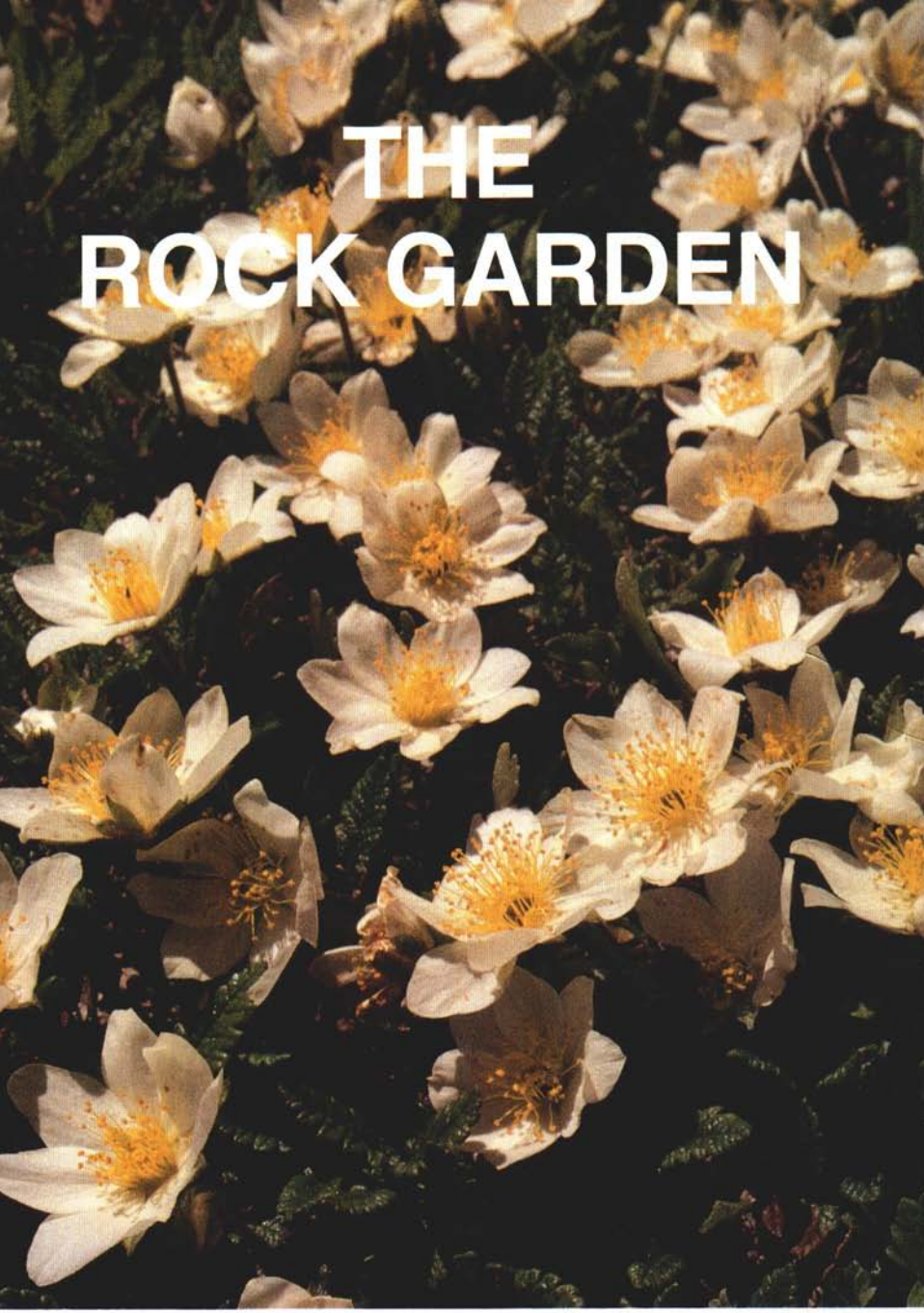

THE ROCK GARDEN

THE JOURNAL OF THE SCOTTISH ROCK GARDEN CLUB

Volume XXII Part 2 Number 87

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The Rock Garden

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

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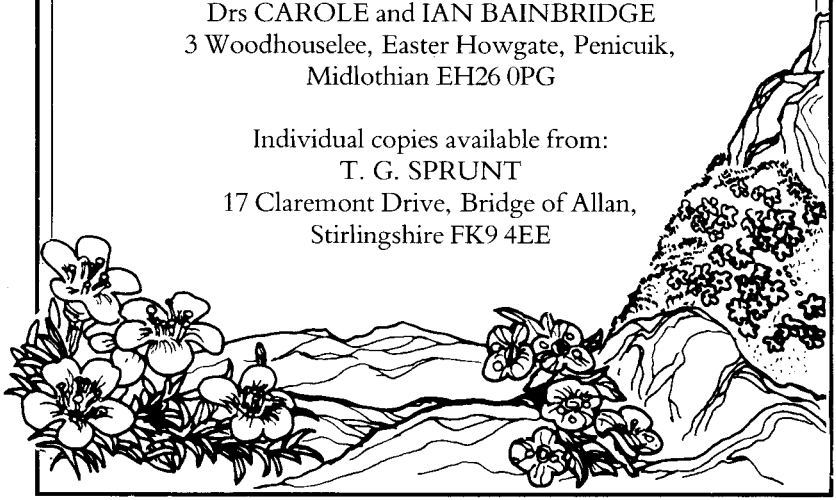


Front cover:
Dryas octopetala in Vallon Popera, Sesto Dolomites
Photograph Michael Almond

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.

Erratum

In Issue No. 86 (June 1990) the photographs for Figs 17 and 18 (pp.54 & 55) were transposed.

Contents

Vignettes on pp 172, 177, 179, 214 by Duncan Lowe, p 218 by Joel Smith.

Anemone palmata Lionel Bacon

Editorial

Wet weather in the autumn, coupled with weeks of snow and gales as the year draws to an end, have left the garden looking very sorry indeed. Autumn clearing up remains unfinished, and sodden earth interspersed with mud-splattered plants really looks most unattractive. With forecasts of more bad weather to come, spring seems many months away.

However, despite these awful conditions, several alpines provide us with a reminder that spring is not so very far away, by flowering at this time of year. Already, the petiolarid primulas are in bud, the first of the dwarf narcissi are beginning to flower in the alpine house, and reliable hardy species such as *Helleborus* 'White Magic' have been flowering valiantly since early December, despite being buried repeatedly by falls of snow. Crocuses, kabschia saxifrages and *Primula allionii* won't be far behind.

Many of these early flowering species are never seen at their best by many members of the Club, or by the public. By the time the weather improves and people start thinking of gardening and visiting shows and nurseries again, these plants have finished flowering, and are busy producing seed. To share the beauty of these first spring flowers, this year the Club will be holding an early spring bulb and plant display at Dunblane (details on p244). Do support this event; if successful it could become a regular feature of the Club calendar. Events such as this, and the Alpines '91 International Conference, provide a showcase for the Club's activities, attracting new members and ensuring continued enthusiasm and interest in alpines, both rare and common.

As this issue of **The Rock Garden** will be current during Alpines '91, it seems most appropriate for the cover of this issue to bear a photograph of the Club's emblem, *Dryas octopetala,* and to carry an article on this interesting Genus. The issue contains articles ranging from cultivation techniques to travelogues, with material from well-known and established authors as well as some contributors new to these pages. We hope their efforts provide something of interest for everyone, and reflect the enthusiasm of the Club's members to alpine gardeners throughout the world.

CAROLE AND IAN BAINBRIDGE

President's Review 1989-90

The past year has, on the whole, been a reasonably satisfactory one for the Club. There has been a slight fall in the Club membership from 4464 last year to 4397 this year, although at one time it looked as if it would be a great deal more. Most of the subscription defaulters eventually paid after being sent out further reminders.

The members resident in Scotland number 1805, those resident in the rest of the UK are 1538, and those overseas comprise 1054. The cost of sending out reminders to those who had failed to pay their subscriptions was quite a heavy burden on the Club. The cost of sending out Journals to those who had not paid would have been quite unreasonable.

Next year, as you all know, is the year of the International Conference and I would like at this point to recommend it to any who have not yet applied to attend; there are still places for the 1991 Conference. These conferences are great occasions and many life-long friendships are forged. The lecture programme is of the highest order and if Alpines '81 is anything to go by then the Plant Show will be an unforgettable experience.

Both Pre-conference and Post-conference tours have been organised. The programmes for these have now been firmed up and are packed full of interesting garden and nursery visits. The Pre-conference tour is, I think, now fully booked but there are still places available on the Post-conference tour, which is essentially the Scottish tour.

You will all be aware that the Queen Mother, one of our Honorary Members, celebrated her ninetieth birthday this year. At the instigation of our Subscription Secretary, the idea was produced that this should be commemorated. A water colour entitled "Flowers of the Scottish Mountain Turf" (Fig. 34, p160) was gifted by the artist, Heather Salzen – one of our Aberdeen members. It was duly framed, a list of the plants depicted was mounted on the reverse and was then sent to Clarence House with an accompanying letter from the President. A reply was received from the Lady-in-Waiting.*

Over the past year a number of members have resigned from their official positions in the Club. They have all in their various capacities made a tremendous contribution to the smooth running of the Club. First is Fraser Elgin, who was Investments Adviser to our previous Treasurer, and who between them brought our finances to their present healthy state. Our sincere thanks are also due to David Simpson and Wilf Holmes who

*The letters are printed on p159.

have also resigned from their positions as Indexers of our Journal. This is one of the low profile jobs in the Club, and because of this the people carrying out the work tend to be unsung. They have carried out this most exacting work faithfully over a good number of years and we are most grateful for all their efforts.

Dick Salvin – for personal reasons – has resigned as Publicity Manager. He has put in a tremendous amount of effort in completely re-designing our publicity material. We are sorry that he is unable to continue and reap the benefits of all those efforts. We offer him our sincere thanks, we wish him well and trust that he will soon sail in calmer waters.

Isobel Simpson also intimated her desire to retire as Club Librarian. She has given many years of stalwart service to the Club especially in her roles as Club Secretary and also latterly as Librarian. During her stewardship the library has increased considerably in size and now constitutes an important service to the membership at Group level. We are sorry to see her go, but offer her our grateful thanks for all her work.

Don Stead has also resigned as Overseas Liaison Secretary. He has given many years service to our Club both in this capacity and also as Publications Manager. I offer him our sincere thanks for this service.

Lastly in the retirements may I offer our thanks to the four retiring members of Council, Ian Douglas, Bob Drummond, Bob Maxwell and Jackie Thomlinson.

During the past year we have had donations of books for the library from Alex Duguid and from Eric Watson. We are most grateful to them for these additions to our library.

We welcome two new Group Conveners – Hazel Smith who has taken over in the Stirling Group from Bob Drummond and David Atkinson who has taken over from Bob Maxwell in the Aberdeen Group. We thank those who have retired for their service to the Groups and the Club and wish the new conveners every success in their Club activities.

I have great pleasure in announcing that a new group has been formed, based on Oban, which is to be known as the Lorne Group. The convener of this group is Hilary Hill, who is already well known to quite a number of the members. We wish them every success and trust that they will find their association will be a fruitful one.

It is also a great pleasure to announce the success of the Ayrshire Group who were runners-up in the Steradent Trophy (for clubs and societies of horticultural interest) at the Ayr Flower Show. We have also had a very nice letter from Mr Shimizu's son indicating his father's great pleasure in accepting Honorary Membership.

You will remember that last year it was decided that the Seed Exchange work should be divided into three separate sections. Jean Wyllie continued as Seed Reception Manager with responsibility for assembling the

donations of seed and for compiling the Seed List. Marisa Main is Packeting Manager and has been ably assisted by volunteers of the Edinburgh Group. Morris Wilson is Seed Distribution Manager. He, with members of the Fife Group, made up and posted the members' seed orders.

In spite of prognostications of disaster, the whole operation went very smoothly. The list appeared earlier than before, the seeds were packeted most expeditiously and the orders were quickly dealt with, the last orders going out by 21st February. There were only a few minor hiccups along the way. The surplus seed distribution proved to be most popular and was a great financial success. The Seed Exchange has now purchased its own computer from its own funds.

The Exploration Fund Committee was again chaired at the Stirling Show by John Main, Awards were made to three applicants, Heather Dale went with the British Schools Exploring Society on a trip to Spitzbergen for six weeks. Joel Smith was given help for a trip to Switzerland. He has already contributed to "The Rock Garden" on several occasions – the first when aged fifteen. The third was to Richard Baines for a trip to Nepal with Chris Chadwell. The arrangements for this subsequently fell through and the money has been re-invested in the Fund.

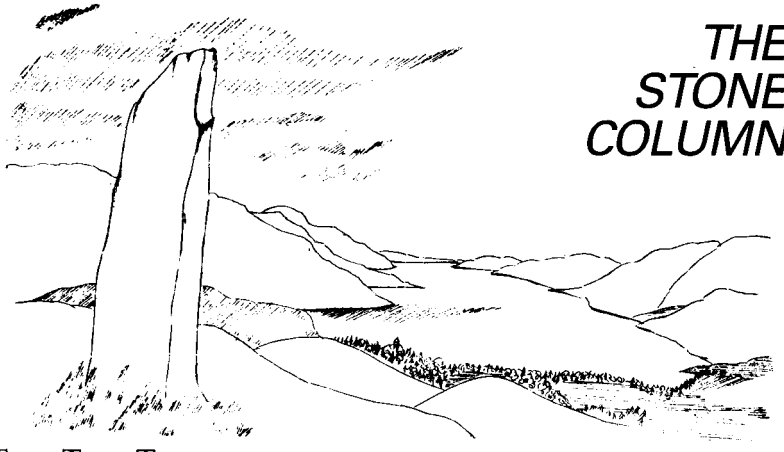
The shows this year have again been a great success in spite of another very tricky winter. I make no apologies for reiterating how important the Shows are to the Club and how important it is that as many members as possible take part. They are the Club's shop window.

We have again had our September Discussion Weekend, this year hosted by the Edinburgh Group. There were some unfortunate problems with the venue. In spite of this the usual cameraderie which pervades these events exerted itself most of the time. The lectures were of the very best order and were greatly enjoyed. I understand that the Edinburgh Group are negotiating for another venue for the 1991 Discussion Weekend.

In accordance with the wishes of last year's AGM one of Lawrence Greenwood's watercolours was sent to the Alpine Garden Society in recognition of their Diamond Jubilee. The picture was of *Tecophilea cyanocrocus*. A letter of thanks and appreciation was received from their president, Ferrier Charlton. A contribution was also sent to the AGS for its appeal to commemorate the life of Roy Elliott and his work with alpine plants. This brings me to our own Diamond Jubilee year, which is in 1993. We hope to plan events appropriate to that occasion. We have collected a number of ideas already, but are open to further ideas. These should be forwarded to our patient Secretary as soon as possible.

Lastly I would like to offer my sincere thanks to all the office bearers of the Club who give so much of themselves to the Club's affairs, and not least to our Secretary, Evelyn, who has the onerous task of drawing together all the threads for this meeting and for the Council, in such a way as to get some semblance of order out of the chaos.

T. G. SPRUNT
20 October 1990



THE STONE COLUMN

Turn, Turn, Turn

Many moons ago, when the Stone Column had already been running for some half-dozen years, a prominent Club member, himself author of several Journal articles, asked me how long I thought I could keep it up before running out of ideas. In practice, lack of ideas is not a problem. Material is accumulating in the Stone Column file at a greater rate than I am able to use it. He did have a point however: all temperate gardening is by nature a highly seasonal activity. As the earth orbits the sun, so with the same inevitability does the pattern of gardening tasks repeat itself. Most times, the weather has provided a very convenient peg upon which to hang our 'life and times' item. Summer of '90 at Askival did have its moments, but was as nothing compared with the traumas of prolonged heat and drought in the South. Although our average temperatures were rather too high for really good growth of alpines, there was generally sufficient rain as weather fronts brushed past the north and west of the British Isles. While temperatures were breaking records in early August, with a new all-time high set in Cheltenham on the 3rd., up here it rained on the 1st and 4th!

Our abrupt changes did bring their own problems, in particular a moist buoyant spell in late June triggered much lush growth, only to have it scorched by a hot early July. Even shrubs were not immune; the young growth on our two plants of *Clethra delavayi* was severely browned, despite being sited in the shade of tall beech trees. Raised from Peter Cox's seed under the number S.B.E.C. 549, collected high on the Dali range in West China, they have proved completely winter-hardy here, and regularly produce 15-20cm racemes of pure white cup-shaped flowers each summer. Other seedlings from the same 1981 Expedition, which have also proved much hardier at Askival than earlier introductions, are plants

of *Pieris forrestii* S.B.E.C. 547. Coming from the same 3300m altitude as the Clethra, they are relatively slow-growing and are not induced into premature growth in the early spring. As a result they have never yet been damaged by frost.

In our last Column, we mentioned a trial planting of Shortias in full sun on our south facing "Blue-Ridge" terraces. Seven species and varieties were put out, from pots varying in size from 10 to 15cm. Only one group of three plants, *Shortia galacifolia* var *brevistyla,* was slightly damaged, at the same time as the Clethra. Although scarcely revelling in the above average temperatures, all these aristocrats have rewarded us with brilliant autumn tints which will, of course, persist until spring. Another member of the Diapensiaceae to turn scarlet for the colder months is *Pyxidanthera barbulata.* Our two cushions, raised from A.R.G.S. seed, give the lie to the myth that "pyxi-moss" can only be grown with Pine Barrens soil. If they do indeed require a symbiotic fungus, then it must be carried by the dust-like seeds.

Returning to the "Blue-Ridge" bed, an Arctic form of *Diapensia lapponica* itself lost half its cushion, perhaps from the shock of transition from shady frame to a bed in full sun. As usual I cut away the damaged growths and placed a flat stone over the site. Further along the front terrace, both *Diapensia lapponica* var *obovata* and *Cassiope hypnoides* were undamaged; clearly they have no aversion to sun, provided soil and atmospheric moisture are sufficient. Our progress with the Arctic cassiope has been a series of cautious steps. Apart from pot-grown specimens, we first tried it in a trough on the north end of the house, where it grows well but flowers uninspiringly. Later one was placed in another trough in full sun, but on the north side of a large rock. Although half-hidden by moss, this grows equally well, and flowers more freely. By now a number of plants were filling 15cm pots so we decided one could be risked in the "Blue-Ridge". It flowered profusely this spring.

We can discern no horticultural difference between the Norwegian and Icelandic forms of *Cassiope hypnoides,* unlike its Arctic companion *Rhododendron lapponicum.* The easiest and most vigorous form here is the one which used to be known as *Rhododendron parvifolium,* from the Far East. Currently about 0.6m high, and rather more across, this flowers well most years. It takes a really hard frost, say -5°C, to noticeably damage its flowers. Not far behind is our plant of coastal Norwegian origin, which is now flowering regularly, having reached 0.4m in height. With similar bronzy leaves to *R. parvifolium,* it is an upright grower, unlike the more glaucous inland Lapland plants. The prostrate habit of these appears to be genetically fixed, as demonstrated by our second generation seedlings. Rather more slow-growing are plants from the Yukon. Seed, collected in

the MacKenzie Mountains, was offered in the 1979 A.R.G.S. Exchange; our largest resulting plant was put out into the "Blue-Ridge" a year ago. A distinct little plant with incurved tufts of black-green leaves on the branch tips, it is still only 0.2m high, and has yet to flower. The Yukon plants are giants indeed when compared with our two survivors from Mesters Vig in north east Greenland. A St. Andrews expedition to the area contributed seed to the S.R.G.C. Exchange the same year, 1979. The last two average only 4cm high at 10 years old!, with a few tiny black leaves. Yet *Vaccinium uliginosum* var *microphyllum* from the same collections has proved a good garden plant!

We have two further, somewhat younger, introductions of *R. lapponicum*. We were sent Alaskan seed in 1987 by Doug Tryck. Rather more twiggy plants than the Yukon form, with dark green leaves, they have already reached 7cm and could well be more vigorous. We also have high hopes of the Newfoundland form, it comes highly recommended by Barry Starling. Seedlings from the 1989 S.R.G.C. Exchange were trayed up this July, having already attained 1-2cm across. They have glaucous foliage rather like that of the prostrate Lapland plants.

Before leaving the "Blue-Ridge" terraces it is perhaps worth mentioning that the three *Shortia galacifolia* var *brevistyla* were moved a short distance this autumn to the north side of a small azalea which originated on the real Blue-Ridge. With blue-green leaves, and producing its white scented flowers very late on the season the latter probably represents a dwarf form of the highly variable *Rhododendron viscosum*. In turn the shortias displaced a *Tanakaea radicans*. This had proved to enjoy full light elsewhere in our garden.

Turning to construction, it really has been more of the same this year. I have started to remove the top-soil from the last remaining section of the old fruit garden, in order to clear the site for the fifth and final standard raised frame. The soil is used to infill more terracing on a south west facing slope linking the conifer bed with the Blue-Ridge further around the same knoll (for the raison d'etre of our terracing see Stone Column, January 1988). These current terraces, to be known as the HAZE bed (Heaths and Japanese Azaleas), lie to the north of Poll's herbaceous hollow where she has been digging over phase two. It is just as stony as phase one (Column Jan. '90). When complete this will be an island bed surrounded by paths; to the west the conifer ghetto, to the east, on the choicer west facing slope is the site for our new main scree. So far only the foundation course of the lowest terrace has been laid, using large boulders recycled from our oldest original alpine bed, known appropriately as Raised Bed 1. (R.B.1).

When we first contemplated having a garden back in 1971 we had no idea what form it should take. Our first plantings were all shrubs, on

slopes too rough or steep to mow. One area in particular required a little more thought. Our garden had been separated from our neighbours by a low ruined stone wall, and the section lying between the houses was demolished to make way for a proper fence. Further from the road, wall and boundary diverge, leaving the former free-standing inside our ground. This section I repaired or rebuilt as a feature; which is probably where I acquired the taste for walling and terracing. To avoid carting away the remaining stones and rubble left from the demolitions, I used some of the larger boulders to construct a very rough retaining wall around the heap. The rubble inside was spread out and covered largely with peat from the moor plus a little imported leaf-mould and top-soil.

Thinking R.B.1. would be appropriate for dwarf shrubs, we visited Jack Drake in the Autumn of '71 to purchase the "Original 20". As we were leaving a distinguished-looking old gentleman, with kilt and military moustache, suggested that we could join the S.R.G.C. and raise our own. We did, General, we did!

Like all prototypes, R.B.1. had its problems, but the majority of plants we tried grew well enough to convince us that small could be beautiful. It soon became obvious that the soil layer was far too thin, and tended to dry out, especially after the *Chamaecyparis lawsoniana* hedge we had planted along the fence started to invade the bed with its roots. In the shade of the hedge, and lying between it and our number one raised seed frame, Poll was soon promoting the idea of a dedicated shade-frame on the site of R.B.1. Sometimes I feel a little like Chamberlain; I wonder what other territorial claims she'll come up with? The hot summers of '83 and '84, however, convinced me that this particular idea had real merit, and the long run-down began the following year. The Ericaceae, including a number of dwarf rhodos, were moved up to the top garden where most have shown their appreciation in escaping the frost hollow below. On one corner a large *Salix repens argentea* made a prominent feature, especially when the twining *Codonopsis convolvulacea* was in flower. Non-specialist visitors were always asking the name of the silver-leaved shrub with large blue flowers! So successful was this particular association that we determined to recreate it. Cuttings of the salix were taken and established above a retaining wall in the upper garden. The tubers of the codonopsis were transplanted to below their new supports when dormant, in early spring. In order to find them easily, their positions had been carefully marked the previous autumn.

At the opposite end of R.B.1. we have another of the originals, a twenty year old specimen of *Salix lanata*. In our relatively hard climate this has grown into a flat dome much wider than high. We have decided to leave this old native friend in situ, the excuse being that it will help soften the end

of the proposed shade-frame, as viewed from the rest of the garden. Much of the centre of the bed was occupied by a large spreading mass of *Sorbus reducta,* free fruiting and reliable in autumn colour. By digging up a fair number of the suckers and replanting them in a patch elsewhere, this was another feature easily recreated. Perhaps the saddest case was that of a *Daphne cneorum* which had grown into a carpet 2m across. Having re-established rooted pieces, from around the edge, in the Blue-Ridge, I had no alternative but to dig out and discard the bulk of the plant. No more will its scent waft across the entire frame area; I hate digging up plants at the best of times!

The bed finally being empty this spring, our son, Sean, and his then fiancée, another Bridget, barrowed all the really large boulders up to the top garden and dumped them in the hollow. The older of our two contractors' barrows broke under the strain of rocks weighing several hundredweights, but was soon welded up by the local garage. No plastic toys in this garden! The hard labour did not deter Bridget (II); they were married this autumn and have recently been back to Askival, where they carried out a major pruning job, one I had had to neglect. This family knows how to choose its women! I didn't escape entirely of course, It was my job to roll those boulders off the site of Poll's herbaceous border, phase 2, and set them firmly in the ground as the aforementioned foundations for the new scree, so she could commence digging.

Visitors to Askival almost invariably mention two things: all our stone walls, and the Column. On the latter, one A.G.S. member suggested that we had no need to worry, material came up out of the ground here. In one topical example it was via the kitchen floor. While visiting Ireland in the Autumn of 1983 we were given seed of several Sorbus species. While preparing them for sowing, using our usual vinegar method (Column June '87) I contrived to drop two, *SS. commixta* and "Joseph Rock", onto the floor and mix them up. I did my best to sort them out by seed colours but it was really guesswork. Berries would have been easy, "Joseph Rock" is yellow. In due course we planted out two groups of three on the plateau in our top garden. We had our suspicions from their leaf-colours and general habit, and these were confirmed this year when all six fruited. One group contains two *S.* "Joseph Rock seedlings" and one *S. commixta,* the other exactly the reverse. All three J.R. seedlings did have yellow fruit, varying from golden to lemon.

Oh, and our *Davidia involucrata* flowered for the first time, 18 years after planting as a 1m feathered tree. Poll has her eye on the hanging green fruits. As the world turns . . .

Back to "God's Own Country"

Having returned to the Alps for our annual holiday in 1989, it is perhaps no surprise that we should look outside Europe again in 1990. "After the Alps, then where?", is a question many prospective plant hunters must have

asked themselves. The decision to go to the U.S.A. in 1988 was greatly influenced by friends, but why choose to return in 1990 rather than visit, say, the Himalaya? The paramount reason is, of course, our developing interest in the alpines of the West, and our success in growing them at Askival.

There are three main climatic hazards for alpines here by Loch Ness: prolonged root freezing with no snow cover, sudden snap frosts in spring to damage flowers and young growth, and rapid alterations from lush wet weather to scorching sun in summer. (Winter wet is not of the same order, plants can be sheltered from it). American alpines have proved themselves in general much more resistant to all three than those from the Himalaya. There are exceptions, naturally, but the majority of Himalayan alpines, particularly from the eastern end of the range, are just too soft to grow here without continuous cosseting. They rarely make the good garden plants we seek. As for the western Himalaya, we have raised more straggly, weedy things from there than any other comparable area, and still *Gentiana cachemirica* eludes us!

Then there are the practical details, motels with showers and clean beds, food one can eat without falling ill, but above all the possibility of travelling independently, just the two of us to walk the high lonely places. Independence also means flexibility, to go where and when we choose, to alter plans on the spur of the moment as opportunities dictate. In the American West there are roads to high altitude, to maximise the time in the alpine zone. It is not that we are lazy, it is just that we do not wish to waste much of our limited time trekking up through the trees.

Finally and conclusively there is the weather. The pre-monsoon period in May and June is impossible for us because of school terms. In any case this is really too early except for rhododendrons and petiolarid primulas, especially those lower altitude ones which require copious protection here. When I quizzed Ron McBeath on the subject his reply was that to see the majority of true alpines in flower you have to get wet! This bears out Ronald Beckworth's experiences in Sikkim, reported in the A.R.G.S. Bulletin v.39 p.75. Having eventually attained the alpine zone he is disappointed to find virtually nothing in flower. The flora, as he says, instead of responding to the retreating snow as do European and American alpines, awaits the arrival of the rains. Not even the promise of seeing *Gentiana urnula,* long at the top of her wanted list, could, I feel, persuade Poll to go trekking through the monsoon.

So, to sum up, it was back to the Wild West for softer travelling and harder plants. We planned a large circle based on Denver, south west to the Gunnison area and the San Juan Range, west across the desert to the mountains of Utah, north up the Wasatch, thence back east to the Medicine Bow of south east Wyoming, and finally revisiting the main Colorado

Rockies to the west of Denver. In the end it turned out rather better than we had dared to hope, the only real hitch coming right at the start. Dollar failed to come up with the promised, and booked, car with a manual transmission, so we had to do the rounds of the small Company desks at Denver airport. We ended up with a 4WD Subaru Estate, with stick-shift (as the Americans say), air-conditioning and a radio for the same price as Dollar's economy car. So it pays to shop around! Dusty, as we called her, for that is what she quickly became, did everything we asked, including the safe passage of one Pass of which we were told, afterwards(!), the last attempt in an ordinary car had ended in a wreck.

As for the plants, we found all those on our primary list save one: *Penstemon uintahensis.* We made three attempts to find this, only to be thwarted by steep trackless block scree, snow blocking a trail past cliffs and finally fierce electric storms! We did find *Ranunculus macauleyi* in flower, and it is everything that the accounts suggested it would be, but that is another story. (Western Alpines part V, time and Editors permitting?)

