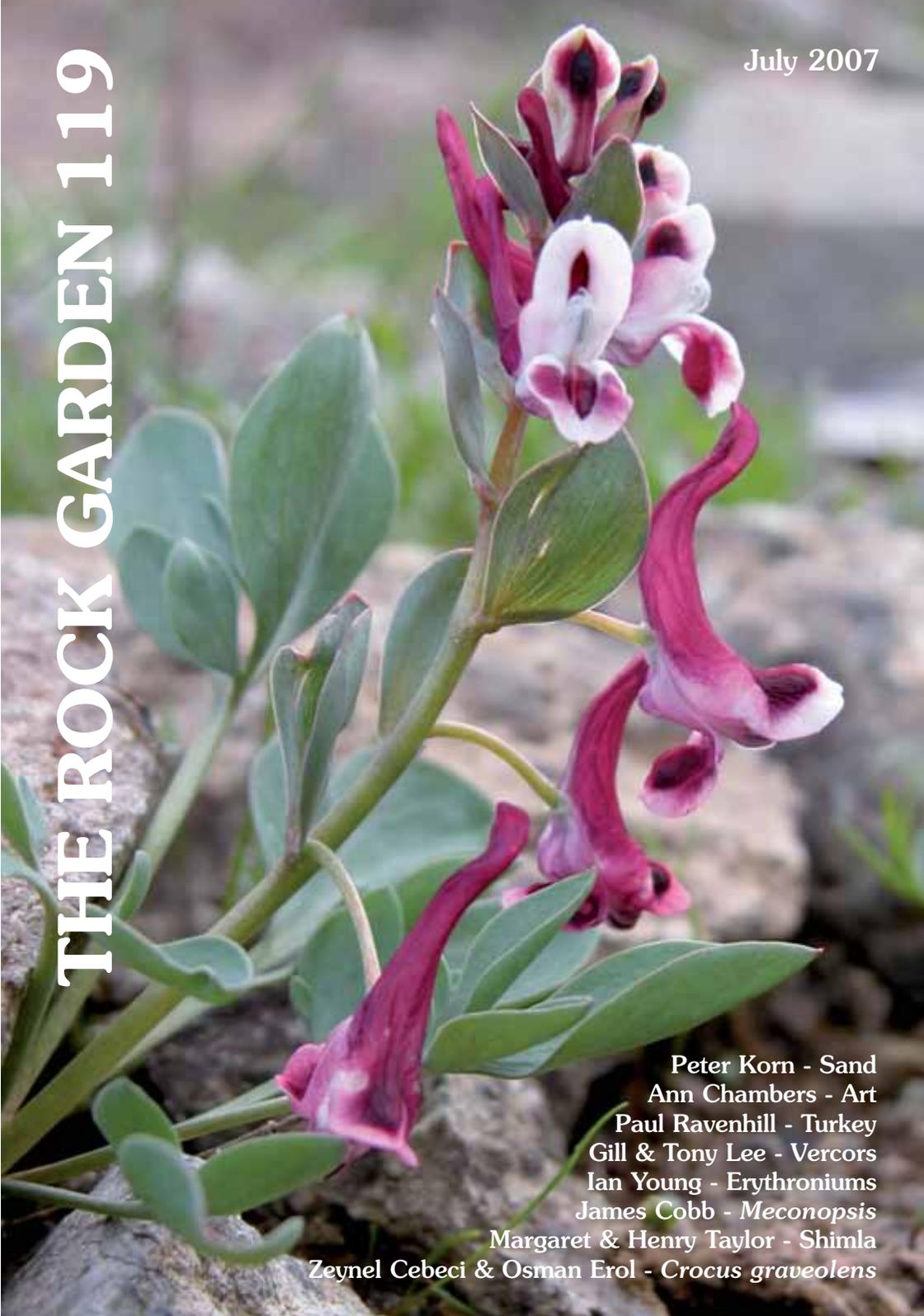


# THE ROCK GARDEN 119

July 2007



Peter Korn - Sand  
Ann Chambers - Art  
Paul Ravenhill - Turkey  
Gill & Tony Lee - Vercors  
Ian Young - Erythroniums  
James Cobb - *Meconopsis*  
Margaret & Henry Taylor - Shimla  
Zeynel Cebeci & Osman Erol - *Crocus graveolens*

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# The ROCK GARDEN

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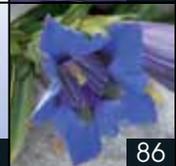
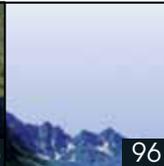
COVER: *Corydalis erdelii*, Turkey

- 1 **Crocus graveolens**  
– Zeynel Cebeci and Osman Erol
- 6 **Turkey, the First of Many?**  
– Paul Ravenhill
- 26 **Cultivating Erythroniums**  
– Ian Young
- 42 **An Artist's Inspiration**  
– Anne Chambers
- 75 **Meconopsis in Yunnan**  
– James Cobb
- 86 **The Vercors - Where's that?**  
– Gill and Tony Lee
- 96 **Exploration North East of Shimla**  
– Margaret and Henry Taylor
- 106 **Growing in Sand**  
– Peter Korn



## REGULARS

- 38 Book Reviews  
56 Show Reports



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The Editor welcomes articles, photographs and illustrations on any aspects of alpine and rock garden plants and their cultivation. Authors are encouraged to submit material electronically but articles may also be submitted in manuscript, preferably double spaced. Digital images are particularly welcome but 35 mm slides, high quality prints or drawings may also be submitted for professional scanning.

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

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# A Lesser-known Malodorous Crocus: *Crocus graveolens*

Zeynel Cebeci and Osman Erol

## Introduction

Crocuses are dwarf cormous perennials, ranging from Portugal and Morocco to western China. Turkey has many endemic and rare crocus taxa such as *Crocus wattiorum*, *C. kerndorffiorum*, *C. anclyrensis*, *C. antalyensis* and many others. Most of Turkey's native taxa were identified and classified by Brian Mathew, Erich Pasche and Helmut Kerndorff but it is still not surprising to find undescribed species there. In 2004 Erich Pasche reported more than 30 species and 25 subspecies of crocus in Turkey. Considering this, Turkey is most probably the native land of the genus *Crocus*: every year, two or three new taxa are described from this country.

Among the others, *Crocus graveolens* of the Flavi group has received less attention. It grows in south and south-eastern Turkey and in north-western Syria, Lebanon and northern Israel. Information about *C. graveolens* is quite limited. This article introduces this lesser known crocus and describes some of its morphological traits. Since it has attractively coloured and shaped flowers we think that it may have distinctive horticultural value in low altitude coastal zones.

## Habitat and Distribution

According to the literature, the species is found in the Turkish province of Adana in the heart of the Cukurova region and in the southern and south-eastern provinces of Hatay, Mersin, Kahramanmaras,



*Crocus graveolens*

Sanliurfa and Gaziantep. All these provincial areas are characterized by a typical Mediterranean climate with very hot and dry summers. Our findings and descriptions are based on specimens that were collected in Adana at altitudes of 150-250 m from the low hillsides of the Taurus Mountains.

In its wild habitat, *Crocus graveolens* likes sunny and light-shaded places. In partial shade it grows longer and thinner and flower colour tends to be yellowish orange. Tony Goode noted that it grows in rocky places or scrubby woodland clearings often over limestone or on the rocky hillsides of stream valleys. The red Mediterranean soil there is neutral or slightly basic. Neighbouring plants are soap lilies (*Asphodelus*), cyclamens (*Cyclamen cilicium*) and the Turkish pine (*Pinus brutia*).

Türkmen and Düzenli found *C. graveolens* in the flora of the Cukurova region. The plant has also been observed under *Pinus brutia* forest at 500-600 m altitude in Kertel in the upper valley of the Ceyhan River in the Kahramanmaraş province, neighbouring to Adana.

## The Plant Traits

The length of the plant from the base of the corm to the end of the tepals of the longest flower is 8 to 11 cm. The aerial part is 4 to 5.5 cm. The rest of the plant is in the ground and wrapped with a layered perianth tube. The corms are ovoid with layered membranous or



*Crocus graveolens*, the corm



*Crocus graveolens*, two cormlets

somewhat coriaceous tunics. While the outer layer of the tunics is blackish brown, the inside layers have a tidy brown surface. The horizontal diameter with tunics varies from 15 to 20 mm and the vertical diameter from 10 to 12 mm. If the corm tunics are stripped out, two new white cormlets may usually be seen inside. The lower and bigger old corm carries two smaller cormlets on top. This parent corm is nearly 5 mm long and 5 to 10 mm in diameter; it produces two cormlets every growing season. Small cormlets are 5 mm in diameter and almost pearl shaped. There are 3 or 4 membranous, white or brownish speckled cataphylls. The three to ten leaves are dark green, about 15 cm long, 1 to 5 cm wide and sometimes adpressed to the soil. The plant is synanthous and, in contrast to other crocus taxa, *C. graveolens* has adaxial hairs at the leaf margin.

The flowers are very attractive and bright orange-yellow; the bud has a waisted shape. The outer perianth segments are longer than the inner ones and have 3 main longitudinal brown-purple coloured stripes on their outer surfaces; the tepals are about 20 mm x 6 mm; the throat is yellow, glabrous or pubescent. The pattern of stripes of the outer tepals is similar to *Crocus imperati* ssp. *suaveolens* but differs in thickness and colour. There are many feather-like tiny vein stripes from the main stripes to the margins of the outer petals while the inner petals have no stripes.

There is no prophyll; the membranous bract and bracteole are white, brownish or greenish, and attenuate at the apex, the bracteole always being narrower than the bract. The perianth tube is 4-8 cm long but, in the wild, corms are deep in the soil and only a short portion of the tube may be seen on the surface. The papillose-pubescent filaments are 3 to 5 mm; the anthers 9 to 13 mm; both anthers and filaments are yolk-coloured. The style is many-branched and extends from the centre of the flower.

Although the flowering time of *Crocus graveolens* has been reported as February to March, it may flower much earlier if the temperature is mild (12-15 °C) as in Adana in the winter. We have seen the plant bloom throughout January in the Turkish Mediterranean Çukurova basin. The flowers may live for 7 to 10 days, depending on the weather conditions. Whereas the life of flowers is shorter on open days, it tends to be longer on cloudy and rainy days.

Almost all other crocus are sweetly scented. For example, *Crocus biflorus* Miller subsp. *biflorus* is clove scented. Uniquely, *Crocus graveolens* is the only crocus with an unpleasant fragrance. This smell, as of rotting meat, probably attracts a specific group of pollinators; bees are not active in the winter when these plants flower. However, Brian Mathew in 1982 noted unscented *Crocus graveolens* flowers in Israel.

In conclusion, *Crocus graveolens* is a valuable crocus that blooms very early, from the beginning or middle of January. Its shiny and orange-yellow flowers with purple veins are extremely attractive. Only Brian Mathew has written on its horticultural value, cultivation and propagation. We found that it can be cultivated successfully. Our corms and cormlets were planted 5 to 6 cm deep in poor to moderately fertile soil and the plant proliferated quickly and easily. It is also valuable for places which have high relative humidity and temperature in the summer, such as Mediterranean basin areas. Since other crocuses require cold winters and a hot dry summer climate, *C. graveolens* may be a



5 - *Crocus graveolens*,  
corm tunics



*Crocus graveolens*: stripes on the outer tepals

good choice for growing in regions with mild rainy winters and dry summers.

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A shepherd and his goats near Seyhan Dam Lake, north of Adana: *Crocus* samples came from the surrounding hills



# Turkey - The First of Many?

Paul Ravenhill

8 - *Iris scari*



9 - *Iris iberica* subsp. *Elegantiissima*



10 - *Serapis* sp.

# Turkey - The First of Many?

Paul Ravenhill

Just as Robert Unwin and I, both from the Royal Botanic Garden Edinburgh (RBGE), were contemplating a plant-finding trip to Turkey, we were lucky to be asked to join Adil Guner, Director of Nezahat Gokyigit (NGBC), to travel to south-east Turkey to botanize and collect limited numbers of bulbous plants as herbarium



11 - *Muscari* sp

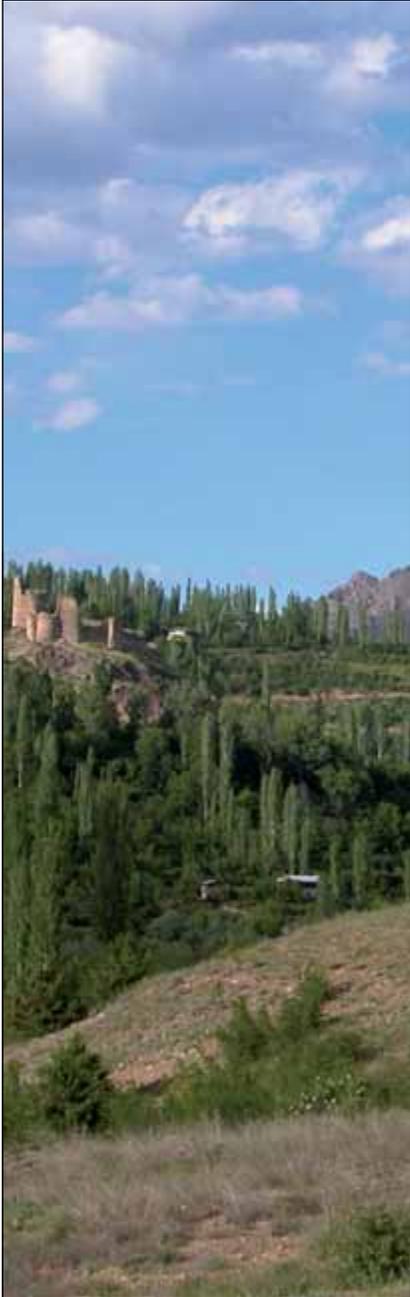


12 - Ogdem

specimens for NGBG. Apart from Robert, Dr. Guner and I, there were four others: Margret - Dr. Guner's partner; Mehtap - a botanist; Gülnur and Hulya - both botanical artists. Having never been on a botanical trip, let alone a holiday to Turkey, I didn't know what to expect or even if we would see any bulbs in flower. We started from Istanbul on the 12th May and set off along the Black Sea coast to stay overnight at Trabzon - a 14 hour drive. We spent two days at Nezahat Gokyigit Botanic Gardens. The



13 - *Iris* sp. nov.



14 - The Coruh Valley



15 - A toilet stop! *Tulipa julia* & *Muscari*



16 - *Anemone narcissiflora* and its habitat



17 - *Pulsatilla alba*



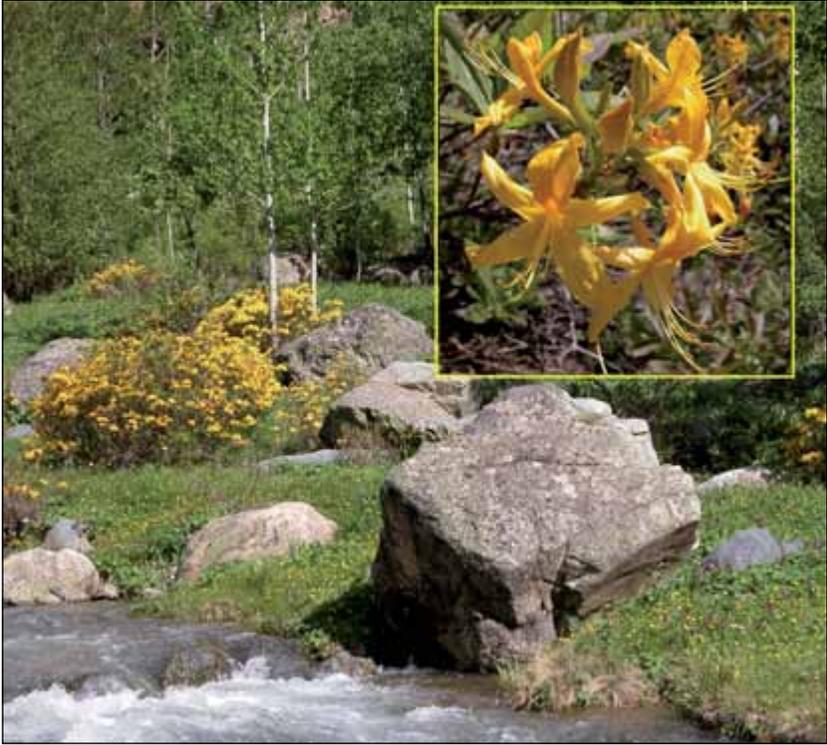
18 - *Primula auriculata*



19 - *Primula elatior*



20 - *Gentiana verna*



21 - *Rhododendron luteum*

garden comprises about eleven different parts. Most of our time was in the part known as the 'Wild Garden'. Only two parts are open to the public: others are as yet inaccessible, sandwiched between motorways. Despite this drawback, within the gardens there are some great plants, including *Iris*, *Serapias*, *Muscari*, and many more.

