburgh. Plants flowered in 1916 and Farrer, now back home, received a parcel from the RBG. " *I opened the box and there, large and lovely and luminous as ever, was the lost Da-Tung gentian, which I had dismissed hope of ever seeing again".* The new species was then officially described and named after its discoverer. It is interesting to note that the plants introduced into cultivation in this fortuitous way were not from the same population first seen and so vividly described by Farrer.

Plants stated to be *G. farreri* were found during a later expedition by Ludlow and Sherriff in 1942-43 at about 4200m in the mountains around Lhasa in Tibet. Herbarium specimens of these differ from the original plants, particularly in having shorter and broader leaves. Harry Smith described these plants as *G. farreri* var. *brevior*. Lhasa is about 1500km further south than Kansu where Farrer made the first discovery. Because of this geographical separation and their morphology it is my opinion that these plants may not be the same species and it is doubtful whether they were ever brought into cultivation.

There have been few recent introductions of *G. farreri*. The Kansu region is several hundred kilometres to the north of the other main gentian areas and, because of its remoteness, has seldom been visited by collectors. Perhaps it will be reintroduced in all its glory one day.

Since its introduction the true *G. farreri* has become rare in cultivation and there has been much controversy about its continued existence. It was certainly common in gardens in the 1920s and 1930s and was said to be easy to grow, Perhaps significantly the usual method of propagation was by seed which set readily. Because of this it is probable that hybrids, superficially resembling *G. farreri* have superseded the species in gardens. Few, if any, plants available today labelled *G. farreri* can match Farrer's exuberant description of the plants he discovered in the Kansu mountains in 1914. It is perhaps ironic as well as sad that *G. farreri* is likely to be relegated to a variety of *G. lawrencei* according to recent Chines studies.This classification is hard to reconcile with the fact that *G. x carolii*, said to be a hybrid between *G. farreri* and *G. lawrencei* is almost sterile. Further research seems necessary.

Even if the continued existence of the originally collected *G. farreri* is in doubt, the species has been the parent of a number of important hybrids: *G. x macaulayi* (*G.sino-ornata x G. farreri*); *G. x carolii* (*G. farreri x G. lawrencei*); *G. x hexa-farreri* (*G. hexaphylla x G. farreri*); 'Inverleith' (*G. farreri x G. veitchiorum*); 'Farorna' (*G. farreri x G. ornata*).

INSECT POLLINATORS, THE FLORAL MECHANISM AND BREEDING SYSTEM

The inherent variability of the autumn gentians can be explained by the fact that they are, almost certainly, cross-pollinated. This is facilitated by a floral mechanism in which the pollen is seldom, if

ever, shed within the open bud and, more importantly, the anthers of any one flower do not shed pollen at the same time as the stigma becomes receptive. Anthers usually dehisce soon after the flower opens; at this stage the stigma is pointed and incapable of receiving pollen. After a few days the style elongates so that the stigma is above the level of the anthers; it then splits into two parts which coil back as they become receptive on the outer surfaces. Stigmas can remain receptive for several days after the pollen has gone. The technical term for a situation where the pollen is ripe before the stigma is receptive is protandrous; this is an effective out-breeding system.

Other important parts of the flowers are the nectaries; in gentians they are situated at the base of the corolla tube. It is not generally recognised that gentians have nectaries. Three out of the four books on gentians show flower diagrams omitting any nectaries and there is no mention of them in any text.

Hoverflies of various species and sizes are the most frequent insect visitors to gentians (Fig.77 p.339). Small bumble bees are also fairly common; larger bumble bees are more rare, as are (surprisingly) honey bees. Hoverflies visit the flower only for pollen. They do not enter the corolla tube, merely crawling over the anthers. Bees, on the other hand, delve down inside the flower, collecting nectar as well as pollen. In delving down they inevitably brush against the receptive stigmas and cross-pollinate.

I have observed moths visiting gentian flowers (in the morning) probably extracting nectar with their long proboscises. Butterflies are also occasional nectar seekers. It is interesting to note that Lepidoptera are stated in the Flora of the British Isles to be the main pollinators of *G. verna*.. Although bees are known o be capable of distinguishing different colours and even shades, the majority of insect visitors to the autumn gentians are indiscriminate. The structure of the flower, together with the behaviour of the insect visitors are important factors in determining the breeding system of autumn gentians but this subject has received scant attention.

Information is also lacking on chromosome numbers. Such information is vital if scientific breeding is to be carried out. Differences in chromosome numbers could also account for some species being difficult to cross, others relatively easy. Why should some varieties in a bed of gentians set seed, others none at all? For

example *G.x carolii*, 'Blue Bonnets' and 'Leslie Delaney' never seem to set seed.

It is only very recently that any chromosome numbers have been ascertained for gentians of the Section Frigida, although earlier counts had been made for spring and summer flowering species. *G. veitchiorum* was found to be diploid (2n=24), *G. farreri* and *G. sino-ornata* tetraploid (2n=48) (Yuan and Kupfer 1993). Counts have not yet been obtained for the other species described here. These results clearly differentiate *G. veitchiorum* from the *G. sino-ornata* group and confirm it as a species in a true biological sense and not merely based on studies of herbarium specimens. Hybrids between diploid and tetraploid parents would be triploid and thus cytologically unbalanced, resulting in sterility or only partial fertility. Some of the poor seed setting already referred to could be explained on this basis. Further cytological studies could prove invaluable in sorting out the species and relationships between them.

BREEDING 1930 – 1950

The breeding of autumn gentians may be divided into two approximate time scales, 1930-1950, and from 1950 to the present day. The early hybridists were mainly intent on inter-crossing the so-called species and this was achieved by deliberate hand-pollination. The species of greatest importance were *G. farreri, G. ornata, G. sino-ornata* and *G. veitchiorum.* It is appropriate to mention these hybridists by name as a tribute to them.

R.H.Macaulay of Lochgilphead, Argyllshire was the first. In 1931 he crossed *G. sino-ornata* with *G. farreri* to produce *G. x macaulayi.* This very important hybrid was followed in 1934 by *G. x carolii* (from *G. farreri x G. lawrencei*). *G. x bernardii* (from *G. veitchiorum x G. sino-ornata*) was produced about the same time, named by Macaulay after his cousin Bernard. Also in 1931, **A.G. Weeks** raised another important hybrid, *G.x hexa-farreri,* from *G. hexaphylla x G. farreri.* In 1938, **W.E. (Bill) Mackenzie** (see p. 420), who was then working in the Propagation Department of the RBG, Edinburgh, crossed *G. farreri* with *G. veitchiorum* resulting in, perhaps, the most famous cultivar of all, 'Inverleith'. The true 'Inverleith' is, alas, now almost unobtainable. A stock is maintained at the RBG but few others have it. The true plant has large, striking royal blue flowers borne, generally singly, on long trailing stems. Although it is vigorous it produces few offsets and

so is slow to multiply. It is a sad commentary that wrongly named clones have been widely circulated in nurseries and garden centres; such inferior plants have obviously proved much easier to propagate.

In the mid 1930s **Andrew Harley**, who lived in Glendevon, Perthshire, produced two important plants; the attractive , very pale blue, 'Devonhall' from *G. ornata x G. farreri* and the small neat growing 'Glendevon' from *G. ornata x G. sino-ornata.* 'Glendevon' closely resembles *G. ornata* and may be a seedling from it, not a hybrid. The *sino-ornata* parentage of ' Glendevon' is doubtful as none of its characters is evident. At about this time **Frank Barker** of Six Hills Nursery, Stevenage, raised *G. x stevenagensis,* later given the name 'Frank Barker' in his honour.The parents were *G. sino-ornata* and *G. veitchiorum.* G.x stevenagensis inherits the very dark blue colour from its parent as well as the purple markings. It is multi-headed whereas *G.x bernardii*, from the reciprocal cross is usually single-headed. *G.x stevenagensis* 'Dark Form' is a particularly good deep blue with less of a purple tinge than 'Frank Barker'. Plants sold as *G.x stevenagensis* are sometimes wrongly named and it is also frequently confused with *G. x bernardii.*

In the 1940s **Dr W.L. Lead** of Stockport crossed *G. veitchiorum* with *G. ornata* resulting in a hybrid with the latinised name 'Vorna', a compact plant with deep blue flowers. At this time G.H. Berry of Enfield was active in producing an array of inter-specific hybrids, all with latinised names. The most important were probably 'Farorna' from *G. farreri x G. ornata* and 'Fasta Highlands' a vigorous plant with large flowers, from *G. farreri x G. x stevenagensis.* 'Farorna' may no longer be in cultivation but it left a legacy since it was the parent of the well-known 'Drakes Strain'.

Latinised cultivar names such as 'Farorna' have been ruled invalid by the RHS so that such cultivars will have to be re-named if they are to retain their identity, a confusing situation. Although some earlier inter-specific hybrids no longer seem to be in cultivation and others scarcely so, there is no doubt that they have been of considerable importance as parents of the wide range of cultivars available today, one might call them the 'building' blocks' for further development.

BREEDING – 1950 TO DATE

We now come to the second phase of breeding, from approximately 1950 to the present day.

Col. J.H.(Jack) Stitt in the 1950's, at his nursery in Blairgowrie, produced several cultivars, all selected seedlings from open-pollination carried out by insect visitors, only the seed parent being known. This rather *ad hoc* method of breeding resulted in 'Elizabeth Brand', a *G.x macaulayi* seedling named after his propagator, 'Ida K' a seedling from wild collected *G. ornata* and 'Christine Jean' and 'Midnight', both seedlings of 'Inverleith'. Unfortunately, apart from the undesirable straggly 'Christine Jean', these cultivars are no longer obtainable or are rare in cultivation.

Many gentian cultivars originated from **Jack Drake's** nursery. Virtually all were the result of open-pollination, followed by rigorous selection of large numbers of seedlings. 'Alpha'and 'Omega' were both obtained from *G. x hexa-farreri*, 'Kingfisher' from *G. x macaulayi*, 'Drake's Strain from 'Farorna' (as previously mentioned), 'Blue Heaven' from *G. veitchiorum*. 'Blue Flame', 'Dusk', 'Inverleith Seedling' and 'Susan Jane' were all selected seedlings from 'Inverleith'. Most of these cultivars are still obtainable today from Inshriach and elsewhere.

Another Scottish nursery which, since the early 1950s, has raised a number of good cultivars is Maryfield at Leslie, Fife, formerly run by **N.C. (Neil) Lyle**. The first Maryfield hybrids were named in Coronation Year 1953, 'Coronation', 'Edinburgh' and 'Elizabeth'. These, together with ' Maryfield' were produced by hand-pollination of 'Devonhall' with the 'Aberchalder Form' of *G. x hexa-farreri* as the pollen parent. 'Elizabeth' has good garden presence with large deep blue flowers with little internal marking, on upright tallish stems. 'Maryfield' is a very pale blue cultivar.

Neil Lyle also hybridised 'Devonhall' with 'Inverleith' to give 'Inverdevon'. In this case 'Devonhall' was the pollen parent. 'Devonhall Supreme'is an improved selection of 'Devonhall', presumably a seedling from it. 'Barbara Lyle' (named after Neil's daughter) is a deep blue flowered seedling of *G. veitchiorum*, a stunning colour, with less of the purple tinge characteristic of this species.

Much later, in the 1980s, a second phase of breeding at Maryfield resulted in a number of new cultivars. All were the result of a particularly good seed year in 1987 when the hoverflies were very active, according to Neil. Approximately 2500 seedlings were

grown and assessed. Pollen parents were not known and seed parents not recorded, seed merely being collected *en masse* from the nursery frames and beds. Four cultivars fom this spate of activity (insect and human) deserve special mention, 'Donald Lyle' (Fig.74 p.337), (named after Neil's son), and 'Robyn Lyle', (named after his granddaughter), both excellent pale blues, vigorous yet compact. 'Lavender Lady' is a distinctive and unusual colour form, its pale flowers contrasting with dark green foliage. 'Loch Maree' is very floriferous with vivid sky blue flowers, attractively spotted within the corolla. With the recent closure of Maryfield Nursery it is important that these, and other Maryfield gentians, are conserved and the more recent ones become more widely available.

R.N.C. (Bud) Lyle, Neil's younger brother, of Grange Nurseries, Alloa, produced three cultivars; 'Leslie Delaney' (pale blue), 'Marion Lyle' (deep blue with a metallic sheen) and 'Mary Lyle' (white tinged with pale blue), all named in 1967. All three were open-pollinated seedlings of *G. sino-ornata* – indicative of the latent variation inherent within the species, particularly as Bud assured me that no other gentian was in the vicinity to cross pollinate. Regrettably 'Marion Lyle' may now be extinct. Bud said it was the finest gentian he had ever seen.

Edrom Nursery, Berwickshire, managed at first by the late **Alec Duguid** and later by **Jim Jermyn**, has produced several cultivars, 'Eleanor' and 'Tweeddale Strain' being the best known. 'Tweeddale Strain' was obtained initially from a complex hybridisation of *G. veitchiorum* with possibly 'Inverleith' and 'Susan Jane'. Alec Duguid who died in 1994 aged 91 maintained vegetatively a clone from the original introduction of *G. farreri* firstly at Edrom and latterly at his retirement home in Ballater. I calculate this to be 78 years, 1916-1994, surely the ultimate in gentian conservation. The 'Duguid Strain' of *G. farreri* must be unique; it is currently maintained at Aberconwy Nursery where it is possible to buy it.

Jeremy Kay who died in 1993, was another gentian enthusiast. He was, for a number of years, engaged in selecting various colour forms of *G. farreri* at his nursery in Silverdale, Lancashire. A number of the best of these will be conserved. This strain was said to be directly descended form the original introduction obtained from Joe Elliott who grew it at his nursery at Broadwell in the Cotswolds, a chalky area, perhaps demonstrating the alleged lime tolerance of *G. farreri.*

Ian Christie has raised a number of cultivars throughout the 1980s and 1990s at Christies Nursery, Westmuir,Angus. 'Strathmore' is vigorous and provides good ground cover. It is rather late flowering but the large pale blue flowers show up well in dull autumn days. It is unique in having gained an Award of Merit as a cut flower in 1990. 'Glamis Strain' has good bright sky-blue flowers with varying degrees of white throat markings. The more recent 'Cairngorm' is early flowering and dark blue. Its main attributes are its neat habit, so that it looks good in a pot and, because it roots easily from the nodes, it is easily multiplied -a good nurseryman's plant.

George Sturrock of Angus Heathers, Letham, Angus is yet another Scottish nurseryman with an avid interest in gentians. This nursery produces many thousands of gentians annually, mostly sold wholesale, some to the continent. George recently retired from the nursery and now has more time to pursue his main interest - gentians. He has been assessing the potential of large numbers of seedlings, grown as spaced field-grown plants. He has yet to name a new cultivar but among his progenies I have seen several promising white-flowered plants. There is a need for a good new white cultivar; *G. sino-ornata* 'Alba' can be shy flowering while 'Mary Lyle' has a weak constitution and is prone to yellowing.

Dr Keith Lever is a keen grower and breeder of gentians at Aberconwy Nursery in North Wales. He has recently produced 'Shot Silk' which he describes as being a deep royal blue, shot through with layers of rich violet. A particularly fine and unusual cultivar it gained an Award of Merit in 1991 followed by a Farrer Medal and First Class Certificate in 1992. It is well worth seeking out but at present is only available at Aberconwy. 'Indigo' is another distinctively coloured form. Both 'Shot Silk' and 'Indigo' were selected seedlings from 'Mary Lyle', open-pollinated with *G. x stevenagensis* 'Dark Form' as the putative pollen parent. 'Serenity', a new white cultivar has just been released.

