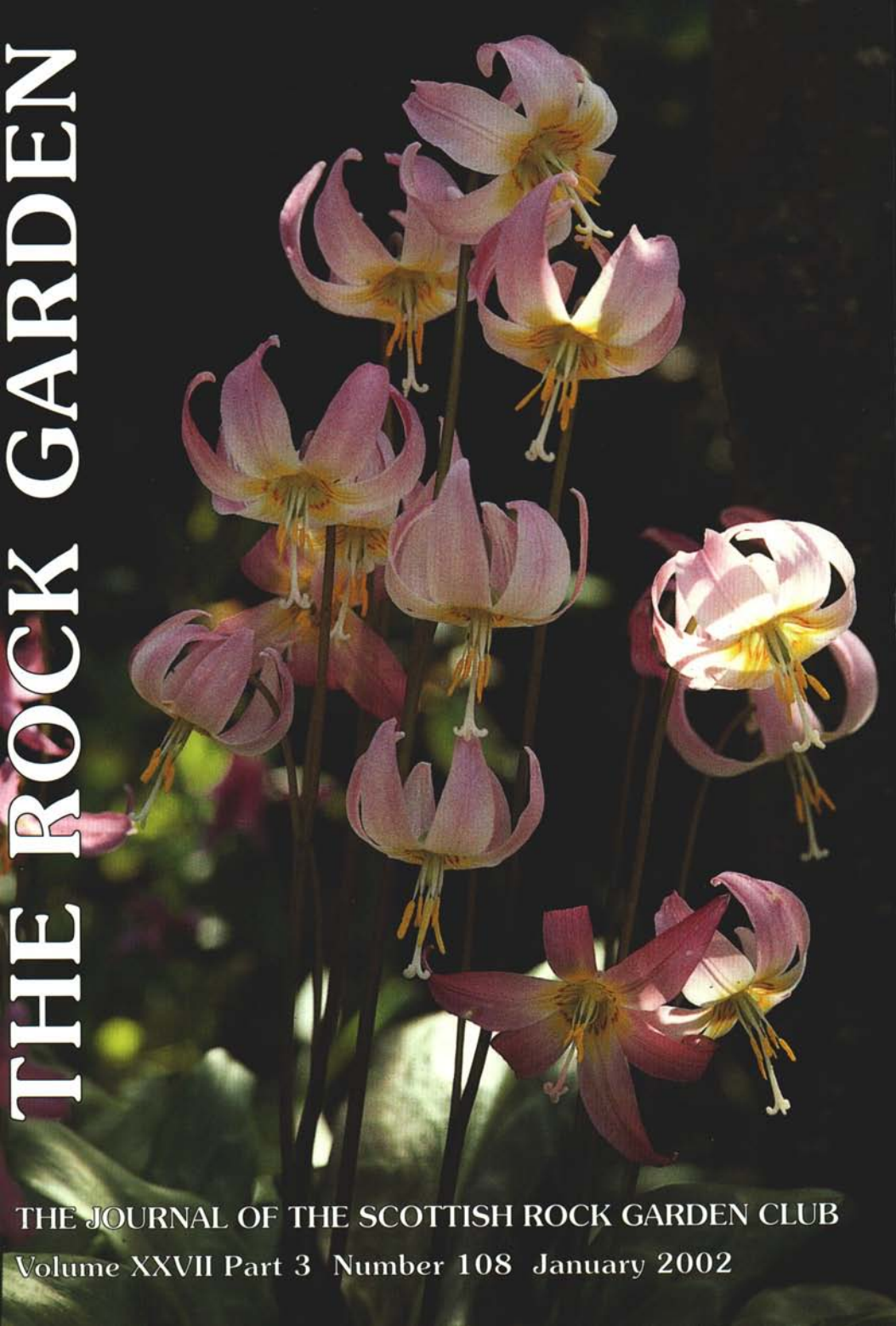
THE ROCK GARDEN



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Bulbs from Seed: Ian Young (p. 202)

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Editorial

The Perfumed Garden

PLANTS ARE JUDGED BY THEIR APPEARANCE, and never more than at Shows. Whatever category it is in, a plant is judged by how good it looks. This is more complicated than just whether a plant is attractive. It is through the way a plant looks that we judge such things as whether a plant is well grown, healthy, distinct, vigorous, and correctly named. This is fine – of course we should – but it is not the only one of our senses that we could use. One of the joys of so many plants is their scent.

I love scented plants. In the alpine house, on a spring morning, with the extra warmth, and the still air, the scent can be irresistible. And it can be some tiny plant that is pouring perfume into the air.

If you look around the major rock garden genera some stand out as far as scent is concerned: lilies are often too big for our shows, but irises, orchids, violas, narcissi, pinks all have richly scented members.

Androsaces are one of the genera in the primula family that do have wonderful scents, although on other occasions .... heady perfume in some specimens, in some clearer lighter scents, in some almost cat's piss sour. And yet George Smith and Duncan Lowe in their wonderful book on the genus rarely if ever comment on the scent of Androsace species. Dionysias can have the most stunning scents. What is noticeable, however, if you grow, for example, *Dionysia aretioides* from seed, is that different seedlings can have flowers very differently scented. Both the particular scent and the strength of that scent can vary quite substantially. My own lack of record keeping from one year to the next means that I am unable to comment on whether individual clones vary from year to year in either respect or whether, like the colour of the flowers, the smell is a relative constant in strength and make-up. In his book on Dionysias, Christopher Grey-Wilson confines himself to the comment "Some forms have sweetly scented flowers." And yet it is possible to describe individual scents just as it is to describe a wine's taste. We do have a vocabulary of smells.

In *Flora Britannica*, Richard Mabey comments on the scent of *Daphne mezereum* having been likened to 'Windolene' and that of *D. laureola* having a "faint, but teasingly musky scent". Of Fragrant orchids, *Gymnadenia conopsea*, he says "Their fragrance is similar to mock-orange (though like Philadelphus scents, not to everyone's taste)". Heather is "honey-scented".

It strikes me that we should consider awarding a prize to the best scented plant in a show. Or it would be possible to have a special class for such plants, with *Daphne cneorum* up against *Iris graminea*, smelling of ripe greengages, *Androsace cylindrica*, a couple of Narcissus, and some little crucifer whose only attraction is its scent. Suddenly some plants which are of little impact visually could assume a proper place.

Composites are not primarily grown for their scent but there are some such as chamomile which are grown primarily for this characteristic. The mignonettes, such as *Reseda pyrenaica*, are rarely shown at present, but would be an interesting addition to the show bench in this new field. The Caryophyllaceae of course would have a great presence. Dianthus are often beautifully perfumed although not invariably so. *Dianthus deltoides* has no scent for instance, but there is a great range of rich carnation/clove mixes. Just get your nose round a few of those. Then there are the plants with scented foliage – herbs – thymes and mints and origanum and sage – the labiates are so often scented. Then there are the verbenas and junellias.

Think of them: Jonquil, Carnation, Lavender, Rose, Orchid, Vanilla and for me you have to add Daphne and Dionysia. If you are not a blind gardener then your sense of sight gets in the way. So shut your eyes for a moment and just think of one of them.

And once you start to think, it just seems very peculiar that there is no particular award at any of our shows for scented plants. Why not ....

Memories of Alf Evans

Alfred Evans was born in Broughty Ferry on 6 May 1920. He died on 15 September 2001.

Dr. Evans was for many years Assistant Curator at the Royal Botanic Garden, Edinburgh where his wide responsibilities included the Alpine and Herbaceous departments. He was a well-known and well-travelled lecturer, broadcaster and author and was holder of the Scottish Horticultural Medal from the Royal Caledonian Horticultural Society and the Victoria Medal of Honour from the Royal Horticultural Society.

As far as the Club is concerned Alf Evans was a key figure. He was Editor of this journal from April 1968 to September 1969, elected President from 1973–1976, was then one of our Honorary Vice-Presidents until 1996 when he became our Honorary President.

As can be seen from the memories of Lyn Bezzant, John Main, Julia Corden and Bette Ivey, Alf Evans was much loved.

IT IS HARD to believe, *writes Lynn Bezzant*, that never more will that amiable, laughter-loving man appear among us at our club gatherings. He has been part of the SRGC all the time I can remember, writing, editing, judging and presiding. At the show bench Alf appeared to like to have his own way, but in reality preferred his fellow judges to challenge his decisions and to give good reasons for their differences of opinion. He was a helpful and considerate chairman of the RHS Awards committee (Joint RGPC) and always appreciative of the work done by the secretary, clerk and stewards.

Photo (from left): James Aitken, John Duff, Bobby Masterton, Alf Evans

He was a very good speaker: quietly urbane, entirely at ease and comfortable. Every word delivered in that measured, deliberate style was perfectly audible. Now when re-reading his masterpiece, *The Peat Garden and its Plants*, I can clearly hear the voice which has charmed and inspired generations of gardeners.

He loved being with people and what good company he was. He had a fund of amusing stories about his adventures, leading tours and plant hunting trips. Then there was the cruise lecturer who sought sanctuary in the Archbishop of Canterbury's cabin, as a mediaeval knight might have resorted to a church, to escape the attentions of a woman passenger. No prizes for guessing who, and the story may in fact be

apocryphal. But best of all were the tales about encounters with such great worthies as Randle Cooke and Willie Buchanan.

So much was Alf associated with rhododendrons, primulas, gentians and the like that we tended to forget that he was an all round horticulturalist. One indignant Bearsden member said to me once; "Do you know what ? Alf Evans was on the radio this morning and he was talking about POTATOES!" When I told Alf about this he replied; "Aye, it was tatties, leeks and neeps on the agenda that morning. I had an awful job to get in a word about alpines. At the end of the spiel the BBC mannie comes up and says if they hear one more word about the SRGC then I'm out on my ear."

It was good to have known him and a privilege to have worked with him. There was no side or ostentation about him and he was ever true to his origins. The Club has lost a great man. We will miss him.

John Main first encountered Alfred Evans as a student:
I first encountered Alfred Evans when I entered the hallowed ground of the Royal Botanic Garden in September 1962 as a student gardener on the three-year diploma course; on first impression Mr Evans was a gruff rather austere person. At that time he was one of four Assistant Curators and his special responsibility was the Herbaceous and Alpine Department. Students had to be over 21, male and some had just returned from National Service. We soon realised that here was a man not to be trifled with.

Weeding in the Rock Garden can become tedious month on end but as a student one had always to keep a sharp look out for the approaching Mr Evans who had mastered the technique of how to walk quietly on gravel paths. His monthly plant identification walk rounds were always interesting with many humorous and educational stories imparted on the plants being described. One of his sayings, which has stayed with me throughout my career from these walk rounds was "Plant it firm and it will come to no harm". He also loathed certain gardening techniques and to him the small metal rake had no place in the garden, "produces too fine a tilth only encouraging weeds to grow and most students only dug holes with them" so it was always safest to leave it behind in the tool shed. He preferred the back of the garden fork to produce a good tilth.

He was the one Assistant Curator who had the knack of appearing early in the morning at starting time, or just before lunch or finishing time but never had a set pattern. Most students avoided week-end duty with him as he always found other duties to be carried out when you had completed your glasshouse chores, usually weeding one of his areas of the garden with a trusty trug basket and hand fork. However, students

had a great respect for him as he also had a rather softer side; he was always ready to pass on his knowledge and was proud of 'his squad'.

Alf played an important part in both the career and private lives of many students including my own. On completion of the student gardener course I was appointed as a Garden Supervisor in his department where a different side of him became apparent. He proved to be a compassionate man with a deep love of plants. He and I spent many happy and fruitful visits to other gardens and nurseries often not returning the same day as we left. He introduced a number of plants to the living collection two of which he was particularly proud of were *Dactylorhiza fuchsii* which he collected from Preston Holm coal bing at Gorebridge and *Hacquetia epipactis* 'Variegata' which he obtained from a friend in Sweden.

I was fortunate to enjoy Alf's friendship and knowledge on his enthusiastic visits to Harlow Carr and Wisley, which continued, on our return to Edinburgh. He was very proud of the RBG and the SRGC.

For Julia Corden:

Alf Evans was my mentor in the horticultural world. The first time I met him was in April 1982, while I was a student at Wisley. I was working in the canal pool in front of the lab, pulling out old smelly water-lily leaves. Without any warning I was summoned to John Main's office (curator of the gardens at that time), for an interview with Mr. Evans (who was down from Edinburgh to select students for placement). No time to wash my hands I took off my waders and rushed to John's office. John introduced me to Alf. As John took the interview the only question Alf asked was did I drink. At 17 years old what do you say. So I just said, "A little." Alf's reply was "Well lass, we'll have to change that". A week later a letter came saying he would like to offer me a job at the Botanics. And that was the start of it all. Alf was so helpful to me in my love of Alpines encouraging me in my career and my hobby.

He was so enthusiastic about Alpines it was catching. Helping you learn about his favourite thing – plants.

My first ever Discussion Weekend was at St. Andrews – Alf said he would give me a lift – so I had to drive him there in his car. What a fantastic weekend – I was hooked! He encouraged me in so many ways – introducing me to so many big names like Jack Crosland, Sheila Maule and Bette Ivey and many more.

Since I left Edinburgh we used to keep in contact every month or so, with always the same greeting, "How are you lass, what are you up to, when are you coming up?". He was a great inspiration to me encouraging at every turn I took in the alpine world and in my career. His advice I always listened to. He will be deeply missed.

The last word is Bette Ivey's:

Alf made everyone feel special to him. He was fun to be with, his encouragement and support were legendary. I valued his experience and knowledge which he shared unstintingly. I recall Alf saying that we should never lose sight of the bond which tied us together, our love of the wee plants from the mountains and the quest to cultivate them in our gardens.

Alf made everyone feel special to him. The late Joyce Halley described Alf as "a'body's man", I could not improve upon that statement.

I have many happy memories of time spent in his company. The laughter and drams shared on coach trips to Chelsea, committees and conferences here there and everywhere.

He was a remarkable man, he was my pal. No more hugs and smiles of welcome, I will miss him tremendously.

Fig 101 *Cornus suecica*, Ullsfjord (p. 196)

The arctic-alpine flora of Troms County, north Norway

Finn Haugli

MANY YEARS AGO, when I was new to alpine gardening in Tromsø, I remember reading Lionel Bacon's classic *Mountain Flower Holidays in Europe*. In the introduction to the chapter on Scandinavia he says: "This great area of Northern Europe presents a problem to the compiler of a book such as this. It is largely mountainous and scenically attractive, and contains some beautiful flowers, many of them more or less confined to the area, so that it unquestionably qualifies for a place in the book. Yet, truth to tell, the number of species of gardening interest is not very great, and of these many are representatives of the "Arctic-alpine" flora, well known and often more abundant in the Alps".

Frankly, I felt a bit offended. The number of species of gardening interest not very great! Indeed!! And "our" plants being more abundant in the Alps. How could he!! Now, some years later and a bit wiser, I realise of course that there is a lot of truth in these statements. So why should I bother the members of the Scottish Rock Garden Club with some glimpses of the arctic-alpine flora in the north of Norway? First, I would like to emphasise that Lionel Bacon did not include northern Norway in his book, only the mountains in the south. Second, I would like to state that it is not only what grows, but also how it grows, that matters to the alpine gardener and the lover of alpine flowers. Thus, I do feel fairly comfortable, after all, about sharing some of my great moments around the county of Troms with you, hoping that these excursions around my home town of Tromsø, 70° north, a long day's travel above the Arctic Circle, could be of some interest.

Climate and geography

The City of Tromsø is located at a latitude of 69° 40' north, about 700 km north of the Arctic Circle. The County of Troms extends both southwards and northwards from Tromsø, as well as some distance further out towards the North Atlantic Ocean and quite far inland where mountains rise towards the Swedish border. Although definitely in the Arctic, with two months of midnight sun (in Tromsø from May 17 until July 24) and an arctic night two months long with no sun at all (from around November 20 until January 21 in Tromsø). The climate is, however, "sweetened" by the Gulf Stream, particularly near the coast. There is a gradient from a more arctic climate in the inland mountains, with very cold winters and relatively warm summers, towards a coastal climate of cool summers and relatively mild winters. Tromsø has a January mean temperature of –4.4°C, against –10°C in the inland valley of Dividalen.

Likewise, Tromsø has a July mean of +11.8°C against +12.8° in Dividalen. The coldest ever recorded in Tromsø was –18.4°C. This may be set against the low record of –51.2°C in the inland settlement of Karasjok in the county of Finmark, east of Tromsø and far from the ocean and the influence of the Gulf Stream.

From the above one might expect alpine plants to show a gradient of increasing abundance from the coast towards the inland mountain plateaux. This, however, is only partly true. First, there are tall mountains on the coast and at any given intersection, giving a vertical gradient towards more alpine conditions and flora. Second, the climate at this northerly latitude is such that many alpines occur down to sea level, even at the outermost islands. Thus plants such as *Saxifraga oppositifolia* and *Silene acaulis* can be found anywhere, even down to the shoreline, but in contrast, some species are virtually only found in high inland mountains, including *Rhododendron lapponicum* and *Cassiope tetragona*. Likewise, *Ranunculus glacialis* is absolutely loyal to its high, lofty places.

As we set out on our excursion, we will start on the islands far out at sea, then travel along the fjords, visiting the mountains close to Tromsø on the way. Then continuing up the inland valleys we will end this journey in the high inland mountains.

Paradise at sea

The Lofoten and Vesterålen Islands in the county of Nordland are very well known outside of Norway. The former, in particular, have a high status as a tourist Mecca in the summer, and deservedly so. However, the much less well known islands along the coast of the county of Troms, with the three biggest being Senja, Kvaløya and Ringvassøy are spectacular in their own right, and well worth a visit. Furthermore, in addition to these bigger islands there are a number of smaller islands which qualify as some of nature's most spectacular and beautiful places. These can be very difficult to get to. There is fabulous Sørfugløy and Nordfugløy (the South and North Bird Island, respectively) with its incredible breeding populations of several hundred thousand puffins as well as guillemots and auks, not to mention a sizeable population of the Sea Eagle. And incredible amounts of the desirable cloudberries occur on the latter. Then there is the large and impressive Vannøy (literally: Water Island). And last, but not least, is tiny and exceptionally lovely Karlsøy. While the first mentioned are birds' paradise, the last is a plant paradise. Much of the island has dolomite in the rocks and consequently the flora is extraordinary. Here, at 70° north about 13 species of orchids are found, close to 40% of the Norwegian total. Particularly abundant are *Gymnadenia conopsea, Platanthera bifolia, Dactylorhiza maculata* and

Fig 102 *Pyrola norvegica*, Karlsøy (p. 196)

Fig 103 *Rhodiola rosea*, *Dryas octopetala* and *Salix reticulata*, Fløya in Tromsø (p. 198)

D. fuchsii, but add to this sizeable populations of *Leucorchis albida* ssp. *straminea*, *Dactylorhiza lapponica*, *Orchis mascula* (the world's northernmost population of this species), *Epipactis atrorubens*, *Coeloglossum viride* and several others, and you start to realise that for its location this is exceptional. The setting is also extremely beautiful, looking across the sea to the openings of two of the most breathtakingly beautiful Norwegian fjords: Lyngen and Ullsfjord, as well as the island of Vanna and several other of the outermost islands including Rebbenesøy.

And of course orchids are not the only plants to enjoy. Here is an abundance of *Dryas octopetala*, *Silene acaulis*, *Potentilla crantzii*, *Veronica fruticans*, *Viola* spp., *Arenaria norvegica*, *Pyrola minor*, *P. norvegica* (fig.102), *Saxifraga oppositifolia*, *S. aizoides*, *S. cespitosa* (fig.104), drifts of *Cornus suecica* (fig.101) and, later in the summer, exceptionally beautiful *Campanula rotundifolia* and lots more (fig.105).

Along the fjords

Travelling inland along the fjord of Ullsfjord, cutting its way deep into the country, the spectacular views of the Lyngen Alps on the peninsula dividing Ullsfjord from the Lyngen Fjord would probably catch most of your attention on a clear day. However, some beautiful flowers grow along the shore. *Trollius europaeus* and *Geranium sylvaticum*, being ubiquitous plants in these areas, will surely grace the shore and forest around midsummer. Similarly, *Cornus suecica, Trientalis borealis, Vaccinium vitis-idaea*, *V. uliginosum* and *V. myrtillus* are extremely common and abundant. When on calcareous ground *Saxifraga oppositifolia, S. cespitosa* and *Silene acaulis* again will be plentiful. It is great fun to see the purple saxifrage in flower and note the great variation in flower size, colour and shape. Thus, just like the situation on the outer islands, those not familiar with the climate here at 70° north will be surprised to see alpines growing very close to the beach. On the beach the most exciting plant will be *Mertensia maritima*, its seed being washed ashore after drifting with the Gulf Stream for long distances.

Close to Tromsø

Tromsø, situated just a short distance further inland from the outer coastal islands, basically having a fjord-location, has a vegetation at sea level similar to what is seen along the shore of the surrounding fjords. However, close to Tromsø the city mountain Fløya, and the mountain peak of Tromsdalstind which rises to about 1300 m, provides locations for some high alpine plants which are easily accessible for the casual visitor. So let us make the climb, or if you do not feel fit for the 1300 m up Mount Trosmdalstid, try the almost vertical 400 m to Fløya, or cheat

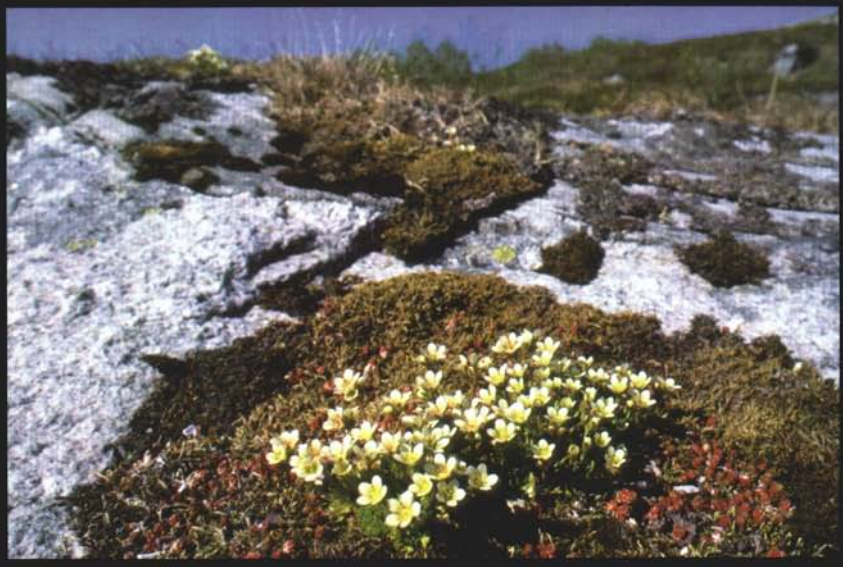


Fig 104 *Saxifraga cespitosa*, Rebbenesøy (p. 196)

Fig 105 *Arctostaphylos alpinus* in September, Skulsfjord (p. 196)

and take the gondola-lift to the high plateau. Here, much of the ground is dolomitic and consequently the arctic-alpine flora, high above the city, is rich and gorgeous. Large fields of beautiful alpines such as *Dryas octopetala, Silene acaulis, Diapensia lapponica, Potentilla crantzii, Veronica fruticans*, *Salix reticulata* as well as scattered plants of gems such as *Arnica angustifolia, Leucorchis albida* ssp. *straminea, Pinguicula alpina* and a very few *Cassiope tetragona* capture the attention of the alpine enthusiast visiting this location. Areas of more acid ground also harbour treasures. Here you will find an abundance of plants such as *Cassiope hypnoides, Loiseleuria procumbens, Viola biflora, Pinguicula vulgaris, Rhodiola rosea* (fig.103) abundance of ubiquitous *Cornus suecica* and *Trientalis borealis.* The incredible blue of *Gentiana nivalis* will be spotted on a sunny day, its flowers closed when the sun is behind clouds. It is a tiny look-alike to the gorgeous *Gentiana verna* of the Alps, and unfortunately a biennial. Later in the summer very beautiful specimens of *Campanula rotundifolia, Lychnis alpina* and *Cerastium alpinum* will be common. Vaccinium species, as well as *Arctostaphylos alpinus*, will be plentiful together with ubiquitous *Empetrum nigrum.* If you care to make an easy walk up to higher locations you will be rewarded with another couple of wonderful alpines: here in wetter areas you can enjoy intensely yellow *Ranunculus nivalis* and virgin white *Ranunculus glacialis,* turning pink as the flower ages. However, the latter plant will be growing larger and more gorgeous if you take the climb almost to the top of 1300 m high Tromsdalstind.

Inland valleys

The drive along any of the north Norwegian fjords (listed from south to north they are: Malangen, Balsfjord, Ullsfjord, Lyngen and Kvænangen) will eventually bring you to the fjord's end and then the steady rise towards the inland mountains, bordering on Sweden. To get to the inland plateau, you will have to traverse one of a number of inland valleys. These rise as you travel eastward and up towards the marvellous Troms inland regions. These valleys are beautiful and have a rich flora well worth a study. They also give shelter to animals of prey such as the lynx, the wolverine and the brown bear. Around midsummer the incredible abundance of *Trollius europaeus* and *Geranium sylvaticum* would be among the most impressive sights. Lush ferns fill the birch tree forests with a bright green carpet. On calcareous ground orchids such as *Gymnadenia conopsea, Platanthera bifolia, Epipactis atrorubens* and *Cypripedium calceolus* can be amazingly and wonderfully abundant, but always in very localised areas. The fairly rare *Rubus arcticus* will brighten the wetter parts with the beautiful pink flowers, while ubiquitous

Rubus chamaemorus, Cornus suecica, Trientalis borealis and *Viola biflora* will make sure your eyes always will have beauty to take in. Add to this often abundant *Pyrola minor, P. norvegica* and their even more exquisite, and somewhat more elusive relative, *Moneses uniflora* and you will understand that alpine wonders are lining up for the keen observer. The three Vaccinium species already mentioned will be omnipresent. In addition, two more Ericaceae will be abundant and beautiful: *Phyllodoce caereula*, preferring sweeter ground, and *Andromeda polifolia*, definitely one for more acid and wetter conditions.

Inland mountains.

