THE ROCK GARDEN

THE JOURNAL OF THE SCOTTISH ROCK GARDEN CLUB

Volume XXIII Part 1 Number 90

Subscriptions for 1992-93

SUBSCRIPTIONS for 1992/93 become payable on 15 October 1992, and should be sent to the **Hon. Treasurer, Mr Ian Aitchison, 20 Gorse Way, Formby, Merseyside L37 1PB,** or can be paid at your Bank, or through National Giro by presenting the Giro payment slip enclosed with this issue of **"The Rock Garden".**

Members' Tickets: These will be enclosed with the January 1993 issue of **"The Rock Garden".**

UK Subscription Rates:

Ordinary	£7.00
Family (for each additional person residing at the same address)	£1.50
Junior (under 18 years of age)	£1.50

OVERSEAS MEMBERS

Overseas members should pay their subscriptions direct to the Subscription Secretary, by cheque if drawn on a British bank, by International Money Order, or through National Giro. Subscriptions may be paid in British currency or US dollars. (Kroner, DM, Yen and Euro Cheques are *not* acceptable.)

Overseas Subscription Rates:

Including the fee for participation in the Seed Exchange and distribution programme.

Ordinary	£9.00 sterling ($20 US)
Family (for each additional person residing at the same address)	£3.50 sterling ($7 US)
Junior (under 18 years of age)	£3.50 sterling ($7 US)

Members paying by Giro should add £1 Giro handling charge.
GIRO NUMBER (for Subscriptions only): 182 2756

CHEQUES to be made payable to **The Scottish Rock Garden Club**

The Rock Garden

THE JOURNAL OF THE SCOTTISH ROCK GARDEN CLUB

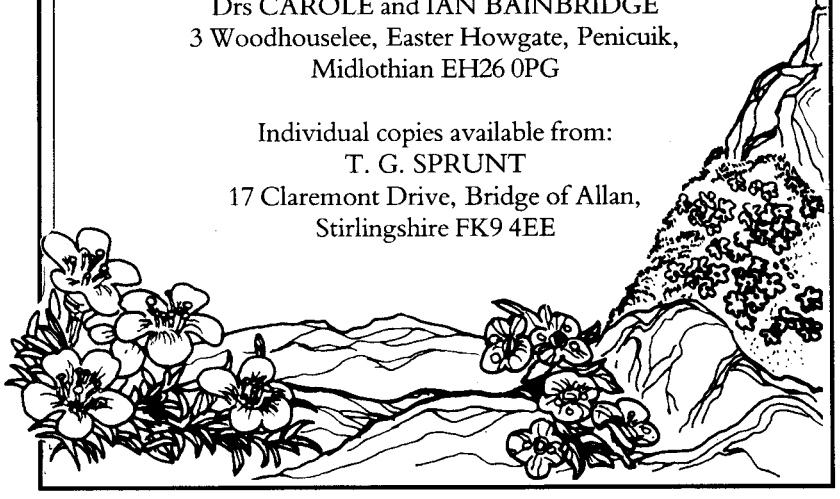
Volume XXIII Part 1 Number 90

January 1992

ISSN 0265-5500

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

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



Front cover: *Shortia soldanelloides* 'Askival Iceberg' (p3). Polly Stone

Back cover: The Stone Column at Askival garden. Polly Stone

Contributions to THE ROCK GARDEN

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

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

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

Contents

Editorial 2

The Stone Column 3

A Fritillaria Anthology Ole Sønderhousen 18

A Wild Crocus Chase to Mugla Francis Ferns 28

Growing on Sphagnum Ian and Margaret Young 39

Small Rowans Brian Halliwell 42

Reginald Farrer: the Man and his Heritage James T. Aitken . . 46

Dispelling the Blues with Gentians Kath Baker 52

Garden Daffodils and Narcissi David Mowle 59

Some Western American Alpines – Part V. An Update and a Few Monocots Mike and Polly Stone . . 63

Letter to the Editors 72

Mongolia Heather Salzen 78

Alpine Fever Helen Brotherston 86

Obituary 88

Jubilee in '93 Sandy Leven 89

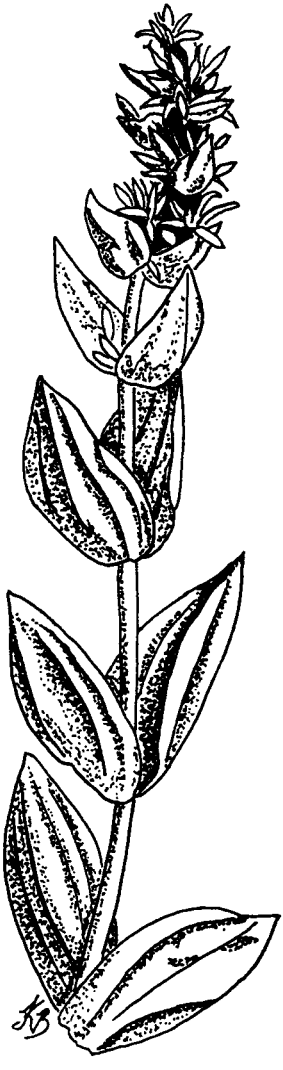
SRGC Diamond Jubilee Weekend, Oban, May 1993 – Update Hilary Hill 92

The Seed Exchange Jean Wyllie 93

Book Reviews 94

Discussion Weekend September 1992 99

The views expressed in this Journal do not necessarily reflect those of the Editors or of The Scottish Rock Garden Club.



Gentiana lutea (see p52) Kathleen Baker

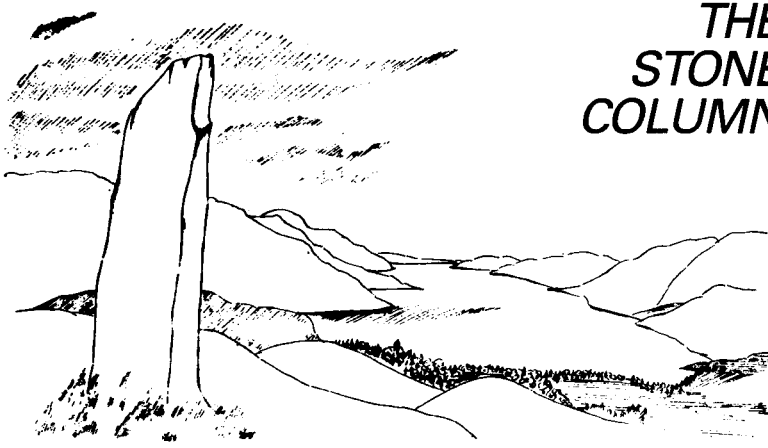
Editorial

At an age when most of us are considering retirement and taking things easier, the Scottish Rock Garden Club, sixty next year, is going from strength to strength. With a band of enthusiastic and willing workers at the core, all sorts of new ideas are emerging to make the anniversary a celebration. In this issue you will find initial details of some of the events and goods which have been organised for members for 1993. If you want to help, we're sure that Sandy Leven will be pleased to hear from you; at the very least we hope you will enjoy what's in store.

When one anniversary comes along, it obviously puts one in the frame of mind to start looking for others, and a little crop of them has emerged this time. This issue presents the tenth anniversary **'Stone Column'**, which is surely now a Scottish Rock Garden Club institution. Ten years of collecting ideas, testing them at Askival, writing of the garden and many other subjects represents an enormous contribution to the Club by Mike and Polly, and we know that many members value the tips, tricks and developments they write about, and try them in their own gardens. Sometimes controversial, always thought-provoking, the Stones certainly make us want to go out and garden. We hope that the map and the pictures contained in this issue will add to your enjoyment of the Column, and give a flavour of the Askival garden.

This issue also represents three years of editing for us. You may have noticed one or two small changes in that time, and we'll continue to introduce these to make **'The Rock Garden'** as good as we can. From this issue, you'll see colour pictures on the back cover; our aim will be to complement the front cover illustation and make better use of the space we have available. In between the editing, work and panic over getting the journal out (almost) on time, we still try to get some gardening done. The eighth anniversary of our move to Woodhouselee sees the first good flowering of our *Magnolia wilsonii,* and the first *Cardiocrinum giganteum* heading for the skies, to flower later this summer. A case, perhaps, of many years of hard labour finally bringing reward; we're sure the Diamond Jubilee will provide good reward for all the members of the Club.

Carole and Ian Bainbridge.



THE STONE COLUMN

Beware the Ides of March, for then Comes Winter

I find it hard to believe that with this, the twenty-first edition, the Stone Column reaches its tenth birthday, having first appeared in June 1982. When one is heavily involved in gardening, even in our case obsessively so, then the seasons flash by and retreat into the blue, just as, from a mountain top, distant ranges merge into the blurred horizon. Without the aid of my page-a-day diary, it would be impossible to recall when the various developments and major plantings were carried out. Fortunately this daily diary is the one piece of routine paperwork I have been able to keep up, ever since it was started, shortly after the garden, in 1974. The card index stalled in the early 1980s, transferring information from our seed and accession files becoming too time consuming. Even the label engraving is falling badly behind the plantings. We do, naturally, put out "temporary" plastic labels with the plants, but when the time comes to engrave a permanent label a form of Murphy's law applies: if the old label is legible then either the plant has died, or it's perfectly obvious what it is. When it could be one of a dozen similar cultivars, the writing has long since washed off!

By way of a small anniversary celebration, our editors made two suggestions. Firstly, that we produce a diagram of the garden, as a number of members had said they find it difficult to visualise the progress we report in the Column. So, dear readers, here it is (p5). Secondly, they said "How about a few pictures to illustrate your range of plants and the various conditions you grow them in at Askival?" Their final choice from our slides was interestingly diverse. *Shortia soldanelloides* 'Askival Iceberg' (cover plate) is a strain raised from seed at Askival. The other three plants, by chance, are from three different habitats in the three major continents,

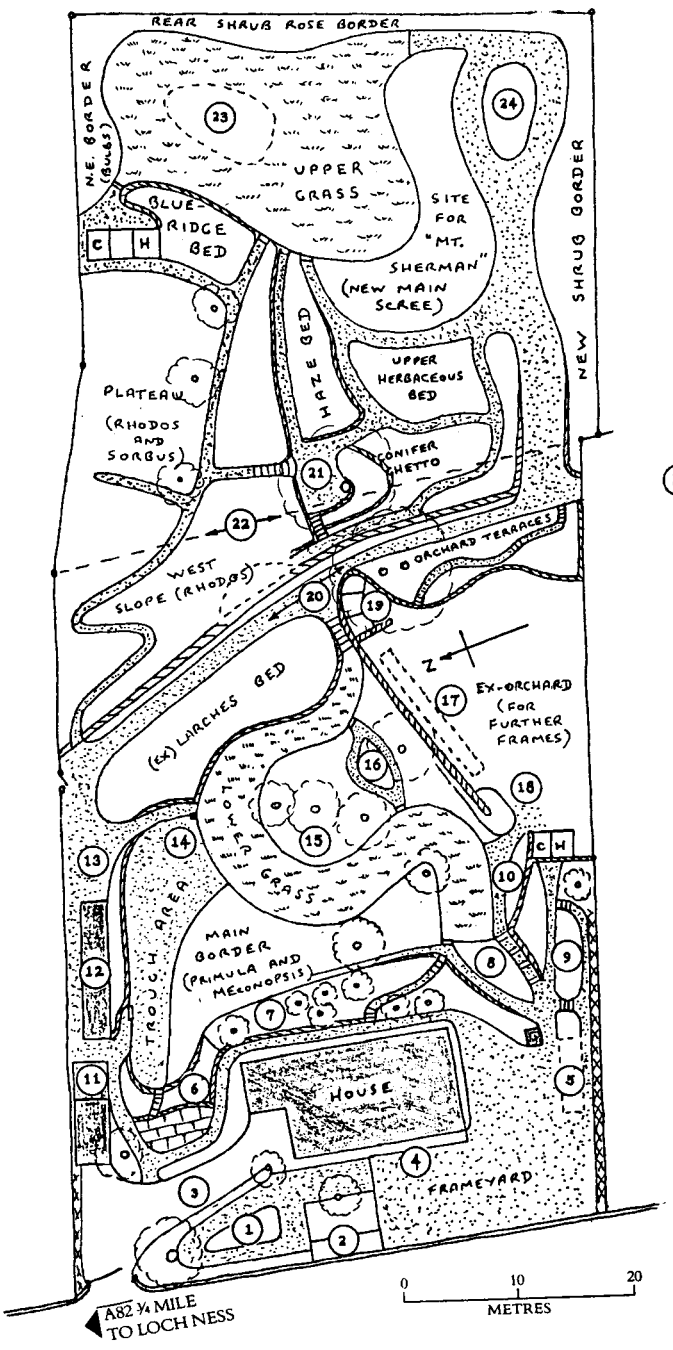
and are given accordingly three differing situations here. *Trillium rivale* 'Purple Heart' (Fig. 1, p14), Boyd Kline's original clone from Siskiyou Nurseries, is an American woodlander which enjoys the terrace beds. *Rhodothamnus chamaecistus* (Fig. 2, p14), a European saxatile or scree plant, grows in several of the many troughs in the garden. Finally, to represent Asia, they chose *Meconopsis integrifolia* (Fig. 3, p15), a fine form re-introduced from China by Peter Cox, an alpine meadow plant which thrives in the upper herbaceous border.

When sitting down to dash off the Stone Column in two or three days of intensive scribbling, I do make a conscious effort to avoid clichés. Certainly, like all writers I will have my favourite phrases, but I do try not to use such expressions as "grown to perfection". This is just a convenient let-out, so that the plant's finer points do not have to actually be described. However, I could not resist the heading for this item; so appropriate is it, for the coldest night of the year, −7°C, was actually the 14th-15th March! Here by Loch Ness it has been a relatively mild winter, and long-drawn out damp spring, thanks to the prevalence of westerly gales. There was little noticeable difference between January and April, and precious little change, other than day length, from late March to early May! Strangely for such a prolonged period of Atlantic weather, the season was not particularly stormy. The B.B.C. weathermen seem to have developed a storm paranoia, warning us with such regularity that we got fed up with battening down the frame lights, from their normal maximum ventilation positions, against an "ordinary" 60-70mph gale. Ignore the cry of wolf once and it will not be the forecasters who get "eaten". In the garden itself, high winds are of no real consequence, we only have two kinds of trees, the firm and the dead!

As I have said before, some computer simulations predict that, as global warming takes hold, milder, wetter winters become increasingly probable in Scotland. The Earth's atmosphere is too complex a system to be modelled with any degree of precision on present day computers; other workers in the field disagree with the above. Such contentions have given the U.S. Government an excuse for doing little to curb emissions of CO_2, and this from a country which produces twice as much of the greenhouse gas per head than Europe or Japan. A recent book on the possible consequences for the British Isles suggests that sunflowers will be grown on the South Downs, and cannabis will once again be a major crop in Scotland as it was in the 16th century, before the little Ice Age. Nowadays of course most ropes are nylon or some other synthetic fibre!

A complicating factor is the presence in the upper atmosphere of sulphate aerosols, particles of around 0.1 micrometers in size, which scatter some of the sun's radiation back into space and so reduce the Earth's energy

ASKIVAL GARDEN



supply. Thus they counteract the greenhouse effect. There are two main sources, industrial pollution, particularly in the Northern Hemisphere, and volcanic eruptions such as that of Mount Pinatuba in the Philippines last year. As a result of the latter, we could be in for a hard winter next time round! And just to give the Global Village pot a final stir, it has been an El Nino year in the Pacific, so the droughts in Southern Africa are no real surprise, but just as disastrous nevertheless.

Closer to home, a mild Atlantic winter is always a poor season for crocus here at Askival. They appear early, and are drawn up by the low light levels only to be flattened by wind and rain. A few survivors struggled to open their flowers, to greet the watery sun on March 4th. Clearly the crocus design of flower was not intended for climates such as ours! Those bulbs which produce pendent flowers are much more adaptable, *Leucojum vernum* for example has been excellent this year. Our various forms have taken up to ten years to really settle down and form sizable, regularly-flowering clumps, but they are well worth the wait, especially the yellow tipped variety, *L.v. carpathicum.*

KEY

1	FRONT RAISED BED	14	THE STONE COLUMN
2	ORIGINAL SLATE LILY BED	15	MIDDLE BED
3	DRIVE SIDES, ROSES & BULBS	16	ERYTHRONIUM BED
4	SPECIAL BULB BORDER	17	SITE FOR COVERED SCREE
5	RAISED BED I (REMOVED)	18	LILY BED
6	OLD SCREES & PAVING	19	LEAF-MOULD PITS
7	MAIN BANK	20	OLD TRACK WITH SHELTERED BED
8	OLD AZALEA BED	21	SEATS UNDER OLD LARCH
9	ORIGINAL PEAT BED	22	BOUNDARY PRIOR TO '83
10	TRILLIUM BORDER	23	PROPOSED AUTUMN BED
11	POTTING SHED	24	PROPOSED LILY BED
12	COMPOST SHELTER		
13	SITE FOR BULB FRAME		DRY-STONE WALLING

Some plants, such as most brooms, or the larger monocarpic meconopsis can provide almost instant gardening, others, equally ordinary, gradually creep up until one suddenly realises what a superb feature they have become. Such has been *Scilla siberica* in this garden. Starting with a dozen bulbs, they have spread their solid carpet of brilliant blue to well cover a square metre in extent, under a Caledonian pine. Nearby, on the other side of the tree, *Anemone apennina* is equally at home. These flower much later, towards the end of April, when, even here, there is enough sun to open their daisies of a softer, but equally clear, blue. We find this a more satisfactory garden plant than *A. blanda*; which is hardly surprising when one reads that the latter grows particularly well on the warm chalk soils down south.

Narcissus asturiensis comes somewhere in between crocus and scilla in its degree of resistance to adverse weather conditions. As grown here the usual type has 2cm trumpets on stems of between 5 and 10cm, which tend to flop a little, especially if drawn by a mild winter. Many years ago, a larger flowered seedling suddenly appeared, with thicker more weather-proof stems of 12-15cm. It retains the same uniform yellow colour, and the 3cm corona is slightly constricted. With larger perianth segments, it is a more conspicuous garden plant than the parent, while retaining the early flowering habit. Normally this seedling clump is going over while the plants we grow as *Narcissus minor* are still in tight bud; but it is possible that after a long hard winter the two species overlapped and hybridised. Another possibility is that our child is one of the abnormally large, possibly tetraploid, forms of *N. asturiensis,* which John Blanchard has recorded in the wild. Are there really two species here, or just one polymorphic complex, and where does that splendid multiplier *N. nanus* fit in? As our garden plantings ever increase in diversity so I feel I must leave the finer points of nomenclature to be argued over by specialists. We just enjoy the plants, consoling ourselves with the thought that Nature does not grow her own populations in neat boxes labelled species.

Down in the trough area it has been a very poor year for Kabschia saxifrages, most were sparse flowered and what bloom there was, badly spotted by rain and hail. Even in the frame, losses of Himalayan Kabschias were heavy, weeding out those unable to tolerate the alternating temperatures of our false springs. European primulas need a long cold rest to flower well; this season has not been to their liking at all: the more recalcitrant species such as *P. glutinosa* are totally barren. Only the *P. hirsuta* group and their hybrids have been near normal, with a pale pink *P. daonensis* and a number of self-sown crosses, obviously with *P. latifolia,* worth singling out. As many readers will know *P. latifolia* itself has long been one of our favourite plants: an excellent parent, it contributes a certain

richness of colour to its descendants.

Across from the trough area, in the main primula and meconopsis border, a similar colour accent is provided by a group of *Primula amoena*. This particular planting, which by leaf characteristics represents *P.a.* var *kasbek*, is a particularly sumptuous reddish purple of such intensity as to make the so-called red forms of *Primula denticulata* look pale by comparison. Not all the forms we have raised were quite so good, but another did provide around 25% of pure whites. These we have also retained, but far away in the upper garden herbaceous border. Like its close relative *P. elatior*, this Caucasus native is a stylish and effective garden plant, easy and long-lived, yet never rampant, nor overpowering.

There are always exceptions to every gardening generalisation, and two supposedly cold-growing species have surprised us this spring. The Japanese *Diapensia lapponica obovata* has bloomed well, especially in the Blue Ridge bed; the flowers saxifrage-like but of stouter texture and more weather resistant, and a *Ranunculus glacialis* in the frame had seven flowers. This particular clone originated from the crest of a dry shaly ridge in the French Alps, growing in full sun without benefit of underground water, and so may be more adaptable as a result. Most writers follow Farrer in stating that the limestone equivalent *R. seguieri* is a more reliable species for the garden; but this cannot be the universal experience, for in the current A.G.S. Bulletin it is reported that a single-flowered specimen received many admiring glances at the East Cheshire show. Planted out in a trough, we find that clumps regularly produce a dozen or more blossoms of such a brilliant white as to draw the eye from across the garden. Later, it is the greenfinches who draw Poll's eye, and wrath, as they compete for the seed!

There is no denying that a cool windy spring paradoxically reduces the incidence of overnight frosts. As a result this has been an excellent year for rhododendrons. Lose some, win some; it would be very boring if every season were the same! The harbinger was the first flowering of our *Rhododendron tsariense*, given to us by Barry Starling as a rooted cutting back in 1976! It has been very slow-growing and is still only some 0.6m high. We have had the best display ever from our various red-flowered members of the Neriiflorum series, and their hybrids like *RR.* 'Carmen' and 'Jenny'. Continuing the red theme a number of young *R. thomsonii*, mostly from McBeath seed, had their first flowering, showing subtle variations in shade. Its relatives *RR. orbiculare* and *wardii* are also excellent this spring, but *R. williamsianum* is sparse-flowered as usual. Not a species I would recommend for cold gardens, even when grown in full sun. *R.* 'Treasure' has inherited the shy-flowering habit, there are plenty of better weed-proof mounds with much more interesting foliage, like *R. pseudochrysanthum*, or the yellow flowered *R. wasonii* with superb indumentum.

It was inevitable that our luck would run out sooner or later. After a day of sleet showers, with the ridiculously low maximum temperature of 6°C for May, there was a frost of −2°C. Damage was less than expected, possibly because everything was so wet. The water droplets have to freeze first, releasing their latent heat. Cassiope flowers were worst affected, but our ground frost indicator, *Kirengeshoma palmata,* was only blackened slightly at the edges of the young growths. Many rhododendrons escaped damage entirely!

Turning to the garden itself there have been virtually no new developments since I last wrote. My "unpaid sex worker", to use a politically correct American term, was out of action for most of this period, reducing our workforce by two thirds. Poll is the full time gardener, I am only part time. According to the same P.C. thinking our dogs are not pets but "animal companions". Actually they are collectively known as the "horribles", especially when they do such things as digging out a sleeping hedgehog, from the deep leaf-litter under a pieris.

Apart from the winter clearing, I have only been able to manage a little remaking of overgrown areas for new plantings this spring. As Poll is fond of telling visitors, I was initially against the purchase of a mechanical leaf-collector, but now admit I could never have completed the clearing this winter past without the help of our Echo (see Rock Garden Jan.91, p.143). As our three leaf-mould pits are rotated annually, it was not until last autumn that I emptied the first batch of mechanically collected leaves. Passage through the machine's impeller shreds the leaves to some extent, resulting in a finer mould. So much easier is this to sieve, for removing twigs, pine cones etc, that it has become feasible to replace 50% of the peat in our standard compost with our own recycled leaf-mould. Time will tell if the plants appreciate the change.

Over the years we must have discarded over a dozen trees and shrubs which have failed to justify their space up here in the north. The latest victim was *Forsythia* 'Beatrix Farrand' for failing to flower adequately. One of Poll's first jobs on returning to duty was to cut this down, together with three over-large junipers which lay below, at the foot of the main bank. One of the earliest pieces of terracing, back in 1973/4, this had become a neglected area, partly overgrown by self sown ferns. Leaf-fall from the forsythia, collecting in the junipers, had killed out sections, so it was time for Grey-Owl and its two companions to go. With all the practice I've had on full sized trees, removing the stumps took only two afternoons. Barrowing over, and forking in, a dozen or so loads of roughly sieved compost took just as long. Although this area had been largely untouched for 18 years, lumps of peat could still be recognised from the original soil improvement. The rate of decomposition in our cold, damp, acid soils must be very low.