Two neat cultivars with large flowers, produced at Aberconwy, are 'Compact Gem' and 'Dumpy'. The latter was a seedling from *G. x hexa-farreri*. Keith Lever seems to have more in the pipeline and is at present selecting plants that survive and grow on calcareous soils, presumably aiming at the large potential for autumn gentians in the south of England.

I myself have been involved in gentian breeding for the past six years. *G.x carolii* is a particularly fine small-flowered Cambridge

blue. It is early flowering, late July in East Lothian in most seasons, but it has a weak constitution, however, and tends to be ephemeral. It is slow to propagate vegetatively and I have not known it to set seed in the garden. I have been attempting to produce a plant with the flower qualities of *G. x carolii* but more vigorous. It does not cross readily with other gentians; I have tried many hand-pollinations, with very little success. The best I have achieved is three or four seeds per 100 flowers pollinated. I am not aware of anyone else being successful, or even using *G.x carolii* in crosses with other gentian species or cultivars. Some of the few hybrids I have managed to raise are, ironically, smaller and weaker than *G.x carolii*. Plant breeding can often be disappointing.

I have made numerous other pollinations and now have some very compact, early flowering and floriferous seedlings but flower colour is not outstanding. I also have a few promising plants with very good deep blue flowers resembling 'Barbara Lyle' but neater growing. One of these has just been named 'Tensing' with obvious Himalayan connotations.

Breeding should have definite aims, for example, earlier flowering, improved flower colour and growth habit. Too many new cultivars have been named which have no particular merit as well as not being clearly distinguishable from existing plants.

THE NATIONAL COLLECTION

I have indicated several times the need for conservation. The NCCPG have organised National Collections of most garden plants in the UK and a list of these has been published. The National Collection of Gentians was formerly held at the Cruickshank Botanic Garden, Aberdeen. Due to lack of staff it languished and, in 1989, with new input from several nurseries, it was transferred to the RBG, Edinburgh. Now, for the same reason, it has again deteriorated. The current position is that Ian Christie has volunteered to maintain it at Westmuir – a daunting task. He has the full backing of other enthusiasts, including myself, who will endeavour to back him in this venture.

Part 2 of this article will be published in the next issue of The Rock Garden and will include a bibliography plus diagrams and tables to complement Part 1.

Cultivars of Autumn Gentians

Raiser	Cultivar	♀ Parent	♂ Parent	Date of origin	Date of award
R.H. Macaulay	x *Macaulayi*	*sino-ornata*	*farreri*	1931	AM 1931
	*x *Carolii*	*farreri*	*lawrencei*	1934	
	*x *Bernardii*	*veitchiorum*	*sino-ornata*		AM 1970
A.G. Weeks	*x *Hexa-farreri*	*hexaphylla*	*farreri*	1931	AM 1931
	'Wealdensis'	*hexa-farreri*	*veitchiorum*	1934	AM 1934
	'Inez Weeks'	*hexa-farreri*	–		AM 1934
W.E. Mackenzie	'Edina'	*ornata*	*prolata*	1937	
	*'Inverleith'	*farreri*	*veitchiorum*	1938	AM 1953
A. Harley	*'Devonhall'	*ornata*	*farreri*		FCC 1936
	*'Glendevon'	*ornata*	*sino-ornata*		AM 1937
Dr W. Lead	Vorna	*veitchiorum*	*ornata*		AM 1946
F. Barker	*x *Stevenagensis*	*sino-ornata*	*veitchiorum*		AM 1934
G.H. Berry	Veora	*veitchiorum*	*ornata*	1942	
	Orva	*ornata*	*veitchiorum*		AM 1945
	Sinora	*sino-ornata*	*ornata*	1943	
	Farorna	*farreri*	*ornata*		AM 1946
	Orphylla	*ornata*	*hexaphylla*	1944	
	Kidora	'Kidbrooke Seedling'	*ornata*	1952	
	Fasta	*farreri*	*x Stevenagensis*		
Col. J.H. Stitt	'Elizabeth Brand'	x *macaulayi*	–		PC 1966
	'Ida K'	*ornata*	–		
	'Drumcairn White'	–	–		
	'Christine Jean'	'Inverleith'	–		
	'Midnight'	'Inverleith'	–		
J. Drake	'Alpha'	x *hexa-farreri*	–		
	'Omega'	x *hexa-farreri*	–		
	*'Blue Flame'	'Inverleith'	–		
	'Inverleith Seedling'	'Inverleith'	–		
	'Susan Jane'	'Inverleith'	–		AM 1968
	'Dusk'	'Inverleith'	–		
	'Blue Heaven'	*veitchiorum*	–	1976	
	'Drakes Strain'	'Farorna'	–		
	*'Kingfisher'	x *macaulayi*	–		
	'Inshriach Hybrids'	'Kingfisher'	'Kidbrooke Seedling'		
	'Angels Wings'				

* recommended cultivars

(continued)

Raiser	Cultivar	♀ Parent	♂ Parent	Date of origin	Date of award
H. Bawden	'Apollo'	'Inverleith'	*ornata*		
C. Wood	*'Edith Sarah'	*sino-ornata*	–	c 1976	
D. Tuckwell	'Multiflora'	x *stevenagensis*	*veitchiorum*		
R.N.(Neil) Lyle	'Coronation'	'Devonhall'	x *hexa-farreri*	1953	
	'Edinburgh'	'Devonhall'	x *hexa-farreri*	1953	
	*'Elizabeth'	'Devonhall'	x *hexa-farreri*	1953	
	'Maryfield'	'Devonhall'	x *hexa-farreri*		
	*'Barbara Lyle'	*veitchiorum*	–		
	'Inverdevon'	'Inverleith'	'Devonhall'		
	'Supreme'	'Devonhall'	–		
	'Merlin'	–	–		
	*'Donald Lyle'	–	–	1987	
	'Margaret Lyle'	–	–	1987	
	*'Robyn Lyle'	–	–	1987	
	'Blue Tit'	–	–	1987	
	'Sea Gull'	–	–	1987	
	'Lavender Lady'	–	–	1987	
	'Purple Robe'	–	–	1987	
	*'Loch Maree'	–	–	1987	
R.N.C.(Bud) Lyle	*'Leslie Delaney'	*sino-ornata*	–	1967	
	'Marion Lyle'	*sino-ornata*	–	1967	
	'Mary Lyle'	*sino-ornata*	–	1967	
	'Ornata Hybrids'	*ornata*	–		
A. Duguid & J. Jermyn	'Eleanor'				
	'Devonhall Strain'	'Devonhall'	–		
	'Queen of the Blues'	'Inverleith'	–		
	'The Souter'	'Inverleith'	–		
	*'Tweeddale Strain'	'Inverleith'	*farreri* + 'Susan Jane'?		
J. Aitken	*'Blue Bonnets'	'Devonhall'	–		
	'Royal Highlander'		–		

**recommended cultivars* *(continued)*

Fig. 80 Helichrysum adenocarpum (p.386) M Hirst

Fig. 81 Helichrysum sutherlandii (p.384) M Hirst

Fig. 82 Delosperma nubigenum (p.383) M Hirst

Fig. 83 Sebaea sp. (p.388) M Hirst

Fig. 84 Bidens pinnatifida (p.387) M Hirst

Fig. 85 Polygala gracilenta (p.385) M Hirst

Raiser	Cultivar	♀ Parent	♂ Parent	Date of origin	Date of award
I. Christie	'Ann's Special'	–	–		
	*'Cairngorm	x *macaulayi* 'Praecox'	–		
	'Glen Isla'	x *macaulayi* 'Praecox'	–		
	'Glen Moy'	x *Macaulayi* 'Praecox'	–		
	'Downfield'	*sino-ornata*	–		
	'White Wings'	Angels Wings cloned section	–		
	*'Strathmore'	–	–		+AM 1993
	*'Glamis Strain'	'Susan Jane'	'Devonhall'		
	'John Aitken'	'Glamis Strain'	–		
	'Kirriemuir'	x *macaulayi* 'Praecox'	–	1995	
	'Violette'	x *multiflora*	–	1995	
Dr K. Lever	*'Shot Silk'	'Mary Lyle'	x *stevenagensis* 'Dark Form'	1988	AM 1991 Farrer 1992 FCC 1992
	*'Indigo'	x *stevenagensis* 'Dark Form'	–	1988	PC 1991
	'Compact Gem'	'Mary Lyle'	–	1988	
	'Cambrian Strain'	'Mary Lyle'	x *stevenagensis* 'Dark Form'	1988	
	'Cambrian Strain White'	'Mary Lyle'	x *stevenagensis* 'Dark Form'		
	'Dumpy'	x *hexa-farreri*	an *ornata* form		
	'Amethyst'	'Shot Silk'	–	1992	
	'Serenity'	Cambrian Strain White'	–	1995	
M. & H. Taylor	'Margaret'	*farreri:sino-ornata*	*ternifolia*		Forrest 1991
	'Henry' 'Gowrie'	*farreri:sino-ornata*	*ternifolia*		
I. McNaughton	'Blue Mountain'	'Drakes Strain'	–		
	'Tensing'	*vorna:* x *hexa-farreri*	'Barbara Lyle'	1995	
R. Goudy & I. McNaughton	'Craignish Sky'	*ternifolia* 'Dali'?	–	1995	

*recommended cultivars; +as a cut flower

THE ALPINE CONSERVATION EXCHANGE

by Barry Caudwell and David W H Rankin

How many of us have seen on the show bench a pan of the wonderful blue *Tecophilaea cyanocrocus?* Yet despite being very firmly in cultivation this plant is considered to be extinct in the wild. *Iris winogradowii* is another example of a well known plant well established in cultivation but endangered in the wild. It is restricted to two mountain localities in the Caucasus and, like many other plants in the past, it has been over- collected to the point of its near demise in the wild. To some extent these are the success stories of plant introductions, they have taken to cultivation well and could provide a stock to return to the wild, if suitable circumstances occur. We must all be aware of the flood of new plant material that is arriving each year, just look at the list of wild collected seed in the seed lists of recent years. But how long will these new introductions survive in cultivation? What can we as a club do to help as many as possible survive?

At a meeting over the summer the authors of this article thrashed out some ideas which may provide a mechanism to help these new introductions stay in cultivation. What we needed to do was to "encourage the maintenance of genetically diverse populations of alpine plants in cultivation, by the exchange of plant material". We also needed a name. The **Alpine Conservation Exchange (ACE)** was coined. We had two separate problems :

a) Providing a means of communication between interested parties.
b) Establishing a mechanism for the exchange of plant material.

The solution to the communication problem was easy : an article in The Rock Garden was the ideal way to start the ball rolling. The second problem was going to be less straight forward. The Seed Exchange already provides a good way of increasing the distribution of plants in cultivation. However, some plants will

only set seed if pollinated by an unrelated plant. Many *Primula* species are heterostylous (pin and thrum eyed) and the two types require to be crossed. In this situation you could swap pollen from the right mating type and achieve a good pollination and seed set, which in due course would provide seed for the seed exchange. As an example of this we had a single plant of *Primula cawdoriana* which stubbornly refused to self pollinate. By chance we saw a second plant of *P. cawdoriana* on the show bench at the Aberdeen show; on its way back home to Edinburgh this *Primula* swapped pollen with ours in our kitchen – result one ripe seed capsule. The content was split between two sites and our single plant now has some friends. Not only have we enlarged our population of plants but we now have a wider range of genetic material in our plants.

Why is it important to increase the genetic diversity of your plants? When a plant is propagated vegetatively each resultant plant has identical characteristics to those of its parent, including its resistance and susceptibility to disease. In a genetically diverse population of plants the variation in disease resistance or ability to withstand some extreme conditions gives an improved chance of some plants surviving. When plants are grown from seed the plants that survive to flowering are those that respond the best to your growing conditions. The greater the genetic diversity of your plants the more likely you are to find some plants that will grow well with you.

- The danger of relying on plants with a small genetic diversity is amply demonstrated by the Irish potato famine of the 19th century. Potatoes are propagated vegetatively, so Ireland came to rely upon a potato crop with a very small genetic diversity. When as was inevitable the crop became infected with potato blight, the result was devastating. With so many identical plants the infection was unrestrained with catastrophic consequences for the population. A similar disaster could so easily befall the many vegetatively propagated cloned populations of alpine plants in cultivation in our glasshouses and gardens.

Our success with *P. cawdoriana* resulted from a series of chance events. How much better if such liaisons could be organised. That is where the Alpine Conservation Exchange comes in. It will provide a means by which you can inform other enthusiasts of material which you expect to be able to offer. In return, you will be

informed about material other people are offering. After that, it is over to you to make contact.

What should you do to take part in the Alpine Conservation Exchange? Send a list of the species that you want to offer to exchange and indicate what material you expect to be able to swap. It might be pollen, in which case indicate whether your plants are pin or thrum-eyed, if appropriate. If you receive pollen before your flowers are ready you can store it until it can be used; pollen stored in plastic tubes in the fridge keeps well if dry.

The primary object of the exchange is not to exchange seed but to enlarge the gene pool of plants in cultivation. However it may be that in some cases it is appropriate to swap seed, for example of groups of plants where the viability of seed is very short. Members of the Genus *Corydalis* and the Family Ranunculaceae would fall into this category. In some cases the swapping of plants or cuttings etc may be an option.

To take part in the Exchange:

1) Send in your personal list and a stamped and addressed envelope to DWHR. Your list must first give your name, address and telephone number, and then an alphabetic list of species and the type of material offered (pollen, plants, seed etc.)

Your list MUST arrive by 14 February to be combined into the list for this year. Only include species which are new or rare in cultivation, or are represented by few clones or other limited genetic variety.

2) You will receive back a list of the other participants and material they wish to swap complete with their addresses and phone numbers.

3) From this point onwards it is up to you to make contact and to arrange the swap. Many swaps could probably take place at shows and other meetings.

The Edinburgh group are planning to run a one day workshop at which the idea of genetic diversity in alpine plants can be discussed further. Further details will be available at Shows, from Group Conveners and from :

Prof. D. W. H. Rankin, 16, Kevock Road, Lasswade, Midlothian, EH18 1NT. (Please enclose a s.a.e.)

FROM UPLAND GRAZING TO A GARDEN

You CAN make a garden at 700 feet in Central Scotland in 10 years

by EVELYN STEVENS

From the beginning we regarded it as a challenge and I, at least,was not at all confident about the outcome. An isolated and derelict farmstead more than 300 years old came on the market on Sheriffmuir near Dunblane, Perthshire, a stone's throw from the site of the inconclusive Battle of Sheriffmuir fought between the Hanoverians and the Jacobites on a foggy frosty moor in November 1715. The farmstead is in an exposed situation at 213 m above sea level, 500m down a track and surrounded by sheep and cattle-grazing pasture. The openness of this tree-less landscape is broken by a few small isolated conifer plantations at various distances away.

Half of the 1.4 ha site is encircled by a dozen mature sycamores with a few tall Scots pines and Norway spruce within the circle, all that remains of a small plantation, felled long ago. Elsewhere, in the other half of the site where the largely derelict buildings were located, there is a row of rather stunted beech trees, which were originally a garden hedge. Other than these there were no trees or shrubs. Most of the site comprised rough pasture heavily infested with coarse weeds like docks, creeping thistle and stinging nettles.

The new house would be built where the original farmhouse and byre had been on the north side of a rough 'courtyard', a rectangular area (23 x 30m), the east side of which was bounded by a barn and the west by a granary with associated horse-mill. The barn was repairable but in the case of the other buildings the walls would be tidied for landscape use only.The courtyard, lying to the south of the proposed new house, was one obvious area for making a garden but there was virtually no soil, only boulders brought in by generations of farmers as hard standing. However, elsewhere there was a good depth of soil which is sandy loam, a bit heavy in parts, and the pH is around 6.5. We were able to use the good soil on the site to give enough soil in the courtyard area to make a garden

there. The rainfall is 860 mm per year and we rarely have long summer droughts. The soil quality, rainfall and relative lack of drought are favourable aspects of the site. Another important asset was the abundance of good sandstone awaiting salvage from the derelict buildings and recycling in the form of raised beds for alpines. Over our 10 years here I have made about a dozen of these.