We picked up two of the team *en route* at the bus station, took the



22 - *Fritillaria alburyana*

coastal road to Hopa and then turned south along the Coruh River, where two of fourteen dams are now being built. We followed the river to our first stay at Yusufeli, about an eight hour drive. We planned just over four days in this area. After dropping our bags, we headed off to a site known for new *Iris* species growing in small numbers on a light slope at the base of a hill. The dry ground was baked hard and alongside the *Iris* were similarly sparse *Muscari tenuiflorum* and *Ornithogalum narbonense*. During our time at Yusufeli, we made an excursion southward towards Kilickaya, stopping in the village for a customary cup of tea and for Adil to ask locals if the new *Iris* grew in the area. We were in luck: it was growing

23 - *Corydalis erdelii*



24 - *Colchicum szovitsii*

at 1300 m, just above the village. As we ascended we found *Iris caucasica* and *Tulipa julia*, at first in small numbers but, as we drove higher, the tulip became more plentiful. On our last day we drove north towards the village of Sarigol, stopping there only to change to a smaller minibus, as the roads were to become harder and rougher.

We stopped at 1280m and found *Rhododendron luteum* in full bloom, its strong scent filling the air. We drove up the valley to 2180m and had to stop as the road had been washed out by snow melt. Robert and I followed a stream upwards, finding *Crocus* species out of flower,



25 - *Fritillaria caucasica*

with large clumps of *Primula auriculata* growing on the banks and in raised clumps of turf within the stream itself. Higher up the bank on drier ground were a small *Daphne* and *Primula elatior*. After a tough walk to 2321m we found a large colony of *Pulsatilla vulgaris* along with *Gentiana verna*.

We moved on towards Erzurum, which lies to the South. Driving via the Kirecli pass added a few extra miles but was well worth it! At the first couple of stops were very small numbers of bulbs, notably *Allium*, *Muscari* and *Iris caucasica*. In

my opinion, the best half of the day was at the large white standards of *Iris iberica* subsp. *elegantissima* growing on a flat grassy dry ridge - a massive flower for a small plant and one growing in a harsh environment alongside *Gladiolus atroviolaceus*. I had difficulty photographing these plants, the wind blew so hard. We moved on (eventually!) after lots of photos, stopping at the top of the pass around 2400m. After a quick lunch our two artists caught up on painting while the rest of us dispersed to see



26 - *Iris caucasica*

27 - *Fritillaria caucasica*





28 - *Iris iberica* ssp. *Elegantissima*  
with heavily veined standards

29 - *Fritillaria*, *Corydalis* &  
*Veratrum* habitat

what bulb life was around – but finding only a couple of flowering *Fritillaria caucasica* with many immature leaves. We moved on to a tiny snow patch, to find a few *Colchicum szovitsii* and other nearby *Crocus* not yet in flower. Heading back to the mini-bus to meet our colleagues, we found a large group of *Bellevalia paradoxa* in grassy muddy ground. We eventually embarked and went on to Erzurum.

We spent five days in Erzurum, heading west to Kop Dagı for our first whole day on level ground in an area 200m off the main road. Our first bulbs of the day were *Corydalis erdelii* growing with *Fritillaria armena*; on looking around we found a small group of *Tulipa armena* var. *armena* on a steep slope. After a bumpy drive, we stopped next to a snow-covered area with large colonies of *Crocus biflora* of unknown variety. Nearby, on drier ground, was *Iris caucasica*. Sheltering from the wind for lunch, we later found

30 - *Veratrum album*





31 - *Tulipa humilis*

*Fritillaria alburyana* growing on a rocky serpentine slope. Returning to the hotel we stopped once more to find *Muscari* species on a sunny stony slope.

In the next two days we travelled eastwards. Plants that stood out were again *Iris iberica* subsp. *elegantissima* which we found in similar conditions on a hot, dry and stony slope, with nearby *Gladiolus atrovioleaceus* and *Iris caucasica*. We discovered a hillside covered with *Iris sari* - nearly every plant a different colour - growing in similar conditions to *I. iberica* alongside large numbers of *Bellevalia sarmatica*. On the second day we turned off to the Tahir pass and stopped just beyond a small village to see a large patch of *Puschkinia scilloides*. Around some snow patches, beside the *Puschkinia*, were *Corydalis erdelii* and *Crocus*



32 - *Colchicum* sp.



33 - *Centaurea cheiranthifolia*



34 - *Adonis vernalis*



35 - *Allium akaka*

36 - *Fritillaria latifolia*



*biflora* all at 2354m. Recognising that it was lunchtime yet again, we walked back to the mini-bus and stumbled upon the leaves of *Iris reticulata*. We drove back slowly, looking out for a different form of *Iris iberica*. At the first two stops we had no luck but, stopping one last time, we came across *Iris iberica* subsp. *elegantissima* with heavily veined standards, mixed in with the white form, and at that point we called it a day!

We drove north to the village of Gungormez. Just getting the minibus through the village and up the stone track was a major achievement. We took our first stop at around 2470m. Next to a stream on a grass slope was *Fritillaria caucasica* but, with little else to interest us, we



37 - *Merendera kurdica* at 2620m: in snow; by a stream; in flower



moved on, only stopping where snow had blocked the road. While we waited for a lorry to pull us out of the mud of a failed U-turn, Robert and I went for a long walk to see if anything else was in flower - only to find *Fritillaria caucasica*.

We took Adil to Kars for his one-day trip to Istanbul and noticed a group of *Corydalis* at a small rocky outcrop in the middle of a sloping field near Golbasi. Otherwise, the land was heavily grazed with little plant life to see. After Adil's return, we drove north through Ardahan to Savsat. After a couple of miles we visited a lush meadow with large clumps of *Veratrum album* and *Dactylorhiza*. We crossed a small stream to a long rocky outcrop where snow was still lying - and in some places melting -





39 - *Iris barnumae* ssp. *barnumae* forma *urmiensis* at 2085m

to see many *Fritillaria latifolia*, as well as a white-flowered *Corydalis*. On the opposite side of the road the terrain was completely different. It felt and looked hotter, there was no lush grass, just sandy stony ground, but even so, we noticed *Centaurea cheiranthifolia* in full bloom with pale or dark pink flowers. We doubled back towards Aktas lake, stopping mid-way and looking for *Iris furcata*, which grew on sloping grassy ground close to a pine wood on whose edge we found *Anemone narcissiflora* in full flower.



40 - *Corydalis erdelii*

We left Kars for Van. At photo stops outside Dogubayazit, *Allium akaka* and *Adonis volgensis* grew in sunny sites. After a military check point by an old lava flow we found a few *Bellevalia fominii* before moving on to find *Iris barnumae*, out of flower. In our first two days in the Van area, we went to Albayak and found *Iris paradoxa* and *Iris pseudocaucasica* both out of flower and so we moved on to find *Iris barnumae* subsp. *barnumae forma urmiensis* by the road-side. After lots of photos we doubled back and stopped along the Güzeldere pass for lunch. We discovered *Iris paradoxa* in full bloom, growing in patches by the road for long distances. A mile up a rough track in a shallow ravine, we located *Colchicum*, *Fritillaria crassifolia* and *Tulipa biflora*. The *Colchicum* was covered with snow next to

a stream or in damper ground where the snow had not long melted.

On our last day before Istanbul, we travelled southwestward from Van to the Karapet pass. The first stop only revealed *Colchicum* species which had gone to seed. At our second stop, over a small but fast-flowing stream of snowmelt, the ground started off stony and flat but gradually steepened and, growing in small pockets, we saw *Tulipa humilis*, *Fritillaria crassifolia*, and *Fritillaria minima*, growing along a thin stony ridge next to a last patch of snow. For me the third stop at around 2620m was the best of the day: two streams joined here and I was surprised by *Corydalis* growing in shallow slow-moving water; I have only cultivated them in pots in dry conditions. As well as finding larger numbers of some of the same plants we had found at lower altitude, we also came

41 - Colour type of *Iris sari*



across patches of *Merendera kurdica*, *Fritillaria minuta* and a *Corydalis* of unknown species.

I take this opportunity to say a big thank you to everybody who was involved in or supported this trip, especially the SRGC, RHS, RBGE and NGBG: it would not have been possible without your help. It has certainly helped me to a greater understanding of those plants which I cultivate at home and has given me an insight into their natural environment.





43 - *Fritillaria latifolia* © Gülnur Eksi

# CULTIVATING ERYTHRONIUMS

Ian Young

A fact of life unlikely to change in the near future is that it is difficult to get hold of many of the species and varieties of *Erythronium*; when you do find them, they are going to be expensive. The way I have built up our collection is to raise the majority from seed, only reverting to buying bulbs when I want a particular cultivar or a difficult-to-get species, and then my first task is to get it into flower and get a crop of seed from it.

I collect most of our own seed when it ripens in June or July, unless in one of the beds under large rhododendrons where I want the plants to self-sow and naturalise. When I was first interested in rock gardening and visited some of the better established gardens of those days, how impressed I was at plants' self-seeding all around. I used to wonder why this did not happen in our garden until I realised that I was collecting all the seed either to sow in pots or for the SRGC Seed Exchange. The answer was blindingly obvious! So it is with many of the other challenges we face when cultivating plants: as gardeners we have to learn to think laterally and observe our plants carefully.

I mostly collect the *Erythronium* seeds by cutting the stem complete with seed heads just as the first ones have opened; even though others may still be green, the seed is fully formed. I put them upside down in paper bags in a shaded shed without high temperature swings. Why don't I copy Nature and sow them immediately they are ripe? Well, thinking laterally, I am copying Nature: in the wild the splitting capsule sheds seed into a climate it has evolved to cope with – generally a hot dry summer. The summer in north-east Scotland is often cool and wet, and seeds sown into pots left outside are subjected to many bacterial and fungal rots. I have experimented and get far better results by storing the seeds in paper bags through the summer. Seed shed naturally into the garden



Dry stored seed



Soaked seed

beds germinates well enough and we have a good population coming along but there are two points to be aware of. First, conditions in an open well-drained bed under trees and rhododendrons are very different to a plastic pot and, second, because large quantities of seeds shed onto this bed, we are less aware of the low germination rates than when we sow them in pots with high expectations of germination.

Having stored the seed over the summer it is best to sow it in September or October, first soaking it for a day in a little water to rehydrate it – it is amazing how it plumps up and gives a better rate of germination in the first spring.

Seed from a seed exchange or specialist seed merchant may arrive as late as February but, as soon as possible, I go through the same process of soaking and sowing. Although I have written a lot about sowing certain types of bulb seed at depth for best results, *Erythronium* seed should be sown on the surface and only covered with a few centimetres of gravel. Sowing *Erythronium* deeper than this, I have had little or no germination and I wonder if the seed requires light to germinate. Thinking about how seed is shed and distributed in the wild gives us the biggest clue as to whether to sow on the surface or at depth. As the capsule dries, it splits towards the top, the dry stem becomes rigid and springs back quickly to its upright position when bent by wind or animals, catapulting out the seed nearest the top. Unlike *Narcissus* or *Crocus*, *Erythronium* seed has no sweet attachment to encourage insects, so its distribution is limited by the catapult distance. I have measured it: 2 metres is typical so, if we take five years for the seed to germinate and flower before it sheds its seed another 2 metres, we can see it would take about 2500 years for the plant to extend its range by 1 km even in



46 - Germinating seed

favourable conditions. Geographical barriers such as rivers would also constrain the spread of a plant with such a limited method of distribution. These factors go a long way to explaining why so many *Erythronium* species have such restricted distributions in the wild, even without considering habitat and climate.

I use our standard well-drained compost of two parts loam, one part leaf mould and two parts 6 mm grit, with a scattering of bone meal to provide some slow-release nitrogen. I fill the pot to about 2 cm from the top, scatter the seed and then top the pot with 6 mm grit before placing it on a sand bed in a plunge open to all weather through the winter. I only place a cover over it when bad weather and snow arrive in the spring and if the seed has started to germinate.

When the seed germinates it puts down a root and sends up its first leaf, then a stem-like structure pushes down into the compost and the young bulb forms towards the bottom of this structure. Do not repot the seedlings until after their second year of growth at least, by which time they will have taken themselves even deeper. Because they are still extending into the compost, the bulbs will often be very long, narrow and delicate structures so handle them with great care. If you break one - almost inevitable when handling many - plant both bits and at least one will grow on. The bulbs like to be planted deeply, so I prefer a range of plastic pots that are 12 cm deep. Even with these deeper pots some species of *Erythronium* try to escape through the bottom in their second year.

I generally repot at the end of the third year, by which time the bulbs are all at the bottom and of a good size to handle. At this stage I have two options: plant directly into the garden; or repot into fresh compost. The large number of bulbs we grow in pots means we sometimes run out of time and delay repotting some erythroniums until they have reached flowering size - this can take five to seven years. It is not until year three that any leaf patterning appears on species that display such a feature; the true extent of leaf markings will not develop until the bulbs are five years old. Exceptionally, first flowers may appear as early as the third year but very few will reward you this quickly; a good target is flowering-sized bulbs in five to seven years.

### Bulb Increase

Although some *Erythronium* species, like *E. tuolumnense*, increase well vegetatively, the majority



Clump-forming bulbs

increases only slowly in this way and some never split. The other extreme is found in some species from eastern America, such as *E. americanum*, which reproduce by sending out stolons on whose ends a new small bulb forms. It can be a problem that some of these plants concentrate energy on the emission of stolons and form very few flowering-sized bulbs. There are many tales of how to prevent this behaviour - such as burying them deep or placing a stone underneath to keep them shallow - none offers helpful advice. Some forms produce a good flower display every year and others produce masses of single leaves with only an occasional flower. Plant them into a bed of good well-drained humus-rich



Chains on *E. dens-canis* bulbs

compost, preferably fortified with well-rotted farmyard manure, leaf mould or both, and you stand the best chance of getting these reluctant forms into flower. *Erythronium* 'White Beauty' is one of the most reliable in division, single bulbs producing up to five offsets in a year. This results in two, occasionally three, flowering-sized bulbs and the others will flower after one year. Clump-forming erythroniums are best divided every three to five years to prevent the congestion which may reduce the number of flowers.

New offset bulbs form in two ways: the largest bulbs form where the roots emerge at the base of the old stem; smaller offset bulbs sometimes occur further up the stem when growing conditions are favourable, the old bulb usually being used up.

In *Erythronium dens-canis*, its relatives and a few western North American species such as *Erythronium montanum*, the old bulbs do not



*E. dens-canis* chain split into links

disappear completely but leave a small remnant attached to the base of the new one. After some years you may find a chain of these past years' bulbs.

As long as these chains are attached to the main bulb they remain dormant but, if you remove them, split them into individual links and grow on as a normal bulb; each forms at least one new bulb.

### Growing in pots

Once bulbs are mature they may still be grown in pots, provided you keep them cool in the summer. Erythroniums tolerate dry periods during dormancy but respond very badly to being too hot and they hate to be out of the soil for long. This comes as no surprise when considering the depth that the bulbs reach in both the wild and the garden; they are going down to a more stable layer that does not heat up much in summer. I like to repot mature bulbs every second year to get them into fresh compost and to prevent their escape through the drainage holes into the sand plunge below.



Bulb escaping through bottom



Chains on *E. dens-canis* bulbs

On first lifting a pot from the sand plunge, I look at the bottom to see if any bulbs are sticking out and then I probe the sand below to seek those that have already escaped. I must mention some disagreement as to whether *Erythronium* is a bulb or a corm: because it displays properties of both, I think it is 'in-between' but I continue to call it a bulb for the purposes of this article. It renews itself every year and sometimes a new bulb forms half-in and half-out of the pot; it is fatter both sides of the hole and is impossible to pull out without breaking the bulb or carefully cutting the pot open. However, at least one of the bits - if planted - will grow.

I also use 29 cm deep polystyrene boxes, carved and painted to resemble troughs, to grow erythroniums, especially clump-forming ones whose rate of increase I maximise by annual splitting. Should I have a lot of seed of any one species I sow it directly into one of these deep



52

Mesh basket

boxes to grow until the bulbs reach flowering size.

## Mesh Baskets

My favoured containers for growing erythroniums are the deepest mesh pond baskets that I can find. These baskets are made for aquatic plants, with a very fine mesh that allows roots and moisture through but retains the bulbs. Well,

most bulbs that is; a few always try to escape downwards through even the smallest mesh holes (1 mm). I have a large number of baskets filled with my standard compost - as above - and sunk in plunges. This makes it very easy to lift and repot, ideally every two years but - more realistically - every three or four years. When repotting, rather than replacing the compost completely, I often refresh it by adding one fifth by volume of leaf mould and a small amount of bone meal, mixing it well. I prefer leaf mould to peat because it is full of nutrients and trace elements whereas peat is not only pretty inert but seems to be actively disliked by some *Erythronium* species.