On the flat ground of the main bed itself, additional replanting space was obtained by removing several large clumps of iris. Some were self-sown *Iris pseudacorus* which we had left in our ignorance in the early days, the others were imposters; variations on *Iris sibirica* which had come into the garden as seed labelled *I. prismatica, I. clarkei* etc. This job too was easier than I had feared; I simply used a fork to lever up the rhizomes, leaving much of the actual root to add to the soil humus content. While working on reducing the area occupied by an intentionally planted *Iris pseudacorus* "Golden Fleece", I suddenly realised that the nearby *Meconopsis betonicifolia* clump which had been the iris' next intended victim, was also from one of our original plantings way back in the autumn of 1973! As blue meconopsis are not generally regarded as long lived perennials, I have since made a quick check through our records to discover that our oldest undisturbed *M. grandis* are clumps of 'Ormswell' planted in 1977, closely followed by 'Mrs. Sherriff's Dream' and 'Early Sikkim' the following year. Our oldest patch of *M. quintuplinervia* was planted in 1976, but these clumps, unlike the above, do look as if they should be divided and replanted. *M. simplicifolia* is definitely short-lived here, even 'Sherriff's Perennial Form' never makes double figures, some half dozen years is usual. We do not bother to divide these, but re-raise from seed, aided by occasional self-sowns. One such has done very well amongst cassiopes in full sun in the south-facing Blue Ridge bed.

Not far away in the upper herbaceous bed, the four surviving plants of *M. punicea* from the original sowing of wild Chinese seed in 1986 are displaying their pendulous scarlet petals for the fifth year. Thus some individuals are definitely not monocarpic, once they have formed multi-crowned plants. When moved to the upper border in 1990 they could not be divided, as all the growths emanate from a single central rootstock. They look quite superb shimmering in the breeze with the sun behind!

I feel I must add that I am in no way advocating neglecting one's meconopsis; *MM. betonicifolia, grandis* and their hybrids such as *M. x sheldonii* do benefit from regular division and replanting in fresh soil, with plenty of organic matter added. There is however no actual need to disturb an established clump as long as it is flourishing and flowering well. I should certainly recommend that one avoids over-division. Unless the central rootstock falls easily into pieces, do not rip it apart. If more plants are desired, the short runners which these plants regularly produce can be detached. If this is done just as growth is commencing in spring, we find even unrooted pieces will grow away and flower the following year. Detached crowns of celmisias will do the same in the open ground, as Poll discovered after breaking some off by mistake during early spring clearing.

In Scottish gardening, primulas, especially the asiatic species, are often associated with meconopsis, and for them too, tradition has it that one should

divide or re-raise regularly. Once again we have found exceptions to this rule, those odd individuals for which the ideal position has been found by chance. 1978 must have been a vintage year for planting, we still have two undisturbed from that year: *P. vulgaris* ssp *sibthorpii* is now a large patch in the main border, and *P. strumosa* on a north east facing raised bed. The latter is the more surprising as petiolarids are not regarded as permanent plantings. This particular clump was given to us in 1975 as a seedling by Bobby Masterton, and is still happily producing its cream flowers, above dark green pointed foliage. *P. vulgaris* ssp *sibthorpii* came to us as *P. "altaica"* hort, an invalid name listed as a synonym for *P. amoena* in the A.G.S. Primula book. This pink primrose is quite distinct from the true *P. amoena*, the long-scaped oxlip we described above, but which, we were told recently, is being offered under its name, so beware!

It has become my occasional habit to quote an appropriate couple of lines from a rock song, as a simple dirt gardener I enjoy their naïve sentiments. In an age when rectangular piles of bricks are considered sculpture, tuneless atonal "plink-plonk long silence" as Serious Music, and gimmicks can carry off the Booker prize, I make no apologies for doing so! Thank goodness alpine gardening is not considered one of the "Arts"; even garden designers have their uses, distracting the Media. After a spring such as this it can only be from J. C. Foggerty (Creedence Clearwater, 1970):

and I wonder, still I wonder
who'll stop the rain?

Mucrones

Possessing a butterfly mind, and with a little help from my friends, I have accumulated material in the Stone Column file rather faster than I am able to utilise it. To clear some of the backlog, a number of the shorter items will from time to time be covered under the above blanket heading. To make a start I shall deal with some points arising from previous editions.

Mini-Troughs (Rock Garden No. 89 page 395)

Following my request for a suitable container to trial growing plants in association instead of potted singly, an English member, living appropriately in the Potteries, suggested saggars. These are containers used to hold pots in the kiln for firing, and as such have already been fired to a high enough temperature for outside use. Although reasonably priced we could discover no source in Scotland, and transport costs on such heavy items from England would make them prohibitively expensive.

We also explored the possibility of using various types of plastic storage trays, but intended for indoor use these incorporate no U.V. stabilisers and so their lifespan outside would probably not justify their cost.

In the end we have settled on expanded polystyrene fish-boxes produced

by Plasboard Plastics of Montrose. Intended to hold food, they should be totally safe to use with plants, and are even blown with nitrogen and so are really "ozone-friendly". 36cm long by 26cm wide, they are fully 17cm deep, for an ample root-run, and the 1.5cm walls will provide excellent insulation. Although some may find white objectionable, closely arrayed in the frame only the top edges will show. Plastic pots are terracotta by tradition, or black to keep the roots dark? We make it a rule never to expose the sides of black plastic pots to the sun, warm roots can be very damaging especially to alpines. Finally, these fish boxes are cheap enough to use once, the only snag we can forsee is storage space: they don't stack inside one another.

Label-Engraving (Rock Garden No. 86, page 9)
When describing how we utilise engraved aluminium labels in the garden, I cautioned that our power-engraver was tiring to use for any length of time, and its hammer-action noisy. John Eden suggests, as an alternative, a hobby drill such as the range produced by Como. These are smaller, somewhat lighter, and powered by a low voltage transformer-cum speed controller, safe in use. Their rotary action is quieter than my engraver, but will produce far more aluminium dust. Should anyone wish to try one out in this role, John recommends a model incorporating a ball-race in the nose. This enables it to cope with the sideways thrust generated when the drill is operated as a writing instrument.

Fashion and Talinums (Rock Garden 89, page 393)
I have lost count of the number of times I have read in an article or seedlist the comments "new to/lost to cultivation" only to snort to myself "Humph, we have been growing it for X years". Now the boot is on the other foot: several readers wrote in regarding *Talinum* x "Zoe"; one even sent up a plant from Devon. Clearly this talinum is not out of cultivation, just out of fashion!

There is no doubt that fashion does exert a selection pressure, filtering the information we receive. Living where we do, unable to attend many shows in person, especially in England, and with garden visiting similarly restricted, we have to rely on the various journals, show reports and awards listings. A plant out of fashion is less likely to be shown and, even if it does appear, may not be written up.

Kath Dryden tells me that there is little interest in *Talinum* x "Zoe" at sales tables, and people may take it for dead during its dormant period, so discarding it prematurely. She also said that she still has the original plant of *Dicentra* x 'Tsuneshige Rokujo', but being a sterile hybrid and not lending itself readily to division or cuttings, propagation is very difficult. Back crossing onto *Dicentra peregrina* is one obvious possibility, but this is a

very difficult plant to keep for long down south in the Steppe-desert zone.

Something Nasty in the Potting Shed

I had decided that the peat/compost issue was too hot a potato to touch again, until I spotted the above heading in the New Scientist magazine. Two gardeners in Queensland, Australia died after contracting an infection of *Legionella longbeachae* from potting compost; so the risks attached to the use of exotic mixes are real enough, although remote. Many series of tests have shown British peat-based composts to be free of legionella contamination. Sterilisation is not the answer, the bacteria grow again even more vigorously after treatment stops.

Several members wrote in support of our position on the use of peat in Scotland, and I shall tempt fate by saying there were none against. One alpine nurseryman told us that he cannot understand how transporting valuable organic matter away from the Third World, using considerable energy from fossil fuels, can be considered environmentally sound. In addition he pointed out that coir, and its local alternatives, wood fibre and composted bark, have even lower cation exchange capacities than peat, which is itself lower than loam. Thus they have poor nutrient holding ability; which means that in longer-term applications, such as for alpines, as opposed to quick-growing bedding plants for example, regular applications of fertilisers will be required. Increased fertiliser use, and greater leaching into the ground water, are hardly green! These composts also tend to dry out on the surface, encouraging over-watering, to compound the problem of nutrient loss.

It has been reported that Fisons are to sell their horticultural business, including the controversial peat operations in England, because of pressure from environmentalists. If I were them I should move operations instead to Russia, where there are enormous reserves of peat, not only to disarm criticism, but to earn that country much needed foreign currency.

Alpines 2001

Our travels in Europe have convinced us that the common European cultural heritage is well manifested in our gardening traditions. We do indeed hope that the 19th century Nation-State is but a passing phase and that we are all Europeans now. One way we could cut the chains of chauvinism would be to move the next ten yearly International Conference away from the south of the country and into the mountains. There are plenty of possible venues, from Grenoble to Innsbruck, or one of the northern Italian universities. For the large Transatlantic contingent any of these would be just as convenient as Warwick, with the added bonus of excursions to see European alpines in the wild. With such aids as fax machines, remote organisation need not be a problem. Who knows, we might get a satisfactory projection system, and some decent food!

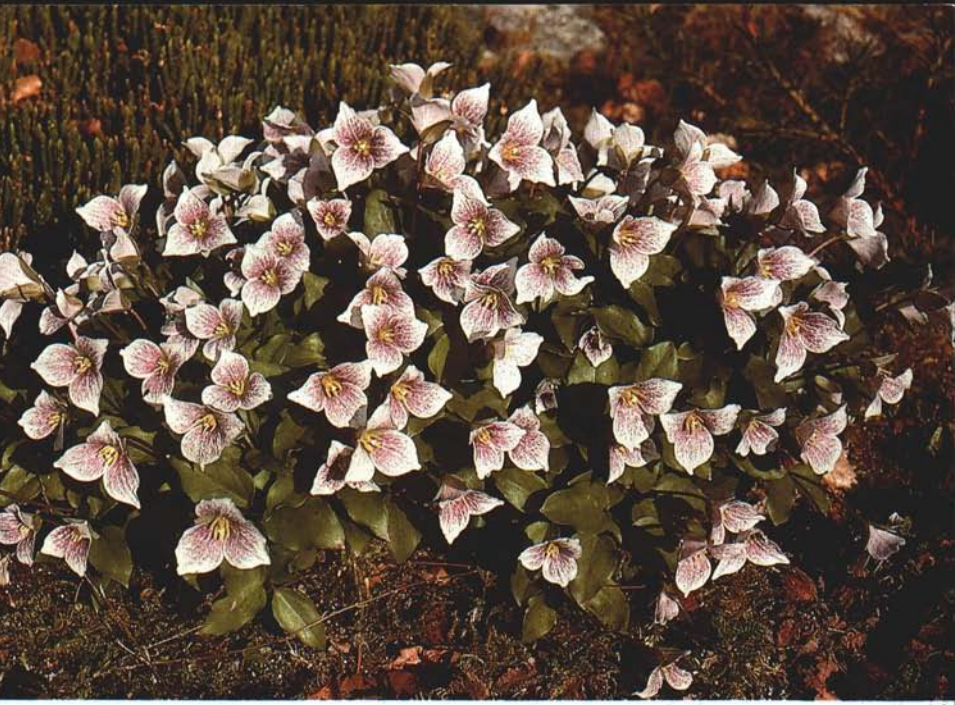


Fig. 1 *Trillium rivale* 'Purple Heart' at Askival (p3) Polly Stone

Fig. 2 *Rhodothamnus chamaecistus* at Askival (p3) Polly Stone

Fig. 3 *Meconopsis integrifolia* at Askival (p4) Polly Stone

Fig. 4 Fritillaria beds (p20) Ole Sønderhousen

Fig. 5 *Fritillaria pallidiflora* (p19) Ole Sønderhousen

Fig. 6 *Fritillaria carica* (p24) Ole Sønderhousen

Fig. 7 *Fritillaria sibthorpiana* (p25) Ole Sønderhou

Fig. 8 *Fritillaria forbesii* (p26) Ole Sønderhousen

Fig. 9 *Fritillaria rhodia* (p26) Ole Sønderhou

A Fritillaria Anthology

OLE SONDERHOUSEN, DENMARK

Over the last 25 years my greatest interest has been the genus Fritillaria – the family of the snakeheads. This genus is close to both Lilium and Nomocharis, so close that taxonomists have discussed whether *Fritillaria camschatcensis* should be called *Lilium camschaticum* instead. Similarly, some lilies resemble the Fritillarias; I can mention *Lilium nanum*, with its conical, nodding light-violet flowers.

The genus Fritillaria covers a large area geographically, as it is fairly evenly distributed over the northern hemisphere. There are fritillarias in Europe from the Alps southwards, in north Africa just on the other side of the straits of Gibraltar. Turkey, Iran and south Russia have the widest range of species; in the east, the Himalayas have only a few. And now, as China has opened a little more to western scientists and tourists, we have found out that they have many more species than we thought only ten or fifteen years ago. Japan has its own fritillarias too. From north Japan, Kamchatka over the Aleutian Islands to Alaska, Canada and to the northern states of USA, you will find the only fritillaria which grows on two continents; *F. camschatcensis*. This is only one species out of about twenty which are found in the USA. All these species occur in the western states only, and here mostly in California.

How many species are there in the genus fritillaria? The answer is that it is a matter of definition. I prefer to speak about the total number of distinct species and subspecies – in this way you avoid the eternal discussion whether a species or a group of species shall be reclassified to subspecies under another species – or the opposite where many subspecies are given specific rank.

Some years ago I tried to make a list of names of fritillaria species and subspecies, I counted about 140, but since then we have received many descriptions of new species from China, the number has passed 150, and there are probably about 160 distinct fritillarias. The question remains of course, of whether all the newly described species are true species or subspecies, or only synonyms. We will have to wait for the answer to that until such time as we have grown them ourselves, and formed our own judgements. The country with the most diverse fritillaria flora is Turkey with 37-39 species; about a quarter of all the species in the world. As the neighbouring countries of Iran, South-east Russia and Greece have many other species, there is no doubt that this area is the epicentre of the distribution

of the genus fritillaria.

During the twenty five years in which I have maintained my interest in collecting bulbs and seeds of this genus, I have grown about 117 different fritillarias, of course, some have died in this period, especially when I grew them only in my garden. Now having built a fully automatic alpine house, I grow about 110-112 species and subspecies of fritillarias (Spring 1992).

When I first started to grow the fritillaria species, I began with the 'common' ones such as *F. ponticum* and *F. acmopetala*. *F. meleagris* and *F. imperialis* I obtained from my father's garden. As I managed to grow these species well, I was keen to try more. A minimum of success will always sharpen the appetite. At that time, it was possible to buy species of different bulbous plants, Crocus, Tulipa, Cyclamen and Fritillaria, in a small shop in the middle of Copenhagen. Unfortunately the firm closed more than twenty years ago, and in Denmark it is now impossible to buy a good range of bulbous species anywhere. It was with plants from this shop that I started my collection.

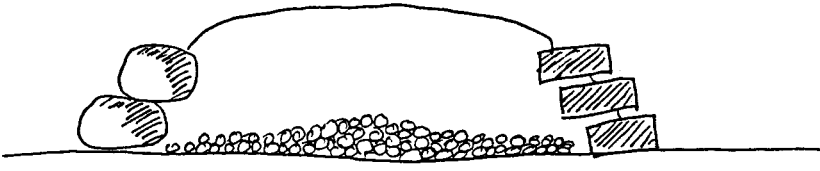
The reason for my success is probably that my garden plot has a slope of about 10° and faces due south, and the soil itself is by nature a light sandy loam and where it was not light, it has become so during the years. I have supplied it with about 40 – 50 litres of yellow gravel per square metre, to make the garden soil more porous and well drained. The alfa and omega of growing fritillaria (and most other bulbous plants) is drainage. The majority of species will stand the frost under these conditions; you will only have to grow the most tender ones, especially the American species, in a more protected place.

In the beginning I wondered why I could grow so many different species in the face of the very capricious Danish winter, when people in south England had given up. The problem in England, though, is surely not the frost, but the considerable amount of rainfall compared to ours. We have a total rainfall of about 670-700mm, about 400mm of which occurs during the growing season from April to October. However, in Denmark things can go wrong too from time to time, as they did for me in the spring of 1986, and this is the reason why I built my alpine house.

That drainage is very important, I can illustrate with an example: I have a group of *F. pallidiflora,* which has grown in one place for more than 10 years now. It is a really fine group, with an enormous number of stems and flowers (Fig.5, p16). The group was planted near to the stones at the edge of a raised bed, 20-30cm above normal soil-level – very well drained, but with a great risk of frost. This, however, has not been a problem, and we have had really hard frosts (down to minus 25°C). In contrast, in the beds of my former vegetable garden, which are now my bulb beds, I have grown masses of *F. pallidiflora*, and although these beds are very well drained as already mentioned, I have some years lost hundreds of plants during the winter and

spring; without doubt because of water and rot problems. Consequently, a raised bed edged with large granite boulders, flagstones or old railway sleepers would surely be satisfactory, especially if a layer of broken stones is placed on the old soil-surface, and on top of this is added a good light porous soil mixture (see Diagram 1).

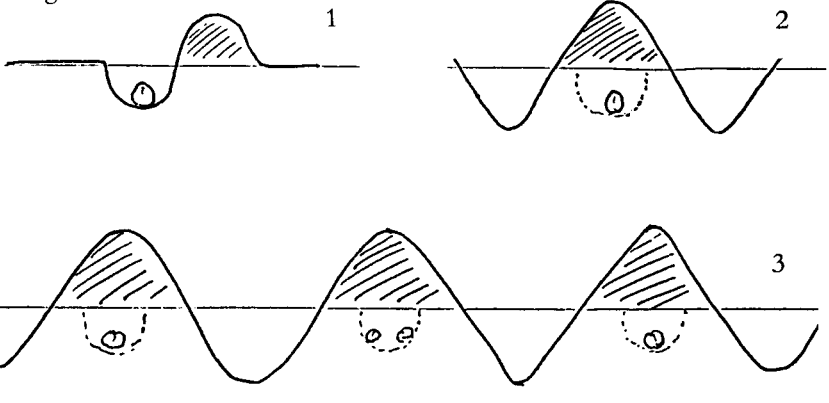
Diagram1



In my vegetable garden bulb beds I have made my own type of raised beds. These are done in three steps, as shown in Diagram 2 and Fig. 4, p16.

1. I make narrow trenches and place the bulbs in these.
2. Then I rake the soil up over the bulbs to form the small ridges.
3. In this way I make rows of bulbs beside each other, they look like rows of potatoes.

Diagram 2



This system works well with me, and it helps of course that my garden plot has a slope of 10° due south, but I think it would also work in a garden without a slope, if the ridges are high enough and the bulbs are placed above the lower level of the drills.

There will always be some losses during the growing season for one reason or another. Consequently it has always been necessary for me to propagate all the species.

I never sow any seed of fritillaria (or any other bulbous plants) in the spring. I always sow in mid-September, never later than mid-October. If I get any seed later, it will be stored until next September. I always sow all my seed in wooden seedboxes, a Danish standard-size: 58 cm × 31 cm. The height of the boxes is more than the standard 7 cm; it is 10 cm: I have made all the boxes myself. The wood used for the boxes has been pressure-creosoted. These boxes stand outside in the same place for two years undisturbed, they are only watered and weeded. Now, as I have the new alpine house, I have some of my seedboxes in there too, especially the most tender and rare species. It is of course practical to sow seed outside, as with the natural selection which occurs, the less hardy plants will die. I feel it hurts less if 50% of the seedlings die, than if 50% of the bulbs planted into the beds die. When the seedlings have been 2 years in the seedboxes and the tops have withered, the small bulbs will be placed in my bulb beds in August/September – or now some will be placed in pots in my alpine house.

In Denmark all fritillarias can take all the sun available (if we are so lucky as to get any!) In more southerly climes (in Greece and Turkey) you will almost always find the fritillarias on the north or north-east facing mountain slopes. In these countries, the sun will burn and heat the soil so intensely on the south facing slopes that the bulbs can't endure growing there, they dry out and die. The temperature differences between the south side and the north side of the mountain is, however, sufficient to enable the plants to survive on the cooler north side. Consequently, it is not necessary in my Danish garden to have any cover from trees or bushes to protect the plants from the sun, but trees could be very suitable to protect the plants from the night frost. I have absolutely no cover for most of my bulbs, but I cover the most rare and tender species in my beds and boxes with branches of spruce during the wintertime (from mid November to early March); I also protect the most early flowering species from the late night-frost in March or April. Here in my garden, which is a frost-pocket, we have night-frost several times in May, and they start again in mid September.

Having explained in general about growing fritillarias out of doors in my garden here in Denmark, it is now my intention to survey the different species and subspecies which I have collected in the wild or have received from some of my many plant-exchange friends. In this section are botanical notes mentioning the best identification characteristics, which

hopefully should make the determination easier. There will be no general description or keys; they would be long and boring, and surely be outside the scope of this article. In addition I will say a little about the locations where I found the plants in the wild, and how the plants have done in my garden in the very capricious Danish winter. We had three very cold ones from 1985-87, followed by four mild ones between 1988-1991.

Let me begin with some of the small yellow species. Years ago, when I first bought *F. bithynica*, it was named *F. citrina*. Later I bought a plant named *F. schliemannii*; it was *F. bithynica* too, named after the very rich businessman and archaeologist who excavated Troja in Anatolia, W. Turkey. But this species has yet more names, including *F. dasyphylla* and *F. pineticola*.

Fritillaria bithynica is found in the western and south-western part of Turkey as well as on some Greek islands, such as *Samos*. This was the first fritillaria I found myself in Turkey in 1977. I found it in several places in the south-western tip of Turkey, near Mugla. *F. bithynica* is not a pure yellow fritillaria, most of the flowers are yellow-green to green-yellow. I have seen a few with a red-brown tinge; it is not the most 'showy' fritillaria. The type which was sold as *F. schliemannii* is the most yellow one I have seen. This differs from the form I first collected as *F. bithynica*, as it has bulbils which come not from the bottom, but from a ring at the top of the bulbs. However, when we visited north west Turkey in the spring of 1990 we found *F. bithynica* in abundance, and here we found the same phenomenon with bulbils arising from the upper part of the bulbs. I have seen the same phenomenon in other species such as *F. nigra* and *F. pontica*. Two of the four collection numbers from the first collection of 1977 I still grow, which means that they have survived all the horrible Danish winters since 1977 in the garden. The first *F. bithynica* we found in open pine forest from 200-700m but in 1990 we found it in north west Turkey in more open areas with deciduous Quercus scrub.

The plants from my first collection exhibit an unusual variation. I noticed this one or two years after I found them, and after they had flowered and set seedpods in my garden. The seedpods were of two very different types. One of them was round and smooth, like a bald-headed man. The other had extremely winged seedpods. I would have thought that such a characteristic would have been sufficient to separate them as two different species, but Martyn Rix has told me that he has found both round and winged pod-types in the same locality in the wild, so it must be the same species. I have never seen this phenomenon myself, and I have not tried to make the cross and back-cross to see if there is a simple Mendelian split of 3 : 1 for this winged/unwinged character. Apart from this, I cannot see any difference between the two types.

0S–434
winged-pod
form

0S–432
smooth-pod
form

Fritillaria bithynica

Ole Sønderhousen

F. bithynica is 10-20cm high with six to nine leaves, usually seven. One of the important factors for the determination of fritillaria species is the style and stigma. *F. bithynica* has a smooth slender style and an entire stigma. I recommend this species for a raised bed with open pines overhead.

Another fritillaria which resembles *F. bithynica* very much is *F. carica* (Fig.6, p17). The two have been confused for a long time, and it is of great merit for Martyn Rix to have solved this problem. It is now 15 years since he described *F. carica* and gave it specific rank. It is so sophisticated that the two species grow side by side on the Greek island Samos. I have found it myself in Turkey, just on the other side of the strait between Samos and Turkey. In this location it is a really fine yellow fritillaria. *F. carica* has its leaves a little spiral-turned, and the plant is a little more compact than *F. bithynica*. I can mention some characteristics to distinguish between *F. bithynica* and *F. carica*: the style is much stronger in *F. carica*, it is swollen and heavily papillose. Inside the flower there are small nectaries, they are dark (brown-violet) in *F. carica*, but green-brown in *F. bithynica*. The flowers of *F. bithynica* are more conical than the flowers of *F. carica* which are mostly campanulate.

