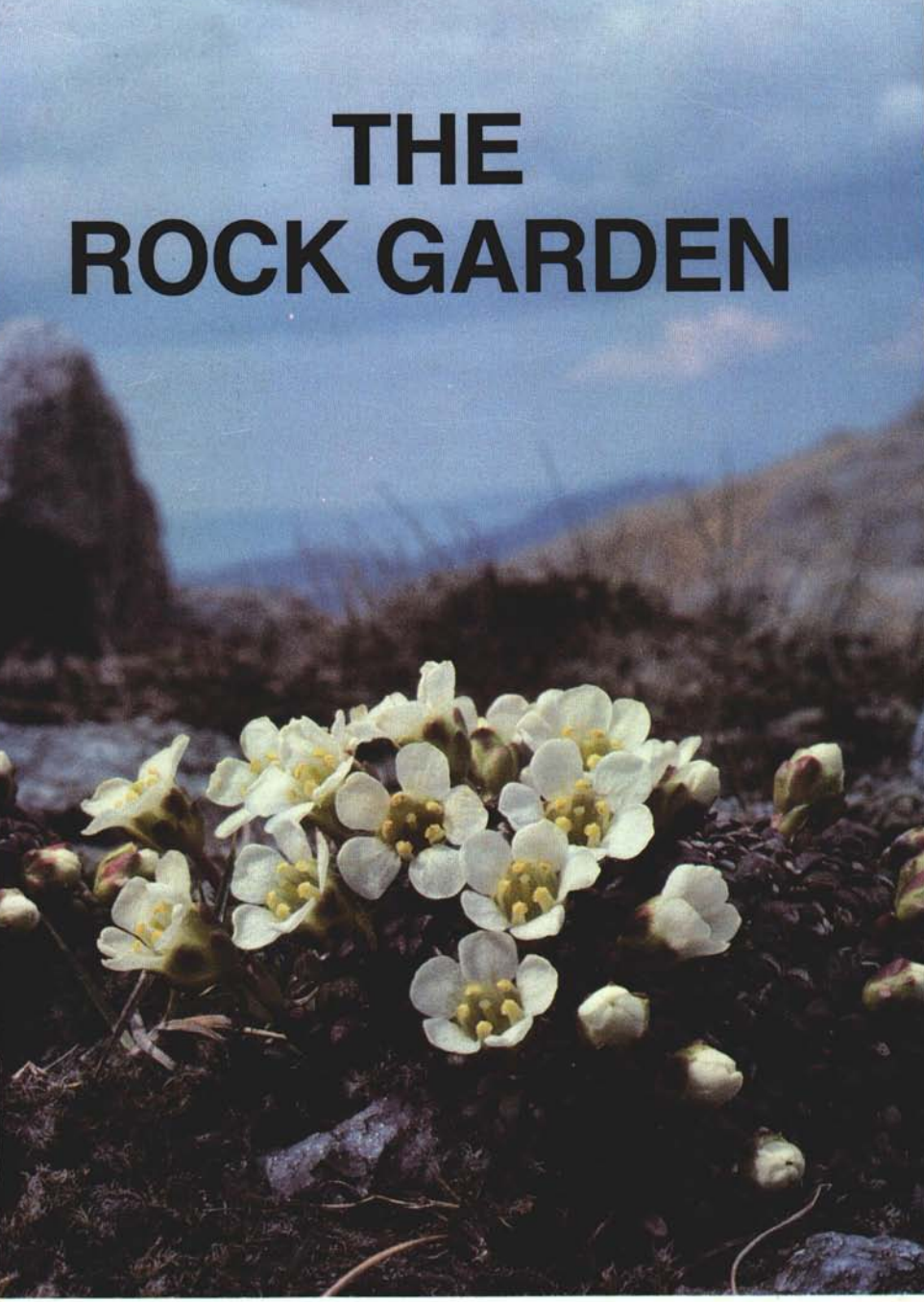
THE ROCK GARDEN



THE JOURNAL OF THE SCOTTISH ROCK GARDEN CLUB

Volume XXII Part 4 Number 89

Subscriptions for 1991-92

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The Rock Garden

THE JOURNAL OF THE SCOTTISH ROCK GARDEN CLUB

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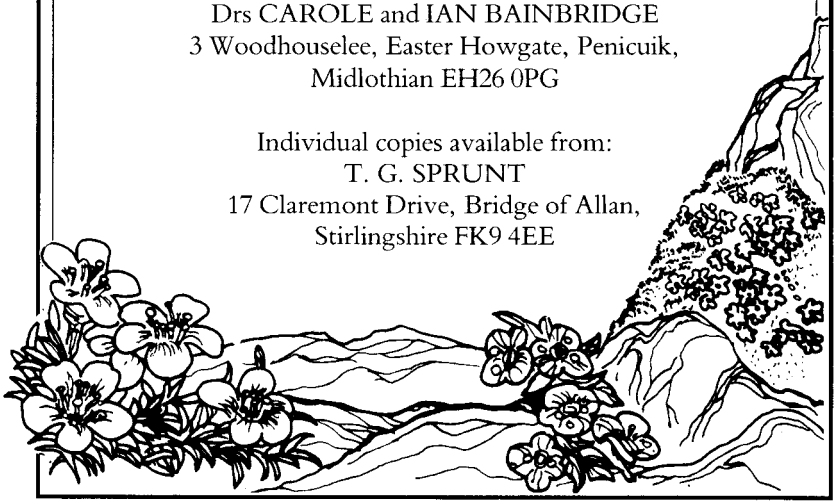
Edited by:
Drs CAROLE and IAN BAINBRIDGE
3 Woodhouselee, Easter Howgate, Penicuik,
Midlothian EH26 0PG

Individual copies available from:
T. G. SPRUNT
17 Claremont Drive, Bridge of Allan,
Stirlingshire FK9 4EE



Front cover:
Diapensia lapponica, Scotland (p428).
Photograph Margaret and Henry Taylor

Contributions to THE ROCK GARDEN

The Editors would greatly welcome contributions to **The Rock Garden** on any aspects of alpine and rock garden plants and their cultivation. Articles should follow the format of previous journals, with colour slides and line drawings if appropriate. They should preferably be typed, double spaced, or on a 5.25" floppy disk in Microsoft Word.

Pen and ink drawings and vignettes are also welcome, especially in a horizontal format to fit a part page. Articles and drawings should be sent to the Editors.

We also require cover photographs for **The Rock Garden.** Anyone with colour slides for consideration as cover plates should contact the Editors.

Erratum

In Issue 88, the photograph Fig. 76 on p293 was taken by Martin Swannell.

Contents

Pinguicula grandiflora Edith Clark

Editorial

One of the things that has always struck us about rock gardening is its international nature. The average rock garden contains plants from every continent except Antarctica. In the past most were collected by some intrepid British (or French) explorer; nowadays it is easier to get to most of these remote places for a few weeks, rather than departing these shores for a year or two, and the rate of introductions of new plants can surely never have been higher. Asia, the Middle East and South America all figure in seed collections more and more.

Similarly, the people interested in these plants are scattered round the world, but find a common theme. This was strongly illustrated by the great success of the Warwick Conference, whose report, 'A Century of Alpines' is newly available from the Club Book Service. The international nature of the Club's membership also demonstrates this fact; 25% of our members hail from overseas, so we are truly catering for an international audience through the pages of **The Rock Garden** and through the continuing success of the Seed Exchange.

In this issue, it is a great pleasure to us that the authors reflect the international nature of the Club. We feature writing from Henrik Zetterlund from Gothenburg Botanic Garden, known to many of us as a keen plantsman and introducer of quality bulbs, as well as the excellent lecturer he showed once again to be at the Discussion Weekend. We also have a notable contribution from Heather Hill, from Temuka, New Zealand, who possesses some of the best pictures of *Raoulia eximia* we've ever seen, and who, through rock garden plants, has struck up a corresponding friendship with Evelyn Stevens, our Club Secretary. We hope to continue to find the best of rock garden writing from around the world to fill the pages of future issues.

The Stones have also benefitted from this international friendship: their central European adventures, as related in the Column, show once again how helpful and willing our kindred spirits are to share their knowledge. These friendships can only help to open up new and exciting opportunities to keen rock gardeners; long may they continue.

Carole and Ian Bainbridge.

President's Review 1990–1991

The past year has seen the work of the Club going on with great vigour. The highlight of the year was undoubtedly the International Conference in Warwick. Most of the delegates from the SRGC had a very happy time at the event, many renewing old acquaintances from Alpines '81, and most of those for whom it was their first conference were soon drawn into the happy friendliness which pervaded the Conference in spite of some problems.

The standard of the Plant Show was extremely high and in general so was the standard of the lectures. Initial problems with the projection facilities were overcome by the efforts of Henry Taylor who stepped in to the rescue. We owe him a great debt of gratitude for battling on in spite of difficulties.

The Club would also like to thank the Committee of the International Conference for all the time and effort which they put in on our behalf. The organisers and couriers of the Post-Conference Tour deserve a special vote of thanks for all their efforts. Those whom I met in my capacity as President, at the Post-Tour dinner, who had been on both Tours were most forthright in their positive comments. The tremendous effort put into compiling the Tour brochure was much appreciated and it was highly prized. The Tour was also fortunate in that the Chief Rainmaker had taken a holiday and given them superb conditions for the Tour. Many letters of appreciation have been received subsequently.

For those of you who, for various reasons, were not able to enjoy this feast of a Conference, some flavour of it should be possible through the Conference Report which will become available in due course through the Book Service.

One innovation this year has been the Early Bulb Display, which was held in February at the Braeport Centre, Dunblane. This was introduced for the simple reason that there are many interesting bulbs in flower at that time, which miss even the earliest of the regular Shows. It was a non-competitive event and members were encouraged to bring along their flowering plants in unlimited quantities. One bulb in flower in a pot was most acceptable and even the algae on the pots were treated with tolerance. It was a very happy occasion and the lecture theatre was packed to bursting point to hear Lyn Bezzant's lecture. The whole of the Centre has been booked for next year and we hope that even more members will appear with their precious plants. There will also be a lecture included in the day's proceedings. 50/50 pricing of members' plants for sale at this Show was introduced and was most successful. It was also introduced at the Stirling Show and proved popular with the growers and the organisers alike. This

coming year the Early Bulb Display will be visited by the Rock Garden Plant Committee.

The overall standard at our Shows was well maintained in spite of the distraction of the International Conference, and many of the newer and younger growers are well able to take care of themselves.

The membership numbers have been well maintained in spite of the recession and of the losses sustained by the removal of non-payers earlier in the year. At the present time the total number of members is 4,045, and of those 1704 are in Scotland, 1280 are in England, Wales and Ireland and 1061 are overseas.

This year we have sadly lost three of our members through death. Firstly, there is Joyce Halley, who must have been known to most Club members. No one could possibly appreciate the amount of work that she put in on our behalf, when she was Seed Exchange Manager over a good number of years, through her attendance at Club functions, through her service to the Club as a Council Member, and also as a shower of plants. She will be sorely missed.

Next I refer to Ion Simson Hall, whose health latterly did not allow him to be amongst us. He was, however, well known to the patients of the Edinburgh area and the Edinburgh medical students as an ear, nose and throat surgeon and author of a successful cram book on ENT. He had further claims to fame, both as a grower of rhododendrons and as the husband of Kathleen Hall, who was President of this Club from 1976 – 79. Our thoughts go out to her and their family at this time. Winnie and Harley Milne have taken flowers to her as a gift from the Club.

Thirdly I have to announce the death of Archie Campbell who was a Vice-President of the Club for many years. Latterly he had little contact with the Club.

This year we have had four changes of Convener. Don Clark has been replaced by Dr Mavis Paton in Kirkcudbrightshire; Angus Small, who was by a long score our longest serving Convener, has been replaced in Renfrewshire by Douglas Marshall. Dr. Cama of the North West England Group has been replaced by Mrs Jephcott, and Wilf Lombard of the North East England Group has been replaced by Mrs Kath Baker. The Club owes a deep debt of gratitude to these retiring Conveners for their devoted work over the years and we wish to thank them for all their efforts. We also wish to welcome those who have stepped in to fill the gaps and hope that they will get a great deal of satisfaction and support in this work.

I would also like, on behalf of the Club, to express our gratitude to Dennis Graham, who has retired as Show Secretary of the Edinburgh Show. He has done this job for eight years. He has also served as an ordinary member of Council for six years and was for three years

Convener of the Edinburgh Group. He has been a member of the Club since 1969. He is being replaced in his capacity as Show Secretary by the indefatigable Harley Milne and we wish him every success in this difficult job.

Four ordinary members of Council step down each year. One due to step down was Joyce Halley to whom I have already referred. The other three are Doreen Golder, Bette Ivey and Ron McBeath and we wish to thank them for their contribution to our deliberations during their period of service.

Our thanks are also gratefully expressed to those who have sent donations to the Club. The North Lancashire Group have given £150 from the Morecambe Show, the North East England Group £100 from the Newcastle Show in 1990, and the Cumbria Rock Garden Group has sent £50.

Sandy Gallie from Eire has again made a donation to the exploration Fund, of £100, for the third consecutive year. It has been possible to give a further £1500 from the Book Service fund making a total for the year of £1843, so please keep buying the books which I sell.

In addition I am now able to reveal the identity of the anonymous donor of £1,000 whose gift was intimated last year. The gift was made by Bill MacKenzie, our sole remaining founder member. The gift has been made to fund and to support what is to be known as the Rutland Salver, and is to commemorate the Diamond Jubilee of the Club that was founded by the doughty eight in an Edinburgh hostelry of that name in July 1933.

It is to be awarded annually to the competitor who obtains the highest number of aggregated first prize points in Section II (and Section I) at more than one Show held during that year. It is stressed, however, that the recipient must have been eligible to compete in Section II at the beginning of the Show Year. The winner is to hold the trophy for one year, and will in addition receive a voucher for the purchase of plants or books. Those placed second and third will also receive vouchers.

This year the Exploration Fund has made gifts of money to two applicants, namely Ron McBeath and David Rae. This year Ron McBeath has also been presented with the Neil Medal by the Royal Caledonian Horticultural Society. This Medal is presented every other year to somebody living in Scotland, for botanical work or for cultivation of plants of horticultural value. He has also been presented with the Lyttel Lily Cup of the RHS Lily Group, for 1991. This Cup is presented for work in connection with lilies, nomocharis and fritillarias.

Also this year Eric Watson was presented with the Scottish Horticultural Medal in recognition of his contribution to the cultivation and promotion of alpine plants.

The Ayrshire Group has again distinguished itself at the Ayr Flower Show by winning the Steradent Trophy and I am sure that we would wish to congratulate them for their efforts.

Our Sub-Committee dealing with our Diamond Jubilee celebrations has been actively considering the various ways in which these celebrations may be pursued and this information will be laid before you in due course. In the meantime preparations are in hand for the production of the Duncan Lowe Calendar which will be on sale for our Jubilee year. A goodly number of orders has already been placed. I am sure that our Editors will be happy to have your money and accept orders of those who have as yet done nothing about it.

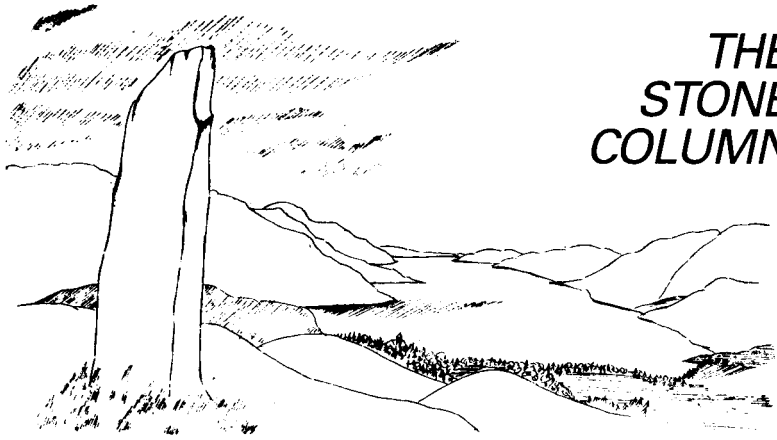
In the offing is the proposed retirement of the Subscriptions Secretary. She is happy to go on at present, but this must not be used as an excuse by the membership to sit back and do nothing about finding a replacement for her.

This also applies to me, and my position as Publications Manager. The reports of my ill-health are grossly exaggerated, but I did have a long bad spell with my back during the spring. I also seem to have so many other things going on that I feel the Book Service perhaps does not always get its fair share of my time.

In closing this rather lengthy review I would like to thank all those Office-Bearers who have given so much of themselves over the past year to the successful running of our Club. I would also like to thank those who have helped and encouraged me during my Presidency. I would even like to thank those who have caused me some difficulty during my term of office, if only because it made me sit back and take thought. I would also like to thank our Secretary for all her efforts, sometimes just for putting up with me, but most of all for her efforts before such a meeting as this, in filling some of the potholes into which I might fall.

I hand over the reins of office, I suppose thankfully, also with some regret, but nonetheless grateful for the experience. I would ask you to confer on my successor the same courtesies and support that have been accorded to me.

T. G. SPRUNT
26 October 1991



THE STONE COLUMN

Re-Using, Recycling and Dovetailing, Season by Season

It is an incontrovertible fact that the further one moves from the Equator, towards the Poles, the more pronounced become the seasons. The lack of seasonal variation, other than possible wet or dry periods, renders tropical alpines, for example, rather difficult to manage in cool temperate gardens. When George Smith came to visit earlier this year, we had our usual wide-ranging discussion on alpines, their seeking and cultivation. George is of course a well-known authority on the flora, in particular the Primulaceae, of the Sino-Himalayan region; and as such took me to task for my luke-warm comments in the Stone Column a year ago. Nonetheless I still stand by my contention that "Himalayan plants do well in Scotland" is something of an oversimplification. There is more to cultivation than air humidity; photoperiod and mean temperatures are just as important. Some of our difficulties could perhaps stem from the geographical position of the Himalaya, relatively close to the Equator: much of the range is south of latitude 30°. As if in contradiction, we have actually had quite a good season for Himalayan plants this year. A number of collections from the Kew-Edinburgh Kanchenjunga Expedition (KEKE) trip to East Nepal in 1989 flowered for the first time including a small *Cyananthus* species (614) with intense violet flowers; and the distinctive *Aster stracheyi* (421) did not stint its cool lavender daisies. These are carried singly on 15cm stems, above shining, bullate, somewhat truncate, foliage. The dark discs made a pleasant change from all those yellow-centred asters and erigerons with similar-coloured ray florets. Our plant did produce the typical strawberry runners of this species, but they failed to root into neighbouring pots, and just shrivelled.

Cremanthodium reniforme is a more variable species, with a wide range in nature. This summer a vigorous form from Göthenburg flowered well on

a raised ericaceous bed in full sun, the blooms nodding so that the large involucre and hanging yellow ray florets act as an umbrella sheltering the working parts from monsoon rains (Fig.99, p384). Staying with Compositae, there was also *Waldheimia tomentosa*, referred to as *Allardia* in older accounts, a plant grown for its finely dissected grey-green foliage, and said to be very shy-flowering. We waited four years for its rather dingy 3cm daisies, then wondered why we had bothered. The rather ragged ray florets were a silver-greyish white, the discs greeny yellow with darker shading around their perimeters. We also had had a long wait for the blooming of *Potentilla coriandrifolia*, but this is altogether a much classier plant. The flowers, two or three on each dainty 10cm stem are white, with maroon centres, the bicolour effect enhanced by the dark calyces. The dark green basal foliage is pinnate, each leaflet deeply dissected into narrow segments.

Fritillaria delavayi has been condemned as uninteresting, possibly because the photograph in the Phillips and Rix bulb book shows it long past its best. When the outer tepals first recurve to reveal their yellow-green inner surfaces, spotted with rusty red it is really most attractive (Fig.100 p384). These tepals persist in fruit; in the wild the capsule detaches itself and is bowled across the scree by the wind, scattering the seed. Another Himalayan bulb which has been unfairly maligned is *Lilium nepalense,* often regarded as dubiously hardy. The late Bobby Masterton would have none of this, and gave us a plant to prove it. Grown in a small raised bed, edged with 0.5m walls of slates simply stacked horizontally, it pushes its stems out sideways between the narrow gaps, each turning upright to produce up to three hanging yellow lanterns. The widely separated segments have a prominent basal staining of magenta.

And finally as my mind wanders through our Himalayan plants of note for this season, it focusses inevitably on gentians. The Ornatae season opens with *G. prolata,* another variable species we have raised from many collections. Easily the finest form we have is Ron McBeath's 1153, with flowers almost as large as those of *G. ornata* or its hybrid 'Glendevon'. They open readily on warm days to reveal their finest feature, copious midnight-blue blotching inside the white throats.

In the Himalaya, the gentians bring the flowering season to a close, one complicated by the arrival of the monsoon. It is small wonder that, on average, Himalayan alpines are less straightforward in cultivation than those of the European Alps, where the seasonal pattern more closely approaches our own. Even within the length of the British Isles there is considerable variation; contrast the Scilly Isles, just below 50°N with the Shetlands of the 'simmer dim', lying largely north of latitude 60°. These differences must influence the way plants respond to our attempts at cultivation.

When I suggested to George Smith that, in our pursuit of American alpines, we should like to travel the Alaska Highway in northern British Columbia, to see such arctic species as *Chrysanthemum integrifolium* and *Pyrola grandiflora* near their southern limits, he warned against too much optimism in being able to cultivate such as these. Yet this Muncho Lake area at the Northern extremity of the Rocky Mountains is at virtually the same latitude as Askival. The North Atlantic drift, or lack of it, makes the difference; but you never know until you try. A plant of *Cassiope tetragona,* raised from SRGC seed collected in this area has proved perfectly growable, and even sets seed in turn.

As with most things, the longer darker winter in the north of Scotland does have its down side. Very few winter-flowering plants really do their thing for us, a case of the old saying "what will for you, won't for me" *Hamamelis* is virtually the only shrub we have found able to flower right through frosts with impunity, both *Jasminum nudiflorum* and *Viburnum x bodnantense* flower in bursts between spells of browning icy winds. Others, such as *Stachyurus praecox* delay opening their blossom until spring is well advanced. Very few bulbs manage to flower in the depths of winter, there is a considerable gap up here between the last crocuses, *CC. goulimyi, medius* and *longiflorus,* and the first snowdrops or Reticulata irises.

The winter flowering narcissi of the Bulbocodium section fail with us, probably because they cannot tolerate being frozen solid for several weeks. Our season opens with *N. asturiensis,* closely followed by *N. cyclamineus* at the end of February or early March.

Two other consequences of our shorter growing season are worth mentioning. Poll never pots, or repots, anything by choice after the end of July. In practice this means before we go on holiday, of which more later. In my department there is conversely a bonus, the weeds start growing later and stop earlier. This goes some way towards compensating for the mid-winter close-down, when it's either raining or the ground is frozen. Thus construction has to be largely fitted into the short seasonal gaps between weeding and impossibly bad weather. This year autumn has been kind, with quite lengthy periods of dry, if somewhat gloomy weather, the result of a persistent anticyclone.