All our erythroniums in pots or baskets are left open for most of the year. I only cover them early in the year when they are starting to germinate and - for some of the rarer flowering bulbs - when in flower. A simple cover about 1 metre above the flowering bulbs greatly improves the pollination and gives a better seed set.

In years when we do not get round to repotting I scatter some bone meal over the pots and baskets in the late autumn and water in a sprinkle of sulphate of potash when the flowers fade in the spring.



Mesh baskets in sand plunge



54 - The garden bed

## Growing in the Garden

We are lucky to have the best conditions for planting erythroniums straight into the garden. Our well-drained sandy loam sits over granitic (slightly acid) rock and over the years we have added a deal of organic matter, mostly compost from shredded prunings, hedge trimmings and, of course, leaf mould. Our moderate climate, with summer temperatures rarely reaching the mid twenties, an all-time record of 29.4°C in 2006, an average winter temperature not much below -10°C, along with average rainfall of about 1000 mm, makes for good growing conditions. You should plant bulbs of the western North American species at a good depth, covering them at least 10-15 cm; the eastern North American species such as *E. albidum* and *E. americanum*, or the Eurasian bulbs related to *E. dens-canis*, need not be planted quite so deeply - 7 to 8 cm will suffice.

Our bulbs are planted to good effect in full sun or in shade. In the North of Scotland there is little need to protect from the sun but the one thing they do not like is wind. Even a mild but gusty day may devastate many of their leaves which, like those of many *Trillium* species, do not cope well with gusty conditions.

After a number of years, clump-forming species and hybrids need lifting and splitting as the amount of flowers starts to drop off from the intense competition. I am always amazed at how many bulbs of the likes of *Erythronium* 'White Beauty' or *E. tuolumnense* you get from splitting a clump; I only wish that all erythroniums would increase themselves so readily. The best time to dig and divide a clump is as the leaves start to turn yellow, when the stems will guide you down to the bulbs. Where possible, dig a deep hole at least 30 cm deep close to the clump, carefully excavate sideways towards it until finding a bulb indicates that you are deep enough to get a spade or fork underneath to prise out the bulbs. Once lifted, it is easy to separate them and replant in several

groups. I always work compost or leaf mould into the holes before replanting.

Unfortunately, not all erythroniums increase quickly. We have species that have not multiplied vegetatively in 15 years; this is why a good seed set is so important. One of the main reasons I raise so many from seed is my hope of a clump-forming clone of some of the species that make offsets so reluctantly. I have had some success with *Erythronium revolutum* but, unfortunately, forms that increase vegetatively do not have the best leaves or flowers so must be crossed with those that do. I hope that somewhere down the line we will get the best of both. I am convinced that this selection program can succeed despite so many bulbs in the wild growing as individuals with only a few clumps to be seen. Clump-forming genes must be present in all erythroniums but a clump-forming type is at a disadvantage in the wild: as the bulbs split and multiply, becoming congested, they compete for moisture and food and starve slowly in their fight for survival, unlike a sole bulb that has no close competition. Nevertheless, if such a clump-forming type had been collected and brought into cultivation it would be more likely to survive because growers would lift and split regularly, spreading it around, sharing it with friends and increasing it rapidly like the excellent *Erythronium* 'White Beauty'.

When you raise from seed, especially that cultivated where we have many species growing in a relatively small area, some hybrids will

55 - The garden bed



inevitably appear. While I think it is difficult - if not impossible - to improve on the beauty of the species erythroniums, we can surely work on how well they increase by offsetting. Most of the hybrids seem to inherit this feature even if the parents do not increase.

**Hybrids**

Few named *Erythronium* hybrids are available other than the larger *E. tuolumnense* hybrids like 'Kondo' and 'Pagoda' that have been around for many years.

The best of the *E. tuolumnense* hybrids I have seen is the large stately yellow *E. 'Susannah'*, one of many fine hybrids raised by the late John Walker; it can easily produce 9 flowers when it is growing strongly.

Another of John Walker's hybrids sometimes available is *Erythronium 'Mini Ha Ha'*, vigorous white and clump-forming, related to and very similar to *E. oregonum*.

Two similar plants, raised by E B Anderson and passed to Kath Dryden as EBA 4656, have been named by her. *Erythronium 'Jeanette Brickell'* and *E. 'Margaret Mathew'* are creamy-white and resemble *E. 'White Beauty'* superficially, sharing the same ease of cultivation. *E. 'Jeanette Brickell'* is not pink as shown in the excellent book 'Bulbs' by Roger Phillips and Martin Rix - perhaps a trick of the printer's ink.

Another *E. tuolumnense* hybrid sometimes listed is



*Erythronium 'Mini Ha Ha'*



*Erythronium 'Joanna'*



*Erythronium citrinum x hendersonii*

*E. 'Joanna'*. A pink tint overlies the yellow outer petals - not the most attractive colour but not muddy like other hybrids with yellow and pink parents.

Many hybrids are unrecognised and masquerade as species. I have seen several fine plants on the show benches that deserve names; they obviously increase well and I hope one day we will sort them all out. Some natural hybrid populations occur where the ranges of two species overlap. Nearly all the *Erythronium* hybrids I have grown are fertile and produce seed in most years. Part of the hybrid



*Erythronium 'Craigton Cover Girl'*



*Erythronium 'Craigton Cream'*



61

Hybrid white pale pink anthers

naming problem is therefore that, although the resulting seedlings vary slightly, they resemble the parent; this is why we see hybrids appearing with species names.

There are some very nice wild hybrids between *Erythronium citrinum* and *E. hendersonii* which are often fertile with a good range of colour forms but none, to my knowledge, is increasing quickly enough as a clone to justify a cultivar name. Some

of the numerous fine hybrids involving *Erythronium revolutum* are now being named. We called our best 'Craigton Cover Girl', selected for its beauty and a good rate of increase - a single bulb soon forming a clump. Like many of our best hybrids it was raised from seed from an open pollinated flower recorded as *E. oregonum*; the other parent must be



62

Hybrid rose anthers



63 - Hybrid pink tips & green back cream anthers

*E. revolutum*. The flower shows no obvious signs of *E. oregonum* but its features make *E. californicum* look a more likely parent. Despite careful records of all hybridisation, mistakes and confusion occur. I admit that my attempts at specific crosses have failed and that all the best hybrids I have raised have been open pollinated. I have seen several other hybrids, old and new, similar to 'Craigton Cover Girl'. Look out for these; they are all worth having if you are looking for a pink *Erythronium* that increases well.

Another of our open pollinated hybrids, 'Craigton Cream', was raised from the seed of *E. helenae* - the clone I named was once again selected for its beauty and speed of increase. We have many other interesting hybrids with potential, all open pollinated. Most involve *E. revolutum* & *californicum* in their parentage.

Some people disapprove of naming too many but I am not worried by a lot of named hybrids. If someone raises and distributes a new plant, they should name it so that we may trace it. If it is not named before distribution we risk several people naming the same plant differently. As time passes, only the best forms persist while the others slowly disappear along with their names. I know that selection from species and hybrids has the potential to produce good garden erythroniums that will be easier to grow and will increase freely in a wide range of soils and conditions. When it takes up to seven years to flower one generation, buying bulbs will never be cheap so I encourage you all to start raising your own erythroniums - both species and hybrids - from seed.

# Book Reviews

Dwarf Campanulas and  
Associated Genera  
Graham Nicholls

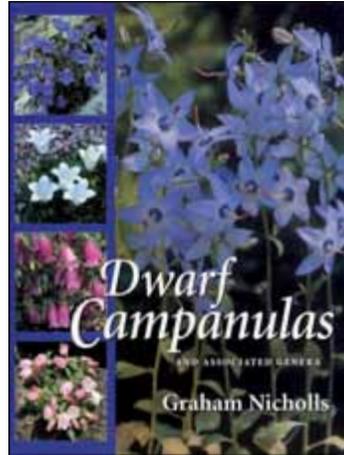
270pp,  
140 colour photos  
ISBN 978-0-88192-810-5  
Timber Press, £25.00

Graham Nicholls is a top-class nurseryman whose enthusiasm has led him to a degree of specialism that we can only benefit from. His overview of the alpine plants of western North America is a first-class book (Alpine Plants of North America)

that welds together his first-hand experience of plants in the wild with others' added and invaluable knowledge of their local plants. With this book on the smaller (under 50 cm) members of the Campanulaceae, Graham has again combined his own experience as a nurseryman with the knowledge of various botanical travellers, particularly Vojtech Holubec & Panayoti Kelaidis, as well as other nurserymen such as Rick Lupp from Mt Tahoma Nursery in Washington State.

Vojtech is well-known to Club members as a visiting speaker. His knowledge of the Caucasus has recently been displayed in his and Pavel Krivka's 'The Caucasus and its Flowers', self-published and an indispensable reference for any serious enthusiast. Only in the last dozen years has the Caucasus become a new focus for plant enthusiasts and Vojtech is one of the pioneers who should be saluted for their efforts. Panayoti Kelaidis is the horticultural director of Denver Botanic Gardens and has helped establish a Rocky Mountains style of rock gardening. He is an unabashed plantaholic (see 'The Rock Garden', 116) who has travelled and collected extensively. His expertise in South African plants is reflected in his correspondence with Graham. In particular he comments intriguingly on the *Lightfootia*, a truly obscure genus; I was quite distracted by the lack of a photograph of what, in Panayoti's words, is "like something out of a fairy tale: one with witches and dark woods ... one of the oddest plants I have ever seen".

The book is divided into three broad sections. The first 40 pages discuss the main geographical areas from which *Campanula* come, and general issues of propagation and cultivation. The main body of the work



- 145 pages - is an encyclopaedic alphabetical listing of all dwarf campanulas, followed by a final section of 50 pages treating the other genera from the *Campanula* family. Individual species' entries are thorough, with information about their garden use added to the plants' descriptions. Information on growing and propagating the more difficult species contrasts with forthright comments about the more vigorous. Graham does not go so far as to say there are downright thugs who should not be allowed out of a locked room, but he implies it. On the more precious species, his expertise is of great value.

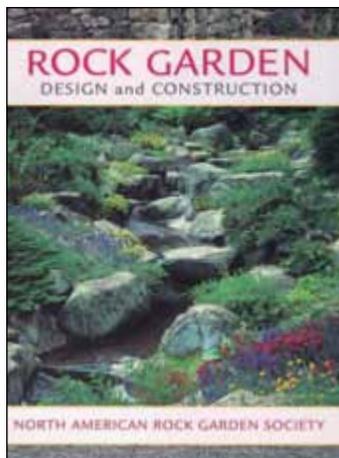
A word must be said about the photographs: Campanulas can be very difficult because they so easily fool traditional film-based photography. The photographs here are very good and most are models of how to deal with such problems. It may be that digital photography is better in this respect.

For those fortunate enough to own the 'Encyclopedia of Alpines', the material on the individual species is to some extent complementary: for everyone else this is a book which is recommended both warmly and unhesitatingly.

*Malcolm McGregor*

**Rock Garden Design and Construction**  
By the North American Rock Garden Society  
Edited by Jane McGary

316 pp, 104 Colour photos  
12 line drawings  
ISBN-13: 9780881925838  
ISBN-10: 0881925837  
Timber Press, £22.50



For many years our bookshelves have lacked books containing modern thoughts on rock garden construction for both the novice and the more experienced. Yes, we can find articles in various specialist club publications and gardening magazines, giving the benefit of the authors' experience, but they usually deal with only one or two aspects of particular construction topics. Within the covers of this NARGS publication is a wealth of practical advice, based on the sound experience of forty contributors, covering a wide subject area, from throughout North America including Canada and Alaska. Jane

McGary has arranged this mass of information into distinct areas.

The first area deals with design principles, including paths, hard landscaping and the materials. The following two areas are devoted to most, if not all, of the various types of rock garden: raised beds, walls, sand beds, crevice gardens, tufa, moraine and scree beds - to mention a few. The advice extends to rock gardening on inner city balconies. In the construction of these gardens, due consideration is given to climatic idiosyncrasies. Indeed, a penultimate area is given over to regional styles and techniques used in such places as California and northwards. A fifth and final section of the book is devoted to public rock gardens of North America. Each section of the book is well illustrated with explicit diagrams, charts and photographs.

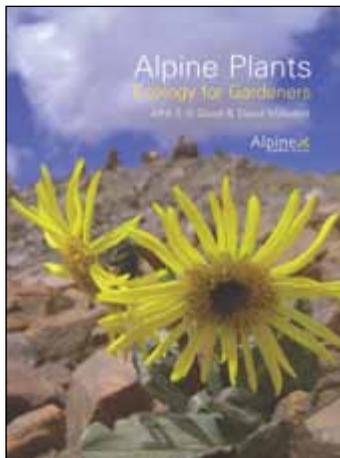
Once I dragged my nose out of this very readable book, I realised that a SRGC Group would have to devote six years of winter lectures to do justice to its topics and contributors. I remember clearly the problems I had when attempting my own rock garden features and the number of books I consulted. None satisfied my need for knowledge about climatic variations and available materials. The vast majority of books I consulted were written well south of the border. Although this book is written primarily for the North American market, it is very pertinent to the British Isles and would have been a great aid when I was starting out. Even now, with the advent of shifting weather patterns, the practical information found here will certainly be consulted again.

*Davie Sharp*

**ALPINE PLANTS Ecology for Gardeners**  
**John E G Good and David Millward**

176pp, 94 colour photos,  
line drawings, graphs  
ISBN 978-0-7134-9017-6  
Batsford, £25.00

Everyone who grows alpine plants is an ecologist, whether they know it or not. As the authors establish early on, ecology is the science of relationships between plants (or animals) and their environment. Every time we grow a plant we ask ourselves about these matters. Does the plant want full sun, will it tolerate winter wet



or a summer baking, does it want a humus-rich soil, will limestone help it grow and provide trace nutrients, does it grow in association with other plants, does it grow on cliffs and, if so, which aspect does it prefer? All these are questions about the plant's ecology. By understanding and answering them, we will grow better plants - in character - and increase our enjoyment.

Given that we're trying to understand all these factors and translate them into practical growing, it is surprising that there has been no book on the ecology of alpine plants for gardeners. There are many detailed books on the ecology of alpiners – for ecologists and scientists - but till now none which has been written for the horticultural layman: a gulf has existed between the two. This book has bridged the gap: John Good and David Millward have taken their ecological & geological expertise, their knowledge of the field & professional literature, and translated it all into plain English, slanted towards improving our understanding of how, where and why plants grow in alpine environments.

The book introduces us to the range of alpine (and Arctic) ecosystems, explains how plants develop in these harsh conditions, and the special adaptations evolved for survival in mountain environments. The effects of climate – simply put, a combination of temperature, rainfall and the sun's irradiation – are explained (though I still don't understand entirely how Finn Haugli grows such magnificent Himalayan plants in Tromsø at 71 degrees North!). Snow cover is given special treatment as a key factor governing distributions of many alpine plants. We are introduced to the geology & soils of alpine environments and how they influence plants & their growth: the role of nutrients is well-explained. A fascinating chapter on reproduction explains many of the strategies used by plants to propagate in harsh and unreliable climates. The book concludes with two short chapters, on the origins and distributions of alpine plants, and the effects of climate change.

The book is well-illustrated throughout with smart and appropriate photographs, sensible and simple graphs, tables and line illustrations to help explain key points. Perhaps the cleverest touch is the 'blue boxes' – these pop up throughout, providing clear and concise summaries of key points and concepts; for example, one box explains the beneficial and adverse effects of snow cover in about 150 words.

I will use this book regularly and I recommend it to all alpine growers; you'll get more pleasure out of growing your plants by understanding why, how and where they grow in Nature, and how you can reproduce that in your own garden.

*Ian Bainbridge*



# An Artist's Inspiration

Anne M Chambers

64 - *Galanthus plicatus* 'Sophie North'



65 - *Calochortus vestae*  
(painted by Lawrence Greenwood when 80)  
Copyright Lilian Greenwood

Your editor, dear reader, flushed with success after reproducing my *Arisaema* painting last year, thought it would be a good idea to have an illustrated article on botanical artists and their work. As the only exponent of the genre in his ken, the task has fallen to me. I offer a few of my thoughts and observations based on a detailed knowledge of only two and an overview of many.



66 - *Rhododendron cinnabarinum*,  
Arunachal Pradesh, India



67 - *Rheum nobile* on the  
screes of the Bimbi La,  
south east Tibet

This Himalayan rhubarb grew at 4420 m on the screes of the Bimbi La in south east Tibet. These plants, often more than 2 m tall, are spectacularly conspicuous on the grey hillsides. This was a very attractive specimen, unusual in its symmetry and in the peachy flush of its topmost bracts.