On the same trip in 1980, a few days later and in another place, we found a small light yellow fritillaria. Many of the plants had flowers with the petals brown edged. Because of that I was in great doubt as to what it could be, but Martyn Rix told me, from the dried plant material, drawings and photos which I sent to him, that it was a typical *F. carica*. This form has a lot more bulbils than the one I had found earlier. It has been more winter hardy than the former, but it was found at a level of 1350m. Some years later I found a pretty yellow one at a level of 1800m, so now I hope this will do well and propagate well, it is superior to the former.

Later on during the 1980 trip, approximately 100km to the east of our first *F. carica*, we found another small deep yellow fritillaria in a pass at 1700m. I saw immediately that I had a species in front of me which I had never seen or heard about before, and it was in fact a new species. Martyn Rix confirmed this and gave it the name *F. serpenticola*, after he had studied the material which I sent to him: photos, drawings and dried plant material. When Rix wrote about fritillaria in the "Flora of Turkey" he placed *F. serpenticola* as a subspecies under *F. carica*. – I do not agree with this conclusion, I think it is wrong; as you can see the difference "from an areoplane", I think it should have specific rank. The botanical differences are: *F. serpenticola* is only 3-6cm high with 4-5 leaves (Fig.10, p34), *F. carica* is 7-15cm with 5-8 leaves. The nectaries are, like the style, one of the important botanical characteristics – and here *F. carica*, as already mentioned, has dark brown-violet nectaries, while they are yellow in

F. serpenticola. Most flowers of *F. serpenticola* have two small violet dots near the base of the petals – and these are of course not the nectaries! *F. carica* has a swollen heavily papillose style, *F. serpenticola* has a slender style, only a little papillose. The flower of *F. serpenticola* is small and widely conical, the flower of *F. carica* is longer and campanulate. *F. serpenticola* also has no bulbils, and it is endemic to this pass only, as far as we know. It is an early flowering species, as it starts just after *FF. alburyana* and *pudica*, the earliest here, about three weeks earlier than *F. carica*.

This is not the only subspecies where I do not agree with Martyn Rix's determination, and we have discussed it in our letters and in his home. But whether it is a species or subspecies or not, we now know the botanical difference, and know what we are talking about. *F. serpenticola* is a really lovely small plant, absolutely hardy here. It does not like too much water, and consequently does not like the wet springs, but I have a good stock in my alpine house, where they have flowered well and regularly.

F. serpenticola grows in serpentine soil, just as *F. epirotica* does in North Greece; in naked brown stony soil with very few plants: some Muscari, Crocus, Chionodoxa and a few big trees like junipers and pines. It was a really successful day, as my wife found *Crocus baytopiorum* in a new locality – the third one – only a few hundred metres from *F. serpenticola*.

In the south west corner of Turkey, just north of the Greek island of Rhodos, two more yellow fritillaria species grow. These are *F. sibthorpiana* and *F. forbesii*. The name of the first has been misused for many years, for different species in Turkey as well as in Greece, all of which were small yellow species with 5-7 leaves. It was the two Swedish botanists, Wendelbo and Runemark, who rediscovered the true *F. sibthorpiana* in that area about 20 years ago. *Fritillaria sibthorpiana* (Fig.7, p17) is easily recognisable, as it has only 2 leaves, the lower is widly lance shaped, the upper smaller and much narrower – very rarely it has a third small narrow leaf too, but it never has 5-7 leaves, as had all the species which were wrongly given the name *F. sibthorpiana*. The misnamed species are now known as *F. euboeica* and *F. carica*.

The true *F. sibthorpiana* grows in humus rich soil in open pine forest only 100–400m above sea level, where there will surely never be any frost or snow. How has this species done here in Denmark in our cold climate? I have been surprised, it has done well, much better than expected. Of course, I have to admit that the three very severe winters of 1985-87 destroyed some of the bulbs, but from summer 1986 I had my alpine house, and there they survived and flowered very well. I had a pot with seven flowering stems, which I hand-pollinated very often, so I got seedpods on most of them. That was fine – it is, of course, a fantastic experience to make plant hunting trips, but in doing that there has to be a

condition that you are able to grow and to propagate the bulbs which you bring with you. I would never go out to the same place every second or third year to dig up new material. That is taking liberties with nature.

In the summer of 1988 I had in my garden a flowering plant which had been placed there in 1980, which means that it had survived the horrible Danish weather, including the three severe winters, for a total of eight year. The flower of *F. sibthorpiana* has a warm yellow colour and is narrowly campanulate. It has a swollen style which is very papillose.

The other fritillaria from this area is *F. forbesii* (Fig.8, p17). I have not found it there, but by chance I found it about 100km eastwards. It differs from *F. sibthorpiana* in having 5-10 leaves, which are long, very narrow and u-shaped. Although I have found it from 500-1100m, it has not been as winter hardy as *F. sibthorpiana* from a much lower level. I always try to collect my plants from the highest level – but you cannot be sure that these plants will be more hardy and better suited for the cold Danish climate, as many different conditions have their effects. An important parameter is the time when the leaves emerge above the surface of the soil. If it happens too early, it will be difficult for these plants to stand the winter frost and the night-frost. Our wet winter and spring would be able to destroy the bulbs too; alternating frost and moisture is surely the most important reason for failure in growing fritillaria out of doors here in Denmark. And no worse place could have been chosen than my garden, as it is a real frostpocket. The flower of *F. forbesii* is also narrowly campanulate, but is not as pure yellow as *F. sibthorpiana,* it is often more yellow-green. The style is swollen and papillose, although less so than the style of *F. sibthorpiana.*

The island of Rhodos is a Greek island, but from a geographical and botanical point of view it belongs to Turkey, and in the book "Flora of Turkey" Rhodos and all the eastern Greek islands, Kos, Samos, Lesbos and others, are included, as their flora definitely belongs to Turkey.

In spring 1969 on Rhodos I found my very first fritillaria. This was at the time still a 'species nova', as my countryman Alfred Hansen named and described it in the autumn 1969 – *F. rhodia* (Fig.9, p17). At that time I always planted my rare and tender plants in front of the south wall of the house – and so I did with *F. rhodia.* The leaves and flowerbuds of *F. rhodia* emerge very early in the spring, consequently my first plants were destroyed by frost. A later collection, which was not planted in this "protected" place, but out in the garden, has done well. The plants flowered well, set seed and I had a lot of seedlings – then the three severe winters killed all the *F. rhodia* in the garden. Fortunately I have some nice pots in the alpine house, so I have kept stock, I have four flowering plants which in the last few years have set seeds. As soon as my seedlings are old enough, I will place them outside again, and the last four mild winters of 1988-91 should have been

problem for them.

F. rhodia has narrow leaves like *F. forbesii,* but they are not u-shaped. It has 7-10 leaves, sometimes up to 14. There can be more than one flower on a stem, and I have seen a plant in the wild with four seedpods on one stem. Until now none of my plants have had more than two flowers on a stem. The flower is smaller than that of *FF. sibthorpiana* and *forbesii* and the petals are more flared to a wider campanulate shape. The flower colour of *F. rhodia* is green-yellow, it is not the most showy fritillaria. The style is slender, entire and smooth, i.e. quite different from the other two, and thus a good characteristic.

The last yellow fritillaria I will mention was found in another corner of Turkey – in the south-east just south of Lake Van, which incidentally is a very large lake. It is *F. minima,* a small plant only 4–10cm high (Fig.11, p34). It has pure yellow – lemon yellow – small conical flowers, which fade to an orange brown colour when the flower dies. The style is trifid and papillose – different from the other species I have mentioned above.

F. minima was considered to be an endangered species, because until recently it was only found on one mountain – Artos Dag – growing up to the very high altitude of 3200-3300m. However, with my knowledge of the laziness of human beings, I was not concerned about the safety of the plants, it is a lovely long trip to walk from a level of 1600m, which is the level of lake Van. Fortunately Prof. T. Baytop found it on another mountain south of this area, and it is plentiful in this new location too. I heard about this new area when Prof. T. Baytop showed me all his herbarium sheets with fritillaria in the University of Istanbul in 1981. The following year my wife and I had the opportunity to go to the new location, a lovely place, with unspoiled nature, masses of snow and mountains of 2600-3000m high. Just at the edge of the snow-patches *F. minima* and *F. carduchorum* (now *F. minuta*) flowered.

It was interesting to see that the plants of *F. minima* from the new locality were more robust than those from Artos Dag – many plants had 2-3 flowers on a stem, which I have never seen on Artos Dag. *F. minima* from the new locality seems to do better in my garden. It also seems to do better outside than in my alpine house – where it surely misses the severe winters they have south of Van. It is not uncommon there for *F. minima* to be covered by 2m of snow in the winter, which gives protection against the frost which may be more than minus 20°C for long periods.

In my opinion *F. minima* is an extraordinarily nice small fritillaria.

A Wild Crocus Chase to Mugla . . . and elsewhere on the way

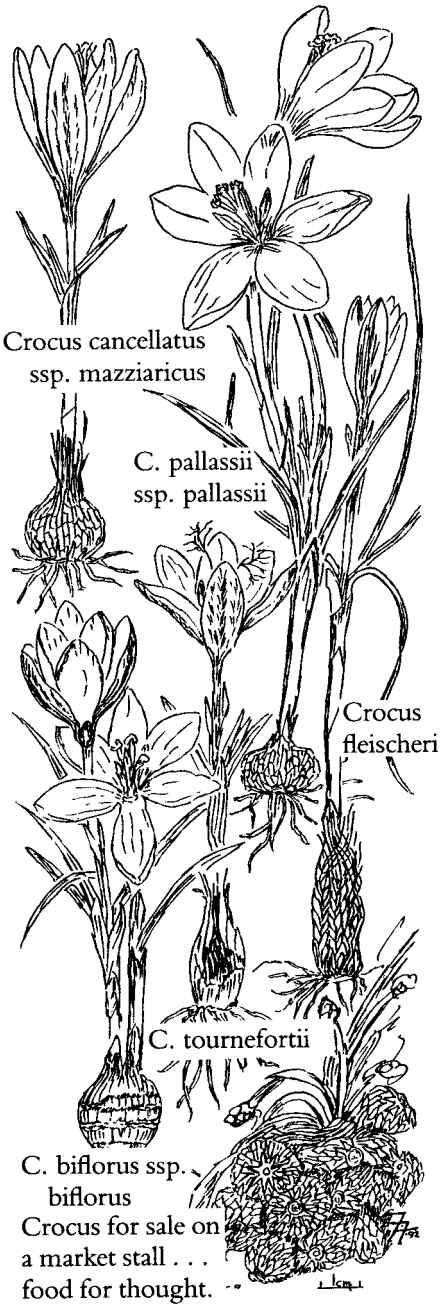
FRANCIS FERNS

My diary note reads "Have now been bouncing around the eastern Med. for ten days . . . variously viewing old Lycian sites and botanical digs . . . our leader can conjure fritillaries out of bare earth, as can another member of the party conjure crocus. This day, 12th April, sailing towards Marmaris we suffered a force 7 gale. I am not surprised that St. Paul on his travels was so often shipwrecked."

The trip had been a one off diversion to explore some Greek islands and the Turkish mainland with plants in mind: our principal transport a small ex-Canadian Navy minesweeper called 'Small World'. She looked very smart at the quayside, but when under way had a permanent list to port. However, she had a wonderful ability to tie up in the most unusual places; so enabling us to get ashore by gang-plank or boat, and walk inland or hire transport to explore the coast and mountains.

We went aboard at Rhodes, instead of the scheduled Kos. A start which augured that where we would travel from day to day was to be in the lap of some very Greek gods. The mountain Profitis Elias (1215m) is the obvious target if one is in port for only a day, but in spring the mountain needs longer to do it justice. My diary note reads "M.R. and D.D. organised a jeep . . . in we tumbled . . . to move off accompanied by a loud clang each time the body banged against the drive shaft . . . all out at the first traffic lights and back to Avis for two little Suzuki saloons!" The note reads on "very good hunting . . . *Paeonia clusii* ssp. *rhodia*, of the lovely white single flowers with a boss of yellow anthers and rose pink stigma held above fresh green leaves, is going over . . . *Orchis papilionacea*, along the river bank, shows hardly a flower this year, such is the contrariness of seasons . . . no *Cyclamen persicum* in flower . . . higher up the mountain *Cyclamen repandum* ssp. *rhodense* is flowering in the pine woods, as also is *Anemone blanda*." The little Suzukis and their drivers did their stuff beautifully, taking us well up an unsealed side road for a picnic lunch: No sedate forty-seater stops for ten minutes on tarmac sealed surfaces this trip.

At lunch the talk was all about crocus, of a species new to me, for I could see none. I sat and listened. There should be two species on the mountain; in fact on the steep grassy rocky buttress, just above the picnic site, but how to identify them when they had long since flowered? Simple really when you knew the answer; by their leaves and tunics.



Crocus for sale on a market stall . . . food for thought.

Crocus biflorus can be divided into a limited number of subspecies. Brian Mathew describes "the common spring flowering 'annulate' crocus . . . the most commonly known form at one time . . . referred to by Miller (1768), was white with a yellow throat and prominent purple stripes on the exterior of the segments . . . this or at least something very similar is still known as the 'Scotch (sic) Crocus', which is a sterile form of some antiquity". *Crocus biflorus* ssp. *biflorus* has long leaves at flowering time, no prominent ribs in the groove on the underside. The corm is flattened, globose, the tunic tough and leathery (coriaceous) splitting lengthwise, forming rings of tissue at the base.

The other species is *Crocus tournefortii*, an attractive winter-flowering lilac-coloured crocus for the alpine house. The leaves are only a millimetre or so wider and not so straggly. The differences seem slight in print but are quite noticeable on the ground. The corm is ovoid with a membranous tunic. When in flower there is no mistaking the style divided into many slender wispy orange-yellow branches.

Having tobogganed down one or two of the less well

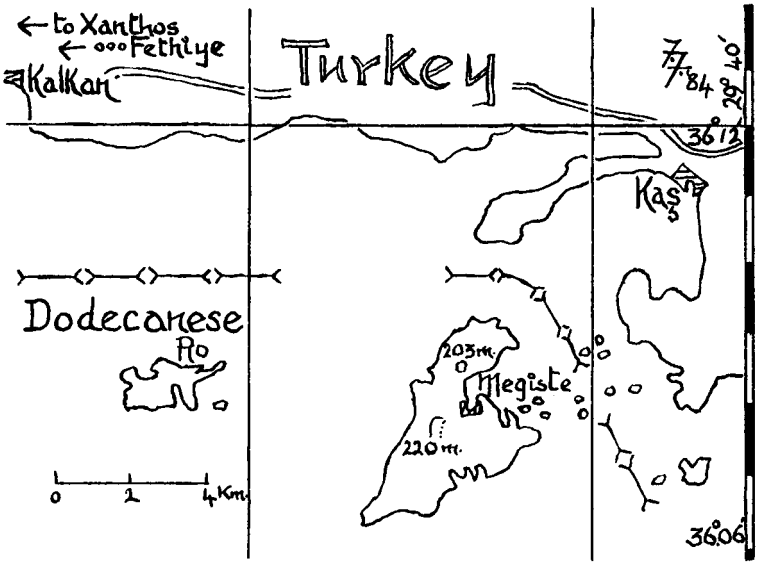
surfaced roads of Profitis Elias, the Suzukis were returned to Avis all in one piece. 'Small World' sailed out of Rhodes past the statues of the hart and hind to Kastelorhizon or Megiste, a pip of an island a hundred and sixty kilometres from Rhodes, only 4km from Kas on the Turkish mainland; not often visited by botanists.

Lord Kinross, writing under the name Patrick Balfour in 'Mountains and a Shore' (1966) says "like all the world . . . like Kas too, Meis (Kastelorhizon) is feeling the pinch . . . 350 miles from Greece . . . not the richest jewel in the Greek diadem . . . and now the town on the island and the town on the shore can only gaze at each other with mutual longing and regret."

For such a small island the flora is quite rich. The ground cover comprises the greenery typical of any small eastern Mediterranean island seen from the sea. A well engineered mule track gives access to the cliff face seen from the quay. The ground cover on closer inspection comprises large bushy plants of *Euphorbia dendroides,* not a useful garden plant, but typical of the landscape. Also *Helichrysum, Phlomis, Psilostemon, Sarcopoterium* and *Teucrium.* I do not give specific names due to the proximity of the Turkish coast.

Getting down to grass roots, the shaggy ground cover is some sort of creeping bent grass, probably *Agrostis stolonifera*. Wandering off the track to explore and to look closer, a gladiolus, *G. communis* or more likely *G. illyricus* is flowering here and there, also on bare rock a campanula of *G. rupestris* persuasion, but precise and easily understood descriptions of these monocarpic Mediterranean species are hard to come by in the popular field guide literature.

Kastelorhizon or Megiste



The red-tinged rock of the cliff, from which some say the island gets its name, now makes an unclimbable barrier, only the track points the breach in the rock as it zig-zags to the top. "The yellowing leaves of a snowdrop, *Galanthus nivalis,* wedged in a crack. One or two plants of *Onosma sp. Ricotia cretica* grows quite tall and straggly, drawn by the shady cliff, facing north towards the Turkish shore. The foot of the cliff has a good depth of soil; there *Colchicum macrophyllum* (Fig.13, p35) has thrown up armfuls of foliage. The bulb lies on its side, at least 30cm down in the 'terra rossa' earth." Seed was still soft, but treated with hormone rooting powder, for the fungicide content in the powder, it hardened without rotting and did germinate. Better to try that, because this colchicum is a scarce species and should not be grubbed up like potatoes, as some European predators were

doing the day before on Profitis Elias. The bulbs need frost protection in most winters and give of their best with fine, usually chequer-patterned flowers in November. *Fritillaria latakiensis* was also there on the grassy slopes above the waterfront. It is similar to *Fritillaria elwesii* but has a markedly three-lobed protruding style.

Besides photographing *Arum dioscoridis* (Fig.12, p35) my diary goes on to remind me that "The wind got up overnight and the rust bucket tied up alongside kept bumping into us . . . a noisy night . . . sailed after breakfast to Kas . . . cleared customs and went ashore to look at the countryside and another ruined Odeon . . . Turkish women in baggy trousers; surprisingly not at all self conscious or worried about cameras. A new tarmac road passed through Kas, but that is all. The weather got fresher . . . sailed after lunch to Kekova Sound, a safer anchorage as the wind and choppy seas increased." For the next three days my new found technique lay dormant. Time was taken visiting the haunt of St Nicholas at Demre. Father Christmas was definitely short of exciting presents here. *Serapias vomeracea* showed plants merging towards *S. parviflora* as it does further east in the Mediterranean. The pages riffle on; ruins of another long gone civilisation at Xanthos where leaves only of *Cyclamen graecum* could be found. And so to Fethiye.

Fethiye woods on Baba Dagh are in their way nearly as rich in exciting plants as Rhodes. Both are in botanical Asia. When I was there Baba Dagh was the classic site of the then recently (1976) discovered *Sternbergia candida*. Turkey, however, lacks the will and tradition to preserve its unique species in the wild. My note goes on "Met and stopped a saloon car coming down the forest track, to be shown a boot full of boxes, a veritable Aladdin's cave of rare, endemic, and beautiful spring flowering bulbs, proudly shown by that prospector, asking for identification of his collection of *Fritillaria carica . . . Sic transit Fritillaria et aliae ex Asia*".

I am told that *Sternbergia candida* has now been collected out from that site. Anyway we did see it and did photograph it. "Found also the aptly named *Cyclamen trochopteranthum*, with the lovely pink petals of the flower twisted like a ship's propeller, much more so than the flowers of *C. coum. Paeonia mascula* and *Chionodoxa forbesii* at the forest transition zone from *Pinus brutia* to cedar. *Fritillaria acmopetala* seen at the top of the Mediterranean zone."

Crocus cancellatus is easily identified by the coarse netted tunic. *C. c.* ssp. *lyceus* comes from Fethiye where it is endemic in Mugla Province and flowers in November. Also in these woods *C. pallasii* ssp. *pallasii*, another November flowering crocus is found; to my eye a rather wishy-washy lilac flower, needing the protection of the alpine house. Crocus corms can be found in bundles in the markets for eating, a not uncommon sight in the eastern Mediterranean. In the Cretan market at Chania skepfuls of grape hyacinth

bulbs are on display, though I have never seen them served for dinner as vegetables.

Noted is *Fritillaria forbesii,* (Fig.8, p17) scarce among Kermes oak, pine and styrax. A small flowered yellow fritillary, tetchy in cultivation and rare in the Marmaris area. Not surprisingly, the light was fading when we got back to the small stand of *Fritillaria carica* (Fig.6, p17), seen on the way up; mercifully untouched by our collecting friend met that morning. The flowers were mainly yellow or greenish in colour, some had reddish flecks on the outer petals. A neat little fritillary growing on a leafy well-drained slope over a limestone base beneath a canopy of pine and cedar, height c. 1200m.

Baba Dagh held tight to one secret. I only learnt the answer seven years later. On the site of ancient Kaunus, near the fever ridden marshes of Gokkaya Sound, there is yet another odeon. I was standing at the top, viewing it with distaste, since all I could see was *Campanula hagiala,* when an urgent voice called, "Come . . . look at this." Scrambling down from the gods to about the grand circle, I beheld the ugliest flower that I can ever remember seeing. This aristolochia had a lip about the size of a matchbox with the colouring and marking of a badly cirrhosed piece of long dead liver. Fortunately it did not smell, because it took time and patience to record. With the help of the experts, we wrongly named it *A. hirta.* I never learnt the true name until in Crete last year I was told that a new species had been found on Baba Dagh in 1976 and recorded in the Flora of Turkey as *Aristolochia poluninii.* It is endemic to the Fethiye region but has not yet been recorded in colour to my knowledge. First simulate an odeon should you wish to grow it.

Before the Turkish mainland is left behind, let me justify the title of these notes. At Marmaris the search for fresh crocus and fritillary species had to reach well inland towards Mugla, up to high ground known as the Cicekli Beli – the Flowery Pass, an attractive name in either language. In the event it proved a goat and tick-ridden spot where the few fritillaries took cover nodding their despairing heads in the centre of bushes of Kermes oak. *Daphne sericea* was in full flower. *Crocus cancellatus* ssp. *mazziaricus* was there, also the yellow corms of *Crocus fleischeri,* but the white flowers were long since over and seed capsules pushing through. This crocus has a unique basket-weave to the corm tunic. *Fritillaria acmopetala* grew in shade on a wooded hillside south of Inisdibi. We also saw a woody prostrate orange coloured pea flower. Quite novel and attractive, but unlikely to survive in cultivation probably being garden tender, and the name ? . . . *Cystisopsis dorycniifolia* ssp. *reesiana!*

My diary note grows thin. There is a list of species found on Simi which would fill a double column and comprises the usual Greek salad. The hillside of the island was covered with leaves of *Crocus tournefortii* dotted all over the slopes above the main village. It must be a cheering sight flowering from September to the year end. *Fritillaria sibthorpiana* was

Fig. 10 *Fritillaria serpenticola* (p24) Ole Sønderhousen

Fig. 11 *Fritillaria minima* (p27) Ole Sønderhousen

Fig. 12 *Arum dioscoridis* (p32) Francis Ferns

Fig. 13 *Colchicum macrophyllum* (p31) Francis Ferns

Fig. 14 *Sorbus reducta* (p42) Henry Taylor

Fig. 15 *Sorbus matsumurana*, Japan (p43) Jim Jermyn

Fig. 16 *Gentiana terglouensis schleicheri*, on the Grand Massif (p53) Kathleen Baker

Fig. 17 *Gentiana nivalis* (p53) Kathleen Baker

Fig. 18 *Gentiana clusii* (p53) Kathleen Ba

found, but I never saw the yellow flowers. *Cyclamen persicum* was in flower and Romulea leaves and seedpods all over the place.

Kos produced a bonus in the yellow-flowered *Muscari macrocarpum* with a scent that fills the alpine house in spring which makes up for its subfusc sterile flowers; one of those plants that intrigue me.

As we sat drinking ouzo and coffee waiting for the airport bus; musing on the fact that we had been up to sub-alpine zones time and time again, and more on Baba Dagh, from sea level, my mind suddenly switched to a little verse by Piet Hein, the Dane, who wrote "We glibly talk of nature's laws, but do things have a natural cause? . . . Black earth turned into yellow crocus is undiluted hocus-pocus", to which I would add: "But Brian Mathew on the crocus surely brings the genus into focus". Perhaps the shortest book appreciation ever written?

REFERENCES

Brian Mathew, 1983. The Crocus. Batsford.
An absorbing, readable and informative monograph on the genus.

Martyn Rix & Roger Philips, 1981. The Bulb Book. Pan Books.
Detailed illustrations in colour.