While looking for the most photogenic specimen of the ranunculus, Poll remarked on the fresh tracks of "an awfully large dog". Looking carefully, impressions of this scale and nature could only have been made by a puma or mountain lion. We did see a coyote, Poll put one up from only two metres away, when getting out of the car to photograph an arnica at the trackside. The cattleman's war on the coyote is now thought to be a mistake; its diet consists mainly of rodents, which, with less predation, increase and damage the grazing. There are certainly plenty of "criturs"; their continual sorties passing in front of the car serving to keep the driver awake on "roads that go for ever".

The weather was rather more changeable than in '88, but no day was completely wet. Beautiful lilac-flowered cushions of *Phlox pulvinata* in the pouring rain on the Snowy Range, or a dwarf, high altitude, form of *Calochortus gunnisonii* in full flower the day after the Mosquito Range had been turned white by a snowstorm, confirmed our impressions of the adaptability of the flora. Most of the alpines are not drought demanding, just drought tolerant.

Writing way back in 1936, Sampson Clay suggested that "The plants of God's Own Country have remained very imperfectly utilised". He considered this would soon be rectified, but the war and fashion intervened. Himalaya, no thanks! There are still plenty of Wild Westerners to be found and photographed. Plus ça change . . . .

P.S. Have you noticed that many lecturers these days are loath to admit having collected a plant themselves. They were "given it by a friend". It's rather like saying that its OK to beat your wife, providing you get someone else to do it for you!

A Tale of Two Leaf-Collectors

There is no doubt in our minds that annual leaf-collecting is the most onerous of the recurring tasks in this garden. Only mowing comes close, but I cut infrequently, once a fortnight or so in the relatively short growing season up here. The area of grass is also slowly but steadily shrinking as beds and borders expand. Weeding is not in the same class, clean a new bed carefully in the first couple of years and it need never be so bad again. No matter how carefully we collect up our leaves we know that next year there are going to be even more from our own trees and shrubs, let alone the surrounding woodland.

We discussed the whys and wherefores of leaf-clearing in our very first Stone Column back in June 1982. Although we leave accumulations under medium to large shrubs for nature to take its course, we still clear most of the garden, all paths, especially around the frames, alpine and dwarf shrub beds, and the grass areas. This annual task takes weeks rather than days. The late Bobby Masterton, creator of the beautiful woodland gardens around Cluny House, near Aberfeldy, advised us long ago that for repetitive jobs, it was better to buy machinery than hire help. A large, wheeled leaf-collector, the "Billy Goat", has been around for quite some time, but this is a somewhat cumbersome machine, unsuited to our intimate gardening style with its narrow paths and ups and downs. More recently smaller, hand held machines have appeared, which use a chain-saw type of engine to drive a fan. The resulting jet can either be used as an air-broom to replace the rake, or in reverse as a garden vacuum cleaner throwing the leaves into a bag slung over the operator's shoulder.

Our first essay into mechanisation was an Atco "Blow and Vac". When this worked it did a good job, but it was very difficult to start, often impossible for Poll, and frequently died under acceleration. More seriously, the collecting bag was totally unsuited to Scottish conditions. Leaves are never totally dry, and when mashed by their passage through the impeller release moisture. This caused the fabric bag to fail at the throat connecting it to the machine, after a few hours use. When we were in Inverness for the *n*th replacement bag and to have the carburettor looked at yet again, our dealer suggested we consider the new Echo machine, from a Japanese company known chiefly for their chainsaws. We needed little persuasion and have not regretted our decision to cut our losses. Apart from one minor problem at the start the Echo leaf-collector has been reliable and easy to use. The silencer incorporated a spark screen for the American market, which became choked with carbon. Since its removal as unnecessary here, we have had no further trouble.

When we collected leaves by hand, we used to wait for the bulk to fall before starting to rake them up. With the machine it is better to gather them as they fall, on all possible dry days. For any deep wind-blown piles we still use the rake; the air-broom is useful on our tarmac drive and grass areas. The bulk of paths and borders Poll clears by vacuuming up the leaves; the Echo has a quick release woven plastic bag, emptied by opening a zip across the end. For beds of alpines and/or dwarf shrubs this cuts the time taken by a factor of ten compared with picking the leaves out by hand. If any small stones, top-dressing etc. is sucked into the inlet pipe, release the throttle immediately and it falls out again. The tough plastic impeller copes with hard rubbish such as beech-mast.

Gathering the leaves quickly as they fall gives the accumulation in the leaf-mould pit no time to settle. The neighbours are treated to the sight of two middle-aged, decidedly grey, gardeners bouncing up and down as if playing trampolines. Perhaps we should get a portable ghetto-blaster and have a real rave-up!

Peat – A Case of Half-Truths?

There can be few gardeners still unaware of the peat controversy. Like many other problems, it is not a case of black and white, but a maze of many shades of grey; one enters with circumspection. Before writing this piece I did a lot of reading, much of which was contradictory or at best inconsistent. I am reminded of the old saying about lies and statistics, having been caught out before. In the Column for Jan '87 I quoted figures for the rate of destruction of the Amazon forests, from an apparently authoritative article in the New Scientist, which I now believe were far too small.

Geoff Hamilton, the B.B.C's current gardening expert, has been quoting some ridiculous single figure percentage for the peat bogs left in Britain. The figure could conceivably refer to lowland peat-bogs in England and Wales, but he did not add this or any other qualification. Since his "conversion" to so-called organic growing, I find it very difficult to take Mr Hamilton's sanctimonious preaching seriously at all. To give but one example, he was seen recently on T.V. dunking his cuttings into Bordeaux mixture, an old concoction of poisonous copper sulphate and calcium hydroxide, an alkali. I would not put my hands in it, let alone my plants!

Undoubtedly a complex issue, the peat controversy can be broken down into a series of questions: how much peat is there, both in Scotland in particular, and worldwide? At what rate is it being exploited, and to what extent is this damaging the environment? What is peat used for, and are there any really viable alternatives? Finally, what should the concerned individual gardener do?

As far as Scotland is concerned, a leading authority, Dr Allan Robertson, for many years peat expert at the Macaulay Land Use Research Institute in Aberdeen, has publicly stated that around 10% of Scotland is covered by peat, equal in area to the entire Grampian Region. Of this, current exploitation is only equivalent to two or three average hill-farms. It is worth pointing out that Dr Robertson has quantified Scotland's peat resources, surveying not only their area but also measuring their depth. If he says only 1% of Scotland's peat is currently being worked, this can be taken as fact, not opinion. From personal experience, in my old hill-walking days, I can say without hesitation that most Scottish peat-bogs are dreary places with a depressingly uniform and impoverished vegetation. Does anyone who has ever climbed the Cheviot actually like or enjoy the squelchy mire up on top? The mountain would be a far more pleasant place were the peat's removal a practical proposition. Lower down, where peat digging actually occurs, the resulting ground can be later utilised for improved grazing or planted with trees.

Outside Scotland, I do not feel it is my place to comment on the situation in England, Wales or Ireland, but should merely like to add that there are vast reserves of peat in Finland, even after setting aside large areas for conservation, and even larger ones in Russia. As far as North America is concerned there must surely be equally huge reserves of peat in Canada, but I have no information, nor of the position in New Zealand. Perhaps members in other countries could write in and tell us.

Driving back from a lecture trip to the Caithness Group a few weeks ago, mile after mile of peat-bog convinced me that this argument should not go to the "Mean Greenies" by default. There is ample peat in Scotland, so what is it being used for? Our local supplier tells me that 80% of his production is for fuel, and only 20% for horticulture. Down South, of course, it is quite different. Peats are still burnt in the Highlands for domestic heating, and also for malting in distilleries. I am sure I need remind no one of the value of the Scotch whisky industry! As for uses in horticulture, we are definitely into an area of shades of grey. Only recently I saw a notice in a garden centre encouraging customers to "Plant it with plenty of peat". This is one use which could and should be curtailed. Forestry Commission research has shown that the incorporation of peat into planting holes does not produce better subsequent growth of trees and shrubs, and in many cases has a negative effect, possibly because of nitrogen being locked up.

We ourselves have never used peat in this way, but have used it in the past to bulk up our thin stony "soil" together with compost from the heap, and leafmould. Long before recycling was fashionable, visitors used to remark on our system of three dustbins: one for vegetable refuse for the compost heap, another for paper and cardboard, to be burnt along with our woody

prunings, fallen sticks etc., and a third for metal and plastic to go out for collection. Plastics we never put on bonfires as they can give off toxic fumes. Apart from home-made materials, there are plenty of other viable substitutes for peat as a general soil conditioner or for use as a mulch – animal manures or forest bark for example. We never use bark lest it encourages our *Armillaria* to become a problem. Others have found it advantageous, providing it has been adequately composted. It is usually weed-free, and does not pack down or blow away, and can be rewetted easily.

When we turn to peat as the basis of compost for container growing it is quite a different story. A great deal of peat is used in this way particularly by the large commercial growers. The present division of the horticultural trade into producers and retailers, usually garden centres, depends on plants in containers. The Horticultural Development Council, a trade organisation, has been assessing no fewer than 22 alternatives to peat. Their full report is still pending, but some of the contents were previewed at a growers conference in Oban early in November. Bark was apparently the most promising substance, but is generally used as a peat additive, not a full alternative. There can be problems with manganese toxicity. The much publicised coir*, a coconut fibre by-product, came out far less well. Samples have been found contaminated with salmonella and other pathogens, also with fungal spores. It is twice the price of peat. To be fair, although peat is normally sterile, there has been the odd case of contamination, but these were all in English lowland peats which perhaps we should not be using anyway.

And so finally, what can the individual gardener do? I leave this to the person's own conscience, but should like to make a plea for decisions to be based on logical rather than emotional arguments. We shall continue to use peat in our potting compost, buying it from a local source and so supporting a Highland industry.

Chance Produces Some Fine Things

One of the great joys of seed raising is the element of surprise involved. When propagating from cuttings the only uncertainty is whether they'll root or not; the offspring will obviously be identical to their parent. With seed one never knows what might turn up. When pricking out or potting on, Poll always keeps an eye open for the odd-plant-out: a more compact habit, or the opposite, suggesting hybrid vigour perhaps. A paler foliage may indicate a possible white form, and a change in leaf shape, colour or size points straight to a hybrid.

A few years ago, while de-traying and potting individually a batch of seedling *Gaultheria hispida* grown from our own seed, she spotted a

* (I keep wanting to put an "e" on this word like the Gaelic form of corrie).

stranger. It had rather smaller leaves than the others, and was singled out on the off chance that it was other than just a runt. When eventually it flowered and fruited its hybrid identity was confirmed. The fruits were pink and of intermediate Gaultheria – Pernettya type; i.e. combining the berry of Pernettya with the Gaultheria's fleshy calyx. *G. hispida* has white fruits of pure swollen calyx type. This Tasmanian species has dark shiny green leaves, up to 50mm long and 10mm wide on average. The hybrid's foliage is olive green with just a hint of red, the leaves smaller at 20 x 5mm. Across the path from our plants of *G. hispida* there is a patch of about half a dozen *Pernettya macrostigma x Gaultheria depressa,* which is a fairly common and stable natural hybrid in New Zealand. Its leaves are the same lanceolate shape as the above two, but smaller again at 12 x 3mm. They have a strong reddish black colouration specially in winter. The fruits are red and of the hybrid type described above.

I am fairly certain that we have a three-way hybrid *G. hispida x P. macrostigma x G. depressa,* and one which may well overcome my prejudice against taking cuttings. But on the other hand, the next generation may well yield some interesting combinations of characters! The original is probably closest to the so-called *Pernettya lanceolata* of Tasmania, which I am still convinced is a natural hybrid, *G. hispida x P. tasmanica (Stone Column,* Rock Garden No. 77, p334). Our three-way cross has, however, much hairier stems than *P. lanceolata,* as have both its species and hybrid parents.

Apart from any wild Cassiope seed that we may receive, regular sowings are made of three species: *C. fastigiata* (from Beer 542), *C. selaginoides* (L & S 13284) and *C. wardii* (of unknown wild origin, but definitely the true species). *C. fastigiata* comes almost completely true from seed, many of the youngsters inheriting the largish flowers with pink staining of the wild original. Len Beer's premature death was a considerable loss to plant hunting – he knew a good plant when he saw one! If anyone with more time than us should wish to breed a pink-belled Cassiope, we suggest crossing one of these selected *C. fastigiata* with *C. mertensiana californica.*

The Ludlow and Sherriff form of *C. selaginoides* is not a particularly robust plant here. Like *C. wardii* it appreciates the protection of a cold frame in winter, and at flowering time to guard against frosting. L&S 13284 has thin upright shoots and very large, relatively tubular flowers for a Cassiope. It has green calyces and long pedicels. One seedling has much thicker, more obviously hairy shoots; while retaining the long pedicels, they are red, as are the calyces. The flowers have a hint of the pink staining, presumably from *C. fastigiata.* It is a robust, extremely floriferous plant, producing circles of blossom around virtually every shoot tip. It is probably worth naming, but at present is just labelled *C. selaginoides x fastigiata.*

A second seedling definitely has the look of *C. mertensiana* about it. A more bushy plant than the female parent, the shoots are still thin, but less hairy and of a brighter green. Still in bud at time of writing, we have this provisionally labelled *C. selaginoides x mertensiana.*

C. wardii is, according to Alf Evans, "the sought-after giant among Cassiopes", so whenever we see any seed on our plants, we seize the opportunity. We find that roughly one third of the seedlings exhibit the greyish, extremely hairy, shoots of the true species. Its flowers are of moderate size on short pedicels. The remaining two thirds are much greener and less hairy; the contrast with the species is obvious when placed alongside. On closer inspection they fall into two groups. Those with more straggling growth, thicker, relatively hairier shoots and short pedicels closely resemble the well known *C.* 'George Taylor'. Like the latter, they are probably *C. wardii x fastigiata.* Some of our seedlings have the prominent pink basal staining inside the bells, from Beer 542. The other group are slightly less hairy, the growths somewhat thinner, the flowers larger with less spreading lobes, and the pedicels longer. This suggests that the latter may have *C. selaginoides* rather than *C. fastigiata* as the pollen parent. The differences, however, are more of degree than kind, so it is probably simpler just to call them all *C.* 'Askival Hybrids'. One of them received the Farrer Medal at the 1989 Newcastle Show (as *C. wardii*!). It was one of the first batch; Jim Jermyn saw them in the frame and twisted Poll's arm. I wanted to keep them all until they flowered.

Rhododendron ludlowii is, like *C. wardii,* a plant in demand difficult to propagate vegetatively, and we sow its seed whenever the flowers escape the frost. Most of our children are true to type, with the distinctive saucer shaped yellow flowers, but the odd hybrid turns up, given away early by its greater vigour. Of these, none were remarkable save one which we have called *R.* x 'Strawbs'. (We also have an *Epigaea repens* 'Pink Floyd' and I'm looking around for a slender something to call 'Skynyrd'.) Like Peter Cox's deliberate crosses with *R. ludlowii, R.* x 'Strawbs' is a better garden plant, with larger obovate leaves up to 20mm long. The widely funnel shaped flowers are white, obscurely flushed and streaked here and there with pink, and with a patch of faint red spots in the upper half of the throat. A gentle plant, which could be a cross with one of the *R. saluenense* series.

Like Rhododendron, the genus Primula is well known as being quite immoral in the garden, especially within the Auriculastrum section. As most readers will know, there are pins and thrums to encourage cross-pollination, so if one has but a single specimen in the garden, its seed is very likely to yield hybrids. We grow very many of these European primulas, as regular readers must be aware. Some are deliberate crosses, such as Fritz Kummert's dusky *P. x crucis* x *auricula* or our own *P.* x *venusta (P. carniolica x auricula).* Others include a fair number of the natural hybrids, and a few which just turned up

in the garden. Of these last, we have singled out *P. integrifolia x minima* for two reasons. Firstly, this combination is not known in the wild, nor have I come across any record of it being produced artificially. Secondly, although it was open-pollinated garden seed, I am fairly certain from the leaves that *P. minima* was the pollen parent. *P. integrifolia* has, as its name suggests, entire leaves, whereas six of the eight seedlings we raised have toothed leaves, the teeth terminated in the little horny tips of *P. minima*. The flowers, carried in twos and threes, have the deeply notched petals typical of *P. minima*. While not plants of any great intrinsic merit, we think them another interesting example of how interfertile is the Auriculastrum Section.

Over the centuries, another of the European sections, the Vernales, have been extensively engineered to produce the modern Polyanthus, with their vibrant, sometimes even brassy colours. To our eyes many, especially those having a combination of bright yellow and red in their flowers, do not associate very well with wild primulas and meconopsis. These strictures do not, of course, apply to the original species. Regarded as garden plants, the primrose and the oxlip are everything that *P. aureata* is not. It is a paradox that, were they more challenging to grow, these exquisite natives might attract more attention.

In spite of tourists and road widening, the primrose is still quite plentiful along the wooded parts of Loch Ness-side. At higher altitude it can be found in full light. I remember a fine colony near Glen Roy, on the sides of a south facing gully at 700m, a true alpine environment. *P. vulgaris* arrived in our garden by itself, but we had to introduce *P. elatior* from SRGC seed. Once here, the latter sows around with a profligacy second only to *P. denticulata*. Intermediates between the two Vernales are not uncommon; they usually have the greyish, more upright rugose leaves of the oxlip, but with completely circular heads of primrose flowers. One particular specimen made a solid dome of sulphur-yellow over 1m across!

The subsection Aizoonia of the genus Saxifraga is another group of plants very prone to hybridising in the garden, so much so that some writers recommend that garden seed of any silver saxifrage be avoided. *S. valdensis* is, however, one of the rarer members, so when one of our plants appeared to set seed a few years ago, it was sown. Only one germinated, and from its much more rapid growth, it was clearly a hybrid. Reputed to be often confused with *S. cochlearis minor, S. valdensis* can actually be distinguished at a glance by its even tighter growth and by colour – a steely grey-blue with a hint of purple about some leaves. Our hybrid, on the other hand, is very like *S. cochlearis,* save only for the less swollen, more wedge-shaped points to the ends of the leaves. *S. valdensis* is said by Winton Harding to cross readily with *S. cochlearis,* so we are probably quite safe putting this parentage on our label.

Not all the surprises we get from our seed pans are the result of such

obvious hybridisation. An example is a giant form of *Gentiana verna,* which, out of flower could be mistaken for an Acaulis gentian. The plant spreads vigorously, the individual rosette leaves up to 25mm long. The flowers, typical *G. verna* in shade, are 30mm across and carried on tall 100mm stems. The calyx is large and winged. This strain, which comes true from seed, is extremely floriferous, some rosettes producing clusters of up to half a dozen flowers. We are going to call this *G.* 'Zeppelin', after both the Count and the band.

While not as promiscuous as the Auricula primulas or silver saxifrages, Ranunculus has spawned a fair number of worthwhile hybrids. Many of these are within the section Ranuncella which includes *RR. abnormis, amplexicaulis, gramineus, parnassifolius* and *pyrenaeus. R. gramineus* crossed with *R. amplexicaulis* has produced the delightful cream *R. x arendsii. R. amplexicaulis* has, in turn, been hybridised both accidentally and deliberately with *R. parnassifolius;* indeed some plants around as the last one are this cross. It makes a larger, more permanent garden plant than *R. parnassifolius,* having larger, paler leaves with only a trace of the species' pubescence.

In the wild *R. parnassifolius* meets and interbreeds with the narrow-leaved *R. pyrenaeus.* This hybrid, known as *R. x flahaultii,* is fertile and gives rise to a whole range of intermediates. The leaves are generally narrower than *R. parnassifolius,* but in our experience always retain the glossy dark green colour and pubescence of the latter. One of our seedlings from *R. x flahaultii* surprised us by having totally different foliage – the leaves divided into three irregular linear segments. The seed came from a plant out in one of our troughs: the only dissected leaf Ranunculus flowering nearby was *R. seguieri.* Thus we can be fairly sure this was the source of the problem, giving rise to another three-way hybrid like the Gaultheria above. When it produced the expected white flowers, the cauline leaves were also tri-lobed. Additionally, Farrer records a hybrid between *R. pyrenaeus* and *R. seguieri* as *R. x yvesii.*

R. parnassifolius itself has since produced another younger seedling with a divided leaf, cut about three-quarters of the way to the base into three broad lobes. This could be a straight hybrid with *R. seguieri. R. glacialis* cannot be involved as it only flowers here after a cold winter.

Even more grassy leaved than *R. gramineus, R. abnormis* is another yellow flowered species, from the central Spanish sierras. Sometimes said to require drying off in summer, it survived the 1989 'August monsoon' while dormant in a trough and has flowered profusely the following spring. A rare species in cultivation, Poll collects any seed that is set. Overlapping in bloom with the other members of its section, and with *R. seguieri,* who knows what combinations may occur; but that's precisely why we linger so often at the side of the seed frame.

Dryas

BRIAN HALLIWELL

In the latest classification of the genus Dryas, there are only two species: *Dryas drummondii* and *D. octopetala*. Both are evergreen decumbent sub-shrubs found on exposed mountain slopes on alpine moorland, screes and rock ledges. Plants of Dryas have the ability to fix nitrogen in the soil.

D. drummondii is confined to the northern Rocky Mountains in Alaska, Canada and the United States south to Montana. The species has long sparsely branched stems which become woody with age, and on which are alternate leaves on long petioles. The leaves are oblong, oval or lance-shaped with somewhat coarse triangular rounded teeth. The base of the leaf blade is wedge shaped as it tapers evenly towards the leaf stalk. There is usually a glabrous wrinkled upper surface which is bright green and prominently veined, whilst the under surface is felted with white hairs. Flower stems carry single terminal blooms which have oval or lance-shaped sepals with blackish hairs or glands. These surround a nodding bell-shaped flower with yellow petals. As flowers fade, the stem elongates and the head comes upright to display seeds with feathery attachments.

However, *Dryas drummondii* is an unsatisfactory plant on a rock garden, for it usually flowers sparsely and does not show its blooms. The impressive silvery seed heads which are long lasting are, perhaps, the best feature of this species.

There is a naturally occurring form, sometimes seen in cultivation, which has the same white hairiness on both leaf surfaces. This has been referred to as *D. d. tomentosa;* usually with varietal rank although it has also had specific status accorded to it. A garden selection, *D. d.* 'Grandiflora', is superior to the species. It flowers more freely and the cup-shaped blooms, which are held well above the foliage, are held outwards.

Dryas octopetala (see cover plate) is widespread in mountain ranges along the Arctic fringes in temperate regions of the Northern Hemisphere. In North America it extends south to Colorado; in Asia to Korea and in Europe it extends down to the Pyrenees. It is quite widespread in Britain occurring on mountains in Wales, Ireland and northern England but it is most common on the Scottish mountains, and in Sutherland it comes right down to sea level. It is most usual to find it over alkaline or neutral rocks.

The prostrate woody stems are much branched with alternate leaves on long petioles in which the lamina, where it joins these, is rounded or cut straight across. The lamina, which varies between 5 and 20mm in length,

is oblong, elliptic or lance-shaped with rounded marginal teeth, the glabrous even upper surface is dark green whilst below is white felted. The flowers, borne terminally, are between 25 and 50mm in diameter, and are saucer shaped and held upright, with white petals and a boss of yellow stamens; there are narrow, linear shaped sepals, often with dark glands. After the flowers have faded they are replaced with long lasting greyish feathery seed heads.

In some classifications a number of other species are distinguished: *DD. integrifolia, hookeriana, punctata* and *tenella* have all been named, but these have now been sunk into *D. octopetala.* Within this species are a number of geographic forms which have been given varietal rank: *D.o. alaskensis, asiatica* and *kamtschatica.* Three forms referred to as *argentea, lanata* and *vestita,* in which white felt appears on both leaf surfaces, are no doubt horticultural forms. *D. octopetala* 'Minor' which is much less vigorous than the straight species is smaller in all its parts. Whilst this would seem to be a horticultural form, Reginald Farrer describes it as replacing the straight species in the Arncliffe valley of Yorkshire. *D. x suendermannii* (sometimes spelled *sundermannii*) is a hybrid between the two species. In appearance it is closer to *D. octopetala,* with saucer-shaped flowers which can be held sideways but are usually upright. However, in the hybrid, the petals are cream or sulphur coloured.

Dryas or dryad was a Greek wood nymph for whom the oak tree was sacred. This seems a curious choice of generic name, when Dryas occurs most usually in full exposure and only very rarely in woodland. Perhaps Linnaeus chose this name because of the oak-like form of Dryas leaves. The specific epithet in *D. drummondii* commemorates Thomas Drummond, who made two plant collecting trips to North America in the last century: to Canada and Texas. In 1825 he accompanied Sir John Franklin, who was making his second attempt to traverse the North American continent via Canada. The botanical authority for *drummondii* as the specific epithet is given as John Richardson, who was botanist and surgeon to the Franklin party. Both he and Drummond have been credited with the introduction of this plant into Britain about 1830. In *D. octopetala,* the specific epithet is indicative of petal number and yet this varies between five and twelve. Perhaps eight was meant as an average, or it may have been the number of petals on the herbarium specimen which Linnaeus used to describe this species. In the hybrid, the specific epithet commemorates a nurseryman, F. Suendermann of Lindau in Germany, who made the cross in 1910. In Britain the common name for *D. octopetala* is mountain avens and for *D. drummondii,* yellow mountain avens. These names may also be used in North America, where white, and yellow or Drummond's dryad are alternative names.

All species and forms of *Dryas* are easy plants in cultivation and on a rock garden in a well drained soil, which can be either acid or alkaline, plants form extensive mats of growth. Flowering usually takes place in early summer although there can be sporadic blooming later. After flowering the display is continued by the long lasting seed heads. Some trimming of plants is beneficial in late winter before they start into growth; this keeps them more tidy and compact. Propagation of the species is simplest by seed, which is sown in autumn and exposed to winter cold with germination occurring in the following spring. Selected forms are increased by stem cuttings. These are best taken when the new growth, which is produced after flowering, begins to mature.

Dryas drummondii Heather Salzen

Corsica in Spring

CHRIS AND MARIE NORTH

Politically Corsica is a 'Département' of France and in many respects as sophisticated, and endowed with as good cuisine as France on the mainland. However, true Corsicans are 'a people apart'. They have their own language which resembles Italian, though most of them also speak French. Some Corsicans revolt against rule from France but the only evidence that most tourists will see of their protests is the defacement of signposts – this can make road navigation difficult, so carry a good map such as the Michelin 90. All the Corsicans we met were kind and helpful.

Geologically the island is roughly divided in two by an imaginary line passing approximately from L'Isle Rousse to Aléria. South west of this line the rock is mainly granite and to the north east it is schists but with some small calcareous areas near St. Florent, the central east coast and in the extreme south of the island. There are some alluvial deposits near the east coast of Bastia and around Aléria. The mountains of the south west section, composed of a hard pink granite, have been weathered into impressive jagged pinnacles which rise to a height of 2710m at Monte Cinto and are snow-capped in winter. They have earned Corsica the name of 'The mountain in the sea'.

The higher mountains have an alpine flora and areas around the coasts are mostly cultivated but much of the rest of the country is covered by impenetrable 'maquis' where wild boars are common and a serious pest of crops, though rarely seen. There is a region of extensive sweet chestnut orchards in the north east known as 'La Castagniccia' which was once economically very important. It has declined lately on account of its being decimated by fungus diseases in spite of a wealth of scientific research on the problems.

The plants of Corsica are well annotated in French floras and are included in the 'Flora d'Italia' by Pignatti (1982) which is well illustrated with line drawings. The most recent work dealing with Corsica alone is that by Briquet (1910-55) and a check list by Gamisans (1984). One can buy a useful small book in French on the plants and flowers of the island by Conrad (1976) and a book entitled 'La nature en France, Corse' by Brun *et al* (1975) is well worth having if one can locate a copy. Should one wish to look closer at the many endemic plant species of the island then a well-quoted thesis on the subject by Contandriopoulos (1962) might be consulted.

We flew into Bastia airport from Nice (note; appreciable reduction in fares for those over 60!) on the 22nd April and found a hotel near the airport. A walk to the hill village of Borgo during the afternoon of our first day there was a good introduction to the prolific wild flowers of the island. The roadsides were pink with *Cyclamen repandum* (Fig. 36, p161) amongst which grew *Allium triquetrum, Anemone stellata* (= *A. hortensis*), *Urospermum dalechampii* and *Asphodelus microcarpus.*

The north and Cap Corse

Driving north from Bastia and then north-west over the Col de S. Stefano one crosses to the coastal resort of St. Florent. Along the route there were patches of scrub mainly comprising *Arbutus unedo, Calycotome villosa, Cistus monspeliensis, C. salvifolius, Cytisus triflorus, Daphne gnidium, Erica arborea* and *Lavandula stoechas.*

In places between the shrubs there was an abundance of *Cyclamen repandum,* some *Polygala nicaeensis* and enormous plants of *Helleborus lividus* ssp. *corsicus* which is grown in our gardens under the simpler name of *Helleborus corsicus.* Here the hellebore was magnificent with clumps two metres across and with very large flower heads (Fig. 35, p161), but it grows throughout the island and is small and stunted under alpine conditions. It is endemic to Corsica and Sardinia and the type species *H. lividus* is only found in Majorca – a relic of the time when these islands were joined in the same land mass.