Since many of our developments require the bulk transport of materials around the garden, by wheelbarrow, it is highly desirable to dovetail projects so that any surplus from one is re-used in another. I mentioned a year ago, that topsoil stripped down to a depth of 0.5m from our old fruit garden has been recycled as part infill for the 'Haze' bed terracing in the upper garden. This task provided an example of Murphy's law: the deepest soil in the garden, and we want to remove it to extend our frameyard. The hole which travelled slowly across the ex-fruit garden was back filled with

stones, brought back down from our upper garden. Much of the stone was produced by our bed-making activities up there, in the top garden, but some was the result of a quite separate excavation.

It had long been obvious that as our beds multiplied, so the compost heaps were becoming more and more inadequate. Thus our plans for the upper garden included provision for extra storage bins. Our original two compost heaps had been built against a break of slope, the ground dropping from the level of the house to the grass area of the lower garden where we used to have apple trees and bulbs. A path past the old peat wall provides access for barrows, tipping down into the heaps from the rear, while the front boards are removable for emptying at the lower orchard level. This split-level design has proved so convenient we determined to duplicate it in the top garden. At the site chosen, hidden away between the Blue Ridge bed and the north boundary fence, the existing ground slope was insufficient for our purpose. Thus we had to excavate a large hole, eventually 6m wide across the slope, 4m back into it, and 1.5m high at the rear wall. The path delineating the upper side of the Blue Ridge bed continues above this hole to provide the necessary barrow access to the rear. To walk straight into the front, we pass around the far end of the lowest Blue Ridge terrace.

The subsoil dug out of the upper garden compost heap site contained sand and gravel in addition to stones of all sizes, a fluvio-glacial deposit we are told. Thus it was suitable for infilling our raised frames, which are built of three courses of concrete blocks and filled solid to the top of the second course. A final 7.5cm layer of concrete sand provides standing for the pots. The solid infill gives thermal inertia to hinder frost penetration in winter, or excessive and rapid temperature fluctuations in hot weather. An additional benefit is the reservoir of water held in the infill, accessible to our uncrocked pots by capillary movement.

Subsoil from the excavation beside the Blue Ridge bed was used as the infill in our last three standard raised frames, no. 3 in Sept/Oct 1988, no. 4 in May 1990 and finally now no. 5 in Sept. 1991. This meant that the hole had to lie like a disused quarry for the intervening periods. During one of these interregnums, a visiting French couple, on seeing the exposed 'soil' profile exclaimed, "Oh la-la! Comment faites-vous pour faire pousser des pareilles plantes dans une terre comme ça?" And so this autumn, with the last barrow of subsoil transferred into raised frame no. 5, there remained but one final task to complete the jig-saw of interlocking developments.

Way back in 1972, at more or less the same time as we joing the SRGC we went to a demolition sale at an old shooting lodge in Strath Nairn. Here we bought a number of old sash windows, some complete with ¼" plate glass. That summer I built our very first frame, using old red bricks mostly dug up out of the garden. It measured 1.7m by 1.2m and originally used

two of the old windows as lights. We still have this frame, building our new raised frames around it, purely for the sentiment. Like all its newer neighbours it now has nylon reinforced PVC lights, but the words "HIS" and "HERS" and a dividing line are still to be faintly seen painted on the rear wall inside! If I had known where this journey was going to lead, would I have taken the first step?

Within a year the brick frame was overflowing with seedlings; potted in those days largely using plastic cups, margarine tubs, and milk cartons with two bottom corners cut off, as a sort of long tom. There followed the first of many frame extensions. We simply bought 15cm concrete blocks and set them up without mortar, hence the wider size for stability, in two parallel rows 1.2m apart, each of two courses, starting at the end of the brick frame. The remaining old windows were simply laid across as lights, propped up on blocks of wood for ventilation. This arrangement was not really satisfactory; a normally-glazed window blew off in a gale, and the plate-glass ones were really too heavy for Poll to handle. Thus in 1975 they were discarded and I made the first of our simple plastic lights – rectangles of 50 x 25mm treated timber to which was stapled the nylon reinforced PVC. Like all prototypes, the long frame, as we called it, was still far from ideal. I had made the lights too short, they did not overlap the concrete blocks, and this, together with the orientation, backing onto the old fruit garden but end on to the wind, meant that rain was frequently driven in. All our later frames are set closer to east-west, across the line of the Great Glen. This also makes shading easier. Nonetheless the long frame grew ericaceous plants in pots quite well for many years, until its removal, half in 1989 to make way for raised frame no. 4, and the rest in 1990 for no. 5.

The old 15cm concrete blocks were barrowed to the top garden, the stacks standing beside the compost-heap extension until this past half-term. With almost unbelievable luck, we had over a week of dry weather at the end of October while I was free, and so walls were built to retain the sides and rear of the hole, plus two partitions dividing the area into three boxes. I took longer wire-brushing the moss from each block then actually laying them. They were, in addition, heavy to work with, but I could not really contemplate discarding 80 perfectly reusable concrete blocks. A quick dash to Inverness for 40 normal (10cm) building blocks and I was able to finish this job; one more half-completed mess out of the way! As this site is too far from the house for an electric drill, I set rag-bolts in the end of each spur wall to hold the retainers for the removable front boards. Our compost heaps may not be the ideal 4 foot cube, lovingly activated and turned, but we are not intensive vegetable growers. One visitor contemptuously referred to the original pair as "just rubbish heaps". Just

so, but they are convenient to use on a largish scale, and they do recycle much needed vegetable matter for our thin stony soil.

The dying fires of autumn

Whilst labouring away in the garden recycling my concrete blocks, there were ample opportunities during coffee breaks to contemplate the superb autumn colours developing on the neighbouring Blue Ridge terraces. Notwithstanding intense competition from other neighbouring American, and Japanese, ericaceous plants, the various gaylussacias were without peer this year. The glossy leaves of the smallest deciduous species, *G. dumosa,* blazed a shining scarlet, *G. baccata* a little taller and a shade darker, while the larger foliage of *G. ursina* became a rich crimson. When at home, these are understorey shrubs, but up here, much further north, they respond very well to full sun. From the same general area comes *Lyonia mariana,* young groups of which add rich purple tones to the scene; also *Oxydendrum arboreum,* whose long-lasting tints vary from purplish to light orange-red. We grow the last as a sort of deciduous substitute for *Arbutus.* Neither the southern Irish *A. unedo,* nor the western American *A. menziesii* have proved capable of withstanding one of our hard winters. Planted towards the far end of the Blue Ridge, two seedlings of *O. arboreum* have formed tight, upright, hazel-like thickets, but have yet to produce their Pieris-like white racemes. Together with three neighbouring clones of *Kalmia latifolia* (a wild seedling, 'Osto Red' and the beautiful banded 'Fuscata') we hope they will eventually screen the newly-built walls from the front.

All gardeners are familiar with the vagaries of autumn colour, but comparatively little has been written on this aspect compared with the flowering and fruiting of trees and shrubs. Perhaps it's a case of fools rush in, but then your columnist is no angel! The trouble is that autumn colour varies notoriously from clone to clone, garden to garden and season to season. Early in our gardening career we raised, for reasons of economy, a large batch of mixed azaleas from seed. One particular individual, with rather ordinary yellow flowers, was nevertheless given a prominent position, facing west to the setting sun, for its unfailing ability to turn a real pillar-box red whatever the weather. Whether this clone would be as pre-eminent elsewhere is open to question.

Evelyn Stevens has told us that in general, the fall colours are a disappointment in her Sheriffmuir garden. She suggests that one factor may be her rich, rather heavy, fertile soil. It follows conversely that an element of stress can encourage the development of enhanced pigmentation. Supporting evidence is provided by the facts that autumn tints are often excellent after a hot, dry late summer, and that pot-bound

plants frequently colour beautifully. To prove any real correlation one would need to grow batches of plants under strictly controlled conditions, and analyse the resulting pigment concentrations in the dying leaves. I rather doubt that the effort involved would be worthwhile; why not experiment empirically to discover those which perform reliably to one's own taste? Or alternatively just enjoy random chance as it happens?

Turning to a few other specific selections, outwith Ericaceae, many rowans are good multi-season value. Their flowers are nothing special, often spoilt by rather indeterminate murky overtones, but fruits (birds permitting), and autumn colours are frequently excellent. On the other hand, *Amelanchier laevis* is a disappointment here in autumn; the leaves turn and fall in relays so that our tree is never really coloured. *Parrotia persica* is too fickle, and occupies too much lateral space: we would recommend *Fothergilla* species instead, which also have worthwhile flowers.

Acer palmatum 'Osakasuki', a well-known selection, is generally reliable, save only if September frosts in the range of -3 to -5°C shrivel the foliage before it has time to turn. I have a feeling that a seedling we have raised from the *A. japonicum* cultivar 'Vitifolium' may in time be a worthy complement. It has larger leaves, with a greater number of lobes, dying more to scarlet than the crimson of 'Osakasuki'. *Acer griseum,* a Chinese species with small trifoliate leaves, also turns a good red here as a young plant. More mature specimens have the additional feaure of an exfoliating bark, the newly-exposed surfaces an orange to rival *Prunus serrula,* or the darker *P. rufa.* Seed of *A. griseum* is notoriously infertile. For two years running our friend, and only other club member in the village, collected a large bag of seed from her tree, a juvenile of some 4m. Both batches were sown in their entirety on large seed trays, and after a year or two each produced a single seedling; a germination rate of less than 1%!

We have only one species of *Euonymus* planted for its autumn colour: *E. alatus.* It turns a good red, but then drops the leaves so rapidly that, given a wet and windy October, we can miss the display altogether. There is little to choose between our two aronias in terms of foliage tint, but *A. arbutifolia* is the less satisfactory here as its matt leaves are also rapidly shed. *A. melanocarpa* retains its polished leaves for rather longer once coloured up, their glossy surfaces reflecting the weak sun of autumn to greatly enhance the display.

By way of contrast, if a clear yellow is desired, then many of the clones of *Rosa rugosa* have the same excellent qualities of foliage texture.

The ideal shrub or tree for autumn colour should, we feel, have lustrous foliage of an interesting shape, colour overall, regardless of weather or soil, and hold the tinted leaves for a week or more, even through equinoctial gales. As a bonus, the leaves once shed should make good mould.

Fig. 99 *Cremanthodium reniforme* (see p378) Polly Stone

Fig. 100 *Fritillaria delavayi* (see p378) Polly Stone

Fig. 101 *Gentiana pannonica* Carinthia, Austria (see p395) Polly Stone

Fig. 102 *Gentiana frigida* Upper Styria, Austria (see p396) Polly Stone

Fig. 103 *Campanula raineri* North Italy (see p398) Polly Stone

Fig. 104 *Hesperochiron pumilus* (see p409) Henrik Zetterlund

Fig. 105 *Colchicum triphyllum* (see p414) Henrik Zetterlund

Doubtless genetic engineers will one day make such a plant, but we do not believe in perfection in gardening, preferring uncertainty and individualism. Our policy is to grow as wide a range of plant types as is practicable by Loch Ness, then whatever the weather, it will suit something and give a first class display, be it flowers, fruits or the fires of autumn.

In many respects autumn is a dreary time of year, when the evenings rapidly close in and the garden is liberally carpeted with sodden leaves, but it does have its moments. Sometimes they are just that; fleeting shafts of low-angle watery sunlight producing wonderfully ethereal lighting effects. Through clear, rain-washed air, they highlight the gold of the larch plantations, the paler yellows of birch woods, and the russet slopes of dying bracken with piercing clarity. Here and there geans provide one of the few accents of red in the local scene. Within the garden our rowans, acers and various Ericaceae provide more exotic fiery shades to really ignite the spirits.

A first, but late – central Europe '91

It has become our practice over the last half dozen years to take our main holiday almost as soon as my school breaks for the long summer vacation. This means that we are normally away for most of July; and because, as mentioned above, Poll considers August too late in the year for potting, the propagation programme has to be completed before we leave. Ideally Poll would like to stop ten days or so earlier, so that she can remain in charge for the crucial transplant-shock period, before turning over to our frame and dog sitter.

This year the Warwick Conference and its ramifications occupied some 3-4 weeks early on in the growing season. Time is not elastic, and so having lost most of the Easter holiday, we had to extend our summer campaign at the other end, into July. Any furlough would have to be in August. When considering where to go, it suddenly struck me that there are a number of very interesting late flowering plants particularly in the eastern Alps. We decided to frame our trip around four of these, two campanulas, *CC. raineri* and *morettiana,* and two of the more esoteric gentians, *GG. frigida* and *froelichii.*

When I mentioned our tentative plans to one of my fellow lecturers at Warwick, Fritz Kummert, he immediately said that *Gentiana frigida* was no problem, he would like to show us. We jumped at this kind offer, for *G. frigida* has rather a restricted distribution. We particularly wished to be able to compare it with the closely related *G. algida* we had seen in North America. We had also had it in mind to visit Czechoslovakia for quite some time, an aspiration reinforced by Dr Gwen Black's influence. The presence

of several Czech friends at Warwick once again gave us the opportunity to make concrete arrangements. We were to drive to Prague, via Würzburg, thence to Graz to see Fritz, returning via the Italian Alps to France, we cannot miss France, and home.

Staying at Askival for July, we were able to enjoy the flowering of many plants we had missed over the previous years. This is the peak time for our 'muckle great roses'. Jim Sutherland does have a point (Column June 1988); like all plants, shrub roses have their drawbacks, they occupy much space, some by suckering too freely, they are awkward, indeed painful, to weed amongst, and can make ungainly looking bushes. In return they offer many delights: the exquisite scrolled buds of 'Alba Celeste' with their ferny calyces, the misnamed 'Golden Wings', its large single primrose blooms enhanced by dark anthers, the peeling bark and strange prickly fruits of *Rosa roxburghii*, and for sheer flower power the vigorous climbing Sherriff rose, possibly an apricot form of *R. longicuspis*. Many lilies also flower at this time, a contrast in reds being provided by *Lilium pomponium* from south Europe and *Lilium grayi* from the Appalachians. The brilliant scarlet perianth segments of the former, fully recurve à la martagon, whereas the brick-red hanging flowers of *Lilium grayi* flare only just enough to display the dark blotches within. *Lilium pomponium* grows well in a small limestone scree bed to the west of the house, its transatlantic cousin in the stony acid soil of a shrub border. The western *Lilium washingtonianum* finds the latter situation sufficiently akin to the pumice slopes of the Cascades for healthy growth and flower production. We find the various seed exchanges an excellent source of lily species, but let these three suffice.

The south-facing scree terraces below Poll's potting shed become very arid in summer thanks to the invading roots of a mature Caledonian pine. In this difficult site, blue *Lithodora graminifolia* and yellow *Genista hispanica* provide an excellent combination beside the large silver dome of *Helichrysum splendidum*. Lower down *Inula ensifolia* 'Compacta' tolerates the competition equally well, freely producing its narrow-rayed golden daisies late in July. This was an early purchase from the long defunct Hollet nursery, as a result of the colour portrait in the Dec. 1970 AGS Bulletin. *Geranium pylzowianum* and *Teucrium pyrenaicum* have claimed much of the bottom terrace between them, but only the latter flowers enthusiastically. Much less permanent wherever we grow it, but easily renewed from seed is the spectacular *Silene elizabethae*: nothing subtle about its vivid magenta. We were able to enjoy the related *Saponaria pumilio* twice this year, at home just before we left, and again in Styria.

After the usual last minute rush, some seed pots not pricked out and a few beds not properly weeded, we finally set off for Hull on August 4th. Once

on the Continent, it was a long hot drive to Würzburg, where we were privileged to stay with Michael and Maria Kammerlander. Michael is renowned for his innovative cultivation techniques, as exemplified both in his own garden and at the Botanic Gardens nearby. Here he looks after the alpine house, frame yard, Mediterranean and steppe gardens all with only one helper!

At first glance, the Kammerlander's own garden appears quite familiar: there are all the usual features of small rock garden, raised beds, alpine house and its accompanying frames, but a closer look at what is actually being grown immediately indicates one is in the garden of a real enthusiast. Step into the alpine house and the pièce de resistance is revealed, probably the finest *Dionysia* collection we can remember seeing anywhere! The alpine house itself is a lean-to plant house, i.e. glazed down to bench level, let into the down slope below the dwelling house. The solid rear wall on the uphill side forms the foundation of Michael's famous tufa-cliff. Comparisions with the late Roy Elliott's cliff-garden in Birmingham are inevitable, (see AGS Bulletin v.31 p.73ff); but the two are quite different, both in purpose and execution. Roy's cliff, although also built against a wall, was much deeper from front to back, the tufa blocks more massive, with flat terrace areas in between courses. Protected from the rain by a glass roof, watering was nevertheless from overhead by means of mist nozzles left on for a day at a time. As it was Roy's intention to grow quite a wide range of plants in and on his cliff, the tufa blocks were backed by quite a rich, highly organic, soil. Even *Erinus alpinus* was allowed to seed in the cliff, its failure in the open an indictment of the air quality in central Birmingham. Although we well remember Roy's famous *Jankaea heldreichii* under an overhang at one end, we do not recall seeing many classic cushion plants, even on the vertical faces, perhaps due to the overhead watering system. When we were there Roy grew such plants directly in his alpine house bench, including a large *Acantholimon* which threatened to block the doorway.

Michael Kammerlander's cliff is a much slimmer, steeper structure, built of blocks resembling thick paving slabs, arranged vertically, and retained to the wall behind by stainless-steel bolts. The space behind the blocks is filled with sand mixed with a little vermiculite; all watering and liquid feeding is via this substrate, a drain channel at the base removing any surplus. Almost a score of *Dionysia* species are established on the blocks, and we were very taken by this naturalistic method of cultivation, much preferring these irregular creeping scabs of green to symmetrical humps squatting in the centres of pots.

As Michael himself pointed out, his cliff only dates from 1988 and is still somewhat experimental. At the time of our visit he was in the process of

adding an automatic shading system, for the whole greenhouse. In complete contrast the front lower side of the house is entirely conventional in appearance, neat rows of clay pots in a sand plunge edged with polished wood. Even here all is not quite what it at first appears, the compost used is a singular mixture of one part sand, one part burnt clay (used in Germany for insulating houses) one part vermiculite or perlite; half part of a proprietary peat-clay soil, and a quarter part of Bentonite. This last is a mineral able to hold onto soluble fertiliser, and is, I believe, used in drilling muds. The low organic content renders such a compost far more stable at the high summer temperatures in Würzburg. As with the cliff, Michael relies on liquid feeding, always avoiding the actual cushions. While his results speak for themselves, we have been told that it can be very difficult to transfer one of his plants to a more conventional British compost based on peat, loam or leaf-mould.

As I am sure I must have said before, the foundation of any extraordinary alpine collection is seed raising, and Herr Kammerlander's is no exception. The dionysias are hand pollinated using a single horsehair, but flies or moths sometimes get there first and random hybrids result. As a species purist, Michael indicated that he intended to discard many of these, but we do hope they are distributed, for hybrid vigour could throw up an everyman's dionysia, a relatively easy plant for the non-specialist. Out in the garden there were further interesting hybrids, a swarm between *Douglasia montana* and *D. nivalis* for example. We were surprised to see many frames with both glass lights and shading in place. The glass serves to raise the humidity around the plants, and thus helps combat red spider.

Lack of space precludes a detailed account of our visit to Würzburg Botanic Garden, a few notes must suffice. From a distance the alpine house is a conventional span-roof structure, once again the surprise is inside – no pots! Instead there are two parallel rock beds on the benches. These face the same way, one to the central aisle, the other to the glass side. Both are real works of art, with beautifully crafted crevices of limestone and granite, containing dozens of choice plants such as *Eriogonum shockleyi*, tight and in character, and the blue form of *Chionohebe densifolia* from the Snowy Mountains. The bed facing the glass side had some evidence of scorch after days of unusually hot weather. (33°C and 25% humidity the day we were there). The lath shading did not extend past the eaves, but Michael plans to rectify this in future. As he says, "The gardener must always be critical of his own work".

The Mediterranean garden lies at the end of a small shallow valley and consists basically of retaining walls of large dressed stone blocks, some 5-6m high. The older parts are almost vertical and were showing signs of bulging under soil pressure. They are gradually being reconstructed with

a more substantial batter and a sandier compost behind and between. As one approaches these walls, the steepening slope to the right forms the Steppe garden. Here, on angular slaty rocks, were some superb hummocks of various acantholimons, and large specimens of *Gypsophila aretioides,* their tight cushions a delicate pale green, contrasting beautifully with the dark rocks. As we moved back towards the valley entrance we noticed some venerable *Erinacea pungens;* self-sowing has provided a colour break to rich purple.

While discussing cultivation techniques, over a last lunch of delicious Bavarian sausage, the innate conservatism of many British gardeners was mentioned. I added that our traditional sausage, which would not qualify as Würst in Germany, had been stoutly defended by the British popular press. This led to jokes about the EC and "Europaische standart Würst". There is nothing standard about Michael Kammerlander's methods, or the results he obtains!

The division of Europe by the Iron Curtain produced many distortions of the road network, and there is as yet no motorway link to Czechoslovakia. We chose to bypass Bayreuth, of festival fame, and spend the night relatively high and cool in the Fichtelgebirge, a range of wooded hills near the Czech border. In our out of season ski-hotel we had dinner in a quiet corner of the bar. The main restaurant was occupied by a coach tour of GGGs (Grey German Grannies) being entertained by oompah-pah music. Change to Scottish tunes and we could have been in one of our local hotels at home!

There was no hassle at the border, we stopped just long enough to purchase local currency, not yet convertible, and vouchers for diesel fuel. Continuing east past the old spa of Karlovy Vary we stopped at an accommodation bureau, with a sign in English, on the approaches to Prague. Here we discovered that there were 70,000 Jehovah's Witnesses attending an International Conference and all hotels were full! The three young capitalists however soon found us an apartment to rent, just around the corner from Jaroslav Kazbal's address. We rocked our way into the city to an early Dire Straits tape, only to find that our flat belonged to a Czech opera singer! This enterprising lady gave us the keys, and left to stay with a friend. As Poll drove Grisewald into the square in the centre of the five storey pre-war block, the diesel's distinctive growl filled many of the balconies.

Over the next three days Dr Kazbal acted as our guide and interpreter. Without his unstinting help we would have seen, and learnt, far, far less, not only of gardens, but also of Bohemian history and culture. He took us first to Josef Jurasek's plot in a windy hillside commune overlooking the city. Here Josef has opened up an old cellar, let into the steep slope below

his chalet, and buttressed the three sides with a beautifully crafted tufa outcrop. Alpines of Turkey and the Balkans, where Josef collects seed, were much in evidence, as were his favourite gentians. Taking one look at our Land Rover, Josef pronounced it perfect for his impending expedition to Kurdistan, and how would we like him to be our guide!