Brian Mathew & Turhan Baytop, 1984. The Bulbous Plants of Turkey. Batsford.
A useful backup to the other two with some photographs.

P. H. Davis, 1965. Flora of Turkey. Edinburgh.
The definitive authority, expensive and not illustrated.

Growing on Sphagnum

IAN AND MARGARET YOUNG

It is some years now since we first read A. Duguid's article, "Propagation by Sphagnum". Encouraged by this article, we set about experimenting with this technique to try to raise plants such as shortias and various ericaceous subjects with which we had had little previous success. A. D. writes of sphagnum that "its great advantage over other mediums lies in its ability to retain moisture, thus avoiding drying out, which is so disastrous for germinating seeds." Even though sphagnum may appear to be a magic medium, success rates will not be high if the seed sown is not fertile and in good condition. Seed sown fresh is by far the best, but provided any stored seed has been kept cool and dry, success is still possible. We sowed seed of *Kalmiopsis leachiana* which we got from the surplus seed distribution in April 1991 and germination was excellent. If seed has been allowed to get damp in storage, which has triggered the germination process, then dried out again, this will prove ruinous. A. D. prefers the pink or deep crimson form of sphagnum moss which grows on high moors but all forms will suffice provided they are free of the slimy growth often associated with ditches. The high moor forms do tend to have even better water rententive capacity due to their dense growth pattern. A. D.'s method of preparing the moss is as follows; "Spread the moss in the sun, turning it until thoroughly dry; then rub it through a quarter-inch sieve with the hands (or a stiff brush can be used with advantage). When this is completed you have a medium not unlike rubbed leaf mould, fine and springy. I dry this out again, either in a heated greenhouse over pipes, or in a slow oven until it is very dry and crumbly. This is to ensure that the sphagnum is dead, as, if it starts into growth in the pots, it will kill the plants."

Our method differs in that we dry out the sphagnum by placing quantities of squeezed out moss in an old pillowcase and giving it a whirl in a spindryer to start the process before drying in the sun and then pass it through a garden shredder (every home should have one, but that's another story).

Seed pots, in our case 7cm plastic, are filled to within 2cm of the top with a 50/50 peat and gritty sand mix, with a small amount of Vitax Q4 or similar. A 1 – 2cm layer of sphagnum is placed on top of this before the pots are thoroughly soaked from the top. The seed is then sown on the surface of the sphagnum and the seed pots kept under cover in a cold

frame. If the frame lights are left off in warm weather we always cover the frame with a mesh as blackbirds love to scatter the moss around, seedlings and all!

If the seed is going to germinate, it is usually up by late May but we always keep these seed pans as we have had odd germination as late as July. However, getting seeds to germinate is usually the easy part; with ericaceae, shortias and the like, the real problem lies in growing on. It is not really difficult to raise these plants but it does require patience, constant attention and an understanding of the plants' habits. As the moss in our method has not been killed (though the spin-dryer and the shredder must have frightened it a good deal!) it does start to regrow; we think this provides favourable conditions for the young plants but regular trimming with a pair of scissors is necessary to save the tiny seedlings from the 'forest'. The growth of the moss keeps a buoyant atmosphere around the plants which is essential to their health. They have a very small and shallow root system so any drying out at this stage is fatal. The peat/sand compost below the moss mostly serves only to support the layer of moss, though there may be some capillary raising of nutrients in the mix up to the seedlings. Their roots do not penetrate beyond the moss for some time. At first, we tried filling the pots entirely with sphagnum but we got spindly seedlings since the seed tended to drop through the moss and we have been happier with the results from using the peat/sand layer below.

The seedlings should be given dilute liquid feed at regular intervals and should not be pricked out until at least their second spring; we sometimes leave them until the third spring, if we think they are not large enough. Great care should be taken not to damage their still small root system when pricking out and the medium used should be rich in humus and very well drained. We use, by volume, 50% leaf mould and 50% grit. The pots should be kept constantly moist and shaded, with the regular feeding continued. We have had first flowers on shortias in their third year by this method. Recently we have been using sphagnum to replace the peat in the 50/50 peat/grit mix in the seed pots and results seem good. We have also had good germination of seeds such as *Eritrichium nanum* and *Diapensia lapponica* sown directly onto this 50/50 sphagnum/grit mix then covered with a thin layer of grit. It should be of no surprise to us that the more difficult seeds do so well in this medium as it is mimicking the conditions that many of them encounter in their natural habitat; we're back to observation and an understanding of the plants you are trying to grow.

A. D. also describes how he germinates lilies in a pot of sphagnum, transferring the entire contents into a larger pot filled with a suitable compost so the seedlings can root right through the sphagnum into the compost with minimum disturbance. We have not tried this method but

do know of someone who has great success this way.

We are very grateful to Mr Duguid for describing his method which set us on the path to successfully raising many of these more difficult plants. We hope that we may encourage you to try growing on sphagnum and wish you the same success and enjoyment that we are getting from a garden full of these wonderful plants.

Cornus suecica Lionel Bacon

Small Rowans

BRIAN HALLIWELL

The genus *Sorbus* is widespread over the Northern Hemisphere. It occurs in lowland areas, including forests, extending up mountains to become part of the alpine scrub. All are deciduous, and most species make small to medium or even large trees, although some are only shrubs. The alternate leaves may be simple: maple – like, or lanceolate or compound when they are pinnate. In many species there is good autumn colour, in shades of yellow and red. They have five-petalled flowers; in white, cream or occasionally pink, which are produced in loose corymbs and often have unpleasant smells. It is, though, the attractive fruit which is their best ornamental feature. Within the genus, some species are small enough to grow on a rock garden. Two species are reasonably well known in cultivation, and a further two Japanese species have recently been introduced.

Sorbus reducta (Fig.14, p36)

This is the best known and most widely grown species. There are two forms: one which is rhizomatous and suckers, which can within a few years produce a thicket of upright stems; the other, which is non-suckering, remains as a single trunk. Trunks which grow upright and may reach 600mm, produce side shoots sparsely. The pinnate leaves are about 100mm in length and are made up of between eight and fourteen leaflets. These are glossy green above, but mat green on the underside which in spring can have a scattering of brownish hairs. Before the leaves fall in autumn they become yellow or bronze streaked with red, or eventually totally red. The white flowers, which are produced in late May, are followed by globose pink berries.

For a rock garden the non-suckering form is best. This can be increased easily by seed. Collect fruits when they are fully mature, extract the seed from the pulp and wash it well. Sow in containers which should be stood outside and exposed to winter cold, and germination should occur in the following spring. The rhizomatous form can be lifted when dormant and the shoots separated, ensuring that each has some fibrous roots.

S. reducta is said to have been introduced to cultivation by Yu in 1937, although the species had been discovered by Forrest in 1906 on the Lichiang Range in Yunnan in Western China. As there are two forms in cultivation, it seems probable there was more than one introduction.

Sorbus poteriifolia (pygmaea)

According to Bean's 'Trees and Shrubs Hardy in the British Isles' this makes 'a dwarf or prostrate shrublet', but I have seen it only as a prostrate plant. It is described by McAllister (1986) as rhizomatous and yet in the few plants that I have seen this is not obvious. The main stem or trunk reaches about 300mm and is branched. The pinnate leaves grow to about 80mm, and are composed of eight to fourteen leaflets, which are glossy green and turn yellow or red before they fall. The inflorescences, of a few flowers, each with 5 petals, are white marked with pink which intensifies with age. The berries are at first red but become white as they mature.

This species seems to demand a moist soil and is better on a peat rather than a rock garden. Seed, extracted from fully ripe fruit, should be washed before sowing in a container which is plunged outside to be exposed to winter cold, with germination occurring in the following spring. This species and all others within the genus are prone to infection by fire blight and honey fungus.

A native of Yunnan and northern Burma, *S. poteriifolia* was discovered and described by Handel Mazzettii in 1916. It was introduced into cultivation by Kingdon Ward in 1926 from an altitude of 3600-3900m in the Seingkhu Valley in north-west Burma.

This species, which has been rare outside Botanic Gardens, is beginning to be offered for sale by a few nurserymen. It is an interesting small shrub for a rock garden and is well worth searching for.

Two new Japanese species

On a trip to Japan in September and October 1979, I discovered two small rowans: *S. matsumurana* (BH4032) and *S. sambucifolia* var. *pseudogracilis* (BH4071), which at that time did not seem to be in cultivation. Seed was brought back to Kew and distributed to other botanic gardens. Ness Gardens, at least, was successful in germinating seed, and both species are now growing in these gardens. On the AGS trip to Japan in 1988 further collections were made: *S. matsumurana* (AGSJ 375) and *S. sambucifolia* prostrate form (AGSJ 235). Subscribers who received seed of these species, if they were successful in germinating them, may have additional seedlings in cultivation.

S. matsumurana (Fig.15, p36)

This is a Japanese species which occurs on the islands of Honshu and Hokkaido. At lowland elevations it makes a small tree but in its alpine form is no more than a shrub. On many mountain moorlands in the Daisetsu Range in Hokkaido, above 1600m it was, along with the dwarf *Pinus pumila,* dominant. The alpine form, much branched and round in outline

can reach 2m but is often less than half this height. With a domed or flat top, these shrubs tend to spread and can reach or exceed 2m across. The pinnate glabrous leaves have nine to fifteen leaflets, and are a bright green which is slightly glaucous above and whitish beneath. The leaflets are surprisingly large varying from 10-70mm long and 10-20mm wide, and are oblong to lanceolate, often with elongated points; there are small teeth only on the upper half of the leaf margins. Before they fall, leaves take on striking colours: yellow which becomes a brilliant scarlet. The upright inflorescences are many flowered, with each bloom being about 10mm across and having five white petals. These are followed by red globose or ovoid berries.

In Bean's 'Trees and Shrubs Hardy in the British Isles' we can read "probably not in cultivation (1979), and judging from herbarium specimens it is unlikely to be of much ornamental value." With this statement I disagree most strongly. The alpine form of this species with its brilliant autumn colour is amongst the finest shrubs that I have seen on any mountain. As it is slow growing, the alpine form of this species would have a place on an average sized rock garden. A larger one may be better so that by the time it has reached its full size, many decades hence, it has not overgrown desirable neighbours.

S. sambucifolia

This species connects Asia with North America for it occurs not only on the islands of Honshu and Hokkaido in Japan but in the Kuriles, Sakhalin, Kamschatka, the Aleutians and Alaska. It produces a much branched shrub to 2m with sticky winter buds. The pinnate leaves have nine to eleven leaflets, each up to 50mm in length and between 10-30mm wide. These vary from narrowly ovate to broadly lanceolate and are a dark lustrous green above and paler beneath, with a thin covering of white hairs in spring as they unfurl; they have acute serrations along their margins. Before they fall, the leaves turn to a dull yellow or red. There is a nodding inflorescence of ten flowers, with each bloom being 10mm across, whose petals are white or pink, occasionally reddish. The globose berries are red.

The species was scattered about the upper reaches of mountains in Hokkaido, but nowhere was it common. *S. sambucifolia* var *pseudogracilis* was found in two locations at 900m in Southern Hokkaido and at 100m on the island of Rebun which is situated off the north-west tip of Hokkaido. It is a slower grower which is prostrate or at least partially so with main branches of only 600mm.

Whilst the straight species may have a place on a larger rock garden, the variety *S.s. pseudogracilis* would be suitable for even a small one.

Propagation of both of these, at least until they are more widely grown,

will be by seed. This should be extracted from the fruits, washed and sown in containers. These should be plunged outside where they are exposed to winter cold. The seedlings will, hopefully, appear in spring flushes over a three year period.

REFERENCES
Bean W. J. 1970-1988 Trees and Shrubs Hardy in the British Isles (8th edition).
Owi J. 1965 Flora of Japan (in English). Smithsonian Institute.
McAllister H. A. 1986 The Rowan and its Relatives. Ness Gardens.

Campanula betulaefolia Joyce Johnson

Reginald Farrer: The Man and His Heritage

JAMES T. AITKEN

"It is not too much to assert that, but for Farrer's work the Alpine Garden Society would not have been born", wrote the late F. H. Fisher, former President of that Society. Fisher might have gone farther; Farrer is responsible not only for the Alpine Garden Society and the numerous other rock and alpine gardening societies worldwide, he is responsible for the whole philosophy, and artistic and horticultural basis of rock gardening. He is a messianic figure in this branch of gardening. His heritage is the modern rock garden, whether in his native England or elsewhere in the world. Without the vision and advocacy of Farrer, the modern concept would not exist.

So, what manner of man was he?

Farrer was an upper middle class gentleman of the Edwardian era, born in 1880 at Clapham, Yorkshire, the eldest son of James Farrer, landowner of Ingleborough, part of the Pennine chain of hills in the Craven District. The family stemmed from London lawyers – the firm still exists – but neither Farrer nor his father were connected to the firm. However, they lived in considerable comfort and were, locally, highly influential.

He was a frail child, educated at home until he went to university at Oxford. At this time his mother, a woman of strong personality, appears to have been the main influence in his life, and he always seems to have remained close to her. It was obviously a somewhat lonely adolescence but in these early days at home he conceived his love of mountain plants and of rock gardening. He suffered from a cleft palate which affected his speech. He never married.

The Ingleborough hill, which rises behind the village of Craven, and Ingleton Hall where the family lived, is rich in native flowers. Farrer explored this and by age fourteen contributed a note on an indigenous alpine, *Arenaria gothica*, to the Journal of Botany. He laid out a rock garden near the mansion house. In later years he criticised the location, but justified himself because he was, as he wrote, "like Cleopatra, young and green in judgement". Later he constructed another in the kitchen garden which was more successful. It was in "rich, fat soil"; there was "nothing alpines appreciate so much as manure". Again, in his student days at Oxford he assisted in the making of the rock garden at St John's College.

His early manhood was spent in a period of intense political controversy, in which he was active. The family had a radical left-wing tradition, contrary to what might have been expected of lesser gentry. In the aftermath of the Boer War and the period of the 1906 Liberal Government's social revolution, which split the country acutely, Farrer was an active Liberal. He was a Justice of the Peace and a Yorkshire County Councillor. In 1911 he unsuccessfully contested the Ashford division of Kent. He was among the young men who gathered around Prime Minister Asquith and was on friendly terms with Cabinet Ministers and politicians of the left.

He visited Sri Lanka (Ceylon) and returned as a convert to Buddhism. (Thus he alone of his family lacks commemoration within the Parish Church at Clapham.) He also visited Japan and the gardening skill of that country obviously influenced his views on garden layout.

He was a man of broad talents. In the Who's Who note concerning him, of course written by himself, he lists among his hobbies, "talking without music" and "indulging in drama". A contemporary writes that he was prone to "unpardonable exaggeration". His behaviour tended to be theatrical, he was moody, impulsive and short-tempered. Despite his speech defect he had a reputation as a first-class lecturer. One who regularly accompanied him on his trips to the Alps found his company entertaining and stimulating. Days with him on the hills could be exhilarating and much of the success of these excursions was attributed to the trouble and forethought he exercised. However, his friends had to tolerate his eccentricities. Despite the social and class constraints of the age, his companions and friends came from a broad band of gardening enthusiasts. Not just his own class of well-to-do gentry but, as well, the nurseryman and the intellectual. He displayed a considerable ability as an artist in water colours.

He had an intense love of mountain flowers and high places. Again and again he explored the European Alps. In his native village he set up an alpine nursery, and to it despatched great chunks of alpine plants from their native habitat. Modern ideas of conservation had not obtruded on him. The nursery was an active commercial enterprise with a catalogue, but it would appear it was run by his 'manager', and photographs of rock plants growing at the nursery disclose rock-work alien to the principles he expounded in his writings!

His travels had familiarised him with the plants of the European mountains. He thirsted for new and broader challenges. The decade before the Great War saw those interested in gardens and plants become very aware of the new harvest to be garnered from the high lands of Burma and China. The Himalayas, the mountains of Burma and China, were being explored by resourceful collectors who were deluging the temperate

gardens of Europe and North America with exciting plants.

Foremost and typical were Forrest and Wilson. Forrest went to Burma and south-west China originally for Bulley of Bees Seeds and later for private British syndicates and in association with Edinburgh Royal Botanic Garden. Wilson likewise went to south-west China for Veitch, the London nurserymen, and later mainly in the service of the Arnold Arboretum at Harvard University in the United States (where he finished his career as Director). Both were highly competent and dedicated professional collectors who conducted a systematic botanical exploration of their territory. The collectings embraced non-ornamental plants necessary for such comprehensive exploration and essential for the academic institutions for which both catered.

While Farrer was keen to delve into this eastern treasure house of plants, he was interested only in the garden-worthy subjects. Those of botanical interest only he dismissed. "Most of Forrest's collectings are weeds", he scoffed. He decided to go to Khansu in China in 1914 and sought support from public sources. Official reaction was that Farrer was unskilled to merit a grant from scientific funds. Both Kew and Edinburgh were dubious of him. But he played his trump; he was a personal friend of the responsible minister; he got his grant!

So in 1914, with William Purdom, a professional Kew gardener who had previously collected for Veitch in China, he started a two-year stint; but the location was ill selected. It was not botanically rich. He maintained his indifference to plants of botanical interest only. Even the handicap of the outbreak of the Great War cannot excuse the poor return from the expedition. Nevertheless, some significant plants were discovered, including that most associated with him, *Gentiana farreri,* which came in a collecting of *G. hexaphylla.* Farrer had the gift of words. He described it as a "gentian that obliterates all others of its race". "Together" (ie Purdom and he), he narrates, "we contemplated that marvel of luminous loveliness". *Meconopsis quintuplinervia* had been recorded earlier by Przewalski, the Russian botanist, but Farrer found it again and introduced it. "Hovering butterflies of the harebell poppy", he described it, and "sovereign of all her race for good breeding and refinement of charm". But the most significant scientific discovery was of *Viburnum farreri* (formerly *V. fragrans*) in shallow scrub and coppice. It had been known for years and cultivated from plants which derived from Chinese nursery gardens. But it was unknown in the wild till found by Farrer. There were other garden-worthy plants, *Buddleia alternifolia, Potentilla fructicosa* var *farreri,* and the *Gentiana hexaphylla* mentioned.

The remaining war years he spent in the Foreign Office classed as unfit for military service. Then immediately after the armistice, while

recuperating from an appendix operation, he decided, along with Euan Cox (to become a notable writer in his own right) to go the next spring to Upper Burma. He assured Dr. Wright Smith – later Professor Sir William Wright Smith, Regius Keeper – then Deputy Director of the Edinburgh Royal Botanic Garden that he would collect assiduously, "even the filthy weeds from the fields". Cox spent the first season only with him; the second Farrer travelled alone with his native servants. Again the location was ill chosen. It was an area of wet jungle which yielded poorly. Another collector, Kingdon Ward – a newcomer destined to make a great career as a professional collector and writer – was nearby, over the mountains, in China, as was the experienced Forrest with his squad of native collectors, the "octopus tentacles of Forrest". In fact Farrer was somewhat consumed with jealousy regarding the very competent Forrest. He pleads with Wright Smith to deflect Forrest away and writes that he hopes to "wipe Forrest's eye over rhododendrons". Forrest remains, of course, the supreme rhododendron collector.

From Upper Burma the notable introductions were two rhododendrons – *R. caloxanthum* (syn. *R. campylocarpum* ssp. *caloxanthum*) which he discovered in high alpine scrub with "flowers of translucent yellow" and *R. calostrotum* from open woodland. "I marvelled that such a small shrub carried such a wealth of bloom". (This latter had been originally discovered by Ward in 1914 but not introduced. It was subsequently also introduced by Forrest, so plants in cultivation may emanate from the Forrest as well as the Farrer introduction.) There was also *Primula sonchifolia*, though this is by no means a plant for general cultivation.

In 1920, on 17th October in his second year in Upper Burma, he contracted pneumonia and, as his native servant wrote, "without pain and trouble, he died". He was buried near Fort Hertz.

It was a pathetic end for such a man. Cox wrote of the "weary desperation at week after week and month after month of weather when he never felt dry and of days when he never saw the sun". His work as a collector was indifferent. He had neither the training nor the aptitude for botanical collecting. He did not adequately research where he was to go. It is pathetic that he sacrificed his talents and enthusiasm in a sphere for which he was not equipped.

However, his failure as a collector does not dim the true lustre. In his forty years he wrote prolifically, and over a broad canvas: five novels, two plays, five travel books, five gardening books, as well as a great torrent of articles to a variety of periodicals on travel, geography, literature and especially gardening. None but his gardening books are now read, though his travel books have recently had something of a resurgence.

His fame rests substantially on his monumental "English Rock Garden", in two volumes, published in 1919 and since several times reprinted. ("The Present Day Rock Garden" by Dr. Sampson Clay, 1937, is a supplement). It is effectively an alphabetical directory of the cultivation of rock plants and is still amazingly comprehensive. The introduction deals with the general principles of cultivating rock plants and the construction of rock gardens. This great work, with his earlier two books on rock gardening, revolutionised the concept and philosophy of the rock garden.

From long since, the English school of gardening drew its inspiration from nature. From the great landscapes of Capability Brown and the gardenesque of Loudon, to Robinson and Miss Jekyll in the nineteenth century, the movement was all towards the emulation of nature. In 1883 Robinson had written that "it is all too often thought that (rock plants) will do best if merely raised on tiny heaps of stones and brick rubbish, such as we frequently see dignified with the name of rock work". Rockeries and rock gardens had embraced grottoes and great hotch-potches of stones. There was little artistry. They tended to be gardens of rocks – which indeed received a degree of informed contemporary commendation.

Farrer castigated all these, with colourful writing which stimulated the imagination of the gardening public. He urged that the "dogs' graves" should be eschewed – the garden of small, one-foot or thereby square pockets of soil each enclosed by stones and containing the special compost of the particular treasure, and looking like a bank of fish-boxes. He described the "devil's lapful". "You take cart loads of boulders. You drop them all about, absolutely anyhow – and you then plant things among them". He mocked the "almond pudding". "You take a bed; you pile it up with soil. (It has) the effect of a tipsy cake stuck with almonds . . . like a petrified porcupine". He instances "chaotic hideousness" which he "remembered with shudders".

His work, though, was not merely ridicule and condemnation. He enunciated the positive rules – an open site, good drainage, minimum rock and that rock should be well buried. "My strong advice is this; don't get any more stones than you can help". No doubt it was the Japanese influence which inspired "the joy of a noble boulder, rightly placed is complete and perfect. And there need not be more than one such in your garden". He also encouraged the gardener to do it himself. "It is far better that he should (build his own rock garden) for himself, and make errors, and learn by them, than commit the whole building to someone else". His confidence in the garden owner's ability to go it himself stemmed from his disappointment at the professional garden contractors who still "pursue this (unnatural) school". And he more or less invented the moraine or scree garden which obviously derived from his travels in the European mountains.

He found it drought resistant. He extolled it – "My own moraine garden is a perpetual pleasure to me and, I think, to the plants in it".

By his writings, and by his exertions as a lecturer, he transformed the rockery he found into the contemporary rock garden – a garden to be taken as a work of art, where it is not sufficient that the plant should be accommodated so that it may grow well, but where also the eye may feast on the beauty which emulates nature herself. The effect has been dramatic, the teaching memorable and lasting.

To the present day reader his writing is contrived and extravagant. Descriptions are discursive; his words are not economical; he can be repetitive and tiring. His great command of words goes to the extent that the reader comes to reel under the impact of purple passages. To an age which requires in its writers simplicity and terseness his style is very alien, but his writing is his monument. His writings on rock gardening encapsulated the whole philosophy and essence of rock gardening. He displays the fundamental artistic concept. The erudition is enormous and the industry vast. There are some errors of description; there is detail which is questionable; there are controversial statements written like gospel truth; and there are corrections revealed by the passage of time and the widening of horticultural knowledge and practice. But the blemishes are inconsequential.

It is given to few men to revolutionise their sphere. This is the achievement of Reginald Farrer. He brought the rock garden into the mainstream of British gardening thought and practice. Under his teaching the rock garden came also to follow the natural which the great English landscapists had emulated. The garden is an art form. The task of the gardener is not mere cultivation; he must fit the plant into the context and his worth is measured by how far he does that. The gardener is creating a picture.

The fame of Farrer stems from his teaching of the principles by which he transformed rock gardening into a sophisticated art form, blending the beauty of nature to the handicraft of man.