St. Florent is a small seaside town with a yachting marina. By the roadside here there were hundreds of tall spikes of *Ophrys sphegodes,*

scattered specimens of *Orchis papilionacea* and dense clumps of *Aceras anthropophorum*. With them grew the delightful *Anemone stellata, Leopoldia comosa, Ferula communis* and the strange *Gomphrocarpus fruticosus*, which is a native of South Africa that has been cultivated for its fibre and become naturalised. In marshy banks by the river there were large groups of *Iris pseudacorus* and we saw little egrets and a purple heron.

From here we drove westwards to an area known as Le Désert des Agriates. Although it can become very dried up in summer and is little inhabited, it is not a true desert but a rocky, over-grazed sheep pasture. At one time there used to be a regular transhumance of sheep from the mountains to this area for the winter. Amongst the rocks there were scattered bushes of *Arbutus unedo, Cistus monspeliensis, Erica arborea, Phillyrea angustifolia* and *Pistacia lentiscus*. The prickly dead plants of last years *Carlina corymbosa* added to a feeling of desolation. Everywhere there were hundreds of spikes of tall asphodel – they could have been either *Asphodelus microcarpus* or *A. cerasifer* for the two species cross readily. Both are shunned by sheep and produce tubers which are bitter when fresh but edible when boiled. The Corsicans call asphodels 'luminelli', for the dried inflorescences burn brightly and were used as torches on All Saints Day which is an important occasion on the island. The flowers have a characteristic 'catty' smell which mingled with that of the sheeps' droppings!

In a moist area near the village of Casta grew hundreds of plants of *Orchis morio picta* in a variety of beautiful colour forms, *Orchis papilionacea* and a few plants of the yellow-flowered form of *Dactylorhiza sambucina*. There were cyclamen, anemones and much of a dandelion-like plant. On some rocks we noted *Sedum coeruleum*, a small annual with violet-blue flowers and found only in Corsica, Sardinia and Sicily. Some two kilometres past here we came across many bushes of the endemic species *Genista corsica*, and *Stachys glutinosa*. Both are extremely prickly small shrubs with yellow and white flowers respectively and the stachys has a characteristic, strong, pleasant smell. After these finds we returned eastwards to St. Florent.

There is a coast road that goes from St. Florent round the west side of Cap Corse to the northernmost point and down the east side to Bastia. Shortly after leaving St. Florent, one passes through a small area of chalk and here were many orchid species we had seen already and also *Ophrys bombyliflora* and *Serapias cordigera*. The west coast road is narrow, winding and in many places clings to the steep rocky cliffs and we were not able to find many safe places to stop. However, we did note the foliage of non-flowering plants of *Pancratium illyricum* and the neat shrubby *Euphorbia dendroides* near Minervio.

Our lodging for the night was in the extreme north-east at Macinaggio – a small resort with a fairly large marina. On this side of Cap Corse the land slopes more gently to the sea and here were a few plants of the troublesome, introduced weed *Oxalis pes-caprae* which does not seem to be so common on the island as in most other parts of the Mediterranean. We drove westwards over a narrow side road (D35) that crosses the peninsula for a short distance. It was quiet and lush with shady banks that harboured *Selaginella denticulata* and the fern *Asplenium onopteris.* An impressive roadside plant was the tall, robust, green, endemic figwort *Scrophularia trifoliata.* Returning eastwards, a short look round our hotel revealed the squirting cucumber *Ecballium elaterium, Cymbalaria muralis* (= *Linaria cymbalaria*) and a form of the tassel hyacinth *(Leopoldia comosa)* with a pale blue 'tassel' instead of the usual dark mauve one. By the roadside in one area there was a handsome leguminous shrub up to 1.5 metres tall with silvery foliage and heads of yellow flowers. This is the rather uncommon Jupiter's beard, *Anthyllis barba-jovis.*

On our way down the east coast of the peninsula we turned off inland at Marine de Sisco to go up the Sisco Valley. This route follows the river and was lush and charming with many ferns including the maidenhair *Adiantum capillis-veneris* and a few plants of the giant *Woodwardia radicans,* which has fronds up to 2.5 metres long, which root at the tips when they touch the ground and give rise to new plants. Strangely Pignatti (1982) does not mention it as growing in Corsica. Around here *Helxine soleirolii,* a small creeping plant belonging to the family Urticaceae, covers the damp rocks in places. It is endemic to Corsica and Sardinia and was once popular at home in Victorian times as a pot plant in porches and under the staging of conservatories, and was called 'Mind-your-own-Business'.

The coast east of Borgo

Back at Bastia we drove eastwards past the airport to La Canonica where there is an interesting eleventh century ruined Romanesque church. Beside the road here grew huge plants of the milk thistle *Silybum marianum.* Continuing eastwards one comes to the seashore with several typical maritime plants, including *Cakile maritima,* which grows at Broughty Ferry and around our coasts, and *Medicago marina,* a typical Mediterranean species. A less common and charming plant there was *Centaurea pullata,* with hairy 30cm stems carrying flower heads with rosy purple outer florets and yellowish-white inner ones. The road then bears northwards past citrus orchards, eucalyptus and acacias and there were fine views of the snow-capped summit of Monte Cinto.

Continuing northwards one comes to the Etang de Biguglia – a large, shallow, brackish lake separated from the sea by a narrow sandy area

colonised almost entirely in places by *Cistus salvifolius* intermixed with the taller *Halimium halimifolium*. The latter is another member of Cistaceae which grows to a metre in height and has attractive yellow flowers that usually, though not always, have a dark blotch at the base of the petals. In one place we saw the colourful small *Cytinus hypocystis*, a leafless flowering plant which parasitises members of the Cistaceae, and in sandy areas with a light cover of grasses there were groups of the yellow bartsia *Parentucellia viscosa*.

Borgo to the south at Bonifacio

The N198 is a 'fast' route down the east coast and there are few convenient roadside stopping places. However, we could not fail to see the large numbers of *Lupinus angustifolius* and *Urospermum dalechampii*. When we were able to stop – not far from Porto Vecchio – we noted two rather fine vetches and much *Bellardia trixago*. Shortly afterwards we turned off westwards and found a hotel near Sotta. In the surrounding cork oak woods there were carpets of the charming, small, annual daisy *Bellis annua*, and in one area we found specimens of the less attractive *Bellis bernardii* which is endemic to Corsica. In some fields around here we saw orchids in unbelievable profusion. Thousands of *Orchis papilionacea*, with equally large numbers of *Serapias lingua*, covered the ground and these were interspersed with *Serapias cordigera* and a few plants of *Serapias neglecta* (Fig. 39, p163) and *Orchis laxiflora*. The *Serapias lingua* grew in metre-wide colonies of nearly identical plants which differed from neighbouring groups and had clearly propagated vegetatively from variable seedlings.

Stopping in a limestone area approaching Bonifacio there were a number of Leguminosae including the strange *Lathyrus ochrus, Lotus ornithopodioides, Pisum sativum arvense* and *Trifolium stellatum*. The lotus usually has heads of four small yellow flowers pointing in the same direction. Its curious specific name simply means "birds' foot-like" and aptly describes the appearance of the groups of pods. The Pisum is the 'feral' form of our cultivated pea and usually has dusky-mauve flowers in the wild.

We had hoped to see the celebrated 'malmignate', a spider with a black abdomen bearing 13 reddish marks, which is said to be common in this part of the island. Perhaps it is just as well that we did not, for it has a poison bite which is nearly as bad as that of an adder. Though rarely fatal it can cause three or four days of severe pain with a feeling of intense cold.

The old town of Bonifacio, perched above the sea on pinkish chalk cliffs at the extreme south of the island, is well worth a visit. After a meal there we explored the surrounding, windswept chalky terrain which is noted as an interesting place for plant enthusiasts. Here there is garrigue consisting

continued on p164 . . .

THE SCOTTISH ROCK GARDEN CLUB

17 Claremont Drive,
Bridge of Allan,
Stirlingshire, FK9 4EE
18th July, 1990

Her Majesty Queen Elizabeth the Queen Mother

Your Majesty,

On behalf of the Scottish Rock Garden Club and to commemorate your 90th birthday, I am sending you a painting entitled "Flowers of Scottish Mountain Turf". This has been painted by one of our members, Mrs Heather Salzen of Aberdeen, and we hope that you may be able to find a place for it on a wall of your home at Castle of Mey.

We know that you are an ardent flower lover and gardener, and we hope that the picture will bring you pleasure. We are honoured to be able to mark the 90th birthday of our most distinguished Honorary Member in this way.

The painting is presented to you with the heartfelt congratulations, affection and good wishes of the Scottish Rock Garden Club.

Yours sincerely,

T. Glassford Sprunt

T. Glassford Sprunt
(President)

CLARENCE HOUSE
S.W.1
30th July, 1990

Dear Mr Sprunt,

Queen Elizabeth The Queen Mother bids me say how delighted she has been to receive the good wishes you have sent on behalf of the Scottish Rock Garden Club on the occasion of her 90th birthday, and the pretty flower painting you have sent.

Her Majesty truly appreciates the warmth of your message and your gift, and sends her sincere thanks to all those concerned in giving her this present.

Yours sincerely,

Frances Campbell-Preston

Lady-in-Waiting

T. G. Sprunt, Esq.,

Fig. 34 "Flowers of the Scottish Mountain Turf" by Heather Salzen. Painting presented to Her Majesty the Queen Mother on her ninetieth birthday by the SRGC.

Fig. 35 *Helleborus lividus corsicus*, Corsica (see p155) C. North

Fig. 36 *Cyclamen repandum*, Corsica (see p155) C. North

Fig. 37 *Crocus corsicus*, Corsica (see p166). C. North

Fig. 38 *Paraquilegia anemonoides* (see pp169-171). H. Taylor

Fig. 39 *Serapias neglecta*, Corsica (see p158). C. North

mainly of the following shrubs: *Astragalus massiliensis, Cistus monspeliensis, C. salvifolius, Helichrysum italicum, Juniperus phoenicea, Pistacio lentiscus, Rosmarinus officinalis* and *Thymelaea hirsuta.*

Amongst these grew an interesting mixture of bulbs and herbs, including *Artemisia vulgaris, Asphodelus microcarpus, Chrysanthemum coronarium, Crithmum maritimum, Eryngium maritimum, Evax pygmaea, Leopoldia comosa, Lobularia maritima, Matthiola sinuata, M. tricuspidata, Paronychia argentea, Smilax aspera* and *Trifolium stellatum.*

Several orchids grew in the garrigue, including: *Ophrys lutea, Ophrys sphegodes, Orchis papilionacea,* and *Serapias parviflora.* We looked in vain for the endemic *Morisia monanthos* (= *M. hypogaea*) – a small crucifer once very popular on SRGC show benches. It has the curious behaviour of burying its fruits in the ground like peanuts and some cyclamen species. It is a relict species from North Africa and is found only in Corsica near Bonifacio and at a height of some 1100m on Monte Corvo in Cap Corse. We had also hoped to see the rather spectacular *Ornithogalum arabicum* which is said to grow on the cliffs near here and around Ajaccio.

On leaving Bonifacio we made our way up the west coast on the N196. Stopping at Propriano by the sea shore we saw *Silene sericea,* a small pink-flowered annual campion only found in Corsica, Sardinia and in a few places on the Italian Riviera. Further along the coast at Porticcio, which faces Ajaccio across the bay, there were more shore plants typical of the area including *Briza maxima, Cakile maritima, Calendula arvensis, Crithmum maritimum, Euphorbia paralias, Medicago marina, Otanthus maritimus, Raphanus raphanistrum* and, again, *Silene sericea.*

On the way to Porticcio, in a lush area near Petreto-Bicchisano, grew some yellow-flowered orchids with rather broad, unspotted, leaves. At first we thought that they might be *Orchis pallens,* which has only rarely been recorded on the island. On careful examination we decided that they were *Dactylorhiza insularis,* sometimes classed as a subspecies of *D. sambucina.* This uncommon plant has yellow flowers with a distinct orange blotch on the lip and is found in Corsica, Sardinia, Elba, and in mainland Italy on the Argentario peninsula and the extreme south. It can be distinguished with certainty from *Orchis pallens* by having lobed, and not entire tubers. To verify our identification we dug up a tuber and then, please note, replanted it immediately. The tuber was, in fact almost entire, but did have slight signs of lobing, thus confirming our identification. After this exciting find we made our way on to the old capital city of Corte. The route takes one over the Col de Vizzavona at 1163 metres, passing through forests of beech and pines. The beech trees are not the elegant giants that we know in Britain, for the forests here are from natural regeneration and the individual trees much more densely spaced so that they grow tall but

somewhat spindly. There was a dense carpet of leaves under the beech and nothing seemed to grow except for a few cyclamen – none of which were flowering. By the roadside grew a white-flowered dead-nettle *Lamium bifidum* (we later saw it in the Gargano) and *Teucrium scorodonia*.

The mountain valleys

Leaving Borgo along the N193 to Ponte Leccia, we took the D147 road up the Asco Valley. During the first part of the journey there were many trees with feathery inflorescences of cream-coloured flowers. These are the manna ash *Fraxinus ornus* – an attractive species which is grown in the London area and yields 'manna sugar' when the bark is tapped like maples in spring.

At the lower part of the valley the land was very heavily grazed and we saw little of interest except for patches of *Anemone stellata*, some plants of the tiny *Arabis vernalis* and the tall, shrubby, *Euphorbia characias*. The last of these was especially common here, probably because it is resistant to grazing. It closely resembles *E. wulfenii* but the flowering stem appears to have a 'knob' of inflorescences. The weather was dull and we did not get good views in the gorges. Amongst the rocks grew rather conical bushes of *Juniperus oxycedrus*, the wood of which is used locally to make utensils for the preparation of goat and sheep milk cheeses, which are a speciality of the island. Soon we came to the impressive Forêt de Carrozzica composed mainly of the Corsican pine *Pinus nigra laricio*. This is a sub-species of the Austrian pine *Pinus nigra* – a commonly grown and rather dull tree. By contrast the Corsican pine is generally taller and has a trunk which is flecked with lighter colour, and the old specimens were truly magnificent. We walked up through the forest but it was cold; there were patches of snow, it was raining and there were occasional rumbles of thunder. We saw few plants except for stunted hellebores, a few dead crocus flowers and flowering blackthorn *Prunus spinosa*. Before turning back because of the rain we saw *Saxifraga rotundifolia* and some plants of the endemic *Pinguicula corsica*, not yet in flower.

Another mountain valley we visited was by taking the D84 from Corte to Calacuccia. The gorges here were rather impressive and on the rocks grew *Saxifraga pedemontana* ssp. *cervicornis* (a rather fine 'mossy' with white flowers and leaves shaped like minature stag's antlers) and one plant of what we believed to be the endemic *Leucanthemum corsicum*. We reached the lake at Casamaccioli and had hoped to get a glimpse of Monte Cinto but the cloud was down. Near here we saw specimens of the interesting small maple *Acer monspessulanum*. It had been a rather fruitless outing and we were glad to get back to our small hotel at Santo Pietro di Venaco where we were greeted by a carillon from a nearby church.

A more profitable mountain visit was from Corte along D623 up the Restonica valley. Driving to where the road ends at the Bergeries de Grotelle, we left the car and started to walk up to the Lac de Melo. This is a wild and impressive rocky area with large patches of snow and much water underfoot. The typical beds of old glaciers with very fine turf and small lakes or puddles are known here as 'pozzines'. The leafless branches of the dwarf alder *Alnus viridis* ssp. *suaveolens* – a Corsican form – gave a plum-coloured haze to the landscape. Two other shrubs growing with it were *Berberis aetnensis* and *Astragalus sirinicus* ssp. *genargenteus* – both spiny shrubs with limited distributions. Amongst the bushes we noted a gagea, common foxglove and *Corydalis pumila*. Higher up still was *Armeria multiceps, Pinguicula corsica* and the endemic *Narthecium reverchoni* but none was in flower. There are a number of other alpine treasures to be found here, including *Aquilegia bernardii, Helichrysum frigidum* and *Tanacetum alpinum* var. *tomentosum* but it was too early in the year to see them in flower. The rare bearded vulture, or lammergeier, also nests near here and we would liked to have stayed longer and gone higher but the mist was coming down and it was very wet underfoot. However we still had time left that afternoon, and after returning to Corte we drove along the N200 in a south easterly direction down the Tavignano valley. This area is green and the river is quite broad and impressive. In a lightly-grazed area amongst rocks and bushes of *Phillyrea angustifolia* we saw magnificent flowering specimens of *Pancratium illyricum*. This species is confined to Corsica, Sardinia and Elba but has been dubiously reported from Spain. Unlike the commoner *P. maritimum*, which also occurs on the island, it flowers in spring, not summer, and has starry white flowers more like those of a nerine than a daffodil. Up a side road near here we saw *Cephalanthera longifolia* (Fig.40, p180) growing by the roadside in quantity. This species is sometimes picked and sold in Bastia as 'muguet' (Lily of the valley) which is itself rather uncommon on the island, but for some reason is highly prized by the inhabitants.

Whilst in the south of the island we took the opportunity to visit the Bavella valley. Leaving Sartène on D268 one climbs through the Forêt de L'Ospédale composed of fine old trees of Corsican pine. Approaching Zonza we came to patches of deciduous woods with holly trees and carpeted with *Anemone appenina* and *Cyclamen repandum*. This was a magnificent sight. The anemone, which occurred in almost equal numbers in its lavender and white flowered forms, is found in Corsica only in this area; its true homeland is, of course, the Appenines of mainland Italy. At the top of the Col de Bavella (1218m) it was cold and in cloud but we were greeted by thousands of mauve flowers, of *Crocus corsicus*, (Fig. 37, p162) beautifully streaked and feathered on the outside. Another

species found in Corsica, *Crocus minimus,* is very similar but has slightly smaller flowers and may be distinguished only if one digs up the plants and examines the covering of the corms. It is, however, usually found at lower levels.

We wandered around on foot near the top of the pass for about two hours, and the mist lifted and there were wonderful views but not many more new plants to be seen. However, we observed *Gagea fistulosa, Potentilla micrantha* and the neat, dwarf dandelion *Taraxacum dissectum.* The road leading down from the Col was narrow, winding and unsurfaced but 'improvements' were in progress. It leads into the Solenzara Valley to reach Solenzara itself on the east coast. The road was truly idyllic with magnificent views of the rugged pink mountains, carpets of anemone and cyclamen, no traffic and nothing but the sound of running water and the cuckoo.

We were sorry to leave Corsica. It has many interesting plants and the orchids are particularly abundant – especially serapias. The scenery is spectacular and one can botanise and live in a sophisticated way. Although the island is not large and one can easily drive from one end to the other in a day, it would not be possible to 'do' the island properly from one base. A difficulty facing the plant enthusiast is, as in other mountainous islands, that one can not see the best of the mountain flowers and those of the lower areas in one visit. It seems that our timing was too early for the alpine species; June would have been a better time to see them.

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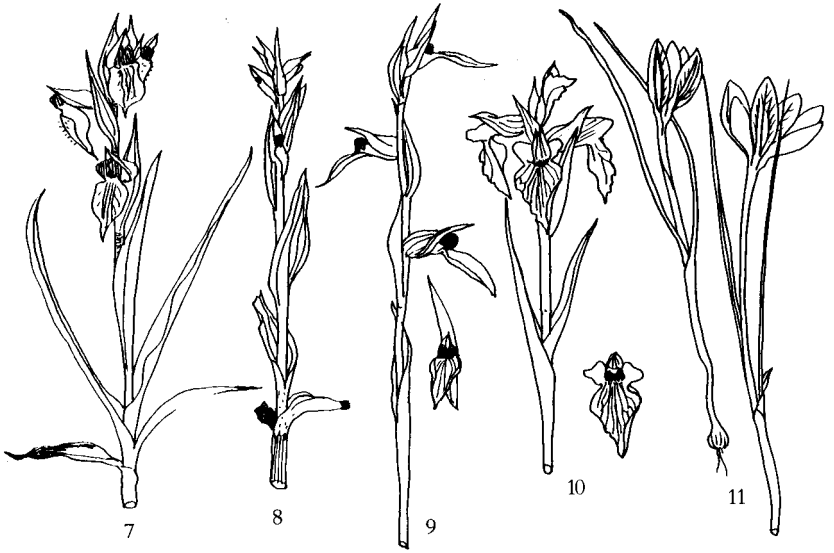
Flowers of Corsica (p168)

1. *Silene sericea*
2. *Saxifraga pedemontana* ssp. *cervicornis*
3. *Cyclamen repandum*
4. *Bellis annua*
5. *Stachys glutinosa*
6. *Halimium halimifolium*
7. *Serapias cordigera*
8. *Serapias parviflora*
9. *Serapias lingua*
10. *Serapias neglecta*
11. *Crocus corsicus*



Chris North

Paraquilegia anemonoides: The Correct Name For P. grandiflora

ANDREW LAUENER

There is no doubt that there has long been confusion over the issue of the correct name for *Paraquilegia grandiflora,* although the matter was resolved by the German botanist Eberhard Ulbrich as long ago as 1922, and again in 1925, when he demonstrated that the correct name should be *Paraquilegia anemonoides,* based on *Aquilegia anemonoides* Willd. (1811). When writing up *Paraquilegia* for 'George Forrest, Journeys and Plant Introductions' (1952), I also maintained Ulbrich's combination and referred to it again in a paper published jointly with M. Tamura (1968).

If one looks at the Indexes of the Journal of the Scottish Rock Garden Club and The Rock Garden one can see that the *Paraquilegia* which we know in cultivation, and which is often exhibited at shows, has been cited variously as *P. anemonoides* and *P. grandiflora.* The tendency lately has been to use the latter name, especially in Show Reports. In his article on The Swedish Botanical Expedition to Pakistan, Zetterlund (1986) drew attention to the conflict between the two epithets but said the species should now be called *P. grandiflora.* It is true, as he stated, that the Flora of the URSS had used the name *Paraquilegia anemonoides* for a different species, but this use was incorrect, as will be shown.

The problem arose in the first place because of a species named *Isopyrum anemonoides,* described by Karelin and Kirilov (1842) based on material collected in the Altai and widely distributed in Asia. This is probably also the species referred to by Gibbons in the SRGC Journal (1972) as having been seen in Afghanistan.

In 1924, the Russian botanist Schipczinsky transferred this *Isopyrum* to *Paraquilegia* as *P. anemonoides* (1924) but this combination had already been used by Ulbrich in 1922 for a different species and so could not be used for the *Isopyrum* under the genus *Paraquilegia.* Obviously Schipszinsky was unaware of Ulbrich's earlier combination and thought he was making a legitimate change. Then, in 1925, Ulbrich created the genus *Paropyrum* to accommodate *Isopyrum anemonoides* and published yet another new combination, *Paropyrum anemonoides,* which is now generally regarded as a nomenclatural synonym of *Isopyrum anemonoides.* However, *Paropyrum* has been retained at Sectional rank under *Isopyrum.* Two further synonyms are *Paraquilegia kareliniana* described by Nevski (1937) from

Kuhitang (Kugitangtau Khrebet) in Turkmen, and *P. afghanica* Rech. f. The latter was referred to in the 1983 Morecambe Show Report by D. Mowle.

The following table should now make the situation of *Isopyrum anemonoides* and its synonymy clear.

Isopyrum anemonoides Kar. & Kir. (1842); Tamura & Lauener (1968).

Syn.: *Paraquilegia anemonoides* (Kar. & Kir.) N. Schipcz. (1924) – non (Willd). Ulbr. 1922; Schipcz. (1937), excl. *P. uniflora* Drumm. & Hutch.

Paropyrum anemonoides (Kar. & Kir.) Ulbr. (1925).

Paraquilegia kareliniana Nevski (1937).

Paraquilegia afghanica Rech. f. (1954).

So, *Paraquilegia anemonoides* (Kar. & Kir.) N. Schipcz. is a synonym of *Isopyrum anemonoides* Kar. & Kir.

One can now proceed to explain the nomenclature of *Paraquilegia anemonoides* (Willd.) Ulbr.

In 1811 Willdenow published the first name for this species, *Aquilegia anemonoides*. We next enter the *'grandiflora'* phase when *Isopyrum grandiflorum* Fisch. ex DC. (1824) was described, also from the Altai. However, it was not until nearly 100 years later that Drummond and Hutchinson (1920), in their paper 'A Revision of Isopyrum and its nearer Allies' created their new genus *Paraquilegia* and made the combination of *Paraquilegia grandiflora*. However, the earliest specific epithet for this taxon was *'anemonoides'* and so, in 1922, Ulbrich made the necessary correction and name change to *Paraquilegia anemonoides*. Thus, Schipczinsky's later use of the same combination, albeit for a different species, was not valid, and the correct name for the species concerned is *Paraquilegia anemonoides* (Willd.) Engl. ex Ulbr.

Isopyrum farreri, referred to by B. Woodward in the Journal (1972) is a nomen nudum and a synonym of *P. anemonoides*. *Paraquilegia microphylla* Drumm. & Hutch. was formerly regarded as a distinct species, but only on account of its seeds being smooth and not papillose, and its smaller leaves. Although it is maintained in the 'Flora of China' (Flora Reipublicae Popularis Sinicae) the distinction between *P. anemonoides* and *P. microphylla* has been regarded as dubious and Grierson and Long (1984) relegated *P. microphylla* to synonymy, a decision with which I agree. However, its distinctness or otherwise does not affect the nomenclature, which can be summarised as follows:

Paraquilegia anemonoides (Willd.) Engl. ex Ulbr. (1922).

Syn.: *Aquilegia anemonoides* (Willd. (1811).

Isopyrum grandiflorum Fisch. ex DC. (1824).

Isopyrum microphyllum Royle (1833).

Isopyrum farreri Farrer (1917), nom. nud.

Paraquilegia grandiflora (Fisch. ex DC.) Drumm. & Hutch. (1920)

Paraquilegia microphylla (Royle) Drumm. & Hutch. (1920).

Paraquilegia anemonoides (Fig. 38, p162) has a quite wide distribution across Central Asia, the Himalayas and China (Yunnan, Gansu and Sichuan). It is a noteworthy rock garden or alpine plant and although George Taylor's praise of it has already appeared in the Journal in 1951, 1963 and 1973, it is worth reiteration. "I shall never forget my amazement on seeing *Paraquilegia anemonoides* for the first time, and indeed for sheer delicacy, poise and refinement this plant must be supreme. I was stung by its perfection as it hung in aged tufts from dry overhanging rocks, the glaucous leaves a beautiful foil to the tremulous pale lilac flowers".

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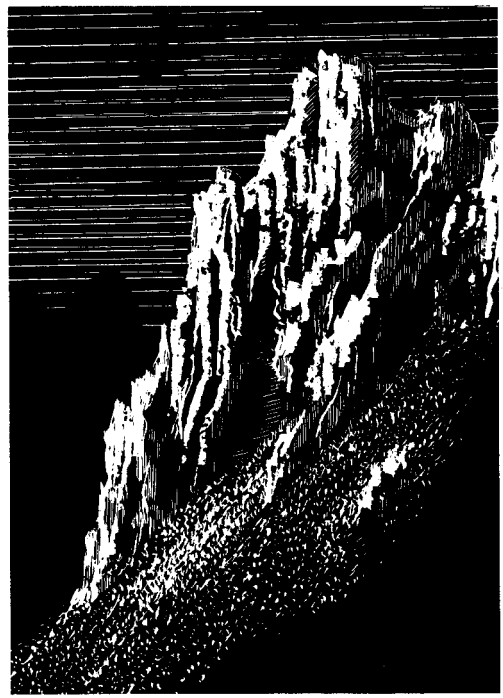
The Private Lives of Scree and Crevice Plants

DUNCAN LOWE



To explain my own fascination for the plants of rock fissures and stone piles, I can do no better than offer an extract from that gentle and sensitive book 'Mountains in Flower', by Vareschi and Drause. It describes the finding of *Androsace helvetica* in the crags of a high mountain and the wonderment that this held. "And then I made an extraordinary discovery. Squeezed into a crevice on the ridge – a cushion in flower, a cushion half hidden in the stone, half growing out from the wall – with sunlight slanting on to it, covered with white and pale pink flowers: a tiny world of its own, a lonely secret life, it fulfilled its existence on these bleak, lonely heights, even as our earth, with all the life on it, wanders through the dead universe. A tuffet – being, round and solitary, by itself able to fight on in spite of all inclemency, to live on – and to blossom."

In their natural lifestyles the saxatile plants present us with mysteries concerning their abilities to not only survive in extremely harsh climatic conditions, but also find enough sustenance to develop and multiply. As cultivated plants they surprise us further just by accepting what are to them quite alien environments. Granted, they need a little help from the grower, mainly in protecting them from pests and competing plants and weeds, but the fact that they can tolerate our conditions and behave more or less naturally is amazing. But do they really prefer those unforgiving perches and the scanty, hard-won nourishment? Given more generous food supplies and a more sheltered, kindly place to live, wouldn't they flourish as never before? Observing them in the wild and experiencing their responses to cultivation give fairly clear answers to these questions.