As you hike up the valleys vegetation slowly changes. While the forests in these parts mostly are made up of *Betula pubescens*, some of the valleys have wonderful forests of *Pinus sylvestris* in their lower stretches. Thus, in the National Park of Dividalen, there are extensive areas of virgin pine forest, a fairly rare sight these days. Arriving at about 400 m above sea level, the tree line is reached. This means more open landscapes and the long views, the wide open landscapes that some of us cherish above everything else. As a backdrop, and in fact surrounding you everywhere, are always the snowclad peaks. Now, if you made this hike in the last week of June, and you arrived in limestone country, you could start to prepare for some absolutely wonderful flower experiences: huge drifts of snow white *Cassiope tetragona*, carrying their dainty white bells in an abundance rarely achieved if brought into cultivation. This is a plant of wide open ground and exposed ridges in an incredibly rough environment. Even more astonishing: this is the home of elusive *Rhododendron lapponicum*. Called the Lapp-rose by Norwegians, this plant is not observed by many since it flowers so early, before most people find their way to the mountains. The flowers, large for such a small bush and of a rich magenta colour, are very attractive when seen in its home places. Growers of rhododendrons will sometimes frown on this as "not very attractive", but maybe that is just something they say because it is quite difficult to grow. In any case, it is a miniature so it must be reserved for the truly keen alpine enthusiast. After flowering it is not so easy to spot the tiny greyish-green leaves, unless you rub against them and smell the wonderful fragrance given off. But there are more treasures here: *Diapensia lapponica* (fig 107) can be very abundant on limestone, and is of course one of the most beautiful alpines. *Dryas octopetala,* never one to be absent from limestone areas, can be very abundant, as is *Silene acaulis, Phyllodoce caerulea, Saxifraga oppositifolia* and *Salix reticulata.* Likewise on limestone expect to come across *Saxifraga cespitosa* and *Pinguicula alpina.* Acid ground has ubiquitous *Betula*

nana, the Vaccinium species mentioned before, *Loiseleuria procumbens* and in wetter parts the ground may be covered with the tiny white bells of *Cassiope hypnoides* as well as the lovely yellow flowers of omnipresent *Viola biflora.* In even wetter parts tiny, but attractive, *Viola palustris*, with flowers of a lovely lavender colour and neat lines of black is a charmer. Likewise, wet and acid ground is the home of the beautiful and bright yellow *Ranunculus nivalis* (fig 106). A particularly lovely habitat is provided where ice-cold groundwater breaks the surface or where permanent snowmelt trickles exist. Here emerald carpets of moss among the rocks is the preferred growing place for the starry saxifrage, *Saxifraga stellaris.* Almost impossible to please in the garden, its dainty white starry flowers are a delight to behold.

Very rare is the alpine poppy *Papaver laestadianum*, only found in these parts. Also quite rare are the three primulas that can be found above the Arctic Circle: *Primula scandinavica, P. stricta* and *P. nutans.*

The arctic-alpine flowers in my garden.

I like to grow our wildlings alongside more exotic alpines. Not that I have them all in cultivation, but most are easy for me and make a smashing show. Those include *Ranunculus glacialis, Andromeda polifolia, Phyllodoce caerula, Salix reticulata, Viola biflora, Cornus suecica, Trientalis borealis, Vaccinium vitis-idaea, V. uliginosum, Silene acaulis, Saxifraga oppositifolia, S. aizoides, S. hirculus, S. cespitosa, Dryas octopetala, Arnica angustifolia, Cassiope tetragona,* and *Gymnadenia conopsea* as well as *Leucorchis albida* ssp. *straminea.* None of these cause many problems in cultivation in our climate. In a warmer climate one would need to give them some shade while providing enough light. I often hear people complain that plants such as *Silene acaulis* do not flower well. I believe that could be a function of the fact that a warmer climate necessitates shade, which then could have the effect of reducing the flowering capacity. The only general advice that can be given in order to succeed with cultivation of these outside an arctic or alpine setting would be to provide very good drainage, steady water and limited direct sun, yet as much light as possible.

As always, the greatest pleasure is to see the plants in their wild habitat. While the city mountain in Tromsø is accessible and can reward a visitor with many treasures in a fairly undemanding way, many of the other locations referred to here will require quite a bit of determination and physical fitness. Most of those reading this will never travel to such remote places, but I hope these glimpses from the "Top of Europe" have been a flower holiday of sorts.

Photos: Finn Haugli

Fig 106 *Ranunculus nivalis*, Vuoma (p. 200)

Fig 107 *Diapensia lapponica*, Vuoma (p. 199)

Bulbs from Seed by Ian Young

Fig 108 *Narcissus triandrus* x *watieri* – an artificial hybrid

WITH SO MUCH interest in growing bulbs, both in pots and the garden, it is surprising that more are not raised from seed. There seems to be a view that it is more difficult to grow bulbs from seed than other plants. This is simply not true. In some cases it can be easier; the difficult bit is having the patience to wait the three to seven years that it may take to see a flower. The rewards are therefore all the more satisfying. This long wait does not seem so bad if you sow bulb seed every year as after the first waiting period is over you should have something new coming into flower every year. The investment of the first wait pays dividends. The following notes deal mostly with the popularly grown species of Fritillaria, Crocus and Narcissus but can be used for other genera of bulbs.

WHY SEED?

Growing bulbs from seed greatly reduces the cost per bulb and means you also have a lot more to play with. You will get a good selection of forms often showing considerable variation which I find highly desirable. Many bought bulbs are often clonal and usually represent a form that multiplies itself freely; this can sometimes be at the expense of flowering. Plants that concentrate their efforts on vegetative multiplication do not always spare the energy for flowers. It also gives you the opportunity to

Fig 109 Seed-raised *Tecophilaea leichtlinii* showing variation

select your own favourite forms that you can multiply clonally if you wish; it is nice to have a pot full of bulbs that are just that bit different from everyone else's and, if you enjoy showing, it might just take the judge's eye. I also like to see a pot of bulbs showing the variation in a species, and providing this is not too extreme, I find it more interesting than a pot full of a single clone.

By having a good selection of individuals which should have differing levels of resistance to different diseases you are less likely to lose the lot, if a problem strikes, than if you had a quantity of a single clone. Also you will have raised bulbs that are more suited to your growing conditions, as any that are totally unsuited will have died off at an early stage. It is much less painful to lose a first year seedling or two than to lose a flowering bulb bought at great expense which then decides it does not like your cultural methods.

You should also collect and sow some seed of all your own bulbs on a regular basis to ensure that if they are unfortunate enough to get struck by a disease or a virus you will always have healthy young stock coming on.

Much is written about not letting your bulbs set seed as this weakens the bulb; this is nonsense. A bulb that is setting seed will grow from four to six weeks longer than the same bulb would if it was not fertilised, this extra growing time more than makes up for the energy the plant needs to produce the seed. It is very important that we all collect and circulate as much seed from our cultivated bulbs as we can. We never know when wild sources of seed will dry up, either by extinction of the plants in the wild or by legislation forbidding seed collection, so we must look to preserve as wide a range of cultivated material as possible.

WHEN TO SOW

I believe that bulbs have a built-in clock that is passed on to the seeds by their parents, and this, more than any outside element or condition, triggers them into growth. Each bulb has an annual window of time in which it will grow. *When* growth is initiated within this window can also be affected by outside conditions such as moisture or temperature.

I know that some people say you should always sow everything fresh as this is what happens in the wild but this does not take into account the very differing conditions found between a summer season in a garden when compared to the those of the plant's natural habitat.

Fritillaria seed should be sown at the beginning of September and watered well, just like the mature bulbs (*The Rock Garden* vol.xxv part 1 page 30). You can successfully sow Fritillaria seed up to late November and possibly December.

Fig 110 Tecophilaea bulbs and seedheads

If I receive Fritillaria seed after December, I do not sow it until the following September, as germination in the first season would be poor if at all, because you have missed the time window for Fritillaria and there is every chance that the ungerminated seed would rot off in the long period of unfavorable conditions of a Scottish spring and summer before the next time window comes round.

Crocus and Narcissus should, ideally, also be sown in September although the time window seems to be wider in these genera and they are less susceptible to the ungerminated seed rotting off in the spring and summer months.

Seed of summer growing lilies such as *Lilium nanum*, and *Lilium oxypetalum*, and Nomocharis species should not be sown until the end of January. I have made the mistake in the past of sowing them in the autumn and they germinated in a mild period before the onset of winter giving me great problems of how to take the tiny seedlings through a winter; needless to say I was not successful on that occasion. This is how gardeners must learn; I do not think a dead plant is wasted if I have learnt something in the process.

Erythronium seeds are best sown fresh or as soon as you can get them. If they are a bit dry and wrinkled a good soak overnight in water with a tiny smear of soap, just enough to break the surface tension, should make them nice and plump again and improve germination; the same applies to Trillium seeds.

STORING SEED

We have discovered the following methods work well for storing seed.

– Fritillaria and lily: allow the seed to dry naturally then it can be kept for at least three years in paper packets kept in a dry environment and at a cool constant temperature well away from any sunlight.

– Narcissus: store in almost dry fine sand in a plastic container also at a constant cool temperature, although the cool temperature seems to be less critical than in Fritillaria and we are still experimenting. We have found that all bulb seed, other than the lily type, store better in sand; they seem to prefer this to being surrounded by air.

COMPOST

A well-drained compost is needed and we use the same formula that we use for all our container grown plants: by volume two parts loam, one part humus and two parts gravel (3–6 mm). This gives us a good open

compost; if your loam is heavy you may need to increase the amount of gravel to obtain a good porosity. We use leaf-mould for the humus part but peat or equivalent can be substituted. We use bone meal as an added feed.

SOWING

We use square plastic pots of various sizes for all our seed sowing; they make much more efficient use of the space available. Fill the pot to about 2 cm from the top and scatter the seed evenly on the surface then fill the pot to the top with a gravel (3–6 mm).

I know that the traditional advice is to sow seed thinly but with bulb seed you can get away with and in fact get better results from sowing quite thickly. We often have pots that resemble a lawn on germination because we sow so thickly; bulbs do seem to enjoy company.

Polystyrene fish boxes are very useful for sowing very large quantities of seed in and we grow Erythroniums, Trilliums and lilies in these until they reach flowering size without the need to repot.

One recent exception to this sowing method is Narcissus. We now fill the pot just over half way with compost then sow the seed, add more compost then top off with grit; we get much better results this way. I learnt this from observing the seeds that shed into the sand plunge in the bulb house, they always seem to do better than the ones that we sowed and I wondered why. If you compare the way Fritillaria seed and Narcissus seed behave at germination you will find that in Fritillaria the growth tip pushes down into the compost and the bulb forms at the end of this tip whereas in Narcissus the bulb forms beside the seed and the roots penetrate the compost. In subsequent years the Narcissus bulb then forms contractile roots that gradually pull the bulb down to its preferred depth.

Fig 111 Comparison of Fritillaria and Narcissus (right) seedlings

Sowing the seed 2–3 cm down not only saves it from having to pull itself down but also places it in a much more stable environment less likely to dry out or be attacked by pest or disease.

AFTER SOWING

We place all our bulb seed pots on a sand bed in an outside plunge bed which is left open in all weathers until germination starts to occur. Some Crocus and Narcissus species can start to germinate in the winter before the year ends and you need to look regularly at the seed frames to check for growth. Once a pot has started to germinate it needs to be covered to protect the fragile young growth from the physical effects of the weather and any prolonged periods of frost. A good flow of air should be maintained to prevent any fungal disease attacking the growth. If the seed coat is stuck to the end of the cotyledon do not worry, this is quite normal and you are only going to do harm trying to remove it.

Also watch out for slugs, they can devour a whole pot of precious seedlings in no time, we have to admit to using slug pellets in the seed frames.

As spring arrives and the seedlings are in good growth we apply regular doses of balanced liquid feed – ideally once a fortnight and at least once a month. We, being good Scots, tend to use whichever one is on offer at the cheapest price at the garden centre. It is important to keep the seedlings growing for as long as possible in their first year, constantly watering and feeding until the shoots show signs of yellowing.

Once the young bulbs start going into their dormant period, keep the frame covered to prevent excessive moisture, but do not let them dry out completely. The tiny young bulbs have not yet built up a big enough store of energy and moisture to take them through long periods of drought.

The frames are kept covered as required through autumn and winter with occasional openings during light rain to keep the compost always moist.

SECOND AND THIRD YEAR

The same procedure is followed for the next few years with plenty of watering and liquid feeding in spring while the plants are growing and holding them just moist during the dormant period. It is important to remember that the seedling bulbs will be starting to root from September on, even though you may not see any growth above the surface for six months or more, so a good soaking at this time is essential. Always be on the look out for slugs and aphids, which not only weaken and damage the plant but can also spread virus.

We use any available systemic insecticide spray to protect the plants and have never found one that causes any problems to the bulbs.

Fig 112 Erythronium seedlings from one 8cm pot

REPOTTING

We usually do not start to repot seedlings until the end of the third growing year. Many bulb seeds will germinate sporadically, especially if they have been stored, so if you repot too soon you could lose the ones that will germinate in their second or third season. One exception may be Narcissus, if you have sown them on the surface there is a big advantage in getting them down a centimeter or two into the compost.

We repot seedling bulbs in August/September once we have finished repotting all the mature bulbs. The ones that are due to be repotted are allowed to get slightly drier which makes sorting them out that bit easier. Tip them out and carefully sift the compost until you find them all, shaking the compost in a tray as if panning for

Fig 113 *Narcissus* x *susannae* – cross of *N. triandrus* and *N. cantabricus* – which also occurs in wild

gold will bring the young bulbs up to the surface. Remember you could have one, two and three year old bulbs in the same pot. Repot them into a fresh batch of the same compost mix increasing the pot size or making two pots from one, as you think necessary.

Once the bulbs have reached this stage we either move them on to a covered bulb-frame or bulb-house as they now require more protection or plant them into the garden if they are suitable. It is a strange fact that seedling bulbs seem to be hardier when they are young than when they are at, or reaching, maturity.

Some Narcissus and Crocus will flower in three years from seed as will many lilies but it is normal to have to wait until year five to seven for Fritillaria and Erythronium.

We normally use clay pots for flowering-size bulbs we intend to grow under glass. Most bulbs that we plant in the garden are grown in plastic mesh pond-baskets for ease of relocating and splitting in future years. We also have several open plunge beds where we grow Erythronium, Trillium, Fritillaria, Crocus, Corydalis, etc in square mesh pond-baskets; these beds act as a halfway house between the bulb-house or bulb-frame and the garden. It also allows us to lift and split the plants on a regular basis without having to disturb other plants growing in our densely populated garden.

By growing bulbs from seed it also gives you that extra few that you can try out in the garden and we are increasingly surprised at how many of these, that we always grew under glass before, can survive and sometimes thrive if the correct conditions can be found in the garden.

At the moment we are spoiled for choice with the great variety of bulb seed available through the SRGC Seed Exchange as well as the exchanges of our sister societies. There are also many specialised commercial seed lists, offering mouth watering gems both from cultivated stock and wild locations, advertising in our journal. There has never been a better time to start growing bulbs from seed.

For further information and our method of growing bulbs see the article 'Bulb Growing' in *The Rock Garden* vol. 25 part 1 page 30

Photos: Ian Young

Fig 114 *Fritillaria chitralensis* – **a rare species which must be raised from seed as it is slow to multiply vegetatively**

Fig 115 *Penstemon whippleanus* (p. 214)

Penstemons hate dirt

Ginny Maffitt

PICTURE jewel-toned floral trumpets in cobalt, magenta, cerise, lavender, purple and more. Penstemons, species and hybrids, offer vivid colour from spring to fall, often on evergreen plants. They can be as valuable in a landscape plan as in an alpine specialist's rock garden. Growing penstemons successfully takes some knowledge and good culture however, or they can be as fleeting as a summer love affair.

Although penstemons grow throughout North and parts of Central America, the majority of the 280 species are found in rocky or mountainous terrain. The plants don't thrive in crowded root areas, so have adapted by finding niches where most plants can't survive. For instance, the 'blow-out' penstemon, *Penstemon haydenii*, grows only on the sand hills of Nebraska, in depressions carved out by winds in the sand. It roots into the shifting debris, but eventually dies out as the ground stabilises. Another, *Penstemon debilis*, actually survives in oil-bearing shale. The plant is able to send out stems from the base of the plants to grow beyond the shifting rubble. When it quits moving, the plants grow flowering stems.

Some penstemons find homes in 'native' rock situations, where they can send roots between cracks for moisture and coolness in hot weather. Needing little humus, they seem to grow in gravel or mineral-rich sands in amazingly stark situations. In the Columbia River Gorge that divides Oregon and Washington, these rock-growers can be found along cracks in the cliffs. One, *Penstemon richardsonii,* has purple, raspberry or pink corollas blooming late into fall and long, narrow toothed leaves that contrast against the dark basaltic rocks. *Penstemon cardwellii*, an upright Dasanthera 'shrubby', is found throughout the Cascade Mountains, especially in screes or gravelly roadsides (fig. 116). There are about a dozen in the Dasanthera group, all handsome evergreens occurring in pink, white, magenta, blue and purple that would be hardy in the United Kingdom such as *P. rupicola, P. barrettiae*, *P. fruticosus*, *P. newberryi*, *P. davidsonii*, *P. ellipticus* and *P. montanus*. Other penstemon species are found as high as 10,000 feet in the Rocky Mountains from Canada to Mexico, where they remain dormant for many months of snow and cold.

In spring and summer, plants such as *P. whippleanus* cope with brilliant light and infrequent thunderstorms. In my western Oregon garden, it thrives in coarse sand, with strict drainage (fig. 115).

Subgenera

Penstemons are currently divided into six subgenera, according to how pollen is released from anthers or from characteristics suggesting commonality of origin. There is no monograph that is written for genus Penstemon; with over 280 species, it could be more than a lifetime's undertaking. New species were still being discovered in the 1990's and botanists are still changing the classifications for many. The current subgenera are Dasanthera, Penstemon, Habroanthus, Saccanthera, Cryptostemon and Dissecti, the last two containing only a single species each. These are further divided into sections and subsections by general and then specific characteristics. Dr. Andrea Wolfe, working at Ohio State University, may cause tremendous revisions in this shifting nomenclature when she publishes her current study next year. She has been collecting all possible species and extracting the DNA, so that exact lineage can be traced. Her amazing study, presented in small part at the 2001 American Penstemon Society annual meeting, shows that Subgenus Dasanthera appeared before all of the other penstemons. In the Scrophulariaceae family, it was the first true penstemon, occurring after the Keckiellas, Chelones and Chioniphilas. It seems to be the progenitor of all the others, travelling from west to east (with the westerly winds?) much as our Natives American people did. Log on to her website for more detailed information (including many good photos) at www.biosci.ohio-state.edu/~awolfe/Penstemon.

Climatic needs

Because this genus is spread over a whole continent, it has also adapted to many climates. Growers in the United Kingdom would probably find the best climate match with plants from the Northwest U.S. Depending on elevation and distance from the ocean, this may be winter rain, alternated with snowy weeks, and generally dry summers. The majorities thrive in precipitation as low as ten inches annually due to their adaptation to thriving in rocky areas. This gives gardeners a wide range of plants with diverse cultural needs with which to experiment.

Since most species will die, rather than adapt to wet conditions, here are some tips for growing them. The first rule for growing penstemons is to try and duplicate the environment your plant calls home. In many cases, this is not possible. The "pents" in the low-altitude warm-winter deserts of California, Arizona and Mexico go dormant after spring

bloom, when rains cease. When weather cools, they grow all fall and winter, and burst into vivid bloom by early April. These don't adapt to a winter climate where cold rains or snow make growth impossible. The exceptions to this rule are the large salmon *Penstemon barbatus* (fig. 117) and red or yellow *P. pinifolius* that have grown in Oregon in my garden into specimen plants at least five years old. Likewise, the cool-growing mountain species resent the long, hot and very humid summers that occur in the Midwest and Southern U.S.

There are fewer species found east of the Mississippi River, and without sounding 'regionally biased,' they do not have the vivid coloration of western plants. *Penstemon canescens* and *P. hirsutus* from the South Central U.S. grow easily, but require irrigation. It is fun to try to grow plants from different climates, but realistically matching the plant's origins to your situation will give you a growing edge.

Watering

The second rule is to match your summer watering schedule to the area from where the plant came. Of course, anything newly planted must have some water in a climate with dry summers. Situating a penstemon where it will catch the lawn irrigation can cause root rot if it's too frequent. Penstemons living in an arid summer climate such as *Penstemon barrettiae* seem to slide into an invisible dormancy after bloom. They won't look much different, but if given regular summer water, may die over the next winter. It's hard to resist giving them a little splash, but keep in mind that thunderstorms may be the only water source, from June through September for many penstemons.

Growing medium and drainage

The third and most important rule is to match the growing media and drainage to the area from where the species came. In most cases, it will be gravel, sand or pumice over a rocky base. An exception to this is having very deep silty-loam and 20–25 inches of precipitation yearly. That is the situation at Jim and Susan Swayne's home in Walla Walla, Washington where thirty feet of 'loess' (blown-in silt) fills the valley, allowing peas, grapes and the sweet onion to grow. With 22 inches of precipitation, Jim grows 150 species of penstemons on totally flat, rock-free ground in colorful profusion. For the rest of us, a rock garden situation is necessary. There are many articles and books on constructing a rock garden. Ideally, it should be constructed and allowed to settle before adding plants, but sometimes a simple raised bed can provide a growing space until permanent quarters are finished.

Raised beds

Begin with an underlay of as large a rock as you can handle. A soft rock such as sandstone seems to hold moisture which roots will seek. The fill should contain about one quarter humus. Sifted pumice is currently my grit of choice. Since the majority of my penstemons come from volcanic areas, the minerals in pumice are ideal. The round shapes allow a well-oxygenated bed which won't sink down too tightly. A loamy sand can be sparsely mixed onto the top to cut the 'glare' of the white pumice and add some humus. Gravel, ordered as quarter-minus, is also a good growing mix, but tends to pack too tightly with its angled edges. Adding rounded pebbles, scree or even perlite will help aeration. *Penstemon newberryi* is seen along roadsides in the Cascade and Sierra Nevada Mountains blooming wildly in shifting gravel. Gravel or pebbles, applied yearly to top-dress beds, is needed to simulate the shifting nature of penstemons' natural habitat and provide a quick-drying surface for foliage.

Another idea, borrowed from an article by Rick Lupp of Mt. Tahoma Nursery in Washington, has been very successful. He hypothesised that worms bring in too much dirt and in 3–4 years can change an alpine bed back into normal soil. To avoid this (and weeds), he suggested lining the bed totally in weed barrier fabric continuing up each edge to contain the mix. Lupp feels there must be a depth of 8–12 inches of coarse sand to allow for root growth over the years. Most of his alpine stock (not just penstemons) thrived for years in the weed cloth in sand (figs. 122–125). The sand should be the rounded kind, from rock mining, not the natural product. Again the rounded shape allows for aeration. I tried this method several years ago at the base of a slope where water runoff would typically preclude growing alpines. Nearly everything thrived, from *Penstemon barbatus* and *P. whippleanus* to *Lewisia cotyledon*. I moved out *Penstemon digitalis* as it was crowding its neighbours in a piggy fashion. It had a rootball I could hardly lift out.

A few penstemons dwell on the edges of forests such as *Penstemon serrulatus*, *P. ovatus*, *P. confertus* and *Nothechelone nemerosa* (a near-penstemon). *P. ovatus* grows along the Columbia River in meadows, reaching nearly a metre tall with multiple purple blooming stems. These herbaceous pents appreciate a situation with afternoon shade, about one-third compost in the pumice and weekly water. A slightly raised bed with underlying rocks usually provides enough drainage.

Troughs for Penstemons

Troughs made of hypertufa are a marvellous way to grow the tiny or mat-forming penstemons. Good choices from the Dasanthera series are *P. davidsonii*, *P. rupicola* (fig. 119) and *P. newberryi*. From Subgenus

Fig 116 *Penstemon cardwellii* 'Floyd McMullin' (p. 213)

Fig 117 *Penstemon barbatus* collected by Sean Hogan (p. 215)

Fig 118 *Penstemon pennellianus*, Blue Mountains, Oregon

Fig 119 *Penstemon rupicola* (p. 216)

Penstemon, try *P. heterodoxus*, *P. procerus*, *P. nanus*, *P. acaulis* and *P. pumilus*. Subgenus Habroanthus might off *P. hallii* and *P. glaber* (cobalt blue). Subgenus Saccanthera (saccate anthers) has tiny *P. caesius*, *P. neotericus*, *P. purpusii* and *P. rostriflorus* (red), mostly from California. Many of these will need to be grown from seed, as only a few nurseries carry them. Other miniature alpines can be added for variety of textures and bloom times. In the rainy season, it's easy to cover the trough about a foot above the plants with clear rigid plastic. The troughs can also be moved under porch structures, clear patio tables or otherwise kept out of the persistent rains that are so hard on dormant roots.

The fourth and final rule

A fourth and final rule is one I have learned the hard way: remove the potting mix from penstemons you get if it doesn't match your mix. In the US, nurseries, particularly those from the south-west, use a loam-based potting mix, apparently to avoid daily watering, but I have also gotten plants from local nurseries this way. The root ball, sunk into nearly straight pumice in a trough, appears to hold too much moisture and the plant doesn't survive the winter. The easiest way to remove the mix is to soak it in a bucket. Gently swish until the roots let it go, then work it loose with your fingers. Immediately repot the plant in your own mix and water lightly.

Pests and Propagation

Pests and fungus are a minor nuisance for penstemons. The best news is that slugs ignore even the tiniest baby plant! The only insect pest I've dealt with so far is a pittosporum scale on evergreen penstemons. The stem above the brownish scale becomes thickened and bends at an angle. The stem will bloom, but the new growth is weak or the stem dies. Prune all plants back to healthy tissue after blooming, disposing of the cuttings to the garbage. Spraying with a solution of rubbing alcohol, or Neem oil mixed with dish soap and water can disturb the scale's shell, but doesn't seem to prevent reinfection. Neem oil is a concentration of leaf oils from the Neem tree of India. It can be used as an all-purpose insecticide, fungicide and bactericide, offering a non-chemical alternative spray found in the U.S. under several labels. A systemic insecticide used in the late winter to catch the crawler stage is the best remedy I can suggest. Do check new plants before planting for any pests.

An unidentified fungus will sometimes attack plants in late winter, particularly the evergreen sub-shrubs. Since fungus usually attacks a plant that is already weakened, prevention is the best remedy. Trim back stems after flowering unless you save a few for seeds. Cut back dead or

dying plant stems especially during the winter. Take new cuttings to root, to replace possible losses. Check that drainage is excellent – if not, move it! If the penstemon comes from an area where it would be under winter snow or frozen, it is most vulnerable when your area is mostly rainy, and may need the winter covers described above.

An identifying tag is important to keep near each plant. It can be tucked beside a nearby rock. With so many species, identification is tricky even for the botanists. If you should share your seeds or an offset of the plant, the new owner will want to know what they are getting to provide good culture.

To propagate new plants, watch for tiny root buds along the underside of stems in the spring and fall. Cut the stems, dip in root hormone if you wish, and plant in sand. Keep the pot shaded and it should be ready to be planted out in the fall. Semi-hardened cuttings from hybrids also root easily by this method. Growing from seed is most foolproof by sowing on to a pot of your mix in the fall, letting the weather stratify (crack) the hard seed coat. A floating row cover will prevent loss of labels or intrusion by animals. Just be sure and label the seeds correctly! Pot up individually when seedlings have a second leaf in the spring, but don't plant them out until the next fall. Of course, seed can be direct-sown on to prepared beds in the fall and thinned when second leaves appear.

Penstemons have been hybridised in Europe and America for over a century. Unfortunately one or more of the parents were often species which were cold or drainage sensitive. This created the feeling that the hybrids were only expected to be annuals. There are literally hundreds of gorgeous new hybrids that should live for many years in your garden in a well-drained, wind-protected site. They tend to be 2–3 feet tall, having larger flowers and more white markings than the species, such as the stunning *Penstemon* 'Cherry Glow'(fig. 121), which blooms from May through October. The most winter-hardy hybrids seem to be those with narrow leaves (one cm. or less), probably parented by *P. campanulatus* from Mexico. For these semi-deciduous types, prune to 10–12 cm. when spring growth begins. Other hybrids, made between our 'shrubbies', such as *P.* 'Breitenbush Blue', 'Winter Frost' and 'Grape Tart', are very winter hardy. Although the nurseries don't often say so, the best culture is to grow them as I have described for the species – excellent drainage, a light hand with water and little or no dirt!

Penstemons may not be the easiest genus of plants to grow, but the glowing flowers, diverse species and challenge to your gardening skills give immense satisfaction.