Dispelling The Blues with Gentians

KATH BAKER

Pangs of conscience plague me when I holiday in the mountains with non-alpine gardeners who appreciate flowers because they add to the splendour of the surroundings only and not because of what they are. In such company, side-tracking in search of plants from a pre-determined, yet, arduous route can be achieved after persistent, pleading persuasion!

Last summer, whilst staying in the Grand Massif, I managed to involve my photographing and walk-loving friends in a search for gentians, with a bottle of Mondeuse dangling as the carrot! After all, this activity would give them an extra dimension to the walk and would go some way to absolve my conscience for the day. Everyone assured me that he would recognise the pure intense blue of the flower which is symbolic of the high Alps and no one wanted to know trivial details such as structure of corolla and shape of plicae, or the morphology of leaves. Who cares whether a species is acid-loving or found growing on limestone since a gentian is a gentian, is a gentian! So this level of systematics was abandoned.

There are more than two hundred species of gentians found in the northern hemisphere and, since they flower mainly from May to August at 1800–2500m, we expected to discover some of them. Not all the species are the dark gentian blue of the *Gentiana acaulis* agg. and none are striped like many of the Himalayan species such as *G. farreri* and *G. sino-ornata*. *G. acaulis* would have finished flowering at the lower altitude but seed would be setting and, possibly, there would be some specimens worthy of being photographed at higher altitudes which would keep some members of the party happy.

Our walk rose from 1600m to 2500m over well-drained meadows and exposed limestone, with pockets of acid turf in the hollows. The first obvious species we encountered was the largest gentian of all, *G. lutea,* standing proudly upright, on a sloping meadow, in full sun, the only plant surviving the previous day's feeding rampage of the huge flock of sheep on its summer transhumance across verdant alpine pastures. Many plants were almost 1m tall, with large deeply veined leaves forming a pleated frill around the stem. The bright gold, short stalked flowers looked like clusters of stars at the top of the stem. The unexpected colour caused some comment from the group whose interest deepened on learning of the use made of the large tap root in mediaeval times as a medicament for digestive problems, gout and 'prevention of pestilence'. The root is also used as the

basis for the distillation of an alcoholic beverage, 'Suze', popular in this part of France, but the taste of which is almost as unpalatable as the grappa which flows abundantly in hostelries on the Italian side of these Alps.

In grassy hollows, further up the mountain, we found another gentian which does not have blue flowers. *G. purpurea* has chocolate brown petals which are frequently spotted and clustered at the top of the stem. This species is similar to *G. punctata;* the main character of identification is the split down one side of the papery calyx, the flowers may be dull yellow and also spotted. Both species have a basal rosette of large, deeply veined leaves similar to *G. lutea* but the plant is about 30 cm high. Insects frequently pillaged the copious nectar supply of both species. Further up the mountain, the fruits of *G. acaulis,* on elongated stalks, were evident in the short turf. The small white orchid, *Pseudorchis albida,* the black vanilla orchid, *Nigritella nigra,* and large groups of the sweet scented fragrant orchid, *Gymnadenia conopsea,* were some of the interesting species at this height.

At 2000m *G. acaulis* was still in flower, the deep blue trumpets lying almost prostrate on short stems above the glossy leaves, with the bright yellow stigma conspicuous against the greenish brown spots of the inside of the corolla tube. Scrambling over the limestone rocks close by was *Rhododendron ferrugineum* which also indicates the acidity of the soil around the alkaline rocks. In contrast, and squeezed into a small fissure in the limestone, was a magnificent specimen of *G. clusii* (Fig.18, p37), the purple tinge of its deep blue, unspotted trumpets contrasted starkly with the whiteness of the rock. Further on, we found the spring gentian, *G. verna,* whose smaller, star-shaped flowers were held on longer stems than the trumpet gentians. The rounded petal lobes lie flat above the narrow tube and shine bright blue, producing a spectacular sight when massed in large clumps. As we walked to the top of the mountain, we found the annual snow gentian, *G. nivalis,* (Fig.17, p37) also growing in clumps with tiny, star-shaped flowers, borne on stiff, erect stems. This plant is so delicate that it can be overlooked easily.

At 2500m, we were greeted with an alpine sward of more patches of brilliant blue, interspersed with the pure white of *Ranunculus alpestris. Gentiana brachyphylla* produces dense cushions of flowers above fleshy leaves and has little preference for acid or alkaline soils. It has narrow petals and the plant we found, *G. b. favratii,* has a winged calyx and rounded stem leaves arising some distance below the calyx tube. *G. terglouensis schleicheri* (Fig.16, p37) was growing in rougher, almost scree-like terrain through which water would drain rapidly. No wonder it is difficult to grow in cultivation. A couple of metres away was *Ranunculus glacialis* in varying shades of maroon, pink and pure white. All around us marmots were complaining about our invasion of their territory. Ring ouzels and

Fig. 19 *Narcissus willkommii* (p60) David Mowle

Fig. 20 *Narcissus assoanus* (p61) David Mowle

Fig. 21 *Narcissus rupicola* (p61) David Mowle

Fig. 22 *Narcissus bulbocodium* (p61) David Mowle

Fig. 23 *Townsendia montana*, Wasatch Plateau, Utah (p63) Polly Stone

Fig. 24 *Senecio holmii*, Mosquito Range, Colorado (p64) Polly Stone

Fig. 25 *Hydrophyllum capitatum,* Gunnison Basin, Colorado (p65) Polly Stone

Fig. 26 *Ranunculus macauleyi,* San Juan Range, Colorado (p66) Polly Stone

nutcrackers were seen flitting through the trees below and ravens were croaking above. It was an idyllic day.

It is always an education to see plants growing in their natural habitats, the dos and don'ts of the cultivation advice in gardening manuals became so obvious. All species were growing in well-drained soil and in full sun. The temperature was about 30°C and the air was still. The previous day the temperature was much lower, there was no sun and the wind was almost gale-force which would have battered the plants. In winter, these plants will be covered by a layer of insulating snow. All the soils I examined contained much organic matter but not all substrates had limestone fragments as some soils were gritty with shale but all were free draining.

Some cultivation tips: *G. acaulis* and *G. verna* require well-drained soil, plenty of pebbles (and sand for *G. verna*) with the roots kept cool and never allowed to become waterlogged. *G. terglouensis schleichleri* and *G. brachyphylla* prefer a scree-type compost with angular, irregularly shaped stones providing much drainage and air for the roots and running water in summer but less water in winter so that the roots do not get too wet. *G. clusii* likes lime in the well drained soil. *G. verna* and *G. brachyphylla* do better in an alpine house. All species like much sun. Most species produce much seed which is better sown immediately as its viability decreases with age. If seed has to be kept, it should be stored in a refrigerator with reduced humidity.

Garden Daffodils and Narcissi

DAVID MOWLE

There seems to be no formal definition of the difference between daffodils and narcissi. Narcissus is the botanical genus I am writing about and the mention of daffodils usually brings to mind extensive spring displays of the larger plants with a single large trumpet. Few of us can contemplate such large-scale schemes, but the smaller commercial hybrids certainly have a place in our gardens. Their soil requirements are those of the normal open garden and their size can be chosen to fit into the approaches to our more specialised rock garden areas.

Narcissus pseudonarcissus, the wild trumpet daffodil, can be found either wild or naturalised over a large part of the British Isles, being absent only from areas in the extreme north and north-west of Scotland, and being found only in south-east Ireland. It seems to prefer fertile, moist, but not waterlogged soils, and although frequent in limestone areas, the soils are often neutral or slightly acidic. Its presence in woodland is probably due to the absence of grazing rather than a preference for shade. Where spring grazing is absent, better stands can be found in open, sloping fields. In addition to *N. pseudonarcissus* itself, all the readily available commercial hybrids will enjoy these conditions in the garden. If drainage is poor, it is only necessary to raise the soil level a few inches above the surrounding areas for it to be satisfactory. Planting at the edge of shady areas can enhance the flowers by providing a dark background. One essential is that the leaves must be allowed to die back naturally to build up the bulb ready for the following year. Positions have to be found where the dying foliage does not spoil the appearance of the garden.

For those of us who would prefer to grow the wild species and wild hybrids the disagreement among botanists over naming has been a real constraint. It affects our ability to talk to each other about the plants we grow and to obtain the plants we would like. Luckily the recent book by John Blanchard (1990) helps considerably to clarify the position where one species merges into another. The seed list offers over thirty different varieties for us to try, and raising narcissi from seed is not at all difficult. For those who can get to the Autumn Weekends the bulb exchange is another opportunity to try new species. Caution is needed in buying the wild species from the larger bulb merchants as misnaming is frequent and they may be associated with wholesale collection from the wild which we must not support. Many of the specialist nurserymen stress that they are

offering cultivated stock; this is what you should buy.

Let us look first at some of the larger species which are best grown away from our alpine beds, and then progress towards those small enough to join the true alpines in the garden.

N. pseudonarcissus varies in height, flower size and in the colour of its petals and corona. In general the petals are paler in colour than the corona. A plant from the smaller end of the size range is *N. lobularis*. The closely similar *N. obvallaris* has petals and corona of the same yellow colour leading to a heavier looking flower. *N. nevadensis* is also closely related to *N. pseudonarcissus* but has three or four smaller flowers to the stem. The petals are white or nearly white, while the straight sided corona is a medium yellow. It is an attractive plant growing easily to 30cm high in the open ground and sets seed copiously. Two other relatives are worth mentioning. *N. pallidiflorus* has pale drooping flowers with the slightly deeper corona strongly flared at the open end. It is a demure plant. *N. nobilis,* in its best forms, has a strong contrast between its white petals and strongly yellow corona which is flared and points confidently upwards.

There are also tall narcissi in the Jonquil section, with multiple heads of smaller flowers, which are satisfactory in mixed plantings though they would look out of place among dwarfer alpines. Plants in this Jonquil section are variable to the extent of making it difficult to decide which species they belong to, but *N. jonquilla, N. fernandesii* and *N. willkommii* (Fig.19, p54) grow well under the conditions that have been described, and are tall graceful plants. The narrow, rush-like leaves of these three appear in October so it is as well to weed the area in which they grow in the early autumn. Flowering begins in April and can last well into May.

It is time now to move on to narcissi needing the extra drainage which is found in the rock garden or raised bed. Successful cultivation of many of these species needs a balance to be struck between plenty of moisture in spring and a dry, warm period while they are dormant in the summer. Those with gardens in the west of the British Isles will need to find excellent drainage in a sunny position to supply sufficient dry warmth during dormancy, but low rainfall gardens will need to be searched for a site to give the essential moisture in spring. Gardening as I do in north-west Lancashire, I find that a raised bed some 30cm deep made up of a rich organic soil mixed with its own volume of stone chippings will, in full sun, provide a suitable home for the smaller jonquils and for one tazetta narcissus, the bulb-merchants' *N. canaliculatus,* whose source and botanical name are equally obscure, but which mixes well with other bulbs needing a dry period in summer, for instance the fritillaries and crocuses.

The group of smaller jonquils contains many which mix well with

dwarf alpine plants. *N. assoanus* (Fig.20, p54) is one of the best known, under its old name of *N. juncifolius*. The leaves of all this group are cylindrical, not flat, though some have a groove running along their length. Either one or two flowers are carried on each 15cm high stem. The petals overlap to give a yellow 2cm wide disc behind the deeper yellow cup-shaped corona which is only some 5mm deep. The illustration of this species is of a group in a pot as my outdoor clump has not yet reached the same proportions. *N. gaditanus* is a dwarf form of *N. assoanus* but is much weaker in the forms which I grow and only suitable for cultivation in a pot.

N. rupicola (Fig.21, p55) is the ideal dwarf jonquil to grow with alpines. Like all daffodils it is variable in size but a plant flowering at 7-10cm can be expected, accompanied by narrow keeled leaves which do not disfigure the bed when dying back. The deep yellow flowers are 3cm in diameter with the petals not quite overlapping. The cup is only a few millimetres deep and would be better described as saucer-shaped. In a sunny position in a gritty soil it will seed gently around and each seedling will slowly multiply up into little clumps. It is said not to like alkaline soils but I have not tested this. The very similar *N. rupicola* ssp. *marvieri* grows on alkaline soils in Morocco.

Three other dwarf jonquils can be considered together. *N. cuatrecasasii,* which is a satisfactory raised bed plant, and *NN. calcicola* and *scaberulus* which tend to be thought of as alpine house plants. *N. cuatrecasasii* is similar to *N. rupicola* but usually has a single flower with a longer pedicel and a truly cup-shaped corona. The petal shape is less rounded, giving a more starry appearance. *NN. calcicola* and *scaberulus* have 1-5 smaller flowers per stem with the same deep corona. These last two are beautifully graceful species and I will be trying them outside when I have built up sufficient stock.

Another intriguing species is the quite readily available *N. triandrus* 'Angel's Tears'. The stems of this small species carry from 1-6 pendent flowers with strongly reflexed petals. The downward facing corona is a cup about 15mm deep and broad. *N. triandrus* itself has white flowers, *N.t.* var. *cernuus* has cream coloured flowers while *N.t.* var. *concolor* has golden-yellow flowers. This group of plants grows in a wide range of positions in the garden and the occasional seedling appears, but I have not found it to be long-lived in any part of my garden, and I would like to hear from anyone who has kept individual bulbs outdoors for more than five years.

The hoop petticoat daffodil, *N. bulbocodium* (Fig.22, p55) and its varieties, have insignificant spikes for petals and a large cone-shaped corona. They can be found in great profusion in the wild, sometimes with great variation in one population. The naming of different varieties is therefore difficult. All but the subspecies *N.b. obesus* grow in acid soils so gardeners on limestone should try growing this one first. The name refers to the larger size of the flower which grows on a generally shorter stem, up to 10cm high, so it is still a very

compact plant. The leaves are only 2mm wide and the plant is completely in scale with smaller rock plants. Again the balance between spring moisture and summer dryness is important, though its needs are not extreme. If flowering is poor it is usually because the summer period is too continuously wet.

Among the named varieties, *N.b.* var. *conspicuus* is a deep yellow rather larger plant, var. *citrinus* is a paler yellow and var. *nivalis* generally describes smaller forms. In my garden the bulbocodiums seed gently around in the neutral raised beds with little variation in form occurring. I have managed to grow the closely related *N. romieuxii,* from the Atlas Mountains of North Africa, for some years in the hottest raised bed in my garden. Unfortunately its January flowers are quickly destroyed by gales and heavy rain so it has returned to the protection of the alpine house.

Wherever narcissus-growing rock gardeners meet, one argument is almost sure to arise. How do we tell the difference between *N. asturiensis* (which used to be called *N. minimus*) and *N. minor*? These are the two smallest forms of *N. pseudonarcissus* and are excellent plants for the alpine raised bed. Although *N. asturiensis* is commonly the smaller of the two at only 10cm high (and often leaning slightly as though the tiny flower was too heavy for it), in wild populations both larger and smaller forms can usually be found. *N. minor,* with stems rising to 14cm high, is rather sturdier than *N. asturiensis* and usually flowers later. Botanists are still searching for a satisfactory distinguishing feature, so what should the gardener do? The answer of course is to write a label with confidence and let someone try to prove you wrong!

REFERENCE

Blanchard, J. 1990. Narcissus: a Guide to Wild Daffodils. Alpine Garden Society.

Some Western American Alpines – Part V An Update and a Few Monocots

MIKE AND POLLY STONE

I am told there is an old saying in engineering, that "the best is enemy of the good". When a new product is being developed, there comes a time when updating must cease and the design is frozen for production. I have yet to write a book, but feel sure the same rule applies. Revised editions are of course possible, but publishers tend to discourage major alterations on grounds of reprint costs. A series of Journal articles has greater development potential, and I hope to take full advantage, adding some new plants we overlooked and giving progress reports on others. The same pattern as in the previous four parts (Rock Garden nos. 83, 85, 86, 87) will be followed, i.e. alphabetically by family.

Asteraceae (Compositae)

The first instalment of this personal commentary appeared as part of the Stone Column, and was, as a result somewhat curtailed. We were highly selective in the plants we included, omitting for example both *Balsamorhiza* and *Wyethia* on the grounds that they are too large to interest the average alpine gardener, no matter how bold and striking they appear in the wild. In addition we always try to restrict our comments to those plants of which we have personal experience. We left out *Townsendia montana* because at that time we had neither flowered it here in the garden, nor seen it wild.

While at the Warwick Conference, we were asked for our opinion on plants labelled *T. montana* and *T. rothrockii*. These were so different in habit from our experience of wild specimens that we refrained from commenting further. At home in the western mountains both species form crowded tufts of thickened, more or less glabrous, somewhat spathulate leaves, those of *T. rothrockii* perhaps a little more succulent. The colour range of *T. montana* is rather wider; the ray florets varying from the whites and pale lavenders of *T. rothrockii* to quite rich reddish purples. Their wild distributions do not overlap, *Townsendia montana* (Fig.23, p56) extends from the Wallowa Mountains of north-east Oregon, east to Montana and south into Wyoming and Utah; whereas *T. rothrockii* is a

Colorado endemic. Thus we have no key which includes them both, but reading the descriptions carefully it would appear that the involucral bracts provide a point of distinction: those of *T. rothrockii* are thick-margined while in *T. montana* the shape is more variable but the margins always scarious. There you go Robert! Along Skyline Drive is found the somewhat broader leaved *T. montana* var *caelilinensis*, its white or bluish flowers very difficult to spot against the clayey limestone scree.

Turning to the two Cremanthoid Senecio species from Colorado, *Senecio holmii* and *S. soldanella*, our further experience both in growing them, and of herbarium specimens, reinforces our opinion that they are neither senecios nor ligularias but cremanthodiums. *"Senecio" holmii* (Fig.24, p56) has proved the easier garden plant here, flowering very well in a trough. Its foliage is thinner and less purplish than that of *"Senecio" soldanella*. As a pressed specimen *S. holmii* appeared very similar to the Chinese *Cremanthodium delavayi*, while the equivalent of *S. soldanella* could be *C. ellisii*. We have the last from McBeath 2200, ex. Lahul, Himachal Pradesh, its leaves are the same shape and texture but green! It has yet to flower.

There are a number of New World Arnica species that are dwarfer than our well-known European *Arnica montana*. We described the Alaskan *A. frigida* back in June 1987 (Rock Garden no. 80). Two others we can recommend from personal experience are the circumboreal *A. alpina*, with conspicuously hairy, relatively narrow leaves, and the orange-yellow *A. cordifolia* var *pumila*. The latter, a high altitude variation on a widespread western species, has a particularly good flower to foliage ratio, the rays relatively few and broad.

Finally we must apologise to *Erigeron leiomerus* for passing it by in Part I. We now know the rather ordinary multi-headed plants we had under this name are not the true species. Seen in block-scree, growing from a strong tap-root the real thing is a pretty little plant with smooth shiny green leaves, rounded at the tip, and blue-purple flowers, with greenish discs.

Boraginaceae

We mentioned our first acquaintance with *Mertensia alpina* on the Beartooth Plateau in Part I; our favourable impression of this plant was reinforced by a visit to the summit ridge of Pike's Peak in 1990. Here its spraying prostrate pools of brilliant blue dotted the red granite scree (Fig.29, p75). It has not proved particularly easy here, doing best in a trough in full sun. One batch of seed from the A.R.G.S. exchange gave us the large upright border plant *M. ciliata*; how could anyone make this mistake?

Brassicaceae (Cruciferae)

We are pleased to be able to report that *Physaria alpina* has proved to be an excellent alpine house plant, Jim Cobb telling us that one of his flowered continuously all summer, while remaining compact.

Smelowskia calycina can be a better plant than we suggested. In the San Juan Range of Southern Colorado there grows a beautiful pinky-lilac form. Nearby was another much more striking Crucifer, a reddish purple flowered population of the widespread and highly variable wallflower, *Erysimum capitatum*. Almost a cushion plant, the compact tufts of linear leaves were entirely hidden by the blossom. The taller yellow flowered variants seen further north we consider of no greater merit than say *Brassica repanda* of the Col d'Izoard. There is an excellent short article on colour variation within Rocky Mountain erysimums in the ARGS Bulletin (v.48, no.2).

Caryophyllaceae

Arenaria obtusiloba is another variable species, like the last, with which it is worth persevering if a first raising proves disappointing. In the Colorado Rockies it can make very dense cushions, more like an inverted plate than a bun, and of a really vivid green all summer. Dormant and brownish in the winter, yet we have found it does not require overhead protection.

Hydrophyllaceae

Wherever one travels in the Rockies, it would be difficult to miss *Phacelia sericea,* its vivid purple or violet spikes adorning many of the road side gravels. It was the first American "alpine" Poll photographed in Colorado! We omitted it first time around because we have found it short lived, tending to flower itself to death. While not strictly monocarpic, as we have flowered individuals twice, if every shoot produces a spike, save the seed!

Another quite large plant, up to 40cm tall, *Hydrophyllum capitatum* occurs throughout the Great Basin area. By accident we came across the dwarf form, *Hydrophyllum capitatum* var *alpinum,* at around 3000m in the West Elk mountains. The globose cymes of characteristic bristly lavender flowers were virtually at ground level, below pinnatifid leaves (Fig.25, p57). Growing from a fleshy rootstock, it goes dormant at mid-summer.

Polemoniaceae

Since writing Part II I have received a copy of Verne Grant's 1989 paper revising the alpine Polemoniums, wherein he has reinstated the name *Polemonium confertum* for the dwarf plants with pale, more open flowers. In doing so he has included and replaced Weber's *P. grayana,* since *P. confertum* has priority as the older name. I welcome the change, from our brief observations in the wild there appeared to be two distinct taxa under the name *P. viscosum*. Grant considers *P. confertum* to be a Colorado endemic, but I still feel that the short form from the Beartooth Plateau shown in Fig. 66, V.21 represents this taxon, and thus extends its range northwards

There is a parallel here with the distribution of *Mertensia alpina*. As to phloxes, although *Phlox condensata* continues to mingle happily with *Androsace vandellii*, it still refuses to flower. *Phlox pulvinata*, on the other hand, has remained more compact here; both the white form from Southern Colorado and the selected blues from the Medicine Bow have started to bloom.

Linanthastrum nuttallii has done a little too well, self-sowing freely into path and bed alike. Its rapidly growing semi-woody clumps are capable of smothering choicer neighbours, so one entire planting has been weeded out, and the other restricted. We still consider it worth having for the extended flowering period, a response to the continuous availability of moisture here?

Polygonaceae

Like the townsendias mentioned above many eriogonums tend to become rather lax in cultivation, if treated too well, and especially if grown under glass. So far we have found them more tolerant of rain than we had dared to hope, even the cushion species *E. caespitosum* has established on a trough. We were encouraged by the many fine specimens we saw in Czechoslovakia, grown outside with full exposure.

Primulaceae

Although our suggestion that *Primula angustifolia* and *Primula parryi* can hybridise in the wild was at first dismissed as impossible by the American worker "Tass" Kelso, John Richards tells us that she now accepts the existence of such hybrids. We revisited the site in 1990 and remain convinced that many of the plants of *Primula angustifolia* there are contaminated with *P. parryi*. A plant we brought back in 1988 has flowered here and is definitely intermediate.

Ranunculaceae

As we reported in the Stone Column for January 1991, finding *Ranunculus macauleyi* in flower was one of the highlights of our 1990 trip. So far it has grown very well in cultivation but unfortunately some of the black furry buds tend to abort. We can only hope that this is a passing phase, and when fully established it will flower regularly. The foliage looks like a cross between *R. hybridus* and *R. parnassifolius*, but as Fig.26, p57 shows the flower to leaf ratio is excellent.

When writing Part III, I by-passed Aquilegia for at that time we had little to report. We had raised plants several times under the names *Aquilegia saximontana* and *A. scopulorum*, only to get either *A. bertolonii*, *A. discolor*, or even a mixture of both! Now that we have genuine plants we can

perhaps be allowed to comment. *A. saximontana* has green leaves, which can tend to hide the small, relatively narrow, bicoloured flowers with short hooked spurs. The white equivalent, *A. laramiensis* was offered, at a price, in a commercial seedlist two years ago, but has been in cultivation over here longer than they suggest. We have grown it since 1986. The leaves are a paler green and the flowers a little better displayed. Sadly we find it short lived but worth re-raising regularly from seed.

Aquilegia jonesii is another species which tends to hide its flowers on the rare occasions when it deigns to produce them. The foliage of *A. scopulorum* is almost as glaucous, and it blooms regularly, the elegant long-spurred flowers presented well above the leaves. In our limited experience it is thus by far the better garden plant. An old seed pot of *A. jonesii* was scattered on the drive-side bulb border, between two shrub roses, and several plants have appeared. It will be interesting to see if they survive.