Jaroslav described our second stop as a "watch-maker's rock garden". On an almost flat site, Ota Vlasak has laboriously created over 100m^2 of rock work in the intricate Czech style, using many relatively small pieces of rock often set vertically. The idea is to cover the ground with rock producing a multitude of crevices. What little top-dressing there was between outcrops, being irregularly sized and matching. For our taste the overall effect was perhaps a little too contrived, but it was good to see plants, such as a collection of eriogonums from Gwen Kelaidis' seed, happy out of doors. Clearly Ota is another member of the 'Cushion Liberation Front'.

Next day we drove out of Prague for Jaroslav's own country cottage to meet his wife and family. When they acquired the land, regulations permitted only a tiny plot in the woods, but it was surprising how much was shoe-horned into the available space. On our way back to the city we called at the larger, long-established garden of Olga Duchacova. Here beneath shade trees, were woodland beds, outcrops, including a most attractive sunken walk, and troughs, even some old cold-frames converted into low raised beds. By any standard, Olga grows a vast range of interesting plants, but two in particular are well worth singling out: a spraying gentian of palest blue, akin to *G. septemfida* but clearly not that species, and the hybrid *Dicentra* 'Tsuneshige Rokujo'. Described in the AGS Bulletin 1973 v. 41:4) when it was given a P.C., we have not seen this *D. peregrina* cross in the U.K. for quite some time.

Our final day in Prague was largely spent sight-seeing, but we did visit the Pruhonice Botanic Garden to pay homage to the original *Pinus heldreichii* (or *leucodermis*?) 'Smit', planted in 1926. I wonder where the original *Salix boydii* can be seen? That evening at Eva Hanslikova's we saw Josef Jurasek's slides of Turkish alpines, including many high endemics of the Cicilian Taurus new to us.

Leaving the city the following morning, we drove southwards to Dr Jaroslav Klima's farm near Jindrichuv Hradec, not far from the Austrian border. Approached through beautiful woods, the steading is typical for the area, buildings on three sides of a yard, the fourth enclosed by a 2m wall. Now grass covered, the farmyard contained a collection of genuine stone troughs, two of them the really deep kind alpines prefer. Many were large enough for Dr Klima to indulge in the Czech passion for the proper arrangement of rocks. On one was another plant we think is lost in the U.K., the hybrid *Talinum* x 'Zoe'. As we looked at the troughs a furious

hammering was heard from the kitchen, it was 80 year old Babicka battering the veal for dinner into submission, a wonderful lady! In front of the house the rock garden contained not only the fine complement of dwarf conifers we had come to expect in Czechoslovakia, but also many American alpines. There was an excellent cushion of an old favourite from Colorado, *Eriogonum flavum* var *xanthum*. The Klimas have recently acquired a field from the local commune, and have planted it with perennials for seed. There were rows of young *Dianthus microlepis* lined out here! After dinner, as darkness fell, we sat around a bonfire drinking home made wine (from *Aronia melanocarpa*) and watching the Perseied meteor shower. It would scarcely have seemed possible a few years ago!

Spending the last of our Crowns in the little town of Nova Bystrice, we left Czechoslovakia at the quiet crossing just to the south, and continued to Vienna for an American style one-afternoon visit. Really it was just the easiest way to reach the Kummert house near Graz. High on a ridge above the village of Rollsdorf, it has a superb view of the surrounding Styrian countryside. Here the climate is far more humid as evidenced by the healthy cassiopes revelling in full sun, and a fine collection of trilliums. On the other hand, coupled with the summer warmth, this can lead to fungal problems, especially on cushion plants. Like us, Fritz has no alpine house, growing his plants either outside in the garden, or in an extensive range of low wooden-sided cold frames. In high summer no lights were apparent, but extensive use was made of shading, much of this wooden laths linked flexibly by wire rings. Such rolls are still commercially available in Austria, not supplanted entirely by plastic nets as here. To save time, some of the frames had recently been filled with a light peat-based compost and directly planted with many of Fritz' finest choice plants. The famous European primula collection was however in square plastic pots! Fritz has also developed a most interesting in-between method of cultivation using what is possibly best described as a small deep seedtray. These containers had been specially made, in what was then East Germany, of stoneware fired at a high temperature to ensure frost resistance. Up to half a dozen alpines are potted in each, and, being rectangular, they can be closely arrayed in a cold frame, to form a virtual bed with divisions. This close arrangement makes an efficient catchment for liquid feed, and minimises frost penetration. The major advantage of this method however, lies in the time saved. Whereas alpines in pots require repotting annually, or, at the most, every two years, these mini-troughs can be left for four, or even more years, providing species of compatible, relatively slow growth rates are grouped together. We feel that the probable beneficial effects of root association need further investigation, and Fritz' method could be one way for the amateur to experiment, trying various combinations of difficult

plants in controlled conditions. Naturally the plants are overpotted at first but judging by Fritz' results this is not a problem. One more myth exploded? Since our garden philosophy is one of minimum intervention, we should very much like to try this method of cultivation, but cannot find a suitable container. If anyone knows of a rectangular tray about 20 x 30 x 15cm deep we would love to hear about it. We even investigated having them made in glass-reinforced plastic, but at over £5 each they would have been far too expensive. For a reasonable trial we would need 50-100!

And so at last we come to the mountains. As indicated above, Fritz Kummert is an acknowledged authority on the Auriculastrum primulas, his subject at Warwick, but the next few days demonstrated a knowledge of the alpine flora quite exceptional in both depth and breadth. We went south first, to Carinthia to see *Gentiana froelichii* and friends. There is a comprehensive plant portrait, by Ray Johnstone, of this unusual gentian in the June 1985 Journal (p.277) but the reproduction of the accompanying plate does not do justice to its striking electric blue. We had to raise several batches of seed from the various exchanges before we eventually got the true plant, the others were all *Gentiana clusii!* This did grow in association with *G. froelichii,* as did the Verna gentian, *G. terglouensis.*

Lower down, in the cow pastures there was the striking Hungarian gentian *G. pannonica* which, Farrer notwithstanding, I would never describe as "dingy". The plants we saw varied in colour from dusky-pink to deep wine red, lacking any hint of blue or purple (Fig.101, p385). Of the five species of its section listed in Flora Europaea, only *G. lutea* is commonly grown in gardens. Although this is the type section, *Gentiana,* it is perhaps unfortunate that these species are gentians, for if judged as herbaceous perennials, rather than compared with *GG. acaulis, verna* and *sino-ornata,* they have much to offer the summer border. With their thick, deep-diving thong-like roots they resent transplanting and dislike pots. We followed the usual advice in such cases to raise from seed and plant out early, while still quite small. We grow *G. burseri* with clear pale yellow flowers; the spotted *G. punctata* undeserving of Farrer's rudeness, and the small *G. purpurea nana,* which came true from the seed exchange unlike many so-called dwarfs. These are far from the least attractive gentians we have raised; that dubious honour belongs to a coarse clusterhead from China, whose murky-white flowers never open.

I have often wondered how many worthwhile plants are ignored as a result of one of Farrer's condemnations. His one sentence dismissal of the genus *Heracleum* may apply to the dangerous giant hogweed *H. mantegazzianum,* but is less than just to *H. austriacum* ssp. *siifolium.* Only some 30cm high, its substantial heads of rich pink glow above parsnip-like foliage, the outer petals fully 10 x 4mm. A complete surprise to us, we

intend to trial this umbellifer in the garden.

The Carinthian limestones are home to a fair number of campanulas, starting with the distinctive narrow-belled, non-running, *C. caespitosa* relatively low down, and ending with the slightly tubby *C. cochlearifolia* and the unmistakable *C. zoysii* on the topmost rocks. Fritz suggested these latter two could be hybridising, citing the slightly constricted corollas of some individuals of *C. cochlearifolia*. At moderate altitudes one is in harebell territory. The more I read on this group around *C. rotundifolia* the more confused I become. Flora Europaea uses the name *C. carnica* for the plants with long thin deflexed calyx lobes, variously called *C. linifolia* and *C. schleicheri*. It also reinstates *C. scheuchzeri* with a broader flower and shorter calyx. Taxonomy is often a matter of opinion, a visit in August would be a good time to formulate one's own ideas on these campanulas, but as a non-specialist I defer.

On our way to rendezvous with the second of our prime targets, *G. frigida*, in Upper Styria, we called at a serpentine outcrop, recently saved from quarrying, the locus classicus for *Sempervivum pittonii*. There were two interesting ferns here, *Cheilanthes marantae* and *Asplenium cuneifolium*. A recent survey in the AGS Bulletin recommended the former for acid screes, the latter for limestone, but here they were side by side! This part of Styria is home territory for Fritz' wife Sefi, and her sister and brother-in-law still live on the family farm. Thus we were able to drive up through the woods, almost to the tree line, on a private forest road. A short walk past several 'high-seats' (for shooting) and we were out on the heavily grazed alm. The modern heavier breeds of cattle are causing considerable damage to the ground by trampling, making it quite difficult to walk over in places. The grasses *Nardus stricta* and *Deschampsia flexuosa*, signs of overgrazing, together with *Calluna vulgaris* and *Loiseleuria procumbens* gave a very familiar feel; not so the rare black woodpecker. The calcifuge theme was continued on the ridge-top by many mats of *Saponaria pumilio* in full flower. There were a few albinos, but unfortunately of a rather impure white. As Fritz and I crested the shoulder of the mountain, half a dozen chamois ran across, only some 30-40m in front! Poll missed this exceptional close sighting, she was behind photographing some of the hordes of butterflies taking advantage of a fine day. The same sunshine opened the flowers of *Gentiana frigida* (Fig.102, p386); Fritz said he had never seen it looking so well. Clearly closely related to the circumpolar *G. algida*, this is a daintier plant, generally with softer, though variable, markings on the outside of the pale greeny-white corallas. The lobes are blunter than *G. algida*, and somewhat stained with pale blue. Wilkie (Gentians) and Huxley (Mountain Flowers in Colour) suggest it is native to limestone, whereas Flora Europaea, Farrer and Fiori delle Alpi say

calcifuge! Our experience supports the latter contention. The surrounding vegetation was almost entirely that of an acid mountian, the phyteumas and primulas for example.

In cultivation the smaller phyteumas, as a group, tend to be overshadowed by the Devil's Claw, now justly separated as *Physoplexis comosa*, but we prefer them for their compact growth and better blues. Back in Carinthia we had seen *Phyteuma sieberi* on high limestone rocks, a hint of grey about the foliage, and with royal blue flowers. A double première for us this year: it flowered for the first time at home, from the seed exchange. Sharing the Styrian home of *Gentiana frigida* were three phyteumas generally regarded as calcifuge. The first encountered was *P. hemisphaericum*, forming tufts of grassy leaves and clear blue heads of flower. Higher in the thin turf of the ridge-top, it was replaced by *P. confusum*, with slender shorter, broader leaves and a hint of violet about the flowers. Here and there were clear whites. Approaching the summit this appeared to merge into *P. globulariifolium*, even shorter at 5 cm and having, as the name suggests, more rounded foliage.

I said "almost entirely acid" above, for there was one very interesting exception. In Scotland, our emblem *Dryas octopetala* is confined to basic soils, and often quite localised as a result. In the Alps too, this is the general rule, but here on an acid Styrian ridge was a beautiful grey-leaved population, its small foliage hairy on both sides. Fritz was most anxious that we should correct Brian Halliwell's contention that is is just a horticultural form (Rock Garden 87, p.152). Bean mentions *Dryas octopetala* forma *argentea*, and gives Upper Styria as one of its wild locations!

That evening, after a splendid meal of deep-fried Boletus, we had to tear ourselves away from Fritz, Sefi and their kind family, and head off south-westwards to see *Campanula raineri* in its native haunts. Around 100 miles later, as darkness gathered, we looked for a room and our troubles began. We must have tried a score of Gasthofs, eventually spending the night in Grisewald parked on the grass behind a hotel and being allowed to use its facilities. We had brought our camping gear as an insurance, knowing this was a possible down-side of travelling in the Alps at peak season. Another came the morrow: a hot and frustrating day was spent crawling through village after village in an endless stream of cars. The air pollution from all this traffic congestion is damaging the alpine vegetation, a point we have made before. The Swiss have recently approved a $20 billion series of new railway tunnels under the Alps primarily to carry trucks on trains. The problem of too many tourist cars is far less tractable. We should have gone south via Undine and Venice, thence straight west to Bergamo on the Autostrada. As it was, we reached the Tonale Pass by 6 pm and decided to stay in one of the ample ski-hotels. It gets wonderfully cold at night up there!

A short, but very narrow drive, early next morning, Grisewald's cow-catcher intimidating any Fiat opposition, Poll's first ever chair-lift, and we were back with the alpines. A cloudy day, but dry, spent below glowering limestone precipices, but there was nothing dull about the flowers. Amongst the last scattered trees *Cyclamen purpurascens* was in full flower, a plant we find difficult, and must grow here in a limestone scree. Just as our visits to the Rocky Mountains caused us to take a second look at our own European alpine composites, so has our interest in dwarf aquilegias developed. Even the habitats can be similar, Utah's high limestone talus slopes have *Aquilegia scopulorum,* north Italy's *A. einseliana.* Only slightly glaucous, the latter's slender 30–40 cm stems carry dark violet-blue self-coloured flowers, with short straight spurs. *A. thalictrifolia,* also from north Italy, is very similar, but as we grow it rather dwarfer. Fritz dislikes the glandular foliage, saying it catches dirt, but this is not a problem in rainy Scotland! We consider *A. thalictrifolia* a more than adequate dark flowered substitute for *A. nivalis*: the Italian species flowers regularly!

We had always thought that *Campanula raineri* was a crevice plant, and so we looked for it on the cliffs and rocks but without success. We were on the point of giving up, when Poll spotted a *C. scheuchzeri* with a large open, upward facing flower. Scrambling up onto the talus above, we were greeted by an area completely seamed by *Campanula raineri,* every tuft with open flowers! (Fig.103, p386). One of life's little moments said Poll, expending half a roll of film. Like the dwarf phyteumas mentioned above, we find this choice species easy in a trough, if one can keep slugs at bay. Lack of deterrent toxins is a characteristic of many of the Campanulaceae. Jack Drake once told us that he thought *C. raineri* a "tiresome little plant, it won't stay put but runs into my best *Androsace carnea x pyrenaica*".

After *Campanula raineri,* anything else would appear an anticlimax, and so next day we turned up the Val d'Aoste for the Mt. Blanc tunnel and the relative peace and quiet of the French Jura, some good food and a little shopping. Almost home, and the Drumochter played its best card, the heather in full bloom, and the evening sun sculpting every fold of the hill sides.

Having just been given a tape, this holiday will always be associated with Bob Seger: there were indeed times when we did feel as if "we were running against the wind". We really attempted too much in three weeks, four would have been far preferable, but we had used up garden-sitting time for Warwick. If one is prepared to brave the August crowds, and walk high enough, there is still plenty of floral interest in the Alps, with those few specials to add spice to the dish. One can also collect seed, we found primulas, ranunculus, pulsatillas and much more.

We must end by publicly thanking all our friends in Europe for their help and hospitality, we could not have done it without them. Apart from the

flowers we have many memories to make us smile. Germanic cocks take orders: Fritz' rooster crowed at 5 am, a voice said two words in German, and all was silence! Wherever she went in Czechoslovakia, Grisewald attracted attention, while for us the novelty was the little Trabant with its angry buzz – 100 kilograms of enraged plastic according to a Czech joke. Prague, like the Czech rock gardens, has real style; go and see for yourself.

Campanula raineri Duncan Lowe

Bulbs in Gothenburg Botanic Garden

HENRIK ZETTERLUND

Bulb-growing is the wise gardener's choice because the bulbous plants provide one with all the challenge and beauty that our kind of grower asks for. This they do without too much effort from the cultivator, since the majority of species are easy to grow. They also contribute their beauty in the gloomy days of autumn, winter and early spring when there is little else to brighten the days of the plant-lover.

After having done their thing they disappear in May and leave you with a summer devoid of responsibilities, a summer for travelling, reading or socialising – activities out of reach of the dionysia-grower or other ambitious gardeners. If plants had only been a hobby of mine, the choice would have been obvious: bulbs, but in my present position I'm stuck with lots of other plants and responsibilities. I see plants calling for attention, I have to see the dionysias fighting for their existence and eventually cross the border line – giving me a constant bad conscience.

Bulbs, on the other hand, when they decide to "snuff it", mostly do it out of sight, requiring only a brief obituary when turning the empty pot in September.

In the scope of this article, "bulb" is a term somewhat widely used. For our purposes, bulbs are plants adapted to a climate that provides ample growing conditions during the autumn, winter and spring. During this period the plant fulfils its vegetative and reproductive phases. This period is followed by a more unfavourable season of combinations of shade, heat or drought.

This season the plants spend underground in an energy and water storage organ that can either be a bulb, a corm, a rhizome or fleshy roots with a bud. This definition excludes summer-flowering plants like lilies and arisaemas which, although they do have a true bulb or corm, are behaving like any ordinary herbaceous plant. For those of you who haven't already been infected by the bulb-bug I will make a brief explanation of the different types of storage organs that I hereafter refer to as bulbs.

The **true bulb** is like an onion, on a short stem are many densely packed leaves. These leaves, called scales, serve as storage during the period of rest and the new shoot, flower, stem and leaves are produced from the tip of the compressed stem.

The **corm** can, superficially, be very similar to a bulb – many would call the colchicum or the crocus corm a bulb. But in this case the storage-tissue is the stem with the growing-point attached to it as a bud.

The **rhizome** is a horizontal, more or less subterranean, fleshy stem – like a piece of ginger.

Sometimes **roots** serve as storage, as in *Eremurus* or the Juno irises. The latter have also a bulb, but for aestivating purposes this is of little importance.

In the three main bulbous families, bulbs, rhizomes and corms can be found in the Iridaceae and Liliaceae whereas in the Amaryllidaceae there are only bulbous genera. In the aroids the corm is the sole storage organ. The tuberous dicots may use corms, rhizomes or roots to take them through hard times, and some, like *Saxifraga granulata* and *Dicentra cucullaria,* produce bulbs.

Though bulbous plants can be found all over the world there is a heavy preponderance in the areas between the 30th and 40th latitude north and south of the Equator, where a Mediterranean climate prevails. The most important region for our purpose is the belt reaching from Spain eastwards to central Asia. Next in interest is western North America, California in particular. Very rich indeed, but of little interest to our collection is South Africa and the southern part of South America.

Within the Eurasian bulb-belt different genera dominate different areas, starting with a mass of *Narcissus* almost entirely confined to Spain, Portugal and Morocco. Then in Greece *Colchicum, Crocus* and *Fritillaria* become numerous only to culminate in Turkey – the bulb-freak's Mecca. Here begins the wealth of tulips and Juno iris, that later culminates in Iran, Afghanistan and the adjoining Russian Republics. Turkey is also the home of the lovely reticulata irises and a centre for the hardy oncocyclus irises. In Central Asia we find the regelia irises and a great number of lovely *Corydalis* species.

In the wild bulbs occupy a wide range of habitats and if you ever have the privilege to travel in Turkey in spring you will see them everywhere; never much colour, but bulbs everywhere. The best sites for bulbs are in the limestone areas, particularly in small cultivated fields worked only with primitive equipment and allowed to lay fallow for periods. During the last two decades there has been greatly increased interest in bulb-growing – mainly thanks to all the superb literature that has been produced by British botanists. The bulb-grounds have suffered from over-collection by ruthless people. Sensible, careful collecting will not do any harm to nature. Ole Sønderhousen may stand as an example on how it should be done. Collect only a few specimens, grow them, flower them, pollinate them and raise the seedlings. However, the modern plough has exterminated far more bulbs than the collector. As always, a drastic change

of the environment is the worst enemy of a plant. Grazing animals might also be the enemies of bulbs. Some areas are definitely over-grazed. On the other hand, moderate grazing stimulates the presence of bulbs.

Gothenburg and Bulb cultivation

Per Wendelbo is very important to the subject of this paper. He was a Norwegian botanist who became the director of the Gothenburg Botanic Garden in 1965. He was a keen plantsman with a particular interest in bulbs and his collections from Iran, Afghanistan and Turkey have formed the base from which we are building our present collection. Much has changed and the assortment has certainly improved since he left us – but he got it started and it wouldn't be wrong to call it "The Per Wendelbo Memorial collection".

Bulbs have been given a rather important position in Gothenburg Botanic Garden and at times I feel over-run by them. The main feature is the bulb garden in which we show around 1000 different accessions to the public. During most springs it is lovely but the bad winters of the 80s were disastrous. We have created different environments in this garden, some beds are covered by glass, others are not. Some beds are shaded in order to contain woodland bulbs, others are in open beds containing a moisture-retaining mix suitable for alpine bulbs. The glass-covered beds are undoubtedly the most successful, since they can dry out in the summer they aren't troubled by botrytis, which quite often makes the open beds untidy. Under glass we have been able to grow the wild form of *Iris danfordiae* for a long time. Unlike the triploid form of cultivation this gives a good show every year. The bulb garden is a rather formal creation with a monoculture of bulbs. It is good for growing and showing but looks awful when out of season. Frankly I prefer to grow bulbs where they are replaced by other plants as they wither. Many bulbs are good for growing in shrubberies and in grass but most require rock-garden conditions if they are to make it in the open. *Narcissus watieri* has, despite its north African origin, done extremely well. A few tulips are also long-lived in the rock-garden though some, like *Tulipa orphanidea,* may be a bit too invasive.

However, most bulbs do best under shelter in Gothenburg, and we grow them in clay pots that are plunged in sand all year. The compost is free draining and rather rich in nutrients since we do not feed during the growing season. Equal parts of sterilised loam, peat, coarse sand and grit are neutralised with lime and fertilised with bone-meal, of which we add half a litre to 100 litres of compost.

Our aim is to carry out the annual repotting in August but for some reason we never get started before September.

Most bulbs are treated similarly. We use ordinary, rather large pots where we place the bulbs half way to the rim and space them out leaving approximately one bulb's distance between them.

Some genera like *Tulipa, Colchicum* and *Corydalis* of the Leonticoides section prefer deep pots. To avoid too much moisture in the pot we fill it with sand from the bulb upwards.

Really tricky items like the dwarf Juno Iris are likely to be infected by botrytis. To help the iris we plant so that only the roots are in contact with the compost, and the bulb and the new shoot rest in clean sand.

The octopus-type of "bulb", for example *Ranunculus acetosellifolius* or *Primula fedtschenkoi,* need their fleshy roots in contact with a good compost but their bud to be near the surface and embedded in sand.

Whichever way we choose, we always top the pot off with a one centimetre layer of grit.

After planting we plunge the pots as soon as possible. From September onwards we keep most pots moist. The roots will start to grow as soon as the nights are cool enough, and a bulb is carrying out a lot more of its annual duties in the autumn than one normally imagines. Therefore an autumn drought can do much damage, it may put *Hyacinthella* into a dormancy that will last for several seasons, it may cause abortion of flower-buds, it may weaken or even kill the plant. Once one has started to water one must continue. In many articles one can read "keep them just moist in late autumn, dry in winter and moist in spring". We keep them moist in autumn, moist in winter and wet in spring.