CONSTRAINTS

Any site imposes constraints, I suppose. An important one here is the altitude with the consequent lower temperatures giving greater chances for frost damage, especially in late spring, and a shorter growing season. Wind speed increases with altitude and is especially important in the absence of sheltering trees and shrubs. A further initial constraint was that our son used certain parts for his Shetland ponies and Soay sheep so that these could not be used as a garden for a number of years. His areas influenced the size and shape of several of the garden's compartments and although they differ from what I would have chosen initially they were a happy accident in that I like their present effect.

I have spent many hours thinking about design but my early grandiose (for me) ideas of plans with scale drawings on squared paper came to nothing. For us, an evolving on-the-ground approach has proved more feasible.

SHELTER

We recognised that planting trees and shrubs for shelter, for ourselves and for plants, was top priority at the start of creating a garden here. Also, as we are surrounded by pasture with a view of the more distant hills, trees and shrubs were needed to give structure to the garden and to enhance the views which would otherwise look rather bleak during the long winter months.

We decided that certain parts of the site could be planted primarily to make shelter belts. I learnt that this meant planting blocks of trees/shrubs not less than 7.5 m deep and fairly close together (2-3 m apart). We used a mixture of conifers such as Scots pine, larch, Norway spruce, Sitka spruce, Western hemlock and deciduous trees including various willows, alders, birch, hawthorn, hazel, Norway and field maples and mountain ash.

We recognised that it would be vital to protect plants against rabbits which live in a nearby small plantation. Despite the cost there was no point in even starting a garden if we made no

provision against rabbits. We have done this in two ways. We erected a rabbit-proof fence around the whole of the Near Garden, which is the half of the garden around the house and courtyard. This has beds with smaller plants as well.as trees and shrubs.
In the Wood Garden (largely the area delineated by the circle of mature sycamores) which we have planted largely with trees and shrubs, we used plastic tree shelters to protect individual deciduous trees. The idea was that the shelters would provide the bonus of a mini-greenhouse effect and so result in better growth of the trees than the alternative of encircling the whole area with rabbit netting. But in the early days we wondered whether, for an exposed situation, the tree shelters were a good choice as the young tress were damaged by the wind as they emerged from them. However, the tree-shelter are now well established and independent of the shelters and have thrived. I am not sure, if I had my time again, which of the two methods, individual tree-shelters or rabbit-netting around larger areas, or a mixture of the two, I would prefer.

THE TREES SHOOT UP

As we looked out from the house in winter in the early years (Fig.79 p.340) at the barely visible 'sticks' that we had recently planted, or at the unsightly plastic tubes, (people often commented that from the road, the white tree shelters ,cheaper than brown or green, looked like a cemetery), we wondered what it would look like in 5years---10 years--. Ten years have now passed and the amount of growth at such an altitude has surprised both us and many visitors. In the early years I would stand among the Scots pines in which growth increment is easily appreciated and point out to myself how the trees had increased from knee height (1986), waist height, head height and for several years now to well above me and I no longer perform this ritual. We can now look out at the tracery of twigs and branches of the trees silhouetted against the winter sky and recollect that they are only there because we decided to plant them there.And in summer we enjoy the enclosed privacy of green foliage (Fig.80 p.349). We are no longer very aware of the daily activities of the neighbouring farmer on his rounds and no longer feel like goldfish in a bowl as he passes by. It has also been satisfying to keep a comprehensive photographic record of the garden's progress.
I am certain that careful nurture has played a large part in the good growth of the trees and shrubs. I think that the level of soil fertility

is quite high as the ground had only been used for grazing sheep with no crops taken from it, so I have used no fertilisers. The important thing has been to keep the weeds at bay for 5-6 years by spraying around trees with herbicide using a ruck-sac sprayer. For our Cooper-Pegler sprayer we bought a guard to fit to the lance for well-controlled distribution of the herbicide; I am surprised that it is not provided as a standard part of the sprayer. Research has shown that weeds compete significantly with young trees and we have have confirmed this for ourselves.

We have used Round-up (glyphosate). Without it we would not have coped with making the garden from such weedy ground with only the two of us to do the work. We use glyphosate with a clear conscience with regard to the environment; it is poisonous to the plants which it contacts but is not damaging to animals. This is because it inhibits the synthesis of a group of amino acids produced in plants but not in animals. Animals obtain these essential amino acids from their diet, in the form of plants or other animals, and are therefore insensitive to glyphosate. In addition, it is chemically unstable and breaks down to innocuous products such as inorganic phosphate which is a normal ingredient of soil.

Not only have the trees and shrubs made the garden more attractive but they clearly reduce wind speed. Even so, I am disappointed that foliage may still be damaged by strong winds. For example, the cold dry winds we often experience for days on end in late spring often bruise the leaves of *Trillium grandiflorum* or the newly lengthening leaves of *Meconopsis x sheldonii*. I hope this situation will improve with increasing growth of the shelter belt trees.

SPECIMEN TREES AND SHRUBS

Having a large garden means that we are also able to grow a number of trees as specimens in order to enjoy each one individually. We moved a number of young but established trees from our previous garden with virtually no losses and most have thrived. One of our favourites is *Nothofagus antarctica*, one of the decidous southern beeches from South America. It looks lovely in winter with its delicate tracery of small twigs along layered branches. In spring and summer its small glossy leaves are never spoilt by harsh winds and in autumn it colours well.We would recommend it for a smaller garden as well as for one this size. Another deciduous tree that has thrived here is *Prunus serrula*, the

Tibetan cherry, with its lovely rich red flaking bark enlivening the winter scene. A cherry that I have, unfortunately , been unable to establish, however, is *Prunus* x *subhirtella* 'Autumnalis'.

Other notable successes transplanted from the previous garden include the following conifers- *Metasequoia glyptostroboides*, the decidous Dawn Redwood from China, attractive with its soft green feathery needles in summer and its red-brown rough bark in winter; *Abies nobilis (*syn. *procera,* the Noble Fir), now eight metres high, carried down our drive by our daughter nine years ago, bearing its first cone three years ago, followed by 26 the next year with a rest last year; *Tsuga heterophylla*, the Western hemlock, now a graceful seven metres high (in one of its early winters here we had to restake it after a spell of fierce north winds, but it is now safe, 'touch wood'; *Abies koreana* regularly producing masses of purple cones; *Chamaecyparis pisifera* 'Boulevard' now about 25 years old, having had three moves from Surrey to Dunblane and then to Sheriffmuir and a lovely fat healthy pyramid 2.3 m high; *Chaamaecparis lawsoniana* 'Pottenii' now 4.5 m high and *Thuja occidentalis* 'Rheingold' the rich copper-gold of its winter colouring being particularly welcome.

Transplantations were one source of trees; others I have grown from seed, some from the Seed Exchanges and it is good to see they have thrived. These include beech (about 350 of them which I have used to make hedges, now as high as we want them), oaks (about 150- we have run out of room to plant them all into definitive positions), a number of species and hybrids of *Sorbus* (both the native *S. aucuparia* and various exotic ones including the white-berried *S. cashmiriana, S. prattii* and *S. koehneana*). It is very rewarding when trees grown from seed flower and produce fruits and seeds of their own.

AN ARRAY OF WILLOWS

Willows, as we anticipated, have been a good choice for our site, ranging from tall trees such as *Salix alba* to prostrate shrubs. One of our favourites we obtained as *S. aquatica*- not a plant for a small garden. I am not sure that this is the correct name (*S. x dasyclados* or *S. aquatica grandis*? – I find the references confusing). However, whatever its name, it is very vigorous and handsome in all its parts with its elegant form, elongated leaves and large erect catkins which appear before the leaves in March. Our largest plant is included in one of the shelter-forming hedges.

Complementing each other , both in winter and in leaf, we have planted next to each other in a border, *Salix purpurea* ' Nancy Saunders' and *S. alba sericea*. Both are bushy shrubs from 1.8 to 2.4 m high with numerous slender branchlets, silvery in the latter and glossy, purplish-red for the former. Both have narrow elongated leaves, intensely silver for the silver willow and blue-green for 'Nancy Saunders'. They look particularly attractive against each other and when moving in the wind.

From giant willows and medium-sized shrubs, at the other end of the scale we have a number of dwarfs. These include the prostrate willows *S. reticulata* and *S. repens,* well suited to a rock garden, raised bed or trough, but which I have planted on a raised gravel-covered patio area near the house. Both of these are Scottish natives and I grew my *S. repens* from a wild-collected cutting in 1981 and it has remained completely prostrate. I enjoy the network of inter-weaving branches of these willows, shown to advantage against the gravel in winter. Another fine prostrate willow is *S. nakamurana yezoalpina* from Hokkaido, Japan, which can be grown at the edge of a raised bed where it will grow tightly pressed to the soil and then down the sides of the bed. It has attractive winter-bare branches, large woolly catkins in spring and wide leaves, thick and silvery hairy when they first open, becoming glabrous later with good gold autumn colour. Yet another effective prostrate dwarf is *S. hylematica* (syn. *S. furcata, S. nepalensis*) from the Himalaya. It grows here as a spreading carpet in a damp border and is growing equally well on a raised bed where it has grown over the edge, down the sides to the ground below. Among its attractive features are the reddish slender stems, small glossy leaves, conspicuous and abundant purple-red catkins and at times the foliage produces a honey scent.

Salix x *boydii*, a hybrid between *S. reticulata* and *S. lapponum* and possibly with *S. herbacea* in its parentage, discovered in Angus, Scotland by William Boyd, is another good dwarf. It assumes an erect densely twiggy habit and is very slow growing. My largest plant, grown on a raised bed is now over 10 years old and is 0.75 m high. The blue-grey thick-textured, deeply veined leaves please all summer and its has good autumn colour.

If I had to choose just one willow, however, I think it would be *S. lanata*, the woolly willow. This is another Scottish native. It forms a compact bush, wider than high. My largest plant is 1.2m high x 3.6m across. Its assets are its compact habit of growth, its thick

gnarled branches with fat, felted grey buds in winter, the broad, densely woolly silvery green leaves, the large golden catkins and the golden autumn colour before the leaves fall.

I thought that acers would be ill-advised for our conditions so I have been pleasantly surprised with the way in which *Acer griseum* with its attractive red-orange peeling bark, and *A. palmatum* ' Dissectum Atropurpureum' with its feathery finely divided deep red leaves have slowly but steadily grown. Another pleasant surprise has been *Corylopsis pauciflora*, a member of the Hamamelidaceae, which we moved from our previous garden and gave as sheltered place as I could against the south wall of the house. It forms a compact slow-growing bush with short spikes of drooping pimrose flowers in early spring. I have , however, been disappointed to be unsuccessful with *Hammamelis mollis*, the witch hazel, - three tries and they have all died.

Corylus avellana 'Contorta', the Corkscrew hazel or Harry Lauder's Walking Stick, has become a large shrub, now 2.5 m at 12-15 years old, again transplanted from our previous garden. This intriguing shrub with its twisted branches was discovered as a sport of the common hazel in a Gloucestershire hedgerow over 130 years ago and all plants in existence are derived from this one plant. The curly branches look good in the winter scene and, in spring, an additional feature are the dangling catkins.

We have several amelanchiers, including *A. bartramiana*, according to Bean, a rarity in cultivation. I grew it from seed collected in Newfoundland by a member who was supported by the Club's Exploration Fund and who donated seed to the Seed Exchange. It is a pleasing low-growing shrub, 1.5 m high with conspicuous white flowers, oval leaves which produce good autumn colour and purple fruits from which I collected seemingly good seed last September.

EVEN A FEW ROSES

I don't think this is a particularly good area for roses but a truly marvellous and vigorous one which we have placed to grow over the old horse-mill is *Rosa filipes* 'Kiftsgate' which covers itself with beautiful single white flowers. This could never be a garden valued for scents as the air is usually on the move but the thousands of flowers on ' Kiftsgate' really do scent the air for three weeks in July. Another rose that does well is *R. rubrifolia* (=

R. glauca) grown for its colourful reddish -purple young stems (I cut the old stems back to ground level every few years to encourage new growth) and its leaves which are a lovely glaucous-purple. The single pink flowers are also quietly pleasing.

We have been sensible enough not to try plants which would obviously be unsuitable but there have been a few failures due, I think to our fairly harsh climate. *Davidia involucrata* had been growing well for several years until last spring when we were disappointed when it was cut back to the ground by a hard late frost, although it sprouted from the base later on. I found it hard to believe but that same few hours of frost also destroyed all the buds on a large *Clematis montana* and it is also having to regrow from the base. I have given up with winter jasmine (*Jasminum nudiflorum*) while *Jasminum officinale* is not really a success. *Camellia* 'Donation' is surviving and produces some flowers but it is not the lovely plant it should be. The same applies to daphnes and to a few of the rhododendrons such as *R. keiskei* ' Yaku fairy'.

In this article I have tried to describe the making of a garden in a high exposed area in Central Scotland, with the emphasis on creating shelter belts and establishing specimen trees and shrubs for interest and visual effect. There has been almost no mention of the smaller plants of perhaps greater interest to rock gardeners but they will be the subject of a later article.

I would just like to say, however, that but for the SRGC I don't think that there would be a garden here now. I owe a quantum leap in my knowledge of gardening as a result of joining the Club in 1980 and through this I gained the confidence to agree to taking on 1.4 ha in which to make a garden from scratch, along with, also, of course the enthusiasm, support and much physical hard work on the part of my husband- I wish I had his strength.

Food for thought. I was speaking to my brother the other day.He lives within woodland in 'banana-belt' Surrey. He said he regretted that we had thought fit to close ourselves in and cut out the extensive views, by means of all the vegetation we had planted.And there have we been seeking, as quickly as possible, to create the 'oasis-effect' which a number of people have described our garden as manifesting. It takes all sorts !

Reference: W.J.Bean 'Trees and Shrubs Hardy in the British Isles' John Murray

DOES IT REALLY MATTER ?

Of course it does,
in all the ways it can

by David Mowle

The occasion was the 1995 Discussion Weekend. Assembling for the first lecture we had hardly started to greet our friends. The title? We didn't need a title to enthuse us because it was to be Mike Almond so we were expecting tramping in Turkey and beautiful bulbs to be part of the recipe and we were not disappointed. Valleys and mountain tops in mist and in sunshine; villages and woodland distinct from our own. Beautiful flowers so recently seen that there was little place for confidently pronounced names. Instead some audience participation perhaps, in the hope of reducing the hours of checking still to be done.

SO MANY BEAUTIFUL FLOWERS

It must have been a wonderfully satisfying trek. Old acquaintances met in new places and in new associations; still the same but always slightly different. And ultimately the snow line approached, the white snow patches contrasting with the brown-green melt-sodden grass and not single plants now but great swathes of the alpine crocuses. Beautiful flowers unknown to many of us, seen perhaps in tiny numbers in pots at an Early Bulb Display, the object of careful cultivation from precious seed. We were shown great areas of yellow, then close-ups of clusters, deeper or paler yellows and each seemingly the loveliest yet. Almost certainly it was *Crocus gargaricus* it was opined. In a different area, a different yellow. Is it *C. chrysanthus* or *C. flavus*? And yet again, slides of clusters of lilac-blues varying from deep to almost white, gleaming in the Turkish sunshine.