Sources for Penstemon Publications, Seeds and Plants:

American Penstemon Society
Membership includes twice-yearly bulletin and 25 seed packets from yearly exchange. Send $10 to Ann Bartlett, Membership Secretary,1569 South Holland Court, Lakewood, CO, 880232, USA

Books:

Northwest Penstemons, Dee Strickler, $29.95 The Flower Press
192 Larch Lane, Columbia Falls, MT, 59912,USA

Penstemons, Bob Nold, Timber Press

Key to Genus Penstemon, Robin and Ken Lodewick
$9 to APS members, 2526 University St, Eugene, OR 97403

Seeds:

Alplains Seed
PO Box 489, Kiowa, CO 80117-0489,USA
Many natives, plus pents (catalogue: $2)

Rogue House Seed
Phyllis Gustafson, 250 Maple St., Central Point, OR 97502,USA
(SW Oregon and N. CA natives) Gusgus@internetcds.ncom

Northwest Native Seed
Ron Ratco, 17595 Vierra Canyon Rd, #172, Prunedale, CA 93907,USA catalogue: $4

Plants in North America:

Agua Fria Nursery, 1409 Agua Fria St., Santa Fe, NM, 87501 USA
High Country Gardens, 2902 Rufina St., Santa Fe, NM 870505-2929,USA www.highcountrygardens.com (SW pents and natives) Catalogue: $4

LaPorte Avenue Nursery, 1950 Laporte Ave., Fort Collins, CO, 80521,USA (Rocky Mt. pents and natives)

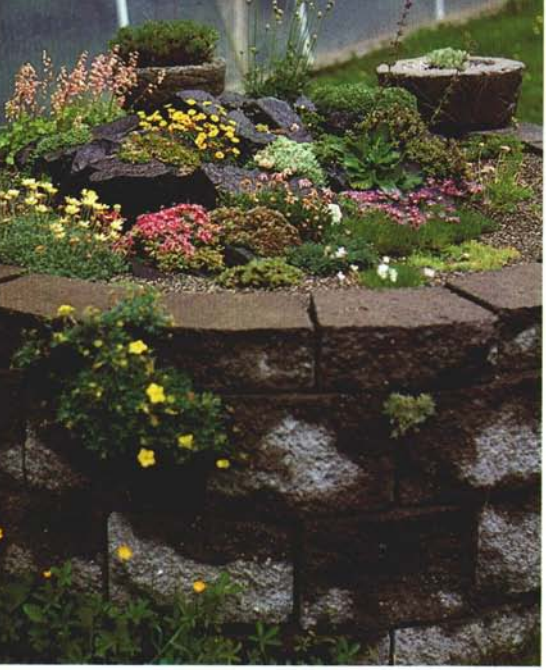
Mt. Tahoma Nursery
28111 - 112th Ave. E., Graham, WA, 98338 USA
Tel.: 253-847-9827 (NW alpine plants, many rare)

Ginny is a member of the American Penstemon Society and gardens in Sherwood, Oregon, USA

Fig 120 *Penstemon cyaneus*, Teton Mountains, Wyoming

Fig 121 *Penstemon* 'Cherry Glow' (p. 219)

Photos: Ginny Maffitt



Figs 122-125
Rick Lupp's sandbeds at Mt. Tahoma Nursery, WA, referred to
by Ginny Maffitt (p.216) and Mike Stone (p. 252) Photos: Malcolm McGregor

An Andalucian vignette: Narcissus

Francis Ferns

RANDOM THOUGHTS echoed through empty spaces in my mind, as I stood on a rock, on a hill surrounded by the natural cork oak forest and heathland in the province of Andalucía on a fine spring day. Beneath my feet the brown remnant seed capsules of a narcissus lay broken on the thin soil, collected in the fissures in the stone; last year's seedling bulbs were scattered like grain, jostling each other for a toehold.

In sheltered cavities beneath the overhanging rock the red scribblings of allegedly Neolithic man, thought to have been made perhaps 7,000 or even 12,000 years ago, are still visible. These graffiti, whenever and wherever I see them, always make me wonder if the ghosts of their scribblers return when the moon is blue to clean and renew them. *Narcissus bulbocodium* goes back in time a few tens of thousands of years more, probably little changed and certainly not retouched by a ghostly restorer of mural paintings. Why it was growing in such a seemingly dry spot, when it is usually found in damp turfy ground I shall never know.

On seeing a plant new to me, I want to know where it grows in the wild (if at all), in what association with other plants and even animals, and why it grows where it does and not elsewhere. Some may say such interest is trivial; Rousseau once suggested of the science of botany . . . "that it is a study of pure curiosity . . . not to be given an importance that it does not have." He was writing in the latter part of the 18th century; shortly after the publication in the year 1753 of *Species Plantarum*, the monumental work of Linnaeus.

Botany or plant biology in the strict sense is now a scientific study with many specialised headings. Not many of us are expert plant biologists in the strict sense; but we do rely on their specific studies in pursuit of our interests and hobbies. Classical taxonomy, by which Karl von Linne brought order out of the chaos which the earlier herbalists had achieved, gave us the keys to identify, classify and name plants. Linnaeus himself is credited with saying, with perceptive clarity . . . " Unless the names are known to you, the concepts will be hazy too."

About a century later Charles Darwin established the next great leap in biological progress and thought. Now, passing time, progress, a kind of evolution, call it what you will, has caused cytotaxonomy to overtake classical taxonomy and nomenclature. Chromosomes, genes, and DNA-profiling are the order of the day, as we record more and more about less and less; it will also create problems if the names of new species are allowed to proliferate for plants which look alike and the old names for taxa are allowed to die, because they give continuity when referring to the writings of older authorities.

Those of us unfamiliar with the doctrine of precedent, find the renaming of many old friends, combined with the tendency to create Anglo-Saxon derivatives where none existed in earlier folklore, a little tedious; I have to admit that the first is necessary and submit that the latter is not. In this note I have relegated the author's identity to an appendix, together with misspellings and pseudonyms in order to reduce a degree of unevenness of flow that such insertions can give; so leaving the more enquiring reader able to identify the species about which I write with the name he last remembered or read about; also bearing in mind that bar codes are already appearing on labels.

"Well it may be . . . but" — more problems in the naming game

In spite of the efforts of the taxonomists to stabilise the names of plants, the problem recurs, that having a species description, how do you and I attach the correct name to a plant in hand with any degree of certainty, when that plant does not quite comply with the description as *we* see the plant and read the description . . . a name to a plant, or . . . a plant to a name; there is also the case where there are many descriptions both of species and subspecies which have been suddenly condensed or lumped under one name or on the contrary expanded or split.

The preferred method is to look round for someone whom you know, who knows all the plants in sight and "Hey presto!" . . . it has a name. But the reply may be covered by that all embracing phrase . . . "Well it may be . . . but it's very variable throughout its range." Then the fun begins. The recognised procedures are brought into play. First the poorly scaled photos in the field handbook, then the better drawn and specifically detailed illustrations in reference books of a size not recommended for travellers by air and finally the definitive flora for the area through which you are travelling; if you can lay hands on one written in a style and language that you can understand. I know a man who carries his reference works in a tea chest. I fear that he will be buried in Kathmandu, if he ever gets there.

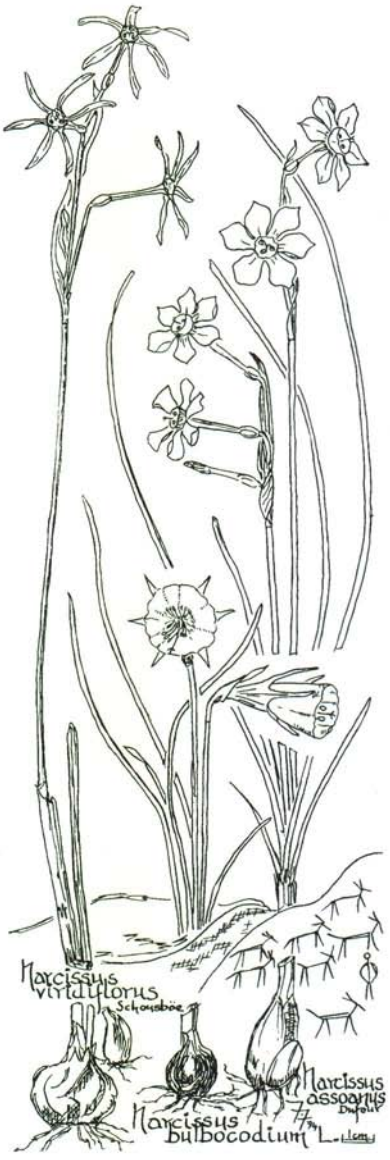
I collected my camera, photographed the red markings on the rock and two stone cyst graves . . . they would make wonderful trough gardens . . . and headed back down the hill to have pointed out to me the site of a colony of the autumn-flowering *Narcissus viridiflorus* in a damp corner of a meadow,

in complete contrast to the dry barren rock, just out of sight over the top of the hill. The random thoughts remained, jostling each other like the scattered bulbils on the dry rock. On my return home I turned to the books for the answers; in particular to B. Valdes, limiting my search to the species recognised by him when writing on the genus in the definitive flora of Andalucía and to John Blanchard (1990), and articles updating his book, for his wider perspective. I found no answers, being left with a cocktail of information on names, and hints for growing that I have tried to meld into a coherent narrative; incidentally showing where the specialists still do not agree. There is still no clear-cut consensus of the source or the true names for some of the species. Let me start with the autumn-flowering Narcissus species of Andalucía.

The Autumn-Flowering Narcissus Species

The autumn-flowering narcissi are perhaps more intriguing than beautiful. ***Narcissus viridiflorus*** is known from only a few localities in Spain. There it is rare, but common along the northern Moroccan coast. The Andalucian location to which I refer above, near Baciente, I have been told has been somewhat denuded in the interests of science. I could not in the time available find even a leaf and certainly no flower. The flower is in shades of dark green having a minute corona consisting of six small lobes and rather wispy petals. Since then I have read that it is easier to find by its scent which is so strong as to be unpleasant. The stem serves as a leaf on flowering plants which seldom put up separate leaves. Those who grow it find it difficult to keep flourishing in cultivation. The bulbs are not frost hardy. Tony Hall of Kew says . . . "We grow it in a Long Tom plunged in a frost-free house with *Narcissus elegans* . . . in a free draining gritty mixture; as it becomes more pot bound so it has steadily improved in vigour" . . . in spite of its evident preference for a wetter stickier loam in its natural home. In time we shall perhaps learn whether the Spanish plants have the same genetic make up as their Moroccan cousins. A major road improvement has trampled out what little the scientists left of that colony, since I was there eight years ago. Valdes includes two more species and one natural hybrid among the autumn flowering plants. I admit to having scant acquaintance with them; but the advent of more autumn shows may extend our knowledge. They have been moving between genera with unfamiliar names, like Braxireon, Carregnoa, Pancratium and Tapeinanthus for over 150 years, and seem limited in their overall Spanish range to Andalucía. They prefer the warmer north African shores of Morocco.

Narcissus serotinus has white flowers, about 2 cm across, with a tiny deep yellow corona at the end of a green tube and sweetly scented. These are carried on a stem about 15 cm long, emerging from prostrate and sinuous foliage which usually appears after flowering. Like the green one, it can be found growing in damp hollows, and is common enough to cross with



Narcissus cavanillesii to form an interesting little natural hybrid in the wild, *N.* x *perezlarae* which is discussed below.

Narcissus cavanillesii is a wispy looking thing with usually single yellow flowers comprised of petals only 10 x 2–3 mm across and a vestigial corona of six small scales. The leaves grow up to 20 cm, straight and rush-like. A plant of grassland and open woods . . . "shaded gulleys open to the north-west" says Mike Salmon . . . and occasionally a show bench.

Narcissus* x *perezlarae occurs naturally where *N. cavanillesii* and *N. serotinus* grow together and is noted as being a rare endemic to the provinces of Cadiz and Seville. It has been found in damp ground beside the road to Castellar in Sierrania de Ronda. The flowers are pale yellow with oblong petals, say 12 x 5 mm and a small 6-lobed corona.

Although out of my self-imposed geographical context, mention should be made of *Narcissus broussonetii* Lagascae, with a cluster of up to eight white flowers with vestigial coronas. A plant of stony calcareous soil in rocky open woodland; flowering in autumn and found on the western coastal belt of Morocco. *Narcissus elegans* (Haw) Spach is another autumn-flowering African species with a Moroccan base; mainly a coastal plant found also in Corsica, Sardinia and parts of Italy. Tony Hall reports that at Kew it is grown in a frost free house with a minimum temperature of 2°C. He sets out in detail the growing conditions in AGS *Bulletin* 64 pp.428–429. Maybe such a regime can be applied successfully toall the autumn-flowering narcissi. Under these conditions the

new growth starts between late August and October; on fully grown bulbs the scapes can carry up to 5 white-petalled flowers about 35 mm in diameter and 3-lobed rudimentary coronas greenish in colour fading to orange. It does not sound very exciting to me; nevertheless I shall continue to look for it in the late season's show benches.

Winter to Spring-flowering species

Valdes recognises only two species in the Bulbocodium section namely *Narcissus bulbocodium* and *N. cantabricus*. He divides ***Narcissus bulbocodium*** into subsp. *bulbocodium* and subsp. *obesus* . . . the one with the markedly tubby corona and decumbent leaves . . . as a subspecies rather than as a form with mere varietal status. These plants reverse the role of the corona when compared with the autumn-flowering species. It is large, conspicuous and funnel-shaped whereas the petals have shrunk. The flowers are usually a typical daffodil yellow with fresh green shading. Whereas the botanist recognises only one or two species in this section, the grower finds many varieties.

Narcissus cantabricus. Clambering up another boulder bigger than a house standing at the edge of *Pinus pinsapo* woodland, I was shown this Hoop Petticoat growing in a scratching of humus in hollows on top. Again most of the seed had set and scattered. The little seed that I could collect, never germinated. The flowers are white; that mouth watering crystalline white that only the Moroccan *Narcissus romieuxii* with all its variations can out-shine. In Morocco, *N. cantabricus* mates enthusiastically with *N. romieuxii*. There are many garden varieties of which *N. cantabricus* v. *petunioides* is one of the most striking, but, disappointingly, Blanchard points out does not always come true from seed. Most have been found in Moroccan mountains and hills and are described by Blanchard. These plants are not happy in cultivation outside the alpine house or frame to give protection from cold and predators, not forgetting routine protection against fungus attack by basal rot and other nasties.

In the Tazetta section, Andalucía can only boast of two species. ***Narcissus papyraceus*** is visually a slightly smaller white-flowered version of *N. tazetta*. ***Narcissus tazetta*** **ssp.** ***tazetta*** has flowers held in a cluster of up to ten on well developed specimens carried on a scape up to 40 cm tall. The petals are pale yellow and the corona orangey-yellow in colour, flowering in February in the wild whereas *N. papyraceus* flowers at least a month or two earlier in December. Both are plants of meadowland. Those we saw were fighting a losing battle against grazing animals. The leaves are like those of a garden trumpet daffodil, flattish and glaucous. Too well known in the Christmas bulb bowls to need further description and anyway not for the rock garden where they would succumb to frost and winter weather.

Narcissus bugei is in the Pseudo-narcissus section . . . trumpet daffodils with yellow flowers as the man in the street knows them. However it is not so simple as that; this bunch of daffodils hides more subtle features for both the gardener and the botanist. The spathe is uniquely long and there are black specks on the tips of the anthers as John Blanchard has pointed out as recently as 1998; a character it shares with the Tenby Daffodil, *Narcissus obvallaris*.

The line drawings in Valdes' Flora, even on the enlarged section sketch does not show black specks, nor does the photograph on p. 334 AGS *Bulletin* vol. 66, taken by Blanchard himself that year; good as it is, it is not clear enough. Further the reader is warned that some stands of plants in the wild examined by Blanchard with flowers about 65 mm in diameter carried on stems about 30 cm high do not all have flanged coronas with six clearly visible lobes, because some lobes are crenate or frilly and some quite cylindrical. Further south of Ronda on the Serrania de Ronda he also reports that he has seen bi-coloured specimens . . . "with almost white petals and medium yellow coronas, others with pale yellow petals and darker yellow coronas as well as those . . . which are almost uniform yellow." I refer the reader to the text of his detailed note, based on plants which he has touched and seen; for myself every time I see a trumpet daffodil in a garden or on a show bench, I shall be looking to see whether it has black specks on its anthers.

Narcissus cuatrecasasii is a small, attractive, yellow-flowered, jonquil-like Narcissus which Valdes has placed in section Apodanthi, a section

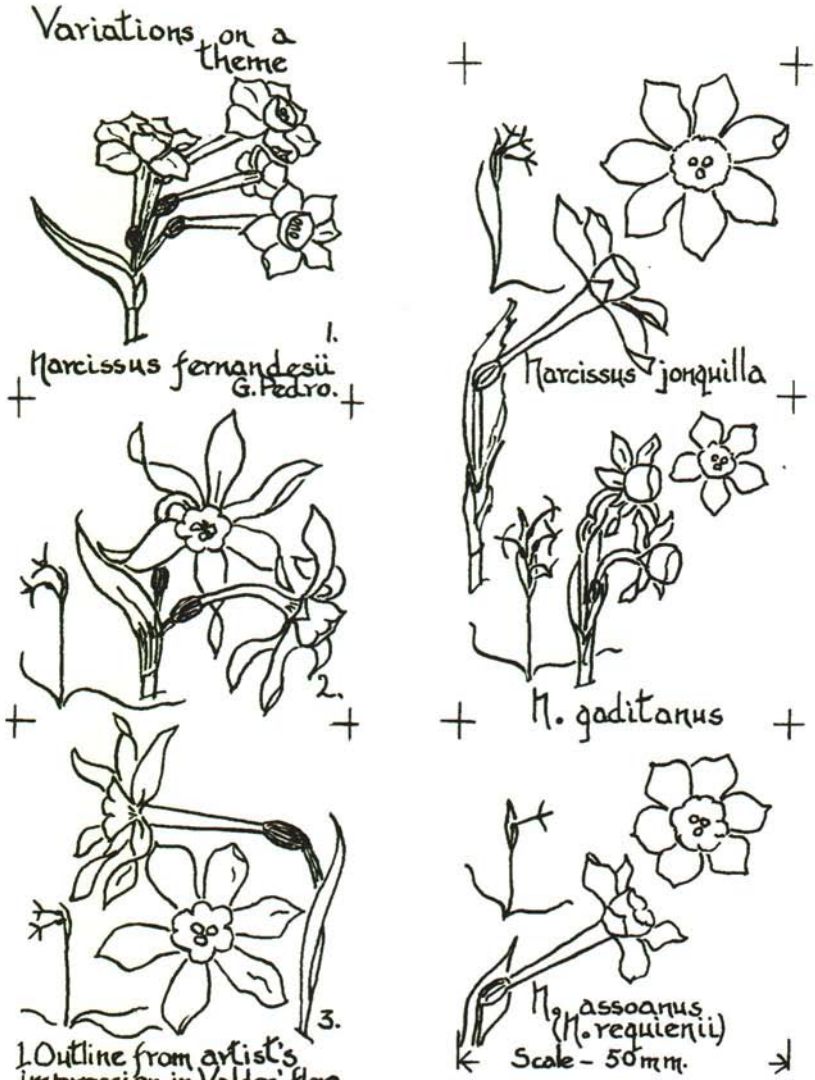
delimited by strophioles (knobs) on the shiny black seed case. It is not easy to trace through the descriptive horticultural and botanical literature. Nowadays one would go to the hilly country around Grazalema to find it in Andalucía. Both *Narcissus cuatrecasasii* and the true *Narcissus rupicola* have two keels or ribs on their leaves and could at casual glance be thought to be *Narcissus assoanus* or *Narcissus fernandesii*, more of which anon. Reliable authority suggests that it is distinguishable from *Narcissus rupicola* by its habitat, having an inclination for limey soils and rocky places and in particular in having a pedicel at least 12 mm long, more or less, whereas *Narcissus rupicola* has a rudimentary pedicel never more than 3 mm, totally enclosed within the spathe, also a cone shaped nearly flat looking large corona. The descriptions in the texts vary in their emphasis; but if the plant looks like a yellow version of *Narcissus watieri* Maire (syn. *Narcissus rupicola* subsp. *watieri* (Maire) Maire & Weller) of the High Atlas in Morocco, it is probably *Narcissus rupicola*. Perhaps it matters not, all are nice little plants, worth looking for in the seed lists and bulb catalogues and worth growing to bring an early touch of spring to the alpine house. I always lose the white one. It seems very frost tender; the other two are, from reports, quite hardy.

Narcissus triandrus* subsp. *pallidulus might be thought to be too well known to need description. The subspecies recognised by Valdes is overall slightly smaller in all its parts than the species. The flowers are creamy to pale yellow in colour. My line drawing is from a photograph of a Portuguese plant. A variable, reputably easy plant for the rock garden.

A nice little detective story.

Finally the four Jonquils or is it five or six? Where the specialist expert has limited the number of species descriptions and the plant in hand does not quite fit any of the available descriptions, the task of giving the plant a name becomes quite a challenging one; especially when the artist or photographer has possibly mixed up the material for delineation. Take a look at my sketch entitled "Variations on a theme" (overleaf). Valdes gives "(1–) 2 (–3) flores de c. 20 mm de diametro" . . . the AGS Encyclopedia says . . . "flowers up to five". The artist's line drawing has four!

Valdes leaves us with four species names to which must be fitted at least five if not six visually different yellow jonquil daffodils. He eliminates *Narcissus willkommii* (Samp.) Fernandes saying that it is not an Andalucian species; pointing out that Willkomm used Portuguese material to describe that species and did not base his description on material actually found in Andalucía and, so to speak, held in the hand. Blanchard adds "I defy anyone to make a positive identification from the description in Flora Europaea". So, I can comfortably leave *Narcissus willkommii* out of this note, beyond sayingthat *Narcissus jonquilloides* Willk. has lost its identity within this species. One down and five to go, or is it still six?


Variations on a theme
1.
Narcissus fernandesii G. Pedro.
2.
3.
1. Outline from artist's impression in Valdes' flora
2. Outline from slide of D. Moule... plant ex J. Elliott via D. Riley...
3 Sketch of flower ex wet heavy loam cornfield Hwy 431 near Ronda, m.p.65.
Scale - 50 mm.
Narcissus jonquilla
N. gaditanus
N. assoanus (N. requienii)
Scale - 50 mm.

Narcissus jonquilla is a species widespread in northern Andalucía. It is a hardy, well known and desirable plant for the rock garden, with visual character and a gratifying scent; not difficult to grow, it gives few problems in identification, nor really, does ***Narcissus gaditanus*** easily the smallest flower in this jonquil group. The flowers are tiny, sometimes as little as 10 mm in diameter, with up to four blooms to an umbel and an easily recognisable curved tube; sometimes it is straight. The name has swallowed all plants previously called *Narcissus minutiflorus* Willk. It is a plant to be found in humus rich crevices in rocky limestone terrain. Said to be difficult to grow well. So, try a gritty self draining mixture and keep dry but not parched, to ripen the bulbs in summer. These bulbs are too small to stand shrivelling dryness. Then, since they are early spring bloomers, start watering in September and keep frost from the growing root tips.

Narcissus assoanus. Valdes finds the Andalucian form is *Narcissus assoanus* ssp. *praelongas*. Be all that as it may, some may recognise our old and willing friend *Narcissus requienii* described by M J Röemer in 1847 and beaten to the post by the earlier description in the year 1830. A perfect little yellow jonquil, sweetly scented, a neat little gem for the alpine house or a trough; to be found widely growing in rocky places up to the sierra snows, even along the main road ditches where not smothered by tarmac on thePuerto de las Palomas – the Pass of the Doves, 1357 m – and seen again on Sierra de las Nieves among stands of Downy Oak, *Quercus pubescens*, around 1800 m. The oaks are fenced off in an attempt to regrow the forest that once

clad these hills. Two hundred years ago the shepherds killed off the wolves, whereupon the grazing animals came in and killed off all the young oak seedlings; but still this little narcissus flourishes. Valdes has given the Andalucian plant subspecies status; a practice becoming more prevalent these days among those conversant with the rules of the naming game and I submit, to the confusion of the gardener and grower who already has the varietal names of horticulture with which to contend.

Only the named species, ***Narcissus fernandesii***, remains to identify all other jonquil narcissi in Andalucia which lie in a No Man's Land that includes a range of measurements and characteristics overlapping *Narcissus jonquilla* at one end of the scale and: the neater, more alpine *Narcissus assoanus* and *Narcissus gaditanus* at the other. Valdes is after all the authority of domicile, and we should bow to his expertise and diligence on the ground; John Blanchard also emphasises the need to do so; though, much to his grief at the loss of *Narcissus cordubensis* being sunk in the description of *N. fernandesii.*

Opinions continue to differ, where the living plant in hand does not satisfactorily fit the text book definition, sometimes mainly derived from dried straw-like squashed herbarium material. I have to admit such a time honoured method is a useful one, but not quite as precise as comparing living matter with living matter, when being applied throughout a wide range of soft tissue obtained from different sources. The problems are exacerbated by the old collectors being unspecific about the source of the material they collected as amateur or professional botanists or, in bulk, as commercial entrepreneurs and distributed to friends or through the trade: not surprising really, after all many roads were unmetalled and the maps unclear; seemingly a more likely reason than the wish to preserve a species or protect a commercial source. Any problem is further exacerbated nowadays by a degree of uncertainty about the source of plants on the show bench, confidently proclaiming a species name which in many cases has no reliable pedigree of origin to test its validity. These are only basic examples, others exist to queer the brew.

I give no description of *Narcissus fernandesii* nor *Narcissus cordubensis*. I refer the reader to my scaled sketches. This note is not a botanist's analysis. It is a pen picture relating to the Andalucian narcissi only; so, I have only sketched in, enough I hope, to inform and perhaps to excite the interest of the gardeners and travellers who may discover more by reading for themselves and comparing the information given in the references; so, to explore further both in print and on the ground. Andalucía, a district in Spain with a musical name, lovely countryside, lovely and interesting plants and natural history, good food, weather and accommodation too, is worth a visit.

The mass of material now left to bear the name *Narcissus fernandesii* may some day respond to modern fingerprinting techniques, when someonewith the technical skill and enthusiasm has the time. Until then, and for that matter always, great care should be taken to try to trace back the

source of any material we grow and show and to identify accurately the position of any material found in the wild. Take a note at the time; unassisted memory is a fickle jade. Try to get a photograph close up, face on and in profile, also of the whole plant and the habitat; and, if your taste runs in that direction, collect seed to grow on and form a nucleus for distribution.

Professor D. A. Webb of Dublin has pointed out in *Flora Europaea*, that the genus Narcissus exhibits more perhaps than any other the taxonomic difficulties of long established cultivation on identification of true species. This combined with a naturally acquired variability throughout the range of a given species makes me wonder when, if ever, the riddle of positive naming in simple form of the Spanish narcissi will ever be solved and who will take up the challenge and carry the torch to light the way?

There is a twist to this tale

I have to add a postscript to my record of the search for the true identity of my cornfield jonquil, growing among celandines in wet clayey soil, which to my eye had a straight tube and Valdes defines as . . . "*ligeramente curvado*".

Walking to breakfast, on a misty morning on the first day of Alpines 2001, a voice hailed us, bright and cheerful; we turned to greet David Mowle, who said, "You know that Narcissus seed you sent me?" I gathered my half-awake wits, remembering that only two winters ago I had sent him *Narcissus viridiflorus* seed from Morocco which Martin Jacoby had sent me. "The one from Andalucia", he said. "Has it a curved tube?" I asked. "Oh yes, slightly."