Some plants, which otherwise would appear too early and get untidy due to lack of light, we try to start as late as possible. This is a problem with tulips and the Leonticoides *Corydalis*; these get their first drink in mid-November.

After starting the bulbs, we take them through a winter than can never be predicted. Most of the winter the temperature shifts between +10 and -10°C but we often get a few weeks in February when temperature drops to -20 to -25°C. During such periods we use electric fans and try to keep temperatures above -10°C, preferably around -5°C. The winters of the 80s showed us that bulbs will stand a lot, even when in growth. Most will survive down to -15 to -20°C for one or two nights but not for two weeks! The most frost-hardy groups of bulbs are the Turkish oncocyclus irises.

In spring we are richly repaid for our efforts and only have to water them, enjoy them and, sometimes, take a photograph of them. When they have done their thing, water is reduced, but never completely. We actually water the sand every week or two over the summer, and the alpine bulbs are kept moist all the time.

Fig. 120 *Crocus baytopiorum* (see p422) R. J. Bezzant

Fig. 121 *Lychnis flos-cuculi* – dwarf form, Sutherland (see p423) R. J. Bezzant

Fig. 122 A 'belly' of *Raoulia eximia* growing with snow tussock, Mt. Nimrod, New Zealand (see p431) Heather Hill

Fig. 123 'Brain' type of *Raoulia eximia,* Mt. Nimrod, New Zealand (see p431) Heather Hill

Fig. 124 *Raoulia eximia x Leucogenes grandiceps* growing on *R. eximia*. Mt. Nimrod, New Zealand (see p431) Heather Hill

Fig. 125 *Dracophyllum prostratum* growing on a 'quilted' form of *Raoulia eximia* in seed. Mt. Nimrod, New Zealand (see p433) Heather Hill

Fig. 126 *Crocus gargaricus* shown by T. G. Sprunt (see p439) Ian Young

Fig. 127 *Pulsatilla halleri slavica* shown by Ian and Margaret Young (see p439) Ian Young

Bulbous dicotyledons

Most people associate the word "bulb" with plants from the monocotyledons. However, the development of subterrestrial storage organs and autumnal to vernal growth has been caused by climate so it is not surprising that many dicots have developed similar habits. Notable families of tuberous dicots are the Ranunculaceae and the Fumariaceae.

Plants from the latter family have long been a particular interest in Gothenburg and the collection is extensive. There are four species of tuberous *Dicentra* in North America, all very lovely. *Dicentra pauciflora* is the one with the most restricted distribution, occurring only in the mountains of northern California. It is only 10 cm high when in flower, and quite reliable, even in the open.

However, my special interest in this family is the other tuberous genus, *Corydalis*. During the last decade it has been the subject of ever-increasing interest and many new species have been introduced to cultivation. The best 'doer' in the garden is undoubtedly *Corydalis solida*. Some beautiful red and pink forms have been introduced from Romania, but there is more to come. In some collections from Macedonia we have been able to select an ice-blue clone, and a white one with a cherry-red suffusion and red markings near the mouth. To our amazement we have also found a new European species in the same area, very different from *C. solida* and very important to me since it bears my surname, *Corydalis zetterlundii*. This was named by the botanist, Magnus Lidén, who shares my interest and is doing a revision on the genus.

The *C. solida* group has another centre in the Far East where we find the sky-blue taxa. The most familiar of these is a Japanese plant distributed as *Corydalis ambigua*. On the mainland *Corydalis turczaninowii* is found, this is an even more elegant plant which should do well in woodland conditions. The dwarfest representative in this group is *Corydalis linearíloba*, only 5 cm when in bloom. In wild-collected material we have noticed a tremendous variation suggesting hybridisation and many individuals are definitely worth selection.

In central Asia the Leonticoides section has its centre. They are the most bizarre in the genus but extremely difficult to keep in character in cultivation, since they are very early growers with a tendency to get drawn. *Corydalis popovii* is the weirdest and perhaps the most beautiful of the lot. In the Caucasus and Turkey the section Dactylotuber is centered. These are also extremely difficult plants but we are having some success with *Corydalis pallidiflora* – the only yellow one in the group. They are best pot-grown in a peaty, gritty mix and must be kept slightly moist through their dormancy, exactly like the better known *Eranthis pinnatifida*, a woodlander which grows in company with the Japanese *Corydalis* species.

Now we're dealing with the other important dicot-tuber-family – Ranunculaceae. The species is unique in the genus, being white. It is also the most tender since it starts very early and suffers from the frost. Its European relative, *Eranthis hyemalis,* is easy and common in cultivation, including a hideous double form and a lovely golden-orange form. I have seen no reference to these in British literature, so I gather they must be rare. Surprisingly both come true from seed so propagation is no trouble.

Anemones are also widely grown, but the group from central Asia is not so common. We can't grow them outside the alpine house but some like *Anemone eranthoides* and *A. tschernjaewii* are certainly worthy a place under glass. They are tricky since they often catch a disease, probably bacterial, during their dormancy. Some *Ranunculus* species are also included within my definition of a bulbous plant. Most are European or Asian but there are two or three species in North America as well. *Ranunculus andersonii* is probably the nicest, and also has the widest distribution, dotting the sage-brush country in white and pink in the earliest spring. I find it difficult to flower and I suspect I should bake it more in summer. Perhaps the most beautiful representative of the family is *Thalictrum orientale,* in the almost red form that can be found in southern Turkey. This has now been established in Gothenburg from a collection made in 1990 so we have to wait to see how it performs in captivity.

In North America we find some tuberous genera in Saxifragaceae. The best known of these is the delicate *Lithophragma parviflora,* which can be grown in scree as well as in woodland and is very easy. Originally this plant reached us from Jack Drake's nursery and it has been a long-time favourite. It can often be found in the sage-brush right next to *Hesperochiron pumilus* from the family Hydrophyllaceae (Fig. 104, p387). This is one of the prettiest plants to be seen and, fortunately, a good 'doer' in a pot and in the bulb garden. The most famous group of American tuberous dicots is, of course, the lewisias, of which most species have a summer dormancy. One mystery plant, probably of hybrid origin from a Swedish garden, we call *Lewisia nevadensis* 'Rosea'. It seeds itself prolifically and is a first rate rock-garden plant.

Cyclamen is normally considered the sole tuberous genus in the Primulaceae. But there are some others, many species of *Dodecatheon* from western North America, like *Dodecatheon clevelandii* var. *patulum,* are distinct geophytes. All the *Primula* species in the western American Cusickiana group like *Primula maguirei, P. capillaris, P. domensis* and *P. nevadensis* have the same habit. This group is difficult to grow mainly because they take such a long time from seed, and need just the right moisture to get through the summer. *Primula cusickiana* is so far the only one that we have tried in the open with some success.

Central Asia also has its bulbous primulas like *Primula kaufmanniana* and *P. fedtschenkoi*. Like most tuberous dicots they are slow from seed, as they only produce the cotyledons above ground in the first year. In this respect they are like the bulbous monocots. It seems as if they put all the effort into getting as deep down into the soil as possible during the first season and don't start to build up until they are safe. *Primula fedtschenkoi* has a root-system similar to a minute *Eremurus* and is easily propagated by detaching individual roots in the autumn. Once you have the plant at a decent size it is reliable in the alpine house.

Liliaceae

Enough of dicots. From now on I shall deal with the three main bulb-supplying families, starting with the Liliaceae.

The genus *Trillium* does not entirely fall within my definition, but *Trillium nivale*, for example, withers quickly after flowering and fits my definition well. They say that trilliums shouldn't be grown in pots but this does very well if the plunge is kept moist in summer. A peculiarity, once a *Trillium*, now *Trillidium govanianum*, is in fact more closely related to the genus *Paris* than to *Trillium* (Fig. 106, p404). We collected this as seed in Pakistan in 1983 so it's special to me. But, frankly, the most decorative part of this plant is the red berry. It is still rare in cultivation but an easy plant in the woodland once it is established.

In gardens *Erythronium* is often in company with *Trillium*. In the wild the genus is centered in western North America and recently many of the rarest species have been introduced to cultivation. *Erythronium purpurascens* is one of the dwarfest and nicest with creamy white flowers fading to purple. Only a few years ago we received seed of *Erythronium elegans*, a very local species from Oregon. This has turned out to be a vigorous plant. It is closely related to *Erythronium montanum* which is considered to be almost impossible to grow. *Erythronium elegans* is the obvious alternative, fast growing, easy and startlingly beautiful with large white flowers fading to pink and dark-green, just slightly mottled leaves (Fig. 107, p404). With this we leave the woodland bulbs and get on with the majority, bulbs coming from the large steppe areas of the world.

The archetypal bulb is the tulip; a true bulb in the important family, Liliaceae. Tulips have been loved by gardeners for hundreds of years, but among the alpine gardeners they have never been as popular as, for example, the fritillarias. This might be explained by the facts that they are difficult to keep in character in the alpine house and that most species have a limited life in the open garden. Species like *Tulipa humilis* do well for a few years, but as undecayed tunics build up around the bulb they are often infected by botrytis. The safest way to grow them is in baskets that are dug

up in early summer and stored dry and cool over the summer and then planted again in the autumn – but who has the time to do that?

We only keep the dwarfer species in pots; to avoid early growth we don't water them before mid-November, after a mild winter they still get very drawn but if the winter is cold and long they sometimes look quite decent.

Tulipa humilis has a rather wide distribution from South-Central Turkey into Iran (Fig. 110, p405). In the west from Bolkar Dag it often has a blue eye, whereas the eastern forms have a yellow one. The so-called *Tulipa pulchella* var. *pallida,* which is perhaps the most beautiful of tulips, is said to have been collected in the eastern part of the distribution of the species, near Tabriz. It seems quite likely, though, that it is an albino of the western form and, is perhaps, the subject of misinformation applied by its introducers in order to confuse other collectors. This is a tricky one to keep; I find it the most difficult. The lady tulip, *Tulipa clusiana* is nearly as beautiful, but is not a dwarf. Our form was collected in Iran, and after several years of annual splitting up it decided to start flowering quite recently. This must be grown under glass in order to be dried out in summer.

Another gorgeous tulip was first collected in Afghanistan at Kurd Kabul by our former director, Per Wendelbo. First he thought it to be a new species and intended to give it a name alluding to "drops of British blood" since the blood red flowers grew on a battlefield where your ancestors once were totally defeated by the Afghanis. It would have been a poetic name indeed but, unfortunately, the plant has now been determined as being *Tulipa linifolia* (Fig. 111, p405).

Tulips from Crete should not be hardy outdoors in Gothenburg but are responding well in the rock-garden. The smallest, *Tulipa cretica,* and the larger *Tulipa saxatilis,* (Fig. 112, p405) looked superb this spring. These two can be started early and flower by Christmas in a glass-house, but in the open they won't open until May, the same time as *Tulipa orphanidea,* an easy and long-lived species from Greece and western Turkey. The species from the Orphanidea group are late to flower and mostly rather tall-growing. The smallest of this group is *Tulipa bithynica* from Western Turkey which is about 15cm in flower. It is rather new in cultivation but has quickly become a special favourite, and should, I think, be as easy in the open as its near relatives.

Another easy group of tulips are those that are related to *Tulipa silvestris.* Of these, *Tulipa primulina* from Algeria stands out as the loveliest (Fig. 113, p405). Beautiful, late, reliable and untouched by botrytis: this one is really to be recommended!

The fritillarias have for long been extremely popular among alpine growers. It is an interesting genus – diverse, beautiful, relatively small-growing and easy to cultivate. The alpine representatives, like *Fritillaria latifolia* var. *nobilis,* from eastern Turkey, take well to rock-garden

conditions. Its near relative, *Fritillaria aurea* from central and southern Turkey, will probably do so too but I have never had enough of it to risk it. When we grow these two in pots we give them a "just moist" dormancy by watering the plunge in the summer. Not as brilliantly golden as the former but still exquisite is the yellow form of *Fritillaria hermonis* subsp. *amana* from Southern Turkey. I believe this orginated from a seedling raised by Norman Stevens in Cambridge. It's easy to grow in a pot or a frame and is now getting around in cultivation. *Fritillaria alfredae* subsp. *glaucoviridis* comes from the same area and is equally easy if grown under glass. It is an oddity with glaucous green flowers but I find it extremely elegant and beautiful in a quiet way. It is best admired from a near distance so I prefer it in a pot.

One of the rarest and most distinct of the south Turkish taxa is *Fritillaria assyriaca* subsp. *melanthera.* Many collectors have looked for it at locus classicus but I know only two who have found it, and then in other places. A little bizarre, with extremely twisted leaves, but very elegant. Another rarity in cultivation is *Fritillaria poluninii* – for some strange reason considered to be a subspecies of *Fritillaria crassifolia,* I don't agree with that. It is only supposed to grow in Iraq and the few bulbs in circulation have their origin there. However, we have a clone collected in western Iran, near the Iraq border, by Per Wendelbo. This form is the dwarfest of all the frits that we are growing, about 4cm in flower (Fig. 108, p404). The Iraqi form is two or three times taller. They are very similar but cross-pollination between the two forms hardly results in any seeds so maybe this is a new taxon.

A more common and very easy Iranian frit is *Fritillaria reuteri.* Quite similar to the increasingly popular *Fritillaria michailovskyi,* but slenderer and with a smaller flower. Both this and *F. michailovskyi* are doing very well in the open without any protection. *Fritilliaria chlorantha,* another Iranian plant, we keep under glass. This is because of its scarcity and unwillingness to propagate itself. The one tuber in our possession refuses to multiply and I don't have the courage to break up the bulb. This is the earliest "ordinary" fritillaria to flower, starting in February soon after the Rhinopetalum fritillarias, that some years will start flowering in January. When they are this early they are like creeping vines, but when, after a cold winter they start late, they are just lovely. I consider the good form of *Fritillaria gibbosa* to be outstanding in this group, beating *Fritillaria ariana, karelinii, bucharica* and *stenanthera* in colour, flower-size and flower-presentation. Pink frits are rare; I can think only of the rhinopetalums and *Fritillaria alburyana* when it comes to the Eurasian species, though with some hesitation *Fritillaria walujewii* might be added.

When it comes to the North American species there is only one pink frit, the Californian *Fritillaria pluriflora.* But of course, America has one or

two scarlet species to make up for that. *Fritillaria pluriflora* is perhaps the most gorgeous species in the entire genus but, unfortunately, like most frits from the American west, it is not very hardy. A few species, like *Fritillaria pudica* and *Fritillaria atropurpurea,* have a distribution that extends eastwards into the continental areas and can be very hardy if collected there. The Californian coastal species are mainly winter growers and we have found that we need to keep them under frost-free conditions if we are to be successful. Having done this, they present no trouble; we grow them in our standard compost and *Fritillaria pluriflora,* which in nature grows in the stickiest clay, is as happy in this as *Fritillaria glauca,* which is a scree plant in the wild. This is also an outstanding plant with tidy glaucous leaves and substantial, golden flowers. There is also a brown form of this which is interesting but not as brilliant. This species often grows on serpentine and sometimes in company with another goodie, *Fritillaria purdyi,* which has a most fascinating flower with white tepals marked with brown stripes and dots making a nice contrast to the red anthers.

The rarest, dwarfest and, by reputation, the most difficult to grow of the Americans is *Fritillaria falcata.* This inhabits some serpentine screes in a small area of California and is unique in having its flowers facing the sky. They say it's extremely difficult to cultivate but we don't give it any special treatment, and still it flowers and sets seed annually. After seeing such superbly grown specimens of American species at the Warwick Conference show this spring, I'm convinced that the American frits will be mastered in the future, and that their bad reputation will be forgotten.

In Gothenburg we specialise in three bulbous genera that are subject to scientific investigation. Two of them have already been dealt with; *Corydalis* and *Tulipa.* The third is the genus *Colchicum,* of which we grow an extensive collection. This has been brought together by Karin Persson, who is the investigator and her husband Jimmy, who is a botanist in our garden. *Colchicum* is a fascinating genus with many secrets to reveal; it has been mistreated over the years, and early botanists, like Walter Siehe, knew a lot more about it than the botanists who have carried out more recent revisions. Karin is doing a most thorough investigation, down to the individual chromosome. As she publishes these facts the genus will, hopefully, be better known and more appreciated by gardeners.

Personally I find the autumn-flowering species less interesting than the spring-flowering ones. On the other hand I'm just crazy about the latter group and consider them to be among the loveliest of bulbs. The easiest and most widely grown of these is *Colchicum vernum* from south-central Europe. This has previously been ranked as a separate genus, *Bulbocodium,* but is now, together with *Merendera,* included within *Colchicum. Colchicum*

vernum takes kindly to cultivation in most positions in a garden and is particularly nice in the rock garden. Another reliable outdoor species is *Colchicum szovitsii,* from south central Turkey. In the Middle East one finds a close relative of this, *Colchicum brachyphyllum,* which is an extremely early plant to flower. We have recently received this and have no experience of it in the open. This plant inhabits turfy soil in seasonally wet depressions and is probably a more tractable outdoor plant than *Colchicum serpentinum* which comes from partly the same area but from exposed, dry sites. This we have only tried in the glass-covered frames of our bulb garden, but here it does fine. It's extremely common in nature and varies a lot and I consider this Archibald collection to be the best we are growing.

More well-known is the Macedonian *Colchicum doerfleri,* which is common and variable within its distribution. It is very hardy under certain circumstances. If the winter starts early, before it shows above ground, it will withstand any amount of frost, but if the winter is mild, it will be up in January, and wiped out by occasional frost. The most beautiful of the genus is *Colchicum triphyllum* with its perfect goblet-shaped, deep-pink, dark-anthered flowers (Fig. 105, p387). It also has the widest distribution within the genus, occurring sporadically from Spain eastwards to Iran. In nature it prefers depressions with humus-rich soil and will probably grow well in the rock garden.

A large genus within the Liliaceae is *Scilla,* which has provided us with many superb garden plants. A recent arrival is *Scilla griffithii* which was introduced from Pakistan in the mid 1980s. Unlike most of the genus this is not an easy plant and if it doesn't agree with your conditions it will remain underground for a few seasons. Like most lowland scillas it produces its leaves in winter and is therefore not very hardy, so we are growing it in a frost-free house. The leaves are striped and the tepals reflexed so it is very distinct, but for the reasons mentioned it will remain a collector's item.

The last of the liliaceous plants I will mention is a *Muscari,* a genus feared and loved by gardeners because many species tend to overtake parts of the garden. When we plant our bulb garden we carefully avoid *Allium* and *Muscari.* Of course there are exceptions; one dwarf *Muscari* we grow was collected in Eastern Turkey by the Archibalds in 1985, and later named after a prominent SRGC member: this is the outstanding *Muscari macbeathianum.* Seriously though, together with the closely related *Muscari discolor,* this is my favourite in the genus. It is a dwarf plant, less than 10cm when in flower, it has a beautiful greenish-blue tinge to the white tepals, it does have a very distinct look and it will certainly never turn into a weed.

Iridaceae

The family next in importance when it comes to bulbs is the Iridaceae.

The most noble representatives are the group of irises now known as Subgenus *Scorpiris* but better known as the Juno irises. *Iris persica* is the grand old plant here, as it was known to cultivation in the late 18th century, and was actually the first plant to be portrayed in the famous "Curtis' Botanical Magazine" in 1787. It's very variable in colour from greenish yellow to dark brownish purple. It can also be pale blue, clear yellow, pure green, purple, chocolate-brown and in smoky shades of all these colours. In some places it occurs in different colour phases; I have seen yellow and purple plants growing together in more or less equal numbers. This species is still extremely common in the eastern part of Turkey, and once you get to know its ecology you will find it at every stop.

The junos are very special in that they combine a small true bulb with fat, long storage roots. Some of the species are a bit difficult so the group as a whole has a worse reputation than it deserves. The tricky species are the early flowerers that often get infected by botrytis when the flowers have faded. The mid-late to late species are quite easy if you keep greenfly off them and so inhibit the spread of virus. When planting them, only put the roots into a free-draining but fertile soil, and let the bulb rest in sand. We have found that if you plant the really early species in the open they come up later and often do better than under glass. This, in Gothenburg, applies to species like *Iris stenophylla* and *Iris nicolai*.

This group's popularity is largely due to the work of Brian Mathew and Tony Hall at Kew, and during the last few years a number of species have found their way to cultivation. The most important contributors have been plantsmen from eastern Europe. New, wild-collected material is often confusing; you never know what you get. One plant we received as *Iris parvula,* but we now think it is *Iris linifolia,* a most delightful dwarf species from central Asia.

Iris maracandica is another newcomer of the same size (Fig. 114, p406). Together with the previous it's a late starter and easy to grow. In nature it grows together with the rarer and outstanding dwarf, *Iris narbutii* (Fig. 115, p406). Some vigorous forms of this have been suggested to be hybrids between this and *Iris maracandica*. This spring we flowered a second form of *Iris narbutii* which lacked the yellowish-white parts of the first, and was almost entirely violet. If you put this beside *Iris maracandica* and tried to imagine a hybrid between the two, you would get the "ordinary" *Iris narbutii*. That is what I call "confusing".

The large-growing and late-flowering junos are quite easy. Most will survive in the rock garden but then require frequent division in order to remain healthy. However, the best place to grow them in Gothenburg is in the glass-covered frames in our bulb garden. Here the compost is rich and deep and species like *Iris warleyensis* are capable of building up large clumps. *Iris warleyensis* is rather variable and many forms are quite poor; the best I

have seen is small, and with a dark-violet flower (Fig. 116, p406).

Another good 'doer' is *Iris aucheri,* which has been in commerce for a long time. The form in cultivation is a good one, vigorous and a good pale blue, but it is only one form. In some areas of Mesopotamia you can find a tremendous variation in colour. In 1990 we went to Leylek Station in east central Turkey and among millions of *Iris aucheri* we were able to select some forms that were snow-white, orchid pink or dark blue. The best plants were the darkest violet-purple with only a narrow yellow crest on the falls. It was a breath-taking experience to visit these fields now so endangered. Soon the farmers here will have modern equipment and then this colony will be wiped out. It's a comfort that at least some of the variation has been brought into cultivation by us as well as by a Canadian. Maybe these someday will find their way into general horticulture like the old clone did.

The group of irises that I love the most is the subgenus *Hermodactyloides* or simply – the reticulatas. It's a small group but includes so much variation that it is worth specialising in. The species that take most kindly to cultivation are those from high altitudes, *Iris histrioides* and *Iris winogradowii.* For some strange reason, this is rather uncommon in cultivation or at least it's frightfully expensive to obtain from dealers; about £6.00. Then consider that this is one of the few species that will thrive in the rock garden or even in the herbaceous border. It will grow and multiply whereas most other species will weaken each year and eventually fade away. *Iris winogradowii* is very rare in nature; it is only known from one Caucasian mountain where it grows in alpine meadows. This explains why it's easier in the open than in a pot. If you want to keep it in pot culture, keep it slightly moist over the summer and repot it in early August since the rooting begins early.