68 - *Lilium monadelphum* syn.  
*szovitsianum*, in the author's garden

Dr Shirley Sherwood who, more than anyone today, has encouraged and publicized the art of botanical painting, described the current era as a renaissance period, such is the resurgence of interest and talent in botanical art at the present time. What makes a botanical artist? It is apparent from the *curricula vitae* of the artists in her collection (the largest in the world) that we constitute a diverse group. Some, after formal art training, start work in fields such as graphic or textile design before changing direction. Others, and I am one, come to it later in life without training because of an interest in plants and art. Men are greatly outnumbered by women in this occupation ... because they have less of the infinite patience and attention to detail required? Certainly not, and how could I consider that even as a possibility?! The statistic may merely reflect the traditional male role as chief provider for the family since botanical art, with exceptions, provides only a meagre and precarious income. And is art training necessary? It is obviously not essential, but any encouragement and tuition must help the struggling beginner beset with self-doubt. When I started, I was fortunate to meet up with Lawrence Greenwood every year at SRGC shows and study his paintings. By that time he was an



69 - *Cypripedium calceolus*  
near Wengen, Switzerland

RHS Gold Medallist with a prodigious capacity for work and I was very much in awe of him. Being a gentle, kindly person, he was always encouraging when I showed him my efforts but my lack of confidence remained. Then we visited John Duff, show secretary at Perth for many years, and found that he had many of Lawrence's botanical art works including some of his earliest. It was fascinating to see the development of his skills and, as Mr Darcy said to Elizabeth, *'it taught me to hope as I*



*had scarcely ever allowed myself to hope before'. If Lawrence had progressed from such a beginning then perhaps I too could achieve his standard, given time.*

What of the plants that inspire such endeavour? Last century, photography replaced painting as the method of depicting plants in the wild, but for an artist the compulsion persists. A Swiss meadow dotted with Lady's Slipper orchids ... they are waiting for you, begging you to paint them. Solid yellow pouches (such a sunny colour), light and shade on the reddish-brown spiralling petals, deeply ribbed leaves ... so irresistible, and so easy to paint! In the middle of a complicated work I have sometimes thought longingly of life as an orchid painter with these elegant, long-lasting beauties as my subjects. Clearly delineated flower forms, linear leaves, what could be simpler? My particular passion, however, has always been for the flora of the eastern Himalaya. It is difficult to convey the mix of emotions experienced when you realise that you are looking at a plant you **MUST** paint. But why must you? – perhaps its beauty is compelling, perhaps its rarity, or someone at your elbow has just commissioned you. Whatever the reason, the

70 - *Lilium mackliniae*, author's garden



71 - *Gentiana depressa*, upper Langtang, Nepal

timing is seldom convenient. Photographing the plant in the required detail and pressing some material mean that you fall behind the group, while at the end of the day when physical exhaustion has set in, great willpower is needed just to make yourself unpack the camera. It may be stating the obvious to most readers but I have been asked many times whether I paint on site in the Himalaya. Conditions such as rain, snow, mud, leeches, lack of time, weight constraint, to name but a few, make it impossible.



72 - *Primula falcifolia*

What joy there is in finding some of the rarest Himalayan primulas – and, more often than not, some despair. After hours spent crossing the deep snows of the Doshong La just south of the great bend in the Tsangpo we eventually reached open ground as the light was failing and rain starting to fall. There, in steep wet turf, was *Primula falcifolia*, last seen by Kingdon Ward in 1924. He called it his Daffodil Primula - in fact the plants showed quite a variation in flower colour from buff to peach but always with a white paste eye and dark green narrow leaves. This species is endemic to the south side of the Doshong La, an area too inhospitable for habitation – a ‘must paint’ subject since we were unlikely ever to see it again.



73 - *Meconopsis betonicifolia*

Nothing rare about *Meconopsis betonicifolia*, of course, many of us grow it, but that does not diminish the thrill of seeing it in the wild. And it was even more exciting to see it growing along the banks of the Rong Chu, the site where Bailey found it in 1913 as he and Morshead progressed on their Tibetan explorations. Kingdon Ward returned there to collect seed in 1924 and introduce it for our pleasure. Some garden forms have disappointingly small heads but on the plants in the wet Rong Chu valley the flowers had a diameter between 8 and 9 cm and a good blue colour.



74 - *Primula deuteronana*, Gosainkund, Nepal, blooming as the snow recedes

## Technique

Nothing is more likely to cause a raised eyebrow or a supercilious sniff than the revealed details of an artist's technique. It is what most people question you about when you are standing by your exhibit at an RHS show, rather than about the plants you have painted. Most botanical artists use the medium of watercolour, with the notable exception of Raymond Booth. His works in oils have stunning impact and the book of his Japanese paintings, *Japonica Magnifica*, is magnificent indeed. But the rest of us do our best with watercolours and, when I started, I thought that watercolours were just that until Lawrence explained his technique to me. Very dilute colour is applied initially to the pencil drawing to differentiate the various areas of leaf and flower, then the final density is achieved by adding layers of colour, perhaps as many as ten or fifteen, using a comparatively dry brush and the lightest of touches. The technique has great potential to produce subtlety of colour and shade ... and disaster, since any excess moisture on the brush will lift off the underlying layers. It teaches patience and infinite care! Our techniques differ in one fundamental respect. Lawrence believed, perhaps because he was trained, that white areas on plants such as coatings of meal or hairs, should be left white. In contrast, I see them as overlays and paint them as such after laying down the base colour. White gouache has the necessary opacity for this and was used in the *Primula aff. limbata* illustration to convey the presence of meal on calyx, corolla and stem.

That '*aff. limbata*' name – correct identification is another problem for the artist and this species has plagued me for some time, but recently John Richards received new information that may finally resolve its identity. Gouache can also be appropriately tinted, say, to reproduce the golden

hairs on a *Meconopsis* leaf. I paint on watercolour board such as Schoellershammer G4 which is smooth, stable and lightweight in use and most of my brushes are in sizes from 0 to 00000 ... so much for the technicalities.

## The plants

While it is much easier to work from live material, it is not an available option for most of the year. Lawrence was adept at working from slides taken by others on their travels around the world but I am less happy to paint a plant unfamiliar to me. I prefer to photograph the subject myself in

75 - *Primula*  
*aff. Limbata*



76 - *Iris lactea*,  
south east Tibet

detail and have the additional security of preserved material plus colour notes made *in situ*. But photographs are just photographs – the art is in composing a botanically accurate painting from the various aspects of the plant available to you. One thing is certain, plants in the wild do not grow to provide a pleasing composition for the botanical artist. Some plants such as irises make the job easier by being naturally disposed in flowing lines. The *Iris lactea* illustrated is a plant of irrigation ditches in low-rainfall areas of south east Tibet. The beauty of its cream and lilac flowers is in welcome contrast to the desert-like surroundings.

And *Primula kingii* – we were forced to camp on top of it in a yak meadow in Arunachal Pradesh! It is a small plant, less than 10 cm tall, but with dark red bells of a velvety texture, large in relation to its stature. Although locally abundant it has a curiously disjunct distribution, its other known locations being in Sikkim and adjacent Bhutan, over 300 km from our site. George Sherriff introduced it in 1949 from Bhutan to his garden in Scotland where it thrived for many years but the photograph taken there (A Quest of Flowers, page 178) shows *P. secundiflora*, not *kingii*.



77 - *Paraquilegia anemonoides*, south east Tibet

78 - *Moneses uniflora*



Should the plant be painted in its habitat? The classic botanical illustration, of course, had no background and some species are more than strong enough to stand alone on a white ground – the *Cypripedium calceolus*, for example. Other plants like the delicate little woodlander *Moneses uniflora* need the support of background. Lawrence told me he painted backgrounds because people like them. I am less amenable but do paint backgrounds where I think them appropriate. *Paraquilegia anemonoides* is a cliff-dweller widely distributed in the Himalaya and it is a moving moment when you first catch sight of it. The lilac-blue flowers with centres of golden stamens are held out on slender

stems, framed by a mass of finely-divided glaucous leaves – a devilishly intricate yet totally compelling subject!

However the plant is depicted, what matters is the quality of the end result. Lawrence never lost sight of this and retained his self-critical perception, such an important faculty in an artist. He was in his eighties when we had a conversation that left a lasting impression on me. He had decided that he was not taking enough time and care over his work and had resolved to remedy matters. If spared to paint into old age, may I too be blessed with such remarkable insight.



79 - *Primula Kingii*

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*Calochortus vestae* © Lillian Greenwood

Other images © Anne M Chambers  
annechambers730@btinternet.com

Afterthought – did this little frog think to escape notice by hiding under an inadequate birch leaf?



## Stirling Show, Dunblane 24th March

The first Scottish show of the year is always exciting. It is here that friends meet up again after the winter. The Victoria Show Hall was packed with members enjoying the colour and interest provided by the large numbers of *Primula*, *Corydalis*, *Fritillaria*, *Cyclamen* and Ranunculaceae on the benches. The set-up in the hall suited the number of entries. The fine weather and lack of a Scottish rugby international brought the local people in to see what was happening.



*Iris vicaria* 'Gothenburg'

Top honours of the Forrest Medal and the Institute of Quarrying Quaich went to Cyril Lafong's wonderful pan of *Trillium rivale* 'Purple Heart', exhibited as part of his 3 pan entry. Its partners in its class were *Tecophilaeia cyanocrocus* (winner of a Certificate of Merit) and *Primula* 'Broadwell Milkmaid', which is becoming one of the most popular white primulas on the show benches at present.

Our president, Ian Christie, indicated that the long awaited supply of new Silver Forrest Medals had arrived and that, at long last, he could present one to Cyril Lafong. A Silver Forrest Medal Sam Sutherland's 6 Pan: saxifrages, dionysias & primulas





*Arum creticum*

is given to an exhibitor who has won 6 Forrest Medals. When Cyril reached that number, the initial minting of 6 had been presented. Cyril is only the seventh exhibitor to have received this award: the first 6 were presented to Harold Esslemont, Jack Crosland & Eric Watson - all now



Ray Fairbairn's *Primula* 'Allen': 'Moonbeam', 'Queen' & 'Imperial'



84 *Pulsatilla vulgaris* 'Pink Form'



85 *Cyclamen coum*

deceased - and to John Lawson (on behalf of Jack Drake's Nursery), Fred Hunt & Sandy Leven.

Competition in the Jubilee Class A, for 6 small pans, was keen and Sam Sutherland triumphed with his immaculate domes of *Dionysia*, saxifrage and one primula. Sam also won the saxifrage class with the fine and dark *Saxifraga oppositifolia* 'Icelandic form', while Tom Green triumphed in the 2 pan saxifrage class with fine examples of *S.* 'Redpoll' and *S.* 'Your Smile'. Ian & Carole Bainbridge's delicate *Callianthemum anemonoides* was judged the Best European Plant in the Show, so it won The Ben Ledi Plants Trophy.

The Stirling show has two 6 pan classes for bulbs: both were won by the show secretary, Sandy Leven. One is for 6 pans from different genera, the other for 6 pans from Amaryllidaceae, Liliaceae or Iridaceae. This allows exhibitors to bring several pans of bulbs for which they might not otherwise find classes. Partly because of this, he also won the Carnegie Dunfermline Trust Trophy for Most Points in Section 1.

People who have not shown before may think that an alpine house is needed to produce suitable plants, but there are always specific classes for plants grown in the open garden: this year Jean Wyllie won with a fine *Trillium maculatum*. Jean also showed *Iris vicaria* which is not at all common but is highly desirable. According to its label this plant originated in Gothenburg. Nor does rarity always triumph, as condition and presentation are important. Alan Weepers was first with two very well



86 - *Narcissus assoanus*



Among the pulsatillas



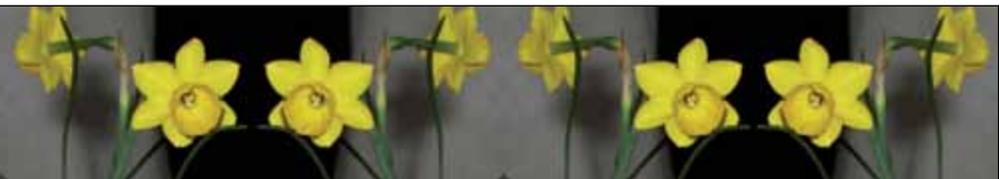
*Fritillaria kotschyana* 'Craigton Max'

grown pans of *Narcissus* 'Minnow' and *N.* 'Tete-a-Tete'. Both are easy to find - even in garden centres - but when well grown are stunning. At the other end of the scale of size and rarity, Margaret & Henry Taylor showed the exquisite *Narcissus moleroi* and *N. assoanus*. I have not seen *N. moleroi* before: it reminds me of *N. alpestris* and *N. moschatus* but is 'much more refined'

Fritillaries often have dull-coloured flowers but are quite eye-catching when grouped together. It is wonderful that different growers bring different species. Sitting close together on the bench were *Fritillaria: aurea, armena, kotschyana* 'Craigton Max', *pudica, bucharica, pinardii, eduardii* and *stenanthera*. I liked *Fritillaria armena* with the superb grape bloom on its flowers. David Milward brought a large pan full of *Ipheion* 'Rolf Fiedler' which attracted a lot of attention and Fred Hunt scooped first prize in the 3 pan bulbs with 3 pans of different *Tecophilaea*, namely *T. violacea, T. leichtlinii* and *T. cyanocrocus*.

Carol and David Shaw had the best 2 cushion plants in flower but they could equally have won the prize for the two brightest coloured plants in one class, with *Saxifraga* 'Your Smile' and *Draba mollissima* - one bright pink and the other citrus yellow.

From all directions primulas could be seen glowing on the benches in the sunshine, thanks in the main to Ray Fairburn and Tom Green. *Primula* 'Allen Imperial', a large dark-flowered *Primula marginata*, attracted a lot of attention and I must record how Tom's *Primula* 'Anne' looked so





*Narcissus moleroi*

beautiful. *Primula* 'Aire Mist' and *P.* 'Clarence Elliot' are wonderful plants for spring shows. This was the first opportunity for us up here to see some of Ray Fairburn's fabulous primulas, many of which are his own hybrids, grown and selected over many years.

Competition was keen in Section 2 with perhaps the best entry in a long time. Each exhibitor won at least 1 first prize. Stan da Prato won Jubilee B for 6 small pans and had most points in section II, so he won the SRGC Bronze Medal and the Fife County Trophy. Jill Lee won the prize for Best Plant from a first time exhibitor, with

*Erythronium dens-canis*. Helen Robertson has entered - and almost always won - the class for an arrangement of flowers and foliage since the days when the show was held in the Guide Hut. Every year she produces a beautiful vase full of perfect flowers and foliage. There is no space to enthuse about the wonderful pulsatillas, hellebores, hepaticas, cyclamen, rhododendrons and other plants. It suffices to say that these plants from all over the world and grown in members' gardens give us a wonderful show when they are brought together.

*Fritillaria pinardii* 'Newbyth'

Because I was unable to play a full part in the proceedings, I want to thank Glassford Sprunt for being Show Secretary for the day. Thanks also go to our judges Lyn Bezzant, Margaret Young, Anne Chambers, Margaret Taylor, Bette Ivey, Ian Young and Henry Taylor.



*Sandy Leven*

## Northumberland Show, Hexham 31st March

I am sitting here in the evening, reflecting on the Northumberland Show while the last of the rain falls. We've just had 21 mm of rain, something most of us have not had for a long time. Weather is topical to the Northumberland Show since it was preceded by an unusually mild winter, a factor evident in the entries. That said, I recall that the 2003 show followed similar weather and both are in complete contrast to earlier shows where, for example, Digby Walker sat in his car with the heating on full, in the hope of bringing *Gentiana verna* into flower, while his children and my girls played outside in the snow.

Normally, you hear comments about this or that plant not making it to the show because of poor weather. Not at Northumberland this year - murmurings were still heard but they were preceded by comments like 'It's been so warm, so-and-so has long gone and I've brought this instead.' Despite the weather, entries were good: 69 exhibitors staged 559 entries with a total of 715 plants. It was particularly pleasing to see a large entry in the B and C sections, with 23 exhibitors showing 182 plants.

*Asarum* was much in evidence and is appearing more frequently at all shows. There were several on the bench, such as *A. campaniforme*, *A. delavayi* and *A. maximum*, including - for the first time that I am aware - a



91 - *Asarum maximum*

3 pan entry. Wilma and Jim Wright took First in class 29 with *A. maximum*, typical of the exhibited standard. Fine examples of trilliums were shown: in Class 17 there was local competition between Alan Furness who took 1st and George Young, both showing *Trillium rivale*.



92

Mala Janes receives the Large Gold 'fish box' Award



*Trillium rivale* (Alan Furness)

The show benches were a riot of colour with plants of all shapes and sizes. *Androsace*, *Dionysia* and *Primula* were prominent in the colour stakes if not in size. Particularly good examples of *Dionysia microphylla* x *freitagii*, *D. 'Monika'* & *D. curviflora* were present. A very good *Draba longisiliqua* was shown by Ian Kidman, earning him a Certificate of Merit. *Cyclamen* added to the colour and one example of *C. libanoticum* shown by David Boyd was awarded the Cyclamen Society Salver.