But now, the ultimate in colour and question. Places are reached where the fields of colour begin to overlap. Individual clumps amidst the thousands show colours which belong to neither group. Lilac tinged with yellow- the cross can be guessed, yellow grading with lilac- more guesses. An exquisite yellow quite distinct from all those we have already seen. Is it...? Is it...? --- and the lone voice in the dark " Does it *really* matter?"

OF COURSE IT DOES

So the interjections stop and the lecture reaches its close to the enthusiastic applause it merited. But we all know that it does matter in all the ways it can. That we can enjoy the exquisite beauty of the natural world captured for us by an enthusiastic and skilful member, the the taxonomically minded purist can be brought face to face with the huge problem of trying to classify natural events and encouraged to renew their efforts and that dedicated hybridists can receive encouragement to continue their quest coupled with a mild rebuke from nature to try harder..

It was a Discussion Weekend which brought refreshment to us all.

ERRATA

In the article 'Look for the Silver Lining' by Beryl Bland in the June 1995 issue:

1. The photographs of *Saxifraga cotyledon* and *S.* 'Tumbling Waters' were transposed
2. The photographs were by D Lowe and not by B Bland

THOMAS EDMONDSTON AND HIS SHETLAND DISCOVERIES

A remarkable Shetlander who accomplished a great deal in his 20 years of life

by BILL PATON

Thomas Edmondston was born in Unst,Shetland on 20 September 1825 and died in Ecuador on 20 January 1846. During these 20 years he was responsible for remarkable plant discoveries in Unst and for advances in the study of botany elsewhere.

His name is especially linked with the discovery of Shetland's two best known plants, *Arenaria norvegica* ssp. *norvegica* (Arctic sandwort) and *Cerastium nigrescens* (Shetland mouse-ear).

In 1837 when Edmondston was 11 years old he found the arenaria growing on serpentine at the Keen of Hamar, Balta Sound in Unst which is the largest area of serpentine in Britain. He later described the plant as "very abundant on the gravelly barren hills to the north of Balta Sound."

The following year he showed it to a visiting botanist, Dr Gilbert McNab, who initially failed to recognise it and took it to Edinburgh for formal identification. It is a low tufted perennial with dark green slightly veined oblong leaves. Solitary or double white flowers are produced with yellowish anthers and petals longer than the sepals. Given neutral or slightly calcareous soil with good drainage it forms a very neat and attractive plant.

Unst was the only known Scottish site until the arenaria was found in western Sutherland 50 years later. It is now also known on a few island and mainland sites in the west of Scotland, mostly growing on basaltic and limestone scree.

The cerastium may safely be described as Shetland's most famous plant. Like the arenaria it grows on the Keen of Hamar serpentine and was discovered by Edmonston in 1837. Unlike the arenaria it grows nowhere else and is one of Shetland's, and indeed, Scotland's few endemics.

It is low and mat-forming, with hairy leaves and stems. Its large white flowers with yellow centres (Fig.88 p.378), contrasting with the rounded purplish-green leaves, have caused it to be described by Scott and Palmer in their 'Flowering Plants and Ferns of the Shetland Isles' as one of the most beautiful species in our flora.

The purple colouring has been thought to be due to phosphorus deficiency in the serpentine, particularly as plants grown under glass produce green leaves. However, replanted in the open garden they regain much of their dark colouring, suggesting that this derives from genetic factors.

Cerastium nigrescens closely resembles *C. arcticum* which is found on a few sites on the more acid mountains in the Scottish Highlands and this has led to much discussion as to whether the Shetland plant is a species in its own right or simply a sub-species of *C. arcticum*. Phil Lusby, now in charge of the Rare Plant Project at the RBG, Edinburgh and an authority on *C. nigrescens,* has described how it has shorter, more fleshy and darker leaves, shorter and broader capsules and sepals which are narrower in flower and broader in later stages. Professor Clive Stacey in his latest Flora gives it full species status as *C. nigrescens*. With such weight of evidence we might have considered the case closed had not Blamey and Grey-Wilson in their recent 'Illustrated Flora' entered it as *C. arcticum* ssp. *edmondstonii*. The laymen (and women) among us may pay our pennies and take our choice !

Edmondston came from a loving and devout family. At home and amongst his friends he was known as 'Linne the Little' after his exemplar, Linnaeus. At age 14 he wrote to his father, "My dear Papa.. The chief thing I have to tell you is that I am acknowledged the sole discoverer of the arenaria (as a British plant presumably) and *Lathyrus maritimus*.... Are you attending to our garden? I shall send you a hoe by first opportunity but do not let it be run over by weeds."

The *L. maritimus* he refers to is the sea pea, now known as *L. japonicus* ssp.*maritimus*. It is an attractive plant with dark grey-green leaves and colourful purple to blue flowers. It is also generously equipped with tendrils despite its sandy habitats providing little opportunity for their use. The seeds have a long viability of 4-5 years in sea water and its settlement in Shetland is probably due to sea-borne seeds being washed ashore.

Fig. 86 Lilium nanum (p.401) Ian Christie

Fig. 87 Margaret Glynn's garden (p.402) Ian Christie

Fig. 88 *Cerastium nigrescens* (p.375) Phil Lusby

Fig. 89 *Primula buryana* (p.391) Fred Carrie

Fig. 90 *Primula dickieana* (p.392) Alastair McKelvie

Fig. 91 *Cremanthodium ellisii* (p.395) Fred Carrie

Fig. 92 *Zephyranthes grandiflora* (p.395) Alastair McKelvie

PROFESSIONAL CAREER

At age 16, Edmondston was appointed Assistant Secretary to the Edinburgh Botanical Society and in subsequent years he published articles on botany, maintained a copious correspondence and lectured at various places. At age 19 he was appointed to the Chair of Botany and Natural History at Anderson's University , Glasgow.

Tragically he did not live to take up this post. Six months after his appointment he published his 'Flora of Shetland' and a further six months later when he was visiting Ecuador on a botanical expedition, a gunshot accident put an end to the life of Shetland's botanical prodigy, and deprived the science of botany of a remarkable student and practitioner.

AVAILABILITY

Arenaria norvegica has been listed for a number of years in the Club's Seed Distribution Scheme. Plants can be traced through the 'Plant Finder'.

Lathyrus maritimus figures in Chiltern Seeds 1995 Catalogue. Plants are also listed in the 'Plant Finder'

Cerastium nigrescens is not so readily available but who knows what the Club's list may contain next year?

Cerastium nigrescens

Arenaria norvegica

John and Helen Duff would like to thank the SRGC President, Dr Peter Semple, and all the members present at the Autumn Weekend in Glasgow in September1995 for the beautiful card, filled with members' signatures on the occasion of their Diamond Wedding Anniversary.

LESOTHO- THE OTHER KINGDOM IN THE SKY

The floral delights of a fascinating and diverse mountain country

by MIKE HIRST

Lesotho is a country about the size of Belgium. It has been an independent kingdom within the Commonwealth since 1966 and is completely surrounded by the Republic of South Africa on which it is heavily dependent. Lesotho has the whole of its landmass over 1700m, with the highest mountain in Southern Africa, Thabana-Ntlenyana reaching 3482m situated just inside Lesotho on the border with Natal, forming part of the Drakensberg mountain range.

The Anglican dioceses of Durham and Lesotho have had informal contacts between the churches, educational bodies and private bodies dating back to the turn of the century. However, in 1986 it was decided to have a formal arrangement and so the Durham-Lesotho link was formed.

The main aims of the link are to " fulfil the command of the Gospel, to feed the hungry, heal the sick and teach the young", and as a consequence the link has resulted in many projects concerned with agriculture, education and health.

In November of 1993 I was asked by the Principal of Houghall College, Durham, a member of the Link Committee, if it would be possible to develop a small garden based on plants from Lesotho and to organise a field trip to Lesotho to bring back seeds of plants that would grow in Durham. The College is in a frost hollow where temperatures as low as -21.6°C have been recorded: plants would have to be fairly tough to grow at Houghall.

Before I made any arrangements I had to find out whether it would be possible to import seeds into the UK from Lesotho, so I contacted the Lesotho Government through the link office in Maseru, explained what I wanted to do and was eventually granted a special licence.

We already had some plants from Lesotho growing on campus at Durham, such as the yellow *Delosperma nubigenum*, (Fig.82 p.358) which is still sold by some nurserymen as *Delosperma* 'Basutoland', the grey-leaved mound-forming yellow *Euryops acraeus*, the ground-hugging *Helichrysum praecurrens* and perhaps the best known species of all, *Helichrysum milfordiae,* which grows on the high plateau, producing mats of grey-leaved foliage and white and red heads of flowers. Plants of *Rhodohypoxis baurii* are also grown at the College but these are protected and grown under glass. All are basically plants of the high mountains that do very well in the British climate.

To help with the project I chose a former student, Darren Webster. Arrangements were finally made with the link organisers in Maseru, where we were given accomodation to use as a base, and transport.

Darren and I arrived in Maseru on 10 March after a 12 hour flight via Johannesburg and were met by Janette O'Neil, the Link Co-ordinator who briefed us on local customs and took us to our accomodation.

WEATHER

The Lesotho summer extends from November to January when the temperature may reach 35°C and the winter is between May and July when the temperature may dip to -8°C. The mountains are usually snow-covered in winter which has led to a ski resort near Oxbow. The annual rainfall is about 70cm, most of it falling between October and April, mainly in the mountains. It is said that more people are killed by lightning than in any other part of the world. Darren and I witnessed several spectacular electrical storms.

GEOLOGY

Ninety percent of Lesotho's rocks are derived from the Triassic and Lower Jurassic periods. In the middle of the Triassic period dinosaurs roamed the plains and therefore Lesotho has a number of important sites where dinosaur fossils and footprints may be found. The rocks are predominantly basalt and overlie sandstones and shales. The deep fertile soils are loose and are rapidly being eroded by cultivation; much of the topsoil is being washed into the Senqu River and its tributaries. The Senqu eventually flows out to sea through the Republic of South Africa where it is called the Orange River after the Dutch Prince of Orange; the autochthonous (indigenous) name is the Gariep.

BLUE MOUNTAIN PASS

The first area we visited was the Blue Mountain Pass to the east of Maseru at 2520m. This is an easy area to reach by bus or car and we spent three days botanising among the plants, notable among which were; *Hirpicium armerioides* (Compositae) a high alpine (for Lesotho) that forms dense mounds on the summit plateau and produces a daisy about 5cm in diameter with white rays flushed purple outside. It is a beautiful plant that would survive the British climate. Another member of the Compositae was *Helichrysum sutherlandii*, (Fig.81 p.358) a common plant of the Lesotho uplands and Drakensberg in Natal. It forms a well-branched lax shrub up to 40cm tall growing between cracks and crevices, hanging from cliff faces. The leaves are grey-woolly and the inflorescence is creamy white, produced between mid February and April. Another species of note is the biennial *Helichrysum cooperi*, producing trusses of bright yellow everlasting flowers. It tends to grow amongst damp grass and near streams, attaining a height of 60cm. Other plants found in the area were *Helichrysum marginatum, H. callicomum,* the blue *Sutera patriotica,* the pink and white *Crassula setulosa,* orange and yellow *Kniphofia caulescens,* and the yellow *Sebaea leiostyla.* Amongst the taller shrubs were *Erica flanaganii, Pentzia cooperi* and *Sutherlandia montana,* a shrubby member of the pea family with silver leaves and orange-red flowers.

MASERU

The next day or two were spent in and around Maseru. There is a fairly undisturbed area in the middle of the town that proved to be very rich. Thia area is about 1700m high and the plants there are possibly more tender. There were several succulents, a white *Delosperma* and the yellow *Nananthus vittatus* growing cheek by jowl with *Aloe maculata* var *ficksburgensis.* Under a rock overhang in a damp patch grew *Diascia moltensis*, not common in Lesotho and a beautiful green and white orchid, *Bonatea speciosa.* Tumbling over the rock outcrops were large stands of *Clematis brachiata* smothered in white flowers closely resembling *C. montana.* Several species of *Rhus* formed a shrub layer where, nestling in between for protection, were one metre tall spikes of *Gladiolus dalenii* with their orange flowers in full bloom.

MOKHOTLONG

Mokhotlong is a large sprawling village in the north-east of the country in the Drakensberg mountains. It is accessible by road after a long journey but also has its own airstrip and we were lucky enough to be offered two seats on a five seater light aircraft. This meant we were able to spend two full days in the mountains around the village. Most of the area was heavily grazed by cattle, sheep and goats belonging to local herdsmen, but there was still plenty to be seen. One of the most spectacular plants was *Cotyledon orbiculata,* a hardy succulent with grey fleshy leaves with a reddish edge. It produces pendulous tubular orange-red flowers on scapes up to 60cm. An interesting shrub with aromatic silver leaves and white flowers was the rare *Jamesbrittenia lesutica* (Scrophulariaceae), hanging on in a few places in the dry, upland stony pastures. Between the damper terraces were groups of *Lobelia preslii* reaching 12 cm tall with yellow flowers produced above dark green narrow leaves. Gentianaceae was represented by the delightful *Sebaea exigua* with yellow flowers on slender stems 10cm tall. Two hemi-parasitic herbs were noted, *Alectra pumila* with orange and brown flowers and *Striga bilabiata* with pink or white flowers both in the Scrophulariaceae: two other members of the same family seen here were *Zulzianskya glareosa* and *Z. ovata,* each producing long tubular flowers with a white or cream limb reddish outside. These were interesting because they opened up in the late afternoon and through the night emitted a strong scent. We are not sure what pollinators are attracted to these flowers but we think it may be a species of moth. Other plants to be seen despite the grazing were *Pelargonium sidifolium* growing between dry rock outcrops and producing deep maroon flowers. Nearby were plants of *Haemanthus humilis* with heads of white flowers. In the dry stony areas were large colonies of *Euphorbia clavarioides* forming boulder-like rock-hard mounds. Other plants of this area were *Gladiolus, Berkheya, Albuca, Wahlenbergia* and the prostrate *Polygala gracilenta* (Fig.85 p.360) with purple flowers.

SEHLABATHEBE

The place we were looking forward to visiting most was the park at Sehlabathebe, in the Drakensberg mountains in the south-east of Lesotho. The area is one of the few places left undisturbed by grazing from cattle, sheep and horses and has within it a wide range of species. The Americans have developed and are running a Range Management Centre next to the park for the benefit

of the local herdsmen. The Centre is geared up for lectures and seminars as well as doubling up as hotel accomodation. We had arranged to be flown out to the park and be picked up by the Centre Manager; this was our base for the next four days.

The park was everything we had been expecting, botanically diverse, but not much wild life at least of the four-footed variety. Most of Lesotho's wildlife has long since vanished; the National Emblem is a crocodile but not one remains in the wild. But we found an amazing number of plants. The usual crop of Composites included *Helichrysum nanum,* a cute little mat-forming species hugging the rock sheets and growing on stony grassland. It produces deep yellow or lemon heads about 12 cm above the foliage. Other helichrysums at their best were *H. adenocarpum* (Fig.80 p.357), common in Lesotho and Natal where it descends to sea level. It grows in the grassland on moist slopes up to 3000m flowering between January and April. The basal leaves are grey and cobwebby, making it an attractive species even out of flower. The involucral bracts vary in colour from red-pink to occasionally white with yellow disc florets. This was one of the most attractive of the everlastings we saw. *H. marginatum* was also in flower, tumbling over the rock outcrops. It is an unusual species with white heads overtopping grey-green aromatic leaves with whitish margins. Other plants to catch the eye were large clumps of *Diascia integerrima* clinging to damp rocky outcrops, the pinky orange flowers looking stunning and visible from quite a distance. After ascending a steep gully between two large rocky outcrops we noted a fine stand of *Gladiolus saundersii* in full bloom. This lovely species is common in Lesotho and in parts of the Cape Drakensberg. It produces one metre tall spikes of orange red flowers with a white throat. This species has been used in the past for hybridising; we found it growing in damp but well-drained grassy scree.