The opposite applies to the recently discovered *Iris pamphylica* from south central Turkey which grows at moderate altitudes. This is tender and also needs a dry rest so it must be kept under glass. Sadly, this has now been exterminated by mean collectors at the locus classicus, but when we visited Turkey in 1990 we found it in a new place so the species is probably safe in the more remote areas.

In this predominantly Turkish group there is one species deviating in both distribution and general appearance. This is the central Asian *Iris kolpakowskiana,* a difficult one. It will multiply, but for each generated bulb an old one will die because of ink-spot or other nasty diseases.

The next group, the central Asian so called Regelia irises, is not particularly troubled by fungal diseases, but has high susceptibility to virus. These are by no means bulbs but they respond best to bulb-treatment and they are so fascinating that I must include them. *Iris afghanica* was described

and introduced by Per Wendelbo and is the most smashing species in the group. If you are inclined to be naughty you inevitably end up sneaking around with a paint-brush doing weird things such as creating hybrids. One we have made is a cross between *Iris afghanica* and *Iris lineata* (Fig. 117, p406). I'm not particularly proud of it but it does have a purpose. The regelias are among the frost-hardiest plants to be found, -20°C for three weeks leaves them untouched, so after the terrible winters of the 1980s I made a lot of hybrids within this group and with the closely related *Oncocyclus* irises in order to widen the range of survivors.

The regelias are late growers whereas the related *Oncocyclus* irises produce their leaves in autumn. However, this does not seem to affect their hardiness. 'Oncos' from the highlands of Turkey, like *Iris iberica* subsp. *elegantissima*, are extremely hardy. Further; what can one say about a plant like this? Perfection is a weak superlative so let's get on with a more modest genus within the Iridaceae.

Crocus is perhaps the best genus to collect since it allows you to grow the widest variation in the smallest space. If you are a stamp-collector thinking of starting with plants, my advice is collect *Crocus*. I'm not joking. The genus includes some of the loveliest among bulbs, like the ice-blue *Crocus leichtlinii* from a small area in east central Turkey. They are also among the earliest to flower and the easiest to grow. *Crocus chrysanthus*, for instance, can be grown in every corner of your garden as well as in a pot. It provides the most striking variation, from bronzed forms from south Turkey to ivory-white forms collected in Macedonia. Add to this all the natural and horticultural hybrids with the closely related *Crocus biflorus*, equally easy, and all the subspecies and forms of the latter. Frankly, the true stamp-collector-soul would grow nothing but *Crocus chrysanthus-biflorus*.

The genus is very uniform and no one would fail to recognise a *Crocus*, but each species has its charm. *Crocus fleischeri* is particularly charming with the contrast between the red style-branches and the white tepals. This species is extremely hardy and survived the winters of the 80s with no trouble. Hardiness within *Crocus* has to be tested. You can never say that species from high altitudes are hardier than those from sea-level, more often it's the other way around. It seems, however, that moderate altitude continental-climate species are much more hardy than those from high mountains and those from near the coast. So when *Crocus fleischeri* was untouched by frost the high alpine, snow-patch species *Crocus pelistericus* was killed without mercy. This species survives most winters, but it will not stand three weeks with temperatures down to -20°C without snow-cover. *Crocus pelistericus* is interesting in many ways, it's rare and local, occurring only in part of northern Greece and southern Yugoslavia, and it always has green leaves and active roots, so this is a plant for a sunny

peat wall rather than for a pot. Its close relative, *Crocus scardicus*, is better known and a more brilliant plant. We have crossed the two, with a bronze offspring as a result. These hybrids have now been self-pollinated and the F2 generation will be most interesting to see. My guess is, that in the future, *Crocus pelistericus* will be reduced to a form or a subspecies of *Crocus scardicus*.

The autumn-flowering bulbs announce the bulb season, they are not late-flowering but should rather be regarded as being the earliest ones. I have previously dismissed the autumn colchicums. I feel very much the same about the autumn crocuses. Most of them lack the substance of the spring-flowering species. Nevertheless, some autumnal species, like *Crocus vallicola*, are great plants. This hails from alpine meadows in eastern Turkey and the adjoining Caucasus and requires the same conditions as *C. scardicus*. *Crocus autranii* is closely related to *C. vallicola* but is so rare in cultivation that it's virtually worth its own weight in diamonds – but I wouldn't sell it for that. It's also distinct and good-looking so it has other values than rarity.

The most beautiful of the autumn species is *Crocus karduchorum* from south-east Turkey, with its intensely dissected, white stigma (Fig. 109, p404). It has been known to science for more than a hundred years, but was not introduced to cultivation until recently. Meanwhile, a form of *Crocus kotschyanus* was masquerading under the epithet *karduchorum*. It's so new to cultivation that I doubt that anyone has tried it in the open but my guess is that it, eventually, will turn out to be a good garden plant.

Amaryllidaceae

The last family, Amaryllidaceae, is poorly represented here but this doesn't mean that we neglect it in Gothenburg. The biggest representative that we are growing in the alpine department is *Pancratium illyricum* which was collected on Corsica. Obviously, it's not hardy, further it requires space and soil volume to develop. We have planted it in our cool house rock garden where it produces its flowers by mid May: it's a really impressive plant.

The one snowdrop I will mention is everything but impressive. *Galanthus angustifolius*, is the smallest in the genus – only about 5cm in bloom. It is also distinct in the flower with a green suffusion on the outer tepals. In a genus as uniform as *Galanthus* it's quite natural that one favours the divergent species, and this is the most divergent snowdrop.

The genus *Narcissus* includes much more variation. The only problem with the genus is to identify the species. Opinions vary regarding the definition of species in circulation, but there are few useful keys. John Blanchard's book is very good but not very useful when it comes to

identification. Perhaps the loveliest group within the genus is the section *Bulbocodium*. A collection of the species and forms of this provides one with flowers from Christmas to May. *Narcissus cantabricus* subsp. *monophyllus* is one of the latest to flower and also among the prettiest in the group. It is not hardy in Sweden so we are growing it in a frost-free greenhouse. Species from the section *Pseudonarcissus*, on the other hand, are all hardy and rewarding outside. My particular favourite in this group is the obscure *Narcissus moschatus* which has not been relocated in the wild. We obtained the plant in 1933 from Barr's nursery and it hasn't multiplied much, but it has survived and flowers each year. With us it is never higher than 15cm, this, combined with the shy, ivory-white flower makes it the most pefect plant.

For those of you not interested in bulbs this review may have been dominated by rare or unusual bulbs mainly suitable for the alpine house or other special constructions. However, you don't have to go for the rare species. If you are "just an ordinary gardener", then go for the common, cheap bulbs. Plant a few red tulips in your bellis-infected lawn. The important message is simple: bulbs are nice and everybody should love them; **a garden without bulbs is like a bottle without whisky!**

This article is based on the 1991 Discussion Weekend William Buchanan Memorial Lecture. We are very grateful to Henrik Zetterlund for providing such a tour de force of Gothenburg Botanic Garden's, and his, immense interest in dwarf and alpine bulbs.

Eds.

Narcissus asturiensis Lionel Bacon

Plant Portraits

Tulipa sprengeri

Alastair McKelvie

It seems strange that the commonest tulip seed to be sent into the Seed Exchange is that of *Tulipa sprengeri,* yet there are hardly any references to it in the SRGC Journal or the AGS Bulletin over the years.

I first saw this splendid tulip in Mrs Knox-Finlay's garden at Keillour in early June where a great mass of the tall cherry-red flowers in light dappled shade made a great impact, although none of the visiting SRGC group could name it. This reinforces the point I made above about its anonymity in gardening circles.

Tulipa sprengeri comes from the Amasya region of Turkey but seems only to have been collected once and perhaps no longer exists in the wild. It has 5-6 shiny green leaves and, in May-June, produces one or two orange-red flowers on a 40cm stem (Fig.118, p407). The outer segments are yellow buff on the back; the inner segments are slightly larger giving the whole flower a pointed appearance.

The few references to its cultivation and, indeed, its garden merit, are somewhat contradictory. Brian Rix in 'The Bulb Book' quotes Brian Mathew as saying that it grows well on south-facing borders in full sun, at the foot of north-facing peat banks and in grass under trees. In 'Dwarf Bulbs', Brian Mathew says it is very hardy and easily grown, not needing lifting in summer. In the AGS Bulletin in 1982, A. Thomson describes it as having "brief flowers for which I can find no great enthusiasm. In its favour it grows well in shade, unlike any other tulip I know." However, H. Wacher, in the Bulletin in 1964, was much more enthusiastic about its lovely cherry-red flowers and its habit of seeding freely and covering large areas in a short time.

I would support Brian Mathew's opinion and say that I find it a superb tulip which has the merits of flowering late, after all other tulips, and of looking after itself once established. I would definitely plant it in light moist shade where it will increase readily by seed, taking about four years to flower after germination. In bright sun it will grow perfectly well, but never looks as glossy green and happy as it does in shade. It looks exceptionally well grown along with Bowle's golden grass *(Milium effusum)* especially in the evening when the glow of the yellow grass complements the cherry red of the tulip which has the added advantage of not closing up as the sun disappears.

The only disadvantage I have found with this tulip is that it is susceptible to tulip fire (Botrytis). If affected, bulbs should be lifted at the end of the season and dipped in Benlate or some other fungicide which is recommended for this disease. I find that Benlate gives good control.

Bulbs are inexplicably expensive at around £2.50 each, but seed is always available through the Seed Exchange, germinates well, giving flowering bulbs in four years. Once you have this tulip it should self-seed, particularly in shady areas and I am sure you will be as delighted with it as I am.

Pleione x confusa

Lyn Bezzant

This terrestial orchid is now thought to be a natural hybrid between *Pleione forrestii* and *P. albiflora*. For many years after its introduction from Yunnan by George Forrest it was grown under the name of *P. forrestii*.

The pseudobulbs are olive green and flask shaped. The flower is primrose yellow, spotted red on the lip. The plant at flowering is 8-10 cm in height. Leaves are lanceolate and about 16 cm long and 4 cm wide (Fig. 119, p407).

Here in central Scotland, I grow it in a frost free alpine house from September to late May. It spends the summer months in an open cold frame, shaded when necessary from hot sun.

Sphagnum moss is an important ingredient of the compost. To remove excess moisture from the moss, I place it in an old pillow case, secure it well and give it a whirl in the spin dryer. The best tool for chopping is a saw edged bread knife. The compost I use consists of 3 parts chopped live sphagnum moss, 3 loam, 3 grit or sharp sand, 2 peat and 2 very well rotted manure.

At repotting time in February the plants are removed from their pans and gently shaken apart, discarding the old shrivelled pseudobulbs after removing the tiny bulbils which will have formed on the tips of them. These can be grown on separately and will make flowering size plants in three to four years.

Each pseudobulb can produce two new flowering size ones a year. The previous year's roots are dead at this stage and are cut off cleanly leaving a 2 cm tuft. This helps to anchor the plant in the new compost. Flower buds may well be emerging from the sides of the bulbs by now and are very easily broken off. Fairly shallow pans are filled to within 2 cm of the rim and the pseudobulbs are placed very closely spaced, just not touching, to half their depth in the compost, and then top dressed with live sphagnum moss. The compost is kept just moist until after flowering and then watering can be increased.

Flowers appear in late March/early April and keep their colour well if lightly shaded and kept as cool as possible.

After danger of frost is past the pans are plunged in an open cold frame. Plenty of water is necessary once the leaves are growing strongly, overhead spraying being particularly beneficial in hot weather. A weak liquid feed is given every five days or so. When the leaves begin to yellow in autumn watering is reduced and the plants are kept dry but not arid during the winter. By the end of September they have been brought into the alpine house and placed under the staging. After repotting in February they are plunged on the main bench for flowering.

Pleione x confusa can be bought from specialist nurserymen. The Seed Exchange often offers small bulbils for growing on and plants are sometimes on sale at the Discussion Weekend auctions.

Crocus baytopiorum

Lyn Bezzant

This exquisite crocus was first seen in 1973 on Honaz Dag, a mountain in west Turkey. It has since been found in at least two other locations in that region. It grows in rocky limestone screes and gullies among thinly scattered pine and juniper. It flowers there from February to April according to altitude.

The flowers are pale ice blue with a network of fine darker blue veining. The throat is blue or white and the three-branched style is yellow or orange. The grey-green leaves are very narrow (Fig. 120, p424).

I grow it in clay pots plunged in coarse sand in a bulb frame. The compost used is equal parts loam, peat and grit with a little crushed lime. A weekly liquid feed is given during the growing season. Repotting is done every year in August. In cultivation here in mid-Scotland, some plants seem to want to flower very early, sometimes before Christmas, and these early blooms are very frail and short lived. The later flowering ones (February) are much more robust and the flowers have lasted in good form for two weeks, especially if light values are high. *Crocus baytopiorum* does not present any great difficulty in cultivation. It increases steadily and seed is set. I feel that growers should try to encourage the later flowering forms, and select out the sturdier, better coloured ones from these. The specialist bulb nurseries offer it from time to time. The Seed Exchange has listed it for the last two years and a few offsets have been available from the Bulb Exchange.

Lychnis flos-cuculi – dwarf form

Lyn Bezzant

We have seen this diminutive form of Ragged Robin flowering in late June on the north coast of Sutherland. It is also reported as having been seen in Caithness and on Shetland. We did not notice it on Lewis and Harris when we were looking at the coastal flowers there last year.

In Sutherland we saw it growing in full exposure on open turfy cliff tops, in dry areas, and on the banks of slow moving streams, around the edges of small pools and in damp hollows.

In the dry areas, associated species included *Dactylorhiza maculata, Euphrasia officinalis, Lotus corniculata, Armeria maritima and Scilla verna.* In the damp areas, there were also *Polygala serpyllifolia, Plantago maritima, Potentilla erecta* and *Hydrocotyle vulgaris.*

The density of populations varied from 10 to 100 plants per 100 sq. m. Most of the plants were growing singly, with a height of 20 - 40 mm, and spread of 40 - 50 mm. Some close knit groups of four to five plants were seen. The leaves are opposite, lanceolate, 10 x 6 mm to 25 x 6 mm. Some flowering stems have 2 - 3 leaves which decrease in size as they ascend. The flower size is 25 mm across and 15 mm deep, and their colour and shape is the same as type (Fig. 121, p424). Typical *Lychnis flos-cuculi* was not seen anywhere in the vicinity.

A similar plant was described in 1847 by French botanists Lecoq and Lamont and called *Lychnis flos-cuculi* var *congesta,* but such a form has not been officially described in the British floras.

In the garden, a small cutting of this plant has in the last eight or so years made a 30 cm wide x 10 cm high hummock which flowers well each June. For the first six years seedlings came true to the dwarf type. Latterly seedlings have been becoming slightly taller plants, but still fairly dwarf, up to 15 cm length of flowering stem. Seed is produced in great quantities and has been available from the Seed Exchange for some years now.

. 106 *Trillidium govanianum* (see p410) Henrik Zetterlund

Fig. 107 *Erythronium elegans* (see p410) Henrik Zetterlund

. 108 *Fritillaria poluninii* (see p412) Henrik Zetterlund

Fig. 109 *Crocus karduchorum* (see p418) Henrik Zetterlund

Fig. 110 *Tulipa humilis* (see p411) Henrik Zetterlund

Fig. 111 *Tulipa linifolia* (see p411) Henrik Zetterl

Fig. 112 *Tulipa saxatilis* (see p411) Henrik Zetterlund

Fig. 113 *Tulipa primulina* (see p411) Henrik Zetterl

14 *Iris maracandica* (see p415) Henrik Zetterlund

Fig. 115 *Iris narbutii* (see p415) Henrik Zetterlund

16 *Iris warleyensis* (see p418) Henrik Zetterlund

Fig. 117 *Iris lineata x afghanica* (see p417) Henrik Zetterlund

Fig. 118 *Tulipa sprengeri* (see p420) Alastair McKelvie

Fig. 119 *Pleione x confusa* (see pp421, 440) R. J. Bezzant

Diapensia lapponica

MARGARET AND HENRY TAYLOR

You know those holiday brochures, everyone drifting around in bikinis or less? That's not the place to see *Diapensia lapponica*. No, it's an Arctic plant.

We parked our car on it, plenty of it, down close to the sea beside the North Cape of Norway. At 71° 10'N this is well to the north of the Arctic Circle.

Well, it's not always strictly Arctic, the cover photograph was actually taken in Scotland at only 46° 40'N but 762m up a remote secret mountain (secret for conservation reasons). It is quite chilly there in late May at flowering time. Eat your sandwiches on the run, it's too cold to sit down, too cold to taste the sandwiches. Feel that horizontal driving sleet, yes it is an Arctic habitat!

Diapensia lapponica is notoriously difficult in cultivation, perhaps it pines for nice cold wet weather. It is shallow rooted and on one visit to its Scots habitat we were worried to see the cushions cracked and sad with drought, a west Highland drought of maybe three weeks without rain, not the three months of southern climes. Fortunately, when we visited the following year in a more normal drizzle, the plants had recovered, they were smiling, sopping wet, and covered with flowers. How much rain on the mountain? Probably around 2300mm (90″) per year, though the exact figure must be doubtful as rain gauges are thin on the ground in these parts.

Why does *Diapensia lapponica* favour just one mountain ridge in Scotland? We have looked at many similar hills and habitats, but to no avail. It is scattered over 1·5ha of craggy mica schist, sometimes in cracks between rocks, sometimes sharing the ground with a 50mm deep fluffy grey moss – *Racomitrium lanuginosum* according to a learned friend. The moss and whole summit area is often churned up by the hooves of red deer.

The diapensia reminds you of a creamy white saxifrage. But to be honest, the flowers, at 12mm across, are nothing like as big and showy as a good saxifrage. In the wild we have measured cushions up to 86cm across. These mats must be quite an age when you realise that a plant in cultivation can take six years to reach 4cm. Assuming a similar growth rate, the largest wild mats must be over a hundred years old. Why was this site only spotted in 1951?

Most of the flower buds are set in autumn, leading to a main flush of flowers in late May or early June, though the odd sporadic flower can be seen right through summer until September.

In winter the plants adopt a muddy purple camouflage among the

rocks. Even in summer those plants which are under stress retain this colour; that is, plants overlying rock or with dying patches, whereas those growing vigorously turn green. Besides the moss, other neighbours include *Loiseleuria procumbens, Alchemilla alpina, Antennaria dioica* and *Empetrum nigrum*. Also nearby there is a remarkably large-leaved form of *Salix herbacea*.

Sun or shade? On its cold wet Scots hilltop there is little shade, yet in our limited experience of its cultivation in a low rainfall region, it survived only where shaded from the afternoon sun.

The slightly rounder-leaved Japanese version, *Diapensia lapponica obovata,* is said to be more amenable to cultivation. A lime-free gritty peaty compost has been recommended. Recently and very generously we were given a piece of the fabled pink *Diapensia himalaica*. This is reported as very showy in the wild and we have been proudly shown a faded flower on a cultivated plant. Maybe at future shows? Though we have a feeling that diapensias could remain thin on the show benches. Seed from Scandinavia, Newfoundland and Japan has been offered in the club exchanges. It germinates readily, but thereafter . . . well! Occasionally plants are available from specialist nurserymen.

Diapensia lapponica in the wild is an astonishing sight when in full bloom, certainly Scotland's showiest 'alpine'.

Diapensia lapponica Duncan Lowe

Brains, Bellies and Carbuncles: A portrait of *Raoulia eximia*

HEATHER HILL

I'm a hobbyist photographer like thousands of other folks, but to give my interest some direction I decided several years ago to set myself a goal, and made the decision to photograph New Zealand's alpine plants in flower. This self imposed task has become a voyage of discovery. But first the homework: the library of reference books quickly grew, many were birthday and Christmas gifts! I even bought "The Flora", a frightfully boring book with no pictures, but one must keep up appearances! Every spring I begin to fidget. Nor'west gales coincide with the flowering time of some of our choice ranunculus species. I just hope I am not too geriatric before *R. haastii* is captured on film. Photographing alpine flowers is dependent on one being in the right place at the right time, preferably with no wind and definitely no rain. Local knowledge is important, and I'm grateful to friendly botanists for pinpointing localities of difficult to find species, like the Swainsona for example. But this is another story.

The plant which has become my most photographed subject is *Raoulia eximia*. If Farrer had lived to see a colony of these plants in New Zealand, would his eloquence have swelled the pages of "The Rock Garden" and taken his poetic word pictures to even greater heights than those five pages devoted to the charms of *Eritrichium nanum*? This plant has form. Not the kind the English attribute to the criminal fraternity, but the kind that artists recognise as being important in the design of things, whether man-made or of the natural world, and this overlaps with photography.

What are the vital statistics of this plant? *Raoulia eximia* is a high alpine growing on stable rocks up to 2,000m. It forms very dense cushions, can look white, pale grey or tinted sea green, depending on the amount of moisture available where it is growing. The cushions can be 2m across and 30cm deep, have a dense covering of hairs and are quite hard despite their plush velvet cushion appearance. It grows on the drier eastern side of the Southern Alps from mid Canterbury to north Otago. Look through any publication on New Zealand alpines and none of the photographs prepare you for the scale and size of these plants. Reading about a plant is self limiting by the ability of the individual to translate the botanical details into clear mental pictures. So I was unprepared for the visual spectacle that unfolded as thick fog cleared from the top of Mount Nimrod. These pale

ghostly shapes like great bleached carbuncles drifted in and out of focus as the mist swirled, closed in and lifted again. It was my first sight of *Raoulia eximia*!

The trip to Mount Nimrod had been arranged by Jim and Margaret Pringle from Fairlie. This is the closest alpine area to my home town of Temuka, a distance of some 45km. Mount Nimrod is the highest point of a farm property by the same name. Permission has to be sought from the owner to make sure no farm vehicles are using the tracks. Because of the condition of these tracks you can only navigate them in a 4WD vehicle and it's strictly a one way system! In a 20-year-old landrover and thick fog I thought I was living my worst nightmare. The higher we got the worse the track became. Resembling a creek bed complete with rocks and wash-outs, the landrover bounded and jolted us ever upwards. The claustrophobic fog made it impossible to get one's bearings and there was debate as to whether we were on the right track. All fuel for anxiety. It is always a magic moment when we reach the top. The sun came out, discomfort and anxiety faded. Margaret and I as usual fell out of the vehicle in our haste to see what was at our feet while Jim made noises about "a cup of tea".

Many artists have recognised that the land contains much of the human form in its contours and it soon became apparent that *R. eximia* was mimicking some of the less attractive aspects of the human condition (Fig. 122, p425). Tumours, brains, obesity of certain parts of the anatomy. I found myself patting bottoms! Moving amongst the plants in the colony, taking photos, it was difficult to know when to stop. No two plants were exactly alike. What was the form repeated most often? I started giving them names. The brain type with bun-like eruptions (Fig. 123, p425), the quilted type with its softer eiderdown appearance, the disc type, perfection personified, flawlessly smooth, a limpet stuck to a vertical rock, and the lava flow, constricted between two rocks and "flowing" downwards.