The range of *Primula* was wide if few in number because of the



*Trillium rivale* (George Young)



95

*Draba longisiliqua* (Ian Kidman)

weather but some unusual species were shown. *Primula petelotii* shown by John Richards took 1st in 'Plant Rare in Cultivation'. The cultivar *P.* "Broadwell Milkmaid" was in much evidence both here at Northumberland and elsewhere, for example at Edinburgh: a fine example shown by Brian Burrow earned a Certificate of Merit. Other *Primula* included *P. vulgaris* subsp. *sibthorpii* (John Richards), and *P. vulgaris* (Martin Hughes) - placed 1st in class 'Plant Native to the British



96

*Primula vulgaris* (Martin Hughes)



97 - *Benthamiella longifolia* (Alan Furness)

Isles'. Other noteworthy *Primula* were *P. bracteata*, *P. marginata* and cultivars 'Peter Klein' & 'Fairy Rose'.

The tallest plant was probably Alan Newton's *Arum creticum*. Classes covering 'New, rare or from seed' were very well supported. For example, Ian Kidman's 3 pan exhibit included *Benthamiella patagonica* and *B. pycnophylloides*. It was another *Benthamiella* that was awarded the Eric Watson Trophy for class 100 'New or Rare', going to Alan Furness for his *B. longifolia*. Ian Kidman had some fine entries

which earned him the R B Cooke Plate for most first prize points in the open section - some 14 entries including 3 and 6 pan classes. The latter also earned Ian both AGS Medals for the large and small 6 pan classes.

98 - *Erythronium multiscapoideum* (Della Kerr)





99 - Construction of a fish-box trough

The show's highest award, this year the Farrer Medal, went to Della Kerr for a pan of *Erythronium multiscapoideum*.

Ian and Maggie Young, as almost everyone knows, have championed the "fish-box" trough. Recently, Carole and Ian Bainbridge visited the Newcastle Group and gave a "How to do" demonstration. The Group took this to heart and many members constructed a variety of fish-box troughs. The results of their work were displayed informatively at the show, together with an arrangement of their troughs. The whole display was organised by Mala Janes, for which she and the Newcastle Group were awarded a Large Gold Award.

It never ceases to amaze me how long it takes to construct a show - always longer than you allow - but still more fantastic is how quick the close can be: this year I think was a record of just over 75 minutes. Far be it for me to start a race between shows but our thanks must go to Peter McGuire and the local group for their efforts in providing us with yet another excellent Northumberland Spring Show.

Mike Dale

100 - Exposition of the fish-box trough



# Edinburgh and the Lothians Show, 14<sup>th</sup> April

The morning dawned to a thick sea fret over East Lothian, ushering forebodings of a cold and dreary show day. All the more surprise that, within a couple of hours, the mist had disappeared and a bright sunny and warm day was enjoyed by exhibitors and visitors alike. Following the unseasonal ‘winter’ – was it really winter? – and a show date now after the Easter holiday, the character of the Edinburgh Show was markedly different from years past. Classes for Fumariaceae and *Crocus*

remained empty and there were but a few dionysias, erythroniums, saxifrages and *Primula allionii*. Yet there was much to delight, with a wide range of tulips, trilliums and the first of the season’s lewisias.

Many observers sensed a ‘white’ theme to the show this year: white *Primula* were aplenty, including such wonderful



Bigeneric hybrid: between *Ramonda myconi* ‘Alba’ & *Jancaea heldreichii*

varieties as *P. denticulata* ‘Alba’, ‘White Lady’, ‘Aire Mist’, ‘Wharfedale Village’ and ‘Lismore Snowcap’. Fine specimens of *Draba dedeana*, *Sanguinaria canadensis* ‘Multiplex’, *Leucojum nicaense* and several white



Part of section 2

trilliums were also exhibited. White plants featured strongly in Cyril Lafong's (Glenrothes) award-winning entries. His Class 2 Henry Archibald Rose Bowl entry contained *Androsace vandellii* and *Trillium pusillum*, along with *Fritillaria pyrenaica* 'Cedric Morris'; likewise, his Class 5 3-pan-from-seed entry contained a second *A. vandellii*, *Lewisia tweedyi* 'Alba' and the yellow form of *Fritillaria acmopetala* (A O Curle Memorial Trophy). The trillium was judged the best bulb, corm, or tuber in Section I (Henry Tod Carnethy Quaich) and the largest of Cyril's four magnificent plants of *Androsace vandellii*, in Class 21, won him the Forrest Medal. The Bill Mackie Quaich for best saxifrage went to Carole and Ian Bainbridge (Easter Howgate) for *Saxifraga georgei*.



Cyril Lafong

Stretching the theme a little, Bob Maxwell's (Kemnay) lovely but 'not-quite white' (very pale lemon-yellow) *Primula auricula* (Class 20) was justly considered the best European or American *Primula* (K C Corsar Challenge Trophy). Of course, many other colours were present. Perhaps foremost of those renowned for their striking colours are the lewisias. There were

104 - *Primula* 'Johanna'





105 - *Prunus* 'Easter Bonnet'

several forms of *Lewisia tweedyi*, including a lovely lemon-coloured variety that earned Cyril Lafong a Certificate of Merit. The best deep-red forms of *Primula maximowiczii* are proving to be excellent show plants and David and Stella Rankin's (Lasswade) entry in Class 11 won them the R E Cooper Bhutan Drinking Cup for the best Asiatic primula. They also showed the lovely *P. 'Johanna'*, not often seen these days. The Midlothian Vase went to Mike Hopkins (Kemnay) for *Rhododendron 'Curlew'* and the Alfred Evans Quaich for other Ericaceae to Margaret and Henry Taylor for *Kalmiopsis leachiana*.

Your correspondent was drawn to a number of other entries. Alan Newton's (Ponteland) 3 pan new, rare or difficult (Class 3) consisted of *Dionysia crista-galli*, *D. caespitosa* subsp. *caespitosa* and *D. hybrid* 99-13S; the first two were grown from seed collected in Iran by Josef Myers. This won Alan the Elsie Harvey Memorial Trophy and he also took the Reid Rose Bowl for most points in Section I. There were magnificent displays of *Pleione 'Shantung'* and *Cypripedium formosanum* by Cyril Lafong. However, I was particularly taken by two delightful, pale blue-flowered specimens of the bigeneric hybrid between *Ramonda myconi* 'Alba' and *Jancaea heldreichii*. These were shown by Maureen and Brian Wilson (Aberdeen) who are noted for their skill with Gesneriads. The forms shown are superb and have a long flowering period: I look forward to seeing these again.

Many fine plants were staged in Section 2 too, well supported by local group members. Competition was stiff and the honours divided: Geoff Hill (Roslin) won first prize in the small 6-pan class 80, Stan da Prato (Tranent) took the Bronze Medal for most points in Section II, and the Special Prize for a first time exhibitor went to Anna Buxton (Edinburgh) for *Coronilla glauca*. A splendid pan of *Anemonella thalictroides* 'Oscar



106 - The RBGE Exhibit

Schoaf was adjudged best plant in the section, shown by Alan Gardiner (Falkirk) who took the Midlothian Bowl. Among other successes for local group members were the Boonslie Cup for the best miniature garden, which went to Ron Stewart (Edinburgh), while Sue and Hector Riddell (Tarbrax) won the Kilbryde Cup for Class 120.



107 - Detail of the RBGE Exhibit

The Edinburgh Show usually has informative, educational & non-competitive displays and this year was no exception, with two fine exhibits. Ian McNaughton's photographic display was awarded a Silver Medal, and a Gold Medal went to the Royal Botanic Garden, Edinburgh, for a splendid display of bulbs and alpines, notable among which were some pans of striking red tulips. As usual, many people contributed to an enjoyable and successful show but this year Carole Bainbridge, having sustained a broken leg only the previous week, must be 'mentioned in despatches' for bravely soldiering on with her duties, including an unusually large entry for the Joint Rock Plant Committee. We all wish Carole a speedy recovery!

*David Millward*



Success and Happiness



*Trillium albidum*

## Perth Show, 21st April

This year's show followed an unusually warm spring which for most of us lacked late spring frosts. This resulted in a different selection of plants on the show benches in 2007 - instead of fritillaries the plant character was taken by genera such as *Trillium*, *Uvularia*, *Rhododendron* and orchids.

Having said that fritillaries were not a major feature of the show, one certainly was, in the form of the Forrest medal winning plant - an award to no less an exhibitor than Fred Hunt (Invergowrie) for *Fritillaria liliacea*. This was one of two pans of fritillaries exhibited in Class 51 - the other being the dwarf form of *Fritillaria hispanica*. The Forrest plant had around 100 flowers - too many to count. Fred's plant was also awarded the Major-General Murray-Lyon Trophy and the Bulb Trophy. Fred previously won the Forrest medal with *Fritillaria liliacea* at Perth in 2005.



110 - *Androsace vandellii*



111 - *Bukiniczia cabulica*

The L C Middleton Challenge Trophy for most first prize points in Section 1 was won by Alan Newton (Northumberland) against hard competition from David Boyd (Powburn) and Cyril Lafong (Glenrothes). Alan won the Alexander Caird Trophy for Class 1 with a six-pan that included *Primula floribunda*, *Anemonella thalictroides*, *Androsace villosa* ssp. *taurica*, *Dianthus* "Rivendell" and *Pteridophyllum racemosum*. Cyril was awarded the Dundas Quaich with *Androsace hirtella*, *Daphne arbuscula* f. *radicans* and *Trillium pusillum*. The Alpines 2001 trophy was also handed to Cyril for best cushion plant - *Androsace vandellii* - an impressive 8" diameter plant so completely covered with white flowers that not much if any "cushion" was visible.

Dwarf rhododendrons were represented well for a change and there were five really good dwarf plants in Class 31. Lyn Bezzant (Bearsden) was the winner of the E H M Cox trophy with her *Rhododendron keiskei* "Yaku



112 - *Benthamiella patagonica*



113 - *Sedum spatulifolium* 'Purpureum'



114 - *Pleione* 'Shantung'

Fairy". Lyn told us that the plant was grown as a layer from a plant she obtained originally in 1982, so it is by rights at least 25 years old. She grows it in a compost of 2 peat: 1 grit: 1 loam. During the winter months it is in the cold greenhouse and then is transferred to a plunge in an open frame for the summer (April - October). She prefers to grow it in a plastic pot. Occasional feeds of Maxicrop sustain it while in growth.



115 - *Uvularia grandiflora*



116 - Perth posies

Brian and Maureen Wilson (Aberdeen) exhibited their newly produced hybrid, a cross between *Ramonda myconi* x *Jancaea heldreichii*. Two specimens of this plant were shown. One was awarded a certificate of merit and one was winner of the Joyce Halley award. The cross was made in 2001: 40 seedlings resulted that were kept under artificial light for the winter and then kept frost-free until flowering size.

Certificates of merit were also given to a fantastic orchid, *Serapias neglecta*, exhibited by Anthony Darby; to *Arisaema taiwanense* from Anne and Viv Chambers (Glasgow); and to Cyril Lafong's *Pleione* x "Shantung".

117 - *Tropeolum tricolorum*

In Section 2, the clear overall winner, with most points and recipient of the Perth Salver and Bronze Medal, was Stan da Prato (Tranent) who brought a great selection of plants - making the section really competitive. We were delighted that the Perth Trophy for most points in show by a member of the Perthshire Group was awarded to Susan Band, the group's convener. Susan's *Primula maximowiczii* also won the R S Masterton award for best Asiatic *Primula*. Leslie Drummond (Forfar) was the winner of the John Duff prize with his *Daphne petraea* "Grandiflora".



The lack of entries in the junior section suggests we need to recruit some more young members: unfortunately, the Georgina Blackwood Memorial Trophy remained in its box. Please encourage any junior members to exhibit next year!

Also on display were some well-designed photographs of *Cyclamen* species from different parts of the Mediterranean. Mike Almond (Errol) had usefully provided colour keys within a montage of photographs of the species to indicate where each was found in the wild. Extra displays like this add a great deal to the interest and discussion at the show.  
Cathy Caudwell

# *Meconopsis* in Yunnan

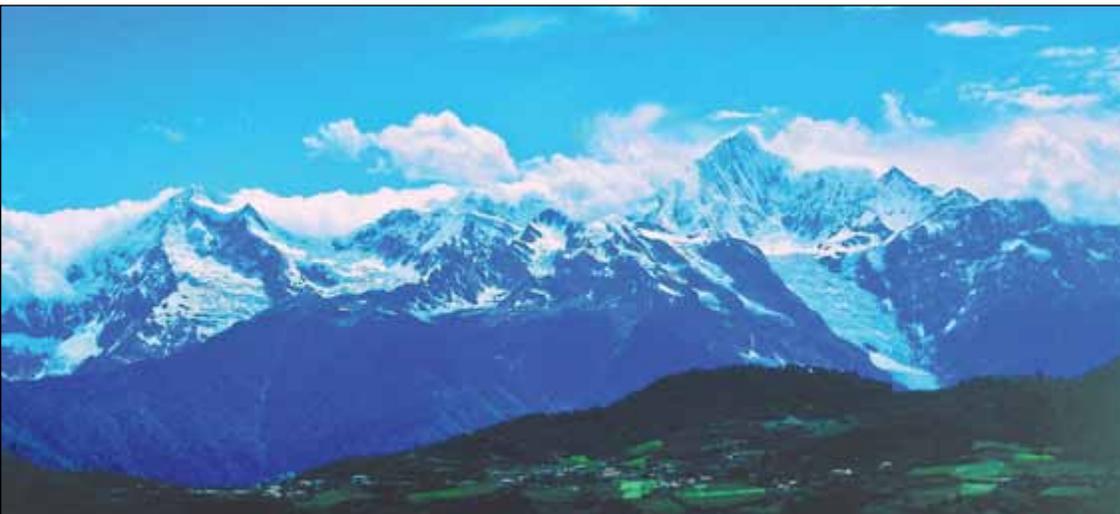
James Cobb

When George Taylor wrote his monograph on *Meconopsis* in 1935 he had not seen the genus in the wild and his interpretations were based on herbarium material. He later joined Ludlow and Sherriff on an expedition and claimed that this reinforced many of his views.

In the early twentieth century new material flooded in from China. *Meconopsis* originated from a huge area where travel was difficult and uncomfortable if not downright dangerous. There was an element of competition between collectors and an understandable desire, after their arduous trips, to seek recognition with new names. Taylor, perhaps in the comfort of a spacious office, sought to reduce the plethora of names. As was then fashionable, he was a lumper. He assigned many species to synonymy with others and did away with many sub-species.

For many years after the Second World War the Himalayas and adjacent areas simply were not open to visiting botanists and Taylor's lumping ideas could not be easily challenged. Not that he would have been an easy man to challenge. I was once introduced and had the temerity to suggest that the blue *Meconopsis wallichii*, which he had lumped into *M. napaulensis*, could indeed be a separate species. That ended a potential friendship that had already lasted for at least 30 seconds. He even refused to sign my copy of his monograph fifty years on from its publication – but tucked into it is a Preliminary Commendation for *M. punicea*, signed by him as chairman of the Joint Rock garden Committee!

118 - Meili Snow Mountains from the Bai Ma Shan





119 - *Meconopsis delavayi*, lower Gang Ho Ba

The concept of 'species' should be simple, with an absolute barrier to breeding between species. In practice this simply does not work. There are regularly even hybrids between genera – only last autumn I caught a hybrid between a swallow and a house martin. Current fashion is to split, not lump, and this applies to animals as much as plants.

I have grown *Meconopsis* that are visibly different and yet were classified by Taylor as the same species – *Meconopsis horridula*. What restrains the

splitters is that, although the extremes are obviously differentiated, there are intermediates in the areas between. Even with molecular techniques the line will still be arbitrary.

The problem goes back a long way. Carl Linnaeus developed the binomial system of genus and species well before Darwin and the concept of evolution. What was inside the minds of men of science at these times? How many believed unquestioningly that all life forms had been specifically created by God? They were, presumably, aware that hybrids existed. Perhaps Linnaeus believed species were immutable and God-given. After Darwin and his evolutionary theory, taxonomists might have realized that the species concept needed modifying. Many organisms, usually with geological isolation and the passage of time, have mutated into entirely new types that may be consistently separated and are not normally interfertile. However, many others are still actively splitting and are not yet separate species. I think many of the *Meconopsis* species are at this stage.

I am indebted to Margaret and David Thorne who persuaded me to join the AGS expedition in 2006 to Yunnan. The joint leadership included John Mitchell of the RBG whom I have known since I used to bump into him riding his bike round the St. Andrews Botanical Gardens. All three looked after me with extraordinary devotion.