In the wild an occasional 'stray' specimen of these rock-dwellers may be

found growing on 'easier ground', but very rarely. Even when some disturbance exposes relatively rich earth near their habitats it is not **their** seedlings that are found colonising the new growing space – they remain in their crannies and debris. In cultivation good soil and balmy airs often cause these spartan plants to grow more rapidly and with a lushness never seen in nature, but at a cost. The blooms are frequently less numerous than expected and can have a pallid, slightly dowdy look about them. The foliage may be greener and turgid, but at the expense of its true crispness and sheen. All too often the pampered subject follows the initial burgeoning response with a progressive decline, becoming prey to chlorosis, moulds and pests, ending its brief garden life on the compost heap.

So, it appears that these plants grow where they do out of choice and that evolution has equipped them with the very special means needed to do so. But did they originally evolve to exploit the rocky places spurned by other plants, or were they forced to adapt or perish? This is a riddle that still wants for a confident answer.

In the waning of the last Ice Age, as glaciers retreated, the newly uncovered and thawed ground was progressively inhabited by plant life and the saxatile species were likely to be prominent amongst the pioneers. But, further improvement in climate would encourage larger and more vigorous types to move in, pushing those hardier but slow-growing pioneers into the younger, harsher habitats. As a result they stayed small and tough in nature, retreating into the colder regions of the higher latitudes or up the mountain slopes. Eventually the only refuges left to them were cracks in the rock or inhospitable heaps of stone fragments offered by screes and moraines.

And so, although millions must have perished when faced with such uncompromising conditions, a few mutants would survive and pass on their advantageous abnormalities to successive generations to make them better suited for life on the rock.

This scenario is credible, but it does overlook one or two aspects, one of which is that saxatile plants are not confined to high mountains or lands approaching the polar regions, nor are they peculiar to harsh climates. Our own thrift is a good example, being a true crevice plant in both character and behaviour, but living on sea cliffs. Another crevice-dweller found at low elevations is *Ramonda myconi,* which is abundant on rocks in the hot foothills of the Spanish Pyrenees. Like their mountain counterparts however, these two plants lose some of their character and resistance to ills when given the rich living of the garden. One or two of the high mountain species also present anomalies, in particular that denizen of the granite fissures *Androsace vandellii.* In cultivation it certainly requires special attention and protection to give of its best, but then it does so with exuberance and can be kept in good health for many years. In its parts it retains its natural character almost

perfectly, but in overall size and wealth of bloom it can exceed the very best of the plants in the wild. (Fig. 41, p181).

Apart from the odd prodigy however, the great majority of rock-dwellers are at the peak of condition and beauty only in the environments to which they are so uniquely adapted, and lose something of their glory and well-being in any substitute or simulated growing place.

The Ice Age produced another phenomenon to complicate our attempts to understand how rock and scree plants came to be what they are and where they are. Not all plant life was obliterated by the advancing ice; some high ground remained clear of the frozen waste in the form of nunataks, like islands in a frozen sea, isolated and stark, but with some stubborn plants still surviving on them. It seems reasonable to assume that this marooned flora continued to evolve, improving the features that enabled it to survive, with a strong bias to existing in cold, stony habitats.

When the ice finally receded, the way down to the newly exposed valley was open, but did the nunatak plants take the opportunity to descend or had they perhaps become so highly specialised that they were unable to live elsewhere? Advancing up the cleared valley would be plants that had been held at the ice fringe, and presumably some of these would evolve to live higher and higher up the mountains. Maybe the nunatak plants were kept there on the heights by the newcomers pressing upwards? These immigrants from the valley may have become 'upwardly mobile' not because they were in retreat, but to explore and colonise the high terrain. Such speculations and arguments have led us to regard the high alpine flora of the present day as a mixture of relict species from the nunataks and extensively modified plants originating from the lower ground. This is our best answer so far to the questions posed.

Little of all this is much help to those of us who strive to improve our cultivation of scree and crevice species, but it does serve to remind us that we are dealing with living organisms which have survived for thousands of years and through several catastrophic changes in climate. They have done so by adapting and perfecting their physical make-up to cope with extremely hostile conditions. The act of bringing them down to a lowland garden is in many ways the reverse of planting a banana tree on the Yorkshire moors! We should marvel at the fact that any of them grow and bloom much as they do in their true homes.

Mention has been made, several times, of the very special evolution that the plants have undergone and a look at the present end-results can be helpful to the interested grower. All rock gardeners become aware early in their pursuits that good drainage is an essential for mountain species, but in the crags and screes, drainage is absolute and so it must be for our cultivated specimens. There is a danger though that in achieving the

immediate dispersal of water we go too far and leave insufficient residual moisture for the needs of the plants. On a sunny day in the mountains the rocks and stone slides can appear to be very arid and it is easy to assume that the plants growing thereon are accustomed and equipped to endure periodic drought in their root runs. Allowing the pots or beds of cultivated plants to become parched will quickly show the error of that assumption. But it is very difficult to ascertain just how much moisture is available in those stony places, short of blasting the rock apart and taking an excavator to the screes. The anatomies of the indigenous plants may provide some clues however.

Compared with what might be called the more conventional plants of the lower altitudes, and even those of upland meadows, the high alpine types produce a root system which is colossal in proportion to the amount of growth above ground. This root mass can be a multitude of relatively short, thread-like strands or a long, penetrating system featuring a robust tap root or several sturdy thongs. In both cases a huge surface area is projected below ground with the ability to take in moisture. This behaviour suggests that the moisture sources are meagre at times and probably exist as thin films of water on the inner walls of fissures or on the surfaces of buried scree stones. Although such reserves are sparse they must nevertheless be persistent, because, with the exception of just one or two succulent species, the saxatile mountain plants have no means for storing significant amounts of water. They must be able to rely on a regular supply even though it has to be drawn from a considerable depth or a wide area.

The hairiness that is a very common feature of high alpine foliage is generally believed to be primarily a protective device, acting as a partial screen against high intensity sunlight and a shield to deflect dehydrating and freezing winds. In either case the effect is to reduce moisture loss.

Evolution has also given many of the plants a smooth, domed form which, where the situation allows, is roughly hemispherical. A hemisphere presents less exposed surface area for a given volume than any other shape. Again the plant is minimising the drying effects of sun and wind. The other growth form frequently favoured is the ground-hugging mat, flowing between stones and benefiting from their shade and wind-break.

The cushion and the mat are also very effective in resisting dislodgement by gales, shuttering stones and slithering snow, which could well be other reasons for their being adopted. Even in bloom the huddled physique is maintained by the majority of species, the flowers sitting tight on the foliage, offering no vulnerable stalk to the hazards of the rocky heights. Other elements of mountain climate also play a part in moulding the character of the plants living there. High intensity light has an inhibiting

effect on the growth rate of shoots, which could explain why many alpines tend to become drawn and lax in the heavily filtered sunlight of our gardens, particularly when under glass. Low night temperatures (common throughout the mountain growing season) are also believed to retard growth rate. A further consequence of high light levels is the possibility of over-stimulation of the chemical systems within the plants' tissues, despite the protective measures which they have developed. The result is a high production of sugar which apparently, because of low night temperatures, cannot all be processed into starch before sugar production starts up again the next day. Plant cells therefore accumulate the sugar overload and it is believed that this contributes to the intense colour of the flowers and also to frost resistance. Perhaps our less highly illuminated plants in cultivation are thus more frost-tender than those in the wild? The theory could also explain why our lowland-grown gentians and others such as *Eritrichium nanum* lack the brilliance we see in nature (Fig. 43, p182).

A little more attention to the root run is warranted in this investigation of natural conditions. Obviously it is predominantly stony (whether scree or crevice) and compared to the soil of a garden bed, will have a far greater amount of air space and hence oxygen present. Roots will therefore encounter numerous air pockets of various sizes in their spreading searches and will be accustomed to 'oxygen-rich' conditions. This may be a feature which they actually need in order to process with maximum efficiency the scanty food sources available to them.

Studies of nutrient levels in mountain soils have frequently revealed generous levels of trace elements and major food components, such as potassium, but invariably a paucity of nitrogen. The nitrogen supplies in stony crevices and rock debris will certainly be no greater and probably even more meagre. In some niches and beneath the surface stones of some screes there can be found a modest accumulation of matter bearing some resemblance to soil, but in others little if any organic substance is present, yet both support advanced plant life. It may be that abnormally extensive root systems have been developed to scavenge as far and effectively as possible in the quest for sustenance. Possibly this purpose could have been more influential than moisture seeking in the evolutionary process, but it is more likely that the two needs were equally met with the one development.

Another enhanced feature of the plants, noted during studies of their physical behaviour, is their ability in photosynthesis – measured at three to four times better than that of 'normal' plants! This extra efficiency puts less demand on the food gathering roots and helps to explain how the saxatile species exist on such frugal food resources. The whole of this specialised life support system has much in common with hydroponics and indeed,

some growers have produced impressive results using non-organic rooting compounds supplied at intervals with very dilute liquid plant food. Such methods are impractical for the open garden but in controlled growing environments they often excel over more conventional means of culture. Fig. 42 p181 shows an interesting example where saxifrages are flourishing in a trough filled with nothing but limestone chippings.

One final aspect must be added to complete this sketch of life in the world of rock and stones, which is the 'long sleep'. Many crevice plants do not enjoy the often-mentioned snow blanket during the mountain winter, whereas many scree-dwellers do. But in both cases the plants exist in a state of true dormancy for eight or nine months of each year. There is little we can do in cultivation which even approaches some simulation of this important period; our captive plants must endure many of our winter's vagaries and it is rarely cold enough for long enough to put them to sleep. As a result they never 'shut down' fully. Mild spells can trigger a growth response and then be displaced by an icy week or two when the bewildered plants halt their surge, only to be re-stimulated by the next thaw. To add to their disorientation they are exposed to damp conditions, even if not actually rained upon. Never do they experience winter wetness in the heights, where anything falling from the sky is dry crystalline snow and the air is too cold to hold moisture. Little wonder that they sometimes grow out of character and become victims of ills that never afflict them in their true homes.

There was never any intention to draw conclusions from this article as guides to the cultivation of scree and crevice species. The sole purpose was to look in on their private lives and hopefully gather food for thought, and perhaps stimulate more innovation in the ways we care for these very special plants.

Show Reports 1990

Morecambe – 17th March 1990

Another exceptionally mild winter in all parts of the country meant that most plants were once again well advanced and a feast of colour met the eyes of visitors to this, the first show of the Scottish season. Amazingly, the weather this year was sunny and warm – a welcome change to the snow, gales and rain that normally bedevil this show. The popular theory amongst the exhibitors was that the new Show Secretary, Lionel Clarkson, had some secret influence with the Clerk of the Weather. Long may it continue! Be that as it may, the benches groaned under the weight of pots of primulas, androsaces, fritillaries and many other plants at the peak of perfection: a worthy tribute to the skill of the exhibitors and the hard work of the Show Secretary and his team of helpers.

The outstanding plant, awarded a Farrer Medal under this year's AGS rules, was an eye-catching *Iris nusairiensis* grown superbly by David Mowle of Lancaster. The specific name derives from the Jebel Nusairi Mountain in Syria where bulbs had been collected in 1966. The five heads of beautifully coloured smoky-blue flowers with darker blue veining had only appeared above ground a few days previously. Alan Spenceley (Cleveland) had a particularly good show, winning the Open section aggregate award and both AGS medals for six pan classes. His winning entries included good plants of *Saxifraga grisebachii,* two *Saxifraga oppositifolia* forms, *Primula amoena, Fritillaria aurea* and *Arcterica nana.*

The Royal Botanic Gardens, Edinburgh, continue to delight us with outstanding exhibits and this year's gold medal display was no exception. A venerable plant of the North American *Kelseya uniflora,* in reality a shrub albeit a cushion forming one, was growing over tufa, very happy in these austere conditions. Other notable plants were excellent specimens of the dazzling blue Chilean *Tecophilea cyanocrocus, Corydalis solida* 'George Baker' and the Turkish introduction *Alkanna aucherana.*

An unusual plant in the new and rare class was *Ephedra frustillata* P & W 6214. No doubt not to everyone's taste it is, nevertheless, of interest botanically as a link between the flowering plants and conifers. Seed had been collected in Patagonia by the Pern and Watson expedition in 1987/88, and Mr and Mrs West of Leicester had grown on, in a peaty, gritty mixture an intriguing plant with its contorted, flat stems. The Kirby Cup for the best foliage plant was awarded to a lovely specimen of the North American fern, *Cheilanthes eatonii,* shown by Brian Walker (Solihull).

Returning to the flowering plants Sandy Leven from Dunblane staged another winning three pan entry of fritillaries with well grown specimens of *Fritillaria latifolia nobilis, Fritillaria aurea* and *Fritillaria pinardii.* He was also successful with three pans of primulas, showing three named forms of *Primula allionii.* Another successful exhibitor from Dunblane, Dr Evelyn Stevens, had a lovely pan of the powder blue *Primula bhutanica* 'Sherriff's form' and, underlying the fact that Asiatic primulas are often more successful in the north of the British Isles, Drs Ian and Carole Bainbridge of Edinburgh had a winning entry of *Primula sonchifolia, Primula edgeworthii alba* and *Primula irregularis.* The Ione Hecker Memorial Trophy for the best pan Primulaceae, however, went to a European primula – a plant of the glowing cerise *Primula allionii* 'Mary Berry' shown by Peter Grimshaw (Harrogate). Other notable three pan winners were Geoff Mawson (Dronfield) whose entry included a superb cushion of *Androsace robusta breviscapa* and Fred Hunt (Invergowrie) with a three pan bulbous exhibit, to his usual high standard, of *Fritillaria aurea, Tecophilea cyanocrocus* and *Narcissus watieri.*

Ranunculus is a genus increasing in popularity on the show benches, and this year several interesting species caught the eye. John Dennis of Doncaster showed plants of *Ranunculus muelleri* and *Ranunculus crithmifolius* both with glossy yellow buttercup flowers. However, whereas the former was set off by dark green, slightly hairy leaves, the latter contrasted with an attractive rosette of divided, greyish leaves. A third New Zealand ranunculus, *R. nivicola,* shown by Alan Furness (Hexham) was a larger plant with golden yellow flowers from the volcanic plateau of the North Island.

The 'B' section was well contested and the final aggregate winner, H. Roberts (Leics) had some lovely plants including a well flowered *Rhododendron pemakoense* 'Rose Elf'. Good plants in the 'C' section are a welcome indicator of the future quality of the shows and the aggregate winner, F. M. Smith (Thetford) maintained this tradition with some good plants including a nice little seed raised plant of the yellow crucifer, *Degenia velebitica,* and the attractive silver foliaged introduction *Helichrysum arwae,* whose appearance was enhanced by the numerous pink flower buds.

Clare Brightman

Fig. 40 *Cephalanthera longifolia* (see p166) C. & I. Bainbridge

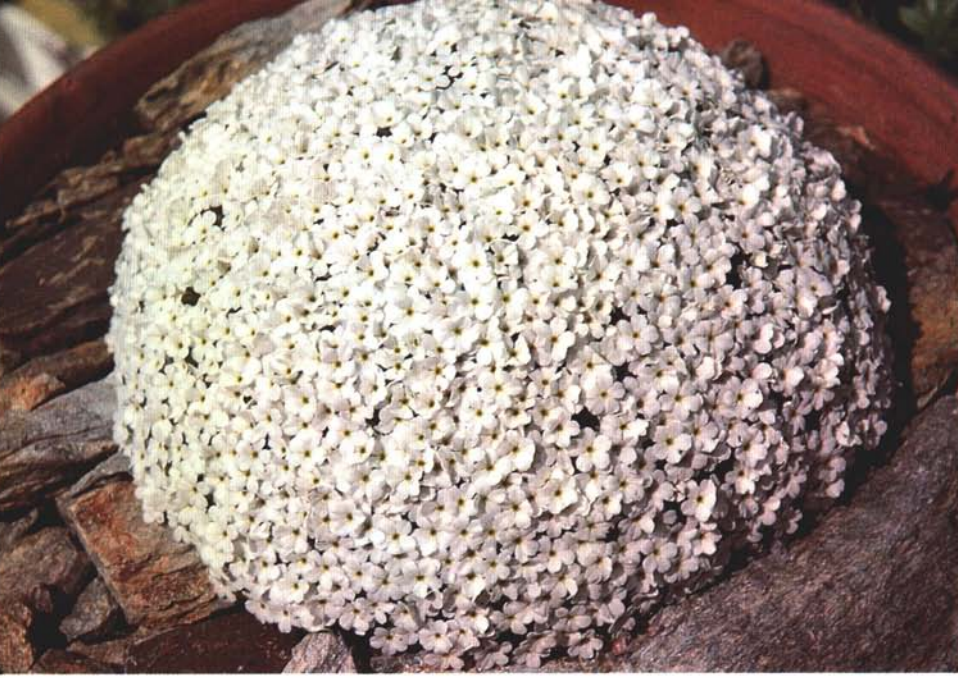


Fig. 41 *Androsace vandellii* (see p174) D. B. Lowe

Fig. 42 Saxifrages in a trough garden (see p177) D. B. Lowe

Fig. 43 *Eritrichium nanum,* Selle Ridge, Dolomites (see p176) M. J. B. Almond

Fig. 44 *Gentiana acaulis* (see p188) I. & M. Young

Fig. 45 *Fritillaria hermonis amana* EKB 1034 (see opposite) I. & M. Young

Fig. 46 *Ranunculus parnassifolius* (see p188) I. & M. Young

Stirling – 31st March 1990

There was some concern that the absence of some of the exhibitors, from whom we have come to expect handsome support at the Stirling Show, might mean that the numbers and standard of plants would be down on previous years. But we worried unnecessarily. The Albert Hall was as usual a lovely sight, and the benches were well filled with excellent plants.

We were glad to welcome exhibitors from as far apart as Caithness in the north and Bolton in the south. Presumably due to the mild winter, there were some interesting differences in the plants exhibited as compared with normal, such that certain genera were better represented than usual and others less well represented. For example, pans of Narcissus are usually few in number, but this year we were able to examine and enjoy an interesting range of species and cultivars.

The superb quality of many of the plants was reflected in the judging for the Forrest Medal, in which a difficult decision had to be made by the judges amongst about half a dozen plants, each one of which would have been a worthy winner. However, a beautiful pan containing about forty blooms of the satiny textured, maroon nodding bell-like flowers of the rare-in-the-wild (its home is Greece) *Fritillaria tuntasia* was a well-deserved winner; this was exhibited by Lionel Clarkson of Blackpool. This plant also won the Ben Ledi Plants Trophy for the best European Plant in Section 1. Lionel was also awarded a Certificate of Merit for a large specimen of a deep pink form of *Lewisia brachycalyx.*

Not only did a fritillaria win the Forrest medal, but there were, as usual with this popular genus, many other plants of a wide variety of species. One remarkable pan was of *F. hermonis amana,* E.K.B. 1034, (Fig. 45, opposite) shown by David Mowle of Morecambe, which won a Certificate of Merit.

The Institute of Quarrying Quaich for the best non-European plant in Section 1 was awarded to Alan Furness of Hexham for a lovely plant of *Rhododendron uniflorum imperator,* which, with a prostrate mat-forming habit, never rising more than 5cm high, spread itself over a 30cm pan, and delighted us with its rosy-pink broadly funnel-shaped blooms. This species is also apparently rare in the wild. There were more rhododendrons than usual, most of them hybrids, but one other noteworthy species was *Rhododendron davidsonianum* shown in Section 2 and winning a first for Alice Milne of Stirling.

The Carnegie Dunfermline Trust Trophy for the most points in Section 1 was awarded to Margaret and Ian Young of Aberdeen. In the last year or so we have become accustomed to the large entries of plants from Margaret and Ian, and appreciate the efforts they make which enable them to stage at most of the Shows such assemblages of excellent plants. Their prize-winning plants ranged from cushions of *Dionysia aretioides* grown

from seed, to two juno irises, *I. kopetdaghensis vicaria* and *I. bucharica,* to their much-loved ericaceous plants (in this case *Cassiope* 'Muirhead', *Kalmiopsis leachiana* and dwarf rhododendrons).

Another of the fine plants shown by Ian and Margaret was a presumed hybrid between two European pulsatillas, *Pulsatilla pratensis* with its nodding small bell-shaped flowers and *P. halleri* with its larger upward-facing blooms, which had self-sown in their garden. Plants from the Ranunculaceae were well represented in the Show. Other pulsatillas were *Pulsatilla vernalis, P. vulgaris, P. pratensis* and *P. albana lutea* with its narrow pale yellow elongated bell-shaped flowers. In the class for new, rare and difficult plants, Alan Furness exhibited a specimen of *Ranunculus nivicola* which he had raised from seed collected on Mt. Tongariro, New Zealand, and sown in January 1985. The six large blooms (2-3cm in diameter) were of a dense yellow with a hint of green and the leaves were large, leathery and heart-shaped. Another ranunculus with smaller, buttery-yellow, glistening upward facing almost flat flowers was *Ranunculus millefoliata,* and in this case the foliage was much-divided and feathery; this comes from Greece. This plant was exhibited by Harvey Shepherd of Bolton. In the class for a plant grown from seed, another unusual plant shown by Alan Furness was *Astragulus mollissimus thomsonae.* This is a desert species from Utah and it had been grown from seed sown in 1982 and had been flowering for the last four years.

Because of the mild winter only a few of the early-flowering *Primula allionii* were to be seen, but there were many other primulas. I counted 54 pots. The Spiller Trophy for the best primula in the Show was awarded to Evelyn Stevens for a 30cm pan of *P.* 'Beatrice Wooster' (*P. allionii* x *P.* 'Linda Pope' – and *P.* 'Linda Pope' is a hybrid of *P. marginata* with an unknown pollen parent) with its lovely clear pink flowers, each with a large white eye, forming a flattish dome covering the compact foliage. Another large primula was *P. 'argentea',* having maroon flowers with a prominent white eye, shown by Mike Dale of Newcastle and gaining a Certificate of Merit. Does anyone know its parentage?

It was pleasing to see so many plants and of a high quality shown in Section 2, and that many of the members of the Stirling Group were amongst the exhibitors. There were 11 entries in the three pan class. One plant that I particularly admired was a lovely specimen of *Erythronium revolutum* with its rosy pink flowers and blotched leaves, winning for our new Convener, Hazel Smith, a first in the class of a plant grown from seed. Amongst many other fine plants, I noted *Primula grandiflora rosea* (shown by John Denny), *Raoulia eximia x petriensis* (Sam Sutherland) and the Chinese form of *Primula sonchifolia* (Bill Haldane). The Fife County Trophy for the most points in Section 2 and a Bronze medal were awarded to Mr and Mrs

C. Jephcott of Penrith. Their many good entries included *Drapetes dieffenbachii, Shortia uniflora grandiflora, Cassiope selaginoides* L.S. 13284 and *C.* 'Beatrice Lilley'. This last plant gained a Certificate of Merit. Another visitor from far-flung places, but in the opposite direction was Richard Lilley from Caithness, the only competitor able to stage a crocus! A very fine plant, which he showed in Section 1 and which gained him a first, was *Iris nusairiensis,* a juno iris with flowers of satiny appearance and with a lovely clear pale blue colour.

There were three displays of plant paintings. Gold medals were awarded to Lawrence Greenwood for yet another display of his much-admired water-colour plant portraits, and also to Mrs Jo Haldane for her lovely paintings. We had the usual support of a number of nurseries, and thanks were also due to the judges Jean Wyllie, Gilbert Barrett, John Main, Peter Foley, Lyn Bezzant and Dennis Graham.

Evelyn Stevens

Edinburgh – 7th April 1990

Fortunately the day was bright and sunny, even though the wind was chilly, for a good day does seem to have an uplifting effect on everyone, even the plants. The Cluny Centre in Morningside was again used for the display of the many and varied selection of plants that members always seem to produce each year, in spite of winter's snow, rain, gales, flooding or even warmth! The show was a good one – plenty of entries and very colourful.

The George Forrest Memorial Medal was presented for a beautifully grown plant of *Cassiope wardii x fastigiata,* shown by Mrs C. Jephcott of Penrith, who also received the Midlothian Bowl – (Best plant in Section II) with another excellent plant of *Cassiope* 'Beatrice Lilley'. The Henry Archibald Rose Bowl was won by Evelyn Stevens, Dunblane, with *Primula* 'Linda Pope', *Draba mollissima* and *Rhododendron pumilum.* Evelyn's *Rhododendron pumilum* also received The Midlothian Vase for the best Rhododendron in the show, and an Award of Merit. She also won The Corsar Trophy – (Best European Primula) with *Primula* 'Beatrice Wooster' which also won an Award of Merit. The Henry Tod Carnethy Quaich for the best Bulb, Corm or Tuber and an Award of Merit went to Mr Fred Hunt of Invergowrie for his superb *Fritillaria michailovskyi.* Mr A. Spenceley of Saltburn received The Elsie Harvey Trophy for three plants in the class for new, rare or difficult genera with *Phlox tumulosa, Raoulia bryoides* and an unusual and eye-catching royal purple *Iris paradoxa.* Mr Sandy Leven, Stirling, carried home the A. O. Curle Trophy with *Draba mollissima, Fritillaria kurdica* and *Primula spectabilis* – all grown from seed. Mr & Mrs I & M Young of Aberdeen had, for the second year running,

most points in Section I, thereby retaining the Reid Rose Bowl, and their *Primula* 'Peter Klein' took the R. E. Cooper Bhutan Cup for the Best Asiatic Primula. Margaret also had a delightful floral arrangement, with about seventeen different kinds of spring flowers and foliage and she was presented with the Kilbride Cup. Mr R. Brown of Hexham's miniature gardens are very hard to beat, and he, dare I say 'as usual', took The Boonslie Cup.

The single pan Fritillaria Class was well represented, Mrs Betty Graham of Edinburgh had a *Fritillaria tuntasia* taking first place. Another good Section was the Iris Class, and Mr R. J. Lilley, Caithness, had a wonderful pan of *Iris nuisairensis* which was placed first and also awarded an Award of Merit. A pan of Iris shown by Mr J. Lee of Glasgow, *Iris iberica elegantissima,* unfurled one of its buds (which had been reluctant to open in the morning) in time for many to enjoy.

An unusual orchid, *Barlia robertiana,* shown by Mr Fred Hunt, turned many heads – a stately plant in a class of its own and a credit to its grower, it was awarded an RHS Preliminary Commendation. Mrs K. Rimmer of Ormskirk exhibited a small *Gentiana verna,* a beautiful 'indigo blue' in colour, differing from the more usual gentian blue, which received a first prize, while Mr A. Spenceley had a lovely *Fritillaria lanceolata* 'Tristulis' which was given an Award of Merit.

Section II had plenty of lovely plants on display. Mr Ken East of Edinburgh exhibited a beautiful pan of *Cyclamen persicum* and Mrs Sheila Durham, also of Edinburgh, won first prize with a dark red Polyanthus, a Cowichan hybrid, 'Ducky'. Mr M. J. Hopkins, Aberdeen, showed an outstanding conifer *Pinus leucodermis schmidtii,* and a nice plant of *Pimelia coarctata,* both winning first prizes, and Mr David Brown, Edinburgh, also won with his *Lewisia cotyledon* hybrid, grown from seed.

The Junior Section was not large, Peter Rankin of Edinburgh taking a first prize with a good pan of *Narcissus triandrus albus* and Miss Heather Dale of Newcastle also winning a first, with a lovely *Zalusianskya ovata,* while Michael Rankin had a nice *Primula denticulata.* We would like to see more of our Junior members coming forward with their plants – it's always so nice to see them. Many thanks to Mrs H. Salzen of Aberdeen for her display of water-colours, and to the judges, Messrs A. Evans, F. Hunt, J. Main, J. Jermyn, B. Barrett and Mrs J. Wyllie.

Edith Armistead

Perth – 21st April 1990

Perth Show is now well settled into Rodney Pavilion on the banks of the River Tay and once again this excellent venue was full of colour from both

exhibits and trade stalls. The judges Mr A. Leven, Mr D. Tattersfield, Mrs L. Bezzant, Mrs J. Whalley, Mr R. Smith, Mr G. Kirkpatrick and Mr D. Hardy were given a difficult task with the high standard of many of the entries.

The Alexander Caird Trophy awarded for the six pan class went to Mr F. Hunt from Invergowrie with a fine exhibit which included *Cyclamen repandum rhodense, Clematis marmoraria, Draba mollissima* and *Ranunculus parnassifolius* (Fig. 46, p183). All six plants were in perfect condition and were a credit to the skill and enthusiasm of Mr Hunt. Mr Hunt was also awarded the L.C. Middleton Challenge trophy for gaining the highest number of points for first prize in Section I, as well as the Bulb trophy and the Major-General D.M. Murray-Lyon trophy for a beautiful pan of *Cyclamen creticum,* which also received an Award of Merit. The Dundas Quaich for the three pan class went to Dr E. Stevens whose exhibit included a magnificent pan of *Primula* "Linda Pope" and an equally well grown pan of *Lewisia tweedyi,* both of which earned Dr Stevens Certificates of Merit. Glancing back through past Perth Show reports it is interesting to note how wide the net of prize winners is cast. However, the winners of the E.H.M. Cox Trophy for the best dwarf Rhododendron, Mr and Mrs Chambers from Killearn, have been regular winners of the trophy over the years. They once again proved their consummate skill in growing rhododendrons, this time with a truly excellent example of *Rhododendron* "Ginny Gee". The white flush pink flowers of this hybrid between *R. keiskei* "Yaku Fairy" and *R. racemosum* covered the plant, which was in absolutely prime condition. The judges were as impressed as the groups of visitors who gathered around the plant later, and duly awarded the George Forrest Memorial Medal.