Margaret was looking for hybrids as *R. eximia* is known to cross with *Leucogenes grandiceps*. The South Island Edelweiss is a wee charmer, at higher elevations a silvery tight plant topped by flowers you feel you would pick up and cuddle. Woolly as a lamb's ear, the bracts surround a centre of tiny florets arranged like buttons padded and stitched in gold. The leucogenes was growing amongst the rocks in the *R. eximia* colony so it was only a matter of time before an orchestrated search located a hybrid. Growing on an area of die-back on a larger *R. eximia,* it wore its label as a hybrid by the slightly different colour and texture of its rosettes (Fig. 124, p426). (Not the most scientific deduction but I can live with it!). It was not suitable for collecting. We needed babies. Margaret's theory was to look below a large plant where seed could drop and germinate. Many other species

compete for space: as well as the familiar snow tussocks, there were the choicer cushions and mats of *Dracophyllum* spp., *Gaultheria depressa,* hard bright green pads of *Phyllachne colensoi,* the heathlike mats of *Pentachondra pumila* studded with flashy red berries, the very similar *Cyathodes pumila* and much more common *C. fraseri, Raoulia hectori, R. grandiflora* and *R. subsericea, Celmisia angustifolia, C. sessiliflora* and *C. spectabilis* and *Anisotome* spp. (carrots!). *Drapetes, Chionohebe, Brachyglottis, Colobanthus, Pimelia* and *Scleranthus* species, plus mosses, lichens and grasses. Much to lick one's chops over! A small landslip below a grandfather of a *R. eximia* (or should it be grandmother?) had provided just the right nursery for a new family. The seedlings were the right size, from one rosette to several plus a few promising hybrids. I lifted out a plug of soil containing three plants close together. Two were *R. eximia* with one and two rosettes respectively and the other was a possible hybrid of one rosette.

Two years in a trough have seen the *R. eximea* seedlings grow from two rosettes to twenty four, one rosette to nineteen and the possible hybrid develop into a probable *Leucogenes grandiceps* with fourteen closely packed silvery white stems about 5mm high. With so little space to develop, the plants have merged yet stayed separate. The eximeas have already formed hairy buns. The underlying colour is sea green with a halo of shining white hairs. If anything they look a little too "soft" as the growing medium is also home for *Saxifraga* and *Androsace* species. The trough is shaded for half the day, for the benefit of the other occupants. But another larger *R. eximia* growing in full sun till late afternoon in the summer is much tighter and white and has survived random hosing of the rock garden, plus temperatures as high as 34.5°C, our hottest day last summer.

Another curious fact is that the plant appears to grow back on itself (Fig. 122, p425). Against my better judgement I collected a fist-sized sized plant and potted it up to recover from the trauma of being moved from the mountains. Left behind a fence in the shade it became a casualty of the "out of sight out of mind syndrome". When I finally remembered it, it was half dead. I moved the pot to the sunnier side of the fence, tipped it on an angle so the ailing bun received full sun and abandoned it again. Some weeks later I commented to a friend looking around the garden "that silly thing has started growing again". There was a marked contrast between the living and dead areas of the plant. Battleship grey is dead. The plant was moved to my rock garden where it is still hanging on. A sheet of glass is covering it for the winter. Always conscious of the aesthetics of a garden, I have to admit *R. eximia* doesn't belong. Unlike the Brits we endeavour to grow as much outside in the garden as possible as our climate is more conducive to outdoor activities (annual rainfall here is 500-660mm), and we moan if it isn't. Glasshouses are for tomatoes, but pot culture is getting

its toe under the door with the N.Z.A.G.S. initiating shows (two to date) for container grown alpines. Our N.Z. alpines are considered some of the most difficult, and most Kiwis who do attempt to grow them admit the casualty rate is high.

I haven't mentioned the flowers of *Raoulia eximia* so if any reader unfamiliar with the plant has been holding his or her breath in the belief that the best is yet to come (and usually the flowering of an alpine is the icing on the cake), then they will be disappointed. The rusty red tufts are the best it can manage and a large plant in full bloom is an awesome sight, like being confronted with a bad case of acne. Mercifully the flowers fade to fluffy seed heads (Fig. 125, p426) which float away leaving the seed collector the problem of how to get the seeds out if you have left your tweezers or pocket knife at home – not to mention glasses!

Other plants will grow in and over *R. eximia* given the chance. While *R. eximia* is encroaching on the snow tussock (Fig. 125, p426), *Dracophyllum prostratum* is well established atop the *R. eximia*. Another, *Dracophyllum muscoides,* festooned with curious new growths mimicking a Liliputian conifer forest, is flourishing on an equally healthy and actively growing *R. eximia*. With such an excellent peaty growing medium below that suede surface, who could blame it? Many exotic alpines dislike competition but ours seem to thrive on it. I have numerous photographic examples of alpine plant associations but as this article is about *R. eximia* I will mention just one more. Picture the heath-like mat of *Pentachondra pumila,* its surface studded with gay miniature red balloons sandwiched between an actively growing *R. eximia* and a lichen covered rock (a rock and a hard place?). Threaded through the pentachondra are branches of *Gaultheria depressa,* a seedling *Anisotome* seems to be doing fine there as well, and to add a touch of class, a jaunty white flower, with yellow blotch and purple anthers, of a semi-parasitic *Euphrasia* species completes the tapestry of colour and texture. That the pentachondra had been double its size at one time was evident by little red "hands" poking through the advancing *R. eximia*. It conjures up pictures of helpless victims caught in quicksand!

There is nothing endangered about *R. eximia* and it must be very widespread within the limits of its range. Of the four colonies I have visited the most bleak would have to be on the Ohau range high above the ski field at Lake Ohau. Some past geological upheaval has thrust the rocks up into a loosely vertical formation resembling stacked headstones, their tops worn jagged with time. *R. eximia* has colonised this barren "cemetery" and nothing appears to grow with it here. This one isolated area is surrounded by a slope of large and unstable rocks not recommended for a Sunday stroll. The tough merino sheep camp high amongst these rocks at night. For the short sighted it may be a case of which is "vegetable"

and which is sheep! Access to this area is via the ski field road; 4WD is not necessary. I understand a fee of $20.00 is being charged for the key to the gate but if you are a guest at the lodge there is no charge. They will even pack you a lunch if ordered the night before.

With Mount Nimrod in south Canterbury and Lake Ohau in north Otago, the two other colonies I have visited are in the Mackenzie Country. The first is on the Grampians range and is part of a high country sheep station. Permission must be sought from the owner as access to the alpine area is via bulldozed farm tracks. Once again, like Mount Nimrod, the trip to the top in a 4WD vehicle is not for the faint hearted. This is an exceptional area for cushion plants and if one includes the species from Mount Nimrod then adds *Aciphylla dobsonii, Raoulia petriensis, Myosotis pulvinaris, Cotula atrata, Lobelia roughii* and many raoulia hybrids then it is easy to see why this is an alpine enthusiast's paradise.

The fourth colony is on the Mount Hay range. On a clear calm day, the tawny tussocks and turquoise colour of Lake Tekapo, with reflected mountains and a view of Mount Cook poking up along the Southern Alps is reminiscent of the calendars that proliferate around Christmas time. Mount Hay is another high country station and once again permission is necessary to use the private tracks. 4WD is a must; access to the area to be climbed takes about half an hour and four gates have to be opened and closed. With back packs on, the rest is physical effort. Once one has left behind the moonscape of rabbit ravaged land, what is left of the smaller silver tussock is replaced by the larger snow tussocks and botanising hots up. One needs to be about 1200m before *R. eximia* puts in an appearance. My husband usually announces its discovery by saying "There's one of those weeds that grows up on Mount Nimrod"! He is not a flower man and is only casing the area for anything with four legs that moves and isn't a sheep. The higher one climbs the more numerous *R. eximia* becomes. After the initial excitement, the sheer number of plants becomes awesome. Sharing the rocks with *R. eximia* were two plants not seen on the other ranges; *Hebe cheesemanii,* the finest of the whipcord hebes, and *Helichrysum plumeum* which looks more like a woolly whipcord hebe than the "everlastings" we normally associate with the genus helichrysum.

As recently as March 1991 we returned to Mount Nimrod with a visiting English freelance botanist, Chris Chadwell. The day was almost a carbon copy of our first visit but there was one very big difference. Although the team was the same, another 4WD vehicle had been added, my husband's pride and joy, a new Toyota truck with double cab. This was a definite improvement on the last trip as he had to travel up in the open deck of the Pringles' landrover! The fog didn't clear from the top as expected, with the wind coming from the east the murk kept banking up against the hills. We

piled on more clothes and wet weather gear. Trying to collect seeds that require tedious picking, while a chilling, wind-driven mist stings the eyeballs which in turn converts one's nose into a dripping tap and numbs fingers, must surely test the sanity of anyone who does that for a living! *R. eximia* appeared unaffected by the conditions which were so distressing for us. Brains, bellies, quilts and carbuncles, looking as if recently dry-cleaned and water-proofed, turned the mist into glistening glass beads of moisture held by the nap of hairs which prevented them from soaking in. My own hair, not covered by my parka hood, was a dripping wet mess. I have never seen *R. eximia* in a heavy downpour of rain. Which is not to say I won't. We had to leave *R. eximia* to its exposed ridge and retreat down to a more sheltered area. But the best was left till last; Chris got to open and close the gate in the bull paddock!

Obituary

JOYCE HALLEY

On the night of 18 August, 1991, Joyce Halley, aged 81, died in her sleep. Latterly, she had problems with angina but, with the help of friends, worked in her garden until the last. At her funeral the minister listed various societies which would miss her help and friendship, but at times he spoke rather quietly. Some of us half expected to hear Joyce's customary command, "Speak up, young man, don't mumble".

She was a most popular and hard-working character in the SRGC and other spheres. As an ex art teacher, she was in demand from local operatic societies to apply make-up that showed above the footlights. Nothing delighted Joyce more than getting to work on males with big faces thus allowing scope for dramatic effect, especially when demonic character was called for.

A long-standing member of the SRGC council, of course, Joyce's great work for us was running the seed exchange for seventeen years. She devoted tremendous time and thought to this task. For this work she was awarded the club's Golden Jubilee Salver, made a Vice-President, an Honorary Member and was also awarded the Scottish Horticultural Medal by the Royal Caledonian Horticultural Society.

To mark Joyce's involvement with the club and seed exchange, the Perth Show committee suggested having a trophy in her name. Her retort was "Not another b . . . . . cup". In keeping with her love of art, she came up with something completely different, the Joyce Halley Award. A beautiful original watercolour flower painting is held for one year by the competitor staging the plant judged as the best grown from seed in the Perth show, and the winners also get a copy of the painting to keep.

Whenever she went round the show benches, Joyce always had a great deal to say about the judging. Once, she challenged an eminent judge about a dubious decision and relished the reply, "I only agree with the judges when I am one of them". Sandy Leven, our show organiser, heard Joyce tell this story and thereupon decided that Joyce's experience and knowledge made her worthy of a place on the panel of judges.

During the time of the seed exchange Joyce's energy was remarkable, she started work at 7 am. When helpers drifted in, then wilted and said at 10 pm, "Time we are off home to bed", the invariable reply was, "What? Leaving already?" Her dedicated circle of friends was kept strictly in order. As befits a former teacher, she could not bear the sight of an idle pair of

hands, or allow chatter at work. We had to sign for each item completed so that in the event of any complaint from a seed recipient she could trace the culprit and come down like a ton of bricks. But she was very fair. In the rare event that the mistake was her own, she gave herself twice as big a row. If again the mistake was traced back to the seed recipient and it was the end of a long tiring day, her written reply so scorched the paper that her packeters used to surreptitiously screw up the note and hide it in the waste basket rather than post it off with the seed. Let there be no mistake, the odd complaint was vastly outweighed by appreciative letters and these certainly boosted the morale of all the workers.

One incident stands out. We had 30 good seed donors from Czechoslovakia (created Corresponding Members by Joyce as they could not send money). One January no requests arrived from Czechs so Joyce held back the distribution until a letter arrived saying, "No seed lists have reached us, some officious government clerk must be feeding Latin names and numbers into his computer in an attempt to crack your code". So Joyce dug out the previous year's Czech requests, deduced what each was interested in, then added some extra choice seeds – result, a bevy of grateful Czechs.

She took a great personal interest in the local rock garden run by Dundee Parks Department and one of their members has written, "Her Mini usually contained some new donation to the gardens and added much job satisfaction to weary weeders. Her encyclopaedic knowledge of seeds and plants, caustic comment and friendly encouragement will be greatly missed."

Her love of mountains took her to distant parts where seed correspondents enjoyed Joyce's company, but recently she was heard to say, "The hills have got gey steep of late".

To many of us Joyce was someone really special. A true friend, a confidant whom we could turn to at any time for counselling, an interesting, controversial and entertaining companion, but most of all a lady we were all privileged to know.

BI, MHT.

Show Reports 1991

Early Bulb Display – Dunblane 23rd February 1991

The weather was very kind to exhibitors and plants for this new, early event. The Braeport Centre proved to be a good venue, easy to find, with adequate car parking, a well-lit hall for the show and a comfortable lounge for the lecture and teas and coffees. There was a very good entry of plants for the display, in great part because exhibitors were allowed to bring as many plants as they wanted and were not constrained by the usual show rules of one entry per class. There were good entries of *Iris, Cyclamen, Crocus, Narcissus,* and *Corydalis* with *Fritillaria, Sternbergia, Chionodoxa, Tecophilaea, Galanthus, Pleione, Eranthis, Primula, Adonis* and *Ranunculus* all represented in smaller numbers.

Mrs Lyn Bezzant gave an excellent lecture on 'Dwarf Bulbs', taking us to various parts of the eastern Mediterranean and showing bulbs growing in the wild. Lyn also put on a splendid table exhibit of a wide range of her own bulbs. Ron Bezzant provided a display of interesting photographs of many crocuses. In the display, it would be unfair to pick out any individual exhibits or exhibitors for special mention. It was possible to compare about twenty one different species and varieties of crocus. This was particularly interesting with the forms of *C. sieberi.* The pure white goblets of 'Bowles White' contrasted with the dark imperial purple markings on *C.s.* ssp. *sieberi.* In the clone 'Tricolour' the rich yellow throats lift these flowers out of the ordinary. For garden worthiness the dazzling form 'Violet Queen' is hard to beat.

C. chrysanthus is one of the most easily bought dwarf crocuses. The colour forms range from straw yellow 'Advance' and 'Cream Beauty' through 'Blue Pearl', to the purple varieties like 'Ladykiller'. Marvellous as all these selections and developed clones are, the true species is such a delicate little flower of outstanding bright yellow that it is impossible to ignore. This wild form is another 'must' to bring sunshine into your spring. It is amazing how often superb plants like this remain rare although they are not expensive.

C. abantensis is not a cheap crocus. It has striking rich blue flowers and a bright yellow throat. It is a plant worth seeking out. Two other orange ones were *C. cvijicii,* whose name looks unreal even when correctly spelt, and *C. gargaricus.* The former flowers over a long period from early February till April. Its blooms are a rich yellow shade with deeper orange in the tips. In spring a pan graced the executive table at the early Council Meeting. In contrast *C. gargaricus* is a diminutive plant with small rounded

jaffa orange petals (Fig. 126, p427). While it is growable in a pot, it loves an open peaty site which is blessed with spring sunshine and is not blasted by snell northern winds. One of the largest crocuses was a pan of *C. veluchensis,* with an Archibald collection number 354002. It has delicately marked petals in pale and dark mauve. We are extremely lucky that adventurous people like Jim and Jenny Archibald, who have superb knowledge of plants in the wild and in the garden, are prepared to travel to inhospitable places to collect seeds for us. How marvellous it is to sow their seed and three or four years later admire a pan of flowers whose parents are a thousand miles away, up a desolate mountain.

There was a good plant stall, the proceeds of which adequately covered all costs. Holden Clough Nursery supported the day. The members of the Dwarf Bulb Group are to be congratulated on organising a splendid day and enriching the Club with their hard work and support.

In 1992 we will hire all three halls in the Braeport Centre to give us more room for the lecture, and we look forward to seeing you there.

Sandy Leven

Stirling – 30th March 1991

At this year's show the bulk of the colour came from bulbous plants and European primulas. The warm spring meant that the Asiatic primulas were few and far between but the variety of Europeans was spectacular. The George Forrest Memorial Medal for the Best Plant in the show, and the Ben Ledi Plants' Trophy for the Best European Plant were awarded to a fine plant of *Pulsatilla vernalis* shown by Sandy Leven. This plant had beautiful, upward facing, blue-backed white goblet flowers, rising from deep green foliage. The judges found it very difficult to choose between the pulsatilla and Jim Jermyn's *Callianthemum anemonoides,* which was awarded a Certificate of Merit. It is interesting to note how highly regarded are these and other members of the Ranunculaceae. Other splendid plants from the same family were *Pulsatilla halleri slavica* which gained an FCC for Ian and Margaret Young (Fig. 127, p427); *Hepatica x meadia* 'Ballardii' and a super pale sulphur yellow *Ranunculus asiaticus* from Roma Fiddes; *Paraquilega anemonoides* and *Ranunculus abnormis* from Jack Brownless, and the magnificent, sought after, *Pulsatilla* 'Budapest' from Fred Hunt.

The Institute of Quarrying Quaich for the Best Non-European plant in the show went to a marvellous pan of *Trillium rivale* shown by Jim Cobb. This small plant deserves to be much more widly grown especially as it seems to flower earlier than its taller relations. The Carnegie Dunfermline Trust trophy for most points in Section I travelled north to Aberdeen with Ian and Margaret Young. A Certificate of Merit and the Spiller Trophy for Best Primula was again awarded to Evelyn Stevens for her enormous pale pink

Primula allionii. Rarely is such a large plant grown, far less exhibited. John Lee won the Bronze Medal and the Fife County Trophy for most points in Section II. Gold Medals were awarded to Lyn Bezzant for her display of plants in pots; to Lawrence Greenwood for his display of water-colour paintings; and to the National Collection of *Chionodoxa*. Lyn Bezzant's enviable pan of *Pleione x confusa* (Fig. 119, p407) was awarded a Certificate of Merit. Sandy Leven gained a Cultural Commendation for a pan of *P. allionii* x 'White Linda Pope', a plant raised by Joe Elliott.

Class 1, for three pans rock plants, produced some memorable plants: an outstanding pan of *Cyclamen coum* with over 100 flowers, a large pan of *Narcissus watieri* and *Trillium rivale* from Ian and Margaret Young took the honours from Fred Hunt's *Trillium hibbersonii, Corydalis solida* 'George Baker' and his tremendous 30 cm pan of *Tecophilaea cyanocrocus*. Evelyn Stevens showed us one of the rarest plants in cultivation, a plant of the yellow *Gentiana oschtenica*.

As always, the bulb classes were well entered, with the two *Narcissus* classes producing an entry of 23 pans. The best of these were Fred Hunt's *N. watieri* and *N. bulbocdium obesus* and Sandy Leven's *N. nanus*. Equally well entered were the *Fritillaria* classes where David Mowle showed a superb pan of *F. michailovskyi*. Nine pans of *Corydalis transsilvanica* dominated the Fumariaceae, showing what a popular and relatively easy plant it is to grow. Less easy to grow is the beautiful white and maroon *C. popovii*. Other excellent bulbs were *Crocus scardicus, Fritillaria tubiformis, Sisyrinchium douglasii, Iris graeberiana, I. bucharica* 'Ellen Willmott' and *I. x sindpers*. The wide variety of bulbs is one of the main reasons for their increasing popularity.

Although Asiatic primulas were few, there were as usual many different Europeans. Margaret and Henry Taylor showed the rarely seen *P. wulfeniana* and their unusual hybrid *P. daonensis x allionii* 'William Earle'. We had seven pans of *P.* 'Lismore Yellow', which varied somewhat in appearance! Also seen were *P. allionii* 'Snowflake', 'Viscountess Byng', 'Avalanche', 'Anna Griffith' and 'Nightingale'.

One of the stars of the show was the Japanese *Heloniopsis orientalis* exhibited by Miss Joyce Halley. This 30 cm pan looked oriental even from a distance. It is a beautifully delicate thing – a study in pink, and green foliage which resembles that of *Gentiana acaulis*. Closer examination reveals that the very long stigma is pink and the anthers hold green pollen. Joyce supported the Stirling Show as exhibitor and judge since its inception. We will all miss her, now that she has gone. Every year she brought her pans of pleiones, this year she won with one containing more than twenty flowers of *P. x confusa* and an equally good *P. formosana* 'Clare'.

We would like to thank our judges Sheila Maule, Bette Ivey, Margaret

Taylor, Joyce Halley, Jack Crosland and Peter Semple. All who attended Dr James Cobb's talk entitled "Remaking the Garden" sang his praises. We extend a special thank you to Jim for giving the Easter Lecture to a potentially highly critical audience.

Sandy Leven.

Perth – 20th April 1991

The public were greeted with the expected riot of colour as they entered the Rodney Pavilion to view the display of alpines in this closely contested annual show. Competitors travelled vast distances with their exhibits and it is a measure of their enthusiasm that they are prepared to put in the miles for our pleasure and perhaps take home a coveted trophy and some red stickers. There are a great number of trophies at this show and the new Show Secretary David Howat and his helpers were well geared up to guiding the judges through the maze of awards available.

The top award, the George Forrest Memorial Medal, was awarded to a magnificent pan of *Daphne petraea,* considered by many to be the crème de la crème of alpine shrubs from the Alps. In nature a limestone cliff dweller, the plant was exhibited in a pan top-dressed with pieces of bark instead of the expected stone or limestone chippings. The delightful scent was enjoyed by anyone who dared to nose close to the plant. The plant was grown from a cutting received by Harvey Shepherd ten years ago, and it is a tribute to his skill as a grower that it survived to give us much pleasure, as we all know that the daphne family can be very fickle.

One of the 'in' plants at the Spring Shows is undoubtedly *Clematis* x *cartmanii* 'Joe' as was witnessed by the number of awards it received for its various growers. It is a hybrid between *C. marmoraria* and *C. paniculata* and responds well to pot culture and can be judiciously pruned after flowering to keep it more compact. Margaret and Henry Taylor's plant received the Major-General Murray Lyon Trophy for the best plant exhibited by a member resident in Tayside, and was also awarded a Certificate of Merit. It formed part of their three pan exhibit which won them the Dundas Quaich, the other two plants being *Primula palinuri,* a member of the Auricula Section, and *Lewisia tweedyi alba.* It was wonderful to see *Clematis* x *cartmanii* 'Joe' turning up in the Junior Section where Pamela Howat's plant won her the award for the best plant in that section. Doreen Fraser's plant won Class 39 for the best dwarf shrub. A good day for the plant was made even better by Joe Cartman and his wife attending the show to see its success.