A scopulorum is closely related to the much larger State flower of Colorado, *Aquilegia caerulea*. While totally absorbed photographing one particularly fine blue specimen, well above tree line, actually in Colorado, Poll sat on an ants nest! This I leave entirely to your imagination . . . Further west in Utah these larger plants are creamy-white flowered and referred to as *A. caerulea* var *ochroleuca*. In some places as we gained altitude this merged into *A. scopulorum*, in others the populations were disjunct.

Still in Utah, in the far north of the State we found a really superb form of *Clematis tenuiloba* (Fig.27, p74). Some accounts submerge this taxon into *C. columbiana*, but the dwarf running plants with short aerial stems are horticulturally distinct. If pot grown it must be repotted frequently or it just sits and mopes.

Scrophulariaceae

Since this family was the last to be covered in Part IV there is relatively little to report. Taking *Besseya ritteriana* first, a late spring frost killed the latent flower spikes, maybe next year? In Penstemon there have naturally been successes and failures as we gain experience and write our own manual. The little mat forming Caespitosi appear not to like pots, especially if their frame is, as all ours are, in semi-shade. The best plant of *P. tusharensis* is in a south facing crevice on a trough in full sun. *P. harbourii* is indeed deciduous, and again better planted out. The really good 'doer' has been *P. virens*, a mass of short blue spikes for a long period.

In the Glaber group some individuals of both *P. hallii* and *P. compactus* bloomed as young plants, the latter setting seed. *P. leonardii* was especially fine, remaining low and compact. It also set seed. The real surprise was the brilliant scarlet *P. eatonii*, which has established and flowered in a trough on the west side of the house.

A Few Monocots

I have a feeling that *Calochortus* has the potential to become a favoured genus with the "bulb-bakers" and "corm-cookers". Seed of enough species is currently becoming available so that the dedicated show grower can have something new to catch the Judges' eyes. Unfortunately many are too tall and slender to look really good in a pot, but they do have the necessary aura of difficulty. Move over fritillaria, the calochorti are coming! However, what does the genus offer for those who don't want the Mojave desert's answer to a cornfield poppy, or perhaps more appropriately, those scarlet tulips of Central Asia? To be fair, not all are as flashy as *Calochortus kennedyi* (sorry Dave!) and many are attractively blotched or marked. I am not entirely sure I like the bearding on the inner surfaces of the petals of the group known as Cat's Ears.

We have, so far, only seen three species growing in a natural habitat that could be described as "alpine", and I am sure it is not coincidental that these same three are the only ones we have been able to establish outside at Askival. *C. subalpinus* is a typical Cat's Ear we found growing in pumice, above the tree line in the Cascades. The petals are creamy white, shading to yellow at the base internally, with a few tiny purple markings. Appropriately the plants we saw were only some 20cm high. Another high altitude dwarf is the *Calochortus gunnisonii* (Fig.28, p74) we mentioned in the January 1991 Stone Column. It was growing in a small meadow at about 3800m, well above the tree-line, and was only some 15cm high. The species as a whole is widespread in foothills and high plains, from Utah to South Dakota. Over much of its range it overlaps with *C. nuttallii* but this extends much further west into Idaho and Nevada. It was in Idaho that we found this, the State Flower of Utah, climbing to just about tree-line at 3000m. Rather taller at 30cm, the petals a clear white with a prominent brownish-maroon blotch, this was the first species to flower outside here.

The closely related genera *Brodiaea* and *Triteleia* form another group of West Coast bulbs of more general use in the garden. Like Calochorti, they tend to flower later than the average bulb, an advantage in that the season is extended, a disadvantage aesthetically for the foliage is withering as the flowers open. The showiest species we grow is *Triteleia laxa* with large lax umbels of blue flowers, the most vigorous is *T. hyacinthina,* perhaps because it inhabits moist places in the wild, its bluish petals having a thin dark green mid-line, and the strangest is *Brodiaea congesta.* This last has globose violet heads, about 7-8cm in diameter on slender wiry stems fully 1m long. It really does look quite pretty growing through the blush-pink *Rosa x dupontii.* Much more 'alpine' than any of these is *Triteleia ixioides,* a dwarf plant 10-15cm high with eye catching umbels of yellow flowers, each petal with a central black line. We found this at around 3000m in the

Sierra Nevada, still within the trees, but at twice the altitude limit given in the Rix and Phillips "Bulb Book".

Next to *Triteleia ixioides* in our bulb border is the curious *Stenanthium occidentale*. From a basal tuft of rush-like leaves, arises a slender raceme of narrow hanging bells, in which dull green and purple shades merge. It has something of the same colour effect as the green and brown frits, but the advantage of a pleasant scent. Found along stream sides in montane woods, we find it vigorous in cultivation, spreading mildly by self sowing. Another plant whose colouring can only appeal to lovers of the subdued is *Zigadenus elegans*. Found in meadowland over a huge area from Alaska to Arizona, and East to the Great Lakes, naturally it varies a great deal. In Colorado there appeared to be two different phases; a tall (75cm) form, found in meadows and scrub, with greeny-white flowers in an airy raceme, and a dwarf alpine tundra form with greeny-yellow stars, each pedicel subtended by a prominent purplish bract. This latter plant deserves horticultural, if not botanical recognition.

There are quite a number of Allium species in the Western mountains and not a few reach the alpine zone. Although they are a fairly prominent component in the flora, we must say straight away that we did not have either the time, or the inclination, to sort out all we were looking at. Of the medium sized sorts, *Allium cernuum* is unmistakable, and well known in cultivation, for its recurved scape. *Allium acuminatum* with its narrow pointed petals, and *A. geyeri* are also frequent, the latter in moister sites. The richest coloured species of this group was *A. brevistylum*, mentioned by Henrik Zetterlund. Of the shorter alpine species the nicest one we found was *A. brandegii*, with white and maroon striped flowers on 10cm stems. It was quite local in the West Elk Mountains. It has to be admitted, however, that we saw nothing to rival the finest Asiatic species such as *AA. amabile, beesianum* or *cyaneum*.

To conclude this personal commentary on a higher note, we cannot do better than the genus *Erythronium*. Although variations on the theme of *Erythronium dens-canis* extend all the way from Europe to Japan, there are more species on the West Coast from California northwards than anywhere else. We have raised most of these over the years, generally with success, but must add that we have found more names than distinct garden plants, particularly amongst the white, cream and yellow species. Some of these are differentiated on minor botanical details only, and so appeal only to the collector.

Our own particular favourite is *E. hendersonii*, with elegant long recurved segments of a cool lilac pink, enhanced by a dark purple eye, and fairly tall for an erythronium at 40cm or so. The most vigorous spreader we have is the well named *E.* 'White Beauty': Starting with the usual

dozen, we now have it by the square metre. Second only to the last is *Erythronium tuolumnense* but this is slightly disappointing in flower here, the yellow blooms too small and sparse for the copious leafage.

A much finer yellow species is *Erythronium grandiflorum,* also with shining plain green leaves, one of only three species we saw approaching the alpine zone. Generally found in subalpine woods, it did extend beyond the trees in several places, and we never saw it in heavy shade. It has a reputation for difficulty in cultivation but perhaps should not be treated as a peat-bed plant or woodlander. Another mountain species said to be even more intractable in gardens is the white avalanche lily, *Erythronium montanum.* Whereas we saw *E. grandiflorum* in seed or flower depending on elevation, all the way West from Colorado and Wyoming, *E. montanum* is restricted to the Cascades and Olympics. We have raised it from seed, and it survives in a small bed on the north side of the house, but will not flower. We live in hope that one day, after a cold winter perhaps, the delicate white blooms, slightly recurving to show orange-yellow centres, will greet the Highland spring.

The third species we found at altitude is neither so spectacular, nor so well known as the previous two. *Erythronium purpurascens* is a delicate little plant of montane coniferous woods along the Sierra Nevada. Starting white or cream, the fading flowers become pink to purplish like those of some trilliums. While not particularly difficult to grow in a humus-rich soil, its fleeting blooms do not make such impact in the garden. It is nevertheless a rather appealing little waif!

Conclusion

This series of sketches of alpines of the American West really grew out of my personal notes, compiled prior to our visits to the mountains. As such they reflect our own preferences and prejudices; we write from the point of view of the Scottish alpine gardener. We are well aware that there is a greater diversity of dwarf plants in the intermountain steppe and desert zones, and were we alpine house orientated these would have figured more prominently in our commentary.

I have always felt that if one tires of trying new plants then it is time to give up alpine gardening and grow cabbages. Fortunately for the adventurous spirit there is, as Pliny says, "always something new out of the mountains". If you have seen the primulas, gentians and saxifrages of Europe, and the crowds are becoming a little wearing, then it is time to take off for the wide open spaces of the West. Here it is still possible to drive for an hour or more without passing another vehicle, to walk all day on the mountains with only the critturs for company, and to discover beautiful plants like nothing you have seen in the Old World.

I said in the final paragraph of our brief essay on some plants of the Appalachians (Stone Column June 1985) that there were other stories to write on the flora of North America. With these notes we may have started another, but it is certain that we can never finish it! We shall never forget our first encounters with *Penstemon hallii, Physaria alpina* or *Eriogonum ovalifolium* var *depressum*: who knows what is on the next mountain?

SELECTED BIBLIOGRAPHY

Floras

Dorn, R. D. 1984. Vascular Plants of Montana.

Dorn, R. D. 1988. Vascular Plants of Wyoming. These small paperbacks are in the form descriptive keys. For the field.

Cronquist, A. et al. 1972 onwards. Intermountain Flora. Not yet complete, vol. 4 is currently the most useful, covering Phlox and Penstemon.

Harrington, H. D. 1954. Manual of the Plants of Colorado. Long out of print but worth seeking.

Hitchcock, C. L. and Cronquist, A. 1973. Flora of the Pacific Northwest. A condensation of a previous five colume full flora, illustrated but the drawings are very small. Extended key format.

Moss, E. H., *Revised by* Packer, J. C. 1983. Flora of Alberta. Also useful for N. Montana.

Munz, P. A. 1959. A California Flora. Not illustrated, the alternative "Jepson " is currently under revision.

Welsh, S. L. et al. 1987. A Utah Flora. Probably the best single volume for the Rockies. Not illustrated. Takes a pragmatic view of taxonomy.

Handbooks

Clark, L. J. 1976. Wild Flowers of the Pacific Northwest. A large hardback, but beautifully illustrated. Not for the field!

Duft, J. F. and Moseley, R. K. 1989. Alpine Wildflowers of the Rocky Mountains. Soft cover, many plates, some reproduction poor, but a must for the rucksack.

Horn, Elizabeth, H. 1976. Wildflowers 3, The Sierra Nevada. A little too brief, layout by habitat.

Jensen, E. R. 1987. Flowers of Wyoming's Big Horn Mountains. Another "excursion flora".

Nelson, Ruth A. 1969. Handbook of Rocky Mountain Plants. Excellent introduction by one who loves the flora.

Porsild, A. E. 1974. Rocky Mountain Wild Flowers. Covers the Canadian Rockies. Good colour drawings.

Letter to the Editors

Dear Editors,

HIMALAYAN 'VEGETABLE SHEEP'

Many readers will have enjoyed Heather Hill's article on *Raoulia eximia* and the accompanying photographs which graced The Rock Garden No. 89, V23, pt4.

She rightly questioned the sanity of those who, like myself, attempt to make a living out of seed collecting. At nearly 5000m on the Baralacha La in Northern India last September, accompanied by your previous editor, Alastair McKelvie, I did think I was hallucinating. There in front of us were mounds which closely resembled the raoulias Heather had introduced me to, albeit with a lime or off-yellow colouration (Fig.30, p75).

The species we had found was *Thylacospermum caespitosum* which belongs to the Pink family Caryophyllaceae, and is found only in the Tibetan borderlands of Pakistan through to Sikkim, Tibet itself and central Asia, growing at elevations of 4800-5700m. At a distance this barren landscape bears some resemblance to the mountain slopes of Canterbury and Otago in New Zealand, and both areas are in 'rain-shadow'.

Even more startling was that on removal of a small section of foliage, the stems and leaf arrangement of the thylacospermum were almost identical to another New Zealand vegetable sheep, *Raoulia hectori*, which belongs to the totally different Daisy family, the Compositae (more correctly now, Asteraceae). Disappointingly, despite much searching amongst numerous mounds, we could find no evidence of flowering, let alone seed capsules on the thylacospermum. For these seed collectors at least, the 'Himalayan vegetable sheep' was well and truly 'dead'! The extreme conditions under which the world's highest alpines survive are not always conducive to good seed-set.

Raoulia hectori forms silvery-green mats of up to 1m or more across, and is one of the important constituents of the cushion vegetation on the broad plateau summits of South Island, New Zealand. *Raoulia eximia,* on the other hand, forms dense, light grey cushions up to 2m across and colonises frost shattered but relatively stable rocks in fellfield. Although often surrounded by scree and from a distance appearing to grow on it, this is not in fact a scree plant.

Growers should note that most of the New Zealand alpines we cultivate are from these more accessible locations, rather than the exceedingly wet Fiordland to the west. Rainfall in the famous Milford Sound can, I am told,

reach 6m a year! That is wet, even by monsoon standards, and illustrates that it is meaningless to generalise too much about the requirements of plants from a particular country or mountain range.

I cannot finish without adding that I found audiences at my lectures in New Zealand far more knowledgeable about certain aspects of horticulture than their counterparts in Britain. A tall, attractive, roadside 'weed' from the Himalayan foothills was immediately recognised, even at ordinary garden clubs; few people in the UK are familiar with it. Botanists and the Police know it as *Cannabis sativa,* out there it is affectionately known as Waccy Baccy: who says things are backward in New Zealand?

Yours sincerely,
Chris Chadwell, Secretary,
Sino-Himalayan Plant Association,
81 Parlaunt Road,
Slough,
Berks
SL3 8BE.

Lloydia serotina Lionel Bacon

Fig. 27 *Clematis tenuiloba,* Bear River Mtns, Utah (p67) Polly Stone

Fig. 28 *Calochortus gunnisonii,* Mosquito Range, Colorado (p68) Polly Stone

Fig. 29 *Mertensia alpina*, Pike's Peak, Colorado (p64) Polly Stone

Fig. 30 *Thylacospermum caespitosum*, Baralacha La, India (p72) Chris Chadwell

Fig. 31 *Saussurea obvallata,* Atlai Mountains, Mongolia (p80) Heather Salzen

Fig. 32 *Pulsatilla sp*, from Khentei Hills, Mongolia (p81) Heather Salzen

Fig. 33 *The Altai Mountains* (p82) Heather Salzen

Mongolia

HEATHER SALZEN

The People's Republic of Mongolia occupies an area of 1,566,000 sq.km in central and eastern Asia between latitudes 41°30′ and 52°N and longitudes 88° and 120°E. The nearest sea coast is about 730 km away to the east at the Gulf of Chihli. The greatest distance from west to east is about 2420 km and from north to south 1280 km. Nearly all this huge area lies at over 1500m rising to 4653m in the Mongolian Altai in the west and 4031m in the Hangai in the north. The boundary with the former USSR stretches west and north for over 3000 km and to the east and south with China for 4670 km. The population of 2 million now has a proportion of just over half living in towns, the capital Ulan Bator accounting for 500,000. The remainder are nomadic herdsmen living in "gers", the traditional round white tents of felted sheepswool, and herding their flocks on horseback. The other occupants of this vast country are 24 million livestock and a diversity of wild animals.

With so many grazing animals one could expect the country to be denuded of wild flowers. Not so! In summer a myriad of colourful flowers adorns the valley bottoms, hillsides, rocks and screes. Their survival is assured under the nomadic system of pasturing, for when a flock of sheep or goats or a small herd of cattle or ponies has eaten down the herbage of a limited area it is moved on and the vegetation is left to recover. Some valley meadows are cut for hay to feed livestock through the long cold winter.

Mongolia experiences an extreme continental climate. The annual range in temperature can be 90°C; dropping as low as −52°C during January, the coldest month, and rising to 40°C in the shade during July, the warmest month. The greatest variation in rainfall occurs between the south (only 60mm), east (300mm) and north (400mm). Some snow falls in winter and there is permanent snow on top of the highest Altai but July is the wettest month.

The narrow Altai range of mountains, whose watershed forms the western boundary with the former USSR, reaches 4653m diminishing southwards to become the Gobi-Altai. The northern region of hills and lakes, the Hangai, at one point reaches 4031m, the Khentei hills in the NE are much lower while the great area of steppe in the east is fairly flat and the Gobi in the south has small rocky escarpments.

The vegetation can be roughly divided into five zones determined by rainfall and each with its characteristic flora. These are: the forests, found in

north and central Mongolia (Hangai, N. Khentei), covering 15% of the land area; the mountain steppe, covering most of higher Altai; the grassy steppe, where grasses are dominant (S. Khentei and east) occupying 26% of the area; arid steppe; dominated by *Artemisia* ssp. (East Mongolia) covering 27% of the area; and desert and semi-desert, in the Gobi and Gobi-Altai.

Of course these zones often overlap; for example, the Khentei Hills have forest on their north and west-facing slopes and grassy steppe on their drier south and east-facing slopes.

Many genera are familiar to a visitor from western Europe though very few of the species are the same. Of these few some are British native mountain plants (e.g. *Saxifraga hirculus, Oxyria digyna*) and some are European alpines (*Aster alpinus, Leontopodium* sp.) Since the whole country lies above 1500m perhaps the whole flora could be considered 'alpine'? The arid steppes and semi-deserts have a xeromorphic flora of spiny bushes and small aromatic annuals.

According to Grubov's "Key to the Vascular Plants of Mongolia" there are over 2200 species in the country. Since this large book is in Russian and cyrillic script the only information I can glean from it are the species binomials printed in roman script!

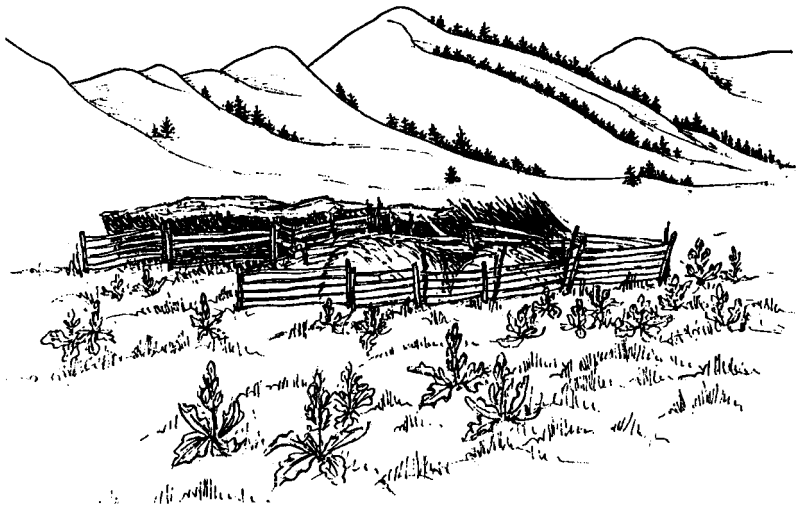
The largest plant family is the Compositae followed by the legumes and grasses. Cruciferae, Rosaceae and Ranunculaceae are also prominent, and the Labiatae include some attractive plants such as *Dracocephalum* spp., closely allied to the penstemons of North America. By far the most conspicuous and abundant genera are the legumes *Oxytropis* and *Astragalus* with 78 and 68 species, growing in every habitat from low altitude in valley marshes to alpine turf in the Altai, followed by *Potentilla* with 35 and the louseworts, *Pedicularis,* with 32 species. However, I think that these large numbers should be treated with caution for Russian botanists are notorious "splitters" and may have given specific names to variants within a population. For example, *Potentilla fruticosa* is the most abundant shrub, growing from wet valley marshes to dry high screes, yet it is not listed in Grubov's flora. Though there are certainly many small herbaceous *Potentilla* species I suspect that some of the 35 listed are variants of *P. fruticosa* for it varies from small-flowered bushes to a superb large-flowered compact dwarf form in the Altai.

A number of aspects of the Mongolian flora struck me during a brief July visit. There was an almost total absence of ferns, even in wet habitats, perhaps due to the low air humidity? Having been asked by a friend in the British Museum to collect fern spores I despaired of being able to oblige for after a week I had not seen a single fern. I eventually found two very small ones growing in rock crevices.

Apart from onions (*Allium* spp.) there was a scarcity of bulbous plants. The abundance of rhubarbs (*Rheum* spp.) was remarkable, especially on cultivated ground and the heavily-manured ground around winter shelters for livestock. The Himalayan element of the flora was small, but perhaps this should not be surprising considering the desert barriers (two conspicuous plants are *Stellera chamaejasme* white form and *Saussurea obvallata* Fig.31, p76).

A visit in July 1989 of 17 days (a tourist record!) allowed only a tantalising glimpse of a fascinating flora, for too much time was spent in Ulan Bator as the entire country goes on holiday for National Independence Day on July 11th. It was, however, a fascinating experience to be inside the huge nomads' camp which assembles outside the city for two days of celebration – hundreds of gers and thousands of people all on horseback. To be faced by a group of galloping ponies made it easy to understand why the hordes of Ghengis Khan so terrified the Europeans in the 13th century! Two areas were visited – the Khentei Hills just east of Ulan Bator and the central Altai near Kvod.

The Khentei Hills have forest on the north and west-facing slopes, thin plant cover on the dry south and east-facing slopes, and flower meadows and marshes in the valley bottoms. The meadows when ungrazed are a riot of colour in summer, can be predominantly yellow, white, pink or blue



winter shelter in the Khentei, with *Rheum* sp.

according to the most abundant flowers, and are correspondingly rich in butterflies. The landscape free of fences, walls or hedges is quite beautiful. The grazing is actually strictly controlled – the nomad herdsmen are all in co-operatives which determine where they graze their animals and for how long. In some valleys a clear river flows between banks fringed with willows full of small birds; in a clearing grew the only orchid we saw; *Dactylorhiza sambucina*. Small gravel floodplains have pale yellow poppies (*Papaver nudicaule*) and small fleshy crucifers and composites. The poppy is abundant in all well-drained habitats; it is replaced in the Altai by a white form. Where a valley had little drop in altitude the water coursed slowly through numerous channels forming a marsh dominated by *Potentilla fruticosa*. These marshes are almost as rich in herbaceous plants as the meadows and grade into them. A brilliant orange globeflower (*Trollius asiaticus*) is one of the finest; amongst other beauties are an enchanting blue *Mertensia davurica*, large pink and cream *Pedicularis* spp., red, pink and yellow *Rhodiola* spp. and large violet and purple *Oxytropis* and *Astragalus* ssp. A lilac onion is abundant and is gathered for flavouring meat.

The meadows on slightly higher ground have an even greater diversity of colourful flowers. One was dominated by the white umbels of *Anemone narcissiflora*, another was a mass of pink and white *Polygonum* sp. and a handsome violet *Oxytropis* species. A blue flax (*Linum* sp.) was sometimes abundant as were the dark brown heads of the salad burnet (*Sanguisorba officinalis*). These meadows, with their rich variety of flowers and butterflies, were a revelation to a visitor from Britain where this natural habitat has been virtually destroyed by drainage, ploughing and reseeding.

The dry open hillsides are also grazed, and trampling by livestock results in quite a lot of bare soil. Their flora is entirely different from that of the marshes and meadows. Apart from a few herbaceous perennials which die down in winter the plants are either bulbous or small annuals. The most conspicuous bulb is the little red turkscap lily *Lilium pumilum* while the annuals include many tiny species of *Oxytropis* and *Astragalus*, small yellow *Linum* and *Potentilla* spp. and pink and lilac *Limonium* spp. among many others. The grasslands support many rodents, from big fat marmots to little jerboas and tiny mice. The marmots make large burrows in the hillsides and the dry excavated soil at the entrances is always colonised by *Pulsatilla* spp. *Stellera chamaejasme* and rhubarb. At least two distinct *Pulsatilla* spp. grow in great quantity on the dry hillsides and must be a wonderful sight in June. In July the fluffy seedheads were prominent. (Collected seed was put into the SRGC 1989/90 seed exchange and I would like to hear from anyone who has flowered a Mongolian pulsatilla. A large creamy-yellow flower with blue-backed outer petals (Fig.32, p77) was produced in 1991 by a seedling raised by Ian and Margaret Young of Aberdeen).