After some discussion about *Narcissus willkomii* and *N. gaditanus* I said "Good, that's one we've identified beyond doubt." And then, "Sad to say" I added, as we joined the cholesterol-laden breakfast queue, "Martin Jacoby has told me that the farmer has ploughed up the cornfield where it grew."

Sic transit flora narcissi.

Reference sources

Flora Vascular de Andalucia Occidental, Ketres 1987, B.Valdes & others.
Alpine Garden Society *Encyclopaedia of Alpines* 1994
Flora Europaea Vol. 5. Cambridge University Press
The R.H.S. Dictionary of Gardening, 1992, Macmillan
Bulbs, Roger Phillips & Martyn Rix, 1981, Pan
Narcissus: A Guide to Wild Daffodils, John W Blanchard, 1990, AGS
This guide also contains a comprehensive bibliography - it is easily the best for the alpine gardener.
AGS *Bulletins* 1998 Vol. 66. and Alpines '81 Conference Report and others containing updates on the Genus by John Blanchard.

APPENDIX - *Narcisssus* L. Sp. Pl. 299 (1753) Ed.5: 1754

The species are listed in the order that they appear in the narrative. The Arabic numerals show the order that they appear in *Flora Anadalucía.*

5. *N. viridiflorus* Schousboë (1800) Oct–Nov

13. *N. serotinus* L. Sept–Oct

14. *N. cavanillesii* Barra & G.López (1984) Sept–Nov
more recently found in the texts under the name *Tapeinanthus humile* or with a choice of five other generic synonyms before settling in *Narcissus:*
Pancratium humile Cav. (1794)
Amaryllis exigua Schousboë (1800)
Tapeinanthus humile (Cav.) Herbert (1837)
Braxireon humile (Cav.) Rafin. (1838)
Carregnoa lutea Boiss. (1842)
Tapeinaegle humilis (Cav.) herbert (1847)
Carregnoa humilis (Cav.) J. Gay (1859)
Narcissus humilis (Cav.) Traub (1841)
. . . for greater detail of distribution see maps in *Flora Vascular de Andalucía Occidental*

15. *N.* x *perezlarae* Font-Quer (1927) Sept–Nov

11a. *N. bulbocodium* L. Feb–Apr
Cordularia bulbocodium (L) Haworth (1800)

11b. *N. bulbocodium* ssp. *obesus* (Salisb.) Maire in Jahandiez & Maire (1931)
N. obesus Salisb. (1796)
N. inflatus Haworth (1800)
N. bulbocodium var. *obesus* (Salisb.) Coutinho (1913)

12. *N. cantabricus* DC. (1815) Jan–Feb
N. clusii Dunal (1815)
Cordularia monophylla Durieu in Duchartre (1847)
N. monophyllus (Durieu) T. Moore (1870)
N. bulbocodium ssp. *monophyllus* (Durieu) Maire in Jahandiez & Maire

8. *N. tazetta* L. ssp. *tazetta* Feb–Apr
N. tazetta ssp. *eutazetta* Briq. (1920)

9. *N. papyraceus* Ker-Gawler (1806) Nov/Dec–Mar
N. polyanthos Loisel. in Desv. (1809)
N. niveus Loisel. in Desv. (1809)
N. panizzianus Parl. (1858)
N. tazetta ssp. *papyraceus* (Ker-Gawler) Baker (1888)
N. tazetta ssp. *polyanthos* (Loisel) Baker (1888)
N. papyraceus ssp. *panizzianus* (Parl.) Arcangeli (1894)
N. papyraceus ssp. *polyanthos* (Loisel.) Ascherson & Graebner (1906)
N. tazetta sensu Coutinho (1939) not L. (1753)

10. *N. bugei* (Fernández Casas) Fernández Casas (1986) Feb–Apr
N. longispathus Pugsley var. *bugei* Fernández Casas (1982)
N. hispanicus auct. not Gouan (1773)
N. major auct. not Curtis (1778)
N. bujei — a misspelling by some modern authorities

7. *N. triandrus* L. (1762) ssp. *pallidulus* (Graells) Rivas Goday ex Fernández Casas (1982) Feb–Mar
N. pallidulus Graells (1854)

6. *N. cuatrecasasii* Fernández Casas, Lainz & Ruis Rejon (1973) Feb–May
N. rupicola fm. (or var.) *pedunculatus* Cuatrecasas (1929)
N. rupicola ssp. *pedunculatus* Lainz ex Meikle (1970)

1. *N. jonquilla* L. (1753) Feb–Apr

4. *N. gaditanus* Boiss. & Reuter (1859) Feb–Mar
Queltia pusilla Herbert (1837)
N. minutiflorus Willk. (1860)

2. *N. assoanus* Dufour in Schultz & Schultz fil. (1830) Jan–Mar
N. requienii M.J.Röemer (1847)
N. assoi Dufour (1860)
N. assoanus ssp. *praelongas* A. Barra & López (1982)
N. juncifolius Lag. (1816)
N. calathinus sensu Willk. in Willk. & Lang (1861)
N. baeticus Fernández Casas (1982) not L.

3. *N. fernandesii* G. Pedro (1947)
N. corsubenisi Fernández Casas (1982)

Anyone persevering enough to scan this list will appreciate the need for taxonomists.

RHS Joint Rock Garden Plant Committee

Recommendations made at SRGC Shows in 2001

Dunblane – 17th February

Awards to Plants

Award of Merit to

Helleborus thibetanus exhibited by S. Band, Pitcairngreen.

Recommendation for AGM assessment to

Adonis amurensis exhibited by G. Butler, Rumbling Bridge.

Stirling – 7th April

Awards to Plants

Award of Merit to

Douglasia idahoensis exhibited by C Lafong, Glenrothes

Fritillaria pinardii exhibited by D Millward, East Linton

Certificate of Preliminary Commendation to

Chionodoxa 'Bluetail' exhibited by D & S Rankin, Lasswade

Erythronium dens-canis 'Snowflake' exhibited by R C Meaden, Penpont

Corydalis 'Persian Waif' exhibited by J Cobb, Kingsbarns

Awards to Exhibitors

Certificate of Cultural Commendation to

F Hunt, Invergowrie for a pan of *Fritillaria davisii*

C Lafong, Glenrothes for a pan of *Sebaea thomasii*

J Cobb, Kingsbarns for a pan of *Corydalis* 'Persian Waif'

Perth – 21st April

Awards to Plants

Award of Merit to

Fritillaria meleagris exhibited by M & H Taylor, Invergowrie

Fritillaria 'Craigton Cascade' exhibited by I & M Young, Aberdeen

Certificate of Preliminary Commendation to

Erythronium howellii exhibited by C Lafong, Glenrothes

Senecio leucophyllus exhibited by M & H Taylor, Invergowrie

Corydalis cava exhibited by A J Leven, Dunblane

Awards to Exhibitors

Certificate of Cultural Commendation to

F Hunt, Invergowrie for a pan of *Primula* 'White Linda Pope'

Aberdeen – 19th May

Awards to Plants

First Class Certificate to

Fritillaria pontica exhibited by R Maxwell, Lumphanan

Award of Merit to

Viola columnaris exhibited by C Lafong, Glenrothes

Globularia bellidifolia exhibited by C & I Bainbridge, Easter Howgate

Certificate of Preliminary Commendation to

Oxalis 'Gwen McBride' exhibited by I Christie, Kirriemuir

Recommendation for AGM assessment to

Fritillaria pontica exhibited by R Maxwell, Lumphanan

Awards to Exhibitors

Certificate of Cultural Commendation to

C Lafong, Glenrothes for a pan of *Viola columnaris*

C Lafong, Glenrothes for a pan of *Meconopsis punicea*

C & I Bainbridge, Easter Howgate for a pan of *Arisaema sikokianum*

Alpines 2001 Conference – 30th June

Awards to Plants

Award of Merit to

Allium unifolium exhibited by A Rymer, Wormald Green

Senecio leucophyllus exhibited by M & H Taylor, Invergowrie

Certificate of Preliminary Commendation to

Triteleia laxa 'Congesta' exhibited by R & R Wallis, Porthyrhyd

Campanula 'Timsbury Perfection' exhibited by G Nicholls, Timsbury

Awards to Exhibitors

Certificate of Cultural Commendation to

M & H Taylor, Invergowrie for a pan of *Senecio leucophyllus*

H Shepherd, Bolton for a pan of *Asplenium dareoides*

Note: all awards to plants; First Class Certificate, Award of Merit, Certificate of Preliminary Commendation are to a plant "as a hardy flowering plant for exhibition".

The Autumn Snowdrop

Sandy Leven

SNOWDROPS are the first bulbs to flower in spring. Everyone knows that. Snow and snowdrops go together. Another obvious statement. When the snowdrops flower, spring can't be far behind. We all feel our spirits rise when we see the snowdrops pushing up through the snow and mud. Imagine my surprise when I learned that not all snowdrops bloom in spring.

I have known about autumn crocuses since I was a boy. It turns out that what I knew as autumn crocuses, were in fact not crocuses but colchicums. Still, despite this early muddle, which most folk of my acquaintance had when I was growing up, there are real autumn crocuses. Through my participation in the SRGC Dwarf Bulb Exchange at the Discussion Weekends, my collection of spring and autumn crocuses and many other bulbs, continues to grow, in both senses.

A few years ago a friend gave me some bulbs of the autumn snowdrop. I knew about them by this time but still did not have any of my own. I think I let these bulbs dry out too much in their first summer because they never got going. Then I was lucky enough to get some bulbs at the Stirling Discussion Weekend and these are flowering now, in October 2001. I have fellow growers opine that autumn snowdrops are not worth growing but I totally disagree. These delicate flowers are a treat on a damp dull autumn morning. When the sun came out later I photographed them in various places and with different backgrounds. My main aim was to prove to my non-gardening friends that snowdrops do bloom in autumn.

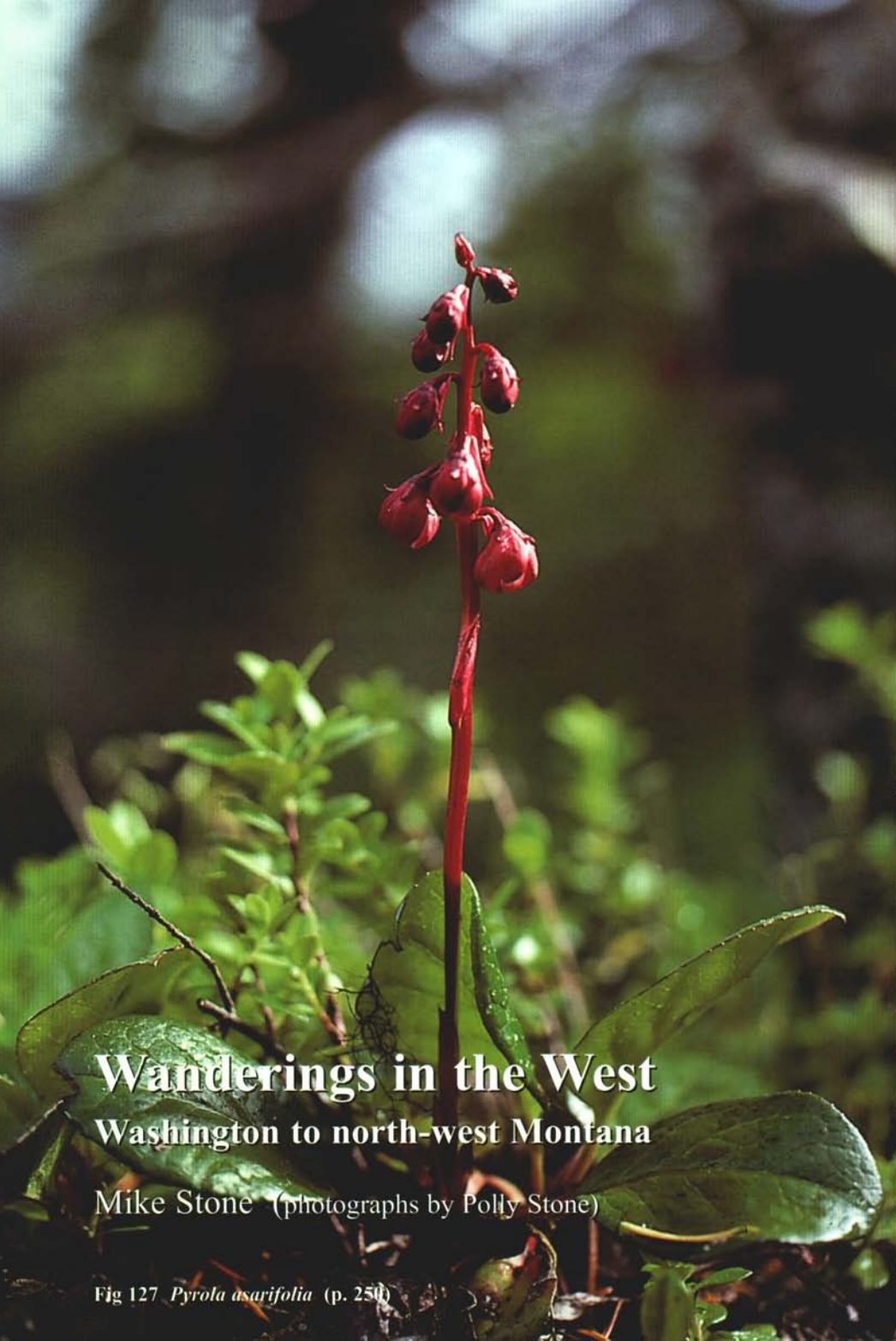
Galanthus reginae-olgae is native to Greece in the Peleponnese and Corfu, to parts of the former Yugoslavia, and to Sicily. I do not know to which part mine originally belong. The flowers are borne before the leaves on stems 8 cm long at maturity. The flowers start to open when at about 4 cm. Like most other snowdrops they open in the warmth of day and close at night. The pristine white outer petals are about 2 cm long and 0.5 cm wide. The inner tube petals are notched and have a typical green inverted horseshoe mark. There are two forms of *Galanthus regina-olgae*. Mine, which flowers in autumn (September to December) without the leaves, is subspecies *reginae-olgae*. The other, ssp. *vernalis*, flowers later in winter or in very early spring (January to March). The leaves when they do appear are quite narrow and eventually reach about 10 cm in length and have a glaucous central stripe.

In some plants of *Galanthus regina-olgae* ssp. *regina-olgae* the leaves are just visible above ground at flowering time.

Some botanists consider *Galanthus regina-olgae* to be just a form of *Galanthus nivalis* rather than a species in its own right. The habit of flowering without leaves is reminiscent of colchicums, which produce flowers in autumn when the weather is still fine, and their leaves during winter when there is sufficient moisture. Like many Mediterranean bulbs it survives the hot dry summers underground. This gives the clue to its requirements in cultivation. It demands a well-drained place where it will neither be too wet nor too dry in winter. In my experience it must be kept just damp enough during summer, neither baked nor soaked. In Dunblane cultivation an alpine house suits it well. I have not tried it in the open garden but am told it should survive under deciduous trees or perhaps beside the house wall protected by the eaves of the roof. Paul Christian suggests that is a slightly limey soil in a south facing sunny spot is cultural perfection. I am pleased to say he writes favorably of *Galanthus regina-olgae* ssp. *regina-olgae* and says that left alone it will clump up. My clone is increasing in its pot in the alpine house.

It pleases me to see it flowering at the 'wrong time of year' for snowdrops. This pleasure was further enhanced by photographing it beside autumn-flowering gentians. [For further comment on autumn-flowering snowdrops see p. 269.]

Fig 126 *Galanthus reginae-olgae*



Wanderings in the West

Washington to north-west Montana

Mike Stone (photographs by Polly Stone)

Fig 127 *Pyrola asarifolia* (p. 250)

'There's a feeling I get when I look to the West,
and my spirit is crying for leaving.'

Led Zeppelin, "Stairway to Heaven."

DURING A RECENT VISIT to Aberdeen our President, Ian Young, mentioned over dinner that he thought it was a pity that so many of the accounts of our fieldtrips written for *The Rock Garden* were hidden away in the 'Stone Column'. He gave as his opinion that if they were in the form of short separate articles then they would also be indexed separately, and thus be more easily retrieved by members seeking information on the American West. When I put this suggestion to our Editor, he was in full agreement and added that a synopsis of previous accounts might be of help. A list of references as to where these may be found is included at the end.

Our latest field trip described below was in fact our second to the Pacific Northwest. We had been there in 1996 and mentioned this visit briefly in the Stone Column. Moving south, a trip to California and Oregon in 1992 was the last one to be described separately, under the title 'Beyond the Great Basin'. The Great Basin itself was the venue for our 1999 expedition, reported in some detail in the Column, as were two out of out three visits to the Rocky Mountains proper. The exception was our long 1993 trip from Denver to Glacier National Park; which is rather unfortunate as this was a particularly successful and strenuous one, wherein our day-hiking into wild places came of age. My daily journals still exist of course, and one day I hope to rectify this omission. Some of Poll's photographs from that year did appear in the Millenium Book.

By the time of our 1998 and 2000 visits to the Rockies it was back to business as usual, and both were recorded in the Column. Finally a somewhat different report followed an autumn visit to Arizona and New Mexico in 1997, the emphasis being on rock gardening as a broad church. Although we have returned to the American Southwest twice more, in 1999 and 2000, to explore the area from Death Valley and Joshua Tree in southern California to the Guadalupe Mountains of north-west Texas, these autumn visits were not primarily flower trips and so they were passed over when compiling the Stone Column.

And so to the matter currently in hand; it had long been our intention to return to the Pacific Northwest. There were a number of choice alpines which we had missed in bloom in 1996, and of course innumerable odd corners to poke about in just to see what might be

growing there. When planning our fieldtrips we always try to map out a circular path, thus minimising the travelling between mountain ranges; and also by returning to starting point one avoids a drop charge on the hired 4WD. Seattle is actually closer to Glacier National Park than is Salt Lake City, another of our ports of entry; and Denver is even further away. By using Interstate 90 we could reach north-western Montana quite easily, then go north to the Park, before working out way back west just below the Canadian border. In selecting our stopping points some naturally were chosen because we knew that a good flora was to be found. In others a relatively high altitude trailhead was the attraction, which both cuts down the time and effort required to reach the alpine and sub-alpine zones, and extends the time one can spend with the plants.

Flying into Seattle on July 9th, we took a taxi to our motel and crashed out; jetlag doesn't get any easier. Next morning I rang around looking for the best deal on a sport-utility vehicle, SUV for short. We ended up with a Jeep Cherokee, less spacious than some, but handling very well off road. There is unfortunately an increasing trend in SUV design towards car-like comfort on the highway, and away from their performance when tackling the sort of roads marked "high clearance 4WD" on Forest Service visitor maps. Incidentally the Pacific Northwest Region has introduced a permit scheme for trail head parking; they cost $5 per day or $30 for a whole year. The money raised goes towards road and trail maintenance, something long overdue and under funded in some of our National Parks. We were of course on Betty and Ned Lowry's home turf, and so they were able to join us from the start. This did mean that Poll and I had no time to train and acclimatise beforehand, but Betty and Ned are very tolerant of our slower hiking speed, especially uphill, and always allow Poll to take the lead and set the pace. We had arranged to meet in the car park at Mt Rainier; we were both late, they were just putting on their boots as we drove up. Sorting and packing the gear into the vehicle always takes much longer than one thinks. The intended hike had to be shortened somewhat, but we did find the first plant on our list, *Polemonium elegans*, which is endemic to the northern Cascades. Unlike the *P. viscosum* group, this has leaflets arranged in one plane, like those of the widespread *P. pulcherrimum*, but differs from the latter in its funnel-form corolla and more congested inflorescence. Although the foliage has the usual skunky odour, the flowers are sweetly scented, a feature not mentioned in the flora, but pointed out to us by Steve Doonan. Another alpine endemic of these more northerly Cascades is the distinctive *Phloxhendersonii*, which we found in full bloom amongst the summit rocks of our next objective, a peak lying to the east of the Goat Rocks. With its tight cushion habit and very short style this phlox

presents a quite different aspect from the sympatric *P. diffusa*. Sympatric, as opposed to allopatric, means that the two plants are found together in the wild. The steep scree slopes up which the trail had made its way were clothed predominently in three snowbed species, extensive mats of *Cassiope mertensiana* (fig. 128) and *Luetkea pectinata*, together with the glossy green cushions of *Saxifraga tolmiei*, combined to make a pale-flowered background for lupins, castillejas and various daisies. The cassiope is generally regarded as a peatbed plant, the luetkea as suitable for the open rock garden, and the saxifraga as very difficult. It makes one wonder.

After spending the night in Yakima, it was time to take a day off from hiking and drive east on I-90 to the Montana side of the northern Bitterroots. This journey, the best part of 500 km, was easily accomplished in a stress free day, thanks to a good road and low traffic density. This part of the long Bitterroot Range is only high enough to be subalpine in character, but this doesn't mean that it is without interest. Fire, wind exposure, late snowbanks, and sufficient, but not excessive grazing, all contribute to a diverse mountain landscape, with stands of conifers, open meadows, scree slopes, and rock outcrops. Each habitat has its characteristic species, the little 'cat's ear' *Calochortus selwayensis* growing amongst thin grasses for example, or *Gentiana calycosa* preferring, as one would expect, sites with deeper soil and rather more moisture. On and near rocky ridge tops yellow *Aquilegia flavescens* was hybridising with bicolored, red and yellow, *A. formosa* to produce some lovely pink and apricot shades. Nearby was another surprise, a plant of *Penstemon flavescens* whose corolla tubes were entirely a rich dusky pink, only the lobes the usual primrose. On north-facing screes where the snow lingers, *Phacelia lyallii* was flaunting heads of rich lavender blue, here near the southern limit of its range.

Next day a Pacific weather system moved in bringing low cloud and heavy rain, it felt just like home. All thoughts of hiking were abandoned, the only completely lost day of the trip; but we made the best of it by renewing old acquaintances at the University of Montana in Missoula, before continuing east to the Rocky Mountain Front. By the next morning things had improved sufficiently for us to hike into the fringes of the Scapegoat Wilderness. This area is notorious for its strong winds, leading to a considerable depression of timberline. As a result many alpines are to be found growing at lower altitudes than normal. It somehow didn't feel quite right to find tiny azure *Eritrichium nanum* sharing an exposed shoulder with the flamboyant heads of *Gaillardia aristata*, their yellow rays surrounding large brownish-purple disks. Perhaps the best new plant was a white form of *Erigeron caespitosa*, with broad rays and short

Fig 128 *Cassiope mertensiana* (p. 243)

Fig 129 *Eriogonum androsaceum* (p. 246)

stems. All that wind made photography very difficult and didn't help with hiking either; "rather like Patagonia", the Lowrys commented. Back in the shelter of the valley a south-facing slope was dotted with the fluffy seedheads of *Clematis hirsutissima*. This fully herbaceous species, growing to around 30 cm, has been accused of being rather reluctant to produce its hanging urn-shaped flowers of rich violet in cultivation, but we have not found it so. Seed is regularly set on our winter covered scree. Wolves are known to be present in this area; their scat was in evidence along the trail, well laced with the indigestible remains of their prey and so easily distinguished from that of coyotes or their domesticated relations.

Farther north in this wilderness complex the Swan Range forms the western boundary, towering over the valley in a continuous wall. Almost all the trails involve an arduous ascent from the valley floor, but there is one trailhead high on a spur which had caught my attention. Once clear of the trees, the whole of the branch ridge up above was white with literally millions of *Calochortus apiculatus* in full bloom. Virtually all of them were single stems which reinforces my view that reproduction is usually by seed, and not by multiplication of the bulbs. Without carefully marking individuals and returning repeatedly it is impossible to say how long lived they are in the wild, but we have found that 3–4 years is about average in cultivation. Taking cognisance of their flowering period, these alpine species should not be treated as one would the low altitude Californian ones. Higher still on the main divide, it was *Erythronium grandiflorum* which dominated the meadows; we had never seen such dense masses, but once again all single plants. Most had finished flowering, but where the snow was just melting there were sheets of yellow dotted here and there with the cream bowls of *Pulsatilla occidentalis*. For a really spectacular display of this western anemone it would be difficult to better that found farther north the following day, during a loop hike in the Jewel Basin. All stages were represented, from tight furry buds hard by the residual snowbanks, to seed heads like miniature green tea cosies on stalks where the snow had long gone. Around these melting snow patches blue notes were once again added by *Phacelia lyallii*, whereas on the drier rocky ridge up above *Phacelia sericea*, its fuzzy heads more violet than blue, represented the genus. We had never previously seen these two species in close proximity. Up top Poll photographed a mountain goat negotiating an impossibly steep slab. She is convinced that those depicted on calendars and postcards have had shampoos and blow dries; in reality they are a decidedly tatty off-white, and they smell.

High on the Swan Range the view to the north is dominated by the jagged peaks of Glacier Park on the far horizon. It was now time to head in that direction to visit one of the late Roy Davidson's favourite plant sites, albeit one lacking lewisias. We have followed in his footsteps many times, but were thwarted here in 1993 by deep mud; chains would have been the order of the day. This time there were no such problems; a brief heavy shower did pass through in the early morning, but the sun soon dried the road surface again. These are calcareous mountains and some of the broad ridges are topped with substantial areas of limestone pavement where one can wander at will. Good plants abounded, some expected like *Androsace carinata* and *Dryas octopetala*, some old friends from last year including *Arnica angustifolia* and *Erigeron radicatus* and a few surprises including *Erigeron lackschewitzii*. This last is a recently described dwarf alpine species, endemic to the Rocky Mountain Front in Montana. Its occurence this far north is not mentioned in the literature and we may have a new record. It resembles *Erigeron simplex* but the tufts are less spreading and very definitely tap-rooted. Farther on up the mountain, shales replace the limestone and eriogonums rule.

Eriogonum flavum and the rather smaller *E. androsaceum* (fig. 129) both have capitate umbels above tight mats of grey foliage, those of the former a bright yellow, while the latter has cream flowers opening from pink buds leading to a bicolored effect. *E. flavum* is a widespread species with several varieties, whereas *E. androsaceum* is more alpine and exclusively northern, its range extending from British Columbia and south-west Alberta into adjacent Montana. Near the summit we came across some late blooms on cushions of *Phlox albomarginata*, growing here at a much higher altitude than usual, and right at the northern limit of its range. As the name suggests the thick glossy leaves have a prominent white cartilaginous margin. Close by was another plant straying up from lower habitats: a tiny form of *Rosa nutkana* with large pink dog-roses on stems of 15 cm or less.

Readers may recall our lack of enthusiasm for Yellowstone Park last year; Glacier suffers from the same drawbacks of too many people and processional roads. We did stop briefly at Logan Pass where we found *Tofieldia glutinosa* var. *montana* in damp scree, while up above *Romanzoffia sitchensis* grew in wet north-facing crevices. Both were new to us and are white flowered, but the former, a little lily, has a greenish cast derived from the ovaries. These National Parks do, however, create a honey pot effect leaving the neighbouring mountain ranges largely free of people. One such is the Whitefish Range, and the Ten Lakes Scenic Area at the northern end is exactly what one would expect. Our hike here was quite delightful, enhanced by good weather,

and the most perfect lunch spot one could imagine. On the lip of a ridge overlooking a cirque, containing a little blue lake, several flat mossy boulders of just the right height to make comfortable seats lay in the shade of alpine larches. Not surprisingly we were reluctant to leave, and spent an extended lunch watching dramatic thunderstorms in the far distance drenching the tourists back in the Park. No other vehicles were in the trail head and we saw no one all day, *chacun a son gout*. There was even a new plant: *Angelica dawsonii* flaunted its yellow umbels, subtended by a striking ruff of broad spiny bracts, along moist stream banks. One for the flower arranger's border perhaps.