The Alexander Caird Trophy was won by Fred Hunt, Invergowrie, with a beautiful six pan entry in Class 1 consisting of *Narcissus rupicola* 'Moro Dwarf', *Ranunculus parnassifolius, Fritillaria pallidiflora* and *F. michailovskyi, Draba mollissima* and *Primula* 'White Lady'. Fred also won the Bulb Trophy

with a large pan of *Fritillaria pallidiflora*.

Dr Evelyn Stevens won the R. S. Masterton Trophy for her plant of *Primula petiolaris* L S 19856 as the best Asiatic Primula in the Show. Its partner in Class 24 was an equally beautiful *Primula aureata*. Evelyn grows wonderful primulas and it was no surprise to see her large plant of *Primula* 'Linda Pope' receiving a Certificate of Merit. John Duff used to exhibit this particular primula in equally good condition and I am sure he would be delighted to see the plant is still a favourite with all of us who enjoy growing the European hybrid primulas.

Plants grown from seed always attract a great deal of attention and the seed classes generally cause great debate as to how the judges arrived at their decisions! South American plants are making their way on to the benches due to the successful seed collecting expeditions from these parts, so it was no surprise to see two successes from the Pern & Watson 1987/88 Expedition, *Viola fluehmannii* and *Nassauvia lagascae* winning Class 4 for Ian and Margaret Young. We look forward to seeing these plants in flower at a future show, as so much has yet to be learned about the South American flora.

It was pleasing to see so many Trilliums on the benches. Jean Wyllie's *Trillium rivale* and the Young's *Trillium erectum albiflorum*, which received a Certificate of Merit and a Preliminary Commendation, are worthy of mention.

R & J Philp, from the good growing area of Invergowrie, won the Perth Salver and Bronze Medal for most points in Section II. Their outstanding plants included *Corydalis cashmeriana, Morisia monanthos* and *Primula denticulata* lifted from the open ground. A Certificate of Merit was awarded to a most magnificent pan of *Pleione* 'Versailles' x *pogonioides* exhibited by L. Drummond from Lunanhead.

A Gold Medal was awarded to Lynn and Mike Almond, Dundee, for their fantastic display of photographs of the flowers of Turkey. Thanks are also due to Mike and Polly Stone, Lawrence Greenwood and the Edinburgh Botanic Garden for their displays.

The judges were Margaret Taylor, Margaret Young, Bette Ivey, Jim Jermyn, John Lawson and David Tattersfield.

Bette Ivey

Edinburgh – 27th April 1991

The Edinburgh Group does seem to be favoured by good weather on their show days and this year was no exception. The venue was as usual the Cluny Centre in Morningside; we felt it was a very good show, certainly with many more entries than last year, and over a thousand visitors wanting to see the display.

The George Forrest Memorial Medal was awarded for a superb *Clematis*

x cartmanii 'Joe' shown by Henry and Margaret Taylor of Invergowrie. The Henry Archibald Rose Bowl was won by Ian and Margaret Young of Aberdeen with *Erythronium* 'White Beauty', *Fritillaria pyrenaica* and *Trillium grandiflorum roseum,* and this beautiful trillium was also awarded the Henry Tod Carnethy Quaich for the best bulb, corm or tuber in the show.

In the Primula classes, Evelyn Stevens of Dunblane received the R. E. Cooper Bhutan Cup (Best Asiatic Primula) for *Primula petiolaris* L & S 19856 and also the Corsair Trophy (Best European or American Primula) with a large pan of *Primula* 'Linda Pope'.

The Midlothian Vase for the Best Rhododendron in the Show was awarded to Mr D. Martin of Scotlandwell for his entry of *Rhododendron racemosum* 'Forrest's Form', and Mr Martin also received two Certificates of Merit, one for an excellent pan of *Draba longisiliqua,* and one for *Androsace muscoidea.* The Elsie Harvey Trophy for three plants new, rare or difficult was awarded to Ian and Margaret Young of Aberdeen for *Viola fluehmannii, Perezia sessiliflora* P & W 6567 and *Nassauvia lagascae.* The Youngs also took the A. O. Curle Trophy (three plants grown from seed) with *Raoulia eximea, Haastia pulvinaris* and *Xerodraba* sp. P & W 6210, and as they had gained most points overall in Section 1 they also received the Reid Rose Bowl – in addition Margaret won the Kilbride Cup for her attractive floral arrangement. The Boonslie Cup was won by Mr Robin Brown of Hexham for his 'Silver and Black' miniature garden.

Fritillarias were well represented with over 12 entries in the single pan class, Mrs Bette Ivey of Kirkmichael taking first with a fine pan of *Fritillaria pallidiflora.* Pleiones are always popular with plenty of entries and Mrs Betty Craig's *Pleione limprichtii* was placed first. Gentians however were scarce, but Mr W. Carr of Newcastle had a lovely pan of *Gentiana acaulis* var *coelestina* on show. Mr F. Hunt of Invergowrie showed a delightful *Cyclamen persicum* while his *Iris afghanica* also won an award, and Henry and Margaret Taylor's *Iris pumila* was beautiful. Mrs Jean Wyllie of Dunblane had a very good pan of *Pulsatilla patens alba* which received a Certificate of Merit, and she also took first in the two pan class of lewisias, with *Lewisia tweedyi* and *Lewisia brachycalyx.*

Section II had an excellent display this year. The Midlothian Bowl (Best plant in Section II) was won by Mr D. Tattersfield of Perth for his *Daphne petraea* 'Grandiflora' which also received a Certificate of Merit. A Certificate of Merit was awarded to Mr Andrew Rankin of Edinburgh for a fine pan of *Primula vulgaris,* surely one of our best loved native plants. Amongst other firsts were Mr and Mrs Wilson of Aberdeen with *Romulea bulbocodium,* Mr K. East's *Cyclamen repandum,* Mrs S. C. Robertson of Edinburgh with *Primula farinosa* (grown from seed), Mr and Mrs Thomson of Edinburgh with *Raoulia x loganii* and Miss H. Dale of

Newcastle with *Cassiope* 'Beatrice Lilley' to name but a few.

In the Junior Section, Mrs S. C. Robertson won in two classes with primulas – *Primula* 'Miss Indigo' and *Primula* 'Gold Lace'.

The judges were Mrs M. Taylor, Messrs N. Huntly, G. Barrett, A. Kirkpatrick and Drs. C. Bainbridge and D. Stead. We thank them and all the helpers who worked to make it a good day.

Edith Armistead.

Glasgow – 4th May 1991

The resourceful Rodger Smyth coped admirably with the enforced eleventh hour change of show venue to a smaller hall in Bearsden at Westerton. Sunshine provided consolation and some interesting plants were on view.

Fred Hunt did not win the Buchanan Rose Bowl for six pans but his entry included an excellent pan of *Fritillaria liliacea,* a serpentine endemic from California, showing creamy, fairly open flowers with green nectaries. An unusual figwort was a winner for Carole and Ian Bainbridge, *Zalusianskya distans,* an unpronouncable alpine from Lesotho, was showing masses of five petalled white flowers with dark pink reverses. Rumours of lack of hardiness were denied but it looks to be a plant for the alpine house. The Forrest Medal went to a great old classic, a plant of *Daphne petraea* 'Grandiflora' which appeared in pristine condition, shown by David Tattersfield. Another small daphne was an albino and diminutive form of *D. cneorum* 'Pygmaea Alba' shown by the Taylors. Late frosts had thinned rhododendron entries but Viv and Anne Chambers exhibited the small lepidote hybrid *R.* 'Ginny Gee', which is an attractive *R. keiskii x racemosum* hybrid, in excellent condition with many pink-flushed white flowers. Pity about the name.

The circumpolar ledums are not often seen at shows and tend to be leggy in form but a small *Ledum palustre yezoensis* was showing several terminal clusters of white flowers set off by leaves with rusty indumentum on the undersides. A well-flowered *Saxifraga pubescens iratiana* could be compared with the larger flowered *S. pubescens* 'Snowcap', a form of the Pyrenean mossy which lies between *S.p.* ssp. *pubescens* and *S.p. iratiana.* 'Snowcap' looks to have Forrest potential. In the cushion class a vivid lime-green *Silene acaulis* (R. Smyth) was second to the Youngs' grey-leaved *Helichrysum pagophilum,* a rare Drakensberg endemic which reaches a metre in diameter in the wild. Raised from seed, Don Stead showed the hybrid *Ranunculus x arendsii (amplexicaulis x gramineus)* with lemon flowers above grassy foliage. A pan of *Narcissus rupicola* 'Moro Dwarf' had large flowers on short stems over grey leaves. The original collection was made by the Taylors in Moro Almanzer, a granite peak in the Sierra de Gredos

in central Spain.

Section II was strongly contested and notable plants were *Cassiope wardii* (appropriately shown by Alison Ward) and the yellow flowered *Hylomecon japonicum* which appreciates peat garden conditions.

Peter Semple.

Newcastle-upon-Tyne – 11th May 1991

The entries were well up to standard at the Newcastle-upon-Tyne show, back at its former venue but at a later date than usual. Exhibitors had travelled from as far afield as Newmarket in the south to Invergowrie in the north, to delight us with some memorable plants. The range of species present was different from that to which we are accustomed in early April. *Lewisia* were abundant and provided a spectacular kaleidoscope of colour: deep cerise, rose pink, orange, peach, yellow and white. Section C attracted many local entries which is promising for the future.

Several plants were considered for the Farrer medal and it was awarded to the prostrate European shrub, *Daphne cneorum* 'Pygmaea' (Geoff Rollinson, Holmfirth), which was covered in pink flowers. The six pan classes were well contested and the AGS medals went to Fred Hunt (Invergowrie) and Geoff Mawson (Dronfield). Fred Hunt was successful in winning the R. B. Cooke Plate for the highest number of first prizes in the open section and he also won the E. G. Watson Trophy, awarded to a plant new or rare in cultivation. His entry was a perfect *Cypripedium macranthus hotei atsu-morianum,* a maroon coloured, large flowered slipper orchid from Japan. The Gordon Harrison Cup for the most first points in Section B went to C. Carr (Woodthorpe) who also won the SRGC Special Award bronze medal for the highest aggregate of points in Section B. His exhibits included *Saxifraga cebennensis, Primula reidii williamsii* and several lewisias. Mr B. Graham (Cramlington) was awarded the Cyril Barnes Trophy (most first points in Section C). His winning entry in the three pan class included *Corydalis cashmeriana* and he also showed *Lewisia brachycalyx* and *Dionysia tapetodes.*

A Certificate of Merit was won by Eric Watson (Newcastle) for *Centaurea achtarovii* which lives on the Pirin Mountains, Bulgaria. This delightful plant, less than 7 cm high with large, purplish blue flowers, was growing in a long tom. *Lewisia brachycalyx* 'Rosea' (Alan Furness, Hexham) also gained a Certificate of Merit as well as Preliminary and Cultural Commendations, awarded by the Rock Garden Plant Committee of the RHS.

Many plants were notable for various reasons; for their habit or brilliance of colour, the difficulty of their cultivation, their rarity or simply their aesthetic appeal. The vivid, deep magenta of *Lewisia cotyledon* 'John's

Special' in a six pan class (Fred Hunt) was jewel-like, *Edraianthus serpyllifolia* 'Major' (Mr and Mrs S Keeble, Newmarket) is rarely seen on the show bench, *Boykinia jamesii* is temperamental to flower, but a couple of well-flowered specimens on display indicated that some growers know how to please this species. *Raoulia buchananii,* the vegetable sheep, (Duncan Lowe, Lancaster) is only found in the wetter regions of the New Zealand Alps and the blue-flowered *Polemonium viscosum,* the sky pilot (Fred Hunt) grows above 3600m on the Pacific coast.

With so many fine plants exhibited, the members of the Rock Garden Plant Committee had a difficult task. An Award of Merit was given for *Androsace muscoidea* forma *longiscapa* (Duncan Lowe), and the New Zealand sub-shrub, *Leucopogon fraseri* 'Renakine' (John Davis, Doncaster) received a Preliminary Commendation, as did *Iris cycloglossa* (Alan Spencely). A Certificate of Cultural Commendation went to Duncan Lowe also, for his superb *Jankaea heldreichii* with its flat rosettes of almost succulent, silvery-haired leaves above which were pale violet flowers, and *Chamaecyparis obtusa* 'Caespitosa' (Mrs S. Jephcott, Penrith) received this award together with a Preliminary Commendation.

For the first time, the class for a pan containing more than one variety of rock plant appeared in both Sections A and B so that Robin Brown (Hexham) would not inhibit aspiring miniature rock garden creators! His entry was certainly individual! A theme of black and white, the container was a black painted pot and the rocks were lumps of coal which showed off the white-flowered and silver-foliaged plants perfectly. However, it would seem that judges are not yet ready for such innovations and no first place was awarded. In Section B the class attracted seven commendable entries.

The Scottish Rock Garden Club photographic educational display of alpine plant cultivation was given a Gold Medal. Dave Millward (Newcastle) was awarded a Silver Medal for his interesting photographs depicting the country and flora of Bhutan.

Kath Baker.

Aberdeen – 18th May 1991

In its new home of Ruthrieston West Church Hall, the 1991 Aberdeen Show attracted a record number of entries to both Sections I and II. A cool but fairly frost-free spring meant that many excellent plants, including the Forrest Medal plant of *Gentiana acaulis* 'Kumrey', shown by Roma Fiddes, had been lifted from the open ground.

The three- and six-pan classes tend to bring many of the finest plants in the Show together. Noted particularly in these classes were *Shortia soldanelloides ilicifolia* with deep red fringed petals over bronze young growth, a large perfect cushion of *Androsace villosa arachnoidea* which is difficult to grow evenly, *Edraianthus serpyllifolia* 'Major' covered in almost

sessile deep purple bells and an unusual dwarf *Polygala calcarea* 'Lillett' covered in deep lilac blue flowers. In these and various other classes throughout the Show, *Erigeron* 'Canary Bird' occurred ten times, differing markedly in colour and form, which obviously required some difficult and unpopular judging decisions. Fred Hunt won the six-pan class and also the Walker of Portlethen Trophy for the most points in Section I.

In the three-pan class, Sandy Leven received a Certificate of Merit for a splendid pink mound of *Asperula sintenisii*. Of interest in 'Plants from Seed' was a pan of *Eritrichium nanum* raised by Monika and Fred Carrie, sown in December 1989, with 60 flowers. They were of the easier Asian form, longer stalked and less deep blue than the typical European form but this still represented a considerable achievement.

Henry and Margaret Taylor showed an attractive form of *Gentiana clusii* with blue petals streaked with white feathers which they had called 'Five Feathers'.

Silene hookeri was present in three forms: salmon pink, white flushed with pink and a most attractive deeply fimbriated form, probably *S. h. bolanderi*. The two last forms were shown by Doreen Fraser. A good collection of blue anemones showed just how similar the flowers are of *Anemone obtusiloba* and *A. trullifolia* although the leaves are quite different.

The Show had many immaculate plants of the dwarf *Clematis marmoraria* and its hybrid *C. x cartmanii* 'Joe' although it might be a good idea to put large shrubs such as 'Joe' into classes away from the neater dwarfer alpines as it tends to swamp them and reduce their impact to the judges. Nevertheless the plant of 'Joe' shown by Jean Wyllie justly deserved its Certificate of Merit.

It was obviously lewisia time at Aberdeen with thirty two pots in the two classes. While for most of us *L. tweedyi* was over, the advantages of a garden at 220 m deservedly won the top prizes for David Atkinson. A large clump of the unusual *Meconopsis punicea* was shown by David Howat with only one of its blood red handkerchieves showing but with ten more to come.

Humble native plants such as *Geum rivale* can make a nice display. In Section II this species won the Scottish Native class and the class for an open ground plant for Brian and Maureen Wilson. They went on to win the Bronze Medal for most points in Section II and the Helen Craig Trophy for the best primula in the Show with the richly fragrant *Primula reidii williamsii* which also won for them the Aberdeen Quaich for the best plant in Section II.

A Gold Medal was awarded to Heather Salzen for a display of line drawings of plants, some of which will also appear in 'The Rock Garden'.

The judges were Fred Hunt, Sandy Leven, Ian Bainbridge, Harley Milne, John Lawson and Bobby Rutherford.

Alastair McKelvie.

Discussion Weekend, Edinburgh, 7th – 8th September, 1991

The Discussion Weekend Show was held this year in the William Robertson Building, George Square, Edinburgh. Autumn Shows are always on a smaller scale than those held in spring – but even so, there were a number of interesting and varied plants on view.

The George Forrest Medal was awarded to a gentian not yet often seen on the show bench, a beautiful pan of *Gentiana paradoxa* shown by Mrs Betty Craig of Edinburgh – it also received a Preliminary Commendation from the Rock Garden Plant Committee. The Mary Bowe Trophy for most points in Section I was won by Ian and Margaret Young of Aberdeen, who also received the J. L. Mowat Trophy for the best conifer in the show, *Pinus strobus* 'Reinhaus'. The East Lothian Trophy (three plants of different genera) was awarded to Ian and Carole Bainbridge of Edinburgh, for *Chionohebe pulvinaris, Raoulia hookeri* var. *albo-sericea,* and *Crassula sarcocaulis,* a good threesome, while a delightful arrangement of cut flowers and foliage entered by S. and D. Rankin of Edinburgh won for them the Wellstanlaw Cup.

In the class 'new, rare or difficult' the Youngs had a fine *Raoulia eximia,* grown from wild seed from Mount Hutt, New Zealand. Margaret and Henry Taylor of Invergowrie represented our native Scottish flora with *Sagina boydii,* and also America with their plant of *Monardella macrantha* with its display of orange tubular flower heads, while Australasia's native plant life was represented by *Myosotis uniflora* shown by Mrs Jean Wyllie of Dunblane. Mr R. Robinson of Milnthorpe showed *Coprosma petriei x brunnea,* which as well as taking first place in the 'plants in fruit' class, was awarded a Certificate of Merit – a delightful shrub, its tiny transparent pale purple berries clustered tightly around the stems like beads. Mr Robinson also won in another class with a different *Coprosma,* 'Red Mack', with its display of bright shining red berries.

There were quite a number of entries in the fern classes – Mr H. Shepherd of Bolton winning with *Ceterach officinale* and *Trichomanes officinarum;* he also had beautiful pans of *Cyclamen purpurascens* and *Cyclamen hederifolium* in the cyclamen class. Mrs D. Fraser of Dundee showed a fine *Cyclamen intaminatum* and there was a good *Cyclamen africanum* shown by Mrs Jean Wyllie.

Unfortunately no crocus was entered, but a good pan of a colchicum hybrid with twenty-five large blooms was outstanding; it was shown by Ian and Margaret Young – whose superb pink *Zephyranthes grandiflora* in the Amaryllidaceae class caught everyone's eye. Dr John Richards' plants of *Helichrysum confertum* and *Dionysia aretioides,* both in flower, took first place, and in the 'Sedum in flower' class Mr M. Hopkins of aberdeen won with *Sedum cyaneum.*

The East Lothian Cup for the best plant in Section II was won by Mrs K.

Rimmer of Ormskirk with a nicely berried *Gaultheria procumbens,* and she also showed a winning plant of *Convolvulus cneorum* in the 'Silver and grey' section. Mrs R. Mann of Dundee who staged 'two plants grown in the open ground' was first with *Scutellaria alpina* and *Armeria maritima,* and she had two good pans in the sempervivum section – *Sempervivum arachnoideum* and *S.* 'Rubin'. Mrs Sheila Durham of Edinburgh had a well flowered *Lewisia* 'Hurstwood Strain' on show.

Gold Medals were awarded to Mr Lawrence Greenwood for his lovely watercolour paintings, to Mrs A. M. Chambers for her paintings and interesting pencil sketches, and to Mr Harvey Shepherd for his fine display of photographs.

The judges were Mrs P. Stone, Dr. E. Stevens and Messrs J. Jermyn, H. Taylor, J. Sutherland and A. McKelvie.

Edith Armistead.

Cyananthus microphyllus Heather Salzen

Book Reviews

Growing Alpines in Raised Beds, Troughs and Tufa
Rock Gardener's Library Series
by Duncan Lowe
Published by B. T. Batsford
136 pages, 20 colour plates, 40 line drawings
Price £17.99

Raised beds have conquered the modern world of rock gardening. In recent years, many of us have enjoyed Duncan Lowe's lectures and journal articles on the cultivation of alpines. He has distilled these and added masses of new material to produce this book. It has informative colour illustrations and skilful explanatory line drawings. These drawings, scattered all the way through the book, make it attractive when first you pick it up.

The book starts with a statement of objective – constructing a place where plants flourish in cultivation. That should be acceptable to most of us!

The major section is devoted to useful and practical advice on wall construction, composts and planting for raised beds, a most successful home for choice plants. In trough construction, lots of useful knowledge is imparted on stone cutting, carving troughs out of solid rock and casting troughs made with hypertufa. Next comes a fascinating section on tufa. The reviewer so far has only one small piece of tufa. How much does it cost to fit a towbar on a car? Next week I must head south for a load! A good feature of this book is the series of lists of choice plants suited to different treatments and the sources of the plants and materials.

Building, casting, chiselling, barrowing countless tons of infill, heaving troughs from place to place, the reader builds up massive imaginary muscle. But this book is obviously written from practical physical experience. So, better be polite to the muscular Duncan, any criticism could be risky!

This is not primarily a book on propagation, but helpfully includes some details of propagation of the chosen plants. The suitable dates for propagation seem unduly restricted; an unwary reader might get the impression that the plants could only be propagated at the stated time, whereas most can be propagated over a wide span of the year.

The practical information on construction is excellent, but some of the rationalisation is dubious. The premise could be disputed that mountain plants need low nitrogen conditions in cultivation. The fact that a plant

seems to survive starvation in the wild does not necessarily mean that it likes being starved. This has to be tested separately in cultivation and a simple test may show the opposite to be the case.

Alpines don't awake to an uncertain spring with false starts and late frosts. Oh no? Duncan Lowe must have a well-insulated sleeping bag. Those erratic late frosts can be noticed even in midsummer by thinner-blooded sleepers in the Alps.

Plants in cultivation are attacked by pests and diseases, "few of which they have ever encountered in their natural lives". Well, if pests and diseases were not found in nature, were they specially created by an act of a spiteful god just to attack our garden plants? On the contrary, it is a fair bet that any pest or disease found in cultivation was previously hiding somewhere in the wild.

The strength and permanent value of the book is in the variety of useful ideas on practical construction. Follow the instructions and our plants in future should live in a luxury they never before enjoyed. This is a story told from experience with enthusiasm.

Will it do? Yes, nicely.

HT.

Alpines in the Open Garden
Rock Gardener's Library Series
by Jack Elliott
Published by B. T. Batsford
137 pages, 20 colour plates, 30 line drawings
Price £15.99

Almost everybody reading 'The Rock Garden' grows alpines outside, and for the majority it is the only way to grow them. This book therefore covers a major part of the alpine grower's world, and as it is so short, we might expect it to be superficial. But far from it. It is packed with information. In just a few words, Jack Elliott is able to give a description of a plant – flowers, leaves, colour, time of flowering, where it grows, and information about related varieties. It is all firmly based on his own experience, and although that is mainly in the south-east of England, he regularly refers to different growing conditions elsewhere. References to Scotland leave one with the impression that when it is not freezing it is raining!