The first *Meconopsis* species we encountered in the Gang Ho Ba was *M. delavayi*. In cultivation, this species, apart from being difficult, comes from root cuttings. Some plants were multi-rosettes and, on scraping away the soil, they looked eaten to the ground and had



120



121

sprouted from a main tap root. Certainly, the area was heavily grazed. The rather soft foliage is presumably palatable and regeneration may be a response to grazing, different to many other species' normal spiny leaves.

Under the cliffs at the top of the Gang Ho Ba we came across *Meconopsis horridula*. Chris Grey-Wilson has largely reversed Taylor's lumping. Writing in the second edition of his book 'Poppies', he has re-divided *M. horridula* into a number of different species. *M. horridula* is reserved for a high altitude form we come to below. *M. rudis* is familiar in cultivation; it typically has rather blue-grey glaucous foliage and very distinctive purple spots at the bases of hairs. This species formed a number of patches under and near the cliffs. A few were in flower, generally a good blue but with some mauvish overtones. Intriguingly, for every plant flowering or about to flower there were large numbers clearly not going to flower. In cultivation the standard



122

120 - *Meconopsis horridula* var. *rudis*, screes of the Gang Ho Ba, 3400 m

121 - *Meconopsis horridula*, *prattii*, Napa Hai, 3300 m

122 - *Meconopsis horridula*, typical Scottish garden form

types of '*M. horridula*' are almost invariably biennial; they, including *M. rudis*, have to be very badly grown to stay too small to flower. Perhaps these screes are very nutrient-poor or the growing season is much shorter than in the UK. Wherever I found '*M. horridula*' - of whatever 'species' - there were always larger numbers of small non-flowering plants too big to be the current year's growth. We next found many of this spiny blue species growing in grass at Napa Hai. This nature reserve is a truly remarkable semi-natural botanic garden. There were good stands of '*M. horridula*' such as we have grown for many years in Scotland. With a good dark blue flower on a flowering scape up to 40 cm tall, oldest flowers at the bottom, they were very attractive. The long elliptical leaves are plain green with golden spines of varying length which may, although not generally, cover the leaves thickly. Chris Grey-Wilson has separated out this plant as *M. prattii*. There were also plantings of *M. rudis*. I say 'plantings' advisedly because I think they were introduced. Intermediates between *M.*

*horridula* var. *prattii*, Napa Hai,  
3300 m



*Meconopsis horridula*:  
*prattii* & *rudis*: Bai Ma  
Shan gorge, leaves from  
adjacent plants

*rudis* and  
*M. prattii* at this site may well have been unnatural hybrids. We found *M. rudis* on high screes of the Big Snow Mountain (Da Xue Shan).

The Bei Ma Shan, towards Dechen - in George Forrest's time this was Atunze - was more illuminating. By now I tended to botanise on my own and spent time looking at '*M. horridula*'. In two places, some miles apart, *M. rudis* was often at the top of screes, whereas lower down in grassy areas under cliffs were hundreds of plants, mostly non-flowering, ranging from pure *M. prattii* to pure *M. rudis*.

Chris Grey-Wilson uses *M. horridula* for the very high altitude form. Perhaps the most beautiful of all the meconopsis, it usually has most perfect azure-blue flowers with



125

*Meconopsis horridula* var. *horridula*,  
Makulu (photo Ron McBeath)

*Meconopsis horridula* var. *horridula*:  
extensive spines more typical of the  
high altitude forms



126

dazzling yellow stamens, intensely golden-spined leaves and flowers on basal scapes. He says rightly that this form is very difficult to grow. When I tried them from Ron McBeath's seed from Makalu, they grew extremely slowly after germination, forming tiny plants at the end of the summer which almost invariably failed to over-winter. I remember they may have flowered at the RBG Edinburgh but only as a travesty of the wild. I have recently grown *M. horridula* from Vojtech Holubec's wild Chinese seed as well as that of Ian Christie of Kirriemuir. They are very slow growing: Ian Christie's SSE 42 have not flowered at two years and are still quite dwarf. Clearly there are genetically determined physiological growth strategies that differ between populations. *M. racemosa* is yet another variation with a characteristic raceme of flowers similar to the high altitude *M. horridula*. However, published pictures show plants variously with basal scapes, both basal scapes and racemes, and only racemes. These plants may have the yellow anthers and magical sky-blue of the high altitude *M. horridula* but can vary to a darker blue with white or grey anthers and various amounts of purple pigment associated with the spines. This too is really only a variety.

One of the great benefits of writing my book on *Meconopsis* was a veritable shower of wonderful books on Himalayan flowers gifted from Japanese and Chinese photographers. Some of them were privately published and one is a stunning photographic essay on the



*Meconopsis lancifolia* var. *lancifolia*, Da Xue Shan, 4600 m

high altitude *M. horridula*. Sometimes they are obviously named wrongly but in many cases they are revealing. Many pictures of *M. horridula* are typical of the high altitude form: some show a strong flowering scape; others grey and white anthers; and others a universal purple pigment or one associated only with the spines. In short, *M. rudis* and *M. prattii* intergrade in the wild, *M. horridula* with both, and many of these are identical to *M. racemosa*.

From my limited observation, *M. rudis* is found on open screes and *M. prattii* in grassier areas. Chris Grey-Wilson has noted that *M. horridula* as found at high altitudes is difficult in cultivation. However, recent collections of *M. horridula* by Holubec and Christie are also much slower growing in cultivation and probably more difficult but they very much resemble the typical *M. prattii*. This suggests physiological adaptations, probably genetically based, to quite different environments and that separation into different species has not yet happened. This species is still highly variable: as long as there is a continuum of integration they should simply stay as varieties. *M. horridula* var. *rudis* has glaucous leaves and purple spots at the base of the spines; *M. horridula* var. *prattii* has plain green leaves; and *M. horridula* var. *horridula* has yellow anthers and flowers on basal scapes only. We saw similar diversity in *Primula chionantha* which I always thought of as 'the' white nivalid. However, John Richards, who wrote '*Primula*', has put a number of others, including *P. sinopurpurea* and *P. sinoplantaginea*, into this species because "these 'species' merge into a seamless interfertile whole".

Closely related to *M. horridula* is *M. lancifolia*. I first found this on the Big Snow Mountain at about 4600m, growing in a deep humus-filled gully. It was very striking, of deepest purple and the best flowers had up to 16 petals. All plants I saw had leaves not dissimilar to *M. horridula* and all had flowering scapes up to 8 flowers. At some sites they grew in open scree with very cup-shaped flowers – perhaps an adaptation to trap heat. A

plant I regret not seeing in the Big Snow Mountains was the variety described by Chris Grey-Wilson as *M. lancifolia* var. *concinna*. This was a separate species until lumped by Taylor in 1935. It is separated from *M. lancifolia* var. *lancifolia* in having only basal flowers. The two subspecies at this site were only a few hundred metres apart as the bumblebees - who were actively pollinating two of the colonies - fly. Cross pollination must be regular and genetically based physiological characters perhaps allow *concinna* to survive in harsher screes. Tim Lever's picture shows a very different plant in many respects, maybe rather more than just a variety! It is possible that they are not interfertile and, as this species group becomes known from more sites, a greater range of variation may be found; Taylor certainly thought so.

The final species we found were *M. integrifolia* and *M. pseudointegrifolia*. I am certain we only saw one species. This is the species that really stimulated my involvement with this genus. In the early 1970s in Scotland there was a bright yellow plant with huge cup-shaped flowers (10 inches) that were held more or less upright. I remind readers



*Meconopsis lancifolia* var. *concinna*, Da Xue Shan, 4600 m

that the main feature separating *Meconopsis* from *Papaver* is the style. The stigma is the surface receptive to pollen; in *Papaver* it is a flat disc; in many *Meconopsis* this surface is projected away from the capsule by a style of variable length; in others there is no disc as such. The *M. integrifolia* we used to grow had almost no style and the stigma resembled the disc in *Papaver*. Many recently collected plants often differ in numerous ways: flowers are a paler creamy yellow and droop sideways; there is an obvious style of variable length and a much less disc-like stigma; the leaves are also different. Chris Grey-Wilson split *M. integrifolia* in two with a number of sub-species. Taylor was of course aware of this variation and had previously lumped a number of different plants into a single species, *M. integrifolia*. Grey-Wilson described the most important characteristics separating *M. integrifolia* from *M. pseudointegrifolia* as the presence of a style in *pseudointegrifolia*, and the leaf structure. *M. integrifolia* has three main veins on the entire length of the back of the leaf: *M. pseudointegrifolia* has a network of



129

*Meconopsis pseudointegrifolia*  
Da Xue Shan 4200 m



130

Seed pods of *Papaver* sp. *Meconopsis cambrica*, *M. superba* and *M. integrifolia* (L to R) showing differences in stigma



*Meconopsis pseudointegrifolia*, Da Xue Shan at 4400, 4600 & 4800 m (L to R).

Plants are squatter at higher levels

veins radiating from a single central vein.

All the plants at various sites had the pale flowers, mostly drooping and all with an obvious style. The leaves, however, told a different tale. I looked at up to a hundred plants at several sites. As a general rule, where plants were protected in rhododendron scrub the leaves were randomly veined but, the higher and the more exposed the scree site, the more three-veined the leaves became, until at 4500m the central vein was up to 7 mm thick and the side pair nearly as robust. Many plants had a strong central rib but a tendency for a network from the side pair. I suspect the leaf venation is an adaptation to exposure. It may well be partly genetic and exposed plants may be selected for strong leaves, but the process is certainly an ongoing evolution of leaf structure. I have recently grown *M. integrifolia unifolia* (classification used by Holubec) which flowered with upright deep-yellow flowers and a little style yet is meant (see Grey-Wilson) to be *M. pseudointegrifolia*. Iain Christie collected *M. integrifolia* as SSSE 36 which flowered with both types of leaf but tends towards the three veined structure. The three-veining of *M. quintuplinervia*, *M. punicea* and perhaps *M. sherriffii* is likely to have some functional significance and I therefore doubt that the leaf veining is a valid taxonomic criterion. That leaves the style. Like others, I have wondered what the style 'does'. It must have some function despite lengthening the journey of pollen tubes to fertilise the seed. Perhaps plants with no flat landing platform for insects are disadvantaged but a flower of this type may be vulnerable in harsh environments. Maybe it is a pole that insects climb to reach nectaries and anthers enclosed more cosily in a cup-shaped flower. Some *M. betonicifolia* have a very flat stigma almost without style and others like *M. grandis* have quite long styles.

*M. pseudointegrifolia* introduced some years ago was a squinny sort of plant contrasting unfavourably with the goblet-shaped bright-yellow *M. integrifolia*, almost lost at that time. I have since grown *M. pseudointegrifolia* from Finn Haugli's seed and they can be very lovely. Grey-Wilson described two sub-species of *M. integrifolia* and three of *M. pseudointegrifolia*; it seems reasonable to differentiate the two species by the style but I suspect that in time more intermediates may be found.

The picture books referred to above have other mysteries such as a typically structured *M. grandis* - another troublesome species - with blue filaments to the anthers, the defining taxonomic characteristic of *M. simplicifolia*. These sources describe not just taxonomic characters but also distribution. It is worth recalling that Joseph Rock described a pink *M. integrifolia* in Yunnan before *M. sherriffii* was described and, intriguingly, Eiko Chiba has photographed this plant well into Sichuan, many miles from its known locations.

I suspect things will become more difficult as more areas are explored and more variation is found in many of the species.

Semi-double garden seedling of *M. integrifolia* from wild seed collected by Ian Christie, SSSE 36



My last thought is - does it really matter? To gardeners it does: we like to name things and the *Meconopsis* Group has found it very difficult to quantify the variation into unequivocal delineations. To me it is more philosophical: 'species' is a human notion that predates Darwin. Evolution is spellbinding, and in *Meconopsis* we see a very active evolutionary process. *Meconopsis horridula* grows in harsh environments; many of the selective pressures are obvious but many physiological responses are less so. The genetic linkage between morphological characteristics, physiological adaptations and interfertility is rarely clear. We still have much to learn from DNA studies and the distribution and variation in characteristics of this group in the wild are still obscure. Whether in the garden or in the wild, I see no reason not to keep a single species – at least for *M. horridula* – with clear-cut varietal names for consistent morphological features. As far as *M. pseudointegrifolia* is concerned I think the jury is still out.

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133

Screes and cliffs at Gang Ho Ba, 3400 m: habitat of *M. horridula* var. *rudis*



134 - The Vercors

# The Vercors – Where’s That?

Gill and Tony Lee

Fly to Lyon in central France, travel south-eastward for 200 km ... and there you are. Founded in 1970, to the South-West of Grenoble, Vercors Regional Natural Park is essentially a limestone plateau rising in places to over 2000 m and guarded by cliffs cut by deep gorges.

The Hauts Plateaux Nature Reserve, the largest in France, offers exceptional botanical richness, with more than 1800 plant species; additionally, there are 150 species of breeding birds, including Wallcreeper, Alpine Chough and Nutcracker, over 70 species of mammals and a butterfly list exceeding 180!

We joined our party of friends from Naturetrek at Lyon airport, then travelled in two mini-buses through Lans en Vercors and the incredible Gorge de la Bourne, where *Pinguicula grandiflora* (Large-flowered Butterwort) was growing in deep shade at the side of the road, to La Chapelle en Vercors in the centre of the park to stay at the Hotel Bellier, a small and friendly family-run establishment.

Our first excursion was to Font D’Urle, an area of open limestone crags and meadows, essentially a winter ski resort. In the meadows, *Trollius europaeus* (Globeflower), various *Ranunculus* and *Viola*, including *V. arvensis* (Field Violet) and *V. calcarata* (Long-spurred Violet) made a glorious foreground to the mountains where, even at the end of May, patches of snow still showed to advantage large areas of *Erythronium dens-canis* (Dog’s-tooth Violet) and - in both its purple and white forms -

*Crocus albiflorus* (White Crocus). We followed a small, flower-edged and stony track past sheets of *Ranunculus pyrenaicus* (Pyrenean Buttercup) to an area with wonderful views and a wide range of plants including *Androsace villosa* (Woody Rock Jasmine), *Gagea fistulosa* (Star of Bethlehem), *Gentiana angustifolia* (one of the Trumpet Gentians), *Gentiana verna* (Spring Gentian), *Narcissus poeticus* (Pheasant's Eye), *Saxifraga moschata* (Musky Saxifrage), *Saxifraga oppositifolia* (Purple Saxifrage) and our very own *Dryas octopetala* (Mountain Avens). If only we could create such magnificent rock gardens with such diverse plantings!

The following morning, the cloud of the previous afternoon gave way to fine sunny weather that, happily, persisted for the rest of our stay. Over the Col de Bataille and its stunning cliff scenery we headed south and found the roadside verges carpeted with orchids: *Ophrys apifera* (Bee Orchid), *O. morio* (Green-winged Orchid), *O. simia* (Monkey Orchid), *O. tridentata* (Three-toothed Orchid), *O. ustulata* (Burnt Orchid), *Dactylorhiza sambucina* (Elder-flowered Orchid) in both colour forms - to name but a few. Later we added *Limodorum abortivum* (Violet Birds' Nest Orchid) and *Himantoglossum hircinum* (Lizard Orchid) to the list. Returning over the col, we found *Alyssum montanum* (Mountain Alyssum), *Draba aizoides* (Yellow Whitlow-grass) and *Alchemilla alpina* (Alpine Lady's Mantle).

Next day, an early start (before dawn) took us up to the Hauts Plateaux Reserve with its alpine woodland - mainly coniferous with predominant *Abies alba* (Silver Fir) and *Picea abies* (Norway Spruce); the adjoining grassy scrub held *Pinus uncinata* (Mountain Pine). After a brisk walk of some 2 hours we were high enough to find such delights as *Soldanella alpina* (Alpine Snowbell), *Pulsatilla alpina* (Alpine Pasque Flower), *Daphne*



135 - *Ranunculus pyrenaicus*



The lekking ground

*cneorum* (Garland Flower), both the blue and white forms of *Globularia punctata* (Common Globularia) and enough orchids to thrill the most avid buff. The main purpose of the early start was to try to see Black Grouse at their lekking ground: we were not disappointed. Two or three were heard ‘bubbling’ as they filled up on oxygen to increase their chances of performing a magnificent leap to impress the ladies of the species! We spent a considerable time watching the leaping and strutting - a great



*Gentiana angustifolia*



138

*Viola calcarata*

entertainment, albeit a chilly one. By the way, their song does NOT rate highly on the bird-song scale. No wonder they have to leap about to attract a mate!