The forests are exploited for timber but are never clear-felled. Large trees are removed leaving spaces and light for natural regeneration. A walk in larch and birch forest at the head of a valley was a magical experience for this was forest as it should be – a natural climax community of trees of all ages with varying shade, abundant natural regeneration and a ground flora of many different species of herbaceous plants including a cream-flowered *Aconitum* sp. and blue *Polemonium caeruleum*. Siberian larch is a handsome pyramidal tree and the birches have very white bark. Later on we visited a "forest nursery" – several large polythene-covered frames housing larch seedlings; they are planted out directly in their third year to augment the natural forests. Pine is less frequent in the Khentei than larch though it is one of the main constituents of the "taiga" the pine-birch forests of Siberia which extend southwards into northern Mongolia. A glimpse into a pine-birch wood on granitic soil revealed a shrub layer of a small deciduous *Rhododendron* and a rather sparse ground vegetation of mosses, *Erica* sp., a small yellow-flowered member of the Valerianaceae, *Patrinia scabiosifolia* and a beautiful pink *Pyrola incarnata*.

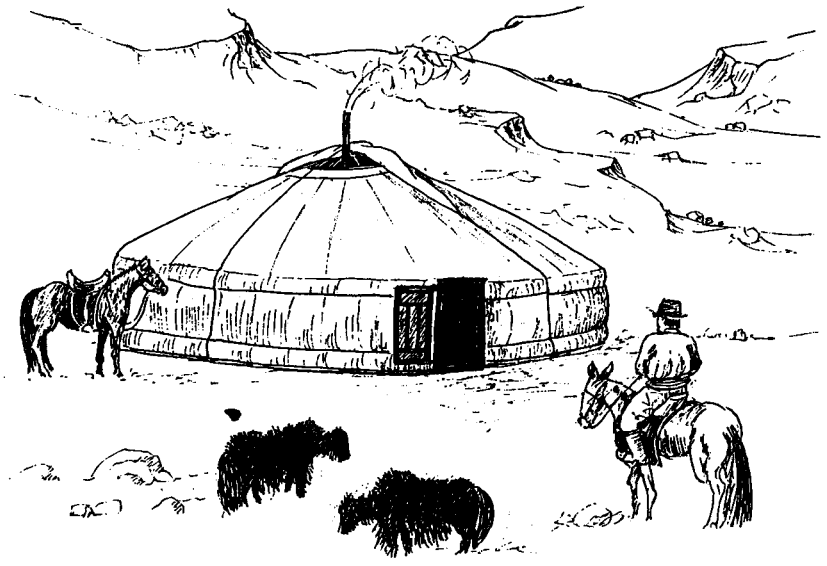
The Altai range of mountains stretches some 1000 km NW to SE receiving most precipitation on its west (Russian) side. Its eastern foothills rise abruptly from level plains which are extremely dry in the rain shadow and are virtually desert (Fig.33, p77). Only very small xerophytic plants and spiny bushes survive such harsh conditions to which are added the hazards of grazing by cashmere goats and camels. The tiny desert plants are mostly Compositae of the genera *Artemisia, Cirsium* and *Saussurea* and the spiny bushes are legumes; *Caragana* spp. Grasses grow where the soil is watered by rivers carrying snow-melt from the high Altai, and a search in a patch on much-grazed grass beside a river at the base of foothills revealed a tiny gentian, an even smaller *Pulsatilla* and a tiny legume with pink flowers and round leaves; *Gueldenstatia monophylla*. On rocks above was flowering a lilac *Aster tartaricus*.

On the flat desert close to the Altai foothills a few small settlements are growing crops in fields surrounded by irrigation ditches, the edges providing fertile ground for some colourful "weeds" such as pink and white *Convolvulus* spp. and a borage with black flowers. Oats were growing well but an "experimental fruit farm" appeared to be a failure.

Entering the Altai through a narrow gorge with only a few brief stops to explore was frustrating, for the crags on either side held many alpine plants and there were glimpses up side gorges where I am sure many treasures are still to be found. Here we first saw the white poppy which is frequent in the Altai, a yellow clematis, like *C. tangutica* but with larger flowers, a brilliant blue *Delphinium* on a ledge of white quartzite rock, *Paraquilegia microphylla* with white flowers, *Arenaria* sp. with large

glistening white flowers and the red stems of a dodder (*Cuscuta* sp.) scrambling over a lilac labiate (apart from this and an *Orobanche* sp. growing in the stones by a river we saw no other parasitic plants). A surprise was the silverweed *Potentilla anserina* growing on a boulder beside a stream.

The botanical highlight of this trip was a day spent on the upper slopes just below the permanent snowfield on one of the highest Altai mountains – the Blue Mountain which reaches 4370m just inside the Mongolian border. The snowfield ensures a continual water supply to boulder slopes, screes and grassland immediately below these and to several small lakes. Below the lowest lake the drainage is concentrated into a river and the valley sides become progressively drier with decreasing altitude. This is glaciated country – we were camped beside a small lake at the head of a long valley, small side valleys each held a little lake and a enormous corrie with high cliffs faced down the valley. Unfortunately there simply was not time to look at the corrie cliffs but the turf on the corrie floor was bright with pink *Aster alpinus,* small yellow *Potentilla* spp., woolly white *Leontopodium* sp., white *Cerastium* and *Arenaria* spp., and many others. But it is the granite boulder slope which provides a range of habitats for a wonderfully varied and colourful flora. It is a natural rock garden kept continually moist by seepage from the snowfield above. It would be

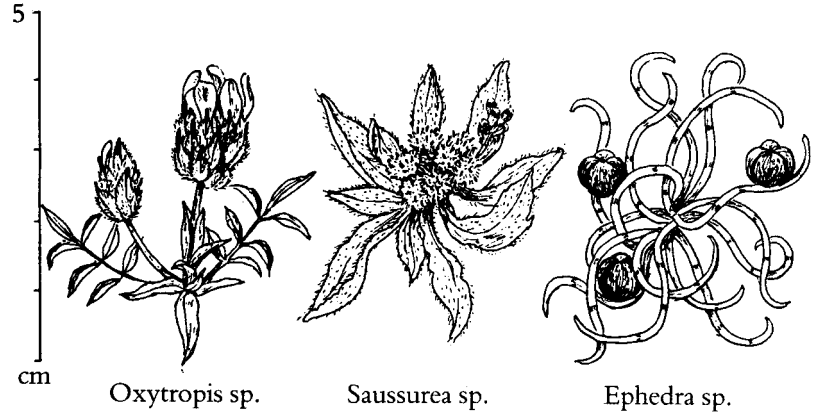


Ger in the Altai, with yaks.

impossible to list all the species, they are so many and I suspect some may not yet be named. The colours on a sunny day in mid-July were wonderful, from dark purple *Aconitum* still in bud, dark and bright blue Labiatae, *Aquilegia* with blue and cream flowers fully 8cm across, yellow *Doronicum* and another composite with inflated pedicels, red and yellow *Rhodiola* spp., lilac and cream *Oxytropis* and *Astragalus* spp. and in the wettest crevices a lilac *Primula*. Small shelves of fixed turf have developed between boulders and these were bright with white poppies, small pink *Pedicularis* and many other small plants. The occasional large plant of a hogweed (*Heracleum dissectum*) and the spectacular composite *Saussurea obvallata*, both up to a metre high, looked out of place. A never-to-be-forgotten memory is of eating a picnic lunch with our Mongolian guides (all except one without a word of English) sitting on a big granite boulder with a wide view of the lake and valley below and distant mountain ridges. The air is so dry that visibility is usually excellent. My boots were literally among delphiniums, the beautiful aquilegia was at my elbow and the primula was in the shaded crevice below!

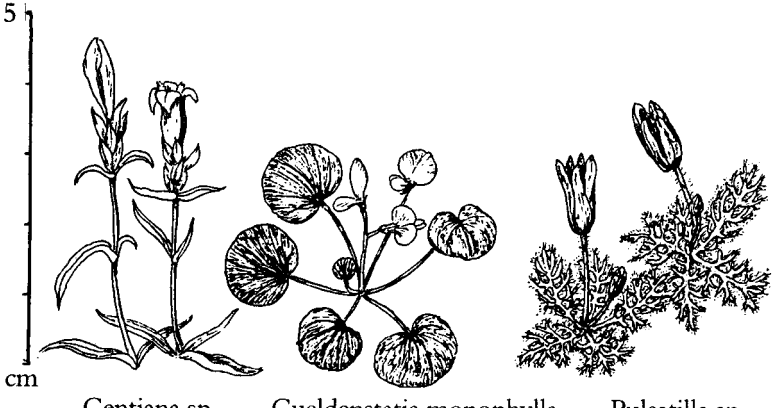
The granite is of the crumbly felspathic kind which weathers into a coarse soil enabling a closed turf to develop. It is sharply delineated from an adjoining very different hard grey slatey rock which forms long screes below the cliffs. Here there is little weathering, no turf formation and an entirely different and much poorer flora than that of the granite boulders. A white-flowered shrubby *Potentilla*, a labiate with hairy calyces and a onion with inflated stems (*Allium altaicum*) are among the few plants of the high screes. The morainic knolls below are covered with a grassy turf and plants different from both those of the screes and the granite boulders. A rare British native, *Saxifraga hirculus*, was frequent here and a *Swertia* sp. of the gentian family.

These high slopes are grazed by sheep, goats, cattle and yaks yet retain a wonderfully rich flora. Several ger families were spending the short summer on the mountain, herding their animals at over 3500m. Further down the valley were a few gers with yaks and camels. Summer must be a pleasant change from the long cold winter, and it is a holiday for the ger children who spend the rest of the year in school. But it remains a hard and lonely life for the herdsmen and women, the isolation must make any diversion welcome and the stranger is greeted with courteous interest and hospitality by the hardy people who live in these remote areas.



Oxytropis sp. Saussurea sp. Ephedra sp.

plants of semi-desert, Altai



Gentiana sp. Gueldenstatia monophylla Pulsatilla sp.

plants of dry grassland, Altai

Alpine Fever

HELEN BROTHERSTON

This is a warning to those of you considering taking your first steps up the alpine path. You are in grave danger of contracting that most contagious of diseases, Alpine Fever.

I suffered an attack several years ago from which I never recovered, and now have the most terrible addiction. The primary cause of the start of the disease was *Lewisia cotyledon* hybrid. You are probably not surprised. I already had Green Fingers, a lesser disease, and was constructing a modest rockery around a small artificial pond. This was an oasis of colour, I recall, with dwarf phlox, aubretia, iberis, penstemons and alyssum. There were pockets of *Iris reticulata* and species tulips. Then came the lewisia which I planted on its side as I was instructed, in a wall. It grew wonderfully well, flowering profusely and was a joy to behold. So much so that a friend suggested that I accompany her to a Scottish Rock Garden Club meeting held at the Royal Botanic Gardens in Edinburgh. I can pinpoint that occasion as the onset of my affliction.

I exchanged plants, seeds and cuttings with all and sundry. I ceaselessly trod the paths of countless gardens, both public and private, in my quest for 'desirable' plants. Many was the time (I hang my head in shame) when it was hard to resit the temptation to help myself to a cutting – a shoot which I felt no-one would miss, and anyway, the plant could 'do with a bit of a prune'. I even considered putting poachers' pockets in my jacket, such was my craving. I found myself drawn as if by a giant magnet into every nursery and garden centre within a fifty mile radius that I just 'happened' to be passing. "Not **more** plants" my incredulous husband would protest, eyeing with consternation the serried ranks of treasures lined up in my plunge beds, "where will you put them all?" Then, "not **another** bed" he would groan, as I dug up yet another portion of the dwindling lawn (the only part of the garden in full sun). And that was not all. I found myself hanging round builders' yards, fingering their gravel and sand. I pored over the piles of grit placed at the side of the road in wintertime by the local council. There is still a glimmer of hope for me as I was able to find the strength to walk away from this temptation. Next year it may be a different story. Farmyards and junk heaps were targeted too in my search for old troughs and sinks. In vain. Other addicts always managed to get there ahead of me.

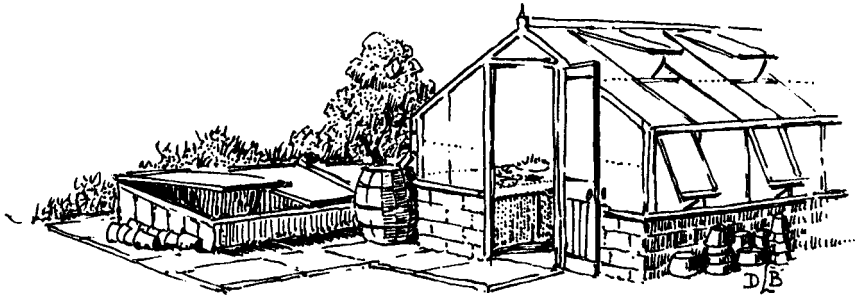
My bedtime reading was, and is, invariably a horticultural catalogue (usually alpines) with the plant names heavily underlined in ink, the pages

liberally besmirched with ticks and stars. My bedlinen is witness to this, covered as it is with biro marks. I wake in the night, muttering Latin names and nomenclatures to myself.

I tried to cure my fever in the way one deals with an epidemic – with an injection – more of the same thing, a horticultural hair of the dog. To this end I packed my bags and travelled by train to an alpine Mecca – the 6th International Rock Garden Plant Conference in Warwick. A fellow sufferer came with me. Here we were bombarded from all sides with the most exquisite of alpines, absorbing lectures, fascinating gardening books and toothsome plant stalls. There were men and women from all corners of the world, who were in an even more advanced stage of Alpine Fever than ourselves. We came away punch drunk, saturated with alpine know-how, how-not-to and growing techniques (since largely forgotten by me) and weighed down by an ample polystyrene box lined wall-to-wall with alpine 'mustavs' (I **must have** this . . . *Celmisia argentea* and I simply **must have** that *Gentiana saxosa* etc.) gleaned from the beckoning plant stalls.

The treatment had failed, alas, and my addiction far from having been resolved was as chronic as ever. More so, if that is possible. I have concluded that I shall inevitably have to learn to live with my consuming passion, but at least I shall die happy.

So, novice alpinists, if my tale fills you with alarm and despondency, now is the time to cry halt, and extricate yourself before you succumb to this madness. Give away your alpines to one of your neighbours who you know will manage to kill them off. You have been warned.



Duncan Lowe

Obituary

MISS MARGARET NICOLSON

After a year-long illness Margaret Nicolson died on February 22nd 1992. She was eighty five years old and had lived in Bearsden for most of her life. A well known and much loved member of the Dunbartonshire Group, she will be greatly missed by all her friends in the Club.

She was possessed of the most astonishing vitality and youthfulness, and was always game for an expedition. Be it a short diversion on the way home from the village to rescue snowdrops from the path of the bulldozers in Roman Road, an afternoon jaunt to collect leaf mould and mole hills at Stockiemuir, or a strenuous ten hour day in wellington boots on Ben Lawers, Margaret was always ready and eager to go.

Her garden was full of rare plants lovingly and expertly tended. She was particularly fond of rhododendrons and other ericaceous plants, dwarf shrubs and conifers, cyclamen, ferns and grasses. Margaret had a vast store of knowledge and enormous experience of growing, propagating and planting. Her ability to choose just the right plant for a situation and her marvellous sense of design were a delight to observe. Everyone she met who showed the slightest interest in plants and gardens was invited to the garden, and usually left carrying a bag bulging with plants, cuttings, gardening books and home made shortbread.

She was always to be found where there was work to be done, helping in the tea room, at the washing up, stewarding at the Show. She was a tower of strength in the Seed Exchange team during Dr. Lucy Dean's six years as Manager. Margaret's favourite job was selling plants, many of which she would have produced herself for the Club's plant stall. The customers got good value, not only plants, but advice, inspiration and a kind of magical injection of enthusiasm, all bestowed in the kindliest and most charming manner and accompanied by the famous inimitable chuckle.

We who knew her well were greatly enriched by her companionship. She had a wonderful way of being able to bring out the potential in beginners, encouraging them and broadening their horizons. 'You can grow anything from seed' she would say blithely, thrusting a packet or two at her listener.

The Glasgow Show Secretary's table will no longer bear the lovely miniature rock garden which Margaret made specially every year for the occasion, nor will her exquisite flower posies decorate the Judges' lunch table.

We will remember her with great affection for her independent yet gentle spirit, her sense of humour, her generosity and for the inspiration she gave. It was a privilege to have known her.

Lyn Bezzant

Jubilee in '93

SANDY LEVEN

In 1993 the Scottish Rock Garden Club will be sixty years old. You might just want to wish it "Happy Birthday" and hope it goes on for another sixty years, or you might decide to celebrate the Club's birthday. Like most organisations our Club is only as strong and as active as its members. We want you to be active in 1993. The Club has arranged several events for Jubilee Year. We have also taken the opportunity to commission some special Jubilee items for members to purchase. Most people think that the word **"Jubilee"** is a noun. We want you to think of **"Jubilee"** as a verb; something that is done. We want you to jubilee in 1993, to join in and enjoy the Club's Diamond Jubilee. One feature of the SRGC is that members make friends in their own groups and outside their groups in other parts of the country. These friendships are founded in a love of plants. Members meet at Discussion Weekends, at shows and during garden visits. In 1993 there will be many opportunities to meet other members and to see a wide range of plants throughout the spring and summer. One of the aims of the events which we have organised is to give you the chance to mix with as many other members as possible.

A series of GARDEN VISITS is planned. The gardens in each group area will be open on a special Saturday or Sunday. Members from other groups will be able to visit these gardens. The visits are deliberately spread out, so that spring, summer and autumn flowers can be seen. The highlight of the garden visit programme is the SPECIAL WEEKEND IN OBAN from May 21st till 23rd, of which more below. Two very special Scottish rock gardeners, Alf Evans and Jim Jermyn, will talk on Peat Garden Plants and Asiatic Primulas. These plants grow well in the gardens of Lorn and Hilary Hill has selected the best of these gardens for us to visit. If you have not booked your place you had better do so as soon as you can because the reserved hotel rooms are being snapped up.

St Andrews will be the venue for the ANNUAL DISCUSSION WEEKEND in 1993. With excellent facilities in Scotland's oldest university, its Botanic Garden, golf courses, beaches and central position, St Andrews is the favourite location of most members for the discussion weekend. A varied programme with top speakers and a Jubilee Year Dinner will have the cream of Scottish Rockers spellbound from the 24th till 26th September 1993. One of the speakers at the Discussion Weekend will be Ole Sønderhousen, the internationally renowned expert on

bulbous plants of the Mediterranean and Turkey, whose article on Fritillaria is in this isssue. Ole has agreed to be a JUBILEE TRAVELLING SPEAKER. He will visit many groups in late September and early October.

For members in the south of England we have arranged with the Royal Horticultural Society for a JOINT LECTURE AT VINCENT SQUARE. James Cobb will travel to London to give this very special lecture "A Scottish Diamond – Gems from the Rock Garden".

The SHOWS are said to be the shop window of our club. Without exhibitors there would be no shows. To thank them for their contribution the Club has commissioned a special "DIAMOND JUBILEE EXHIBITORS BADGE". One of these will be given to everyone who exhibits plants at the 1993 shows. In the shows there will be special classes in both Sections I and II. These will be six Pan classes with pan size limited to 6 inches. The first prize winners will receive a framed drawing by Duncan Lowe. There will be a SUMMER DISPLAY OF ROCK GARDEN PLANTS IN PERTH on Saturday 31st July. Here you will be able to see a range of plants not usually seen at SRGC shows. We hope that those of you who do not usually show your plants will take the opportunity to exhibit in 1993.

To improve some of your skills and give you an enjoyable day we are arranging some PRACTICAL DAYS in local group areas.

For the adventurous, who want to visit the plants in their natural habitats we are planning two SUMMER OVERSEAS TRIPS. We hope that Jim and Alison Jermyn will lead members in the DOLOMITES, while Ian and Carole Bainbridge aim to head for COLORADO with another party. Full details of these trips will be published in the January 1993 edition of The Rock Garden, but if you want to register your interest before then to enable us to plan these trips, please contact Drs I and C Bainbridge, 3, Woodhouselee, Easter Howgate, Midlothian EH26 0PG.

We are marking our Diamond Jubilee Year by commissioning some special jubilee products. These are a mixture of beautiful and useful items. If you have not bought your copy of the JUBILEE CALENDAR FOR 1993 then order it as soon as you can. Almost three quarters of them are sold already. The calendar features 13 of Duncan Lowe's paintings of Scottish Alpines. The design is such that the portraits can be individually framed after the calendar has served its purpose. Thirteen pictures of native flowers, beautifully depicted and ready to frame for only £6. This must be the rock plant lover's chance of a lifetime! Details are on p101.

We are producing a LIMITED EDITION PRINT of a *Paraquilegia grandiflora* by LAWRENCE GREENWOOD, whose immaculate watercolour drawings are superb. This will be the first time that one of Lawrence's paintings has been produced as a print. *Paraquilegia grandiflora*

has been chosen because it is a beautiful plant which was first cultivated in this country at Branklyn Garden in Perth. Live plants collected by Ludlow and Sherriff were flown back to this country and grown at Branklyn by Mrs Renton.

To keep you warm in the garden or mountains, Snowgoose, makers of top quality clothing are producing BODY WARMERS embroidered with the SRGC emblem. To accompany these there will be embroidered WOOLLEN PULLOVERS and SWEAT SHIRTS.

COMMEMORATIVE GLASSES with the club emblem will be produced by Caithness Glass. These glasses will be sold boxed in pairs.

The last items need your cooperation. To show Scottish rock gardens to the general public we would like some members to open their gardens under the SCOTLAND'S GARDENS SCHEME. Our other way of showing our skills to the public will be our displays at the HIGHLAND SHOW. For this we will need plants, builders and members to man the stand in rotas over the four days. If you would like to help with either of these please contact Mr A. M. Wilson, Nydiehill, St Andrews KY16 9SL.

In 1993 the Club celebrates its Diamond Jubilee 1933–1993. Sixty years ago eight men met together in Edinburgh to found the SRGC. MR BILL MACKENZIE is the sole surviving founder member. He has presented the Club with THE RUTLAND SALVER, which will be awarded annually in Section II at the shows to the member with the highest aggregate of first prize points. After all this time Bill is still active in the club. Are you? Tell your friends about our Club. Show them your plants. Come to the Shows, garden visits and weekends. Above all, join in and JUBILEE IN 1993.

Saxifraga grisebachii Edith Clark

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

HILARY HILL

Thanks to the splendid response from SRGC members to the item in **'The Rock Garden'** 89 I have been able to reserve all the bedrooms at the Caledonian Hotel for this special weekend conference. All the single and double rooms have been allocated, but I still have fifteen twin-bedded and one family room, all with private facilities, available. There are also one or two twin and double rooms (some with, some without private facilities) at the Kelvin Hotel, a small friendly hotel nearby. Three Lorn Group members or their families have offered B and B accommodation. If you would like to reserve any of these rooms please write or phone me without delay.

HILARY HILL, COILLE DHARAICH, KILMELFORD, OBAN, ARGYLL PA34 4XD.
Tel. 085 22 285.

Further details of the programme are:

Jim Jermyn will lecture on Asiatic Primulas.

Alf Evans will lecture on The Peat Garden and its plants.

West Coast Nurseries (primulas), Edrom Nursery (primulas and a wide range of alpines) and Braevallich Nursery (rhododendrons) all hope to have plants for sale.

Several Lorn Club members and their friends are opening their gardens for this event so delegates will be able to sample a wide range of large and small gardens and see the way in which Argyll gardeners tackle our problems of wind, rain, bog and rock. It sounds daunting, but there are some stunning solutions.

The Seed Exchange

JEAN WYLLIE

Over the last three years, the splitting of the seed exchange workload into three separate sections, of seed reception, seed packeting and seed distribution, has been a great success. This has produced jobs of a more reasonable size, and, we hope, the most efficient and successful seed exchange in alpine gardening circles. I would like to thank all of the members in Stirling, Edinburgh and Fife whose combined assistance has made the seed exchange run smoothly, and we hope they'll continue with their happy contributions.

There is, however, a small problem. Some members obviously have misplaced or not read their Yearbook (p7) and send requests for seed lists and order forms to the wrong person. To clarify the procedure:

Seeds and requests for seed lists should be sent to Mrs Jean Wyllie, 1 Wallace Road, Dunblane, Perthshire FK15 9HY.

Completed order forms should be sent to Mr Morris Wilson, Nydiehill, St. Andrews, Fife KY16 9SL.