Moving on to the Idaho Panhandle, our chosen trail in the Selkirk Range had a similar ambience. After passing up through woods with a rich ground flora, reminiscent of the western Cascades, and including such beauties as *Clintonia uniflora*, we reached a high granite ridge dotted with the enormous pale boulders typical of this substrate. Much of the turf round about was composed of *Cassiope mertensiana* and Poll, who was leading as usual, spotted a superb pink-flowered mat, right by the trail. How many backpackers have must passed by without giving it a second glance. This was not the only colour break of the day; *Stenanthium occidentale* is a liliaceous plant with grassy foliage and a slender raceme of narrow pendant bells. In the normal form the tepals are some combination of brownish crimson and green; but on a sunny bank many of the plants had bells of a clear primrose, and in a dwarf form to boot, only some 30 cm high. There is an interesting parallel with fritillaria, possibly these yellow forms are semi-albinos.

Continuing west, we re-entered Washington and headed for the eastern Cascades where Ned had arranged a pack trip into the Pasayten Wilderness. In these areas all forms of mechanical transport are banned, legs are the order of the day. We would walk in on our own, while Mike Buchert rode in leading a pair of mules carrying our camping gear and food, dropped it at our chosen campsite, and returned three days later. His parents, who have been married for 61 years, came along just for the ride; they used to run sheep up there and told us that the first time Mike went with them he was 5 months old and travelled on a pillow in front of his mother's saddle. The mountains hereabouts have broad, flat tops, somewhat resembling the Cairngorms, but with rather more floral interest; so with the camp established on a little shelf, sheltered by a grove of conifers, we were free to explore at will. For once there was a target species *Gentiana glauca*, a tundra plant common in Alaska but only just reaching the 'Lower 48' in a few cold lonely places. Betty and Ned had found it here a few years before, and sure enough it was in bloom in mossy turf on the plateaux, where the soil had accumulated

amongst the scattered boulders. Not a spectacular plant but one of real character, the stems of around 10 cm carry one or more dusky blue, green suffused, flowers, the bottle-shaped corollas hardly opening. Much of the turf itself was composed of various prostrate willows, we christened these the 'willow gentian mountains'. Present were *Salix nivalis*, a more southerly equivalent of the circumpolar *S. reticulata* which it closely resembles, and *S. arctica* with smaller, brighter green, foliage lacking the characteristic veining of the former. It was the third species, however, that we found the most interesting and distinctive. We have seen plants in cultivation labelled "*S. cascadensis*", but they were not the real thing which makes an absolutely flat tight mat, second only to *S. dodgeana*. The tiny pointed leaves are not shed in the autumn but wither and persist on the stems, the botanical term is "marcescent", giving the plants a characteristic appearance. We were caught in a heavy, but fortunately brief, snow shower on one summit; on another a stiff south-west wind drove us to seek shelter for lunch on the north side, with a lovely view into Canada. There were other interesting plants on these hills, including dark patches of *Cassiope tetragona* on north-west-facing slopes, enlivened by the most vigorous and floriferous *Erigeron aureus* (fig. 130) we have seen, their yellow heads enhanced by dark purple involucres. In one of the valley bogs, Poll spotted a pink dandelion which turned out to be *Agoseris lackschewitzii*, a species only described from central Idaho and adjacent Montana in 1990. Here it was hundreds of miles away; the Washington Natural Heritage Program were very interested in Poll's photographs, sent by email.

If broad plateau tops make for uninhibited wandering, the same cannot be said for steep knife-edge ridges such as those at the western end of the Pasayten Wilderness. Fortunately, our chosen route therein, the Pacific Crest Trail is very well constructed; and although it traversed some steep slopes, made for easy walking. One is virtually confined to the trail however; Betty and Ned did start up a ridge towards one summit but returned after the going became very steep and loose. Nevertheless, there were good plants within camera range such as *Elmera racemosa*, here in its variety *puberulenta*, and *Epilobium latifolium*. We had previously seen much lusher plants of the latter in shingle beds by a river in northern Montana, so it was something of a surprise to find this dwarf form in shifting scree on a ridge top.

Continuing our progress west, we drove over the scenic North Cascades Highway to Mt Baker. Although we did attempt our planned hike it was a pretty miserable day, low cloud and a strong wind driving patchy rain. This was the second time Poll and I have been on this ridge, and we still haven't seen the main cone of Mt Baker close up. This area is

Fig 130 *Erigeron aureus* (p. 248)

Fig 131 *Senecio neobrewsteri* (p. 250)

notorious for bad weather, it holds the record for the deepest annual snowfall. It was with some relief that we took the ferry across Puget Sound in search of the last plant on my list: *Senecio neowebsteri*. This is a choice plant with large solitary hanging flowers (fig. 131), which I feel sure would be better descibed as a cremanthodium. Endemic to the Olympic mountains, it is only found on steep moist screes, usually facing north where the snow lies long. We had sought it unsuccessfully in 1996, finding its habitat still under its winter blanket. 2001 was a light snow year, so hopefully this August-blooming species would be more advanced. The hike took the form of a car shuttle; we left our Cherokee at the lower trailhead, and all four of us drove up to the higher end in the Lowry's large Toyota pickup.

By now we were reasonably fit and took the numerous switchbacks up the steep slope to the ridge in our stride. Once up the fun began, the cirque below was indeed largely clear of snow. Looking down we could see large mats of *Elmera racemosa* in full bloom, this time the more hirsute variety *racemosa*. Carefully picking our way along the thin trail we soon found our senecio in both bud and early flower. This species is highly palatable, and its future had been threatened by the mountain goats unwisely introduced into the Olympics. The Park Service have now eliminated the goats, and the vegetation, including the senecio, is recovering. Contrast this with the situation on Ben Lawers, where the sheep eat everything while the National Trust watches. On some of the rock outcrops cushions of *Douglasia laevigata* were still blooming, looking infinitely more beautiful here (fig. 132) than as a symmetrical dome squatting in a pot. It doesn't have to be grown that way of course, as it's quite easy outside.

The trail winds its way up and down along the steep ridge, switching from one flank to the other to avoid cliffs where one can find two more local endemics: *Campanula piperi* and *Petrophytum hendersonii*. After carefully climbing one last vertiginous scree-filled gully we were suddenly over a lip and onto a wide meadow. From here on it was all down hill, hard on the knees, following a good trail winding through the woods. Poll was very taken with the rich variety of saprophytic species here, including coral-root orchids and various members of the Ericaceae such as the tall, red-stemmed pinedrops, *Pterospora andromedea*. By foregoing photosynthesis and relying on fungi for nutrition these leafless species are able to grow in the deepest shade. Other species here, including the lovely pink-flowered *Pyrola asarifolia* (fig. 127), have it both ways, retaining leaves and symbiotic fungi, and thus can be very vigorous in conditions which suit, such as our rhododendron beds. They are largely unfazed by tree-root competition. Eventually we emerged

Fig 132 *Douglasia laevigata* (p. 250)

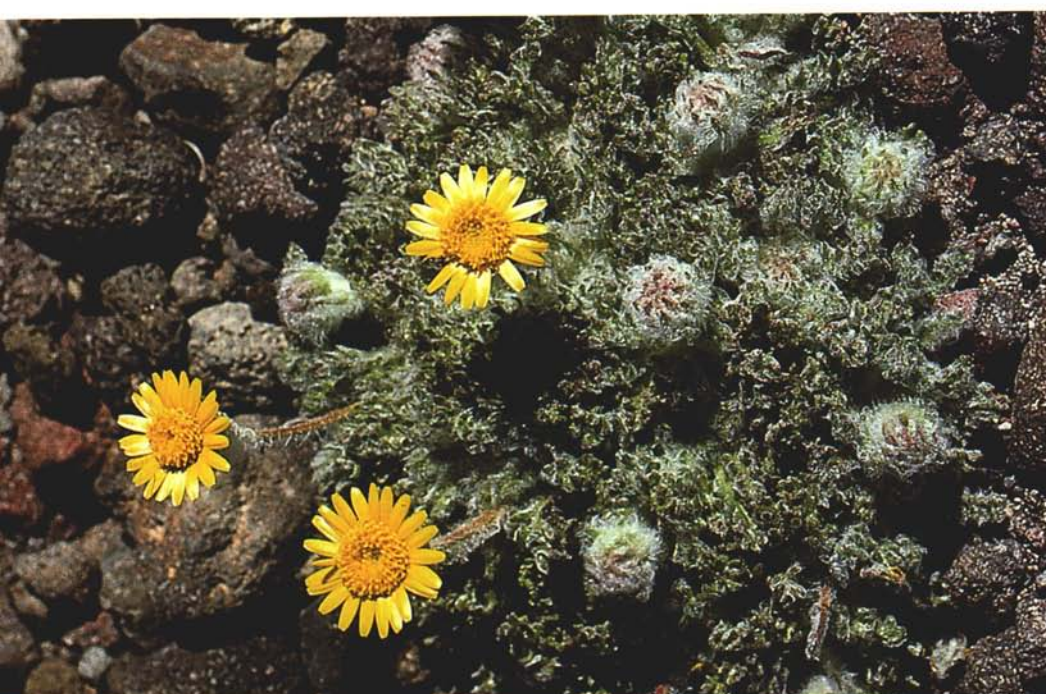


Fig 133 *Hulsea nana* (p. 252)

from the woods right by our SUV, and I drove Ned back up the hill to retrieve his truck.

Next day Betty and Ned took the ferry home, while Poll and I drove south over the notorious Tacoma Narrows bridge to keep an appointment the following day on Mt Adams with Rick Lupp. We had also planned to visit his Mt Tahoma nursery, and see first hand the fascinating sand beds we mentioned recently (figs. 122 – 125). He took us on one of his favourite hikes on the mountain, a locale with a real sense of place and a fitting reprise to our trip as almost all the characteristic alpines of the high Cascades were present. After lunching at the upper end of the official trail we continued on, at first winding through the last few krummholtz thickets, then picking our way up scoria strewn slopes to a little lochan at the foot of one of the main glaciers. Even the weather co-operated on this last hike; it was a beautiful day and *Hulsea nana* was in bloom, its pale woolly buds contrasting wonderfully with the dark volcanic boulders (fig. 133), so rough on the photographer's knees. The Act of Congress defines wilderness as a place where man has no permanent presence, and so with the relentless approach of evening we descended reluctantly once again. But the sirens' call of the high wild places is irresistible, as long as we can put one foot in front of the other we shall answer.

PREVIOUS TRIPS

California & Southern Oregon

'Beyond the Great Basin', January & June 1993, *The Rock Garden* 91 & 92 (vol. 23, pts. 2 & 3)

Pacific North-West – a brief account

'The Stone Column', January 1997, *The Rock Garden* 99 (vol.25, pt.2)

Arizona and New Mexico

'The Stone Column', June 1998, *The Rock Garden* 102 (vol. 26 pt. 1)

Southern Wyoming, Idaho, and western Montana

'The Stone Column', January 1999, *The Rock Garden* 103 (vol.26, pt.2)

The isolated mountain ranges of the Great Basin

'The Stone Column' June 2000, *The Rock Garden* 105 (vol. 26, pt. 4)

Mountains of the Greater Yellowstone ecosystem

'The Stone Column' January 2001, *The Rock Garden* 106 (vol.27, pt. 1)

Primula World

Pam Eveleigh

IF SOMEONE HAD TOLD ME that the purchase of a scanner would have a profound impact on my gardening, I would have laughed. However, that is exactly what has happened. As an alpine gardener for almost ten years, the plants I've coveted have changed, but for some reason I always go back to the Primulaceae. With my scanner I started creating an online collection of primula photographs so that I wouldn't be digging through journals and books looking for that picture to match to an entry in a seed exchange list. After all, a picture IS worth a thousand words and a beautiful picture will haunt your dreams until you have that plant growing in your garden. I soon realised what a useful tool I had created and wished that it could be shared with other gardeners, but I didn't own the copyright on any of the photos I had used.

With encouragement from my husband and a couple of gardening friends, I created a website in September 2000. The main purpose of the site is to be a visual reference for the genus Primula – eventually it will display pictures of every species, subspecies and natural hybrid and someday all the pictures may be ones taken in the wild. Related information on primula identification will be added in the future. To date, over 30 photographers have graciously allowed me to display their photographs on the site, covering over 180 species.

So how has this impacted on my gardening? Every time I see another wonderful primula picture, I immediately covet it! My selections on the seed exchanges seem to be almost all primulas. Best of all, I have been in contact with wonderful people – gardeners, explorers, professors, travelers, nursery proprietors, professional photographers and other primula enthusiasts, from every corner of the world. My trip across to Alpines 2001 (I'm based in Calgary in Canada) was a wonderful opportunity to meet so many of the people I'd been in contact with electronically and to make contact in person with so many new people as well. The website is called **Primula World** and is found at **www.primulaworld.com**. Try it out! If you like it, drop me an e-mail at **webmaster@primulaworld.com**. New pictures are always welcome.

Plant Fashions

Brian Halliwell

THERE HAVE BEEN FASHIONS in garden flowers for more than 500 years, ever since gardening took its place as a leisure pursuit for the gentry in the 16th century. Probably the first fashions were of double-flowered British natives such as daisies, primroses and wood anemones. The 17th century saw the establishment of florists' societies. A florist at this period was not a person who made a living from selling cut flowers but an amateur who specialised in the cultivation of variants of a single species. These florists of the gentry class met regularly to discuss their favourite plants and to exchange material. During the year, floral feasts were held in which plants were exhibited in competition to be judged by head gardeners of local estates for prizes of pieces of silver. These were the first flower shows.

In the 17th century, the first fashionable flowers were anemone, auricula, tulip and carnation, to which were added in the 18th century: polyanthus, hyacinth, Asian ranunculus and pinks. The first floral feast was held at Norwich in 1632 with several more in England and probably one in Scotland before the end of the century. During the 18th century they were being held in most towns and cities throughout the British Isles. Although floral feasts were originally organised for and by the gentry, by the 18th century all classes of society were allowed to compete and soon the lower classes were carrying off the prizes. By the 19th century, floral feasts came to be replaced by the flower shows we know today with a wider range of horticultural produce presented in competition.

Although the growing of small plants that would be considered today as alpines has a long history, the first rock gardens appeared in the 18th century as arrangements of rocks in the form of ravines or grottoes. Rock gardens as places on which small plants came to be grown began and developed during the 19th century.

It was during this century that it became fashionable for the gentry to take summer holidays in the European Alps. These travellers were excited by the wealth of flowers to be seen in alpine meadows and were fascinated by tiny plants with colourful flowers tucked away in rock crevices or sheltering amongst broken rocks in screes and moraines. On

their return home, these tourists took with them plants and seeds of the alpine flora to grow in their own gardens. Throughout the 19th century, increasing numbers of people were attracted to this new horticultural pursuit. They were to build rock gardens, often of considerable size which could accommodate large plants. These rock gardens were maintained by an army of gardeners but their owners, though directing operations, had little knowledge of cultivation.

In nature, mountain plants in winter are covered by snow that provides protection by keeping plants dormant and dry and preventing or reducing frost penetration of the soil. In the erratic winter climate of the British Isles, temperatures rise into the upper forties Fahrenheit (9°C) which may result in premature growth to be followed by damaging severe frosts. Plants can tolerate more dry cold than when cold and wet are in combination. Early rock gardeners realised this and built alpine houses. These unheated, well ventilated structures were intended to keep plants dry in winter. The glazing kept temperatures up to 9°F (5°C) higher than outside. Alpine houses provided protection from arctic winds, kept plants dry and gave protection to precocious growth and flowers. Originally intended as places to overwinter plants, they were to become multi-purpose, being used also for propagation, growing-on plants and as display houses. Whilst containerised plants could be kept permanently in an alpine house, they were usually transferred outside in summer when temperatures within were excessively high. It was common practice to keep plants in frames for most of the year, transfer them to the alpine house as they came into bloom and return them to the frames as flowers faded. Alpine house cultivation gave absolute control over watering, allowed special treatment for difficult plants and protected or hastened plants to provide perfect show specimens.

Robinson and Farrer

The first book about rock garden plants was William Robinson's *Alpine Flowers for the English Garden* published in 1870. From this book it can be seen which were the most fashionable flowers in the seventh decade of the 19th century: Androsace, Primula, Saxifraga and Sempervivum. The most popular was Sedum, but this does not retain premier position today. Most plants mentioned by Robinson were from the European Alps.

The hundred years which began in 1850 were a golden age for plant collectors. Amongst plants being brought back to England from remote parts of all continents, were many suitable for cultivation on rock gardens.

In the first two decades of the 20th century, books about rock

gardening written by Reginand Farrer began to appear. He has come to be considered as the arch priest of rock gardening for his writings have had more impact on alpine gardeners than those of any other writer. At the time of publication in 1919 of *The English Rock Garden*, almost half a century had elapsed since the publication of Robinson's book. In *Alpine Flowers for English Gardens* almost 500 species were listed whereas in *The English Rock Garden* there were some 600 genera, most with many species. No longer were alpine plants predominantly from the European Alps, but now originated from mountain areas of most continents.

Europe was still providing plants and two genera which had become important were Campanula and Gentiana. From North America came Phlox and Penstemon and perhaps surprisingly, certain genera of cacti which though botanical alpines are not so considered today. From Asia there were petiolarid and candelabra primulas and species of Meconopsis. High mountains of Africa were still to be explored although some bulbs had arrived from the Atlas Mountains. More attention had been paid to African plants from tropical regions to furnish heated glasshouses and conservatories. This was also the case with plants from South America. Calceolaria, a genus from South America, had species that were used for glasshouse display, and bedding, but provided some rock garden plants. Of plants from Australasia, large numbers were failing to survive the long sea voyages with seed having short viability.

Societies and shows

The next landmark for rock gardeners was the foundation of the Alpine Garden Society in 1929. It was in 1930 that the first issue of its journal appeared. Two rock garden competitions were held in London in the same year. The Scottish Rock Garden Club was founded in 1933, but its first journal did not appear until 1936. In that year there were two spring shows: one in Glasgow and the other in Edinburgh. Competitive shows were soon to spread far beyond London, Edinburgh and Glasgow and are now held almost weekly between March and June somewhere in the British Isles.

1936 saw the first rock garden conference organised jointly by the AGS and RHS in London. It had been intended to hold these each decade, but the Second World War intervened and the next rock garden conference, which was now arranged jointly by the AGS and SRGC, was held in London and Edinburgh in 1951. For 50 years, conferences have been held at various venues in Britain every 10 years. The first International rock garden conference was held at Seattle and Vancouver in 1976, ten years later in Denver and in 1996 at Christchurch in New Zealand.

Competitive local shows and those held at conference centres were important in creating plant fashions. It was plants that continued to win prizes that were determining fashions. Some of these were species of Draba, Androsace, kabschia and encrusted saxifrages, many sorts of Primula, Lewisia, and Pulsatilla. It was less easy to determine fashions for plants on rock gardens. Choice here was governed by the garden's geography, soil type, extremes of temperature, rainfall and summer humidity. Many earlier fashions were continuing. A number of plants grown for showing were finding a place on the rock garden. Some of those grown outside included Aquilegia, Armeria, Daphne, Helichrysum and Viola as well as small Ericaceae, dwarf conifers and small bulbs. In the last 20 years fashions have continued to be determined by winning show plants with Dionysia as the most fashionable cushion. With faster air travel greater numbers of species of petiolarid primulas have become available which has allowed English gardeners to grow far more and challenge their Scottish neighbours. *Primula allioni* and *P. marginata* with their many selections have lead the field in this widely grown genus. Dwarf Ericaceae and dwarf conifers have continued to be important along with most species of Daphne. *Clematis marmoraria*, relatively recently introduced from New Zealand, has become widely grown, but it is the hybrid group, *Clematis* x *cartmannii* which has become most fashionable. Dwarf bulbs have continued their popular appeal not only on the show bench but also on the rock garden with selections from *Crocus*, *Fritillaria*, *Narcissus* and *Rhodohypoxis*, as well as *Cyclamen* if this is considered as a bulb. On the rock garden, the old favourites have continued to be grown to which have been added: *Dianthus*, *Diascia*, *Celmisia*, *Dodecatheon*, *Soldanella*, *Trillium* and outdoor gentians.

Just as plants can come into fashion, so they can fall from it. For nearly 50 years, kabschia saxifrages were found in every alpine house and were regular winners in competitive shows. By the 1970s they had almost disappeared and remained scarce for 20 years, but once again they are attracting attention. As the size of rock gardens continues to decrease, there is no longer room for certain genera which were popular in the early decades of the 20th century, such as *Helleborus*, *Meconopsis* and *Paeonia*; these have been transferred elsewhere in the garden. The ease of cultivation must have created fashions as with *Aubrieta*, *Alyssum*, *Helianthemum*, *Iberis*, mossy saxifrages and common edelweiss, but equally, their ease may have destroyed them.

A number of genera and plant groups have attracted attention over the years but have never become quite fashionable. The cultivation of terrestrial orchids began in the 17th century when attempts were made at cultivating British species. Gardeners still strive to solve the problems of

cultivating this fascinating group of plants. Pleiones have certainly become fashionable but these are really epiphytes and can only be grown in containers by most people. Ferns too have had a long history of cultivation but have never achieved fashion status at least on the rock garden. In the past the elite were those grown in stoves, conservatories, fern houses and fern cases. There are many small ferns which are attractive, easy to grow (although some are a challenge) and have a place on the rock garden or in a pan for the show bench. Cultivation of rock garden ferns is beginning to attract a following. *Gesneriaceae* is better known for showy plants for warm glasshouses or as house plants. The family, however, contains a number of taxa small and hardy enough for rock garden or alpine house. *Eritrichium nanum* is very desirable but difficult to grow. Even plants successfully brought to flowering are a travesty when compared with what is seen in the wild. Too few people have mastered the technique of cultivation for this plant to have become fashionable.

What next?

Having discussed fashions in the present and the past, can those for the immediate future be determined?

It is expected that New Zealand plants will continue to attract attention. Certain species of Raoulia and Haastia may join cushion plants on the show bench. With more frequent collections of seed from mountains of South America, gardeners will eventually discover how to obtain success with plants which in their homeland experience dry winters and wet summers in contrast with those of Europe where winters are wet and summers dry. Plants much grown at present include species of Mimulus, Ourisia, Oxalis and Tecophilaea. The ericoid and rosulate violas are a challenge and gardeners may be attracted to species of Calandrinia, Nassauvia and Perezia. Japan is a country still little known to tourists. The high cost of living and relatively poor exchange rates have prevented extensive investigation by rock garden enthusiasts. Relatively few plants from these oriental islands are in our rock gardens; there are many more awaiting introduction. The Japanese have their own fashionable groups of plants all suitable for a rock garden: Adonis, Hepatica and *Primula seiboldii*. Perhaps British gardeners will acquire some of them, succeed with cultivation and challenge Japanese growers.

The Drakensberg Mountains in southern Africa have other desirable plants in addition to *Rhodohypoxis baurii*, *Helichrysum milfordiae* and *Euryops acraeus* which are well known and much grown.

Helichrysum pagophilum was fashionable for a brief period as a new and easy cushion plant following its introduction in 1983. This

fashion was not maintained when it was discovered that large plants became increasingly difficult to keep as they aged. There are other cushion and carpeting species of Helichrysum that have potential. Will Crassula challenge Sedum? Gentians have long been fashionable, will the difficult genus of Sebaea attract specialists? Already, a number of Oxalis species are well considered and in southern Africa there are hundreds of species so the Drakensberg Mountains may have others to offer.

The genus Corydalis may already have become fashionable but it will certainly continue to be so in the next decade as recent introductions become more widely available. In the genus Arisaema, flowers are more bizarre than beautiful. Many species are too large for a rock garden but some of the newer introductions from China and Japan will certainly have a place. Over the last 5 years many more species of Juno Iris have appeared on the show bench. Perhaps it will not be long before classes of this group appear in show schedules. It must be time for another group of Iris to attract attention. The Oncocyclus group require similar conditions to the Juno and have more spectacular flowers.

Fashions in all things can be fleeting; they come and they go. In horticulture some last for 2 or 3 years and then seem to disappear and are forgotten. The auricula, which might be considered as an alpine, has retained its fashion status for half a millenium.

Limited space restricts the number of genera and species that could be mentioned, and anyway extensive lists can become boring. This is one person's analysis of plant fashions for the rock garden.

The Club has a website that is well worth visiting. If you have not yet had a look drop in and have a look all the Forrest Medal winning plants from the SRGC Shows and keep up with the news

www.SRGC.org.uk

The Crosland Prize is awarded annually by the Aberdeenshire Group in memory of the late Jack Crosland for the best contribution in *The Rock Garden* in that year. Writers, photographers, and illustrators are all eligible. The inaugural award is to Malcolm McGregor for his article 'Diary of a Travelling Speaker' in the January 2001 issue.

News from the Nurseries

In this new series ***The Rock Garden*** gives nursery owners the opportunity to write about their nursery, and the plants they love. In this issue Ian Christie writes about his nursery at Kirriemuir and Fred Carrie writes about Tough Nursery.

Christie's Nursery

To find us, visitors will travel through one of the most scenic areas in the East of Scotland. Kirriemuir is built primarily with red sandstone. Although only a small town there are many attractions in and around the area. J M Barrie's birthplace is in the town and there are historic sites including ancient Pictish stones and only five miles south is Glamis Castle childhood home of the Queen Mother. For visitors who wish to extend their stay, the Angus glens provide excellent hill-walking for those who are energetic, and peace and quiet at one of the picnic areas offered at various scenic spots throughout the glens.

One mile west of the town overlooking the Sidlaw Hills, the nursery is situated on the northern rim of Strathmore valley with a view across fields which offer a rich tapestry of colour throughout seasons; there is always a plentiful supply of clean fresh air even if at times it comes in strong gusts filled with rain or snow. At an altitude of 500 feet, winters can bring long spells of bright crisp frosty weather as well as substantial falls of snow. Last winter snow fell in January, February and March with snow cover remaining until the beginning of April. The location here ensures that our plants are hardy and we continually endeavour to add to our already extensive range of alpines, woodland plants, dwarf shrubs, interesting bulbs, and a small selection of plants for the herbaceous garden. Alpine house or troughs are used for the small, special or more tender alpines.

In business since 1978, we moved to our present location in 1982. The nursery and garden is south-facing and is open to the prevailing south westerly winds. Originally a heavy clay soil with water sitting before draining down the very slight slope we found it necessary to create raised beds or large islands before planting. Maturing slowly over the years trees and shrubs planted in 1982 now provide shelter and shade for the woodlanders. As time passes, however, some areas become overgrown and this year we have started our programme of revamping, by creating a new limestone scree. This we plan to plant with some of the smaller lime-loving alpine gems.