In the lower areas and outside the park were several species of *Sebaea,* the most spectacular being the clump-forming *S. leiostyla* with stems 30cm tall crowned with trusses of yellow flowers. Its habitat is on damp grassy slopes, on the edges of streams and other moist areas. *Kniphofia caulescens* was also common in damp gulleys and wet flushes as was the yellow *Senecio achillioides.* Two interesting species of *Eucomis* were also found, *E. schiffii,* a small plant with a spike of purple flowers crowned with a tuft of leaves tinged red, and *E. autumnalis* growing to 40cm with greenish-white flowers. Other bulbous and cormous plants out of flower were

Albuca, Hypoxis, Hesperantha and Dierama. There were several species of *Jamesbrittenia,* including *J. pristisepala.* with grey leaves and white flowers, *J. filicaulis* with grey leaves and white and orange flowers, *J. breviflora* with orange flowers, and a closely related species *Sutera patriotica* hung from damp rocky outcrops producing masses of blue flowers. Perhaps, if I may say so in this Journal, this species may be suitable for hanging baskets. By the stream sides were large stands of the orange-flowered *Phygelius capensis* and on the steep grassy slopes were plants of *Erica alopecurus* the "foxtail heather" in full bloom, its pink flowers massed in a thick terminal spike. Another little gem growing in the stony grassland was *Zaluzianskya microsiphon,* an interesting species that produces a cluster of dormant buds at and below ground level. Apparently after grassland fires and then rain, one or more buds grow to form the next inflorescence. The resting buds can be detached and root readily. These plants grow to about 30cm tall and produce red and white tubular flowers. Growing close by were several species that we were able to photograph, including *Ajuga ophrydis*, a lilac-flowered species growing to 30cm and *Polygala rhinostigma*, a prostrate plant with pink and purple flowers. Finally we found one of the plants we had been told to look out for, *Cratercapsa tarsodes* (Campanulaceae) with rosettes of light green leaves and blue bell-shaped flowers growing in the grassy banks. Campanulaceae was also well represented in the area by several species of *Wahlenbergia* to which *Craterocapsa* is closely related. After our four days at Sehlabathebe we boarded our hired plane and left for Maseru.

OXBOW

We hired a car for a week and headed north to the small settlement of Oxbow. Comfortable hotel accomodation is available there, not too far from the ski slopes and within easy access of the high plateau. This area also proved botanically rich. We made several stops to photograph plants in the lowland areas of Lesotho which were ablaze with colour in March and April with an introduced species from Mexico, *Bidens bipinnatifidus* (Fig.84 p.39). This late summer flowering annual grows by the million, seeding itself and giving a spectacular display of pink,white and purple flowers. Eventually we arrived in Oxbow where the hotel is situated next to a river, surrounded by steeply rising hills. We noticed some yellow flowers clinging to a wet and dark overhang above the river; after

crossing we found the plants belonged to yet another species of *Sebaea*, the 'African Gentian' (Fig.83 p.359). This particular species had flowers about the same size as *Gentiana verna* but yelow. We have not been able to determine this species from our slides. There were two other species in the area, one, *S. repens,* quite vigorous and producing mats of foliage and small yellow flowers. The other grew in wet flushes in moss, with water running through the plants, which formed little tufts up to 10cm across, resembling an aquatic *Dionysia.* On the summit plateau were carpets of *Helichrysum milfordiae* and *Othonna burttii* which has yellow daisy-like flowers and narrow grey-green leaves, forming mats on stony places but proving tender in cultivation. By the streams and in wet gulleys were large stands of *Kniphofia caulescens.* These produce an orange and yellow inflorescence above broad grey-green leaves. Nearby, *Diascia barberae* with its pink flowers, formed mats in the wet turf.

Growing in moist places between cracks in the cave sandstone were large 40cm tall clumps of *Xerophyta viscosa.* It flowers between January and March producing mauve flowers held above narrow dark green leaves. Of particular interest was *Eumorphia sericea,* a one metre tall grey-leaved shrub with white daisy-like flowers and *Inulanthera thodei,* a vigorous yellow-flowered rayless shrub that is strongly honey-scented. Several other plants recorded in the area included *Geranium brycei* with blue flowers, *Cotula hispida* with yellow flowers and *Psammotropha mucronata,* a mat or cushion-forming plant of the stony high plateau. Tiny rosettes of grey-green leaves are produced which give rise to 10cm tall scapes of green and white flowers. This has proved very hardy in a trough and has survived unprotected in the winter. Large mats of *Delosperma nubigenum* were also seen tumbling over damp rocky outcrops. This plant has yellow flowers, is hardy and quite easy to grow. Other plants of interest in this area included *Geum capense, Phygelius capensis, Galtonia viridiflora, Albuca* sp., *Moraea* sp. and many more.

MAFIKA LISIU PASS

A new road has been built between Hlotse and the Katse Dam in the central Maloti mountains; this has made access easy to a difficult area. As usual we stopped along the way making a photographic record of the plants and the mountains. The high point was the pass at about 3100m where we found the usual crop of

Helichrysum including *H.witbergense, H.trilineatum* and *H.callicomum,* more *Hirpicium armerioides* and the delightful blue-flowered, mat-forming *Felicia uliginosa.* Further plants of *Craterocapsa* were found nestling in the grassy banks, along with the yellow *Romulea macowanii* and, in wet flushes, over the pass, more *Kniphofia caulescens* and *Berkheya multijuga.* The latter is a brute of a plant with vicious spines on the leaves and bracts, but when in full bloom is most attractive and should be given garden space. There were several large plants of the dwarf shrub *Passerina montana* and lower down the pass growing to a height of 1.2m, a large stand of *Erica schlechteri* smothered in pink flowers was at its best.

Our visit finally came to an end and we were sorry to be leaving. Lesotho gave us both an insight into just how diverse and fascinating this mountain flora is.

ACKNOWLEDGMENTS

I am greatly indebted to Dr O M Hilliard and Mr B L Burtt for the help given to me in the preparation of this article and naming the specimens; also to Mr R G Baker for producing the map.

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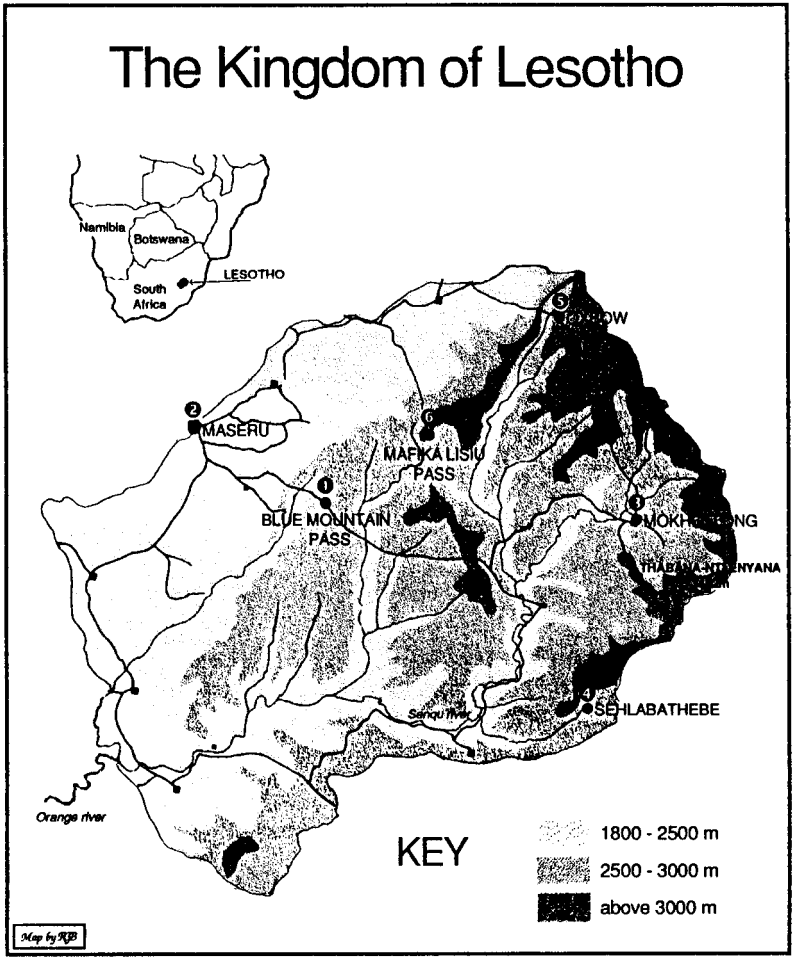

The Kingdom of Lesotho
Namibia
Botswana
South Africa
LESOTHO
MASERU
MAFIKA LISIU PASS
BLUE MOUNTAIN PASS
SEHLABATHEBE
Senqu River
Orange river
KEY
1800 - 2500 m
2500 - 3000 m
above 3000 m
Map by RJB

PLANT PORTRAITS

Primula buryana

Fred and Monika Carrie

Native to central and eastern Nepal, this soldanelloid primula has been introduced and subsequently lost from cultivation on several occasions. The most recent introduction was by seed collected by Alastair McKelvie and Chris Chadwell (C&Mc144) in the Dhaulagiri region in 1990. We were fortunate enough to obtain some of this seed and managed to raise a number of plants.

P. buryana is a beautiful little plant (Fig.89 p.379) with a neat rosette of soft hairy leaves and stems of scented white funnel-shaped, often rather flat- faced, flowers arranged horizontally around the top of a 5 to 10 cm stem. The plant is most certainly worth growing but is invariably short-lived. We tried our plants in several locations with mixed results. In terms of longevity the most successful planting was in a deep trough. No protection of any kind was given at any time and the plants grew and flowered well. Alas no seed was set despite having pin and thrum eyed plants growing side by side. The least successful was without doubt in clay pots in an alpine house.

By spring 1993 plant numbers were dwindling fast and no seed had been set. Careful hand pollination that year gave us a reasonable seed-set and allowed us to produce a second generation although we lost most of the original plants in the process. We have not, as yet, managed to produce enough plants to distribute widely and although we are now into our third generation of seed, two abnormally hot summers have taken their toll of the stock plants. We have heard that other growers have had similar problems and that the number of plants left in cultivation is likely to be very small. From our successes and failures with this plant we would draw the following conclusions. The plants are likely to be short-lived so hand pollination is vital to ensure seed set and a succession of new plants. Although not considered monocarpic, the plants may well die if seed is set. It is therefore necessary to have a reasonable number of plants to ensure continuity.

The seed germinates well. Seed stored in a fridge for 6 months before sowing actually produced more seedlings than seed that was sown straight from the plants. The seedlings should be pricked-out as early as possible in spring straight into 7cm pots. The compost

we use is a mix of 2 x peat, 1 x J.I. and 1 x 5 mm granite grit with the addition of a little Osmocote slow-release fertiliser. The young plants must be kept in a cool north facing frame as any direct sun is likely to prove fatal at this stage. During hot periods an adequate supply of water and some form of shading is essential. Early pricking out will ensure a long growing period in the first year and will produce strong plants which should survive the following winter. Protect the over-wintering buds with glass while ensuring adequate ventilation. Using this method it is probable that a few plants will flower in the autumn of their first year. However, no seed is likely and the plants do not seem to be weakened by this. In their second spring, the larger plants can be potted on into one litre plastic pots. They should be kept in these pots and have a permanent home in a cool north facing frame. As flowering begins, select an assortment of pin and thrum eyed plants, take them into a cool greenhouse and cross-pollinate. The plants should then be protected from the worst of the weather until the seed is collected. It is best not to pollinate all of your plants in the same year as many are likely to die if seed is set.

We feel that much has been learned about this plant since the C&Mc 1990 introduction and that if a little more seed could be collected, this plant could become permanently established in cultivation.

Primula dickieana

Udai C. Pradhan

During visits to north-eastern Sikkim with my colleague and co-author, Sonam Lachungpa, while recording rhododendron species for our book 'Sikkim Himalayan Rhododendrons', we were in a spot called Yakchey. This spot a few km north of Lachung has a fine colony of *Rhododendron niveum* (smoky blue flowers). Opposite this habitat is marshy land where some exceptionally lovely *R. ciliatum* used to exist. It was while photographing *R. ciliatum* that I first spotted what to me looked like *Primula dickieana.* Just to make sure, I immediately sketched it in my scrapbook and also took some slides of the plant (Fig.90 p.379). This was away back in 1986 when the eastern half of Sikkim was still out of bounds for foreign visitors.

In May 1995, while giving a slide talk on Sikkim Himalayan flowers to an enthusiastic group of plantsmen from the Scottish Rock Garden Club (see addendum to this note. *Ed.*) I happened to

mention this plant to Alastair McKelvie and other members of the Group that also included my old friend Heather Salzen who had visited us with Oleg Polunin in the early 1980's. I then showed them a slide of this plant and it transpired that Heather and Alastair had spotted what was probably the same group of plants during their visit to Lachung.

Addendum

Alastair McKelvie

The above note from Udai Pradhan is of interest because of the context of the find. On a visit to Sikkim in May 1995 by a group of plantspeople (not a SRGC Group as stated by Udai) we visited Lachung in north east Sikkim, an area where access is still difficult and photography forbidden (we were searched for cameras!). Heather and I spotted this group of magnificent primulas as mentioned by Udai. Fig.90 does not do justice to the wide colour variation shown by the colony, from pale yellow through to deep pink. 'An Enumeration of the Flowering Plants of Nepal' suggested it might be a form of *P. dickieana* which is normally yellow. This was further supported by Udai's opinion and by references I found on my return home in the AGS Bulletin by Kingdon Ward (1938, 6, 300) who found *P. dickieana* in Assam in exactly the same conditions as we saw in Sikkim, wet peaty pastures trampled by yaks. Ahead of his time as an 'environmentalist', Kingdon Ward pointed out that ' the presence of yak undoubtedly stimulates this primula and we have the curious spectacle of the rhododendron scrub being cut and burnt by man and the pasture being rapidly replaced by a single species of primula, useless for cattle; an example of succession not perhaps dreamed of by our ecologists'.

More positive identification came from an article by Lowe and Smith (AGS Bulletin 1979,47,38) whose detailed drawing agreed closely with our Sikkimese plant. They described the flower colour as ranging from white to yellow, pink, purple or red. Key diagnostic features are the glandular hairs of the corolla and throat and the glandular depressions on the underside of the leaves.

It would be interesting to know if anyone grows this pink/red form at present. It would seem to need cool moist shade during the growing season and a fairly dry winter.

For anyone interested in going to Sikkim, particularly the 'forbidden' north-east corner near the Tibet border, treks are available through Chandertal Tours and Sikkim World Expeditions.

Udai Pradhan is the founder Editor of the Himalayan Plant Journal of which four issues were produced before the agitation for Gorkhaland from 1985-1989 forced closure. He wishes to revive the HPJ once again from 1996 and seeks support from plant lovers for subscriptions and articles. Around 3000 subscribers would see this Journal back into circulation again. Anyone interested should contact Mr Udai C. Pradhan, Himalayan Plant Journal, Primulaceae Books, P.O. Box 6, Abhijit Villa, Kalimpong 734301, Darjeeling, Gorkha Hill Council, West Bengal, India.