The orchid theme continued the following day in the North-West of the Vercors; *Anacamptis pyramidata* (Pyramidal Orchid), *Orchis purpurea*



139

*Cypripedium calceolus*



140

*Cephalanthera damasonium*



141 - *Ophrys insectifera*

(Lady Orchid), *Platanthera bifolia* (Lesser Butterfly Orchid), *Ophrys sphegodes* ssp. *araneola* (Early Spider Orchid) and *O. bertolonii* ssp. *Drumana* (Bertolini's Bee Orchid). A total of 48 members of the Orchidaceae family were seen during the trip - who could ask for more? On the return journey, there was brief excitement in the car park at Pont en Royan with the discovery of Europe's largest moth, a Giant Peacock; it became a star in its own right and its portrait was taken many times.

Another hot sunny day found us exploring to the South, travelling over the magnificent Col de Rousset. The rock faces provided *Gentiana angustifolia* and *Genista pilosa* (Hairy Greenweed). Down the valley, with Griffon vultures circling on the thermals, we turned east through Die and, near the small village of Les Nonnières, we found yet more orchids: *Cypripedium calceolus* (Lady's Slipper Orchid), *Cephalanthera damasonium* (White Helleborine) and the emerging spikes of *Neottia nidus-avis* (Bird's-nest Orchid).

Next day, our ornithologists found what they had been hoping for: Wallcreeper at its nest in a quarry face. The botanists meanwhile were finding *Saxifraga*



*paniculata* (Livelong Saxifrage), *Primula elatior* (Oxlip), *Ranunculus aconitifolius* (Aconite-leaved Buttercup) and *Saxifraga rotundifolia* (Round-leaved Saxifrage). Near Lans en Vercors we ventured into marshy meadows that held, amongst others, *Geranium palustre* (Marsh Crane's-bill) and *Dactylorhiza majalis* (Broad-leaved Marsh Orchid). Stopping in the spectacular Gorges de la Bourne we added *Convallaria majalis* (Lily of the Valley), *Aquilegia vulgaris* (Columbine) and *Lonicera xylosteum* (Fly Honeysuckle).

A check-list of well over 500 flowering plants means it is impossible to mention them all. The only unhappy note during the whole expedition was the evidence of the suffering of local people during the occupation in World War II. The cemetery was a most moving and poignant place and several people in our group were moved to tears. Suffice it to say that it was a considerable privilege to enjoy the natural history of such a beautiful and relatively little known area in the centre of France. We have no hesitation in recommending it to everyone, botanists and ornithologists alike.



142 - *Saxifraga moschata*



143 - *Ophrys insectifera*

# Seed Exchange

## Donation of Seed

All seed should be sent to the Seed Reception Manager:

Prof G Stuart Pawley (gsp.srgc@tesco.net)  
Acres of Keillour, Methven, Perth, PH1 3RA

The Seed Packeting Manager is Ian Pryde and the Seed Distribution Manager is Ian Bainbridge. Seed should arrive before the end of October, because the list is prepared for the printer on October 31st and posted the next day. If you think your donation might be too late for inclusion and therefore of very limited value, please either post a separate list in good time or send a list by e-mail to the Seed Reception Manager. Because of the risk of virus infection, e-mail attachments from unrecognised correspondents will not be accepted or opened.

## Seed Lists

- Overseas members receive a list automatically.
- Home donors receive a list automatically.
- Home non-donors should request a list by sending a stamped addressed envelope to the Seed Reception Manager. This should be a C5 (24 x 17.5 cm) envelope with a single second class stamp.

The formal closing date for requesting a list is 14 December 2007.

The list will eventually appear on the SRGC web site as a pdf file, useful if you lose your own list. It will not contain the order form because this file will have unrestricted access.

## Seed Order Reception

The lists should be ready for posting about 10th November. They will contain the order forms, which should be sent to:

Dr Alan J Hayes, 31 Liberton Brae, Edinburgh, EH16 6AG

- Overseas members should include payment ONLY for Surplus Seed.
- UK members should include payment for all seed ordered.
- Priority is given to donors, who may order 25 items.
- Non-donors may order 16 items.

## Distribution

Requests for seed need to be received by 15th January. Distribution will be completed before the end of January.

All US members are reminded to comply with US regulations by sending us the appropriate completed phytosanitary forms; without these forms we can do nothing!

## Seed News

### My Favourite Garden Tool

Being of Cornish ancestry (according to slate carvings in the south aisle of Lelant Church) and living in Scotland, I must prove my Celticity. You see here the tool I use most in the garden, cut from a fork which had served its time; two for the cost of a blunt hacksaw blade! Here you see it with our seed exchange offering (57th, 3207) named as *Primula nivalis* but which is clearly *P. chionantha sinopurpurea*, a nivalid (section *crystallophlomis*). It's one of my favourite primulas, so I'm happy.

### King of Cabbages

This year our *Megacarpaea polyandra* is about to flower, as the buzzard's eye can see. It has over the years been flattened too often by the wind, hence the support at the ready. We had a few seeds on offer in the Seed Exchange four years ago from Argyll, and a wild collection last year. I hope to get a good crop from our plant for you all this year.

Christopher Lloyd wrote of our plant in "Garden Flowers" (Timber Press), a book concentrating on specific worthwhile plants. He described the magnificent display in his cousin Mary Knox-Finlay's garden at Keillour Castle, the source of Phillips & Rix's photograph in "Perennials" (Volume 2, page 38, Pan Books). These authors say it is alpine and perhaps monocarpic – all good to our



144 - *Primula chionantha sinopurpurea* with a favourite tool



145 - *Megacarpaea polyandra*

ears to hear that it is obstinately perennial. The Pan photograph is of the same plant that you see here about to flower. It journeyed across the road to Acres of Keillour when it was threatened with becoming lawn. It had not flowered for nearly 20 years since photographed and was growing in exhausted soil. It has since been mollycoddled by us and bent double by the wind for seven years but now will proclaim itself the King of Brassicaceae.

### Inside the Seed Exchange

**A** comparative newcomer to alpines returning to East Lothian after a career in England, whatever made me offer to coordinate seed exchange packeting? With a background in geology, I am fascinated by the influence of rock types - their chemistry and their physical characteristics - on plant populations and location. Following Henry and

Margaret Taylor is a great challenge. Following the Taylors' 'retirement', Ian and Carole Bainbridge organised the Edinburgh Group for seed distribution and got together a group of nationwide volunteers for packeting. I hope that those kind people found the experience sufficiently rewarding to repeat it in 2007.

Seed donations are sorted into tens of thousands of packets. A comfortable number for one person is 1000 to 1200 - enough to give a sense of achievement but falling short of a chore. With that target, and wishing to distribute more packets of popular genera, we need more volunteers please!

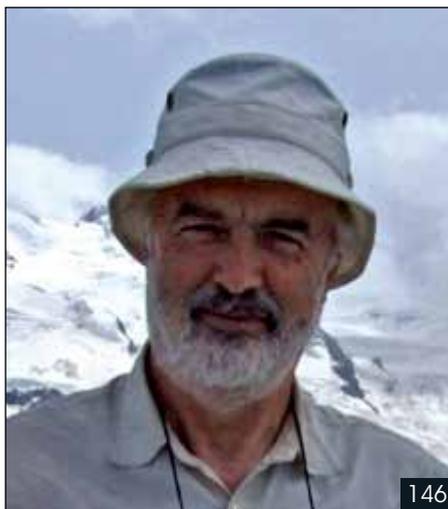
Packeting seed is a pleasant relaxed activity; it can be done in company or in quiet solitude. It requires no complicated equipment or skill other than a steady hand, reasonable eyesight and no unannounced sneezes. Some fluffy seed may cause irritation. Ability to distinguish viable seed from empty husks is useful. For the 2007 exchange, seed will be sent, delivered, collected and returned in boxes of uniform size, each with sufficient seed, instructions and materials for 1000 to 1200 packets. Individuals or participating members of groups will receive one box each. If you have expertise in or special fondness for a particular genus, we welcome your dealing particularly with its seed. Boxes will be sent out in early November with a generous return deadline of early December.

For many of us, the seed exchange and the growing of its exotic plants is motivation enough for SRGC membership. Whether it is in reception of donations, packeting, or the bumper-car buzz & whirl of number-seeking volunteers circling the order distribution tables, exchanges would not work without the many enthusiastic people who give their time so generously.

To join the band of SRGC seed packers, please contact:

Ian Pryde,  
25 McIntyre Lane, Macmerry,  
East Lothian EH33 1QL

Telephone 01875 615185 or  
e-mail: [ianpryde@tiscali.co.uk](mailto:ianpryde@tiscali.co.uk)



Ian Pryde on the Gornegrat

# Further Exploration North East of Shimla

Margaret and Henry  
Taylor

To quote a previous article:  
*"We have looked down from  
the summits of these passes  
into intriguing misty valleys and  
wondered what goodies are  
down there".* Now we know -  
mostly problems!

In early July 2004, with our  
little band of intrepid explorers,  
we returned to Sangla in the Baspa  
valley of Kinnaur for a hazardous  
three week trek over the Nalgan  
Pass and down the southern side  
to the confluence of the Nalgan  
and Rupin rivers. Then we turned  
north over the Rupin Pass to return  
to familiar territory and reach the  
motor road at Sangla.

Indian maps of this area are  
intentionally poor because of  
military problems with the nearby  
Tibetan border. Contours on our  
map, which might have indicated  
easy flowery meadows, turned out  
to be tree-clothed precipitous  
cliffs with no easy route along the  
river gorge.

On the way up from Sangla,  
sunny days were spent



147 - The Motor Road to Sangla



148 - *Meconopsis aculeata*

acclimatising gradually and photographing previously seen beauties such as *Lilium nanum* & *L. oxypetalum insigne*, *Paraquilegia anemonoides* and *Lloydia longiscapa*. Then came the day when we left the sunshine to head down the misty southern backside of the Nalgan. Taking photographs of *Gentiana venusta*, *Primula macrophylla moorcroftiana*, *P. stuartii* and hybrids gave us welcome rests; also, cliffs festooned with purple *Paraquilegia* and gorgeous blue *Meconopsis aculeata* lulled us into delaying the hour when we had to descend steeply into trackless misty slopes.

### Walking Poles

Wearily and slowly we made our way down until I (Henry) stumbled, found my hands tied together on my chest with the straps of my walking poles and was immediately airborne - bouncing down the rocks. Our group was transfixed in horror. Fortunately our leader, Bir Singh, who was some way ahead, rushed across the slope and did a spectacular rugby tackle to stop me in a stream.

It pays to have medics in your group. Ben, our surgeon, cleaned up the zigzag gash in my forehead with Iodine then carefully aligned the two sides of my head while Aileen, our dentist, stuck me together with Steristrips, Elastoplast and a headband. The clean air at 4000m healed all my wounds quickly but my dirty bloodstained shirt had to be thrown away. I will



*Cardiocrinum giganteum*



*Arisaema propinquam*, Rupin



*Androsace sarmentosa*, Nalgan ledge

never again put my hands through the straps of walking poles! Our porters, who had gone on ahead, had set up camp on the last patch of turf above a waterfall. We did a bit of plant hunting and found *Rhododendron lepidotum* (3 years to flower from seed) hanging from the rocks beside the waterfall; Ben also found bear footprints near the water. Around our sloping tents clumps of blue *Anemone obtusiloba* and pink *Androsace sarmentosa* straggled over the rocks. Sleeping was difficult on the angle of the slope and we tended to slide into a heap, the bed mat climbing up the tent wall.

In the morning, the mist had cleared and we realised our tents were on a ledge above a vertical drop. Fortunately a Gadi (shepherd) spotted us and came skipping down to tell us that we had to climb upwards a short way to traverse the hillside and find a better route of descent. He came with us for several hours to show us

the way, no doubt glad of unexpected company as he is alone for months with his sack of rice and flock of sheep & goats.

For several difficult days we gradually descended to the main valley and along it through trees, going up and down crumbly cliff ledges where the river was in a gorge. Monkeys watched us from the far side of the river. This was dense primeval forest and we felt no one had ever been here until, occasionally, we passed the remains of an old campfire. There were good *Calanthe tricarinata*, *Roscoea alpina* and *Cardiocrinum giganteum*, the latter



*Dracocephalum wallichii*, Rupin

mostly past flowering. We picked up walnut shells which had been eaten through on both sides by a "Hoochil" - a flying squirrel. Near the confluence of our river with the Rupin, at our lowest altitude around 2250m, we found good blue *Parochaetus communis* with a few dark-red petals scattered around. Looking up, we realised that we were under *Rhododendron arboreum*. Fortunately, these trees had some of the previous year's seedpods still hanging and the seeds may give rise to a good hardy strain.

## Route of the Gods

As we started up the Rupin valley the going became easier, with a walking path to a small village where smiling locals were threshing corn



*Saxifraga jacquemontiana*, Buran Pass



154 - Waterfall  
Camp, Rupin

with large flails. There were small fields of peas, potatoes and buckwheat; this southern side of the Rupin is a wide fertile valley with lots of flowers. We were happy to be out of the previous precipitous forested valley. White-flowered rose bushes - possibly *Rosa sericea* - lined the track and we camped among rocks ringed by the huge cobra-like heads of *Arisaema propinquum*. Next day, round a bend in the river, the valley opened above us with a series of snow-edged waterfalls completely blocking the way. Margaret's diary reads "The way ahead looks fearsome".

*Meconopsis aculeata* was everywhere; a friend had asked us to press some of its leaves to show the variation in leaf shape. *Gaultheria tricophylla* edged the path in pink flower, with just a few shining blue berries. At the foot of a damp cliff, *Lloydia longiscapa* and *Trigonotis rotundifolia* flourished in wet turf. The star plant here was *Dracocephalum wallichii*, spreading by runners in damp gravel beside the river. This 15 cm tall member of the Scrophulariaceae has large soft lilac-blue hairy flowers and is most attractive in the wild. The way ahead was not too fearsome. It is a walking route used by villagers from further south in Garhwal to take their Hindu gods over the Rupin Pass to visit the gods of the Baspa valley. Hindu gods like to go visiting! Our way zigzagged up the side of a waterfall and across a late snowfield. Plants became reduced in size to cushions of *Arenaria festucoides*, *Saxifraga jacquemontiana* - plentiful on most high passes, scattered woolly balls of *Saussurea gossipiphora*, and good mats of pink *Androsace muscoidea*.

A stiff pull up the final scree took us onto the Rupin pass about 4600 m and now we looked down on familiar territory. The winter and spring of 2004 had been dry so most plants were more dwarf than usual. We puzzled over the name of a small white *Waldheimia* - it may have been *W. glabra* just dwarfed by drought - whereas *Corydalis meifolia violacea* and *Gentiana tubiflora* were magnificent.

## Pabar Trek to Chansil and Buran Passes

In early June 2006 a similar group of friends, without Margaret, returned for a three-week trek into another new area. We motored eastward of Shimla to Rohru to walk up the Pabar Valley to the West of the Rupin, separated from it by a mountain ridge and the Chansil Pass. We had read on the web of an Indian bird-spotting trek to the Chansil and deduced that good for birds might also mean good for flowers - and worth exploring before our main walk up the Pabar.

Our first camp on the climb towards the Chansil Pass was beside a small village where we became local entertainment. Cleaning my teeth and shaving, I was watched by a man and boy standing only one metre away! Being close to a village, we were serenaded all night by dogs. We had a stiff climb past *Rhododendron campanulatum* with only the odd attractive pink flower remaining and, beside a stream, good *Primula involucreata* and *Meconopsis aculeata*. Further through the rhododendron thicket we found a beautiful pink *Rosa macrophylla* flowering on very thorny branches beside a 5m tall white *Syringa emodi*. A more open meadow was the site of brilliant ruby-red cylindrical heads of *Persicaria (Bistorta) milletii* about 20 cm tall. The same meadow had weird pale-green spathes of the taller *Arisaema tortuosum* while nearby lurked another *Arum* relative, the lurid evil-smelling *Typhonium diversifolium*.

Higher and near the pass we found several exciting plants new to us. On a steep slope beside a shady cliff amongst *Primula stuartii*, there were several plants, two metres tall, of the rare mountain brassica *Megacarpaea polyandra* with clouds of small creamy-yellow flowers. The lower branches were festooned with large penny-like seedpods above massive pinnate lobed fern-like leaves, said to be edible. Nearby was a small attractive pink



155 - *Arisaema tortuosum*, Chansil Pass



156 - *Persicaria milletii*, Chansil



157 - *Typhonium diversifolium*, Chansil Pass

orchid, *Galearis spathulata*. Then Olivia spotted a gorgeous deep-pink *Cypripedium himalaicum*: we were to see more of this in the Pabar valley. Another speciality of the Chansil around 3850m was *Primula sessilis* among boulders on a steep open rocky slope and within the top edge of a very steeply sloping *Quercus semecarpifolia* (Evergreen Oak) forest. This was much higher and drier than our previous sighting of *P. sessilis* on a dripping wet cliff on the Rohtang Pass. The Chansil *P. sessilis* had smaller greener leaves than the purple-tinged Rohtang version. Though the plants were well past flowering, the shrivelled pink remains of a late flower showed the pointed petals typical of *P. sessilis*. Fortunately, I can now state accurate altitudes as my son-in-law has given me a GPS satellite gadget.