At the moment *Cyclamen coum* is in full leaf and will cheer us up as it produces its many pink flowers during the shortest winter days. Coming along

in harmony, during January and February, the snowdrops pop up through snow keeping us going until early Spring. Hellebores too give us early colour followed shortly by the first of the Corydalis. Flowering from March in magnificent shades of red, blue and white these provide interest for the early visitor. Spring has arrived and alpines come to the fore. Too many to mention in detail; suffice it to say they bring us a host of colour, form and interest throughout the seasons. The SRGC spring shows have started: on the show bench the first of the prize-winning alpines, and bulbs such as Fritillarias, are displayed. In April, *Anemone nemerosa* pushes through the ground and Erythronium flowers give an array of colour in the woodland setting. Beginning of May for trilliums and dwarf rhododendrons, both bringing a riot of colour. Into summer with dwarf lilies and our collection of Meconopsis, which includes those stunningly beautiful blue poppies, along with mixed shades from the monocarpic types. End of July and both *Gentiana septemfida* in blue, and *Gentiana* 'Olga's Pale' in a creamy white are cascading over rocks. As we reach autumn, the flowers of *Cyclamen hederefolium* appear, dwarf shrubs produce their colourful fruit and foliage, and of course the Asiatic gentians and their hybrids reward us with a sea of colour in shades of blue well into November.

We were given a year's notice to write this article but a nurseryman's work is never done. Today, 13th November, a hard frost clothed the ground, so with central heating working the task albeit brief has at long last been accomplished. I fear we would need 365 days of frost to write about the many plants growing at the nursery, however I must be off to sow more seed before darkness descends.

Tough Plants in Aberdeenshire

Tough Alpine Nursery (pron. Tooch – "ch" as in the Scots word Loch) was established in the mid 1980's by Monika and Fred Carrie, and over the past 15 years or so has earned a reputation for growing quality, in-character alpines and rock plants. The location at over 220 m (800 ft) above sea-level in north-east Scotland, provides harsh growing conditions which the plants seem to enjoy. Varieties that are often considered difficult or even impossible to grow commercially elsewhere, seem to thrive under this climatic regime. Long cold winters and cool summers seem particularly suited to the many Asiatic plants grown at the nursery, especially Primulas. The business grew out of a hobby. Many years of fighting against the weather trying to grow unsuitable plants, coupled with a fascination of the tiny plants met with over years of wandering in the Scottish hills, led inexorably to alpines and eventually the nursery.

We try to continually introduce new varieties but have one very strict rule. We only supply hardy plants. Any plant that requires any artificial heat whatsoever, in order to survive the winter or to encourage flowering,

is definitely off the menu at Tough. The quest for new plants led to the participation in several Himalayan expeditions during the 1990's. As a result of this, the nursery is offering some fine new Primulas including the rare *Primula deuteronana* and the even rarer, white flowered, wild occurring hybrid, *P. deuteronana* x *aureata*. Both of these plants were described and illustrated in Alastair McKelvie's excellent article in the January 2001 edition of the *Rock Garden*. There are also some fine *P. aureata* and several good flower forms of *P. gracilipes* on offer from the same collections.

The nursery welcomes visitors, offers an efficient all year round mail order service and has an extensive web site at www.alpines.co.uk which features secure on-line ordering and a convenient "shopping basket system".

Full contact details can be found in the Advertisement Section of this Journal. We look forward to welcoming back our many established customers and hopefully a few new ones in the year to come.

Show Reports 2001

Blackpool Show – 17th March 2001

For the first time this joint SRGC/AGS show was located in Blackpool rather than Morecambe. The spacious hall was afforded good support by both exhibitors and the public, with 83 exhibitors displaying some 462 plants. The most attractive feature of the hall was the fact that the show benches, nursery stalls and refreshments were all together in the same area creating a good integrated atmosphere for exhibitors, members and public alike. A hard winter resulted in an interesting cross section of plants, but not with the usual noticeable north-south divide due to the whole of the U.K. having experienced a harsh winter.

The Forrest Medal was appropriately awarded to Mr J Forrest for a wonderful brimful pan of **Trillium rivale** *with heavily purple spotted flowers. He also received a Certificate of Merit for a seed-raised pan of* **Erythronium albidum** *ssp.* **mesochorum** *with ghostly grey shaded bells that attracted many admiring glances, and showed* **Primula daonensis** *with an attractive mat of fleshy, sticky, leaves bristling with tiny glandular hairs topped with reddish-pink flowers with distinctive white throats. It is found in the E. Alps in stony pastures at 1500-3000m.*

Certificates of Merit were also awarded to Mr J Leven for **Fritillaria sewerzowii,** *Mr L Clarkson for a large pot of* **Iris nusariensis**, *to Mr A Spenceley for* **Trillium nivale**, *to Mr & Mrs F Bundy for* **Frillaria plurifolia**, *and to Dr & Mrs M P Brown for* **Cyclamen coum**, *all challenged the Forrest Medal plant for the ultimate honour.*

The Duncan Lowe Award for the best plant in a 19cm. pot went to Mr A Furness for a compactly grown **Corydalis solida**. *This was a close decision since Mr I Betteridge's well grown* **Asphodelus acaulis** *had been a contender until it was discovered that its hand made long tom pot just exceeded the 19cm limit for the award. It displayed finer grass-like foliage than some clones in cultivation, and had over 30 soft pink flowers fully open by the time judging commenced. The plant had been purchased some 5 years before from the old Washfield Nursery. A potting compost of equal parts of grit, John Innes, and leafmould had been employed for cultivation.*

Other interesting plants on display and drawing admiring glances included, Mr G Rollinson's **Raoulia buchananii**, *a green/blue mound of intricate rosettes, Mr A Furness's* **Ranunculus nivicola** *which is rarely seen in cultivation, and Mr & Mrs F Bundy's* **Hepatica maxima** *x* **nobilis** *own hybrid probably not previously exhibited before. The Hollett Trophy was gained by Mr JAlmond, along with class 45. Mr D Sleep took the Michael Roberts Memorial Award, Mrs H Luker the Reginald Kaye Trophy and Mrs M J Allanson received a Bronze Medal.* **P Riley.**

Stirling Show – 7th April

The annual Spring Show took place in the Albert Halls in Stirling on 7th April 2001. The preceding autumn and winter had been rather trying from the weather point of view and the resulting difficulties were reflected in the number of plants presented for showing. The show benches were considerably less laden than they had been on previous years. In spite of this, the plants that did make it to the Show were of as high quality as usual.

The Forrest Medal was this year won by Fred Hunt with his large pan of ***Fritillaria davisii***. This Fritillaria has a bad habit of breaking up into a large number of bulbils which take a long time to come to flowering size, this made Fred's achievement all the more remarkable. The plant was also awarded the Ben Ledi Trophy for the best European plant in the Show. His plant had been entered in Class 1.

Cyril Lafong, who grows many plants to perfection, put on show in Class 1 a splendid example of ***Sebaea thomasii*** CDR 992A. This plant was awarded the Institute of Quarrying Quaich for the best non-European plant in the Show. This was a most spectacular exhibit and it was also awarded a Certificate of Merit.

The Spiller Trophy for the best Primula in the show was awarded to ***Primula*** **'Clarence Elliott'** which was staged by David Millward in Class 35.

In addition to this David Millward was awarded a Certificate of Merit for this plant and a further Certificate of Merit for the ***Narcissus bulbocodium*** which he staged in Class 17.

A Certificate of Merit was awarded to Cyril Lafong for the ***Orchis italica*** which he had entered in Class 48. Year on year Fred Hunt is able to produce huge pans full of ***Tecophilaea cyanocrocus***. This year was no exception and this pan in class 1 was a flawless exhibit. For his effort he was awarded a Certificate of Merit.

An unusual plant on the Show bench this year was ***Asarum maximum***, in Class 85. It was awarded first prize and was staged by Jens Nielsen from Glendoick. This is a most unusual and spectacular plant. Also of great interest was Fred Hunt's pan of ***Crocus scardicus*** in Class 1, which is still a challenge to many. It was first brought to notice by Harold Esselmont who also grew it extremely well.

Of course, Shows are made up of considerable numbers of plants which, for various reasons, fail to catch the judges' eyes. Many excellent plants fall into this category, which on another day might well have been prize-winners.

During the judging the waiting members were treated to a talk by Jim Sutherland on 'Flowers of the Altai'. ***Glassford Sprunt***

Perth Show – 21st April 2001

The plant of the show, and winner of the Forrest Medal, was the 10" diameter, bright yellow cushion, of **Sebaea thomasii *CDR992A***, *exhibited by Cyril Lafong (Glenrothes). This plant formed part of the six pan exhibit that won Cyril The Alexander Caird Trophy as well as a Certificate of Merit for a huge specimen of* **Androsace muscoidea *'Schacht's Form'***. *Cyril also won The L.C. Middleton Challenge Trophy for the most first prize points in Section I. Fred Hunt (Invergowrie) was the winner of the Diamond Jubilee Card in Class A, with a six pan made up of six different Fritillarias. Fred's* **Fritillaria tubiformis** *which sported 25+ flowers was awarded a Certificate of Merit, along with his* **Pleione *'Shantung'*** *which had only 22 flowers! Fred also brought along an extra exhibition of other Fritillarias, large enough to cover two benches, which added greatly to the interest of the show. Another extra exhibit, photographs by Mike Almond, was on the subject of "Flowers of Turkey", for which a silver medal was awarded.*

A couple of notable plants, not seen often at shows, were exhibited this year. The first was a "new chinese frit" **Fritillaria yuminensis**. *This plant has a tall flower spike, about 14" – with unusual pale bluish-grey flowers and prominent yellow anthers. The other was the beautiful little Himalayan member of the Primulaceae,* **Bryocarpum himalaicum** *with its fringed lemon yellow flower. This plant was raised from wild seed and grown in JI3*

with added peat and grit. In the wild it occurs in mountain forests at 10-12,000 feet in central Bhutan.

In Section II the John Duff Prize for the best plant in the section and the R. S. Masterton Trophy, were won by Leslie Drummond (Forfar) with **Primula aureata** *x* **gracilipes**. *The Perth Trophy was won by local member Ray Paul.*

Amongst the Juniors, Mark Tosh won the Georgina Blackwood Trophy with **Primula marginata** *and Peter Thomson won the "raised from seed" class with an auricula,* **Primula *'Argus'***. **Cathy Caudwell**

Glasgow Show – 5th May 2001

Equable weather resulted in a good entry and a well-attended show, not that there are ever enough plants in Section II to satisfy organisers but that seems to be a perennial problem.

For the third successive year Fred Hunt out-pointed other competitors to take the Crawford Silver Challenge Cup as the overall winner in Section I. As ever, the presentation of his entries in the two 6 pan Classes was immaculate. They included fine pans of ***Fritillaria liliaceae, F. whittallii, F. affinis*** **'Sun Ray'** and ***F. pyrenaica*** **'Cedric Morris'**, ***Androsace cylindrica,*** several ***Lewisia*** species, ***Thalictrum orientale, Alkana aucheriana*** and ***Pleione chunii*** which also won him the trophy for the best plant in Orchidaceae.

The continuing popularity of the genus Fritillaria was evident in the show entries. Bob Maxwell, who took the Don Stead Prize for most points in the bulb classes, was awarded a well-deserved Certificate of Merit for his magnificent pan of ***F. caucasica.*** Another Certificate of Merit and the Joan Stead Prize for best primula in show went to Margaret and Henry Taylor's ***P. albenensis.*** This primula is one of three European species described only in the last decade and is found on cliffs high on Monte Alben in northern Italy (The others are ***P. recubariensis*** from a similar habitat east of Lake Garda and the much smaller ***P. grignensis***.) They showed that species in Class 5 for new, rare or difficult plants where it came second to Ian Christie's ***Pteridophyllum racemosum,*** a Japanese endemic from the woods of Honshu. Another primula that attracted admiring comment was Richard Barr's ***P. orbicularis,*** an elegant yellow species from Sichuan. It too was awarded a Certificate of Merit, as were the enormous pot of velvety red ***Trillium sulcatum*** shown by Stephen McFarlane and Cyril Lafong's ***Lewisia tweedii*** 'Lemon', a delightful colour form of this plant. But a well-grown plant of ***Daphne petraea*** **'Grandiflora'** never fails to appeal — Ian and Maggie Young's plant, smothered in flowers, was no exception and the outstanding winner of the show's Forrest Medal.

Anne and Viv Chambers won the Edward Darling Memorial Trophy for three pans of Rhododendron with well-grown plants of ***R. fastigiatum*** and the hybrids **'Phalarope'** and **'Crane'**. The latter, one of the many successful Cox

"bird" hybrids was a mound of creamy white flowers. The weather was mild in the weeks before the show and Section VI provided a colourful and interesting display of cut rhododendron exhibits. Both trophies were awarded to Jamie Taggart of the Linn Garden, Cove.

In Section II the trophy for most points was won by local lad Martyn Lamb. Mark Tosh's pan of ***Fritillaria michailovskyi*** gained him the special prize for best plant from a Junior member. ***Anne Chambers***

Aberdeen Show – 19th May 2001

The long winter which killed many plants and the heatwave of early May which brought on plants too quickly meant that entries for the Aberdeen Show were down especially from exhibitors in the south.

Notable among the exhibitors was Bob Maxwell who produced immaculate pots of twelve different kinds of fritillaries which helped him to win both of the six-pan classes as well as the Walker of Portlethen Trophy for the most points in Section I. His frits included a lovely **Fritillaria affinis tristulis** *covered in dusky black flowers, a 10cm tall* **F. bithynica** *with pale yellow and green flowers over glaucous blue leaves and a huge pan of* **F. pontica** *with more than 50 blooms of pale green flowers with red stripes for which he received a Certificate of Merit. Another notable plant shown by him was* **Saxifraga pubescens *'Snowcap'***, *a 40cm cushion covered in pure white flowers.*

Closely behind Bob Maxwell in total points were Ian and Carole Bainbridge who showed a 25cm cushion of **Globularia bellidifolia** *covered in short-stemmed lilac-blue flowers which won them their first ever Forrest Medal. In contrast their enormous* **Arisaema sikkokianum**, *50cm tall with a brown-striped spathe and pure white spadix dominated the three-pan class. Other arisaemas on show were* **A. ringens** *like a coiled cobra and* **A. luteum tibeticum** *with attractive yellow spathes exhibited by Anne Chambers.*

Another enormous plant was a two-year old **Meconopsis punicea** *shown by Cyril Lafong with more than 50 huge scarlet drooping flowers like prayer flags. What a pity the plant will die after this wonderful display. At least it won a Certificate of Merit in its short life. Other plants from this expert grower to receive Certificates of Merit were* **Androsace himalaica** *with delightful pale pink flowers and* **Viola columnaris** *from Argentina, 20cm tall with stiff spiny leaves and pure white flowers. This entry won him the Esslemont Quaich for three pans rare or difficult.*

Nick Boss always impresses with his presentation and his educational notes about the plants so it was fitting that he received a Certificate of Merit for his overall presentation rather than an individual plant although he also received a Certificate of Merit for a pan of **Saxifraga nivalis** *growing in rock with flowering plants accompanied by seedlings. His plant of* **Claytonia**

megarhiza *from Colorado also impressed with small white flowers nestling in side dark green leaves.*

Ian and Margaret Young showed many choice plants including a tight dark grey cushion of **Raoulia eximia** *from Mount Hutt in New Zealand growing on dark grey rock. Interestingly the Youngs water this plant copiously from above, contrary to much perceived advice about growing these cushions. They also showed* **Fritillaria purdyii**, *a 20cm tall frit with white flowers flecked with chocolate and the most amazing gloss to the petals and they received a Certificate of Merit for a well grown plant of the difficult to please Himalayan* **Eriophyton wallichii**.

Fred Hunt's plants had suffered from the heatwave but he still showed some immaculate plants including **Fritillaria guiccardii** *with red-brown bells and* **F. liliacea**, *slender with white-green flowers. His* **Daphne *'Bramdean'*** *(***D. collina** *x* **D. cneorum pygmaea***) was a delightfully scented 20cm tall bush reminiscent of a dwarf* **D. retusa**.

Prizes for lewisias are always a matter of personal choice among the judges because all the plants are of outstanding quality. Among a range of plants of delightful shades, unusual lewisias won the day for Jean Wyllie with **L. leana** *with delicate purple flowers while Ian Christie won the two-pan lewisia class with two* **L. columbiana** *plants with large deeply coloured red flowers.*

In Section II, Bob Mackie won the Aberdeen Quaich for the best plant with an elegant **Androsace geraniifolia** *with neat umbels of pink and white flowers and also won most points in the Section. His outstanding plants included a neat* **Clematis marmoraria** *hybrid in marked contrast to the huge but still attractive* **C.** *x* **cartmannii *'Joe'*** *of June and Bill Mackie. Ron Arthur won the Brian Bull Trophy for the two-pan class with* **Erigeron *'Canary Bird'*** *and* **Androsace hirtella**. *David Aitken won the Special Prize for a first-time exhibitor with a large spreading plant of* **Helichrysum *'County Park Silver'*** *with whipcord silver-grey leaves. In the Junior section, Mark Todd impressed with four First Prizes while Peter Thomson's* **Aquilegia alpina** *was judged the best plant in the Section. Heather Salzen received a Silver Medal for a display of water colour paintings while Ian and Margaret Young mounted a fascinating display of clematis hybrids which they had made between* **C. paniculata, C. petriei** *and* **C. marmoraria**. ***Alastair McKelvie.***

Highland Show, Inverness 6th–8th October 2001

Had the Cyclamen Society come to at the SRGC Discussion Weekend in Inverness? Well, not officially, but the fine display of flowers and foliage from this valuable genus certainly provided the backbone of the entries for

this show in early October. It might also have been termed the Sandy Leven Show, since that stalwart of the Show circuit had brought a formidable range of cyclamen from Dunblane, including the Forrest Medal Winner, a large and very handsome ***Cyclamen africanum***. This had a good ratio of big flowers to healthy leaves and happily claimed Sandy's tenth Forrest Medal. One of his other entries, a ***Cyclamen graecum***, had the best leaves of all, well-marked and exceptionally velvety, this, I think, will be almost unbeatable in full flower in a couple of years time.... watch this space ! The redoubtable Mr Leven had also brought some other plants, he also had some large pans of gentians, which won their class, but were not perhaps of the calibre of the cyclamen. John Lupton had a pretty ***Gentiana* 'Shot Silk'** , and a fab, fruiting, ***Fuchsia procumbens*** that looked good enough to eat, luckily the food at the hotel was so good the plant was in little danger.

There were not too many bulbs on show; Roma Fiddes had a pot of ***Galanthus regina-olgae*** of delicate charm and Jean Wyllie a large pan of ***Sternbergia lutea***, with good big flowers and lots of leaves, as tends to be its habit. There were few pots of Crocus and some ***Crocus banaticus*** seemed to be showing ill-effects of changeable weather. Cyclamen came to the fore in lots of classes, six interesting ***hederifolium*** forms (without flowers) won the Jubilee A for Sandy and another ***Cyclamen hederifolium*** with silver leaves, dark-splashed and with frilled edges, the one pan foliage class for Roma. Roma took the three pan foliage class with ***Ophiopogon planiscapus nigrescens***, ***O. japuran vittatus*** and a cyclamen! Mrs Fiddes also had plants on show of ***Campanula cashmeriana***, and a dainty hybrid Lewisia, which gave a pleasant memory of Summer days. But this is an October show and Helen Greenwood's ***Shortia illicifolia*** was in rich seasonal colour to win the autumn foliage class.

Although entries overall were rather scarce, Section II was not too thin. Joan Whelans had another hint of summer with her ***Campanula cashmeriana*** and Audrey Leach was showing her fondness for ***Saxifraga fortunei***, with two cultivars, **'Blackberry and Apple Pie'** and **'Crystal Pink'**. Such nice names for these dainty-flowered plants with biggish leaves, in contrast to their formal description as "Autumn-flowered, Irregular-petalled saxifrages" which may be accurate, but doesn't exactly roll off the tongue.

Lorna Milnes, the busy registration Secretary (who had somehow found time to make everyone a buttonhole of mixed heather sprays – a lovely memento, likely to be longer-lasting than the whisky miniatures!) kept up the cyclamen presence in this section with a well-flowered ***Cyclamen hederifolium album*** which had heavily marked leaves with overlapping "heart-lobes". I'm sure there's a botanical term for this attractive phenomenon, though I am too dim to remember it – I expect you know what I mean, nonetheless. Another local member, Olive Bryers, supported the show and

was rewarded with the JL Mowat Trophy for the best conifer and the East Lothian Cup for the best plant in Section II, for her chunky pine, which most of us still call ***Pinus leucodermis* 'Schmidtii'**, though in fact this is more properly ***P. heldreichii* 'Schmidtii'**. Olive has adopted the Youngs' method of engraved strips of aluminium (ex. venetian blinds) for her plant labels, though hers are somewhat neater than the originals!

Only one brave soul entered the Holiday Photographic Competition, but Christine Thomson's entry would have been hard to beat in any event. The perfect colours and compositon of her stunning panorama of Mt. McKinley, in the Denali National Park, Alaska made a super centrepiece to her display.

Though not strictly part of the Show, I would like to make mention of the photo displays of various gardens/projects by some local members which gave added interest.

Yes, even from only 85 delegates, the show might have been fuller, but standard and colour was there aplenty. And yes, a grand time was had by all, even Show Secretary Ronnie Loveland, who had trouble with his decimal placings for the prize money !! ***Maggi Young.***

Northumberland Show - 13th October 2001

What a gamble Autumn Shows are! A cool and uncertain summer had provided less than ideal conditions for the ripening of autumn bulbs in 2001 (and however controversial the need for bulbs to be totally dried out, it is certainly true tat many flower more reliably after a hot and sunny summer). Then, just as cool autumn nights began to trigger flowering, we were hit by ten days of hot and humid southerlies. This seemed to cause many bulbs to flower intermittently, so that good potfuls of crocus displayed single flowers over a month or more.

Difficult conditions, but nothing seems to hamper Bob and Rannveig Wallis whose magnificent car-full once again took almost all the senior awards, including their first Forrest Medal for a **Cyclamen graecum** *grown from seed 31 years ago. As this was a "Scottish Rules" Show, it was particularly unfortunate that they faced virtually no competition from north of the border. A number of Scottish 'dignitaries', who we know possess magnificent collections of bulbs, attended, but plantless. Were they afraid of being trounced by the 'Welsh Wizards'? This Joint Show will depend on active Scottish participation for its future survival. You have been warned!*

Bob and Rannveig allowed us to compare the two autumn snowdrops. As seen, the southern Turkish **Galanthus peshmenii** *had flowered before the leaves appeared ('hysterantherous') and the inner perianth bore narrow pale green inverted "U"s. The applanate foliage of* **G. reginae-olgae** *from further west had extended to 1 cm, and the green mark on the inner segments reached to half-way.*

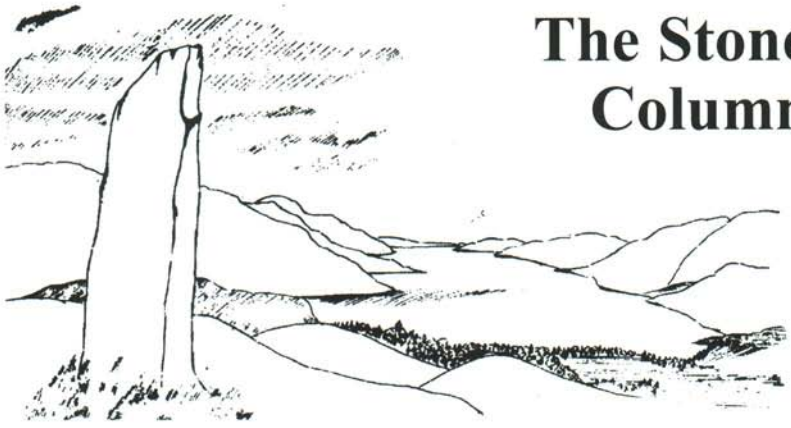
The same exhibitors presented many other interesting bulbs. **Sternbergia pulchella** *had been thought extinct before it was collected by Manfred Koenen in northern Syria. It is closely related to the more familiar* **S. colchiciflora,** *but the leaves are already well-developed at flowering ('synantherous').* **Empodium nemaquensis** *is a Harry Hay introduction from the South African Drakensberg with large Gagea-like yellow flowers.* **Crocus oreocreticus** *is a Cretan endemic. This 'saffron' crocus has narrow purple-striped petals which readily reflex to reveal large yellow claw-shaped anthers and violently red stigma branches which almost seem to be vomited out of the flower. Not for the faint-hearted, but a striking exhibit.*

One of the smallest and most charming exhibits was provided by the former Show Secretary, Alan Newton. **Petrocosmea *"sp. 3"*** *(now designated aff.* **forrestii***) was obtained from Yunnan through the internet and proved to have minute furry pale green cuneate foliage and tiny flowers of the palest pink to match. It has yet to be subjected to frost. From further west, the Tian Shan had yielded* **Pyrethrum leontopodium.** *Both Ron McBeath and Brian Burrows raised seedlings of this very dramatic foliage plant with snowy two-pinnate leaves (it is said that the summer-flowering white daisies have furry backs) and several exhibitors staged it on this occasion.*

Autumn Shows showcase foliage plants, and one of the best variegated woodlanders was shown as **Disporum sessile *'Variegatum'*** *by Harry Roberts. This white periclinal chloroplast mutant looks a little like a dwarf variegated bamboo.*

As in past years, we were treated to two magnificent Gold Medal winning exhibits in which gentians played the leading role.

The Aberconwy Nursery (Keith Lever) was at least as good as we have come to expect. For the second year running Ian McNaugbton displayed some of the 300 gentian seedlings he has raised in recent years. This breeding programme resulted from crosses between **G.** *x* **hexafarreri** *and* **G.** *x* **vorna**, *backcrossed to* **G. veitchiorum** *and so involving four species but not, unusually,* **G. sino-ornata.** *This may explain the remarkably compact and tufted habit of these exceptionally desirable seedlings, the uniformly midnight-blue hue of many clearly reflecting the dominant personality of* **G. veitchiorum.** *Many have a clean white throat. Sadly, it appears than Ian does not plan to release these superb plants onto the British market. Perhaps he can be persuaded otherwise?* **John Richards.**



The Stone Column

THE STONE COLUMN NO. 39

THE HISTORY IS IN THE MAKING

In writing this column, I have on occasion drawn comparisons between our progress at Askival and evolution in the broad sense. One should not however try to stretch the analogy too far, for there are major differences. Even the most catastrophic extinction known, that at the end of the Permian, only resulted in the demise of around 80% of the marine invertebrates and, on land, a roughly similar proportion of reptiles. It was by no means uniform, some regions and habitats were hit far harder than others. This left a large number of species to reradiate, and occupy the various vacant ecological niches. Evolution by no means restarted from scratch. As usual the plants were tougher; there was a drastic decline in the number of treelike club mosses, the lycopsids, and a corresponding rise in conifer species, but this is believed to have happened gradually as the earth's climate became warmer and drier.

Gardens are quite different. One can bring in a bulldozer, flatten the whole place and start with a clean sheet. Going to extremes perhaps, but some of those ridiculous TV makeovers are almost there. The cynic in me suggests that the owners involved could well be more interested in enhancing the resale value of their property, than they are in horticulture. Be that as it may, the real enjoyment in gardening comes from the interplay of plot and cultivator, the two linked in a feedback loop.

The true gardener observes the pattern of light and shade for example, or where the soil dries out and where it remains moist, and plans accordingly. The garden responds, the gardener notes the changes and makes any necessary adjustments; and so it goes on through the seasons, taking many years to create a truly interesting garden. The gardener may decide at some point to conduct their own Permian extinction, drastically altering parts of the garden; but if they are wise they will always retain their good plants and features. These will then form the basis of the subsequent evolution of the garden just as surviving species do in nature. It is with these thoughts in mind that I come to a more topical subject, the changes we have made to what we call the Middle bed.