Lewisia brachycalyx rosea grown in the largest "long tom" at the show was the best plant from seed and Mrs J. Wyllie (appropriately the Seed Exchange Manager) received the coveted Joyce Halley Award. The R.S. Masterton Memorial Trophy for the best Primula in the show was awarded to Dr E. Stevens for *Primula rosea.* The Perth Trophy was awarded to R.J. Salvin for the most points gained by a member in the Perth Group. Mrs R. Fiddes *Gentiana acaulis* (Fig. 44, p182) also received a Certificate of Merit.

Section II was keenly contested with J. & R. Makin from Newport-on-Tay winning the section, gaining the Perth Salver and a Bronze Medal with some fine pans including *Tulipa linifolia, Iris bucharica* and *Gentiana acaulis.* Also in section II, J. & R. Philp were awarded a Certificate of Merit for *Rhododendron* 'Hatsugiri'.

In the Junior Section prizes were won by Pamela Howat and Ayley Salvin. Dr M. Almond won a Gold Medal for his exhibition of photographs of plants and landscapes of the Dolomites, and L. Greenwood also gained a Gold Medal for his pai ıtings which was an appropriate way of marking his twentieth year at the Perth Show.

Michael Constable

Glasgow – 12th May 1990

I think the vagaries of this year's climate have been a discouragement for many of our usual exhibitors. No winter weather, apart from incessant rain and gales, which brought plants into really precocious growth, so that a vicious frost in mid-April did the maximum damage; even the normally imperturbable *Primula denticulata* suffered grievously, and the rhododendrons were a sorry sight, with new growth, as well as the flowers, pulped. We were all grateful therefore to the stalwart exhibitors who supported the show, and made such a cheerful and colourful sight in the show hall.

The Forrest Medal was awarded to Mr Sandy Leven, for his superb plant of *Erinacea anthyllis,* which had a complete cover of its elegant lavender pea flowers. Another shrub, an immaculate *Salix reticulata,* won the Ian Donald Memorial Trophy for the best plant native to Scotland in the show, exhibited by Mr and Mrs V. Chambers.

The Charles M. Simpson Trophy for the best orchid in the Show went to Fred Hunt for a lovely *Cypripedium calceolus,* which was also awarded a Certificate of Merit. Fred also won a Certificate of Merit with his *Celmisia allanii,* and his *Arisaema sikokianum,* which is rarely seen, was another beauty.

As is often the case these days, Ian and Margaret Young of Aberdeen gained the most points in Section I, and thus the Crawford Challenge Cup. Probably the choicest plant in the show was entered 'not for competition' by Mr and Mrs Young. This was the lovely *Jankaea heldreichii,* a sure contender for future top awards, once its qualifying period of six months ownership is over. Mr Roger Smyth won the James Wilson Trophy for the most points in Section II.

Other plants which stood out were, in Class 15, the beautifully flowered Pyrenean saxifrage *Saxifraga pubescens iratiana* of Drs Carole and Ian Bainbridge. In Section II, the best plant from a first time exhibitor was *Saxifraga tazetta,* shown by Mr A. D. Williamson of Gatehouse of Fleet, who also showed a beautifully flowered *Telesonix (Boykinia) jamesii.* Mrs E. Armistead's *Leiophyllum buxifolium nanum* was also a real charmer.

Amongst the bulbous plants, the subtle colourings of *Fritillaria pontica* var *substipelata,* from the island of Lesbos, were quite outstanding. From the Pacific States of the USA, the calochorti are becoming better known for alpine house cultivation, and Dr Stead showed two beautiful examples, *Calochortus amabilis* and *C. albus* var *rubellus.*

Mr and Mrs Chambers had a superb *Gentiana acaulis* in Class 38, and surely the beautifully flowered plants that we have seen in the last few years will kill that hoary old tale that *G. acaulis* is impossible to flower. Dr and Mrs Rankin of Lasswade were awarded all the trophies in Section VI. Mrs Chambers also offered a beautiful display of water-colours of plants.

The Committee thank the judges Messrs. Hunt, Leven, Main, Wotherspoon, Dr Semple and Mrs Stead.

Joan Stead

Aberdeen – 19th May 1990

This show was the first to be staged by the Group's new Show Secretaries, Ian and Margaret Young, whose hard work ensured that the day went well. Some changes had been made in the show schedule to make it more appropriate to the late date when flowering of many groups of true alpines is over. This is especially true in a warm dry spring such as Aberdeen had experienced this year. The Show attracted a good number of entries and we are grateful to members from elsewhere who travelled long distances to show their plants and to the Judges, Mrs E. Ivey, Mrs R. Fiddes, Mr J. H. A. Milne, Mr W. Holmes, Dr I Bainbridge and Dr C. Jones.

A remarkably wide range of plants included some rare and unusual ones. Some of these were grown from seed, a real achievement with *Viola atropurpurea,* from the high Andes of Chile, shown by Mr W. Holmes of Banchory: others were a perfect pan of *Physoplexis comosa* in flower, which gained a Certificate of Merit for Mrs Betty Craig of Edinburgh; Mr & Mrs Young's *Rhodohypoxis baurii,* and *Orychophragmus violaceus,* a lilac crucifer from Japan, grown by Mr A. D. McKelvie, Aberdeen. Notable plants were not confined to Section I, for in Section II were *Telesonix jamesii* (Mr M. Hopkins, Kemnay), a fine *Celmisia* sp. covered in stemless white daisies (Mrs H. Sutherland, Cults) and *Rhododendron keiskei* 'Yaku Fairy' (Mr B. Bull, Bridge of Don).

Other plants, some less rare but equally beautiful, which caught the eye were a fine lilac *Campanula rupestris* (Mrs R. Fiddes, Kintore), a pale pink *Asperula nitida puberula* (Mr D. Atkinson, Craigievar) the pink *Saxifraga* 'Kathleen Pinsent' (Mr M. Hopkins), *Rupicapnos africana* (Mrs Betty Craig), *Sarmienta repens* and *Raoulia haastii* (Mr R. Lilley, Caithness), and a fine yellow *Linum* 'Gemmell's Hybrid' (Mrs Doreen Fraser, Dundee) which was unplaced. Another judgement difficult for this reviewer to understand was the third place given to a fine flowering *Leucogenes leontopodium* shown by Mr S. McGrath, Aberdeen, the judges preferring the tight cushion of *Raoulia eximia x petriensis* shown by Mr S. Sutherland, Kincardine. (How rarely are perfect cushions seen in the wild and what a great number of first prizes they attract!)

The high standard of entries was reflected by the magnificent pan of *Celmisia densiflora,* shown by Dr E. Stevens, Sheriffmuir, in the six pan class, for this was awarded the Forrest Medal for the best plant in the show although it was in an entry given third place. *Vaccinium floribundum* gained

a Certificate of Merit for Mr F. Hunt, Invergowrie, in his winning entry in this class. The three pan class was won by Mrs Doreen Fraser, with salmon-pink *Silene hookeri,* pink *Phlox mesoleuca* and *Oxalis* 'Ione Hecker'. A white *Rhododendron* 'Maricee' gained the Simpson Salver for the best dwarf Rhododendron for Mr & Mrs Young, who also took the Walker of Portlethen Trophy for most points in Section I.

The honours in Section II went to local members; Mr M. Hopkins took the Bronze Medal for most points, while Dr and Mrs Wilson of Cults, who had never exhibited before, took the Aberdeen Quaich for the best plant in the section, the Helen Craig Cup for the best Primula, and a special prize for the best entry from a first-time exhibitor, all with a perfect pale blue *Primula reidii williamsii.*

Lewisias were well represented in their main flowering season, giving a splash of bright colours. *L. rediviva,* white and pink forms, gained first and third place for Mr F. Hunt and Mr D. Atkinson in the two pan class, *L.* 'Ashwood Yellow', an unusual colour, shown by Mr M. Hopkins, won its class, while a magnificent deep carmine *L. cotyledon* from Mr R. Maxwell, Tullochvenus, was unplaced. Dwarf ferns, unusually, attracted six entries with first place going to Mr F. Hunt's small *Dryopteris pseudomas crispa congesta*!

The hall was decorated by a colourful display staged by the Cruickshank Botanic Garden, which featured red, pink and white *Rhodohypoxis baurii,* the lilac *Roscoea humeana* and pale yellow *R. cautleioides,* and by a display of flower paintings by Mrs H. Salzen, which was awarded a Gold Medal.

Heather Salzen

Newcastle-upon-Tyne – 26th and 27th May 1990, held at the National Garden Festival, Gateshead.

Held in the spacious and magnificently lit Horticultural Hall of the Gateshead Garden Festival, this Show lasted for two ten hour days, and was graced by presence of the Joint Rock Garden Committee and the award of the Sewell Medal. There was also a special Festival Award in the form, perhaps rather inappropriately these days, of a Davy lamp. The Newcastle Show has never been held so late, nor I believe, has a Show held under Scottish rules lasted for more than one day before. Thus, as a hot and unprecedentedly early spring wore on, Alan Furness, the Show Secretary, might have wondered whether the Show could live up to the expectations bestowed upon it.

In some senses these worries were justified. Perhaps because the day following a 7 p.m. close was not a Bank Holiday north of the border, very few exhibitors travelled south. Several leading exhibitors from the north of England were also absent, claiming that their Show plants had all finished.

There were only two entries each for the Sewell Medal (won by Alan Spenceley) and the Garden Festival Award (won by Bill Carr), while the E.B. Anderson prize attracted no entries at all. Nevertheless, partly through sterling efforts by the local Group, many fine exhibits graced the benches, and both the organisers and the general public were well satisfied with the final effect.

Some classes were exceptionally well contested. Mrs C.M. Coller won the 'trough' class from eleven, and must have been well pleased with the results of her long journey from Norwich. Winning also with *Lewisia rediviva,* three distinctive forms of *Rhododendron campylogynum,* and the unusual American composite *Chaenactis douglasii* with its creamy spherical heads, she took the R.B. Cooke plate for the maximum points in section one.

Two genera took the eye in particular. At least six plants of the 'Devil's claw', *Physoplexis comosa* were staged, and the tightest and most floriferous, with thirteen heads, won the Forrest Medal for Betty Craig. This fine form was said to have been grown from seed from 'the Balkans', perhaps from the Yugoslavian end of its Alpine range? Both Mrs Craig's, and a similar plant exhibited by Robert Rolfe, were awarded an FCC.

Celmisia, the New Zealand daisies, certainly attracted the judges. *C. lyallii,* the 'false spaniard' from its foliar similarity to an Aciphylla, *C. spectabilis* var *magnifica, C. semicordata* var *aurigans,* and *C. allanii* all won, the latter justifiably gaining an Award of Merit for Alan Furness.

Bulbous classes, we are told, exclude rhizomatous plants, but this was certainly 'liberally interpreted' (rule 22) as a fine *Roscoea humeana* (Mr and Mrs McGregor) beat Jack Brownless' splendidly horrific *Arisaema speciosum.*

Some indication of the earliness of the season was given by a flush of Greek campanulas, presently in fashion, including *C. oreadum* from Olympus, *C. anchusaeflora, C. topaliana* ssp. *delphica* and *C. orphanidea.*

Other plants to catch this observer's eye were Dave Kirby's superb *Phlox nana,* awarded an FCC, Lionel Clarkson's *Saxifraga cebennensis,* with scarcely a leaf visible in a 27cm pan, a fine lilac flowered and silver leaved *Oxytropis splendens* from North America and *Lupinus microphyllus* with tiny prostrate azure flowers from Robert Rolfe's Bolivian seed, both staged by B. Swales. Alan Furness's *Microcachys tetragona,* just coming into cone, the New Zealand *Myosotis rakiura* (Bill Carr) with its brown leaves, Alan Furness's *M. arnoldii* from the Nelson limestones with silver leaves, and a fine North American crucifer, *Physaria alpina,* with spoon shaped grey leaves and large golden flowers (Lionel Clarkson) were also notable.

A fine photographic exhibit 'A Walk in the Savoy Alps' gained a well deserved Gold Award for Mrs Kath Baker.

Some of the most exciting plants in the Hall appeared away from the Show. Amongst several interesting trade stands, where the cream and black *Dodecatheon dentatum* was much in evidence, Jim Jermyn showed such rarities as the scarlet poppy, *Meconopsis punicea, Incarvillea brevipes,* the fascinating *Iberis candolleana (I. pruitii* according to Flora Europaea, but a much better plant than that usually seen under this name), *Primula cernua,* very similar to *P. hyacinthina,* and the fascinating tiny candelabra *P. prenantha* which unaccountably failed to receive an award. Could it be that it was too small for the tastes of the Joint Rock?!

Finally many thanks collectively to the judging team of 17 who did an excellent job in keeping to a very tight time schedule.

John Richards

Discussion Weekend – Edinburgh 8th September 1990

The Discussion Weekend Show held at Queen Margaret College did not have as many entries as in previous years – whether this was due to the unusually hot and dry summer experienced in many parts of the country it is difficult to say. However, in Section I most classes were well filled and some interesting and lovely plants were on show, but it was in the Section II classes that entries were so lacking, which was unfortunate. We must hope that there will be more interest next year.

The plant awarded the George Forrest Medal was a beautiful pan of *Gentiana sino-ornata x farreri x ternifolia* raised by Margaret and Henry Taylor, Dundee. Although not quite so many Gentians seemed to be on display, Mrs V. Lee of Devon showed a lovely pan of *Gentiana ornata,* and it was a colourful class as always. The Mary Bowe Trophy for most points in Section I was won by Margaret and Ian Young of Aberdeen, who also gained the East Lothian Trophy (three plants of different genera) with *Zephyranthes grandiflora, Cyclamen hederifolium* and a *Colchicum* hybrid. The Conifer Classes were interesting with a lot of good entries and the J. L. Mowat Trophy for the best conifer in the show was also won by Margaret and Ian Young for *Pinus strobus* 'Reinshaus'.

Among the new, rare or difficult class, Mr and Mrs McGregor of Sheffield won first prize with a most unusual *Viola* sp. WR 8719 and it also was awarded a Certificate of Merit. *Viola fluemannii,* from Chile, raised from seed by the Youngs, also won a first, and Dr Don Stead of Glasgow showed *Trochocarpa thymaefolia* from Tasmania, a small shrub with dark green foliage and small crimson bell-shaped flowers on the terminal shoots, also raised from seed.

Silver-grey foliage plants had many entries, Margaret and Henry Taylor winning the two pan class with *Helichrysum heldreichii* and *Veronica*

bombycina. The Helichrysum was also awarded a Certificate of Merit, and *Artemisia nitida* shown by Dr J. Richards of Hexham was awarded a Preliminary Commendation by the Joint Rock Garden Plant Committee. Two rock plants in fruit won first prize for Mrs E. Armistead, Edinburgh with *Myrtus nummularia* and *Pernettya tasmanica* (white berried form) (Fig. 60 p222). The Pernettya was also given a Joint Rock Committee Award of Merit (subject to a clonal name being given). A superb plant of *Teucrium subspinosum* in full flower shown by Carole and Ian Bainbridge, Edinburgh, won a Certificate of Merit, a Joint Rock Committee Preliminary Commendation and a Cultural Commendation.

A pan of *Crocus banaticus,* an arresting dark purple form, exhibited by Mr T. G. Sprunt, our President, won a lot of admiration, while *Colchicum agrippinum* shown by Mr D. Mowle of Lancaster was magnificent and worthy of its first place.

Cyclamens are always popular, and Mrs C. McCutcheon from Northern Ireland won with a dainty little *Cyclamen intaminatum,* and there were many more winning entries in this section. The sedums, sempervivums and jovibarbas were plentiful and there were many good pans on show. Mrs B. Ivey, Kirkmichael, had two winning pans of *Sempervivum arachnoideum* and *Sempervivum* 'Climax'. Mr R. J. Lilley of Caithness brought *Eriogonum ovalifolium,* with woolly white foliage – a plant native to the Americas and a genus which is becoming popular. Mrs Doreen Fraser of Dundee won first prize with pans of *Silene acaulis,* the white form, and *Campanula zoysii,* which was in flower, a good duo indeed. The Logan Hume Trophy for a miniature garden was won by Dr J. Richards from Hexham, with an imaginative pan comprising only dwarf New Zealand alpines.

In Section II the East Lothian Cup for the best plant was awarded to Dr G. Black of Carlisle, with a splendid plant of *Ulmus parvifolia pygmaea,* a remarkable dwarf Elm. Mrs H. Hill from Oban had *Lewisia* 'Ashwood Yellow' which won first prize, and Mrs K. Rimmer of Ormskirk showed pans of *Rosularia platyphylla* and *Jovibarba hirta* which also won an award.

The Wellstanlaw Cup for a lovely floral arrangement was given to Margaret Young of Aberdeen and it was so nice to see many lovely entries in this class.

A special Class 100 – The Brookfield prize for one pan of *Crocus* grown from seed, was won by Dr. D. Stead, with a charming pan of *Crocus vallicola.*

Margaret and Henry Taylor showed some interesting photographs of Yugoslavia, and Mr Lawrence Greenwood had a number of his delicate and beautiful watercolours on show, which are always a delight.

The judges were Mrs S. Mowle and Messrs D. Lowe, D. Mowle, N. Huntley, A. Leven and I. Bainbridge.

Edith Armistead

Some Western American Alpines, A Personal Commentary: Part Four

MIKE & POLLY STONE

Scrophulariaceae

If the backbone of the European alpine garden is provided by *Primula, Gentiana, Saxifraga* and perhaps *Campanula,* then their equivalents from North America are *Phlox, Eriogonum* and above all *Penstemon.**

Farrer speaks of the cold awe which sweeps across the gardener as he attempts to get to grips with the genus *Primula.* I feel exactly the same when contemplating a genus of almost 300 species, the vast majority of which are completely unknown in Scottish gardens. It is not simply a question of numbers, the genus *Penstemon* ranges from tall red-flowered border plants, which need concern us no further, to tiny leaved blue-flowered congested mats, suitable for troughs. Then there are the inevitable problems of nomenclature. By their own admission, three expert members of the American Penstemon Society may well suggest three different names for a particular wild specimen. Classification within the genus is sometimes controversial; we shall use the names from the current Penstemon Society booklet.

Some of our American friends may well consider our personal selection of species somewhat idiosyncratic, in that it omits many of the dryland dwarfs. Panayoti and Gwen Kelaidis point out that there is more genetic diversity in the deserts; Gwen even claims that there is a Penstemon factory somewhere in Utah, turning out endemics. We would ask them to remember the Scottish climate, and that we write only of species we have actually tried to grow.

Section Penstemon

Writing in the 1986 Conference report, Geoffrey Charlesworth says of Penstemons that it is a pity most rock gardeners grow only the Dasanthera section (the *P. rupicola – P. davidsonii* group) and the eastern weeds. The latter are fortunately outwith our remit, and in any case we have only tried one, *Penstemon hirsutus* var *pygmaeus* with its bicoloured flowers of lilac and white.

Penstemon hirsutus and its allies are members of the Subsection Penstemon, which is followed in Section Penstemon by Subsection Proceri, a large polymorphic aggregate which I have heard Americans refer to as the "mint-heads". This alliance is quite different from the

*I find it hard to take Lewisias seriously as alpines, rather like *Sempervivum,* but this is controversial even within this household.

shrubby Dasantheras with which most British alpine gardeners are familiar. The Proceri are more herbaceous in nature, their rhizome-like caudices rooting down as they go, to form spreading mats. The flowers are quite small for a penstemon, 10-12mm long, but with the usual tube, plus two upper and three lower more or less spreading lobes. They are concentrated into one or more separate whorled clusters, known technically as verticillasters. Such an arrangement of tubed flowers is reminiscent of the candelabra primulas, but in detail the Proceri penstemons are quite different. The primulas have leafless scapes, and the flowers are carried individually on simple stems. Like most penstemons, the Procerus group have cauline leaves, and within the verticillasters the clusters of flowers are on branched stems with quite prominent bracts. In some of the larger forms this can give rise to a tall, thin, somewhat untidy inflorescence with an indistinct feel. The dwarfer, often more alpine types, may have only two or three whorls of flowers, or even just a single capitate cluster. The general effect is then less messy, and what is more, most are excellent clear shades of blue.

Turning to specifics, *Penstemon procerus* has been divided into no less than six subspecies. The type extends from Alaska, one of only three penstemons found there, down through the Rockies as far as Colorado, where we discovered a small, 15cm form with intense royal blue flowers. Absent from much of the Great Basin area, it reappears in the Cascade – Sierra region, where there are three alpine subspecies worth considering.

The smallest, forming a dense creeping mat of tiny, relatively broad leaves, is *P. procerus formosus*. This is actually quite a well-known plant in cultivation having been distributed as *P. "pulchellus"*. Unfortunately with us this hardly ever flowers, a great pity as the single verticillasters on stems of only 5cm are a piercing blue. Hoping to obtain a more free-flowering clone, we raised this ourselves from ARGS seed, originating in the Strawberry Mountains of eastern Oregon. At five years old, they have yet to flower!

Happily the next subspecies up in size, *P. procerus tolmei*, shows no such reticence. A group of plants from the 1986 SRGC Exchange, ex Cascades, regularly produce their 10cm spikes of rich blue flowers. Having a more northerly distribution in Washington and south British Columbia than the previous subspecies, *P. p. tolmei* is said to require cool growing conditions in the U.S.A., but revels in full sun up here.

Returning south again to Oregon, extending just into the north of California, and stepping up once more in size, we have *P. procerus brachyanthus*. The foliage mat is very similar to the previous subspecies, with ovate-lanceolate leaves generally 3-5cm long, but the flowers are a paler, more turquoise blue, and there are usually 2 or 3 verticillasters on a 15cm stem.

The last two are among the best garden plants we have yet found in the genus Penstemon, easy to raise and grow, free-flowering, and showing their appreciation of Scottish conditions by self-sowing mildly into the paths below their respective raised beds.

Apart from *Penstemon procerus* itself, the Subsection Proceri contains over a dozen other species. Of these *P. rydbergii* overlaps with *P. procerus* from the American Rockies westwards, filling in some of the gaps in the latter's distribution, for example in parts of Idaho. It is really quite similar, differing in that the flowers are slightly larger, around 15mm long, and are held more horizontally, whereas those of *P. procerus* decline. Regarded as potential garden plants, the taller (0.4–0.5m) meadow phases of *P. rydbergii* are slightly better than those of *P. procerus,* but neither is in the same class as some of the Habroanthus Section (see below). However, we did find what could well be an interesting dwarf form of *P. rydbergii* in the White Cloud Peaks of Idaho. Seedlings are very slow growing, which may be a good sign.

Penstemon confertus has been described as a "yellow procerus", but we have never seen it anything other than cream. A rather spindly plant up to 0.5m tall, it has the small flowers of *P. procerus.* Writing in the Journal for September 1980, we asked readers not to be biased against *Meconopsis villosa* because it is not blue. In the case of *P. confertus,* we feel that a jaundiced eye is perhaps appropriate.

Staying within Section Penstemon, we come to Subsection Humiles, the members of which show some considerable affinity with the foregoing. Generally the Humiles penstemons have larger individual flowers, in less dense clusters. This gives a lighter, more graceful feel to the inflorescence. *Penstemon humilis* itself is another widespread polymorphic species, extending from the Continental Divide to the Cascades and from the desert to above the timberline. We were directed to a particularly dwarf, 10cm, form with ash-grey leaves, and brilliant blue flowers, in the foothills of the Lost River Range in Idaho. Suprisingly for a dry-ground plant, seedlings have grown very well here.

In the genus Penstemon it is very difficult for the gardener to know where to draw the line between shrubs and herbaceous plants. Many of the latter are quite woody at the base, and when this is combined with an evergreen habit, as in many of the Humiles, distinctions are blurred. *Penstemon virens* is perhaps best described as a mat-forming sub-shrub, with bright green glossy, finely toothed leaves and elegant 20–30cm spikes of brightest blue. Found in the eastern foothills, from southern Wyoming southwards, the abundance of flower has led to the common name of Blue-mist penstemon. While much of its provenance is scarcely alpine, it does attain over 3000m in the Colorado Front Range, and we have

introduced it to our garden from near its upper limit. Here it was only some 15cm high, and the richly coloured flowers had a hint of violet.

Penstemon whippleanus is another member of the subsection which is more or less evergreen, losing only its largest and oldest leaves for the winter. The basal foliage consists of rosettes of prominently-petioled leaves with relatively broad blades, the cauline leaves sessile as usual. The corollas have a slightly hooded appearance, with a projecting lower lip, making the so-called "pouting penstemon" one of the easiest to recognise. Generally from 0.3-0.6m high, sometimes taller, two colour forms predominate, either some shade of dingy purple or a pale greeny-cream. Neither of the typical colour forms is really worth garden space; but on Pike's Peak there grows a short form with glossy chocolate-maroon flowers, quite the equal of any "brown" fritillaria. Away to the west, on the Tushar Range in Utah, we found an even smaller form with horizontal flowers of clear violet. The species as a whole is an alpine of the Rockies proper from Montana down to New Mexico and Arizona.

Penstemon ovatus is a better known non-alpine relative from west of the Cascades, whose basal rosettes do indeed have ovate leaves. A robust, often monocarpic, always short-lived plant, it produces slender 0.5-0.6m spires of many small flowers. Colour is variable but a good blue form is a valuable filler for a sunny border.

In the northern Rockies, centred on Waterton-Glacier National Park, there is *Penstemon albertinus,* (not to be confused with *P. abietinus,* one of the Caespitosi from Utah). Said to be a mat-former like *P. virens,* but with pale blue flowers, it is on our list for the future.

The final species of Section Penstemon to be considered is a singular one with a subsection all to itself: *Penstemon harbourii* (Fig.49, p201). When we read that this Colorado endemic was exclusively a high alpine, found only in talus on the higher peaks, it had to be given a high priority. Shifting scree is a demanding habitat which requires a specialised flora. *P. harbourii* has the same combination of deep-diving elastic rootstock and creeping stems peeping out between the stones one sees in such European alpines as *Thlaspi rotundifolium.* The shoots can obviously mature at differing rates, plants we found bore buds, flowers, and seed all at the same time. A rather fey little plant, with mat green leaves and small clusters of pale lilac-blue flowers, blending in very well with the forbidding slides of grey stones it regards as home.

We collected a few capsules, sowing half the seed fresh, and keeping the other in reserve for later in December. That sown germinated within a fortnight. As I write in November, our plants are beginning to die back. Is this normal, are the shoots deciduous, or is there something wrong? There are no previous records of *Penstemon harbourii* in cultivation which we can find to help us.

Section Ericopsis

The name of this section alludes to a supposed resemblance with *Erica,* but most of the members we have seen did not appear particularly heath-like to our eyes. However, they did have the same creeping mat-forming habit as, for example, do the American phyllodoces in the wild, and their leaves are much smaller than most, but not all, other penstemons. They spread by semi-woody stems, which either creep or flop and root down; height appears to vary according to habitat, from tight carpets on dry road verges in full light to around 15cm on banks in forest clearings. This reaction does not bode well for the retention of compact habit in Scotland.

Writing in the April 1956 Journal, the late Dr C. R. Worth, an authority on, and introducer, of many Rocky Mountain plants, considers the Ericopsis Section the greatest treasures of the genus. Apart from the fears expressed above, we do have other reservations. The small flowers are not always well displayed and their soft lavender blues do not contrast sufficiently with the mats of more or less greyish hairy foliage. Secondly, as Dr Worth points out, they are not alpines, but inhabit the sagebrush zone, rarely ascending above 3000m.

Finally there is the question of where to grow them. They are not really all that small, we saw many patches over 1m across, and their creeping, rooting habit does not make them particularly suitable for pot cultivation in the alpine house. American writers recommend troughs, but if their shoots hang over and cannot root down, will they die back? Perhaps they should be tried in drier climates than ours, planted out on winter-covered scree beds.

The centre of distribution of the section Ericopsis is Colorado, spilling over into neighbouring States. In Colorado itself the complex around *PP. caespitosus, crandellii* and *teucrioides* is particularly confusing. Some plants we found keyed out satisfactorily, others were difficult to determine. There are two members of the aggregate we would like to mention, as being both fairly distinctive, and, climbing near the tree-line, having some claim on being at least sub-alpine. They have two further points in common, their specific status is not generally accepted, and they are fairly narrow endemics.

Penstemon crandellii ssp *procumbens* (= *P. procumbens*) is found only in the northern part of the Gunnison Basin. It has glossy dark green leaves, oblanceolate to spathulate, reminiscent of some of the tiny cotoneasters, and quite bright blue flowers which stand out better than most. *Penstemon caespitosus* ssp *suffruticosus* (= *P. tusharensis*) is by contrast primarily a foliage plant, with larger, generally obovate leaves of a beautiful pinkish grey. It does tend to hide its flowers a little but this is not material. As the name suggests, this is a plant of the Tusher plateau in Utah, where its clumps

Fig. 47 *Penstemon hallii,* central Colorado (see p205) P. Stone

Fig. 48 *Penstemon leonardii,* north Utah (see p207) P. Stone

Fig. 49 *Penstemon harbourii*, central Colorado (see p198) P. Stone

Fig. 50 *Penstemon compactus*, north Utah (see p206) P. Stone

Fig. 51 *Chionophylla jamesii* (and *Physaria alpina*), Colorado (see p210) P. Stone

Fig. 52 *Besseya ritteriana,* Colorado (see p213) P. Stone

Fig. 53 *Primula* Tinney's hybrid (unnamed) (see pp215-218) D. Sampson

Fig. 54 *Primula* 'Tinney's Appleblossom' (see p217) F. Hunt

inhabit loose rocky places, including gravel road beds, up to 3300m. Some readers may be surprised that we have not written rave reviews for the real dwarfs of the section such as *PP. acaulis* and *laricifolius,* but having seen their native habitats we doubt they are plants for Scottish gardens.