We climbed to a 4057m windswept peak above the Chansil Pass where very dwarf *Lilium nanum* with open flowers were just above ground level; we actually saw taller plants with attractive purple-speckled centres to the flowers at lower altitude amongst *Rhododendron anthopogon* scrub. Near this peak was an electric power line crossing the hilltop; an interesting feature was streaks of burnt herbage and melted rock under each pylon. As there were thunderstorms each night we thought it prudent to avoid camping near a power line.

We only explored a short way over the Chansil Pass then took a route back into the Pabar valley, passing a walnut tree, *Juglans regia kamaonia*. Sonam - one of our guides and also a good cook - explained that this is a toothbrush tree. Cut a twig,

clean off a bit of bark, chew the end and use this feathered end to brush your teeth.

### Whisky is Risky (roadsign)

Back down near Ramai we were all in bed at 9 pm when I heard a shout from Aileen - "*Help! Scorpion!*" I grabbed clothes and a torch; Olivia had heard the shout and we both piled into Aileen's tent to seek the enemy. Aileen cornered him and clapped Olivia's metal whisky mug over him. She slipped a thin card under the mug and I carried out our scorpion, lifted the lid and hurled him away. I think Aileen had a poor night's sleep. Heading onward next day we met some attractively-dressed women and children walking down the valley to get polio vaccine. Olivia is an energetic and sociable girl who admires the clothes of local people, takes photos, then shows them to the smiling folk.

In open woodland, *Pteracanthus alatus* painted the ground like Scottish bluebells. Then we were up into extensive meadows. Unfortunately, this part of the Pabar valley is heavily grazed by vast flocks of sheep and goats so is rather lacking in flowers. We had to scramble up side-cliffs to find *Paraquilegia anemonoides* and the sweet-scented white *Primula reidii*. In a sheltered site by the river, inaccessible to animals, was more *Cypripedium himalaicum*. After a few days we emerged above the grazing fields to a campsite by a stream at 4074m in a beautiful meadow carpeted with yellow and white *Anemone obtusiloba* and masses of spectacular *Lloydia longiscapa*.

We had a rest day here so, while



158 - *Trigonotis rotundifolia*, Rupin



159 - *Rhododendron campanulatum*, Chansil Pass



160 - *Lilium nanum*, Chansil

the others explored, I lingered then set off slowly alone. At the start of our Pabar trek one of our guides had a fever and chest infection which gradually spread around our whole party. The medics pooled medicines and rationed them among guides, porters and ourselves as several of us became ill. At this point I was weak and walked slowly towards promising dark wet cliffs that had lovely *Meconopsis aculeata*, *Primula obtusifolia*, *Primula macrophylla* var. *moorcroftiana* and its hybrids crossed with *P. stuartii*. We have found *P. obtusifolia* - a Kinnaur speciality - in several of the passes around here but always in small local groups. I sheltered in a cave from a thunderstorm and then emerged lost into dense mist, only being rescued and led back to camp by my GPS gadget.

We started early the next day for a hard pull to the 4587m Buran Pass; I had fluid in my lungs and others were also suffering. Slogging uphill, each of us fought a desperate battle of mind over matter. Around the summit prayer flags were lovely yellow cushions of *Potentilla biflora*, good pink *Corydalis meifolia* var. *violacea* and mats of purple *Primula reptans*. Other good cushion plants included the compact silver-leaved *Leontopodium monocephalum* with sessile creamy flower heads, snowy-white buns of *Androsace delavayi* and a few sparse flowers of *Saxifraga pulvinaris*. The descent from the summit led over a huge bowl-shaped snowfield. It was comical to see porters setting loads of camping gear onto the snow then having fun as men, tin boxes and luggage flew down, scattering in all directions into the hollow.

We found a good campsite at the junction of two valleys at 3658m. On a rest day, our folk found lots of flowers, including the strange shaggy-haired spires of *Arnebia benthamii*, and a cliff with good clumps of white *Lloydia serotina* alongside pale-blue *Aquilegia fragrans* and blue crystals of Kyanite in the rock.



## Masala Ridge

The following day we toiled to our last 4071m ridge before dropping towards the Baspa valley. Attractively coloured forms of *Androsace sarmentosa* were along the crest of the ridge. Sonam had us all hunting for the small high altitude *Pleurospermum govianum* with its delicious spicy leaves - valuable in cooking as "masala". These snippets of local lore contributed to our holiday. After a steep descent we walked at relatively low altitude. We camped on disused terraces near villages with magnificent ancient *Cedrus deodora* - probably holy trees - one with a trunk 24.7m in circumference. Pale-yellow *Clematis buchananiana* trailed over cliffs. In one valley we picnicked under steep scree and were stoned from above by a troop of monkeys. Nasty beasts, these monkeys - they were too close to being human.



161 - The elusive *Lilium oxypetalum*

We eventually reached the motor road at Sangla to meet our vehicles. On the trek we had been impressed that our men kept in touch with base with mobile phones - which failed in the last four days because of a lightning strike at the Sangla mast. The day we arrived in Sangla, I walked into town, found the mast had been repaired, went to an STD booth and phoned home at very small cost. India is developing rapidly.

A special plant that still hides from us - surely somewhere around - is the yellow *Lilium oxypetalum* seen recently only 150 km further south by our friend David Tattersfield who found many plants in an area of Garhwal where grazing is completely forbidden. Any quest brings unexpected rewards but we failed to find this yellow lily.

# Growing in Sand

Peter Korn

*"It can't be done - It won't work in the long run - It will be too barren - It will be too dry - Perhaps cacti? - Maybe at your place, but not at mine ...".*

There are numerous arguments against growing in sand, but usually only from

people who have never tried it. Those who have tried themselves are surprised that it can indeed be done.

I took up gardening 12 years ago, when I basically knew nothing about flowers except the most common perennials. I bought a house in Örkelljunga on a plot of 3000 square metres, where I tried out many different soil mixtures and in the process killed thousands of plants. The advantage of not knowing much is that you have to find your way by trial and error. I have never gone by the book and find following the rules very tiresome. So I tend to tear up the rule book and simply do as I please.

I began growing plants in pure sand while still in Örkelljunga. I have since moved to Eskilsby, 30 km east of Göteborg. My main reason was that it was so easy. Tip a pile of sand onto the lawn, cover it with rocks of some kind, and you have the perfect rock garden. On the south side you can grow cacti and other warmth-loving plants, while on the north side you may put plants that prefer to be a little cooler. That is as difficult as it gets. However, just having numerous heaps of sand would be rather boring, so you might like to be a little more creative.

The siting of the rock garden is the most important



Tip a pile of sand ...



... cover it with rocks ...

On the south-facing slopes



consideration, depending on what you wish to grow in it. You can make a sand bed anywhere. All you have to do is choose plants to suit the location. A rock garden is often sited in a south-facing position, making it suitable for many plants from the Mediterranean, the western United States

and Central Asia. However, this would be far too warm for high-alpine plants from places like the Himalayas and New Zealand. If *Ranunculus glacialis* is to thrive, it needs a very cool environment.

I have a rather big garden with a variety of natural features, where I can build several rock gardens under all conceivable conditions (although no salt flats yet). There are steep north and south-facing slopes with exposed rock, oak woods, fir woods – although since recent storms only four large firs remain - and a small bog with a cool spring in the middle of the plot. On the south-facing slopes I have built rock gardens in gneiss and limestone. In this case, I want to create conditions as warm and dry as possible in this, one of the wettest parts of Sweden. Late summer tends to be so warm and dry that the bulbs receive a real roasting and the cacti have a chance to mature properly. On the sunny north-facing slopes I have rock gardens for those plants that like dry, well-drained but not too warm conditions. In the woods I have mainly peat beds for forest plants but here too I intend to build rock gardens for ferns, primulas and other plants that like shady, well-drained conditions. Then there are those plants

Varied niches in the forest



that like dry, well-drained soil but cold and wet conditions. This kind of environment can be hard to create but ... where there's a will there's a way.

I have started building rock gardens out in the bog, where the cold springs cool them from below. I try

to site these where they will be shaded by a tree in the middle of the day when it is warmest. I also try to angle the beds to receive as much sun as possible without overheating. This combination produces a rock garden that is sunny and dry yet cool and damp. The



alternative is to create a wet bed on a north-facing slope by building a pond, filling it with sand and building a rock garden on top. Here I grow various high-alpine plants such as *Ranunculus glacialis*, as well as trying all kinds of things that will not grow anywhere else.

As mentioned, I have tried a wide variety of soil mixtures and many of them work well. The disadvantage of those containing any kind of compost is that they decompose. After a year or two, all that is left is some rather sticky topsoil, no matter how fluffy it was to begin with. Rock gardens and beds are always best when new. Everything grows easily and you think you are an excellent gardener. Then, after a few years have elapsed, the soil starts to compact. You can no longer insert your arm up to the elbow in the peat bed and the rock garden is far too wet, except in summer when it is rock-hard and dry as dust. What's more, there is tough competition between roots, and nothing grows so easily anymore. You have the same problems even if you plant in sand: after a few years, it doesn't go so well. The difference is that the bed is still well drained and you still have the same sand that you built the bed with. I have now stopped using any kind of compost in my rock gardens and have also switched to pure natural sand (not crushed) for perennials.

I still kill thousands of plants but also try to grow anything that has the slightest chance of survival. If a plant can withstand frost, then it might work. I plant several thousand new



varieties every year and it is amazing how many survive. If it works, I try to plant at least one tray (40 specimens) of each variety. There is always one that is hardier than the rest and, if I can just get one to survive, I can cultivate it further. I have no real inhibitions and really try to grow everything I come across, mostly from seed.

## The Sand

The sand I use is 0–8 mm. I have tried finer grades but find them too compact. When I moved to Eskilsby, I ordered sand from all the local gravel pits so that I could test which was best. There were clear differences but I don't know what they were. I did not send the sand for any kind of analysis and was content to conclude that sand from Landvetter was the best. It is just a matter of trial and error.

The sand bed should be as large as possible and 20–40 cm deep. Nothing must be mixed with the sand! It doesn't really matter what is underneath. I usually build a structure of the original soil which, being old



pinewood, is completely useless as anything other than fill. If you are siting the bed on a lawn, it does not need to be excavated first. Most of the grass will die off, and it is easier to remove any that survives than to excavate the lawn beforehand. A sand bed should always be

raised. If you dig a pit and fill it with sand, it will fill with water during the winter. It is also good if the bed slopes in one direction, to ensure that no water can ever stand.

The sand should preferably be covered with something: crushed stone, natural stone, bark or whatever takes your fancy. The main point is that it should be coarse, improve drainage and reduce evaporation. It is easiest to plant the bed before or while adding the covering layer, especially if you are using coarse material. When I plant, I remove any soil the plants may previously have been in. Otherwise, they will not take root in the sand but will keep their roots in the clump of soil and wither away when it dries out.

The advantages of sand are that it never gets really wet and it dries up very fast on the surface. It also retains moisture very well. Look at a beach in the summer: 10 cm down it is always damp, no matter how

warm and dry the surface. I never water anything in my garden except perhaps once when I plant it. If it is a dry bed, it should contain plants that prefer to be dry. There are plenty of fun desert plants that will never die of thirst. Since the surface is very dry and barren, weeds will not thrive, and any that



take root are easily cleared. If you live in a very dry area or are one of those people who cannot bear to see their favourite plants desiccated on the ground in summer, then the sand is very easily dampened even when it has become thoroughly dry.

However, there are very few plants that die of thirst. Often they simply wither but recover in the autumn. If they fail to do so, then it was obviously the wrong place for that particular plant. If you torment plants sufficiently, they acquire a large root system and cope much better with future dry spells. Roots grow very easily in sand and often the plants end up with an extensive and deep root system that probably also compensates for the lack of nutrition. Likewise, they gain in hardiness and maturity.

In the spring, the combination of cold nights with ground frost and strong sun during the day often causes me problems. The spring sunshine frequently kills more plants than the winter. Sand does not contain so much water, so the ground frost is not as hard and melts very quickly when the sun warms the surface. This gives the plants a source of water so that they do not wither to death. Sensitive evergreens in particular fare much better in sand.

If you grow pot plants in sand beds, you will often find those that have taken root in the sand grow much better than those in the pots. Indeed, I personally do



not think that growing plants in sand-filled pots is effective.

The disadvantages of sand are possible leaching and lack of nutrition. My oldest rock gardens are currently four years old and still growing well. If you wish, you may add a little of your preferred fertilizer. I sometimes use a small amount of Chrysan (5 kg per 1000 square metres), but only in those areas where I have slightly larger plants. I should like to try some kind of mineral fertilizer with zero Nitrogen content, while rainfall still provides enough of that. If I notice a lack of minerals setting in, I shall have to look for something suitable.

Annual rainfall where I live is around 1200 mm, most of it when not wanted. Winter fluctuates between mild and cold, with temperatures above freezing one week but down to  $-30^{\circ}\text{C}$  at their coldest and rarely with any certainty of snow cover. Spring is often cold and late (which is why I come to Scotland in March). Last year, there was around 30 cm of snow on the rock garden when I opened on 1 April.

Whether you now believe me or still agree with the first lines of this article is up to you. If you don't try, you won't know, and anything that works is right. One tip is to think big. A small pile of sand won't work. Order two truckloads of sand straight away. That still won't be enough!



A small pile of sand won't work!

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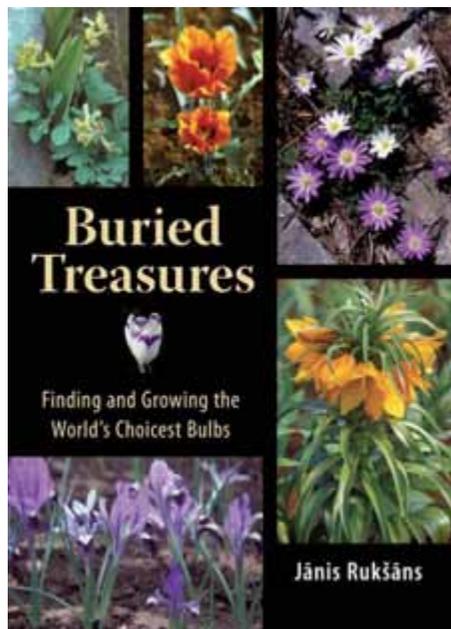
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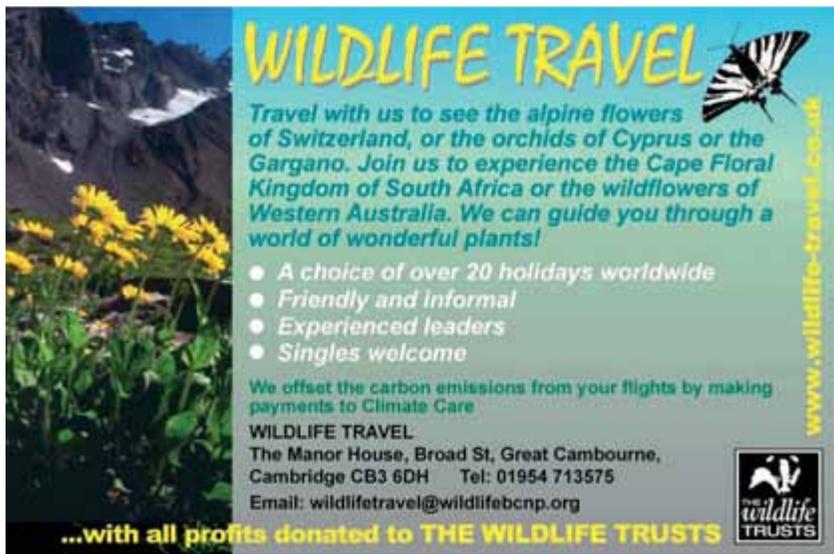
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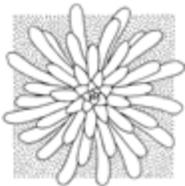
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THE SCOTTISH PLANT HUNTERS GARDEN



## Sandy Leven

A Photographic Exhibition by Sandy Leven, of plants and flowers that David Douglas would have seen on his explorations in western Canada. The exhibition is housed in the **David Douglas Pavilion**.

It is open now and will run until the end of October.

Sponsored by the SRGC [www.scrge.co.uk](http://www.scrge.co.uk)

## Peat Garden

Come and see the progress of this new section of the garden. Built last year by Peter Korn and sponsored by the SRGC, the sustainable peat came from Sweden and gives us a number of good growing conditions for a variety of plants such as *Lilium nanum*, *Lilium oxypetalum*, *Cyananthus sherriffii*, *Lewisia cotyledon* and *Lewisia redivia*, and *Penstemon menziesii*.

***We sell seeds from our own collections  
in the garden and unusual plants!***

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