Readers may remember that our garden is on many levels: the ground falls away down a bank behind the house, then rises again beyond the hollow of the lower garden, reaching a maximum height above the house roof at the plateau, before a more gradual descent to the back fence. The lower garden is divided into roughly two thirds and one third by a dry stone dyke, which had once been the boundary between the nun's vegetable garden and orchard, and the Convent Wood. In the early days the whole of the flat lower area remained as grass while the surrounding banks were clothed in shrub borders, to avoid having to mow steep slopes. It was in creating these shrubberies that I developed my terracing techniques, of which more later. Surprise and concealment are said to be fundamental principles of garden design, one should not be able to take in the whole at a glance. Thus we decided to plant a copse in the middle of the lower garden in the shape of a solid omega with the dyke across its base. The grass would then be reduced to a C-shape around this future Middle bed. We started by planting a number of young trees in separate holes in the grass: three cherries and a *Magnolia sinensis* for flowers, a purple hazel, *Cornus mas* 'Aurea', and *Acer palmatum* 'Osakazuki' for foliage colours, and an amelanchier together with a dark crab for both. The prepared circles were gradually joined up to form a sort of herbaceous border with young trees protruding at intervals. One section departed from the norm; rather than dig over the whole area we considered that it might be more interesting to have a change of level. Thus the turves taken up while extending the cultivated area were stacked in the shape of a low thin triangle across the neck of the omega and allowed to rot down. With an edging of stonework, a surrounding access path, and the loam lightened by the addition of peat and grit the stack became the erythronium bed. This was the 1982 prototype of a number of

similar constructions around the garden; it's much easier to build on top of our stony soil than winkle a fork into it.

Some 15 years on it was becoming obvious that a revamp was necessary; the tree canopies were joining up, shading the whole area and many of the original herbaceous plants were no longer thriving and flowering. It was time to convert the area into a true woodland planting. In the intervening period we had made one major change, the replacement of the grass on the far side of the Middle bed from the house with the raised Snake bed in 1994–95 (see 'The Stone Column' for January 1996). A visit to the Gothenburg Botanic Garden with an SRGC party in 1995 clinched matters. Below the rock garden there were a series of low raised beds in a woodland setting planted with trilliums, erythroniums, and other suitable American species. With two similar raised sections already there, the Snake and the erythronium bed, this was the obvious solution for the Middle bed. As I said in the introductory paragraph, the first step is to rescue any plants one wishes to keep. The rodgersias for example were moved to an open moist position in the main border alongside the trough area, where they are flowering much more freely. That done we sprayed the areas to be remade with Roundup in June of 1999, and again the following year, a procedure much kinder to the tree roots than forking everything out. The annual bulb cropping generates the best part of 100 barrow loads of spent compost, and in the autumn of 2000 this was dumped on the cleared parts of the Middle bed which we wished to raise. We have two large compost heaps in the upper garden which we use alternately, emptying one each winter. After putting the rotted material through a coarse barrow sieve, home made from a sheet of diamond security mesh, it was added to the piles of old potting mix to enrich them. With the return of better weather in Spring of this year the construction could begin, surrounding the piles with low stone walls while at the same time thoroughly mixing and levelling them out.

There is always much to learn by visiting other gardens. In the late David Shackleton's walled garden outside Dublin I recall a raised bed on the shady side of a stone building planted mainly with his cassiope collection. These had not only spread across the bed but were climbing up the wall behind. Now we had the opportunity to emulate this on the north side of the dry stone dike separating the Middle bed from the orchard frame yard, where on the south side of the dyke, lies the winter covered scree, in a completely different micro-climate. As realised, the bed is almost 1m wide and runs the full 15m length of the wall. It is

edged by a single row of large split boulders, flat sides out, and was thus kept fairly low at around 30 cm. Cassiopes and shortias do not require a deeper root run, and raising the bed further would serve only to bring it up out of the shadow of the dyke. As well as the aforementioned genera, this bed contains a few of the dwarfest rhododendrons, such as *Rhododendron lowndesii*, some choice ferns, and a large clump of *Glaucidium palmatum* 'Album' placed where it adjoins the lily bed at the end of the dyke to act as a divider. We had laid out a perforated hoe along the path next to this bed, but such was the summer that I don't think our garden minders had cause to actually turn it on. The whole of our cassiope collection is now here, and looks much better already. They do not like pots for any length of time becoming rather straggly and tending to go brown at the base. It took much longer to clean them up than to plant, placing some deeper to cover any brown parts of the stems. Shortias are said to be cultivated in sun in Japan; we experimented with some in the Blue Ridge bed but they definitely didn't like the exposure here. In fact one of our best plants is a self sown one right under a *Rhododendron caucasicum* and difficult to see.

The space between the cassiope/shortia bed and the old erythronium bed was taken up by two island raised beds, their stone retaining walls 30–40 cm high serving also to edge the paths around them. One currently contains various meconopsis; the other, around the base of the large gean, a mixture of woodland plants. In scree or bulb beds, even herbaceous borders, stepping stones make for convenient weeding access, but in a woodland setting such as the old Middle bed are often covered by leaf fall. A gravel path with a definite edge is easier to keep clear, especially by machine. The flat stepping stones weren't wasted of course; I took them up and recycled them to Mt. Sherman (see below). One other raised bed was started on the other side of the erythronium bed, but cannot be completed yet, as we wish to first remove the amelanchier completely. This does not colour properly in Autumn, and the bullfinches invariably eat the flower buds, so it has to go. This will create a well of light in the centre of the Middle bed, one we can enhance this winter by lifting the crowns of the remaining trees by removing lower branches. Such work is best done while plants underneath are fully dormant to minimise damage from any falling branches Poll fails to catch.

As regards the rest of the garden, there is little to record. A third terrace has been added to Mt. Sherman, the main scree in the upper garden, almost an exact repeat of the one below it which I described a year ago. As the boundary paths curve, it is marginally longer at 16 m,

and has completely changed the feel of the site as we are now past the half way point; two more terraces to go. Virtually all our once potted scree plants are now out in the garden including the whole of the European primula collection; and we are even up to date with the pricking out. The older I get the less interested I am in growing miffy rarities in pots. In order to make a real contribution to the garden scene a plant should look happy with its lot. The secret is in choosing where to put them. If you guess correctly then you will be surprised how many choice plants will indeed thrive without continuous attention.

THE WALLS OF JERICHO

Of all the gardening activities it is undoubtedly construction which I most enjoy. I am not an artist, but I imagine that is must be far more satisfying to paint a picture, than to stand and look at one. Many years ago one of the monks looking across the garden towards the then new terraces on the west slope of the plateau, remarked that they were like the walls of Jericho. I think I should have preferred the Hanging Gardens of Babylon, as the walls of Jericho fell down! It is an appropriate epithet in one sense, however, as Jericho is one of the oldest known cities, and terracing is an extremely ancient practice. Excellent accounts coming from rather different directions are to be found in the sources listed at the end. I have frequently explained in the past why we have felt it necessary to terrace much of the garden at Askival, perhaps it is time to say a few words on how it is done.

There are many books on the construction of raised beds including one fairly recently by the late Duncan Lowe, and the topic is returned to by him in an article in the AGS *Bulletin* for September 1997. Duncan was a practical gardener, and both are excellent as far as they go; but I have to disagree with his unqualified statement that "a single wall of random stone has to be strengthened with mortar otherwise it will be unstable". I think it is really a question of what kind of stone one is using. If the wall is built of book-sized pieces of stratified stone, with approximately flat surfaces, then it is perfectly possible, and indeed preferable, that they be mortared together. However, the stones we use are more like footballs than books or bricks; if placed on top of one another then the voids between are usually large irregular triangles, difficult and costly to fill with mortar. Our stones are probably considerably larger and heavier that those normally used in hard landscaping, weighing from 10 to 50 kg, according to our bathroom scales, but I prefer those in the range 20 to 30 kg. Even larger stones of 100 kg or more have been used for the

foundation courses of some of our major walls. These stones are not picked up of course but are rolled up a plank into Grisewald, our Land Rover, and out at the other end. To get a large stone into a stout barrow, place the latter on its side, roll the stone in, then put one foot against the wheel, grip the upper rim, and use your own weight as leverage to get the barrow upright. As our stony soil provides a firm base on which to build dry walls, we have never needed to place them on a concrete foundation; but if I were building on clay, which is subject to shrinkage as it dries, and using smaller stones then I should certainly do so. In all our raised frames, the base course of building blocks is set in concrete, as are kerbs.

If one has suitable stone then there are positive reasons for building dry. The wall does not rely on the adhesion of mortar for its stability, it is unaffected by frost or settlement cracking, and plants can sucker through the joints or seed into them. In a way our terrace walls are more like linear rock gardens than formal raised beds. The basic method we use has not changed in 30 years; first catch your hare. It is well to lay in a large stock of stone before one starts, then there are plenty of choices for a given position. Most beginners will underestimate the quantity required for a given job; even a relatively simple one like edging the orchard bulb bed used 4 tonnes of stones. I start the actual construction by digging or scraping a shallow trench about 10 cm deep and setting the base course in it. Each stone is tested to see if it rocks in any direction; if it does, I re-excavate underneath until I am satisfied. There is always a temptation to make this stage easier by putting the flat side of the rock down; but this could well be laying in trouble for the future, it may be difficult to avoid rocking in the second course (fig. 1). If a split boulder is set with the flat side out (fig. 2) then the highest point is near the face, and the stone above sits more comfortably. I cannot tell you how to select a stone for a given position, it is a matter of eye and practice. Even after all this time, I may try 4 or 5 stones before I am satisfied with one which doesn't move at all, once the soil behind is well rammed. I don't worry if the face of the wall is a little uneven or knobbly, it adds to the informality. It should be possible not only to walk, as Duncan says, on the completed wall, but also to stand on every set stone at all stages without it moving. The rest of the points are perhaps covered more clearly in the figures. The batter is very important; a wall I built holding up the bank behind the back track is 2 m high and slopes back about 0.5 m. The weight leaning into the bank holds it in place, it hasn't moved in 15 years.

We started making the garden at Askival the way we do simply because the materials were readily available nearby, and above all, free.

FIGURE 1

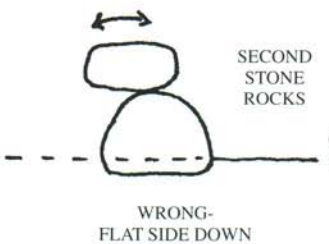


FIGURE 2

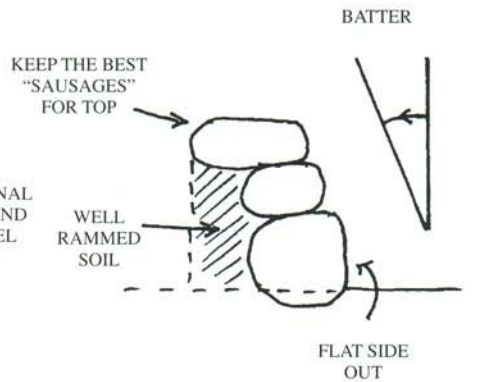


FIGURE 3

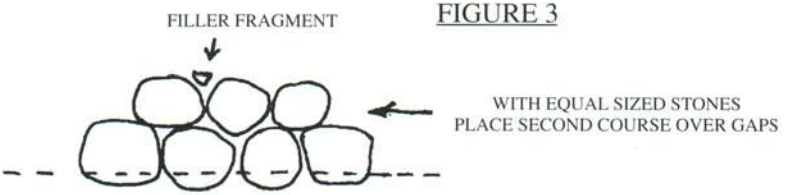
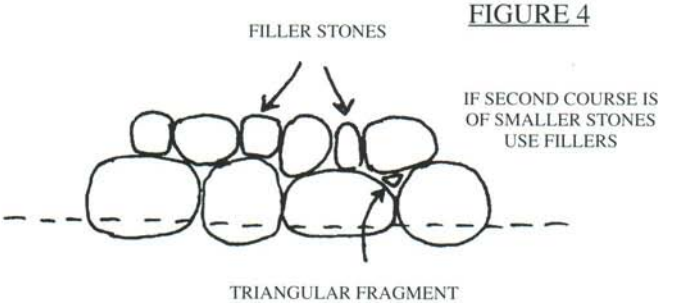


FIGURE 4



We have no regrets at all; by using local stones the garden sits comfortably in its context. Sleepers, red bricks, or even imported sandstone, would be totally inappropriate. Although much of my early work has disappeared under rampant vegetation, enough still stands out to make a unifying theme throughout the garden.

SOURCES

Hillel, Daniel, *Out of the Earth: Civilisation and the life of the Soil*, Aurum Press, 1992.

Johnson, Douglas L. and Lewis, Lawrence A, *Land Degradation: Creation and Destruction*, Blackwell, 1995.

Lowe, Duncan, *Growing Alpines in Raised beds, Troughs and Tufa,* Batsford 1991.

Discussion Weekend 2002 Irvine, Ayrshire

Friday 4th October to Sunday 6th October 2002 Thistle Hotel, Irvine, Ayrshire

For the first time for almost 30 years, the Discussion Weekend returns to Ayrshire in 2002. In 1973, the programme did not start until lunchtime on the Saturday although there was a talk and film on Friday evening for early arrivals. One of the talks was 'Irises – for Everyone' by J.C.Archibald Esq., and we are delighted to welcome Jim back in 2002. Hotel bookings were made directly to the Seamill Hydro (now too small for a Discussion Weekend as the hotels used for overflow accommodation have closed). Costs have gone up but that's inflation for you! The accommodation cost from Saturday lunch to Sunday tea was £6.30 in a room with private bath, television and telephone or £5.10 in a standard room. The conference fee was an extra £1.50. On Saturday evening, delegates could either go to the Dinner Dance, or watch a Film Show after their dinner. The Show was held on Saturday afternoon and comprised 6 classes in two sections corresponding to the present Sections I and II. The William Buchanan Medal was awarded for the best plant in show.

Attractions within Irvine itself are the Scottish Maritime Museum, Eglinton Country Park, the Big Idea, the world's first inventor centre, the Glasgow Vennel, in one of the houses of which Robert Burns was apprenticed as a flax dresser, and a small Burns Museum. Contact Ayrshire and Arran Tourist Board (www.ayrshire-arran.com or 01292-678100) for more details. Glasgow (30 miles) is an excellent shopping centre with a range of world-class museums and art galleries.

The Thistle Hotel is on the outskirts of the town on the A78 near the junction with the A71. To quote the brochure: "Enter a world of fantasy on the West Coast of Scotland when you book into a hotel with more than just a hint of Eastern Promise. The Moorish splendour of the Thistle Inn will take you back to the Tangiers of the 1930s, with all the convenience, comfort and warm welcome of a modern hotel. There is a spectacular indoor lagoon kept at a constant tropical temperature with waterfalls, palm festooned walkways and a myriad of plants, inviting you to bathe in the warm waters and relax with a long cool drink beside the pool before sampling the delights of cuisine served lagoonside."

There is also a 9-hole golf course and Irvine is very conveniently situated for all the courses of the Ayrshire coast.

Access is easy by road, rail, air or sea.

By Road
From the South, follow M74 to Junction 8 and take A71 to Irvine.
From the North and East, take M8/M77/A77 through Glasgow to Kilmarnock, then follow A71, or take M73/M74 to Junction 8, then as above.
By Rail
Irvine is on the line from Glasgow Central to Ayr and Stranraer.
By Air
Ryanair (www.ryanair.com) has low-cost flights to Glasgow Prestwick airport (8 miles) from London (Stansted), Dublin, Brussels (Charleroi), Paris (Beauvais) and Frankfurt (Hahn). Glasgow Airport is 26 miles away.
By Sea
Seacat ferries run to Troon (5 miles) from Belfast.

Accommodation is in double and twin rooms. There is a single room supplement. It would be appreciated if single members who wish to share a room could arrange this between themselves. **Please remember to give details of dietary or other special requirements.**

As usual, there will be a PLANT SALE, but a RAFFLE will replace the Plant Auction. Contributions to both will be much appreciated. We are also hoping for a large entry for the SHOW and the HOLIDAY PHOTOGRAPHIC COMPETITION (details in the Handbook). If you have lost your Handbook, ask for a copy of the Show Schedule when you book.

Bookings should be made by **6 September 2002**. **Please use the booking form enclosed with the Secretary's Pages.** There is a **discount for early booking**. Applications for bookings together with the appropriate remittance (cheques payable to 'SRGC Conference') should be sent to **SRGC Conference, Gareth Williams, 28 Carrick Road, AYR KA7 2RB** (Tel: 01292-263132). Non-UK visitors should ask about alternative methods of payment.

PROGRAMME

FRIDAY 4 OCTOBER

16.00 - 19.00	Registration
16.00 - 17.30	Show Hall open for receiving entries
18.15	Dinner
19.45	**President's welcome address – Ian Young**
20.00	**BULB GROUP LECTURE:** **New Ways with Bulbs – David Mowle**
21.00	Break
21.30	**Small Bulb Exchange and Bulb Sale** Donors to the Bulb Exchange will have priority in the first 10 minutes.

SATURDAY 5 OCTOBER

08.00 - 09.00	Show Hall open for receiving entries and Plant Sales
08.30 - 10.00	Registration
10.00	**Lecture: Hepaticas – John Massey**
12.00 - 13.45	Show and Plant Sales open
14.00	**HAROLD ESSELMONT LECTURE:** **Kirghizstan and Kazakhstan:** **the Switzerland of Central Asia** **– Vojtech Holŭbec**
15.30	**Lecture: Hellebores – John Massey**
19.30	Conference Dinner **An Entertainment from Adam Train** Raffle Draw

SUNDAY 6 OCTOBER

08.30 - 09.30	Registration
09.30	**WILLIAM BUCHANAN LECTURE:** **Dionysias – Michael Kammerlander**
11.00	**Lecture: Gone to Seed – Jim Archibald**
12.00 - 13.45	Show and Plant Sales open
13.45	Show closes. Plants may be removed
14.30	**JOHN DUFF LECTURE:** **Glenarn – A Garden in the Space Age** **– Michael Thornley**

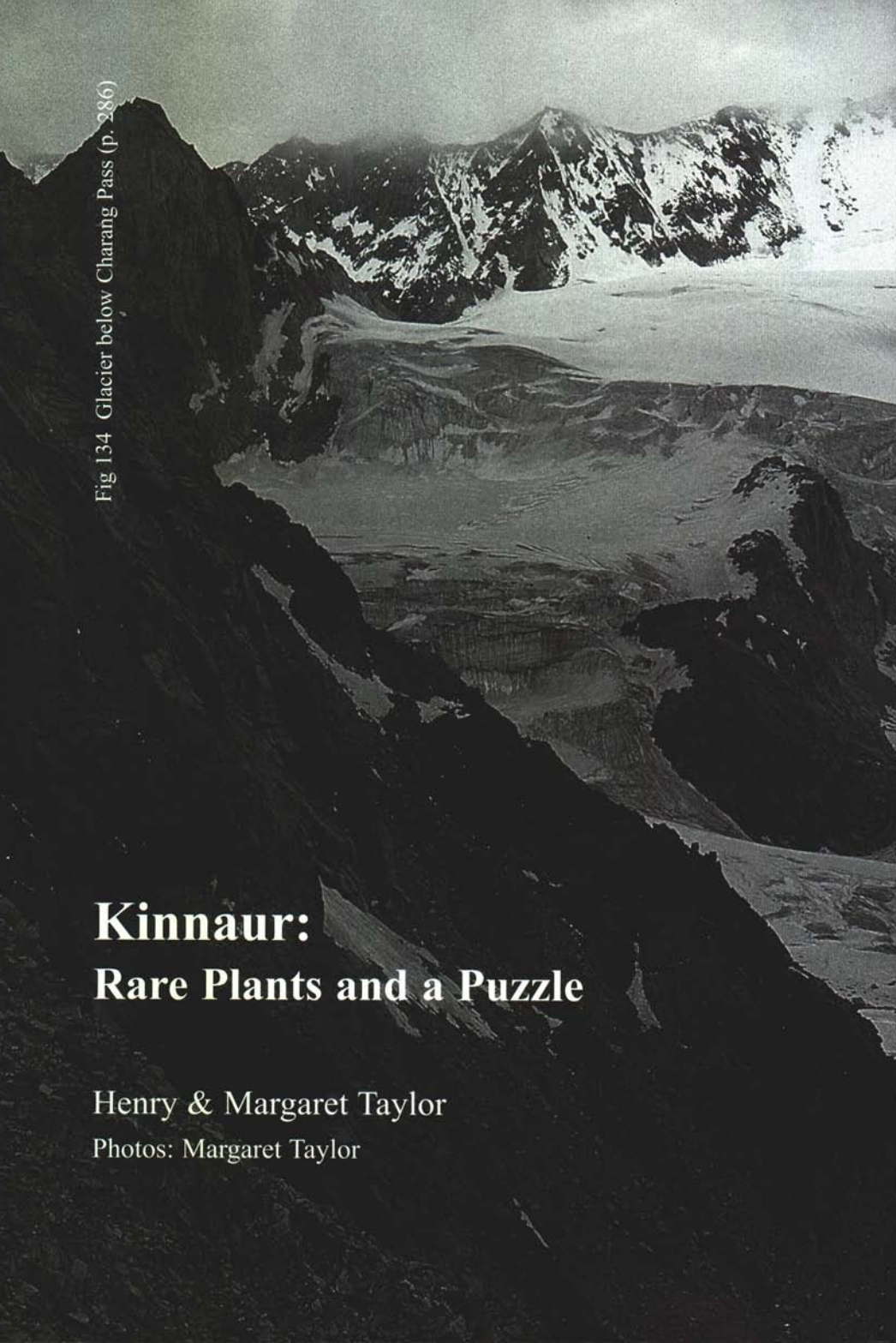


Fig 134 Glacier below Charang Pass (p. 286)

Kinnaur:
Rare Plants and a Puzzle

Henry & Margaret Taylor
Photos: Margaret Taylor

PILGRIMS GAIN MERIT by walking clockwise round Kinner Kailash, the mountain home of the god Shiva, and this worked for us on our trek in late June and early July 2000.

When Prem met the five of us off the train in Chandigarh he did a bit of magic by whisking us back in time to the former Secretary's Lodge in Shimla (modern spelling since Indian independence) now converted to a small hotel. The splendid museum-like rooms had paintings and books dating from the time of the British Raj. For half a day, we enjoyed the life of the Raj taking afternoon tea of tiny pancakes and honey served on heavy silver dishes. Carola rather fancied staying instead of going trekking. It was here that the Simla Manifesto (old spelling used throughout British rule in India) was signed when the British declared

war on Afghanistan and we read the history of our disastrous withdrawal from Kabul in 1842 when only one man, Dr John Bryden, out of an army of 16,000 got back to Jallalabad and India. Next day we headed north-east towards the Tibetan border. Fortunately, Prem had arranged permits to allow us into this military zone.

"The Valley of the Shadow of Death" (in the old accounts)

Even now, the Sutlej Gorge can pose problems. Imagine a ferocious torrent carving through the Himalaya with the only road scratched along a rock ledge. Remember that these mountains are recently formed so the rock is very unstable and any shower of rain can bring down a landslide to dump the road farther down into the river. When we turned a corner to find that our road had indeed gone, Prem climbed over the rubble and negotiated with a lorry driver on the far side so that we could carry our trekking gear across and continue onwards. This swapping, to a different vehicle plus driver when you meet an obstruction, is standard practice in the mountains. Our nerve-wracking hurtle around ledges in the dusty back of the lorry eventually ended at the village of Thangi at 2700m.

Tea on the Track

We planned to trek towards the Tibetan border then turn south over the Charang Pass crossing the main Himalayan range into the top end of the Baspa valley. While stopping to take a photo of a clump of cream *Lilium polyphyllum* growing at the pathside well above the treeline, we were overtaken by a burra sahib police chief whose horse was being led along the precipitous track by a minion. Our innerline permits were examined in detail and the satisfied policemen went ahead. Following on fifteen minutes later, we rounded a corner to find that a cooking stove had been set up in a ruined house. The big chief invited us in to take tea in dainty bone china cups with pink roses on them. When we mentioned that we were unable to get a detailed map of the area, the chief helpfully allowed us to study his map with *Top Secret* written across it! Sadly, we noticed that the two Indian guides walking with us had been left outside with no hospitality as they were presumably considered lower caste than us Europeans. The following day we were halted at the last military post before the Tibetan border where the officer in charge said that though these permits allow us to be in the area they do not give permission to climb to the right over the Charang Pass. When we explained that our good friend the chief of police had sanctioned our trek; the army man fortunately relented allowing us to continue to Charang village at 3450 m.

We had spent several days on a narrow track sometimes on river shingle, sometimes on high ledges like flies on a wall. At one point the

path was built out from the cliff on branches supported by we knew not what. However, a boy in front of us with three donkeys crossed safely! Here we were told by our Indian friends that they would enlist the help of a local guide to lead us over the pass.

Rain-shadow Plants

We had been walking on the north side of the high Himalaya with the Kinner Kailash massif (6470 m) blocking the monsoon rain blowing from the south.

Why were we taking this difficult route to reach the Baspa valley when two years ago we had simply motored up the valley? Well, this was all Margaret's fault as she had read about a clockwise pilgrimage route around Shiva's mountain that had probably not yet been botanised. So far, in addition to *Lilium polyphyllum* we had seen clouds of pink *Rosa webbiana*, a dwarf pale blue *Aquilegia fragrans*, a strange yellow flowered *Daphne mucronata*, *Lonicera spinosa* and *Geranium regelii*, all typical rain-shadow plants growing along the riverside. Could our track get any worse? It did, but the plants improved.

In Ashok's Footsteps

With our local guide, born and bred at high altitude, we now turned south climbing steeply in the heat over meadows grazed by yak to a 4300 m ridge carpeted with pink *Androsace muscoidea longiscapa* (*A. robusta purpurea* according to some botanists). Then followed the 600 m drop down to the Lalanti River, only made bearable by occasional patches of special plants beside our narrow ledge. *Paraquilegia anemonoides* is exciting even when your knees are shaking and here, as we have noted in other rain-shadow regions, the flowers were white or pale blues to pink. However, the real excitement was the discovery of several colonies of *Primula obtusifolia* (fig. 135) growing on damp shady ledges. This member of the Crystallophlomis (Nivalid) section has broad rugose leaves covered with white farina on both surfaces and heads of deep pink white-eyed flowers on 8–15 cm stems. An old seedpod spotted while taking a photo, yielded a few seeds. From these, we hope to reintroduce it to Scotland.

Having scrambled down to the river, our strength and spirits flagging, Ashok said, "Not far now, only two hours up valley to camp". Fortunately new plants perked us up and we skipped around the shingle, cameras at the ready, finding ever better plants of *Waldheimia tomentosa* (fig. 136) with large pink flowers over snow-white woolly leaves. A few flowers, which had just gone over, were collected and these yielded seed sown when we got home. The resulting plants have proved disappointing

here at sea level with good pink flowers but borne on long straggly stems with greenish grey leaves.

A Pick-me-up

Our weary band reached camp after 9½ hours of hard going. Margaret and Carola were given a pick-a-back over the river. An injustice, as the rest of us had to take our boots off and stagger through the icy water. And what did we find on the riverbank?

A dwarf blue corydalis that we could not identify until pressed specimens were sent to Gothenburg. *Corydalis nana* (fig. 137) nestled camouflaged among the grey river shingle. It was only 6 cm tall with fleshy divided grey leaves and grey-blue flowers with purple veins. The air around our camp was pervaded by the scent of almond-oil from the carpet of *Androsace muscoidea longiscapa*.