Section Auritor (or Cristati)

This is another section highly spoken of by Dr Worth, but with the proviso that they are difficult to cultivate. Most species are tap-rooted, with obvious basal rosettes, the foliage varying from broad and green in, say, *P. albidus* of the prairies, to narrow and glaucous in some of the Great Basin species. They are said to be intolerant of excessive moisture and our experience certainly bears this out; of the four species we have tried only *P. eriantherus* lived long enough to produce its congested spike of pale purple flowers. It is not an alpine, but a plant of northern foothills and high plains, extending into Canada. It does, however, have a close relative in Alaska and the Yukon, *P. gormanii,* which may well be worth trying.

Section Habroanthus (or Glabri, The Glaber Group)

Since starting these notes on penstemon, I have been looking forward to reaching this section; if we had to choose one only, this would be it. Poll considered, on our first visit, that to see a large clump of *Penstemon hallii* in full flower was alone worth the price of the trip! What is more, in contrast with the previous two sections, some of the dwarf members of the Glaber Group are undoubtedly true alpines.

The Group as a whole varies greatly in height, those we have seen were all of tufted herbaceous habit, with divided rootstocks, and as their name suggests, the shining green leaves are usually hairless. The flowers are large and well displayed, the spikes less cluttered with leaves and bracts than many. They can provide that most sought after of garden hues, a really true blue, but to the unbiased some of the violets are equally superb. The lower corolla lips turn vertically downwards, exposing a white throat, and have a somewhat ridged appearance.

Penstemon glaber itself is not an alpine, but a Great Plains species, nor, despite the name, is *P. alpinus!* The latter was the first member of the Group we came across, in the Colorado Front Range. It is rather like one's first sight of *Gentiana acaulis* in the wild, to be driving along and suddenly there is a road-cut dotted with dozens of brilliant blue spikes! Growing on quite rapidly from seed, we feel *P. alpinus* would make an excellent filler for a sunny scree. Grown hard, it should stay around 20cm high. Like many penstemons it appears to dislike competition.

Everyone will, I feel sure, have their own ideas as to what constitutes a classic alpine plant. If we were asked for nominations from North

America, we should certainly include *Telesonix jamesii, Physaria alpina,* and *Penstemon hallii,* for not only are they outstandingly beautiful, there is nothing like them in the Old World.

Penstemon hallii (Fig. 47 p200) is a clump forming plant, with close packed tufts of rich green narrowly oblanceolate leaves, around 5cm long. Although sometimes growing in turf, the finest clumps, 0.3m across, were in relatively bare gravelly soils well above the timberline. The few-flowered inflorescence is usually about 15cm high, and somewhat capitate, the slightly flattened effect, enhanced by the oval-section corollas. In colour they are some shade of intense violet, the sort of colour found in certain gentians such as *G. veitchiorum* and some forms of *G. kochii.* Some populations were quite uniform, others varied from almost purple to indigo blue; often the corolla lobes a bluer shade than the outside of the tubes. So far *P. hallii* has proved easy to raise from seed, and our plants look large enough to flower next spring. But will they? Once again there is no recorded past experience to guide us.

As we stated in the Stone Column, *Penstemon uintahensis* was the only real disappointment of the 1990 trip, therefore we cannot describe it from life. A full scale drawing we have shows similar vegetative growth to *P. hallii,* but the 10cm flower spike carries the flowers above the horizontal, the corollas more funnel-shaped and round faced. It is said to be a good blue. If we have to spend a whole week attaining the ridge-crests of the Uinta range in the north-east Utah, where it is a tundra endemic, we are going to find *P. uintahensis* next time! It will make an excellent excuse for going back.

When deciding whether a plant is suitable for the alpine garden, I should never impose an arbitrary cut-off at, say, 30cm high. It is not a question of height, but one of style. I fail to understand any logic which makes *Meconopsis horridula* and the like acceptable, but ignores more graceful and non-monocarpic penstemons. *Penstemon strictus* is a good example, although 0.6m or slightly more tall, its inflorescence is wand-like and a better blue than many forms of *Meconopsis horridula* in cultivation. It would be very difficult to miss *P. strictus* in western Colorado, where it frequently colonises the disturbed soil along roadsides. It occasionally reaches 3300m.

Further east in Utah grows the even more spectacular Wasatch penstemon, *P. cyananthus,* with its more densely packed cylindrical spires of medium blue. Ranging from 0.4m in scree to over twice the height in moist meadows, a range of habitats suggests it should be a tractable species in gardens. By no means a dry ground plant, it is montane rather than alpine. *Penstemon cyaneus* is a similar species with darker blue flowers in a one-sided, or secund, inflorescence. It was the only worthwhile plant we saw within the confines of Yellowstone Park.

To end this section on a high note, we come to *Penstemon compactus* (Fig.50 p201). This last has been reduced to a variety of *P. cyananthus,* but as we saw it on limestone rocks and screes in Northern Utah, it appeared to be a genetically distinct entity. *P. cyananthus* was occasionally growing nearby, but it seemed to prefer better soil and less exposure. Having attained an altitude of around 2700m, we had left *P. cyananthus* behind; *P. compactus* continued on to the ridge top.

Never producing such large spreading clumps as *P. hallii, P. compactus* has a few rosette-like tufts of broader, lanceolate to ovate leaves. In the wild these were often folded in at the midrib, but here in the garden they tend to lie flat; responding to our increased humidity perhaps. The 15-20cm spikes carry two or three closely spaced verticillasters of true gentian blue flowers, varying a little in depth but not in purity. This species was without doubt one of the highlights of our 1990 travels.

It has been suggested that a Habroanthus Penstemon be made the National Flower of the United States. Few, if any, would be more appropriate, none more beautiful.

Sections Elmigera, Anularius (Coerulei), Peltanthera, and Fasciculus

These four sections are largely outwith our experience and so need not detain us long. In all probability they are only of mariginal interest to the alpine gardener.

Section Fasciculus is the best known for it contains the Mexican *P. hartwegii* and the like, parents of the tall border hybrids, and also the needle-leaved *P. pinifolius.* We do not find the peculiar orange-red shade of the latter's narrow-tubed flowers particularly pleasing. A yellow form has been trumpeted of late, but Sampson Clay noted that the species could have yellow flowers back in 1938! It is not an alpine, but from dry canyons on either side of the Mexican border.

If a red-flowered species is desired for the larger sunny scree, then few could be more brillant than "Eaton's Firecracker", *P. eatonii,* with its hanging, small-lipped tubes of shining scarlet. The species ascends to 3400m in Utah, where we saw it well up in the Aspen zone, reduced in height to only some 0.3-0.4m. It is in section Elmigera, along with *P. barbatus* of herbaceous borders.

Section Peltanthera is a dry-ground group from California and Nevada, whereas many of the Anularius are plants of the prairies. Over half a dozen of the latter are described in Claude Barr's "Jewels of the Plains". *P. nitidus* is below the magic 0.3m mark, with glaucous foliage and bright, light blue flowers. It has a wide range from Nebraska to Canada and should be worth a trial.

Section Saccanthera

As readers may well have guessed from some of their names, the various sections within the genus Penstemon are delineated by technical details of the anthers. This groups together plants which to the gardener appear quite dissimilar; the two species of this section we have grown being a case in point.

Section Saccanthera is allocated *P. heterophyllus,* well established as a bedding plant in, for example, California, and so too tainted for the alpine garden. *P. laetus* is a more appropriate version of this, with semi-woody upright stems and a lax open raceme-like inflorescence. The corollas are lavender-pink on the outside, the lobes brilliant blue. In our form, the foliage, all cauline, is a delicate grey-blue, but this is apparently not always so. The species climbs to 2500m in the Sierra.

Apart from its anthers, *Penstemon leonardii* does have features in common with the above, being another woody based herbaceous perennial. Its habit is quite different, with more clustered basal growths and decumbent flower-stems, sometimes turning upwards at the ends. The flowers are smaller than *P. laetus,* of a deep violet-blue, sometimes with paler tubes, but are born in denser clusters. Quite widespread in Utah, we saw *P. leonardii* in both roadside granite gravels and limestone crevices, at altitudes from 2500 to 3000m (Fig.48 p200). On one memorable day, *P. leonardii* with its spraying heads of rich violet complemented rather than rivalled the more chunky upright blues of *P. compactus.* Both have germinated for us and grown on well, so we look forward to their association being recreated in the garden.

Section Dasanthera

At the end of a long difficult day negotiating the mist-shrouded plateau above Glen Feshie in the Cairngorms, I well remember breaking down through the cloud and seeing the cream dot of Grendel's roof in the glen below. Five Munros in the bag and only a straightforward stroll down the ridge ahead. It is with the same sense of relief that we arrive at last on the familiar territory of the Dasanthera Section. There can be few rock gardens without one or more of these woolly-anthered shrubby penstemons, so valuable for their freely produced summer flowers.

This is the only section which we knew reasonably well before our first visit to the American West. As they are quite widely grown, this group has an extensive literature, but unfortunately there are quite a number of errors in many of the accounts. An excellent survey of these, and some other penstemons is to be found in the 1976 Conference Report, Alpines of the Americas, written by Roy Davidson; and a detailed key is available from the Penstemon Society. The Group is virtually a completely interfertile

aggregate; this readiness to hybridise is very probably the source of much of the nomenclatural confusion. Many of the plants in British gardens do not represent any of the wild taxa.

A particularly persistent error is the case of *P. "roezlii"* (hort). The rightful owner of this name is a blue flowered subspecies of *P. laetus* (see above, Section Saccanthera) not even remotely like the British garden hybrid. This mistake was pointed out as long ago as 1936 (!) in the AGS Bulletin vol. IV page 325. In all seriousness I suggest this cultivar be given the name *Penstemon* "ancient error". The same plant, or something very similar, was described as *P. newberryi* forma *humilior* in the Botanical Magazine. Actually I feel it is closer to *P. rupicola,* although its cherry-red flowers are much darker than any we saw on this species in the wild.

Penstemon rupicola, with its rounded thick leathery glaucous leaves, looks rather succulent-like. Appearances can be deceptive, we have found that it resents a hot dry position in the garden, Clematis conditions are better: cool roots, head in the sun. Plants we saw wild in the Oregon Cascades were a rich pink. Its distribution extends somewhat north and south into neighbouring States.

Further south in California it is replaced by *Penstemon newberryi,* a larger shrub, 20cm+ rather than 10cm, and with much redder flowers. The foliage in the wild is dark green rather than grey, but this distinction is blurred if they are cultivated in too much shade. In the Trinity Alps of northern California is found an intermediate population which has been named *P. newberryi* ssp *berryi.* It has the foliage and pubescent corolla of *P. newberryi* but the flower colour is pink. We grew it well for several years, but our plants were lost in the 1989 drought. This subspecies obviously takes after *P. rupicola* in its dislike of dry positions; *P. newberryi* itself is much tougher.

Both the above species grow in scree and rock over quite a wide altitude band above and below timberline, but *P. davidsonii* is much more exclusively alpine. This ranges from British Columbia down to the Sierra Nevada, the further south, the higher one has to climb in order to find it. *P. davidsonii* ssp *davidsonii* occupies the part of the range from around Mt. Rainier southwards. It has entire, pure mat *green* leaves and *lilac-blue* flowers. In quite a few places, such as the rim of Crater Lake, either *P. rupicola,* or *P. newberryi* climb up to meet *P. davidsonii,* and hybrids are common, in various shades of purple. One of these may have been the source of Farrer's "ferocious aniline red-mauve". This error has been repeated in both Royton Heath's "Collector's Alpines" and in the "Collins' Guide to Alpines".

P. davidsonii ssp *menziesii,* as we saw it in the Olympics, differed in having glossy green leaves, slightly serrate towards the top, and darker violet-blue flowers. It occurs mainly to the north of *P. d. davidsonii.*

Away in the south east of Oregon, above the Lake Malheur Wildlife Refuge, lies the long isolated ridge of Steen's Mountain, home to *P. davidsonii* ssp *praeteritus*. Raised from Ramona Osburn's seed, our plants have made congested twiggy bushes, about 10cm high, with tiny browny-grey leaves. They have yet to flower. Perhaps they need more light, but we have scorched other *P. davidsonii* subspecies, and are a little wary. One student of the genus considers that this taxon should be transferred to the wider-ranging *P. fruticosus* complex.

Penstemon fruticosus is a polymorphic dry ground species found all the way from the eastern side of the Cascades across to Montana. It is absent from Colorado and points south in the Rockies, where its place is taken by the Caespitosi. Most commonly seen in British gardens is the northern *P. f.* ssp. *scouleri* from around the Canadian border, with narrow, slightly grey green leaves, serrate at the top. The usual flower colour is some shade of lavender-pink, but a good white is available. These forms are a little too large for today's gardens, making sprawling bushes up to 40cm high, and rather more across. The discerning will seek out *P. fruticosus* ssp *serratus*, a dwarfer, more alpine plant from the mountains around Hell's Canyon on the Oregon-Idaho Line. A selection with particularly toothed leaves, called "Holly", has been made in the U.S. Our seedlings of this vary, but some are really compact, with red-edged leaves.

On the western, more humid side of the Cascades, *P. cardwellii* replaces *P. fruticosus*, but the two overlap in places. Generally the former has broader, elliptic leaves, more or less serrate, and brighter, more violet, flowers. In theory it should do better in Scotland, but our seedlings are too young to tell. It is obviously going to be quite a strong grower. A natural hybrid between *P. cardwellii* and *P. davidsonii*, *P.* x "Brietenbush Blue", is said to be the 'bluest' of all the Dasanthera.

All the above are shrubby evergreens, but there are a few members of this section with other growth habits. In the Canadian Rockies, and also coming south into Idaho and Montana, the alpine screes are the haunt of *P. ellipticus*. Our plants from Alberta seed have finely toothed green leaves and large pale lavender flowers. Growing to around 10-15cm high, they flower profusely from mid-summer onwards, after the other Dasanthera. They are more or less deciduous, depending on the severity of the winter.

Penstemon montanus from Idaho has taken the deciduous habit a stage further, losing not only the leaves, but also the shoots each winter, dying back to a woody rootstock. As we saw it in the White-Clouds this was a plant of shifting screes, with spraying annual shoots of shining grey leaves and large lilac flowers of excellent texture. Said to be very difficult to grow, our own seed germinated well, the seedlings dying down on schedule, only to reappear this spring. We are keeping our fingers crossed. The seed

was collected from the highest plants we found, somewhat over 3000m, and well above timberline.

Only one further point remains to be considered, the contentious question of Penstemon die-back. Overwatering has been suggested as contributory, but we are not so sure. All our plants are exposed to rainfall during the summer months, and we can discern no correlation between rainfall and die-back on our shrubby penstemons. I feel there is a pathogen involved; we have seen something similar on the semi-woody *Veronica allionii* of the French Alps, but this can grow through an attack. The problem is not of commercial significance, so it is unlikely to be researched.

Chionophylla

After our long journey through the complexities of Penstemon, it is relaxing to discover that *Chionophylla* has only two perfectly distinct species. Chionophyllas differ botanically from Penstemon in that the fifth sterile staminode is reduced to a vestigial filament; but, more importantly to the gardener, they are small plants of fully herbaceous habit.

Chionophylla jamesii is a high-altitude tundra alpine from Colorado (Fig.51 p202), just sneaking over the border into Wyoming in the Medicine Bow Range. It is usually found in thin turf, or moist gravel, around melting snow banks, where its little secund raceme of greeny-cream flowers is easily overlooked. Unlike penstemons, the flowers are always borne singly in the leaf axils. The chocolate edging to the lips is normal, not frost damage. This species has grown and flowered well for us; in the way of the world it is the less attractive of the two.

Away to the west in central Idaho and south west Montana grows the slightly taller and more aristocratic *Chionophylla tweedii*. This is also, as its name suggests, a lover of melting snow, but is not so exclusively a tundra alpine. We found it in peaty soil alongside *Cassiope mertensiana;* but unfortunately it is not nearly so tractable in the garden. Plants grew well, but the mild wet winter of 89/90 killed all but one. The rootstock runs, producing little tufts of oblanceolate leaves, around 5cm long, above which rise the delicate racemes to 15-20cm. I cannot do better than quote Roy Davidson: "It is just as watery a blue as can be imagined, each strange little flower looking as if an elf had slept on it and left it flat."

Mimulus and Castilleja

Neither of us really like Mimulus, so I shall rapidly pass them by. The purple-pink flowered *Mimulus lewisii* is the least garish, but this is quite a large plant, seen always at streamsides.

It is not possible to travel the American West in due season, and miss the Castillejas or Indian Paintbrushes. At first sight, always arresting, their

flaming colours demand a photograph. We do feel however that they are all flamboyance, with no real depth or subtlety to their attraction. There is something about the jagged, splintered look of the inflorescence which I find displeasing, most of the colour being provided by leafy bracts. Perhaps it is the same touch of the exotic, or should I say synthetic, which I dislike about *Cypripedium*.

Appearances apart, Castillejas are tailor-made for the cultivator who relishes a challenge: how to cope with their semi-parasitic habits. There is actually quite a body of advice available but no one method has brought any certainty of success. We have found that the seed germinates readily and the seedlings can be pricked out successfully when small. The trouble starts at the growing on stage, when presumably, in the wild, they would be attaching themselves to a suitable host. Some American growers recommend frequent high-nitrogen feeds to keep them going. It might be better to avoid this altogether, either by pricking out into a pot together with a host, or straight into the scree. We tried the latter, and two out of five seedlings have established into a mat of *Raoulia*. Slugs are a problem. If plenty of seed is available, direct sowing, nature's way, could be as fruitful as anything.

For those wishing to experiment, *CC. miniata* (red shades) and *occidentalis* (sulphur) were the most alpine species we saw, but neither is a really dwarf plant. Success has been achieved in gardens from Ulster to Styria, via the Col du Lautaret, where we saw some vigorous clumps. Me? I would rather have a single *Ranunculus macauleyi* or *Penstemon compactus* in flower than a whole patch of Castilleja; mais chacun à son goût!

Veronica and Synthyris (including Besseya)

Without doubt Scrophulariaceae shows a greater diversity of floral structure than most. It is difficult for the non-botanist to see the common factor between, say, Castilleja, Erinus, Penstemon, Veronica, and Verbascum. One of the family traits is a progressive reduction in the number of floral parts; Veronica has four corolla lobes, the upper one somewhat larger than the others, and two stamens.

Of the two species of Veronica we noted in the American mountains, the widespread *V. wormskjoldii* is very close to the European *V. alpina,* which is, to say the least, not one of the more attractive of our alpine species. We thought *V. cusickii* rather better with larger, darker flowers. Easily distinguished by its much longer style, this is more restricted in distribution, from the northern Rockies of Montana, south through the Cascades to the Sierra, where it is rare.

Just as Dodecatheon compensates to some extent for the dearth of Primula in the New World, so does Synthyris for Veronica. As well as

Veronica, Synthyris is also closely related to Wulfenia, Lagotis and Picrorhiza. We have only a single species each for the last two genera: *Picrorhiza scrophulariiflora,* a medicinal herb from Nepal; and *Lagotis glauca* from Northern Japan, a largish plant, 30cm high, with thick somewhat glaucous leaves, and dumpy spikes of pale blue.

Like many genera, Synthyris has received the attentions of "lumpers and splitters". Pennell divided Synthyris into 14 species, with a further 9 allocated to the very closely related genus Besseya, in his classic 1933 paper. More recent workers have lumped a number of Pennell's taxa, some even submerging Besseya altogether into Synthyris. *Synthyris stellata* is one species whose status is open to argument; most modern opinion inclining to the view that it is merely the Columbia River Gorge variety of *S. missurica.* A fine display of *S. stellata* is to be seen in early spring on the raised scree bed in front of the Edinburgh Botanic Gardens' Alpine House; the upright racemes of violet-blue are carried well above the almost circular, cordate leaves. *S. missurica* from Idaho, and adjacent mountain ranges to the west, such as the Wallowas, is really very similar. Its leaf margins are slightly less toothed and the bracts below the inflorescence less obvious, but the differences are of degree not kind. We were given a seedling which has turned out to be a fine white form. Although a montane species, often found on damp shady rocks, *S. missurica,* like *S. stellata,* does very well on open scree bed in Scotland.

Synthyris reniformis has been confused with both the above in the past but is actually quite distinct from either. This is really an inferior plant which will appeal only to the collector, with much smaller corolla lobes and thinner, obviously hairy, leaves. It is native to the damp coniferous woodland along the West Coast from San Francisco northwards to the Columbia, but is not averse to part sun here, providing the soil does not dry out too much.

The true alpine scree species which we grow are now all reduced to varieties of *Synthyris pinnatifida, S. pinnatifida* var *laciniata* produces its 10-15cm racemes of intense violet blue, at the edges of melting snow in Central Utah, where it is endemic. As the varietal name suggests, the long-petiolate leaves, slightly grey-green, are deeply slashed at the edges but retain their basic ovate outline. Further north in Utah, and in south west Wyoming, this is replaced by *S. pinnatifida* var *pinnatifida* whose leaves are at least pinnatifid i.e. cut right to the centre, or more often, pinnately compound. We could not discern any distinction between these two varieties in flower. Why two dissimilar leaf shapes should have evolved for the same ecological niche in neighbouring areas is a mystery to us.

In the mountains of central Idaho is found the next variation on the theme; S. *pinnatifida* var *canescens,* which has the same compound dissected foliage

of *S. p.* var *pinnatifida,* but the leaves are noticeably white-woolly when young. We have some young plants from Sonia Collins' seed coming on. Their leaves are said to become glabrous with age, at which time there may be little difference between *S. p.* vars *pinnatifida* and *canescens.* It will be interesting to compare mature plants of these two, especially as there is some evidence for a transitional population in the Bitterroot Range.

The fourth and final variety is geographically completely isolated from all the foregoing, away on the crests of the Olympic Peninsula. Here we have *S. pinnatifida* var *lanuginosa* which is on the opposite side of var *canescens* from var *pinnatifida.* The same finely dissected foliage is now covered with dense white wool making this a beautiful plant for the alpine house, frame, or winter covered scree bed. Unaccountably it appears to be out of fashion at present, as evidenced by the judging at our shows. Bette Ivey's fine specimen, with many compact racemes of bright blue buds over marvellous white ferny leaves, was once passed over in the "silver" class for one of those mouldy half-grapefruits. In the wild the foliage remains a good white, at least until August, when we saw plants in seed. Back here in Scotland we have found that the oldest leaves can turn somewhat grey-green, before dying down eventually for the winter. Beautiful as it is, *S. p.* var *lanuginosa* should not be allowed to overshadow its less hairy relatives. The bright shining green filigree of *S.p.* var *pinnatifida* as it comes into growth is just as attractive in its own way.

There are, in addition, a number of isolated relict species, such as *S. canbyi* in Montana, but we doubt they have anything distinct to offer the alpine garden. On the other hand, *Synthyris borealis,* an arctic-alpine from south central Alaska makes a really dwarf clump, with relatively broad, congested, racemes of true blue. Certain floral features are transitional to the next.

Besseya alpina is one of those standard alpines of Colorado, easily found once the tundra zone is attained, and continuing right up to the tops of the highest summits. As the snow melts, little tufts of ovate to elliptic, somewhat scalloped, leaves appear, to be rapidly followed by 10cm racemes of synthyris-type flowers, showing a fuzz of stamens. In colour they often veer towards the red side of purple, and the young foliage can also be suffused with red or purple. This genuine high alpine is actually quite easy to grow in Scotland, but very difficult to flower.

Of the other Besseya species, most are apetalous and thus not of any great interest, but there is one which should not be overlooked. *Besseya ritteriana,* an endemic of the San Juan Range in south west Colorado, is a rather larger version of the above, but with creamy-lemon flowers. The best plants we saw were in moist turf at around 3500m where their dense 30cm spikes of blossom were really quite imposing (Fig.52 p202). 1990 had

been a dry spring and those we found the next day at a lower altitude were looking decidedly unhappy. A plant for the proverbial "moist but well-drained soil" in Scotland, methinks.

"Distinct" is a much over-used word in alpine circles, how three cushion androsaces can be described as "distinct" I'll never know; yet totally distinctive is really the best description of *Besseya ritteriana*. There should be room in every connoisseur's garden for the interestingly different as well as the outstandingly beautiful.

to be concluded . . . . . .

One Man–One Wood

DAVID SAMPSON

Gerry Mundey 1926-1989.

In paying tribute to Gerry Mundey I realise that many members will not be familiar with his name or his woodland home, Tinney's Firs, but like so many before him there are specific plants that will always have an association with an individual, whether it is an individual genus or borne on a person's reputation as a plantsman able to cultivate a broad range of plants. For Gerry it will surely be his work with the petiolarid primulas, in particular to the hybrids he raised and named which were prefixed with "Tinney's". However, this was just one facet of his horticultural talent, and not the only hybridising programme he was engaged in. Orchids, especially the dactylorhizas and pleiones, and Gesneriaceae were two other subjects undergoing similar treatment. These needed laboratory conditions and a scientific approach, both of which were facilities he had. The study of the hardy Gesneriaceae must have made him one of the few authorities on the family and he must surely be credited with securing *X Jankaeamonda vandedemii* in cultivation, a plant he offered in his plant list of 1989.

Gerry was also an accomplished naturalist and when he acquired Tinney's Firs he was able to satisfy both passions. He purchased Tinney's in the late seventies, a small woodland so he told me of 25ha on the edge of the New Forest, and although rather neglected it was just the property he had in mind. As one might imagine many diverse habitats could be found within the wood, creating a range of communities within a very short distance. Such were the extremes that the dry sandy banks, home for the badgers, and large wet areas of sphagnum moss bog were only a matter of a few yards apart. Largely these would be left undisturbed but on occasions some intervention was necessary, such as when a colony of purple emperor butterfly caterpillars were found feeding on a scruffy stand of willows. The following winter was spent improving the trees and enlarging the plantation hoping to establish a permanent breeding site. Very little of the wood was used for the establishment of plants, perhaps 1ha, most of which was confined within a perimeter of deer proof fencing. The largest area consisted of hybrid and species rhododendrons, magnolias and stuartias, many grown from cuttings or seed. The young plants, having spent several years in nursery beds, would eventually be transplanted into their final positions, and despite the relatively young age

that some of these plants were, a bulldozer was employed to shift them, testifying to his skill and ability as a propagator and cultivator, not to mention the skill in controlling several tonnes of machinery.

Using timber which it was necessary to fell, two raised beds were constructed that were to be home to the many hundreds of smaller plants, such as shortias, epigaeas, erythroniums, and of course primulas. To list all that were present would sound like a nursery catalogue, some catalogue! but to mention just a few and their size will I trust indicate what can be done, especially in the south, with an understanding of a plant's requirements: *Epigaea gaultherioides* at 1.5m diameter, *Cassiope wardii* at 1.2m and *Shortia soldanelloides magna* at 1m. Now you may think that Gerry had the ideal situations for growing such plants, but there is one thing that can be learnt from conditions experienced during the last two years. That is just how tolerant plants are of seemingly hostile seasons. Despite the long hot dry summer of '89 such plants survived, even the shortias seeding about in what appeared to be talcum powder.

The Tinney's primulas

To begin the story of the hybridising programme which led to the Tinney's strain of primulas we must go back to the early 1970s when Gerry and I first met. At the time Gerry was residing temporarily in a caravan and because of the limited space associated with the site it wasn't possible to construct permanent structures such as frames and greenhouses. Home for his plants was anywhere within the boundaries of the caravan, including the underneath. Don't we all grow *P. aureata* under caravans? He did! He had collected primulas, mainly from commerical sources, some years before and these formed the basis for his early work which resulted in many fine selections. Hundreds of seedlings were raised, selected and discarded in the pursuit of creating new varieties or improving on existing species such as *P. aureata* and *P. bhutanica,* the latter being riddled with virus. Later, with the introduction of fresh blood and the importance of authenticated material from wild stock, the breeding programme increased and several new seedlings appeared which were given the Tinney's prefix.

In order for a seedling to carry the "Tinney's" symbol several criteria had to be maintained; nothing short of perfection would be tolerated. First and foremost the quality of the flower, whether the petals were rounded or toothed, to give the flower more substance, colour and the overall shape and size of the truss. Secondly the foliage, particularly where *P. aureata* was used to give the leaves a covering of farina, although this wasn't always the case. With the exception of one, all the crosses were carried out under controlled conditions in a greenhouse which meant the plants had to be grown in pots purely as a means of convenience. The early crosses were quite straightforward, being between two species such as *P. bhutanica* and *P. boothii,*

giving 'Tinney's Icebreaker'. Others which appeared later were so complex that abbreviations had to be used for labelling as in 'Tinney's Poona', raised by crossing a white *P. edgeworthii* with *'P.* Tinney's Blueblood' – a hybrid between two forms of *P. edgeworthii,* one being Ghose's, and a *P. stolonifera* and *P. aureata* hybrid. Try printing that on a standard 15cm label! The label reads "edge alba x bl-bld x stol x aur."