After a brief introduction to his own garden, which sets the personal scene, there are two main chapters. One is devoted to sun-loving alpines, while the other is concerned with those preferring some shade. Within these there are sections dealing with plants for early, mid and late seasons,

with further division into carpeters, typical alpines and shrubs. Carpeters are often disdained by alpine connoisseurs, but the author grows alpines not just in raised beds and rock gardens, but also in shrub and herbaceous borders and even rose beds. And mid-season alpines also seem to be out of favour, at least in Scotland. Why is there no show between May and September? As this book shows, there are many fine alpines that bloom in the summer, and we lose by our neglect of them.

Finally, there is a short chapter on practical matters. Its brevity is a virtue, as it concentrates on the *really* important things. Two pages on seed raising will probably be adequate for 90% of seeds in the exchanges whereas a 100-page beginners' guide is likely to ensure that no-one ever begins. Similarly, the section on pests is admirably short. Insects are disposed of in two and half lines, fungi in one and a half. A cure for mice is suggested (buy a cat) but a cure for cats is lacking!

The colour plates (8 pages) and thirty line drawings are insufficient to illustrate the text adequately, but the writing is so good that there is almost no need for illustrations. Once I had read a few pages, I found it hard to put down. By the time I had finished it, I had a long list of ideas to implement. So for one reader at least it has served its purpose, and I suspect that it will prove equally valuable to many more.

DWHR

Gentians
by Fritz Kohlein
Edited by Jim Jermyn
Published by Christopher Helm
183 pages, 58 colour plates, many line drawings
Price £17.95

This is an attractive well-presented reference book covering the gentian species and their close relatives. Its sixteen chapters cover gentians around the world, their propagation from seed and other methods, and cultivation in the open and the alpine house. The coverage of species appears to be comprehensive although the descriptions vary from in-depth tributes down to brief notes. This is perhaps due more to the author's acquaintance with individual species rather than their overall garden merit.

Herr Kohlein gives some attention to cultivation and compost. Whilst his advice is generally helpful, a suggested trek to Peru for guano is outwith the reach of most gardeners (phostrogen or a weak solution of tomato fertiliser from the corner shop would suffice). The suggested use of phosphoric acid and flowers of sulphur is ill-advised unless the user has a detailed analysis of the soil and a good knowledge of these potentially

dangerous chemicals.

We agree that Gentians are seldom affected by pests and diseases, but the author omits any mention of the root rot which is perhaps the greatest cause of mortality.

For the botanist it is of great interest to see the table of chromosome numbers presented in this book, unfortunately it is restricted to European species. Hopefully equivalent information on Asiatic species will become available and may help to sort out the confusion which remains with them and their hybrids.

In conclusion the excellent colour plates will stimulate the gardener to actively seek out these alluring blue gems, as the author says 'The names employed to describe the colours are inevitably inexact and fanciful'.

IC

Alpines
by Will Ingwersen
Published by John Murray
292 pages, 350 colour plates
Price £50

Just before his death in 1990, Will Ingwersen completed this book, which is the summation of his life's work. The manuscript was edited by Richard Bird after his death. Most rock gardeners know and appreciate Will Ingwersen's 'Manual of Alpine Plants' which is a splendid reference book to most of the plants they grow. This new book is not in this category; it is a book where he presents his more personal likes and gives his experiences of growing them. Nevertheless he finds space to deal with more than 2000 species and varieties so that it is also a useful if incomplete reference book.

The book is made up of 27 chapters each dealing with a particular topic in a discursive style rather than just a list of plants. Examples of chapter headings are "Primroses and their allies", "The diversity of buttercups", "New Zealanders and other Antipodeans". Within each chapter the choice of plants is sometimes idiosyncratic and does not necessarily cover the expected species. For example, when dealing with gentians and primulas there is hardly any mention of Asiatic species, with most emphasis being on European species. This balance predominates throughout the book which perhaps reflects the author's own experience of growing plants in the drier parts of England.

By its nature this book can only cover a limited range of topics and readers are bound to complain that a particular plant is missing but each chapter is eminently readable and generally gives an excellent overview of

a group of plants and a real feel for them.

It is difficult to know what readership the author has aimed at. If the individual chapters had appeared at intervals in the AGS or SRGC Journals they would have been very welcome but it seems doubtful whether members of these societies will be prepared to pay £50 for the privilege of reading them when assembled in book form.

The book is splendidly produced with high quality paper, eminently readable type and excellent colour photographs. Typographical errors are few although one or two photographs have transposed titles.

This is a very much a coffee table book which would make a wonderful special present or a retirement gift but which is likely to prove beyond the pocket of most rock gardeners.

ADM

Letters to the Editors

Dear Editors,

I am seeking seed or plants of *Ostrowskia magnifica,* and would like to hear from anyone who knows how to grow this plant.

I would like to exchange seed and cultural knowledge with other growers of the species of *Lilium,* especially the rarer species.

A note on the germination of *Meconopsis napaulensis:* success for me seems greatest when I sow the seed in early spring at temperatures in the 10 to 13°C range, in a 50% peat / 50% perlite mix which is topped with vermiculite. The pot is sealed in a clear plastic bag to create a very humid environment. It is exposed to indirect light only, both before and after germination. Germination is in about three weeks, and must take place below 15°C, or the seedlings will die. A dilute fertiliser containing trace elements is applied after germination. The plastic bag is opened slightly for air circulation during growth. After about three weeks, the plants are large enough to transplant into individual small pots, with the same mix as above. They are grown on in plastic bags, slightly open at the top, in indirect light. They are placed in humusy, sandy soil in the garden when they are well established in the pots. This whole process should ideally be completed before hot weather. This method also works with *Michauxia.*

For those who are experiencing unexplained losses of choice hardy plants in containers over winter, here is a method of winter storage that works without fail for me. Make sure the container medium is moist.

Place the container in a plastic bag, seal, and place in the refrigerator at between 0 and 2°C. Keep in refrigerator at least four, preferably six months. You have now simulated an ideal alpine winter under snow cover. The plastic bag keeps the refrigerator clean, but prior negotiation with other family members is advised.

Yours sincerely,
Gene Mirro Jr.
Oregon Wild Lily Sanctuary
7850 S.W. Garden Home Road
Portland
Oregon 97223
USA

Dear Editors,

I am extremely concerned at the statement on the toxicity of paraquat contained in Peter Hainsworth's letter (The Rock Garden, v22: p 358, June 1991). My information, from the Poisons Centre, Royal Infirmary, Edinburgh, is that a fatal dose can be as little as 10ml (i.e. one spoonful) of the Gramoxone concentrate (200g paraquat / l), which is completely at odds with the "10ozs of concentrate" he quotes. I agree that there is no particular difficulty about being careful – for one's own safety. Gramoxone concentrate is often shared out, dispensed from the original container into whatever inappropriate one is at hand, including coloured glass bottles which obscure the blue dye, and fatalities occur from the unintentional ingestion of small amounts of the liquid. Large volumes are not consumed unintentionally because of the very unpleasant taste of the fluid. From my experience as a hospital biochemist, the tragic victims of these accidental poisonings are often the young, the mentally less acute or the intoxicated who are unaware of the hazard – certainly **not** one to be underestimated.

Yours sincerely,
Anne M. Chambers
'Suilven', Drumore Road
Killearn
Glasgow G63 9NX

Paraquat has received substantial airings in recent issues of 'The Rock Garden', both in medical and gardening terms. This letter again emphasises the need to handle all poisons with great care – do your gardening safely. We now consider it appropriate to close this correspondence, at least for the present.

Eds.

Dear Editors,

Jankaea heldreichii from seed

Everyone says that *Jankaea heldreichii* is very difficult to propagate from seed; some people even use 'test tube' propagation as a result. My own experience last year with seed from the SRGC 1990/1991 Seed Distribution is rather different and is worth passing on to other members.

All the work was done in 5cm pots sitting on a layer of damp sand in an unheated propagator placed on an east-facing bedroom windowsill, where the temperature was a fairly steady 15°C.

My first sowing of fifteen seeds was done in late January on a sterilised mixture of peat and sphagnum. After about five weeks the seed appeared to fatten up but cotyledons failed to emerge and the seed eventually just disappeared. I believe now that the seedlings damped off as they germinated.

Meanwhile in mid February I sowed another eight seeds on 'Foremost' horticultural sand. Six germinated in four to five weeks and a seventh a week later, the small rootless plantlets being left lying on the surface. With aid of a 4x magnifying glass and penknife the tiny plants were transferred from the sand to a peat/sand mixture containing Chempak seed base fertiliser, where they have grown on without problems. The first true leaves began to emerge after two weeks and nine weeks after germination the seedlings were 2-3mm across and developing other leaves. A further sowing of nine seeds was made at the end of March, producing seven more healthy seedlings which are now growing their first true leaves. None of this work was done under sterile conditions; far from it, as the propagator was being used for other things at the same time and the pot of sand used to germinate the *Jankaea* had already been used to sprout a crop of *Primula gaubaeana*.

If others have a go at this and get similar results then perhaps here is a method of propagation which could be used to produce *Jankaea* in quantity and finally answer Jim Archibald's eloquent plea at the 1981 Conference (see "Alpines '81"; p 121).

Yours sincerely,

A. G. Jacklin
69 Highlands Road
Runcorn
Cheshire WA7 4PT

THE ROYAL HORTICULTURAL SOCIETY'S ROCK GARDEN PLANT COMMITTEE

Recommendations made at Scottish Rock Garden Club Shows.

STIRLING, 30th March 1991

AWARDS TO PLANTS

First Class Certificate

To *Pulsatilla halleri* ssp. *slavica* as a plant for flower in the alpine house or in the rock garden.
Exhibited by Mr and Mrs J. I. Young, 63 Craigton Road, Aberdeen.

Award of Merit

To *Trillium ovatum* f. *hibbersonii* as a plant for flower in the alpine house.
Exhibited by Mr F. Hunt, 34 Morris Place, Invergowrie, Dundee.

Certificate of Preliminary Commendation

To *Helichrysum heldreichii* as a plant for foliage in the alpine house or in the rock garden.
Exhibited by Mr & Mrs H. Taylor, 32 Morris Place, Invergowrie, Dundee.

AWARDS TO EXHIBITOR

Certificate of Cultural Commendation

To Mr A. J. Leven, 2 Leighton Court, Dunblane, for a plant of *Primula allionii* x *P.* 'Linda Pope'.

PERTH 20th April 1991

AWARDS TO PLANTS

First Class Certificate

To *Daphne petraea* as a plant for flower in the alpine house. Exhibited by Mr H. Shepherd, 30 Lingmoor Road, Bolton, Lancashire.

Certificate of Preliminary Commendation

To *Fritillaria whittallii* as a flowering plant for the alpine house.
Exhibited by Mrs E. M. Bezzant, Monievreckie, Port of Menteith, Stirling, and by Mr F. Hunt.
To *Trillium pusillum* as a plant for flower in the rock garden.
Exhibited by Mr & Mrs J. I. Young.
To *Trillium erectum* f. *album* as a plant for flower in the rock garden.
Exhibited by Mr & Mrs J. I. Young.

To *Primula pulchra* as a plant for flower in the rock garden. Exhibited by Drs. C. and I. Bainbridge, 3 Woodhouselee, Easter Howgate, Midlothian.

AWARDS TO EXHIBITORS

Certificate of Cultural Commendation

To Mr D. Martin, Main Street, Scotlandwell, Kinross, for a plant of *Draba longisiliqua*.
To Mr H. Shepherd for a plant of *Daphne petraea*.

EDINBURGH 7th September 1991

AWARD TO PLANT

Certificate of Preliminary Commendation

To *Gentiana paradoxa* as a plant for flower in the rock garden.
Exhibited by Mrs E. B. Craig, 9 Hillpark Road, Edinburgh.

Weldenia candida Lionel Bacon

Discussion Weekend

SEPTEMBER 1992: UNIVERSITY OF ABERDEEN
FRIDAY 4 TO SUNDAY 6 SEPTEMBER 1992

Aberdeen, known throughout the world as the Granite City, and more recently as the oil capital of Europe, also enjoys an enviable reputation as the Flower of Scotland and has been the repeated overall winner of the Britain in Bloom Competition. Aberdeen's seasons tend to be later than the rest of the UK so that September is an especially floriferous month with roses, herbaceous plants, annuals and, of course, alpines in full bloom. For all these reasons it is particularly appropriate that the SRGC has decided to hold the Discussion Weekend in Aberdeen for the first time.

Accommodation will be in the Crombie or Johnston Halls of Residence in Old Aberdeen, an area of great charm and antiquity. The Lecture Hall, Show and Plant Sale Rooms, Dining Hall, Halls of Residence and the Cruickshank Botanic Garden are all within the University precincts.

Accommodation is available from Friday evening to Monday morning in single study bedrooms. Members with any special requirements of accommodation, diet or access are asked to mention them when booking. A list of local hotels and attractions is available from the Registration Secretary, Mrs Maureen Wilson.

The evening meal on the Friday will be from 6.00 to 6.30 pm. Members who are unlikely to reach Aberdeen by this time should let Maureen know their approximate time of arrival so that arrangements can be made for a buffet supper for them.

The Saturday night dinner will be held in a university banqueting hall and will be waitress-served: the price includes wine.

The lectures cover a wide range of topics by people well-known throughout the Club for their expertise. The programme has been balanced to suit all tastes, ranging from general rock gardening, the collecting and cultivation of alpines from places as contrasting as New Zealand and the Himalaya, the problems of seed germination and in-depth looks at lewisias and ericaceous plants. There will be the now well-established Bulb Exchange with a talk on some aspect of their cultivation as well as the usual plant show, photographic competion, trade stalls, club plant and seed stalls and the auction. In addition, books and paintings will be on display and sale. There will be an informal programme on Sunday evening for members staying till Monday morning.

Programme

Friday	
8 pm	**Purest Pleasures – Almost** Bob Gordon
9.30 pm	Dwarf Bulb Meeting and Dwarf Bulb Exchange
Saturday	
10.30 am	Guided tours of the Cruickshank Botanic Garden and of Old Aberdeen including King's College and St Machar Cathedral.
2.30 pm	*The William Buchanan Memorial Lecture* **New Zealand Alpines in the Wild and in Cultivation** John Richards
4.15 pm	**Ericaceous Plants for Garden and Exhibition** Lyn Bezzant
7.00 pm	**Conference Dinner and** *'The Three Princes of Serendip'* Alastair McKelvie
10.00 pm	**Plant Auction**
Sunday	
9.45 am	**The Lewisia Story** Kath Dryden
11.30 am	*The Harold Esslemont Lecture* **Modern Day Plant Hunting: Seed Collecting on the Borders of Western Tibet** Chris Chadwell
2.30 pm	**Problems and Advances in Seed Germination** Mike and Polly Stone

Prices –*Residents*

Friday evening dinner-Sunday afternoon tea £94.00
Saturday lunch-Sunday afternoon tea £67.00
These prices include the cost of the Saturday evening dinner.
Members booking before 1 June may deduct £5 from the above prices.
Sunday evening dinner to Monday breakfast £25.00

Non-Residents

Saturday or Sunday: morning coffee, lunch, afternoon tea
and all lectures on that day £17.00
Saturday evening Conference Dinner £17.00

Bookings should be made on the form enclosed with this issue of 'The Rock Garden'. Together with the appropriate remittance, payable to the Scottish Rock Garden Club, these should be sent to Mrs Maureen Wilson, Remuera, Inchgarth Road, Cults, Aberdeen AB1 9NX. (Tel. 0224 867469).

Anyone wanting further information about the Weekend should contact Maureen at the above address.

SRGC Diamond Jubilee Weekend, Oban, May 21-23 1993 – First Notice

HILARY HILL

To celebrate our Diamond Jubilee the organising committee wanted to do something the Club had never done before, so the idea of a spring weekend on the west coast was born. To organise such an event is a big challenge to the recently-formed Lorn Group – but we are delighted to do so, and a very big welcome awaits. May is a wonderful month for visiting west coast gardens. Rhododendrons and azaleas are at their best; primulas, particularly Asiatics, abound; rock gardens are into their late spring and early summer display, and the weather is usually good.

Provisional Programme

Friday evening dinner will be informal and flexible to allow for different arrival times.

Saturday morning will be at the Corran Hall. Two lectures are planned, about plants that thrive in west coast gardens. There will be a Club plant stall and at least one commercial stall (West Coast Nurseries, which specialises in Asiatic primulas).

The afternoon will comprise guided visits to gardens half an hour's drive south of Oban. **Arduaine Garden** is situated on a promontary bounded on one side by the Sound of Jura and on the other by the mouth of Loch Melfort. A big shelter belt coupled with the Gulf Stream allows a wide range of frost-tender plants to thrive in the open. It is noted for rhododendrons and azaleas and there is a magnificent woodland area where huge rhododendrons form cascades of colour, plus herbaceous borders and water gardens.

Coille Dharaich, Kilmelford, is a tiny windy garden on a raised beach on the north shore of Loch Melfort. The garden centres on a large rock outcrop and the lower strata form the bed of an attractive bog garden and pool. Of special interest are the alpines growing in extensive scree beds and troughs. Arduaine and Coille Dharaich are only 5 km apart and make an interesting and varied pair. There is ample car parking.

The evening Dinner will be at the Caledonian Hotel, Oban.

Sunday is also set aside for visits to gardens around Oban. A **must** for everyone is **Dreva Mhor, Ganavan,** an enchanting garden on a steep slope; in it are about 2,000 different plants, trees and small shrubs grown in

mixed random beds, a scree bed and troughs. In the afternoon, choose more gardens in Oban, or leave in good time, to break your homeward journey at another garden, perhaps **Achnacloich** on the A85 between Connel and Taynuilt, with its extensive woodland garden above Loch Etive. It is noted for rhododendrons, azaleas and primulas grown in an impressive setting. Or, if travelling south, try **Crarae Garden, by Inveraray** where rhododendrons, exotic trees and shrubs grow in a highland glen.

Accommodation

Accommodation in Oban is hard to come by as many hotels have regular contracts with holiday coach tours. We have been offered very favourable terms at the excellent 3-star Caledonian Hotel on the sea front. However, from May 1992 rooms will be let to holidaymakers, so, **please** think very hard now about what you would like to do in May 1993. **If you are definitely planning to come to Oban, splendid; or even if you think you might come, please let me know NOW (no deposit required).** These bookings are provisional and will not commit you, but will help me to make the correct hotel booking. Obviously 'definite' answers get first choice of rooms, particularly single rooms. All bookings will be acknowledged.

Costs will be kept as low as possible. The cost for two nights dinner, bed and breakfast, and Conference fee will be between £90 and £105 per person. The single room supplement will be no more than £20 for two nights. At these prices, it really is a bargain.

To ensure this event is a success, I must have a firm idea about numbers by the end of April 1992. Obviously, no-one can be definite when booking for an event more than a year ahead so I stress that making a booking now will not commit you; adjustments to numbers can always be made. However, accommodation may be very difficult to arrange after April 1992, so do please let me know now that you propose to come. Write, or phone after 6 pm, to **Dr Hilary Hill, Coille Dharaich, Kilmelford, Oban, Argyll, PA34 4XD; phone 0852 2285,** indicating whether you wish to make a definite or provisional booking, with your name, address and phone, and the numbers of double, twin or single rooms you require.

Annual General Meeting

The Annual General Meeting
will be held at the
Kessington Public Hall
Bearsden, Glasgow
on
Saturday 31 October 1992
at 2 pm

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

Nominations in writing and seconded by another club member or members should be lodged with the Secretary not later than 16 May 1992 the nominator having ascertained that the nominee is willing to serve if elected.

The following having served for three years as Ordinary Members are not eligible for re-election to Council for one year: Mr F. Hunt, Mr J. D. Main, Mr R. J. Smyth and Mr J. I. Young.

Secretary
Dr Evelyn Stevens
The Linns
Sheriffmuir
Dunblane
Perthshire
FK15 0LP

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AUTHORS

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Abbreviations- F aM Farrer Medal, FM Forrest Medal, FCC First Class Certificate, AM Award of Merit, PC Preliminary Commendation. Bold type (eg 25) indicates an illustration number.

THE SCOTTISH ROCK GARDEN CLUB

1993 Diamond Jubilee Calendar

Featuring thirteen water colour paintings by Duncan Lowe of mountain plants, in a 9" x 12" format, this special calendar celebrates sixty years of the Scottish Rock Garden Club and provides a monthly reminder of the attractive alpines found in the British mountains.

Price £6.00 each – post & packing (per calendar): UK **60p**, overseas **£1.10**

Please make all cheques
(Sterling cheque drawn on a British Bank or US$ cheque at $2.00 = £1.00)
payable to **The Scottish Rock Garden Club** and mail with your address to:
Drs C. & I. Bainbridge, 3 Woodhouselee, Easter Howgate,
Midlothian EH26 0PG, UK

Available at spring shows 1992 or posted early summer 1992

Back Issues

Some of the back numbers listed below, as available, are in very short supply. 29 back numbers are still available from stock. The Waiting List for the original Journals 1-8 is closed but reprints are now available (see below).

Discount Offer:
15% discount on orders of 10 Journals or over.
There is NO discount on Journals bought from the Waiting List, or on reprints 1–8.

CURRENT AVAILABILITY AND PRICES (PER COPY) TO MEMBERS

Journal	*Pence*	*US Dollars*
1-8 (Waiting List closed)	300 (when available)	$5.10
1-8 (Reprinted version–no discount)	250	$4.25
9-38, 40-51, 53, 54, 56, 57, 65, 74	150 (waiting list only)	$2.55
39, 52, 55, 58-64, 66	50	$0.85
67-73, 75	100	$1.70
77-81, 83-86	175	$3.00
76, 82	300 (waiting list only)	$5.10
87, 88	225	$3.85
Index 1-19	45 (post paid)	$0.77
Cumulative Index 20-69	240 (post paid)	$4.10
Index & Cumulative Index	265 (post paid)	$4.50

Postal contribution 24p (42c) per Journal up to a maximum of £6.50 ($10.50).

PAYMENT
Payment may be by Sterling or US $ remittances – Cheques, Money Orders, Bank Drafts, etc., made payable to SRGC Publications Account or through Giro No. 12 320 4003. PLEASE NOTE that this Giro Account number is **NOT** for subscriptions.

Early numbers of the Journal are now urgently required for the ever-growing Waiting List. I would gratefully receive these as gifts to the Club, or buy them at half the above prices. Those most required are up to No. 56 and also No. 82. Postage for either arrangement will be refunded.

BINDERS
Stocks of binders to hold four numbers of the Journal are available at £2.50 each, post paid.

Journals and binders are available from Mr T. G. Sprunt, 17 Claremont Drive, Bridge of Allan, Stirlingshire FK9 4EE, Scotland, UK. Tel: 0786 833607
(evenings only)

Please note that all other books are now available from
Mr B. Hammond, Park House, 10 Park Road, Letham, Angus DD8 2PX.

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