We were not the only exhausted members of the group; our porters carrying food and tents for the trek were also worn out, and three unaccustomed to high altitude were treated for headaches by George. Ashok though remained lively "I am feeling very hungry, no tired"!

Base Camp

Thankfully on the next day, we had a more leisurely walk to the 4700 m final chilly camp beside a glacier below the Charang Pass (fig. 134 p.282/3). The silver carpet in the mess tent consisted of small just emerging *Waldheimia tomentosa*. Tiny cushions of a pale blue crucifer, *Pegaeophyton scapiflorum* hid among the boulders at a streamside, sharing the damp ground with *Primula minutissima* and *P. macrophylla moorcroftiana*. The scenery was superb with snow-capped peaks in all directions and an immense glacier at the head of our valley. The sight of the near vertical, snow-covered pass was not quite so attractive. That night Ashok treated us to some local Kinnauri songs, one happy, one sad, these traditional mountain songs are usually mournful.

The ascent of the 5266 m pass (a 17280 ft pass on a 21230 ft mountain) was gasping heart-thumping head-aching torture up steep scree and snow on top of ice. For every two steps up we slid back one, only two of us making it under our own steam, the other three had to be hauled up by our guides. We only lingered briefly at the prayer flags on the cold windy summit, to photo a sparsely-flowered cushion of *Saxifraga pulvinaria*, as we could see the 1800 m drop down jumbled boulders to Chitkul village in the Baspa valley.

There we were scheduled to meet a vehicle to take us to our next campsite at Sangla. We had a rest day here for shopping and the diversion of the Narayan (gold-plated god) of Kamru being carried past our tents on a palanquin with the god's band of trumpets and drums

Fig 135 *Primula obtusifolia* (p. 285)

Fig 136 *Waldheimia tomentosa* (p. 285)

Fig 137 *Corydalis nana* (p. 286)

blasting away. Peter, tape-recorder wallah, swore there was the hint of a tune hidden within the racket. After this short rest, we had a further week of trekking south into the wetter Rupin and Nalgan Passes in the Baspa region of Kinnaur, but a month earlier in the season than on our previous visit.

We Score Two out of Three

One of the objectives of our Baspa exploration was to hunt for small lilies and in '98, we had only found *Lilium nanum* in seed.

This time on our way uphill Margaret and I made a detour to explore a side valley where we had previously seen a bullfight. A thicket of *Rhododendron campanulatum* looked a promising place to start searching.

Imagine the thrill of finding our first deep pink *Lilium oxypetalum insigne* growing in the shade in rich leaf-mould (fig. 138). Later in the day when our whole group combed the valley, we found more on the open hillside growing amid lots of flowering *Lilium nanum* in a ratio of approximately one *L. oxypetalum insigne* to two *L. nanum*. This was at about 3700 m. Picked specimens ready to be pressed were photographed and these show *L. nanum* to be about 1/3 the size of *L. insigne*. The leaf arrangement is similar but flower colour more lilac in *L. nanum*.

A friendly Gaddi (shepherd), fascinated by seeing Peter and I counting lilies, invited us into the two by two metre room in his stone igloo. There was dried grass and a rug on the floor. Peter told our friend that it was more comfortable than our tents. Then the two old codgers had a lengthy chat, discussing goats? Though they could not understand a word of the other's language they got on very well.

A Puzzle?

In cultivation in Scotland where these dwarf lilies grow well, the relationship of *insigne* (Latin for conspicuous) has been questioned as the plant's appearance is closer to *L. nanum* than the yellow flowered *L. oxypetalum*. Did Robert Sealy the botanist who named it from a plant growing in Branklyn garden get it wrong? We continued to find mixed populations of *nanum* and *insigne* up to 4000 m but above this altitude only *nanum*. We speculated, is the bigger *insigne* a *nanum* with a recessive gene for gigantism, a polyploid *nanum*, or is the smaller *nanum* a virus infected version of the large *insigne*?

From our herbarium specimens, a friend took electron microscope photos of pollen and pollen from a garden plant of the yellow *Lilium oxpetalum*. The pollen grains of *oxypetalum* and *insigne* are of similar size whereas *nanum* pollen is much smaller, but to our inexpert eyes, the

relationship is still inconclusive. Despite careful searching, we failed to find any yellow *L. oxypetalum* in the wild. What we were surprised to find at about 4700 m were two stands of a 15 cm fritillaria. Unfortunately the flowers had gone past their best but some still had yellow petals with pink chequering. On good authority, this is a high altitude form of *Fritillaria roylei*. Previously, we have only seen this species at lower altitude as a much taller plant with green flowers, so perhaps we should call this small yellow one 'Nalgan Dwarf'.

Two Contrasting Gentians

On steep turf banks near the Rupin divide and part way up the Nalgan Pass to 4500m, there are large colonies of *Gentiana stipitata* (fig. 139). This normally flowers in late summer, but we did find one rather poor freak flower open. A couple of small seedlings flowered here in Invergowrie in late August. The dumpy blooms are pale lilac or white with internal green stripes on short stems radiating from a central leaf rosette. As this plant grows on well-drained cliff ledges and slopes, it probably does not require too much water in cultivation.

Bir Singh, leading the way up the Nalgan spotted the straggly stoloniferous *Gentiana venusta*. (Our apologies, wrongly called *G. stipitata tizuensis* in our previous article, SRGC *Journal* 26 (3) pp. 206, 208). This grows at high altitude in wet areas on snowmelt banks or on the edge of small streams. It has lovely blue tubular flowers, which close the minute a wisp of mist comes over.

Primulaceae Plus Others

Rangalti camp (fig. 140) at the Rupin divide is a marvellous area for flowers. Our tents were pitched near a damp hollow full of spectacular *Cremanthodium arnicoides*. The large, 7 cm, golden daisies compensate for the big docken-like leaves. On drier slopes pink *Androsace muscoidea* in its dwarf form is everywhere. Here we also found an unusual form of *Geranium regelii* with large white flowers veined pink. Across the river in damp shallow caves, *Primula obtusifolia* was again plentiful with *Cortusa brotheri* in the darker recesses. In a damp flush in the open, there were a few *Primula stuartii* with gorgeous primrose petals shading to a darker yellow star in the centre.

Several days later after climbing over the 5030 m Nalgan Pass we found extensive colonies of *Primula stuartii* on the wet monsoon slope. In two sites it had crossed with intermingling dwarf lilac *P. macrophylla moorcroftiana* giving rise to a range of pale lilac hybrids that had a suffused yellow eye and smelt of honey like the *stuartii* parent. Possibly, these hybrids (fig. 141) could be easier to cultivate than the rather temperamental *P. macrophylla moorcroftiana*.

Fig 138 *Lilium oxypetalum insigne* (p. 289)

Fig 139 *Gentiana stipitata* (p. 290)

Fig 140 Rangalti campsite (p. 290)

While scrambling around the cold windy summit screes we again found the astonishing unplant-like *Saussurea simpsoniana* (fig. 142). The tiny purple daisies were just popping out of the top of 8 cm columns of fluffy pink candyfloss.

The blue meconopsis of the NW Himalaya is *Meconopsis aculeata*, which grows beside streams on the dry side and more plentifully on the monsoon side of the mountains. The best plant we have seen grew on a slightly precarious cliff ledge above the *Primula stuartii* hybrids but both camera and owner lived to show the results. Although *Meconopsis aculeata* is monocarpic, it is well worth cultivating and easy in Scotland.

Corydalis meifolia violacea was just in pink bud while another high altitude cream to deep yellow corydalis with maroon bracts was in full flower (we have not yet got a specific name). Tucked amongst boulders beside the corydalis were large cushions of white *Androsace delavayi*.

On both sides of the Nalgan pass a little below the summit there are brown slate cliffs hanging with good blue *Paraquilegia anemonoides*. One old plant 60cm across was covered in blooms but on a ledge just a little too high for a photo. Flowers were in a range of shades of blue and violet, with one particular plant having overlapping petals forming deep violet bowls with orange staminodes (fig. 143). What makes the stamens of many wild paraquilegias fuse together into groups to form staminodes? We have never seen this in cultivation.

It was interesting to note, on our trek back downhill six days after photographing the two dwarf lilies, that all their petals had fallen making it difficult to spot the plants. So hitting the peak of flowering is a matter of luck with the time varying from year to year.

Coincidence?

Back in our Gypsies, returning along "The Valley of the Shadow of Death" we came to a side valley with a suspension bridge. During the previous night rocks had fallen breaking several supporting cables so the bridge was hanging rather low on one side. Vehicles were not allowed to cross though foot passengers were. This time Prem negotiated with a bus on the far side and over we went carrying our entire luggage. The following day we got news that the bridge had gone down with seven killed. Was Shiva protecting us after our trek round his mountain?

Reference:
Taylor, M&H. (1999) SRGC *Journal* 26 (3) pp199-208

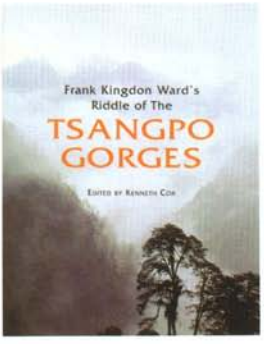
Fig 141 *Primula stuartii* x *P. macrophylla moorcroftiana* (p. 290)

Fig 142 *Saussaurea simpsoniana* (p. 292)

Fig 143 *Paraquilegia anemonoides* with staminodes (p. 292)

Fig 144 The Tsangpo Gorges – the Po Tsangpo in South-East Tibet (looking downstream)

Book Reviews



FRANK KINGDON WARD'S RIDDLE OF THE TSANGPO GORGES

edited by Kenneth Cox

320 pages. 258 colour illustrations, 51 b/w
Antique Collector's Club
ISBN 1-85149-371-9 £35.00

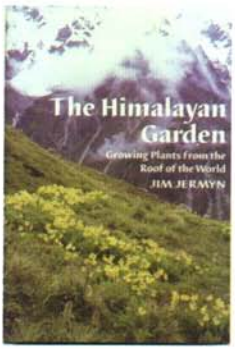
Most of Tibet is an extremely high, arid, plateau where nomadic herders bring their yaks to the high meadows. There are some vast turquoise inland lakes and the still-magical city of Lhasa but from a botanical point of view the main focus is the south-eastern part of the country, where the Yarlung Tsangpo and Po Tsangpo meet and cut through the Himalaya dropping some 10,000 ft in around 25 miles. Even today it takes three days to drive from Lhasa airport on unmetalled roads to get to any starting point for trekking in this area. Kingdon Ward, accompanied by Lord Cawdor, spent nine months exploring and collecting plants in the region and provided an array of plants which grace our gardens today, foremost among them *Meconopsis betonicifolia*, Bailey's Blue Poppy. Bailey had preceded Kingdon Ward to this particular area and provided them with valuable information as well as smoothing their way by using his personal influence with the Dalai Lama.

Kingdon Ward's account of the 1924–25 expedition in *The Riddle of the Tsangpo Gorges* has long been out of print but it has remained authoritative. In recent years, after the area had been closed to westerners for almost fifty years, a few groups revisited the area, most notably, from a botanical point of view, under the leadership of Kenneth Cox (an account of one of these trips was written by Anne Chambers, Fred Hunt and Richard Lilley and was published in this journal in vol. 25 parts 2 & 3). That the area now appears to be closed again only adds to the value in republishing this fascinating book. Kenneth Cox together with Ian Baker and Kenneth Storm Jr add a series of chapters to Kingdon Ward's original: on the plants and plant-hunters, the exploration of the Gorge before and after 1924, and on the spiritual significance of the Tsangpo.

There are many books which are of historical interest but which have ceased to live. It is a mark of the achievement that this book has been brought back to vivid life. There are one or two quibbles about the editing of Kingdon Ward's original manuscript: metric measurements are unnecessarily given precedence over Kingdon Ward's originals; the more extreme comments

about the native Tibetans have been airbrushed out (which is a bit like TS Eliot without the anti-semitism); and it would have been helpful to have had references to plates added to the main text. But these are minor in comparison with the achievement.

The large format (8½" x 11") and very generous production standards allow a wonderful range of colour photographs from Cox, Baker, Storm and others, including Anne Chambers, to support the evocative originals of Kingdon Ward & Lord Cawdor. There are over 300 illustrations in all, something over two dozen Primula, 16 of Meconopsis, and an extraordinary 98 of Rhododendron. What is quite extraordinary about the region is the way in which landscape, plants, people and the sense of the religious fuse, and many of these photographs bring this fully alive. It is hard to imagine that anyone who could be disappointed with this book. *MM.*



THE HIMALAYAN GARDEN

Growing Plants from the Roof of the World

Jim Jermyn

320 pages. 128 colour plates

Timber Press

ISBN 0-88192-500-4 £25.00

It is always fascinating to read a book written by someone who knows his subject and loves the plants he grows and writes about. Jim Jermyn's life as a nurseryman shines through the book; as well as being a mine of information for future reference it is an excellent book to sit down and read through.

Rather than concentrate on groups of plants, the bulk of the book is laid out in relation to altitudinal zones with chapters on Ecological of the Himalaya, Temperate Zone, Subalpine Zone and Alpine Zone. These form the vast bulk of the book although there are additional chapters on Plant Hunting, Conservation and the Future, Propagation, and Pests and Diseases. This does, however, mean that the genus *Primula* for example is spread over three chapters with some degree of overlap which is not so handy when trying to obtain an overview of a particular genus. There is no plant key so that this is not a book from which identification is easy from the text although the many stunning colour plates are a great help.

The Index lists plants but nothing else, which is a pity. There is no way, for example, of knowing from the Contents page that there is a section from pages 86 to 90 dealing with the Peat Garden so that if you wish to look again at the Peat Garden section you have to simply turn over the pages until it appears.

Jim writes of the habitat of the plants in the wild, describes them and then

explains how to grow them. Since he is such an expert grower he tends to make their cultivation sound easy. For example he describes *Adonis chrysocyathus* as forming strong perennial clumps of deciduous foliage with golden yellow flowers in profusion. I fear, however, that there can be few people who manage to make it flower in profusion. For most of us it sits there and sulks. For *Gentiana depressa* we read that there is no finer sight than a well-grown mat growing on a raised bed amongst rocks and slates with other associated plants. I must be doing something wrong. For the bulk of the plants described, however, there is an excellent illustration, the habitat in the wild is described and the cutural instructions are clear and sensible.

You will not find a better book anywhere on Himalayan plants in the wild and in the garden. This is a book not to be missed. *AM.*

Illustration and Art

THE ILLUSTRATED RHODODENDRON

Pat Halliday

Royal Botanic Gardens, Kew
260 pp. 121 colour illustrations
ISBN 1 900347 99 7 £49.95

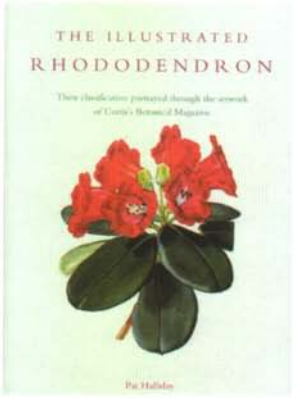
THE ART of BOTANICAL ILLUSTRATION

Wilfred Blunt & William T Stearn

Antique Collector's Club
368 pp. 126 colour illus, 140 b/w
ISBN 1 85149 177 5 £35.00

The invention of photography undermined the roots of painting. The successive movements from Impressionism, through Cubism, to Abstract Impressionism put off the eventual demise of painting as a leading medium, but today it is clear that painting is no longer central to western culture. It must have seemed likely that photography would have an equally devastating effect on botanical illustration, but botanical illustration is still used to record plants and their diseases, while it has also acquired a new status as art, hung on walls. The fascination of botanical illustration is in the amalgam of form and function. At their best these precise drawings and paintings transcend their function but they do still have one.

Botanical art has very strong conventions surrounding it. The plant is isolated, stripped of context. The drawing or painting is placed on the sheet with great artifice, sometimes as if it were growing, sometimes as if picked and laid there. It is as if the plant is waiting for the plant-press. The white space foregrounds the image of the plant. These conventions have a social and historical context and to understand the evolution of this context there is no better account than that in ***The Art of Botanical Illustration***. This was first published as no.14 in the New Naturalist series by Collins in 1950, but what has been reprinted again is the 1994 edition revised by William Stearn. The arrangement of the book is historical; looking at the development of classical botanical art from the medieval monastery and early herbals through to the work of the twentieth century. Blunt & Stearn chart the rise of naturalism, the changing nature of the printed image from woodcut to engraving and etching and lithograph. Chapters which focus on the work and contemporaries of outstanding figures such as Ehret, Redouté and Fitch are intertwined with chapters on artists we know far less well and with discussions of the different national traditions, the interplay of eastern traditions with those of the west. The range of illustration is vital in helping communicate points made and the illustrations are superbly reproduced. It is a highly literate account which well deserves its continued place in the canon.

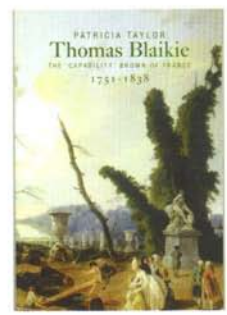


One of the chapters in Blunt and Stearn is on *Curtis's Botanical Magazine* which was first published in 1787 and with surprisingly few changes is still published today. It is the source from which Pat Halliday has selected the illustrations for ***The Illustrated Rhododendron***. This is a sumptuous book. The full page illustrations show examples, often more than one, from every series, subsection, section and subgenus of the Edinburgh classification with discussion of each of the species illustrated. There is a page of text about each species shown, with a description, and discussion of habit, introduction, and relationships but it is by the illustrations that this book must stand or fall. As Pat Halliday says, "this is primarily a book of 'pretty pictures'" and the pictures are wonderful.

One of the features of botanical art is that it has such well-established parameters and procedures that illustrations from different dates can sit well together. Here there are plates from the early 1800s by Sydenham Edwards and John Curtis, from the 1840s through to the 1870s by Walter Hood Fitch, from the 1910s by Matilda Smith, through those by Lilian Snelling to recent works by Christabel King, Margaret Stones, Valerie Price and others. Lillian Snelling and Walter Hood Fitch provide more than half of the plates between them, nearly 40 from Snelling and over 30 from Fitch with Margaret Stones

providing 12. Although another dozen illustrators provide the remaining 40 or so, it is through the work of these three major illustrators that we see the genus and Fitch stands out. He is sometimes criticised for the qualities that I would value him for. Fluidity of line marks is crucial to his work, with a great sense of the layout on the page. His lithographs were hand-coloured, as were all of Curtis' plates until as late as 1948, but for me it is the boldness and freedom of Fitch's execution that stands out. You don't have to be hooked on Rhododendrons to want a book like this – but if you are hooked on them you might like to start saving. *MM.*

THOMAS BLAIKIE: The Capability Brown Of France 1751-1838



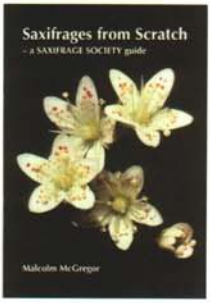
Patricia Taylor
250 pages 55b/w illustrations
Tuckwell Press
ISBN 1-86232-110-8 £20.00

Over the years there have been several short accounts of the life of Thomas Blaikie and his diaries were published in 1931 but this new book by Patricia Taylor is a monumental work of great erudition dealing with the life of this great botanist and gardener with more than 1500 references. If this sounds intimidating the book is a truly wonderful read flowing along smoothly and elegantly.

Thomas Blaikie was born in Edinburgh in 1751 and after a spell collecting plants in the Alps he became the foremost garden designer in France at the end of the 18th century. He soon became a favourite of Marie Antoinette and the book gives fascinating insights in to the life of the French Court before and during the Revolution with graphic accounts of many of the horrors of that period as well as the problems Blaikie faced with the Allied armies when they invaded Paris. It is as much a social history as a gardening book. Because of the many problems of life in France, Blaikie was unable to return to Edinburgh which he had left in 1770 until the year 1820. He did not remain there long and came back to France where he died in 1838.

The book deals thoroughly with his life from his early days. He was fortunate that he was passed over to go as a botanist with Captain Cook in favour of David Nelson who then came home with Bligh on the Bounty and was killed. His diary telling of his exploits as a plant collector dealt with the plants, the people and the customs of the remote mountain regions of the Alps, particularly around Chamonix. In contrast is his life as a garden designer in France where he soon became the foremost man of his day, but always beset by political troubles.

The book is a mine of information presented in a methodical manner and full of fascinating insights. His alpine plant list in the book amounts to 1700 species and he succeeded in collecting seeds and plants of the most desirable garden-worthy species. As Patricia Taylor says in conclusion, Thomas Blaikie was "an extraordinary gardener and a remarkable man". This account of this remarkable man is also a remarkable book. *AM*



SAXIFRAGES FROM SCRATCH

Malcolm McGregor
The Saxifrage Society
42 Louis Street, Hull HU3 1LZ
ISBN 0-9526882-5-5 £4.50

This slim volume (54 pages) sets out to introduce the gardener to the variation and versatility of the genus. The first section describes well just how variable these plants can be from the tightest cushion to larger spreading plants well suited to the front of a herbaceous border. Following on it outlines the garden habitats and conditions found in most gardens from shady border, through rock gardens, troughs, alpine house and even the lawn, suggesting the saxifrages most suitable to growing in each of these environments. The availability of saxifrages both as plants and as seed is well documented and there is a useful price guide which will make even more fascinating reading in 50 years time.

Once you have got your plants, you can start to increase them by following the detailed section covering all the simple methods of propagation.

A easy-to-follow botanical chapter describes the various sections of the genus and how to recognise the different characteristics of the plants in each section without being over-elaborate or technical.

The guide finishes with three lists of saxifrages: one for beginners, one of all-time favourites and one of the group which is proving most attractive to those who show plants, the newest of the Porphyrion Saxifrages. These will prove most useful when going through the growing number of saxifrages appearing in many nursery catalogues. The colour plates used have been carefully selected to illustrate both the range of the plants and their use in the garden in support of the text. A list of books and journals for further reading and an index of species and cultivars completes this publication.

The plants that we grow go in and out of fashion and saxifrages were once among the most numerous and popular plants grown by rock gardeners. The interest then waned in all but the most enthusiastic saxifrage growers, who do not respond to fashion in this way, and thank goodness for them. There are signs that the interest in saxifrages is on the rise again and the publication of this guide is well timed to encourage gardeners to look again at this diverse and attractive genus. It has worked for me, I have a definite urge

to seek out a few of the cushion plants for a trough as well as some of the irregular-flowered type for our humus beds. It is a well thought-out guide answering all the questions that a gardener may have when growing saxifrages and at just £4.50 I can highly recommend adding it to your bookshelves. JIY

THE PRAIRIE ROCK GARDEN

Donna Balzer

Red Deer Press

ISBN 0-88995-195-0 US$14.95, Can$14.95

This book is aimed at the beginner – it is selling the idea of the rock garden – and at communicating a range of ideas about landscape and rock which make it well worth picking up if you get the chance. The fact that it starts from a different landscape and climate brings one's own into focus again. The prairies have low rainfall, and low (sometimes very low) winter temperatures. Calgary, where the author is based, has *average* maximum daily temperatures below zero from early December to the end of February and an annual precipitation of only 16" (40cm). These conditions would seem severely restrictive but the rock gardens of Calgary have a wonderful range of rock, styles, plants and philosophies. Pure and austere rock gardens, formal homes for dwarf saxifrages; mixed gardens with Halda-designed rockeries, troughs, outcrops and lawns; wooded gardens creating oases for native cypripediums; outdoor collections of Himalayan primulas; south-facing walls with sharp drainage being home for cacti; and *Eritrichium nanum* growing, happily, uncovered. The range of rock gardens and landscape are well-illustrated with over 100 colour photographs. This book discusses rock and the way in which the gardener, in the role of rock garden designer, needs to become aware of their own locale, landscape and rock. The discussion of the naturalistic elements of the rock garden is valuable, and is supported by a wide range of pictures – of rock, rockwork, construction and planting. Chapters on design, selecting rock, construction, planting and maintenance are relevant to anyone. There is an extended plant list obviously of great value to the target audience. The title makes it *seem* unlikely that this book would be of great value to the Scottish gardener, but it is the sense of the rock garden as landscape, which the author has at heart, that makes the book worth looking out for. *MM.*

Other Societies

FROM TIME TO TIME we get publications from other societies which will be of interest to members. Two have come to hand: from the New Zealand Alpine Garden Society and from the American Primrose Society.

The New Zealand Alpine Garden Society produces its 40 page *Bulletin* twice a year. The May 2001 issue has articles on South African geophytes, on a Wellington alpine garden and a profile of and article by leading NZAGS member Charlie Challenger. The *Bulletin* has 8 pages of excellent colour illustrations. The Society has an annual seed exchange which includes an "extensive NZ Native section" which could be a wonderful source of new material. Overseas subscription rate is NZ$30 a year. Contact the Society at PO Box 2984, Christchurch, New Zealand.

The American Primrose Society produces its 36 page journal *Primroses* quarterly and are now at volume 59. The spring 2001 issue has detailed reports on the Alaska Rock Garden Society seed-collecting expedition to the Yunnan/Sichuan border area of China in 2000 as well as a variety of shorter pieces. There are 6 pages of colour plates. The Society has a seed exchange and annual subscription rate for those outside North America is $32 a year ($90 for three years). Contact APS at PO Box 210913, Auke Bay, AK 99821, USA

. . . and finally

DIE ORCHIDEEN DER TÜRKEI

C A J Kreutz

ISBN 90-9011307-X (available from Summerfield Books, Main St, Brough, Cumbria, CA17 4AX, for £125 including carriage)

The English sub-title of this magnificent tome (published in 1998) might well be *The Bumper Book of Orchids*. It is a *magnum opus* in every sense. The author follows the recent craze for "splitting" orchid species and so manages

to find a total of 148 species of orchids (including 60 of *Ophrys*) in Turkey, not counting hybrids. He can be forgiven this enthusiasm, however, because of the stunning photographs accompanying each entry. Not only are the plants themselves shown in breathtaking detail but most entries have a habitat shot, showing the kind of conditions in which the species is found. Add to this the many distribution maps and the fact that every photograph is precisely located and dated, and the book becomes not only the best tool available for identifying what you may have found on your orchid hunts in Turkey and surrounding countries, but also an invaluable resource for planning such expeditions in the first place. Unfortunately, if you want to take this book with you by air you should be prepared to pay excess baggage rates, as it weighs in at almost 4kg. The text is in German, but the entries are headed and indexed in Latin. The price seems high but, compared with many other books on the market today (and at little more than the cost of a TV licence), this book is definitely good value for money. *MJA*

FLORA HELVETICA (3rd edition)

K Lauber, K & G Wagner

Paul Haupt, Bern
ISBN 3-258-06313-3 Sfr148 (approx. £65)

Resembling a brick both in size and weight, this is not, perhaps, the *Flora* you would wish to have in your knapsack on your back, as you go a-wandering along the mountain track. But, in one volume, it is as comprehensive as anyone could wish, including ferns and grasses (perhaps even a little more comprehensive than might be considered necessary: the potato is included!) and fully illustrated. There are an incredible 3773 photographs – a colour photograph of every species included – and these, together with the map with *each* entry showing the distribution of the species within Switzerland, make it extremely useful as an aid to identification, even if your German is not up to scratch. Each species is named in Latin and described in German, and there is a full Latin index. The main volume is accompanied by a booklet containing a full key to all the species (in German). If your pocket is deep enough and your bookshelf strong enough, this work deserves pride of place in your collection. *MJA*

Reviews by Malcolm McGregor, Alastair McKelvie, Ian Young and Mike Almond.

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