The one exception to this controlled hybridising was a seedling that appeared amongst some pots growing outside in the frames. He was foxed by this, having no idea whatsoever as to its parentage so he named it 'Tinney's Bees Knees!' In his notes Gerry comments "I like this one very much and congratulate the bee or whatever on its good taste."

Many first class seedlings were named between 1981-83 representing the first to be offered on a commercial basis, and it is extremely difficult to make a choice between the varieties, as they all merit cultivation. However, for the purposes of this article, I will describe a selection, giving the date of introduction and parentage, which will highlight the range of species used. Details used are from Gerry's own notes.

'Tinney's Icebreaker' (1981) *P. boothii x bhutanica.*
"Flowered outdoors in the last normal winter from January to May, with apparently frost proof blooms, in long succession and thus outstanding for garden display. Rich green leaves without farina. Flowers larger and a little paler than bhutanica, with a yellow eye, broad white zone and wide blue edge."

'Tinney's Tigger' (1982) *P. boothii x aureata.*
"Large trusses of toothed-edge flowers are of the palest cream with a sharply contrasting orange eye."

'Tinney's Dairymaid', sister seedling to 'Tinney's Tigger'.
"Slightly reddish-backed narrow leaves with a mere sprinkling of farina. The large domed trusses of circular flowers are of pale creamy yellow, with a rich orange eye and regularly dentate outer petal edges. This plant flowers after the first flush of the earliest varieties."

Also using the same parentage as the previous two, particular mention must be given to:

'Tinney's Appleblossom' (Fig. 54, p203).
"Long strap-shaped finely toothed leaves with very many flowered domed central masses of large white flowers with a yellow eye. Finely frilled petals have fresh pink edges."

An outstanding variety which received the recognition of an Award of Merit, and for the distinction of being considered the best cultivated hybrid in 1989, the Reginald Cory Cup.

'Tinney's Gamble' (date not known) *P. bhutanica x aureata.*
"Were it to be discovered in the wild this would be acclaimed the find of the century. Rosettes of long toothed leaves, densely covered with thick farina, are highly attractive through the winter. They give rise to trusses of flowers of primrose yellow underlaid with blue, which comes through to give a blue shaded outer edge to the petals."

Of the later varieties, raised between 1985 and 1988, several stand out for their unique colour and size of the individual flower.

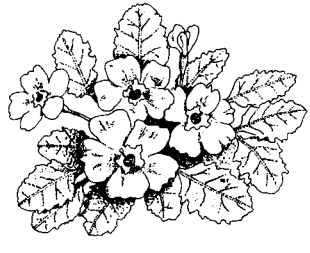
'Tinney's Poona'. *P. edgeworthii alba* x 'Blueblood' x *stolonifera* x *aureata.*
"A shiny leaved selection with a trace of farina at the base of the leaves. Flowers in large central clusters. 37mm dia. overlapping petals with a broad outer zone of rich lime violet, an inner zone of pale cream and a deep orange eye."

'Tinney's Boggle', *P. edgeworthii tricolor* x 'Tinney's Roundel' (which is *P. irregularis* E.N.380 x Blueblood – two forms of *P. edgeworthii).*
"Dark olive green leaves with slightly reddish backs with a little farina when young. Large flowers 37-38mm dia. A light cobalt violet, with overlapping petals which are deeply cut at the tips, as in *P. bhutanica.* A large orange eye inside a narrow white zone."

'Tinney's Innocence', *P. boothii* x *aureata* Langtang form.
"This cross has given me hell! About 125 seedlings flowered with hardly a dud amongst them. This is a very farinose seedling: the leaves are in fact grey and contrast very well with the fresh rosy lilac flowers which are deeply cut at the tips. A broad white zone and sharply contrasting orange eye give a wonderful look of freshness, hence the name."

These later additions were never released, as far as I know, but along with many others the early varieties were. Gerry hoped that these would be perpetuated by growers and distributed amongst enthusiasts so that he could concentrate on developing other creations.

What a great pity his life was shortened: he lived for his plants and his woodland, and for those of us who knew him, Gerry will always be synonymous with Tinney's. He will, I am certain, be recognised for the significant contribution he made to horticulture. Gerry died shortly before Christmas last year and was, as he wished, buried in his beloved woodland, Tinney's Firs.



The Sunny Climes of Pontresina

JOEL B. SMITH

During an expedition to Switzerland this summer, assisted by an SRGC Travel award, I passed nearly two weeks in the delightful alpine village of Pontresina.

Pontresina is a sprawling but attractive village perched at 1800m, a few miles further up the Val Bernina than the exclusive resort of St Moritz, in the Upper Engadine. Mountains surround Pontresina and close to the Italian border culminate in the Piz Bernina (4049m) and the perilous snow-bound Piz Palu (3905m). The area is particularly well-served by Rhaetian Railways and a regular service operates between Pontresina and various stations along the Bernina valley. Good botanical hikes can be made from a number of these small stations along the well-signposted routes. The Swiss timings on these signs may be accurate for the well-conditioned hiker, but I found a ten minute walk could easily transform into an hour's botanising.

I stayed in the Youth Hostel in Pontresina: a relatively new building with superb accommodation, close access to the station for all those early starts, and good food, all at a very reasonable price. Contrary to popular belief, this hostel was open to guests of all ages and in June was still quite empty.

The weather in the Engadine is reputedly the driest in Switzerland, and on the whole most days were sunny. However, when it did rain, there was the small alpine museum to view and the church of Sta Maria decorated with ancient murals. Further afield, there were the expensive shops in St Moritz or the National Park Wildlife Centre in Zernez, with its excellent displays about flora and fauna of the region.

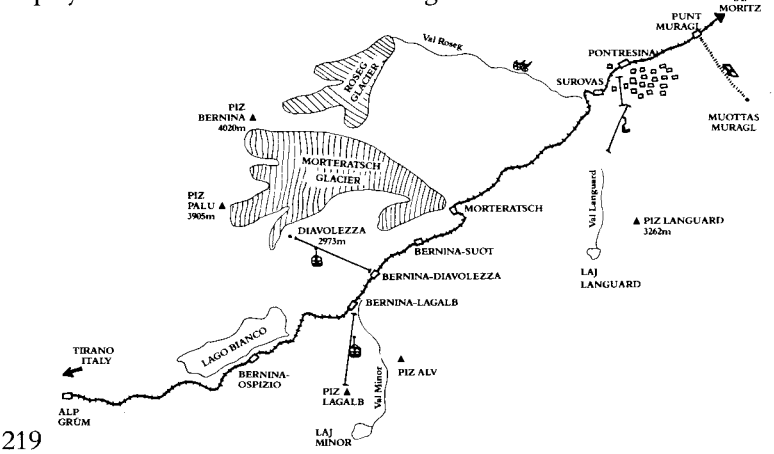


Fig. 55 *Primula latifolia,* Pontresina, Switzerland (see p224) J. Smith

Fig. 56 *Androsace alpina,* Pontresina, Switzerland (see p227) J. Smith

Fig. 57 *Fritillaria whitallii* (see p228) R. Bezzant

Fig. 58 *Iris* 'Katherine Hodgkin' (see p228) R. Bezzant

Fig. 59 *Crocus karduchorum* (see p229) R. Bezzant

Fig. 60 *Pernettya tasmanica* 'Moonstone' (see p230) B. Armistead

Fig. 61 *Leucogenes leontopodium* (see p233) I. & M. Young

Fig. 62 *Rhododendron keleticum* 'Rock's form' and *Celmisia bellidioides* (see p234) I. & M. Young

Muottas Muragl

Arriving in Pontresina to clear skies, I left my luggage at the station and boarded the first train to the small station of Punt Muragl. From here a steep funicular railway climbs rapidly to Muottas Muragl at 2456m. The wide path to the Val Languard served as an excellent introductory walk with fine views over snow-capped peaks.

In the turf were the yellow stars of *Gagea lutea,* mingling with the white sheets of *Ranunculus pyrenaeus.* The star attraction was the purple drifts of *Viola calcarata,* blending with the rich yellow of *Geum montanum.* Further along the path besides a snow bridge were the tiny fringed bells of *Soldanella pusilla,* nestling in the moist turf. The dwarf snowbell is particularly common in the Eastern Alps near snow meltwater. Also growing in the turf were the rich rose coloured *Primula integrifolia* and higher up on the more exposed slopes *Primula latifolia* was just beginning to break the brown turf. Also seen were some particularly dwarf forms of *Pulsatilla alpina apiifolia,* the nanism produced by the high levels of ultra-violet radiation.

Bernina Pass and Alp Grüm

A regular train service loops its way up the valley from Pontresina to Bernina-Ospizio, past waterfalls and views of glaciers. Set in the barren landscape of the Bernina Pass is the small station of Bernina-Ospizio, beside a white glacial lake, still partially frozen in June.

As I set out along a path beside the Lago Bianco, I saw a splash of electric blue. It proved to be a large clump of *Gentiana brachyphylla* in the turf, with the characteristically non-winged calyces. The grassy slopes above the station were sheeted in pink from *Primula integrifolia.* Near the receding snow patches were the larger bells of *Soldanella alpina,* seeming to prefer slightly drier turf than *S. pusilla.* Below some rocky outcrops were a few belated blooms of the white crocus – *Crocus albiflorus,* where obviously a snow patch had only quite recently melted. Above in the grass was a very pale cream form of *Pulsatilla alpina apiifolia,* which proved particularly photogenic. Whereas the entire-leaved primrose preferred an open site, *Primula hirsuta* seemed to drip from the shaded granite rocks with its bright pink flowers. Nearby on a large rock were both species and a possible contender for *P. x berninae,* the natural hybrid reported in this area.

At the far end of the lake, on the path to the Alp Grüm, were the best specimens of *Primula latifolia* seen (Fig. 55, p220). Both the mauve and the bright pink form seemed to revel in the rocky scree bank beneath the railway track; they illustrated the typical loose umbel of flowers and the upright yellowy-green foliage. As I rounded a corner, looking over a boulder strewn river bed, I saw the rich glowing yellow of *Geum reptans*

with its beautiful silky red runners. These were by far the best found in the area and were a pleasure to see in an otherwise barren rocky stretch. The path climbed and now *Primula integrifolia* covered the shale ledges and in the grass were some fine bluish-purple *Gentiana kochiana*. The drier south-facing Alp Grüm yielded less of interest, but the view over the Sassalmason glacier was worth seeing and there is a small alpine garden there.

The Primulas were the main objective on this walk and my visit in the third week of June seemed to be the ideal timing for these plants, so often missed in full glory later in the season.

Val Roseg

I made the mistake of walking from Pontresina, rather than taking a pony carriage ride as far as the Hotel Roseg. Although this wooded valley yields much in the way of attractive scenery, there was very little flora present in the meadows as yet. In the pine woods were *Viola biflora, Gentiana kochiana* and a single specimen of *Pulmonaria angustifolia,* whilst in the meadows were *Gentiana verna, Myosotis alpestris* and the sweetly-scented plants of *Daphne striata,* perched on small rocks. Much of the basic alpine flora was present, but in the gravels beneath the Roseg glacier there were no exciting higher alpines, but admittedly I never reached the terminal moraine wall itself, as the weather necessitated a retreat.

Val Languard

A two-stage chair lift quickly lifts one from the village to the Val Languard lift station at 2262m. In the valley, snow was thawing rapidly from the previous night's thunderstorm and sparkled in the grass. In the moist turf beside the many streams, the tiny bird's-eye primrose *Primula farinosa* was common; while in the drier turf were gentians and the mountain pansies. *Antennaria dioica* and the alpine sainfoin, *Hedysarum hedysaroides* thrived in the valley, alongside *Androsace obtusifolia* and *Linaria alpina* in loose scree. The path wound its way toward the head of the valley, following the river banks. The ground became more barren with only soldanellas and *Viola calcarata* occurring. As the track climbed the rocky slopes towards the Laj Languard, the turf seemed to sparkle with the azure blue of *Gentiana brachyphylla* carpeting this natural rock-garden. In the scree, purple studded mats of *Saxifraga oppositifolia* tumbled over boulders in the wide meltwater streams from the snow fields. Beside the frozen sheet of the lake itself, on an exposed bank, were the nodding heads of *Pulsatilla vernalis*; the vibrant golden boss of stamens matched in perfection by the violet streaked petal backs. A tiny whitlow grass, *Draba ladina,* native in the Engadine, was just beginning to flower on the same bank.

Snow prevented further advance towards the Pische Lake, where the

King of the Alps is reputed to grow in a fine natural rock garden. On my return, I was lucky enough to see a marmot at close quarters as the animal posed for a photograph, without uttering the characteristic shrill warning cry and disappearing into a burrow.

The path can be followed to the delightful restaurant perched on a narrow ridge at the Chna-Paradis, well worth the diversion. The descent to Pontresina was steep, but yielded a few more specimens of *Primula hirsuta* and *P. latifolia,* as well as the beautiful and now rare *Clematis alpina* tumbling over boulders in the pine forest.

Diavolezza

A rocky station at 2973m can be reached by cable car and was worth the journey for the views of the entire Bernina range and Morteratsch Glacier alone. However, in the most unlikely location, on this exposed rocky outcrop, close to the trampling tourists were some magnificent ranunculus specimens. Growing in the lee of boulders the species, probably *R. glacialis,* formed a lush mat of foliage and heads of gleaming white. Another interesting discovery was the tiny rosettes of *Draba fladnizensis,* with its white cruciform flowers, wedged into rock crevices. Also present were, surprisingly, *Primula hirsuta* and *P. latifolia* at this high altitude, *Saxifraga aspera, Papaver rhaeticum* and the odd specimen of *Gentiana bavarica imbricata* (the high alpine form of the Bavarian gentian).

Val Minor

The Val Minor is one of the prize attractions of the area for the botanist. The variety of plants reflected the unusual geology of the area: on one side is the Piz Alv, a calcareous craggy peak, while on the opposite side of the valley is the acidic mass of the Piz Lagalb with its sheer cliffs and shale screes.

The Val Minor was reached by taking the train as far as the Bernina-Lagalb station up the Val Bernina. In the turf above the station were some fine mats of *Gentiana verna.* On the dry limestone slopes of the Piz Alv were many calcicole plants including: *Helianthemum alpestre, Hippocrepis comosa, Potentilla thuringiaca, Anthyllis vulneraria, Globularia cordifolia* and *Phyteuma sieberi.* In the limestone screes above, it was a joy to see the compact and congested saxifrage, *S. squarrosa.* A few plants of *Leontopodium alpinum* promised a fine show later in the season. Nearby *Astragalus australis,* the Southern Milk-Vetch gave a fine show, with its milky-white pea flowers tipped with purple.

When I climbed the opposite peak, the Piz Lagalb, I found a stark contrast in the flora. The acidic meadow was full of yellow pasque flowers, *Geum montanum, Leucanthemum alpinum, Loiseleuria procumbens* and

Gentiana kochiana. Higher up *Primula integrifolia, Saxifraga oppositifolia* and *Silene acaulis* covered the rocks and damp turf. The white flowering butterwort, *Pinguicula alpina* was also commonplace in the sodden grass.

I followed the path along the Val Minor towards the Laj Minor. In the screes *Gentiana brachyphylla* replaced *G. verna*. Searching for *Androsace alpina* was a difficult task, but I finally found a specimen, yet disappointingly still tight in bud. Nearby I found my goal, the twinkling pink flowers nestling in fine shale (Fig. 56, p220). Most of the hummocks were smothered in particularly bright pink flowers with darker eyes, but a few were a very pale pink. Nearby, besides a stream, some fine stands of *Geum reptans* arched over the large boulders. Above the first lake, the steep grassy slopes were sheeted by yellow pulsatillas and the leaves of *Papaver rhaeticum* promising some fine flowers a month later. The head of the valley, past the perilous semi-frozen Laj Minor, was very barren, yielding only *Primula hirsuta* and *Saxifraga oppositifolia* and no specimens of the *Eritrichium nanum* mentioned in an article over thirty years ago.

In the centre of the stream on the return were some large gravel deposits. Besides seeing *Androsace alpina* almost growing in water, there were the magnificent tufts of *Ranunculus alpestris* with its shiny leaves and pure white cup-shaped blooms. The precarious jumps I made to reach the centre of the stream were easily rewarded by these aristocratic plants. On my return I explored the screes below the Piz Lagalb and discovered the pink tinged flowers of *Ranunculus glacialis* close to the woolly tufts of *Achillea nana* and the purple studded glaucous tufts of *Linaria alpina*. All seemed to revel in the long ridges of fine grey shale.

The mountains and valleys around Pontresina are botanically rich in alpines and only the Engadine has a travel network to rival that of the Bernese Oberland in the relative ease of access to these plants. There are many other places to visit in the area, including the Val da Fain, Pische Lake, Piz Nair and Morteratsch Glacier, all abundant in alpine flowers. The timing of a visit is critical and will vary from year to year, so although the last two weeks of June were excellent for primulas and early flowering alpines, many of the higher alpines were only just free of snow in 1990. I hope that I have conveyed a taste of what this area can offer.

Gentiana brachyphylla
Joel Smith

Plant Portraits

Fritillaria whittallii

Lyn Bezzant

Fritillaria whittallii (Fig. 57, p221) is named in honour of Edward Whittall, a British businessman and plant collector whose special interest was bulbs. In the wild this plant is found only in the Antalya area of south west Turkey. It grows in rocky limestone places in light coniferous woodland and in open stony meadows at about 1900m.

The narrowly linear alternate leaves are grey-green. The flowers, one or two to a stem, are bell shaped, bright green in colour with brown chequering. They appear in April, and will last in good condition for about two weeks in cool conditions. The seed heads are decorative. In cultivation here in mid-Scotland, *Fritillaria whittallii* reaches a height of about 25cm. The bulbs do well grown plunged in an open sided bulb frame in full sun. The compost consists of 1 part loam, 1 peat, 1 grit and ¼ crushed limestone. Repotting is done every year in late summer, the bulbs placed fairly low down in a long clay pot. Compost is kept just moist during winter, and watering increased during the growing period, a weak liquid feed (Tomorite) being given once a week. During dormancy the plunge material is kept just moist and lights are replaced on the frame to encourage ripening of bulbs. These increase steadily, with flowering size bulbs and small offsets to harvest. Seed should be sown as soon as ripe or available, and kept as cool as possible.

Flowering size bulbs can be obtained from Cambridge Bulbs. Bulbils have been distributed at our Discussion Weekend Bulb Exchange and seeds have been on offer from the Seed Exchange.

Iris 'Katharine Hodgkin'

Lyn Bezzant

Iris 'Katharine Hodgkin' (F.C.C. 1973) is now generally believed to be a cross between *Iris histrioides* 'Major' and *I. winogradowii,* both of the Reticulata Group. It was E.B. Anderson who produced this hybrid. It first flowered about 1960. It was named after the wife of Eliot Hodgkin, a well known plantsman and a friend of E.B.A.

The colour of this iris is a little variable. Here, grown outdoors in our cool, damp northern climate, the flowers are pale blue, the falls veined with darker blue and having a central yellow blotch which is spotted dark blue

(Fig. 58 p221). Grown under glass the flowers are reported to have much more yellow in their colouring. The grey-green narrow leaves lengthen considerably after flowering time.

This is an excellent bulb for the open garden. Planted in a light gritty loam with good drainage and full sun, it increases and forms tidy little clumps to flower bravely in late winter. The picture was taken on 9th January. A little rose fertiliser is sprinkled around in autumn and occasionally a weak liquid feed is given during the growing season. I top dress over and around the bulbs with very coarse gravel to help save the flowers from mud splash and to 'mark the spot' when the bulbs are dormant. Also, mice and squirrels are less likely to discover the buried treasure under a thick stony mulch.

The clumps can be divided occasionally in late summer. The small bulbils can be grown on in pans to flowering size for a season or two before being replanted in the garden. *Iris* 'Katharine Hodgkin' can be obtained from specialist bulb nurseries, and bulbils have been available at our autumn Bulb Exchange.

Crocus karduchorum

Lyn Bezzant

Crocus karduchorum flowers from September to October in gritty, non-limy soil among oaks and scrub at 1850-2000m in the Bitlis Province of south east Turkey. The flowers are faintly perfumed, pale lilac, delicately veined a deeper shade. The throat is white. The style is much divided into thread-like spreading branches (Fig. 59 p222). The leaves appear in spring, well after flowering.

Here it is grown in the protection of the alpine house. Clay pots are used and the bulbs are planted in a compost consisting of equal parts loam, grit and peat. Repotting is done in July. The bulbs are kept fairly moist during the growing period and have a reasonably dry resting period in summer. The usual routine feeding for bulbs is given.

Crocus kotschyanus var. *leucopharynx* is often sold masquerading as *C. karduchorum*. The true plant is rare in cultivation at the moment. It makes a charming addition to a collection of autumn flowering bulbs and is well worth looking out for. It has been on offer by Cambridge Bulbs and by Paul Christian.

Pernettya tasmanica 'Moonstone'

Edith Armistead

Pernettya tasmanica is a low growing prostrate species of dwarf shrublet native to Tasmania. A member of the Ericaceae, it produces small green leaves and forms into a quite dense plant. In spring it produces tiny, rather

insignificant white bell-shaped flowers, which can be easily overlooked among the green leaves – but it is for its fruits, which follow later in the year, that it is best known. In the white berried form, the berries are quite spectacular, being cream to white in colour. The shape of the fruit is also unusual in being indented with a collar of five picot-edged growths round the back of each berry (Fig. 60 p222).

The plant that received an Award of Merit in 1990 originated from Jack Drake's Nursery in 1987 – their records trace it back to AGS seed acquired in 1956. As it grew well, it has been potted-on several times, always in an ericaceous mixture with extra grit added. It is a plant that likes a cool position with not too much sun, must never dry out, and has been kept out in the open most of the year. I have, during very frosty periods, put it into the cold frame for some protection.

I have actually 'grown on' small plants from some of the berries, the seed of which germinated well – but I am not sure if they will be like the parent plant as they are not big enough to flower and subsequently fruit, but it should be interesting to see the results.

I believe that in the wild *Pernettya tasmanica* likes to go deep into rock crevices, which may be why I have heard that it fruits better if slightly pot bound. As I have been unable to trace its home territory which might give it a local name, I propose to call this cultivar 'Moonstone'.

Obituary

Will Ingwersen, V.M.H.
1905 – 1990

Will Ingwersen, founder of the well-known alpine nursery, passed away on 14th June after a long period of poor health. His nursery, and the many fine plants now happily growing in thousands of gardens throughout the country, will continue to be a tribute to his skill and his love of alpines.

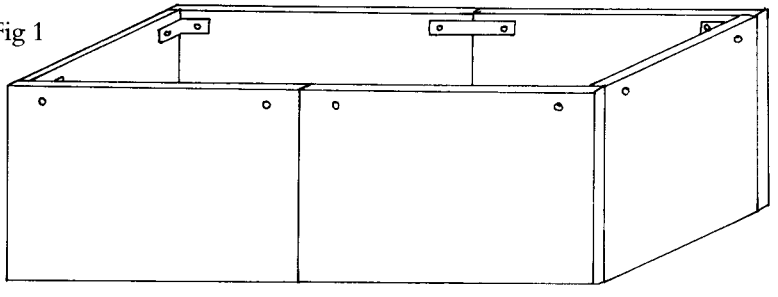
Raised Beds

IAN AND MARGARET YOUNG

Some years ago we were fortunate to be able to increase the size of our garden. In planning our garden extension, we were keen to include some raised beds. These were to be quite close to the house, where we were laying a terrace of 90 x 60cm concrete paving slabs. As we had no source of natural stone suitable, we decided to build the beds from the same slabs. The slabs were to be set on their long edge to form a bed two slabs long, by one wide, giving a bed 180 x 90cm, x 60cm high.

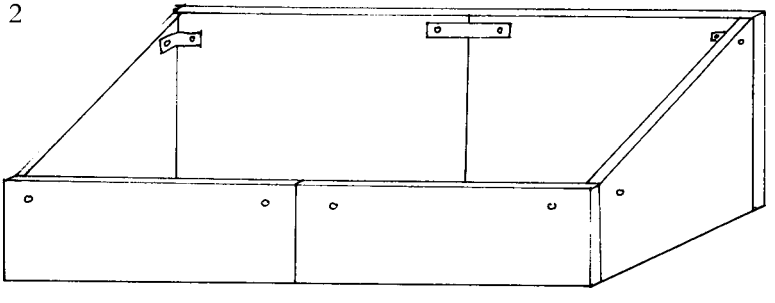
Holes were drilled in the slabs, near the corners, using a masonry drill, allowing a steel angle bracket to be bolted on. The two slabs forming the long edge were also drilled and a straight strap of steel was bolted on the inside to secure them. (Fig. 1). The bottom edge of the bed was held in place by being set into the surrounding slabs of the terrace. If such a bed were to be free-standing, the slabs would be drilled and bracketed at the foot as well, for stability.

Fig 1



We have also used this system to build a plunge-frame by using two 90 x 60cm slabs for the back; two 90 x 30cm slabs for the front; and cutting two 90 x 60cm slabs diagonally, with a stone cutting saw, to form the sides. (Fig. 2). (If you prefer, the local builders' merchant who supplies the slabs should be able to arrange the cutting for you.)

Fig. 2



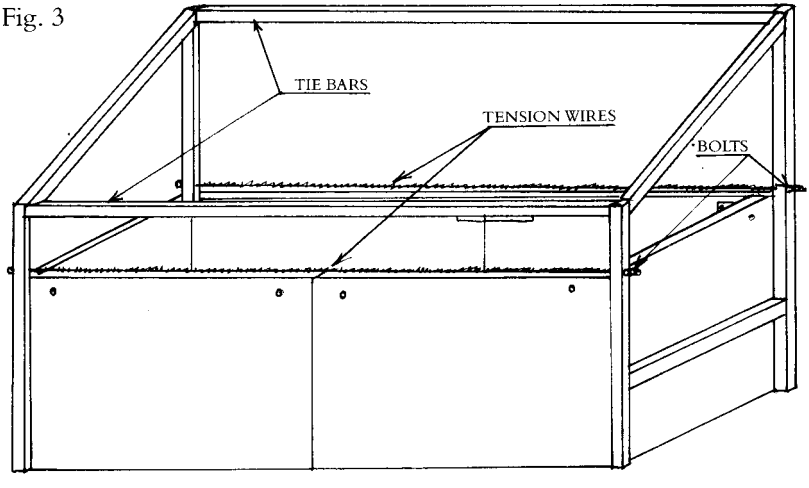
Our raised beds and frames were 180 x 90cm but they could be built to any multiple of the slabs.

With about 20cm of sand in the base of the frame and dutch-light type frames made to cover the top, we have found this frame successful for growing a large range of plants.

Now back to those raised beds. As our garden is free-draining, no special care had to be taken to ensure that the beds did not become baths! Nonetheless, we took the opportunity to dispose of any rubble and broken pots in the bottom of the beds. Next in were old stacked turves and the contents of our compost heaps, to provide a rich moisture retentive layer of humus. The final 30cm were a mix of equal parts of peat; shredded, composted turves; and ¼" granite chips. After planting up the beds, a 6-9cm dressing of the granite chips was applied. (Now our own shredded and composted hedge trimmings and prunings are replacing most of the peat content in our more recent projects.)

We have devised a system to cover the raised beds which is very quick and easy to erect. (Fig. 3). We use this method to cover two of our four slab beds from late September to April. The system consists of two sloping wooden gable frames that fit the short ends of the bed; these are 120cm high at the back and 90cm at the front. Wooden tie bars hold these together at the top, while tension wires, positioned just over 60cm from the ground and tightened by a bolt, anchor the structure firmly to the bed. Corrugated plastic or glass fibre sheeting, secured to a wooden frame, fits into the top between the gable end where it is held in place by steel pins through the tie bars.

Fig. 3



These covers stop the worst of the winter rain from saturating the resting plants, but wind-blown rain and snow can cover the beds and provide sufficient winter moisture. The covers also allow the early flowering plants, some of which can be in flower in late January, some protection from the worst of the frosts.

Some settlement occurs in the beds but this allows us to top-dress them annually, usually in late autumn, with more granite chips. These are worked well in around the plants. Some plants have to be eased up to avoid burying them with the gravel mulch: others, such as *Raoulia australis,* like to be completely buried for the winter, coming through with renewed vigour in the spring. We have noticed this plant steadily moving across one of the covered beds in a north westerly direction. Is it looking for fresh soil? We dug out and replaced the soil in its original site to see if we can encourage it to reverse its migration before it overtakes a *Saxifraga oppositifolia.* The saxifraga also likes a gravel mulch and does well in the raised bed where we can enjoy its very early flowers at a more convenient height. We find this plant does much better if it is dead-headed to prevent seeding.

Androsaces also enjoy life in the raised beds, especially the *A. sarmentosa* forms which are rapidly taking over half a bed. They have such good foliage, with a magnificent display of flowers in the spring, then in autumn *Cyclamen hederifolium* comes through their rosettes, so we are content to let them spread, rescuing any plants they are overgrowing. Another plant that has spread is *Leucogenes leontopodium.* Fully 1m across, it has swamped many a less vigorous plant in its path, but when it rewards us with over 500 long-lasting flowers in early summer (Fig. 61, p223) and such magnificent silver foliage all year, who could resist it? We thought we might plant *Leucogenes grandiceps* in the other half of the bed to make a North Island and South Island, New Zealand bed!