Cremanthodium ellisii

Fred Carrie

The genus Cremanthodium is often regarded as being difficult in cultivation but in my limited experience of one species, *C. ellisii*, this has not proved to be the case. If a few basic requirements are met, most growers (at least in Scottish or simlar climates) should have some success and enjoy its fine display of " mini sunflowers". According to Polunin, *C. ellisii* has a wide distribution from Kashmir to SE Tibet. I have personally seen it growing in Central Nepal on cliff edges, at the base of rocks and on east facing slopes at about 4500m. The plants on the open slopes formed large colonies while the cliff dwellers were mainly solitary. It is certain that these plants have a good supply of water during the growing season due to the monsoon, do not suffer baking hot temperatures at any time and are protected by snow cover during the worst of the winter weather. All this gives a good indication of its cultural needs although it should be noted that we have never found winter protection necessary here at Tough in Aberdeenshire. In December we obtained seed of C&Mc 383 collected at 4050m above the Rohtang Pass in Himachal Pradesh. Not all the seed was viable but a reasonable number germinated and were pricked out into 7cm plastic pots. After a short growing period of about two months, and in mid-summer, the seedlings disappeared and at first sight appeared to have damped off. This was not, however the case. Next spring they re-appeared and grew on quickly.

We have had a simlar experience with *C. arnicoides* and wonder how many pots of seedlings are thrown out , believed dead when in fact they are simply dormant. It could be that this early dormancy is brought about by overly dry conditions but this has not been proven. We have seen the same sort of behaviour with *Dodecatheon*. We kept the plants in their pots until August 1993

(mainly because I forget to plant them out before then) and then found a space for a group of them in a bed beside our house which is sheltered from the south by a north-facing gable and from the west by high shrubs. The soil here is acid, fairly heavy and moisture retentive but the bed is raised and well drained. It only gets sun in the early evening and is a very cold spot in the garden all year round.

The plants flowered for the first time in June 1994 with only one or two blooms but in July 1995 they flowered again, producing a wealth of nodding blooms on stems of about 25 cm (Fig.91 p.380) and setting a great deal of seed.

The main requirements of this species would appear to be a very cool moist spot that never dries out nor becomes saturated in winter, some protection from slugs which relish the new foliage and a good deal of patience on the part of the grower who will, in the end, be rewarded by this unusual and very attractive plant.

Zephyranthes grandiflora Lindley
(*Z. carinata* Herbert : *Z. tsouii* Hu)
Alastair Mckelvie

Zephyranthes is a genus of about 60 species from semi-tropical areas of the western hemisphere. About six species can be grown in unheated glasshouses, provided pots do not go below freezing, although *Z. grandiflora* will stand a certain amount of sub-zero temperatures.

Z. grandiflora is native to Mexico and possibly Guatamala but is now widespread in the West Indies, Argentina, Brazil, Peru and China (where the Chinese have given it the new name of *Z. tsouii*). It is common at roadsides in Sikkim where the photograph was taken (Fig.92 p.380) in May 1995. Strangely, in spite of its wide distribution it rarely sets seed..

Z. grandiflora is a gorgeous species, flowering from June to September depending on temperature, in a cold glasshouse. It grows easily in any free-draining compost but it does seem to prefer clay pots to plastic.

It is best not to begin watering in spring until growth begins (very much as for pleiones). Once watering has begun it should be continued right until the leaves begin to turn yellow. Stopping too soon means fewer flowers. *Z. grandiflora* has large flowers, 9cm in diameter, of a beautiful rose-pink with a white throat, on a 2.5cm stalk. Propagation is by removal of offsets.

Discussion Weekend
13 - 15 September 1996

The Discussion Weekend will be held in the
Kelvin Conference Centre, West of Scotland Science Park,
Maryhill Rd, Glasgow G20 0TH.

Friday 13 Sept	
evening	lecture by Jack Brownless - Food for thought followed by Dwarf Bulb Group meeting
Saturday 14 Sept	
9 am - 12	visit to the Burrell Collection or workshops - Growing Tips, Troughs
12 noon	Show opens
2.30 pm	William Buchanan Memorial Lecture David Harberd - Pleiones and their cultivation
4.15 pm	David Paterson - Woody plants suitable for the alpine garden, in cultivation and in the wild
7.30 pm	Conference Dinner
Sunday 15 Sept	
9.45 am	Ian Christie - Plant propagation
11.30 am	Chris Grey-Wilson - The flowers of Greece and Crete
2.30 pm	Harold Esslemont Lecture Chris Brickell - A Chinese Odyssey

Costs

RESIDENT	
Friday dinner - Sunday afternoon tea including Conference Dinner	£115
Saturday lunch - Sunday afternoon tea	£87.50
Sunday dinner - Monday breakfast	£30
NON-RESIDENT	
Saturday or Sunday day charge (morning coffee, lunch, afternoon tea)	£25
Saturday evening Conference Dinner	£18

Please add a late booking fee of £5 if making payment after 31 May 1996. A cancellation charge of 15% will be levied up to 30 June, thereafter the charge will be 25%.
The number of delegates is limited to 150. Overnight accomodation may not be available after 1st July.
Bookings should be made on the form in this issue of **The Rock Garden**. The booking, with the appropriate remittance made payable to the Scottish Rock Garden Club, should be sent to:
Mrs Anne Chambers, Suilven, Drumore Road, Killearn, Glasgow G63 9NX.

Fig. 93 Sibbaldia purpurea (p.417) Brendan Marnell

Fig. 94 Potentilla eriocarpa (p.417) Henry Taylor

SHOW REPORTS

STIRLING - 25 March

What better place than the Albert Hall to luxuriate in the freshness and vitality of the bulbs and primulas.

Ray Philp won the Forrest Medal and the Ben Ledi Trophy for the best European plant with a lovely *Helleborus lividus*, with flowers of a curious mixture of green, bronze and pink arising out of a 25cm stem - not completely hardy, however.

The Stirling Show this year aptly demonstrated that fritillaries are now classic alpine plants. Fred Hunt was awarded a Certificate of Merit for *Fritillaria aurea* with some 30 golden flowers on 5cm stems. He also showed three outstanding pans of the bi-coloured *F. michailovskyi*, the off yellow *F. hermonis amana* 'Sunglow' and the bright yellow *F. pudica* 'Richard Britten'. Sandy Leven showed the uncommon *F. ariana,* a pale pink aristocrat.

Sandy also presented *Crocus malyi,* with a yellow centre, and the purple *C. heuffelianus*. Once again he won the Carnegie Dunfermline Trophy for the most points in Section 1.

Margaret and Ian Young's pan of the electric blue *Tecophilea cyanocrocus* took the Institute of Quarrying Quaich for best non-European plant. They also took a Certificate of Merit with a well-flowered pan of the white *Narcissus watieri.*

Glassford Sprunt showed two beautiful irises, *Iris willmottiana alba* 20cm tall with pale blue and yellow flowers, and *I. kolpakowskiana* with lilac/purple flowers with orange and white in the falls.

Cathy and Barry Caudwell exhibited three striking corydalis in the Jubilee A class, *C. integra* (off white), *C. firouzii* (cream with yellow tips) and *C. popvii* (light pink with maroon tips).

Primula allionii has certainly come back into fashion with a wide range of colourful and compact forms. The best of a wonderful range at the Show was Betty Craig's lilac ' Hartside No. 12' with barely a leaf showing. A Certificate of Merit was awarded to Glassford Sprunt for *Primula* 'Lismore Yellow' which won him the Spiller Trophy for the best primula in the Show.

Fred Hunt's pan of *Pulsatilla* 'Budapest Blue' with 14 flowers of opalescent sky blue lived up to its 'Holy Grail' reputation.

Lathyrus vernus albo-roseus, a sweet pea with a difference, gained a Certificate of Merit for Maureen and Brian Wilson. A similar

award went to Monica and Fred Carrie's *Saxifraga oppositifolia* 'Corrie Fiadh' which from a distance looked like a blanket of snow.

For a varied collection of plants in Section II, Helen Greenwood was awarded the Fife County Trophy and the Bronze Medal.

The Gold Medal exhibit from the RBG,Edinburgh contained many gems including *Corydalis nariniana,* the rare Juno iris *I. hippolyti* and a well-flowered pan of *Dionysia curviflora.*

Lawrence Greenwood was awarded a Gold Medal for his display of watercolours including fine paintings of *Calochortus venustus, C. kennedyi* and *Fritillaria cirrhosa* and *F. purdyi.*

John Lee

NORTHUMBERLAND - 1 April

This year the Show was held under AGS Rules and several saxifrages vied for the Farrer Medal, the prize eventually being carried off by *Saxifraga* 'Lismore Carmine', a cushion 25cm across covered in deep pink flowers, shown by Jeff Mawson. This formed part of the winning entry in the large six pan open class which included *Dionysia aretioides* 'Phyllis Carter', *Saxifraga poluniniana, Androsace robusta breviscapa, Primula allionii* and *Primula marginata x allionii* for the AGS Medal. Fred Carrie's white *Saxifraga oppositifolia* which was mentioned in the Stirling report deservedly won a Certificate of Merit.

The other AGS Medal for a six pan class was won by Mrs M Taylor with *Androsace breviscapa, A. pyrenaica x carnea, Dionysia bryoides, D. lamingtonii, Townsendia hookeri* and *Primula* 'Alexis' - a colourful group.

There were more dionysias than for many years and the Sandhoe Trophy for the best plant in a pan not exceeding 19cm went to J. R. Dixon with *Dionysia viscidula* GW-H 1305. The R.B.Cooke Plate for most points in the Open Section went to Geoff Rollison.

The Gordon Harrison Cup for most first prizes in Section B went to Ian Kidman who was also awarded the SRGC Bronze Medal. The Cyril Barnes Trophy for similar honours in Section C went to H.T. Garnick. The Ivor Barton Trophy for six bulbous plants went to A. Spencely and a neat *Primula fasciculata,* recently reintroduced into cultivation won the E.G.Watson Trophy (new or rare) for J. Dennis.

Certificates of Merit were awarded to *Iris hippolyti* (RBG,Edinburgh), *Pulsatilla vernalis* (Mr & Mrs A.T.Sutherland),

Corydalis parnassia alba (E.F.Rainford) and also to the trough of Mrs M . Taylor.

Among the many dionysias, Eric Watson had the most fascinating group, exhibiting three F2 hybrids; *Dionysia* ex *curviflora x tapetoides* (deep pink with white eye), *D. ex* bryoides x tapetoides (yellow) and *D.* ex *archibaldii x aretioides* (mid pink with a yellow eye.

It is difficult to do justice in the limited space available to all the many fine plants on display. Fritillaries were there in large numbers along with saxifrages, primulas, pleiones, pulsatillas and many others. The RBG, Edinburgh were awarded a Gold Medal for a superb display of plants and photographs and a Professional Farrer medal for *Iris willmottiana.*

Lawrence Greenwood received a Gold Medal for a display of watercolours and Robin Brown received a similar award for a selection of troughs, every one planted to a different theme, including the controversial 'Coal-Silvers' which utilises silver foliage plants against a backdrop of coal pieces.

Peter Maguire

EDINBURGH - 8 April

The six pan class in Section 1 was won by Fred Hunt with *Fritillaria conica, F. michailovskyi, Androsace carnea laggeri* 'Andorra', *Primula x* 'Fairy Rose', *P. x* 'Joan Hughes' and *P. pubescens* 'Alba'. This last plant had fine neat trusses of pure white flowers. In the same class in Section 2, Peter Maguire won with *Cyclamen parviflorum, Erythronium tuolumnense, Fritillaria aurea, Hepatica nobilis, Pleione formosana* 'Oriental Grace' and *Primula allionii* 'Mars'.

The Forrest Medal was won by Eric Watson with an excellent deep pink *Dionysia viscidula x freitagii*, said to have arisen spontaneously. The Henry Archibald Rose Bowl for three plants different genera was won by Margaret and Ian Young who also took the A.O.Curle Trophy for three plants raised from seed, the Henry Tod Carnethy Quaich for the best bulb, corm or tuber and the Reid Rose Bowl for most points in Section 1.

The K.C.Corsar Challenge Trophy for the best American or European primula went to Monika and Fred Carrie. There were few entries in the Asiatic primula classes and the R.E. Cooper Drinking Cup for the best plant in this group was not awarded.

The single pan class for a new, rare or difficult plant was won by Margaret and Henry Taylor with the unusual *Primula dryadifolia congestifolia* KGB 512 from China with tiny pink flowers. Other notable plants in Section 1 were *Primula whitei x aureata,* (Taylors), *Soldanella cyanaster* (Ray Fairburn) with many pale lilac -fringed flowers , *Dionysia viscidula* GWH 1305 (Eric Watson) with pale pink white-eyed flowers, *Tulipa humilis* (A. Mackenzie) and *Leiophyllum buxifolium nanum* (Edith Armistead).

Peter Maguire gained most points in Section 2 with several good plants. The Midlothian Bowl for the best plant in Section 2 was won by Ian McNaughton with a bright yellow *Saxifraga juniperifolia* var. *sanctifolia*, difficult to flower evenly and well. The Special Prize for the best plant shown by a newcomer was won by Christine Thomson with *Androsace hedraeantha* dug up from her garden that morning!

Ian McNaughton

PERTH - 22 April

This was the largest show we have seen in Perth in the last few years. The Forrest Medal and the Joyce Halley Award (the best plant grown from seed) were both won by a magnificent cushion of *Androsace vandellii* probably 18cm in diameter grown by Jean Wyllie. The seed was collected from her own plant, a Forrest Medal winner in 1985. This year's plant was one of several perfect cushions which Jean exhibited. Her advice is to grow these tricky beasts from seed and pick the survivors. It was shown in class 3 (three plants different genera) where she won the Dundas Quaich together with *Trillium rivale* 'Roseum' and *Ranunculus munroi.*

Winner of the Diamond Jubilee award in Section 1 was Fred Hunt with *Anemonella thalictroides* 'Oscar Schoaff', *Fritillaria hermonis amana, Cyclamen repandum peloponnesiacum, Primula x* 'Wharfedale Bluebell', *P. x* 'Lismore White' and *P. allionii* 'Lea Gardens'. Fred also won class 2 with a display which won the Alexander Caird Trophy. The plants included *Fritillaria pallidiflora* which received the Bulb Trophy and *Polemonium viscosum* and *Primula x* 'White Linda Pope' which both received Certificates of Merit.

The R.S.Masterton Trophy for new, rare or difficult plants went to Jim Sutherland for *Primula fasciculata* with a creeping habit and covered in deep pink flowers. It is to be hoped that more than one

clone of recent introductions such as this can be propagated in order to increase the chance of viable seed.

David and Stella Rankin won the E.H.M.Cox Trophy with the splendid *Rhododendron racemosum.*

Competition in Section 2 was intense. Winners of both the Bronze Medal and the Perth Salver (for most points in the Section) were E. and R. Smart with some very good plants. The Diamond Jubilee award went to Nick Boss with an excellent display.

There was a very high standard in the Junior Section. Helen Scott won the Junior donated plant and the new Gina Blackwood Trophy in Caithness glass for an excellent lewisia. Laura Denney won class 88 with an elegant pan of *Narcissus* 'Hawera'.

A display from the RBG, Edinburgh, including fascinating species such as *Arisaema auriculatum* and *A. urashima*, was awarded a Certificate of Merit.

Lawrence Greenwood was awarded a Gold Medal for a brilliant display of watercolours, his 25th annual Perth exhibit for which the Club presented him with a Caithness Glass Vase.

Barry and Cathy Caudwell

GLASGOW - 29 April

Stroll round the benches on show day and you'll be educated, illuminated, awestruck and entertained but you'll also realise that genuine preservation through cultivation of species is as viable and laudable a motive as any.

The Forrest Medal was won by Maureen and Brian Wilson with *Corydalis cashmeriana*, its top-dressing of sphagnum wonderfully suggesting the cool peaty conditions it prefers. They also used sphagnum for their *Erythronium* 'Pagoda' and *Pinguicula grandiflora*, both of which received Certificates of Merit.

Jean Wyllie's *Androsace vandellii* was hemispherical perfection a week after winning the Forrest Medal in Perth while Glassford Sprunt's *Daphne petraea* 'Grandiflora' smothered in crystalline pink flowers received a Certificate of Merit.