Anchusa caespitosa grows strongly, obviously appreciating the deep root run. To those who insist it should be grown "in the character of its native habitat" this plant, forming a dome some 20cm high by about 60cm across, with its spiky foliage liberally sprinkled with the brilliant blue flowers, must seem exceedingly vulgar! It seems that we are quite unable to grow it "in character", but we're really enjoying our fat monstrosity!

In early July we take cuttings from this *Anchusa caespitosa,* reducing it to about half its size, though about six weeks later, you would not know any difference. These cuttings, grown on and repotted regularly, make good show plants the following spring.

A *Lewisia tweedyi* seedling, planted in the corner of a bed in July, flowered from the following February right through to August. It was a very good large flowered form, and seed and cuttings were taken from it before we decided that we must try to move it because its large leaves were damaging

some nearby cushion plants. Alas, it did not survive the move, but its offspring thrive. It was this experience that persuaded us to take a more relaxed attitude to the question of large specimen plants taking more than their fair share of space. We now try to rescue the smaller plants in good time, or failing that, we just think ourselves fortunate to have so many happy plants!

Dionysia aretioides has survived in one of the covered beds for two years now, flowering in spring, though it does not do as well as those in the alpine house. The dwarf aquilegias, *A. saximontana* and *A. bertolonii,* do well and it is a pleasure to be able to study them at close quarters. We have just raised enough seedlings of *A. jonesii* to try a few out in one of these beds and hope for flowers.

Many of the dwarf narcissus, such as *N. bulbocodioides, N. romieuxii* and *N. scaberulus,* are happy in the beds, where the covers allow their early flowers to be enjoyed without wintry weather spoiling them as soon as they open.

Rhodohypoxis baurii thrives in these beds, increasing well and flowering cheerily from May until the first frosts in late September or early October. Recent plantings of townsendias, eriogonums, physarias and other American species have been very encouraging. We are tempted to make a new bed especially for the Rocky Mountain alpines.

Azorella trifurcata, planted close to the side, hugs the edge of the slab and is now making its way down the outside. *Hypericum reptans* trails over another edge, providing flowers from July until winter sets in. *Rhododendron keleticum* 'Rock's Form' covers itself with its large, rich mauve-pink, flat-faced flowers and is happily intertwining with *Celmisia bellidioides* whose white daisy flowers contrast well (Fig. 62, p223). Both obviously enjoy the conditions provided by life in an uncovered raised bed.

The beds receive an autumn feed of bone meal and a spring feed of Vitax Q4. This, with the top dressing of chips, is all the maintenance required, apart from the occasional removal of plants in imminent danger of swamping! We have found very little difficulty with weeds, which are in any case very easily removed. Basically, the only watering we have to do is to ensure that new plantings do not dry out before their roots become established. We enthusiastically recommend this method of building raised beds, but should you wish to try them for yourself, we urge you not to make our mistake: be sure to make any paths between the beds wide enough to allow the passage of a loaded wheel-barrow, or, like us, you will have to make some rather convoluted journeys to bypass them!

Letters to the Editors

Dear Editors,

Himalayan Plant Association

I thought that your readers might be interested to hear about the recently formed Himalayan Plant Association. The Association at present is very much in its embryonic stage, but aims to be an informal Association, with a periodic newsletter and other events, bringing together and spreading information on Himalayan Flora in the following areas and ways:

CULTIVATION
- articles on cultivation experiences, propagation etc
- plant profiles
- articles on Botanic and other gardens which grow Himalayan plants and can be visited
- articles on specialist nurseries and seed suppliers
- plant/seed exchanges

CONSERVATION
- highlighting Himalayan conservation issues
- outlining and sponsoring conservation schemes

BOTANY
- giving botanists access to Himalayan plants in cultivation
- background on botanical work taking place in relation to the Himalayan Flora

PLANT HUNTING
- articles on the adventures of plant hunters past and present.

In the short term, emphasis is on the Western Himalaya, but in time full coverage of the Himalaya should be reached, along with bordering regions. The Secretary of the Association is Chris Chadwell, a modern-day plant hunter who has sustained his seed collecting in the Western Himalaya for the past decade, and current members are largely shareholders from his various expeditions. We are keen, however, to expand membership to a wider base and there is much in the Flora of the Himalaya to interest the Alpine Plant enthusiast. If your members would like details of how to join the Himalayan Plant Association then they should please write to me at the address below.

Yours sincerely,
David White, Newsletter Editor,
Himalayan Plant Association,
Leaside, Valley Road,
Hughenden Valley, High Wycombe,
Bucks HP14 4LG.

Dear Editors,

While bowing to the Stone Column in all matters horticultural, I have plucked up my courage to make a couple of comments on their reference to paraquat, SRGC Journal, Vol XXII p 3.

I don't think paraquat even in a diluted form is quite the gardener's friend that might be inferred; it would be unnecessary to distress SRGC members with the quite horrific symptoms of paraquat poisoning, but they are very nasty indeed. It is also lethal. One paper in the Lancet which must be of interest to those who might think of taking a casual approach to paraquat, showed that of 218 cases the authors had collected, where individuals had variously ingested Gramoxone, Dextrone or lower strength formulations of paraquat in Weedol or Pathclear, 110 died. ICI themselves take anything but a casual approach – in their Professional Products Manual for 1988/89, the instructions for Dextrone X (which contains 18% paraquat), as well as having the usual very formidable list of precautions, include a special 'guide to the doctor' about stomach washouts and so on. ICI also publish a list of day and after-hours telephone numbers of experts to contact if their chemicals are ingested; one number is for paraquat accidents only.

Things aren't always 'banned just because they work', either. DDT and thalidomide are two examples of very different products which 'worked' but they were each banned for very good and specific reasons indeed, as all your readers know.

Yours sincerely,
David Simpson,
2 Dalrymple Crescent,
Edinburgh EH9 2NU.

Gentiana 'Edinburgh' Edith Clark

Book Reviews

Travels in China – A Plantsman's Paradise
by Roy Lancaster
Published by The Antique Collectors' Club
516 pages, numerous colour and black and white photographs and maps
Price £29.95

There can be no alpine gardener in Britain who does not have Chinese plants well distributed throughout his or her garden, from autumn gentians and androsaces to irises and pleiones. These smaller treasures are often shaded and sheltered by their larger compatriots such as rhododendrons and viburnums, through to magnolias, paper-bark maples and the beautiful *Betula jacquemontii*. Indeed, China is the backbone of many a Scottish garden, due to the courage and skill of a host of plant collectors such as Forrest and Farrer, Wilson and Kingdon-Ward.

After an intermission of many years, this exploration resumed in the 1970s as the Chinese border re-opened, and there are the few lucky ones among us who get the opportunity to carry on a great tradition. One of the luckiest must be Roy Lancaster, who has visited China on six trips, tours and expeditions, and this book is the 'magnum opus' of his experiences, taking in places such as Yunnan and Sichuan, as well as lesser known provinces like Hubei, home of *Sorbus hupehensis*, and the Changbai Shan, close to the North Korean border.

The skill of Lancaster, in this enormous book, is to marry the excitement of exploration of these superb places and their floras with an encyclopaedic knowledge of the same plants in British gardens, and to acknowledge the skills of the original collectors. He catalogues the dozens of collectors in an early chapter, and then recounts his adventures following in their footsteps. His major advantage, for the reader, is that he had a colour camera, and the book is literally crammed with mouth-watering pictures, and I mean crammed; hundreds and hundreds of them, on almost every other of the 500 plus pages! He also uses archive material from the 'original expeditions' where he can. There can be no better photographic collection of the Chinese hill flora. The only drawback is when the pictures precede the text by some few pages, and you have to hunt back through the book to refresh your memory when reading the account of them.

This is a magnificent book for armchair explorers and plant enthusiasts, and I for one emerged from it much the more knowledgeable. It might seem expensive at £30, but don't be deceived; given its size and the number of pictures it is tremendous value for money and will keep you engrossed for many, many hours.

I.P.B.

The Royal Botanic Garden Edinburgh
Book of The Scottish Garden
by Brinsley Burbridge, text by Fay Young
Published by Moubray House
167 pages, numerous colour plates
Price £19.95

'The Scottish Garden' contains a large selection of colour photographs from a photographic record of Scottish gardens taken by Dr Brinsley Burbridge for the Royal Botanic Garden Edinburgh. These take the reader into most of the famous Scottish gardens and also into some lesser known ones.

The photographs are grouped into four sections, each with a useful three page introduction. The first looks at gardens in the landscape and illustrates in particular how gardens have been integrated into, or developed as, a feature of the landscape. The second section considers in detail wild, woodland and water gardens which are so popular in Scotland.

The third section has the title House and Garden; it looks at the more formal aspects of Scottish Gardens and in particular the region near the house. Doocots, conservatories and other buildings are considered and it examines the use of ornaments such as statues, sundials, walls and gates. The final section has the title 'The Plantsman's Garden' although most of the photographs are of plants rather than gardens. The highlighting of plants in this section helps to balance the book as the photographs in the earlier sections are mainly of gardens.

At the end of the book there is a useful list of the gardens which gives addresses and dates of opening. This also acts as an index for the photographs. A map shows the position of each garden. Plants are not indexed. The captions name the main plants in many of the photographs.

Most of the books reviewed in **The Rock Garden** can be classified as scientific or technical. The Scottish Garden is an exception: it concentrates on the art of gardening and its main attributes are high quality photographs and a very artistic presentation. In a book of photographs it is very easy to lose the interest of the reader, but this has been skilfully avoided by using a wide variation in the size and layout of the photographs on each page. This is visually stimulating, but it carries a penalty as some of the reproductions are small and detail is lost. When a number of photographs are presented on a page, linking features produce a unifying effect which is most satisfying. These vary from page to page to maintain interest. The photographs are excellent and the reproductions are good.

This is a book which will be valued as a photographic record of gardens in Scotland. But it offers more than this and anyone wishing to take successful photographs of gardens and to assemble them into an album could learn much from it.

R.M.E.

Alpine Wildflowers of the Rocky Mountains
by Joseph F. Duft and Robert K. Moseley
Published by Mountain Press Montana USA
UK Distributor: Gazelle Ltd,
Falcon House, Queen Square,
Lancaster LA1 1RN.
200 pages, 300 colour plates
Price £7.75

This is a splendid little soft cover guide to the plants which grow above the treeline in the Rocky Mountains. The area covered by the guide is wide, covering the main chain from the Canadian Rockies down through Montana, Wyoming and Colorado to New Mexico and west to north-east Nevada and north Arizona. Anyone travelling to the mountainous parts of these states will find this guide useful.

Several features contribute to the book's success. The first thing to strike you is the bright magenta pink cover, which makes it easy to find in your rucksack or if you leave it lying around. It is the only book I have in this colour.

The front cover has a splendid plate of *Telesonix jamesii* and the rear a smaller but well reproduced photo of *Aquilegia jonesii*. These two are the best photographic reproductions in the book. Unfortunately between James and Jones the quality of the photographs is not nearly so good. Many of the plants have obviously been well photographed but the printing has caused a drastic loss in quality, especially in those of white and pale pink flowers.

The photographs are grouped according to flower colour to help with identification. Within each colour group flowers of similar shape are kept together. It is good to see foliage as well as flowers included. Many also show some background so you have some idea of where the plants grow. All the plates have a scale indicating the relative size of the plants.

Cross-referencing between plates and text (and vice-versa) is easy and 300 of the 400 species described are illustrated. In the text the plants are arranged alphabetically by their Latin family, generic and species name. This is cunningly hidden by the prominence and stress given to "Common names". I suppose that because the book is written for the general public, the authors feel these common names are more important than the specific names. Synonyms are included. The entries in the text are clearly printed, concise and informative. We are given a brief but sound description of each species, its height, form and habitat. These habitat descriptions are good and in some cases quite specific e.g. alpine screes, limestone crevices, pinewoods. Where there would be confusion between species, distinguishing features are stressed. Where it is important flowering time is given.

This is the first all metric American guide I have had. Unfortunately the authors feel compelled to refer to "dm" (decimetres) as well as "cm" and "m". This confuses the basically simple metric system. For most, the derivation of the specific name is given. This is very informative and is a good feature of many American books.

In the Introduction, mention is made of "the International Rock Garden Society", an organisation unknown to me but about which I would like to know more. I think they must mean The American Rock Garden Society.

While the book is intended as a guide, I feel it will be of most use to our members as an illustrated seedlist handbook. I have counted the species in the current year's listing of the "Rocky Mountain Rare Plants" seedlist: of these, 66 were illustrated in this guide. Most of the drabas in Colorado Flora (Western Slope) are included. Although I criticised their general quality, many of the photographs will make you want to grow the plants of the Rockies. I liked those of *Senecio soldanella, Douglasia montana, Ledum glandulosum* and *Trollius laxus*. Priced at £7.75, this little book is excellent value and I recommend it to everyone interested in the alpine wild flowers of the Rocky Mountains.

A.M.L.

Primulas – The Complete Guide
by Mary Robinson
Published by The Crowood Press
272 pages, 16 colour plates, 30 line drawings
Price £15.95

This book falls far short of being the "complete guide to primulas" but it would serve to introduce either the beginner or the general gardener to the Genus Primula. The notes on cultivation are sound and will help people new to these plants to be able to grow them successfully.

It is unfortunate that, in the introduction, the author further adds to many people's confusion between the Primulaceae Family and the Primula Genus by writing of the "Primulaceae genus".

There are extensive lists of the many forms and hybrids of the Auriculastrum and Vernales sections, as well as chapters on the *Primula allionii* and *P. marginata* cultivars and hybrids, including a brief description of each.

The chapters on the Asiastic Primulas are inconsistent and confusing in parts. This is not the book the specialist grower has been waiting for to revise the Asiatics.

This book may be of some use to people whose main interest in Primulas lies with the Auricula and Polyanthus forms but as far as species are concerned one will be better served by the existing titles available.

J.I.Y.

The Alpine House – Its Plants and Purposes
Rock Gardener's Library Series
by Robert Rolfe
Published by Christopher Helm
176 pages, 24 colour plates, 17 line drawings
Price £13.95

It wasn't a case of would a book dealing with alpine house culture surface from the plethora of offerings already before the alpine gardener, but rather when, and, sure enough, we now have one in the recently launched "The Alpine House – Its Plants and Purposes", compiled by that esteemed grower and writer, Robert Rolfe.

It comes to us as the most recent addition to the series known as the Rock Gardener's Library (Christopher Helm) and, in general, provides a comprehensive and sound account of the requirements of growing plants under glass, leading the reader through the initial stages of construction, management of the plants, pests and diseases, propagation, and so on.

Plants exampled, other than those listed at a later stage of reading, tend to be members of a rather sophisticated league, calling for all the expertise of the more knowledgeable grower (who in any case may have no need to acquire this latest literary offering), while such plants would be extremely difficult to come by and no less difficult to grow successfully.

Along with a "frightening" section dealing with the many pests and diseases, with which many of us are already all too familiar , I wonder if this, combined with the observation of the previous paragraph, may tend to discourage rather than encourage the less-than-enthusiastic newcomer.

However, this latest treatise, being adequately supported by colour illustrations and informative figures, will more than likely earn its place among the many already straining bookshelves, whilst possibly being considered an authoritative guide, if leaning somewhat towards excessive counsel of perfection. F.F.H.

The Rock Garden and its Plants
by G. S. Thomas
Published by J. M. Dent
266 pages, 38 colour plates, 212 black and white
Price £18.00

The author has a fine reputation, established by his classic books on roses, and maintained by 'Perennial Garden Plants', which we use as our standard reference for the herbaceous border. Perhaps as a result we expected too much. With this current volume I am reminded of the aged Picasso daubing a quick sketch on tile after tile, to be fired and sold.

The author's perspective is quite different from that of the majority of current alpine gardeners; he sees the rock garden as an art form, the rocks and their placement all important, plants are merely for furnishing.

Following an introduction there are chapters on the geology, history,

construction and planting of his chosen style of gardening. The treatments vary from the adequate to the decidedly sketchy. In the Introduction (p.9) the statement that alpines in the wild "do not grow in heavy clay or fat greasy loams" is simply not true, as anyone who has investigated soil conditions in the Alps will know. That they do not tolerate such soils in cultivation is entirely a different matter.

The writer's lack of perspective shows elsewhere; the complex geology of Scotland and Ireland is given half a page, while that of the chalk areas of south east England is covered in over three pages! The chapters on the history of landscape rock-gardens are perhaps the most valuable part of the book. Even here there are outrageous statements such as "in the pursuit of art all is fair and permissible". This apparently includes the wholesale pillaging of limestone pavement to build incongruous rock piles for wealthy clients!

The plant references are too sketchy and disjointed to be really useful, the same information may be found in more convenient form elsewhere. The author's knowledge of alpines appears, from this showing, to lack depth. If I were to quote the many errors and oversimplifications, the reader may well accuse me of carping, so I shall merely suggest that the assertion on page 137, that new alpine introductions are coming to an end clearly shows how out of touch he is with alpine gardening as currently practiced. To some extent he contradicts his own conclusion later in the book, in the chapters on growing alpines outwith his own definition of a rock garden.

The peat garden is accorded a chapter to itself, but there is no mention therein of the hair-moss problem so prevalent in Scotland. Even at Edinburgh, in the rain-shadow, constant discouragement is required. In a later chapter on restoration the writer's priorities show clearly once more. There is no suggestion of propagating any plants before clearance to display the all-important rock-work.

Turning to the illustrations, the monochrome photographs of gardens and outcrops are adequate, those of plants less satisfactory. Of the colour illustrations I much preferred the author's own paintings. Many of the older reproductions have a dull brownish overtone. I was especially interested in his depiction of an authentic *Gentiana farreri* which matches a recent reintroduction almost exactly. Neither is as pale as *G. farreri* is supposed to be.

The author clearly loved the old-style grand rock gardens and mourns their passage. The truth is that they were unsatisfactory homes for plants. Edinburgh's rock garden has had to be extensively modified to provide more garden for less rock. As a handbook this volume is largely irrelevant. Its value is as an historical document. In fairness I must add that it has been reviewed enthusiastically elsewhere. Am I out of step? or are these reviews a case of the "Emperor's new clothes"?

M.A.S.

The Dwarf Bulb Group

At the 1987 Bearsden SRGC Discussion Weekend, Mrs. Lyn Bezzant convened an informal meeting of those members present who were interested in growing dwarf bulbs. She brought seed and bulbils of many species from her own collection, which she kindly put out in packets on a table, and at the close of the meeting, everyone was encouraged to take those which they wanted. If she was lucky she may have been given some swaps in return. At this meeting there was discussion about how the members who grow dwarf bulbs might further their interest through the Club. One strong feeling of all those present was that there should be no splinter group or seemingly elite bunch of bulb enthusiasts. The 'Dwarf Bulb Group' and its activities should be a loose grouping of all those members who are interested in them, just as those who enjoy showing plants can exhibit at the Club shows, growers use the Seed Exchange, others attend Group Meetings, and some join to receive the Journal. The Dwarf Bulb Group is simply an extension of what the Club provides for its members.

In 1988, at the first Stirling Discussion Weekend, I was asked what progress had been made on the bulb front. The answer was some thought and little action, but stimulated me to organise for 1989.

In 1989 at the Stirling Weekend, I organised a Bulb Exchange and a short talk on the Friday evening. I chose the Friday, since traditionally that was not a full part of the Discussion Weekend. People bringing plants to the show could also participate, besides Saturday and Sunday were fully programmed already. The only free time was after the Friday lecture.

I wrote to all those who had booked for the Discussion Weekend, telling them of the proposed Exchange and talk. The talk was "Growing Crocuses" and was given by David Mowle. It was most informative and thought provoking; he encouraged the growing of bulbs from seed; the keeping of good records; and the writing down of our observations. After the talk there was much discussion, ideas were exchanged by the many expert growers present and everyone benefited.

The Exchange was also very successful. Members were asked to bring bulbils, cormlets and tubers in small packets or envelopes, suitably labelled. Packets were grouped in genera. Everyone who brought donations was allowed to take up to five packets. Once all the donors had chosen, the surplus was sold at 20p per packet to all who wanted them. The result was a scramble amongst S.R.G.C. members reminiscent of old time January sales. Over the weekend we sold over 400 packets. All of

these had been surplus to members' needs and in previous years might just have been discarded: in the event they are now growing in the gardens of others. The range of species was remarkable; from the ordinary to the extremely rare. Since it was so successful the Bulb Exchange was repeated at the 1990 Edinburgh Weekend, and again over 400 surplus packets were sold. Jack Brownless gave a splendid talk on "Iris Cultivation" and explained how he grows these often difficult plants. The Bulb Group has got off to an enthusiastic beginning. I hope that in time we will all donate more of the special and rare bulbs which are often difficult or expensive to come by. By sharing our treasures we increase everyone's pleasure. We may also be helping to keep some rare plants in cultivation.

The natural extension of the autumn meetings is an Early Spring Display of Bulbous Plants. The first of these will be held in Dunblane on 23rd February 1991. Members are invited to bring pans of early flowering bulbs and alpines. This will be a non-competitive show of plants; like the other shows but with no prizes. Plants will be grouped into classes on the day. Mrs. Lyn Bezzant has promised a talk on "Bulbs in the Wild": She has travelled widely in Europe and Turkey in pursuit of this interest. Please come along and share in what we want to be the first of many such ventures. Come, bring your plants, share them with others.

The Early Spring Display will be held at:

The Braeport Centre, Ramoyle, Dunblane, Perthshire.
Saturday 23rd February 10 am – 4 pm

Sandy Leven

THE ROYAL HORTICULTURAL SOCIETY'S ROCK GARDEN PLANT COMMITTEE

Recommendations made at Scottish Rock Garden Club Shows.

EDINBURGH, 7 April 1990

AWARDS TO PLANTS

Award of Merit

To *Iris nusairiensis* as a plant for flower in the alpine house.
Exhibited by Mr R. J. Lilley, Tofts of Tain, Olrig, Castletown, Caithness.

Certificate of Preliminary Commendation

To *Barlia robertiana* as a plant for flower in the alpine house.
Exhibited by Mr F. Hunt, 34 Morris Place, Invergowrie, Dundee.
To *Iris schachtii* (yellow form) as a plant for flower in the alpine house and in the rock garden. Exhibited by Mr A. Spenceley, 42 The Lane, Mickleby, Saltburn, Cleveland.
To *Fritillaria affinis* var *tristulis* as a plant for flower in the alpine house or in the rock garden. Exhibited by Mr A. Spenceley.
To *Cassiope wardii x fastigiata* as a plant for flower in the alpine house or in the rock garden. Exhibited by Mrs S. E. Jephcott, Upper Rawcroft, Arthur Street, Penrith, Cumbria.

AWARDS TO EXHIBITORS

Certificate of Cultural Commendation

To Mr R. J. Lilley for a plant of *Iris nusairiensis*.
To Mr A. Spenceley for a plant of *Fritillaria affinis* var *tristulis*.
To Mr F. Hunt for a plant of *Barlia robertiana*.
To Mrs S. E. Jephcott for a plant of *Cassiope wardii x fastigiata*.

GLASGOW 12th May 1990

AWARDS TO PLANTS

Award of Merit

To *Shortia soldanelloides* f. *alpina* (white flowered form) as a plant for flower in the rock garden. Exhibited by Mr & Mrs M. and P. Stone, Askival, Fort Augustus.

Certificate of Preliminary Commendation

To *Shortia soldanelloides* var *ilicifolia* as a plant for flower in the rock garden. Exhibited by Mr & Mrs M. and P. Stone.

AWARDS TO EXHIBITORS

Certificate of Cultural Commendation

To Mr A. Leven, 2 Leighton Court, Dunblane, Perthshire for a plant of *Erinacea anthyllis*.

To Mr & Mrs M. and P. Stone for a plant of *Shortia soldanelloides* f. *alpina*.

EDINBURGH 8th September 1990

AWARDS TO PLANTS

Award of Merit

To *Pernettya tasmanica* (white berried form) as a fruiting plant for the alpine house. Exhibited by Mrs E. Armistead, 45 Swanston Gardens, Edinburgh.

Certificate of Preliminary Commendation

To *Teucrium subspinosum* as a plant for flower and foliage in the alpine house. Exhibited by Drs C. and I. Bainbridge, 3 Woodhouselee, Easter Howgate, Midlothian.

To *Artemisia nitida* as a plant for foliage for the alpine house or in the rock garden. Exhibited by Dr A. J. Richards, High Trees, South Park, Hexham.

AWARDS TO EXHIBITOR

Certificate of Cultural Commendation

To Drs C. and I. Bainbridge for a plant of *Teucrium subspinosum*.

Geranium Cazorlense

Lionel Bacon

Discussion Weekend

September, 1991

Pollock Halls of Residence, Holyrood Park Road, Edinburgh

Friday 6 September to Sunday 8 September 1991

Scotland's capital city can perhaps lay claim to be the cradle of rock gardening in the country, and certainly the Royal Botanic Gardens hosts the best collection of rock garden and alpine plants in the country today. A visit to Edinburgh would not be complete without a visit to 'The Botanics' and this year's programme allows time to do this, guided by RBG staff if you wish.

The lecture programme will cover many fields by both new and well known speakers. Bulbs are a popular group of plants and we shall hear how they are cultivated to perfection at Gothenburg Botanic Garden. "Patterns of Change" will delve into the variation found in plants and in particular gentians, and hardy orchids are a group of plants that fascinate most people, both in the wild and in the garden. Travel will take us to the Himalaya in search of primulas and across both hemispheres in search of the unusual, and everyone can learn something in a D.I.Y. talk by an expert. There will be the popular bulb exchange along with a talk on an aspect of their cultivation by Duncan Lowe.

The Pollock Halls of Residence (Edinburgh University's Halls) are to the south west of Holyrood Park, almost in the shadow of Arthur's Seat. They are situated next to the Commonwealth Pool, with access from Holyrood Park Road, the entrance road to the Park. Car parking is available on site. There are numerous bus services from Edinburgh town centre, which is about a mile away.

Accommodation is available from Friday evening to Monday morning 9th September, in single study bedrooms. **Members requiring vegetarian meals, or with any other special requirements, should make these requests at the time of booking.** All the lectures and the autumn show will be held on the campus site. A list of local hotels and attractions is also available on receipt of an s.a.e. The Saturday evening dinner will be held in the Old Debating Chamber of the University Students' Union, Teviot Row, Edinburgh. Transport by bus will be provided to and from the venue. The dinner will comprise a seated hot buffet, and the price includes wine with the meal.

There will be a number of trade stalls, and a club plant stall and plant auction, for which plants would be greatly appreciated. In addition, books and paintings will be on display and sale. We hope there will be large entries for the autumn plant show and for the holiday photographic competition (details in the Show Schedules). Please support both of these and add to your and everyone's enjoyment of the weekend.

Programme

Friday

8 pm	**Alpines from Both Hemispheres** Mrs Brenda Anderson
9.30 pm	Dwarf Bulb Meeting and Dwarf Bulb Exchange

Saturday

10.30 pm	Guided tours of the Royal Botanic Garden, Edinburgh Meet at the West Gate
2.30 pm	*The William Buchanan Memorial Lecture* **Bulbs in Gothenburg Botanic Garden** Mr Henrik Zetterlund
4.15 pm	**Patterns of Change** Dr Noel Prichard
7 pm	Dinner at The Old Students Union Debating Chamber
10 pm	Plant Auction

Sunday

9.45 am	**Alpines – DIY** Mr John Main
11.30 am	*The Harold Esslemont Lecture* **Alpines in the Langtang Valley, Nepal** Mr Peter Burnett
2.30 pm	**Hardy Orchids** Dr Philip Cribb

Prices

Residents

Friday evening dinner-Sunday afternoon tea £88.00
Saturday lunch-Sunday afternoon tea £60.00

The above prices include the cost of the Saturday evening dinner.

The above prices apply until 31st May 1991. Thereafter please add £5 per person.

Members wishing to stay for Sunday evening meal, bed and breakfast should add £25 to the above prices.

Non-Residents

Saturday or Sunday: morning coffee, lunch, afternoon tea and all lectures on that day £15.00
Saturday evening Reception and Banquet £15.00

Bookings should be made on the form enclosed with this issue of 'The Rock Garden'. Together with the appropriate remittance, these should be sent to the Registration Secretary, Mrs Jane Thomson, 88 Liberton Drive, Edinburgh EH16 6NR. Telephone 031 664 1512.

Please send s.a.e. for acknowledgement of booking. Members wishing further information should contact Jane at the above address (s.a.e. please).

ANNUAL GENERAL MEETING

The Annual General Meeting
will be held at the
Battleby Conference Centre
Redgorton, Perth
on
Saturday 26 October 1991
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 15 May 1991 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: Mrs D. E. Golder, Miss J. Halley, S.H.M., Mrs E. Ivey and Mr R.J.D. McBeath.

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

Back Issues

Some of the back numbers listed below, as available, are in very short supply. 26 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.

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)	250	$4.25
9-38, 40-51, 53, 54, 56, 57, 65, 74	150 (when available)	$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 (when available)	$5.10
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 20p (34c) per Journal up to a maximum of £5.00 ($8.50).

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

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