In the Diamond Jubilee Class A, Fred Hunt's six pan entry was textbook stuff on how to combine and contrast diversity into a unified principle. In class 2, Margaret and Ian Young's trio which took the Archibald Challenge Rose Bowl included a dwarf *Fritillaria pyrenaica* 'Braeside' while in the same class, Margaret and Henry Taylor showed *Androsace primuloides* 'Doksa' (named

after the Himalayan valley where it was found) with a criss-cross network of runners and lovely white flowers.

In class 3, rare or difficult, the Taylors showed *Meconopsis latifolia*, a stunning but fragile dwarf ethereal poppy from NW Yunnan in their entry which won the William C. Buchanan Challenge Cup.

Ian Brooker won class 5 with *Astragalus coccineus* with felt-like leaves and magnificent red, pea flowers, not easy to grow. His *Cassiope wardii* is now a venerable specimen. Anne and Viv Chambers gained the Ian Donald trophy for Scottish native plants with *Primula scotica.*

Some interesting bulbs were *Tristagma nivalis*, barely 5cm high with long green tubes turning into stars at the ends, *Leucojum nicaeense* a tiny snowflake with white fairy bells and *Calochortus nudus* pale lilac with indigo basal markings.

The Taylors won the Crawford Silver Challenge for most points in Section 1 with their usual array of wonderful plants.

Cyril Lafong won the James Wilson Trophy (most points in Section 2) and also the Bronze Medal, demonstrating a skill and maturity that was a revelation. His *Jeffersonia dubia*, lifted from the ground gained a worthy Certificate of Merit as well as being the best plant from a first time exhibitor. The future of our shows looks secure when individuals like Cyril keep emerging.

Fred Hunt was awarded a Certificate of Merit for a demonstration of *Fritillaria* spp. and Gillian Lee received a similar award for an Embroidery of Spring Bulbs. John Lee

ABERDEEN -20 May

Was it the interaction of the British climate and showmanship that helped to produce a spectacular show with one of our largest entries ever ?

The judges did not hesitate over the Forrest Medal which they awarded to Cyril Lafong's *Polygala calcarea*, a British native confined to the warmer chalks of the deep south. The bright blue compact and floriferous form on show was 'Lillet' collected in northern Spain. This pan was also the best plant in Section 2, earning the Aberdeen Quaich and it also received a First Class Certificate and a Cultural Commendation. He also tabled a splendid *Rododendron calostrotum* 'Gigha' with massed rosy red flowers which won the Simpson Salver . His *Epimedium*

grandiflorum 'Nanum' with neat foliage and delicate star-like flowers is under consideration for a FCC. Together the *Polygala* and the *Epimedium* won the Special Prize and these along with other entries won Cyril the Bronze Medal for most points in Section 2.

The Walker of Portlethen Trophy for most points in Section 1 was won by Maureen and Brian Wilson. Their meticulous work over many years growing a variety of plants but specialising in gesneriads is producing winners. Two difficult plants from seed were the rosulate viola, *Viola cotyledon* from seasonally hot dry volcanic soils of Chile and Argentina and *Omphalogramma delavayi* from very wet areas of western China, a plant with rich purple tubular flowers.

The Esslemont Quaich for three pans new, rare or difficult, was won by Margaret and Ian Young with *Raoulia eximia*, now 10cm in diameter. They also showed *Tropaeolum azureum* from Pern and Watson seed collected in 1987/88 and now producing cascades of purple blue flowers.

Several times since the Special prize for a first time exhibitor was introduced it has been won by an aquilegia and this year John Lupton won with a splendid *Aquilegia bertolonii*, just a few centimetres high with 20 flowers.

There seem to be fashions in plants and I noted that splendid plants of Erigeron 'Canary Bird' and *Aethionema* 'Warley Rose' failed to gain any kind of prize.

In the class for 'others' I was delighted to see the winner was *Glaucidium palmatum* with its pleasing pale lilac flowers, knowing the problems of squeezing its large roots into a transportable pot.

Easier travel has resulted in a stream of new plants and I noted several species of celmisia from New Zealand, a fascinating orchid from Tasmania (*Diuris* sp.), called donkey orchids because of the side petals shaped like donkey's ears. The RBG, Edinburgh showed two 5000m plants, *Saussurea tridactyla* and *S. medusa*. I await these fluff lagged plants in flower on the show bench.

Five plants gained Certificates of Merit; *Viola lutea* (Taylors), *Gentiana acaulis* 'Belvedere' (Alicia Thomson), *Tropaeolum azureum* (Youngs), *Ramonda myconi* (Wilsons) and *Lewisia x* 'Pinkie' (Fred Hunt).

Heather Salzen was awarded a Certificate of Merit for a collection of watercolours of snowdrops and crocuses.

Wilfred Holmes

GLASGOW - 2-3 September

Autumn may bring out in many the urge to quote Keats but there's no denying the the Discussion Weekend Show does have a mellow reflective end of season feel to it.

Appropriately Lyn Bezzant's pan of *Vaccinium oxycoccus* which took the Forrest Medal displayed many of these autumn traits; a prostrate mat of healthy foliage overflowing the rim with berries already formed among the profusion of dainty pink flowers.

Three cyclamen were awarded Ceritificates of Merit; Peter Semple's *C. hederifolium* (or an *africanum* cross?) and Glassford Sprunt's *C. graecum* and *C. rohlfsianum*. With this last species especially, dormancy can be broken slightly earlier than the other more difficult cyclamen with one good watering in late July. The cyclamen in the show emphasised their dual nature of combining elegant and refined flowering with the most intricately patterned foliage.

Not surprisingly gentians were a bit scarce after this year's scorching heat but Ian Christie managed to produce a fine trio, including particularly nice 'Sapphire' and 'Maryfield' to win the Peel Trophy.

Harvey Shepherd's profuse display of ferns, including *Dryopteris, Asplenium* and *Polystichum*, underlined their diversity of form, habit and frond shape and his six pans took the Diamond Jubilee class.

Elsewhere the tints of foliage predominated, with silver *Raoulia* 'Margaret Pringle' and *Celmisia argentea* and red *Sedum spurium coccineum* and *Sempervivum arachnoideum*. The perfect geometry of cushions of *Androsace globifera* and *Saxifraga georgii* also indirectly defined autumnal roundness.

As counterpoints to the greenery two flowering plants won Certificates of Merit. They were *Petrocosma kerrii* from Maureen and Brian Wilson and *Convolvulus sabatius* from Harvey Shepherd. This along with the ferns helped Harvey take the Mary Bowe Trophy for most points in Section 1. In Section 2, Darrell Desbrow took the East Lothian Cup with a fine pan of *Blechnum penna-narina*. David Rankin won the Wellstanlaw Cup with an arrangement that combined all the best qualities of flower, foliage, fruit and form.

John Lee

A FLAVOUR OF IRELAND

The Irish welcome and hospitality on this SRGC trip were every bit as good as the plants and gardens

ed. by Ann Christie

The Scottish Rock Garden Club trip to Ireland started at Dunblane very early on Friday 2 June 1995.We were met by our trusty leader Bette Ivey (later nicknamed Rover) and John our capable driver who steered us across Scotland picking up the other participants on the way to the ferry at Cairnryan. The excitement of setting foot on the island with its soft airs was a prelude to a host of pleasures to follow.

On disembarking we were met by Jim Price who was to guide us to Dorothy Brown's garden at Bally Money with its large scree area containing many plants which generated great discussion and several disagreements on plant names. A rocky outcrop used tree trunks, rescued from an Irish bog , whose surface roots accomodated celmisias, orchids (including cypripediums) and a tiny *Bellis* from the late Molly Sanderson's garden. A winding pathway with large troughs strategically placed led us to a natural stone retaining wall. Who would have considered planting a *Celmisia spectabilis* in a vertical wall and topping the wall with a one metre cushion of *Raoulia*? The tradesman's entrance was enhanced by a magnificent *Clianthus puniceus*.

Harold McBride delighted us after dinner with a mini talk on the Burren area.

SATURDAY

On Saturday we were all bright-eyed and bushy-tailed for our 8.15 start when Margaret Glynn guided us to John McWhirter's garden at Banbridge. The perimeter area contained many unusual shrubs, for example an established plant of a *Solanum* sp. with a floriferous *Clematis forsteri* scrambling through it. Alpine raised beds (edged

with large granite blocks) were festooned with many interesting plants including *Roscoea cautleoides*, colourful *Rhodohypoxis* and a stunning fiery orange azalea. A cleverly designed pool was central to the main garden. Rover shepherded us aboard and we headed for Lisburn.

On arrival at Harold McBride's garden we were all gifted two plants, typical Irish generosity. Here was a suburban garden, a Pandora's box of colourful alpines, meconopsis (including 'Slieve Donard'), lilies (Fig.86 p.377) and aquilegias with First Prize awarded to *Oxalis* 'Gwen McBride' named by that illustrious plantsman Alf Evans. Who needs to go to New Zealand when they can see the master at work with his celmisia collection?

Gary Dunlop's garden, the extravagantly romantic Ballyrogan, was our next stop. An extensively landscaped area incorporated cleverly placed natural stone sculptures enhancing the overall design and planting, including a Japanese-style garden, woodland dell, herbaceous plants, irises and a subtle mix of meconopsis and trollius. We were hypnotically drawn to the summit of the garden with its panoramic views. The natural bed-rock made an ideal home for Gary's celmisia collection. Pride of place was given to a specimen of *Celmisia semicordata* 'David Shackleton', although many found *Celmisia walkeri* with some 300 flowers quite breath-taking. This was obviously an architect's garden.

The mini talk on Saturday evening was given by Nigel Marshall, head gardener at Mount Stewart, the National Trust garden on the shores of Strangford Lough which was to be our first port of call next morning.

SUNDAY

This was exotica to be confronted by azaleas by the ton load, stone sculptures in the Do Do Garden, the arched conifer topiary, the extensive lake with acers, *Davidia involucrata, Drimys winteri* var. *chilensis, Banksia* and the giant echiums on Tir-nan-Og, the land of the ever-young. Nigel was in his natural element showing us round the policies.

Down to the lough for lunch prior to our visit to Carol McCutcheon's immaculately designed garden at Killinchy. What a flair for creativity- a plant for a place and a place for a plant. Situated in the frame were *Gentiana depressa* (Forrest Medal winner at St Andrews 1994) and

Trochocarpa thymifolia which deserved a medal, in the open garden *Orchis mascula* and *Pteridophyllum racemosum* that tantalising Japanese woodland plant, to name but a few.

The Scottish Rockers are never happier than when buying plants and we were given the opportunity to do this when visiting Susan Tindall's Nursery at Ballynahinch. There had never been a more orderly queue to spend money. Our coach driver was speechless at the number of boxes he had to store for the remainder of the tour. Rover was awarded 12 out of 10 for the best collection. We did not do justice to Susan's garden because we were too intent on fulfilling our own desires from her excellent selection of plants.

On Sunday evening John McWhirter entertained us with an amusing talk on the gardens we didn't visit. His pawky sense of humour and enthusiasm endeared him to the assembled company.

MONDAY

Our last day in Ireland; we were reluctant to depart not knowing the treat in store for us which was a short trip from the hotel to Margaret Glynn's garden (Fig.87 p.378). Who can boast a garden with five mature chestnut trees, a giant oak, an acre of lush Irish lawn, a sunken garden, several raised beds and 30-40 troughs- all filled with exceptional plants - it makes you weep? Arisaemas, trilliums, acers, hostas, rhododendrons large and small, wisterias and the bags of composts against the rear wall in case of emergency. We must not fail to mention the elegance of *Cornus controversa* 'Variegata', a fitting finale to walking round this oasis of tranquillity which could only be excelled by food, glorious food.

The Irish welcome and hospitality were second to none, from the tasty home bakes served at the garden visits to the buffet provided by the group at Margaret's. To single out a recipe from the buffet was difficult but here's one to test your taste buds (see next page).

ROSY MOUSSE GATEAU--- serves 16

For the sponge	For the mousse
5 eggs separated	4 tablespoons rose water
5 oz caster sugar	1 tablespoon powdered gelatine
6 tablespoons ground almonds	6 eggs separated
1 oz plain flour	6 oz caster sugar
1 tablespoon lemon juice	1/2 pint double cream

Pre-heat oven to 180°C, grease and base line a 10-11 inch loose-bottomed cake tin. Make sponge, whisk together yolks and sugar until pale and thickened, gently fold in the almonds, flour and lemon juice. Whisk egg whites in a separate bowl until just peaking, gently fold a spoonful into yolk mixture then fold in the remainder, turn into prepared tin and bake for 20 minutes, turn out and cool. Wash tin and re-line, carefully halve sponge horizontally and place one half in the tin.

MOUSSE

Place rose water in a bowl with two tablespoons of water, sprinkle over gelatine and set aside, whisk yolks and sugar until pale and thick, dissolve gelatine slowly, pour into egg mixture whisking vigorously, whisk whites to soft peaks, whip cream to floppy stage, fold into egg mixture then whites, transfer to cake tin, cover with other half of the sponge. Chill for several hours, turn out and sprinkle with icing sugar.

It only remains to say:

We're no awa tae bide awa, we'll aye come back and see ye.

Many thanks to our Irish members for all the tour arrangements and to Sandy Leven for all the spadework done beforehand.

SUPER W.B.
(PICEA ABIES 'KOCANDA')

Dr Kasbal from Prague describes the herculean efforts needed to obtain this first rate dwarf spruce

by Jaroslav Kasbal

Sometimes one gets to plants, or they get to you, in a curious way; many times by pure chance. For example, one meets someone and in talking he mentions.... or one goes somewhere and sees... Perhaps someone visits and says that he has heard of ..... So it goes, but we all know that chance favours those who are prepared.

Now - that adjective SUPER - being surrounded by so many super things perhaps it is now a counterproductive word. We feel lost in the big cities, uneasy in big cars, bored by big brother, big bosses, supermen and supermarkets.

It is perhaps because the human dimension is missing and so, when I first used the name - SUPER W.B.- for a plant close to my heart, I soon abandoned it in favour of a more appealing one. The plant in question was derived from a witch's broom (W.B.) of huge dimensions (SUPER) on an old spruce tree.

Perhaps I should begin at the beginning of my tale. A colleague of mine mentioned to me that there was a " giant bonnet- like growth on the top of an old spruce tree" near his summer cottage in the Czech Moravian Highlands. On my insistence he promised to climb the tree and bring me some cuttings from the growth. Several scions were grafted but sadly none took. Next season, same again. All that I had after a few years of effort was a poor quality photograph of the tree with its bonnet. (*Unfortunately the photograph was not suitable for printing. Ed.)*

Was it not The Bruce who said " if at first you don't succeed"? Ashamed to ask my colleague yet again for cuttings I organised an expedition myself to the remote locality. We were three and there was the tree. It was only then, standing at the foot of a 50m high spruce, that I appreciated my colleague's courage, willingness and generosity in furnishing me with scions.

Without the correct skills it was a difficult climb, the lowest branches were ice-covered and sloping, nine metres from the ground. A piece of "nut" cake to a squirrel. However, one of our members was Mr Tomcat (Kocourek in Czech). He is young and nimble, and with ropes, ladders and the help of the rest of us he made it. A description of the climb would occupy another page but all's well that ends well. After hours of toil he stood, trembling at the knees, roped to the first branch, and we celebrated. Then came the easier climb to the very top of the tree. His head appeared, pea-like, protruding from the top of the witch's broom. Its main branches were as thick as his thighs.

Well that is the story of *PICEA ABIES* 'KOCANDA', a first rate dwarf spruce and how it was introduced to cultivation.

The original witch's broom is several metres in diameter, very vital and broadly conical with a rounded top. It has two types of growth; one is robust with 2cm long blueish needles, the other emerging spontaneously from adventitious buds on the old wood, forming little "hedgehogs" of very short (up to one cm) medium green needles.

We prefer to graft the latter type of growth, although it is more difficult to handle than the former, because it makes a more diminutive and therefore desirable plant on a strong well-rooted understock.

HELLEBORE SEED

Two reports have come in this summer of skin problems caused by handling seed capsules of hellebores. Apparently finger tips began to go red and sore an hour or two after opening the capsules. This lasted for a day or two, followed by skin peeling from under the finger nails, which lasted for several weeks .

It would be interesting to hear from anyone who has experienced this problem or can shed any light on the causes.

Replies to the Editor

BOOK REVIEWS

Plantsman in Nepal
by Roy Lancaster
Published by Antique Collectors' Club
270 colour plates
Price £35

This beautifully produced and illustrated book is a reprint of Roy Lancaster's book (out of print for several years) published in 1981 describing an expedition to NE Nepal in 1971 for seeds and plants. This enlarged new edition also includes an account of a later visit to Nepal in 1973 when the rhododendrons were flowering.

It is a charming account of the plants, animals and people and highlights the difficulties and delights of travelling with porters and sherpas. It will be a most useful book for anyone going to Nepal in search of flowers and an armchair book for those unable to go.

MS

Euphorbias
by Roger Turner
Published by B T Batsford and the Hardy Plant Society
192 pages 48 colour plates
Price £25

Probably most of our members think, as Roger Turner did when he bought his first six euphorbias in 1976, that there are not all that many species. After all the old RHS Dictionary only listed 50. In fact there are at least 1600 species in the genus and Roger Turner has done a tremendous job in compiling this book where he describes around 280 species and innumerable varieties and cultivars.

This book reveals the value of euphorbias as foliage plants, wintering stems, rock plants and ground cover. The author describes all the euphorbias suitable for outdoor culture in the Europe and the USA. There are many tongue-twisting names to cope with ie *ambohipotsiensis* but there is bound to be something for every gardener here. This is an indispensible reference book on an unjustly neglected genus.

AT

A Beginner's Guide to Growing Hellebores
by Graham Rice and Elizabeth Strangman
Published by David and Charles
160 pages 40 colour plates
Price £16.99

Most gardeners think of hellebores as white, greenish or purple flowers which appear in late winter and early spring but are not aware of the vast colour range now available as well as the size and quality of the flowers. New cultivars now encompass white, yellow, green, pink, plum, lilac and black flowers.

There are only 15 species in the genus but well over 350 cultivars are listed as being in cultivation. This book gives an excellent acoount of the range of forms available plus sound information on growing as well as useful hints on breeding. The wonderful colour plates are worth buying the book for alone and they will be extremely valuable for any gardener trying to identify cultivars.

PS

Cushion Plants for the Rock Garden
by Duncan Lowe
Published by B T Batsford
160 pages 76 colour plates
Price £17.99 (£16 p&p free from SRGC Publications until 20/3/96)

A book on cushion plants by Duncan Lowe speaks for itself because he has been an expert on this subject for many years as well as an authority on walls and troughs. This book discusses the nature and physiology of cushion plants and goes into detail about the various cushion plants we can grow in the rock garden or alpine house. This is followed by a section on propagation and pest control.

The plants discussed range from trouble-free easy ones to those varieties which defy cultivation except by experts.

This excellently produced book will be a tremendous acquisition to the library of newcomers to rock gardening.

AM

Bulbs for the Rock Garden
by Jack Elliott
Published by B T Batsford
160 pages 64 colour plates
Price £17.99 (£16 p&p free from SRGC Publications until 20/3/96)

This is not a book which lists all the bulbs suitable for the rock garden but rather one which discusses the planting of bulbs in various places in gardens and their propagation. It then deals with bulbs suitable for different seasons of the year including summer bulbs, a topic often omitted. It also includes a useful list of those bulbs which have received the RHS Award of Garden Merit, a sure guide to growability. Jack Elliott tells us of his experiences of growing bulbs over many years with the emphasis on cultivation rather than on classification. It is excellent that he has concentrated on bulbs which are readily available in the trade. This book can be recommended to gardeners who want to grow bulbs. PW

Saxifrages -the Complete Cultivars and Hybrids
by Malcolm McGregor
Published by The Saxifrage Society 1995
102 pages Price £9

Since its birth only few years ago, the Saxifrage Society has been determined to produce an international register of saxifrages and has become the authority for this task. Now it has done it.

The result is a neat, clear easy-to-use booklet of 102 pages of which 68 are devoted to an alphabetical listing of all the cultivar names, each with its origin, status, parentage and validity. In a very useful and interesting appendix each saxifrage is listed then put against every other species with which it is known to have been crossed and the inter-specific hybrids resulting from these crosses. The booklet is free to Saxifrage Society members and £9 to others.

It would be difficult to criticise this remarkable product of hard and painstaking work, the credit for which goes to the author who is also the Society's editor. Among those who could not imagine the rock garden without saxifrages there are those who think that there are already too many cultivars, and others who are almost addicted to producing even more. But for all lovers of the genus this register presents, at last, a single source of accurate information, providing a thorough and reliable guide through the maze of saxifrage cultivars. DL

THANKS BE TO SCOTS

I'm just glad I joined the SRGC

by Brendan Marnell

Sometimes I get things right. Since joining the SRGC in 1990 my wife and I were introduced by John McWhirter (via coach tour from Banbridge Co. Down) to the Sharps of Ganavan, the Hills of Kilmelford, then Campbells of Kilmore and Branklyn Garden. Not just sunshine and alpines all the way but encouragement and advice from every expert. Such a pleasure that we drove from Dublin in June 1994, cheerfully wending our alpine way through Oban and on to the Stones at Fort Augustus and the Taylors at Invergowrie. Happily my wife is still a normal person but by then I was undergoing personality change. The rockscape and troughs at Kilmelford, white cyclamen through black ophiopogon at Ganavan, the gentian bed at Fort Augustus and the Taylors raised beds had begun to interfere with my dreams and quality weevil hunting time.

To be able through the SRGC Journal to tap the practical experience of experts, successful and otherwise, was enormously helpful. For example, an article about raised beds by Margaret and Ian Young was a bit advanced for me in January 1991 but last year it became so relevant that I concocted a table of 18 follow-up questions on outdoor cultivation of over 60 alpine taxa and sought the Young's advice. My four page questionnaire was soon returned with over 700 specific hints, many of which have already proven their worth. How many more plants would I have lost this hot summer if I had not dead-headed every saxifrage, gentian, campanula, cassiope and even daphne? Perhaps my leiophyllum, leptospermum and phyllothamnus might have survived too if I had included them on the questionnaire or had had the wit to extrapolate from the information supplied.

THE TAYLORS LEAD ME ON

The most informative and rewarding experience happened in July 1995 on a plant-spotting trek among the western Himalaya with Margaret and Henry Taylor. In a nutshell, my diary for 26 July lists

38 species, all in flower, almost all shorter than 8cm at or on the ridge over the Rohtang Pass. Some special favourites were the star-spangled buns of *Androsace delavayi* (Front Cover) which bulged out of every horizontal crevice where the schist layers were thin, well west of its usually recorded habitat and *Sibbaldia purpurea* (Fig.93 p.397) a tiny beauty locally abundant at 4000m creeping in soil as shallow as 6cm over stabilised scree. This seemed to be the usual medium on gentler slopes. From this Rohtang ridge, dry soil samples showed about 14% humus with pH between 4.7 and 5.2. Near the summit of the Hampta Pass 300m higher up, *Paraquilegia anemonoides* bloomed gorgeously from vertical crevices, with nearby another spectacular cliff dweller *Potentilla eriocarpa* (Fig.94 p.398). To find so many and so varied beautiful plants up high with Margaret and Henry to identify and discuss them was a fair glimpse of botanical paradise for me.

WHAT ARE BOOTS FOR ?

Reaching these altitudes as the snowline receded and before the herbivores got there became part of the daily game, but with a marvellous support team we won every time. Our professional guides, Buddhists in soft canvas shoes, even cut fotholds and held my hand crossing steep patches of snow on the Hampta. They must have wondered what my sturdy climing boots were for but were far too discreet to enquire. You may smile but gritty glacial moraine is not the ideal surface for a bumslide and it is six years since snow in Dublin lasted more than a day, even in the hills. We don't have mountains in Ireland . Not any more.

Hopefully the Taylors will do justice on paper and on stage in due course to our 1995 trek. Me, I'm just glad I joined the SRGC AND thanks to all aforementioned Scots and to John McWhirter.

RHS ROCK GARDEN PLANT COMMITTEE

Recommendations made at SRGC Shows in 1995

Dunblane -18 February

Awards to Plants

Award of Merit (as hardy flowering plants for exhibition)

To *Crocus abantensis* exhibited by J Wyllie, Dunblane

To *Galanthus elwesii* 'Fred's Giant' exhibited by E Hamilton, Falkland and I McNaughton, Pencaitland

Certificate of Preliminary Commendation (as hardy flowering plant for exhibition)

To *Crocus korolkowii* exhibited by F Hunt, Invergowrie

Selection for AGM Assessment

Iris 'Katherine Hodgkin' was recommended for further assessment for the Award of Garden Merit, exhibited by A Leven, Dunblane

Edinburgh -8 April

Awards to Plants

Award of Merit (as hardy flowering plants for exhibition)

To *Primula* 'Wharfedale Village', exhibited by D Rankin, Lasswade

To *Corydalis solida* 'Highland Mist', exhibited by M&H Taylor, Invergowrie

To *Corydalis shanginii* var *ainii*, exhibited by F Hunt, Invergowrie

Awards to Exhibitors

Certificate of Cultural Commendation

To J&M Young, Aberdeen for a pan of *Trillium rivale*

Aberdeen -20 May

Awards to Plants (as hardy flowering plants for exhibition)

First Class Certificate

To *Polygala calcarea* 'Lillet', exhibited by C Lafong, Glenrothes

Award of Merit

To *Tropaeolum azureum*, exhibited by J&M Young, Aberdeen

Awards to Exhibitors

To J&M Young, Aberdeen for a plant of *Tropaeolum azureum*

To C Lafong, Glenrothes for a pan of *Polygala calcarea* 'Lillet'

Glasgow -2 September

Awards to Plants

Certificate of Preliminary Comendation

To *Asplenium scolopendrium* 'Kaye's Lacerate' as a hardy foliage plant for exhibition, exhibited by H Shepherd, Bolton

To *Vaccinium oxycoccus* as a flowering plant for exhibition, exhibited by L Bezzant Port of Menteith

Awards to Exhibitors

Certificate of Cultural Commendation

To C McCutcheon, Kilinchy for a pan of *Asplenium dareoides*

To L Bezzant, Port of Menteith for a pan of *Vaccinium oxycoccus*

OBITUARY

DOROTHY PAPE

For so many years a member of the SRGC and a founder member and later convener of the North Northumberland Group, Dorothy Pape died at the end of March 1995.

Although handicapped by deafness throughout a long life, her diverse interests and emthusiasms included plant collecting in Europe. Rhododendrons and conifers were her special enthusiasms.

We remember the garden of a skilled plantswoman and her many gifts to us of plants propagated by herself. Sadly she was denied her wish to collect in China.

A lady of so many talents, she was, surely, one of the first lady motorists, remembered donning thick leather gloves at the wheel of an open roadster. To celebrate her 80th birthday, Dorothy acquired a BMW automatic which she drove with pride for many of her later years. Her Parish church at Norham benefits from her fine embroidery, and the churchyard from her gifts of choice shrubs.

S D Aitchison

W.G. (BILL) MACKENZIE

Bill MacKenzie who died on 16 October 1995 aged 91 was a founder member of the SRGC when it was formed in 1933 and was elected Honorary President of the Club in 1994.

He began his career at the RBG, Edinburgh as a student gardener and rose through the ranks to become an Assistant Senior Curator. While at Edinburgh he began his lifelong interest in alpines and was instrumental in breeding 'Inverleith', perhaps the most famous of all gentian hybrids. Another plant for which his name will always be commemorated is the clematis 'Bill MacKenzie' which was raised at Waterperry and named after Bill by Valerie Finnis.

In 1946 he took charge of the Chelsea Physic Garden which had been greatly neglected during the war and restored it to its former glory. He was awarded the Silver Salver of the SRGC in 1994 for outstanding services to the Club which he always supported; he attended the Discussion Weekend in 1994 at the age of 90. He was a member of the Joint Rock Plant Committee and was awarded the Victoria Medal of Honour, the highest award of the Royal Horticultural Society.

Alastair McKelvie

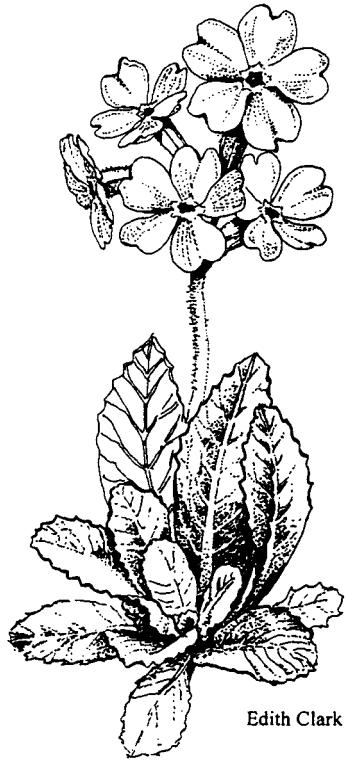
AUTHORS

OBITUARIES

ARTICLES

PLANTS

Abbreviations: FM, ForrestMedal; FaM, Farrer Medal; AM, Award of Merit; FCC, First Class Certificate; CPC, Certificate of Preliminary Commendation.
Bold Type (eg **25**) indicates an illustration number.



Edith Clark

PRIMULA FARINOSA

ANNUAL GENERAL MEETING

The Annual General Meeting
will be held at the
Battleby Conference Centre
Redgorton, Perth
on Saturday 2 November 1996
at 2.00 pm

Nominations are required for the President, the Executive Office-Bearers and for four ordinary members of Council to serve for three years. All executive Office-Bearers retire annually but are eligible for re-election.

Nominations in writing and seconded by another Club member or members should be lodged with the Secretary not later than 15 May 1996. The nominator must ascertain that the nominee is willing to serve if elected.

The following have served for three years as ordinary members and are not eligible for re-election to Council for one year : Mr B. Caudwell, Prof. D. Rankin, Mrs P. Watson and Dr S. B. Wilson.

Secretary
Dr Jan Boyd
Greystonelea
Gartocharn
Alexandria
Dunbartonshire
G84 8SD

SCOTLAND'S GARDENS SCHEME

We are very pleased to have the opportunity to write in "The Rock Garden" as we feel that many enthusiastic gardeners throughout Scotland still do not know of our existence in spite of being 65 years old in 1996!

We have no membership-but we want you to join us. Open for us one day (or more if you like) and, by doing so, give a great deal of pleasure to many and support a charity of your own choice as well. Or, join up with a neighbour and have a joint opening on the same day. Full details are available from :

Scotland's Garden Scheme, 31 Castle Terrace, Edinburgh EH1 2EL.
Tel :0131 229 1870

Thank you for selling our handbook at SRGC shows early in the season; we do appreciate this very much indeed and it would be even better to see your name amongst the gardens opening for us. We can assure you of a warm welcome.

The New Zealand Alpine Garden Society

invites you to join other overseas members enjoying the benefits of our Society. Two informative Bulletins each year and an extensive NZ Native section in our seed list enhance the contact with New Zealand alpine plant lovers. Enquiries to the Secretary, or join now by sending N.Z. $25 for annual membership, personal cheques welcome.

The New Zealand Alpine Garden Society,
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