The Easy Ten

'The Easy Ten', the new idea tried last year to encourage beginners to participate in the seed exchange, proved to be a great success. It seems that this service has filled a gap in the seed exchange, serving members who feel intimated by a seed list of thousands of species, and it will continue this year with a different selection of ten easy-to-propagate alpines for you to try.

To participate in the scheme, send remittance of £1.00 and your name and address to Mr Morris Wilson (address above), before 14th February, 1993, and you will receive 1993's 'Easy Ten' packets of seeds and basic instructions on growing from seed. These will be despatched in mid-February.

Most importantly, enjoy your seed sowing and growing, and please continue to contribute seeds to the exchange; after all, it's you who make it all possible.

Book Reviews

A Century of Alpines
The Sixth International Rock Garden Plant Conference Report
Edited by Richard Bird
Published by the Conference
247 pages, 66 colour plates, 12 line drawings
Price £15.00

Not being able to be present at the Conference held at Warwick University between 6th and 11th April 1991, I picked up this report with some trepidation. I have been familiar with reports of various types of conferences over the years and they often make very dry and uninteresting reading, especially if you were not a participant. This is certainly not the case with "A Century of Alpines". The reader is immediately drawn by the attractive cover picture of *Dryas octopetala* and *Gentiana acaulis* growing in harmony. These plants are the respective emblems of the SRGC and the AGS who jointly sponsored the conference.

Inside the reader can choose from 27 articles on a wide range of topics, plus a short introduction and a well written feature on the Conference Show. There are articles to suit all tastes, many of which are illustrated by excellent photographs of views or individual plants. It is a shame however that these illustrations and particularly the comments below them do not always match up with the text.

Those with a botanical mind can delve into the mysteries of micropropagation, whilst those of us whose ambition in life is to grow a plant worthy of a first prize in an open class can study a number of very readable articles on "Growing for Showing". Anyone interested in single genera can read about Meconopsis, dwarf phlox and penstemons, Auriculastrum primulas, American trilliums or the genus Corydalis. If you are only interested in plants growing in their natural habitats you can choose from every corner of the globe. The high Pyrenees, New Zealand, Italy, Turkey, China, North and South America, Romania and Bulgaria are just a few of the countries whose varied and spectacular plants are discussed in the pages of this report. Those who grow "rock plants" for no other reason than to enjoy the spring display they put on in the garden are also catered for, as there are a number of articles giving useful tips and advice.

It is not possible in a short review to list all the topics covered in a report of this type. I have however had many hours of pleasure delving through

its pages and I still have a large part of the book to read in depth. Some of the overseas articles would have benefited from having the English corrected as this would have made them easier to follow. However, despite this "A Century of Alpines" is good value for money. The conference organisers should be congratulated for achieving the near impossible. Not only a well presented conference report for those lucky enough to attend, but at the same time a good reading reference book.

BH

The Propagation of Alpine Plants and Dwarf Bulbs
Rock Gardener's Library Series
by Brian Halliwell
Published by B. T. Batsford
193 pages, black and white illustrations
Price £17.99

The problem facing the author, Brian Halliwell, when writing a book of less than 200 pages on the propagation of alpine plants and dwarf bulbs, is immense. It would be all too easy to compile 200 pages on just one method of propagation, or on the propagation of a single genus.

The author describes, in the first 75 pages, the various methods of plant multiplication likely to be used by the alpine or rock gardener. He explains the basics of seed propagation, vegetative propagation and "special techniques", particularly those applied to bulbs.

Good advice is given on the composts to use and the main qualities required of them for each method described.

He gives the optimum timing for propagation by season of the year, so the book will be of use to gardeners throughout the temperate regions of both hemispheres.

There are no photographs but many good line drawings by Eilidh Reeves accompany the text. However, the purpose of some of these is unclear or confusing to me and some seem unnecessary.

The remainder of the book comprises an alphabetical list of more than 2000 genera detailing the best method and time for their propagation. It is very difficult to state in a few lines how best to propagate an entire genus with all its extremes. Take, for example *Cassiope;* some root readily from cuttings while some are virtually impossible. Each genus listed has a hardiness key rating; again, this has to be a general guide and although the author does sometimes indicate in the text that a plant is difficult to propagate, it might have been useful if some general key to the degree of succcess of propagation was included. It is easy for the keen and practised propagator to disagree with the method or timing recommended but for

ne majority of gardeners the advice is sound and they can always experiment as they gain experience. For those gardeners who have attempted little or no propagation this book will serve them well; if you are an enthusiastic propagator, while you may have different methods or timings to some of those suggested, it still makes interesting reading and gives you a good starting method for any genus with which you are unfamiliar.

J.I.Y.

The Cultivation of Ferns
by Andrew MacHugh
Published by B. T. Batsford
144 pages, 48 colour plates, 22 line drawings
Price £25.00

In recent years there has been an upsurge of interest in ferns both as garden subjects and houseplants, and as further evidence of this they occur with increasing frequency on the show benches of the various SRGC, AGS and Horticultural Society shows throughout the British Isles. MacHugh's book, the first of its kind for ten years, has made a timely entry.

It is obvious after reading the first chapter that the author has written the book with the North American fern enthusiast in mind. However, the writer, a trained horticulturalist, writes in a lucid manner, giving useful advice on growing ferns in the open garden, on the patio, in the courtyard, greenhouse, conservatory and the home.

He gives a history of fern cultivation since the eighteenth century and a comprehensive survey of the ecology of ferns of temperate and tropical regions. A pleasing aspect of ferns is their ability to thrive in conditions where sun-loving plants would fade and die. The book gives practical advice on evaluating and preparing suitable sites and maximising the garden's microclimate to the full.

In contrast, however, when growing ferns in the greenhouse, the author states 60–65°F as the minimum night temperature, and recommends a humidity level of 60 per cent be maintained, conditions ideal for the cultivation of tropical and sub-tropical ferns, but fuel costs are surely far beyond the pocket of the average British pteridological enthusiast.

Continuing the same reasoning, the author considers the cool house as a more practicable alternative, 50–55°F minimum night temperatures being the norm, although fuel costs are slightly lower, this is still an expensive proposition. For those undeterred a comprehensive list of appropriate ferns is given with cultivation and propagation notes. Alternatively, the unheated greenhouse provides congenial conditions for hardy and semi-hardy species.

The cultivating mysteries and planting techniques of epiphytic ferns in baskets, rafts, plaques, and fern poles are well documented and the terrarium, a nineteenth-century innovation, rediscovered by many indoor gardeners, gives a challenge for those with imagination for creating a miniature fernery.

The final chapter gives an annotated list of 400 cultivated species. This is followed by a comprehensive list of European and North American gardens with good collections of ferns, details of fern societies, an antiquarian book list and extensive bibliography.

A first rate if somewhat expensive publication.

H.C.S.

Alan Bloom's Hardy Perennials
New plants raised and introduced by a lifelong plantsman
by Alan Bloom
Published by B. T. Batsford
224 pages, 20 colour plates
Price £15.99

As an introduction Alan Bloom describes his early days learning the nursery trade, starting almost seventy years ago. This is followed by personal reminisences of well known plant raisers, such as George Arends (astilbes, eryngiums and phloxes), Ernest Ballard (Michaelmas daisies) James Kelway (irises and paeonies), Amos Perry (poppies) and George Russell (lupins).

An impressive total of 171 cultivars were raised and introduced into commerce by Alan Bloom during the period 1934 to 1985 (and several more since then!). These were mainly herbaceous perennials but included some well known alpines. Numerous other good plants were discovered elsewhere, especially during his visits abroad, and assessed, multiplied and marketed by him. These achievements are a tribute to his eye for a good plant, skill and persistence as a propagator and a knowledge of the requirements of the nursery trade and gardeners in general.

Alan Bloom was ably supported in this work by loyal staff, notably Percy Piper, who receives due credit. He acknowledges that bees were often instrumental in carrying out the initial pollinations, although judicious use of Percy's paintbrush created several cultivars of merit.

In the final section the 1938-39 wholesale catalogue of Blooms' Nursery, then at Oakington, is reproduced in its entirety. Some may consider this item, which takes up almost a quarter of this relatively short volume, to be over-represented. However it is certainly of interest for the reader to compare this extensive list of plants (and prices) with those available today.

Many plants listed are now undoubtedly lost to cultivation. Alan Bloom comments pertinently on changes in fashion, causing erosion of certain groups but greatly increasing the popularity of others, for example Bergenia, Geranium and Hosta.

There are detailed descriptions, together with a few coloured illustrations. Comprehensive lists of plants raised, and or, introduced by Alan Bloom are given in the appendices. Blooms of Bressingham continue to make important new introductions. This book makes an interesting supplement to the earlier publications, "The Bressingham Story" and "A Plantsman's Perspective".

B&IM

Blue Guide: Gardens of England
by Frances Gapper, Patience Gapper and Sally Drury
Published by A. & C. Black
638 pages, many b & w photos, maps
Price £14.99

This substantial handbook represents a new departure for the long-established 'Blue Guides', being the first to cover gardens. It contains information on gardens open to the public throughout England, everything is covered from alpines to cacti, Kew to Cumbria and Cornwall. Seven to ten gardens per county are given detailed treatment: how to get there, opening hours etc, plus comprehensive descriptions of their interest. Looks a pretty useful guide to put in the car when you're heading south: wonder when the Scottish, Welsh and Irish gardens will get similar treatment?

Discussion Weekend

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

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

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

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

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

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

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

Programme

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

Prices –*Residents*

Friday evening dinner-Sunday afternoon tea £94.00
Saturday lunch-Sunday afternoon tea £67.00
These prices include the cost of the Saturday evening dinner.
Sunday evening dinner to Monday breakfast £25.00

Non-Residents

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

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

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

THE SCOTTISH ROCK GARDEN CLUB

1993 Diamond Jubilee Calendar

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

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

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

Available now while stocks last.

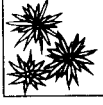
Holden Clough Nursery (Peter J. Foley)

We have an interesting range of Alpines, Primulas, Hardy Plants, Heathers, Shrubs and Dwarf Conifers. All are fully described in our current catalogue and 1992 supplement, price £1.20. Seed list available (sae please). We also stock frost-proof Alpine Pans and Half-pots, Tufa Rock, and a selection of various grits which can be brought for collection from SRGC Shows attended. Mail order service and export orders invited.

Dept S, Holden, Bolton-by-Bowland,
Clitheroe, Lancashire. Tel. Bolton-by-Bowland 615.
Visitors welcome all year

Hartside Nursery Garden

We offer a wide range of ***Rare and Unusual Alpines*** Specialising in Primulas, Dwarf Shrubs, Dwarf Rhododendrons, Dwarf Conifers, Ericaceous Plants. Hardy Ferns and many more subjects for the rock garden, troughs, alpine house or peat garden. Our latest catalogue includes many rare items including Trillium hibbersonii, Primula Wharfedale Ling, Saxifraga poluniniana, Primula minima x glutinosa, Orchis maderensis and many more.



Visitors welcome. Send 3 second class stamps for latest catalogue.

Hartside Nursery Garden
(SRGC), Near Alston, Cumbria CA9 3BL

The Alpine Garden Society

invites you to join its band of enthusiasts
who enjoy a Bulletin every quarter
have opportunities to buy specialist publications
have tours to see alpines in their natural habitat
have a panel of experts to advise on alpines and their cultivation
can participate in the distribution of the seed of more than 4,000 distinct species each year

Home Members £13.00, Overseas Members £16.00. Dollar Cheques welcome.

Secretary **E. M. UPWARD, THE ALPINE GARDEN SOCIETY, AGS CENTRE, AVON BANK, PERSHORE, WORCESTERSHIRE WR10 3JP, UK.**

The American Rock Garden Society

Benefits of Membership include a beautiful, colourful quarterly Bulletin, the worldwide Seed Exchange, offering thousands of species, spectacular National Meetings, and the exchange of knowledge and experience with American gardeners.

To join, send $25 cheque or international money order, or £17 sterling to Jacques Mommens, Executive Secretary, PO Box 67, Millwood, New York, 10546, USA.

JACK DRAKE

INSHRIACH ALPINE PLANT NURSERY
AVIEMORE Inverness-shire
Tel: 0540 651 287 Fax: 0540 651 656

Gentians, Primulas, Meconopsis, Heaths and many other rare and lovely plants

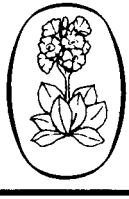
Plant and Seed Lists gladly sent on request

JIM and ALASDAIR SUTHERLAND

ARDFEARN NURSERY

Specialists in Alpine and Rare Plants

BUNCHREW · INVERNESS · IV3 6RH
SCOTLAND Tel: 0463 · 243250



Come and see our exciting new display areas featuring many of our rare and unusual plants.

We offer a happy and relaxed atmosphere with an extensive range of quality plants for the beginner, and the connoisseur. For those who are unable to make the journey, we will be offering a U.K. mail order facility from October-March. Lists will be available from Oct-March for 2 x 1st Class Stamps.

Pacific Horticulture

The magazine for gardeners everywhere who enjoy reading about plants and gardens. It is colourful, varied, and our readers say, not frequent enough. They also say:

"What a treasure it is."
Ken Gillanders,
Tasmania, Australia

"... Exceptional ... in content, depth, breadth, and intelligence."
Paul Hawken, California, U.S.A.

"One of the finest horticultural magazines in circulation today."
Rosemary Verey,
Gloucestershire, England

"... a very high standard ... the highest in the world."
Graham S.Thomas, Surrey, England

Subscribe now by sending $20 (in U.S. currency please) for a year of four issues to Pacific Horticulture, P.O. Box 485, Berkeley, CA 94701, U.S.A.

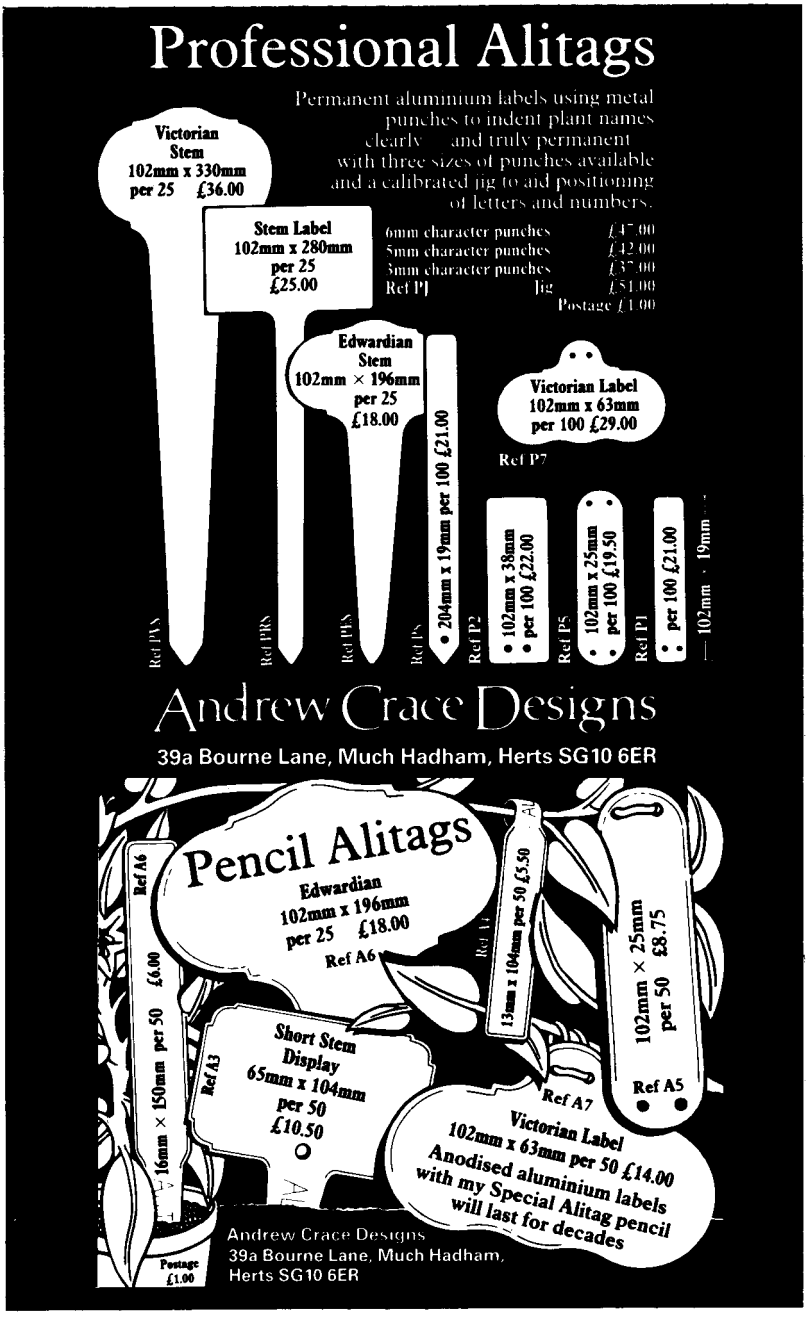
BARKERS (ESTABLISHED 40 YEARS)

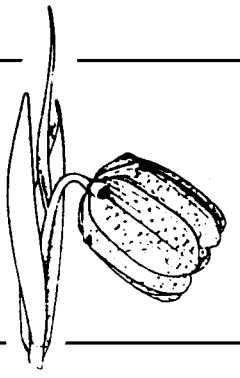
Primrose Nurseries & Garden Centre
Whalley Road, Clitheroe, Lancs. Telephone: 0200-23521

Extensive Shrub range with many choice and uncommon varieties; Ornamental Trees, Conifers, Climbers & Roses; Tree Heaths, Heathers & Alpines with a large collection of Herbaceous Perennials including Hostas, Candelabra Primulas etc. Rockery Stone, Tufa, Troughs & Terracotta Pots, Chippings & Gravel.

OPEN DAILY (Personal collection only)
(Easy access Motorways M6, M62, M65 & M66)

VISA


Professional Alitags
Permanent aluminium labels using metal punches to indent plant names clearly and truly permanent with three sizes of punches available and a calibrated jig to aid positioning of letters and numbers.
Victorian Stem 102mm x 330mm per 25 £36.00
Stem Label 102mm x 280mm per 25 £25.00
6mm character punches £47.00
5mm character punches £42.00
3mm character punches £37.00
Ref PJ Jig £51.00
Postage £1.00
Edwardian Stem 102mm × 196mm per 25 £18.00
• 204mm x 19mm per 100 £21.00
Victorian Label 102mm x 63mm per 100 £29.00
Ref P7
• 102mm x 38mm • per 100 £22.00
• 102mm x 25mm • per 100 £19.50
• per 100 £21.00
102mm · 19mm
Ref PVS
Ref PRS
Ref PES
Ref PS
Ref P2
Ref P5
Ref P1
Andrew Crace Designs
39a Bourne Lane, Much Hadham, Herts SG10 6ER
Pencil Alitags
Edwardian 102mm x 196mm per 25 £18.00
Ref A6
Ref A6 16mm × 150mm per 50 £6.00
Short Stem Display 65mm x 104mm per 50 £10.50
Ref A3
13mm x 104mm per 50 £5.50
Ref A4
102mm × 25mm per 50 £8.75
Ref A5
Ref A7
Victorian Label 102mm x 63mm per 50 £14.00
Anodised aluminium labels with my Special Alitag pencil will last for decades
Postage £1.00
Andrew Crace Designs
39a Bourne Lane, Much Hadham,
Herts SG10 6ER



CAMBRIDGE BULBS

Offers an exciting range of bulbs for the specialist grower, Arum, Corydalis, Crocus, Erythronium, Fritillaria, Iris, Tulipa. Many species unobtainable elsewhere.

Send 2 x 1st class stamps for list

Cambridge Bulbs, 40 Whittlesford Road, Newton, Cambridge CB2 5PH
Telephone 0223 871760

ALPINES & DWARF BULBS

Our new lists offer some 1400 Collector's alpines, bulbs, conifers and carnivorous plants, etc. Many new introductions.
All available by post or at Nursery. Overseas orders welcome.
Nursery on B1205, off A46 at Nettleton (between Market Rasen and Caistor, North Lincolnshire).
Open daily 9-5 pm. 50p in stamps please.

POTTERTON & MARTIN

The Cottage Nursery, Moortown Road, Nettleton, Nr. Caistor, North Lincs. LN7 6HX.
Telephone: 0472 851792

TOWN FARM NURSERY

Our new list containing many choice and hard-to-find alpines and perennials is now ready. Please send SAE (9" x 6" preferred).
Mail order service UK.

Nursery and garden open Friday to Monday 10am to 6pm March to October.
Closed Tuesday to Thursday except by prior appointment.

TOWN FARM NURSERY, WHITTON VILLAGE, Nr. STILLINGTON, STOCKTON ON TEES, CLEVELAND TS21 1LQ
Tel: Sedgefield (0740) 31079

The Vicarage, Sheffield, Canterbury, New Zealand.

Offer you:
Alpine Plant Seed of the Waimakariri Catchment, Southern Alps, New Zealand

Unusual and Rare Alpine Plant Seed

Seed list available
NZ $3.00 post paid:

Quality Alpine Plants

A wide range of alpine and rock garden plants to suit both beginners and specialists, grown in harsh conditions at over 900 ft above sea level in north east Scotland. Visitors welcome but please telephone beforehand to avoid disappointment. Mail order service (U.K. only). Please send S.A.E. for our latest list.
The nursery is off the Kirkton of Tough to Craigievar road. Not easy to find but worth searching for.

Tough Alpine Nursery
Westhaybogs Tough Alford Aberdeenshire Scotland AB33 8DU
Telephone 09755 62783

TIMPANY NURSERIES

Susan Tindall

Many rare and unusual plants including

Androsace	Ericaceae
Celmisia	Helichrysum
Dianthus	Phlox
Draba	Primula

Opening times:
Tues.–Fri. 2 – 6 p.m.
Sat. & Bank Holidays 10 – 6 pm.
(Or by appointment)

Please send 50p for the Autumn and Spring list.

Mail Order Welcome.

77 MAGHERATIMPANY ROAD
BALLYNAHINCH, CO. DOWN,
NORTHERN IRELAND.
Telephone 0238 562812

ALPINE GARDENING WEEKEND

13th-15th November 1992

The nineteenth in this popular series of weekend conferences will, once again, be directed by Michael Northway and the programme will offer both the enthusiast and the beginner the opportunity to learn from the experiences and insights of practising alpine gardeners.

The speakers will be MICHAEL UPWARD, Secretary of the Alpine Garden Society, on "In the Shadow of the Jungfrau" and "Plants of the Drakensberg"; ALAN FURNESS on "My Kind of Plant" and "Two Gardens, Two Aspects" and MICHAEL NORTHWAY on "Cyprus in the Spring".

There will also be an auction of plants brought by the speakers and, if time permits, an "open" session to which you are invited to bring your alpine-gardening problems, preferably illustrated with slides.

Please send S.A.E. for full particulars to:
Brian Jenkins, Warden,
Horncastle Residential College,
Horncastle, Lincs. LN9 6BW.

WHITE COTTAGE ALPINES

MAIL ORDER AVAILABLE

New list now available, including an increasing range of AMERICAN species

Large SAE for our descriptive catalogue

OPEN THURS-SUN. 10 am - 5 pm BANK HOLIDAY MONDAYS 10 am - 5 pm

N.J. & S.E. Cummins, Eastgate, Rudston, Nr. Driffield, E. Yorks, YO25 0UX.
Telephone: (0262 82) 668

SEED COLLECTING EXPEDITION TO THE HIMALAYA AND TIBETAN BORDERLANDS 1992

Following their very successful 1991 expedition, Chadwell & McKelvie will be undertaking another two-part venture. Chadwell will cover a new area within the Tibetan borderlands, whilst McKelvie heads for a little-explored Himal in Central Nepal. Excellent collections are anticipated, particularly Primula, Meconopsis, Gentiana, Saxifraga, Corydalis, Cremanthodium, Androsace, Rhododendron, Saussurea, Nepeta, Waldheimia, Draba. The range of species offers much for both the high-alpine enthusiast and first-time subscriber. £30 or £55 shares are available.

Send for a detailed prospectus, enclosing a s.a.e. plus 3 x 18p stamps (2 US $ bills or 3 International Reply Coupons outside the UK) to: C. Chadwell, 81 Parlaunt Road, Slough, Berks. SL3 8BE, England.

ALPINE FLOWER ENTHUSIASTS TOUR OF THE WESTERN HIMALAYA AND BORDERLANDS OF WESTERN TIBET JULY 1993

Nowhere else in the Himalaya can such a rich variety of the world's highest alpines be reached during one visit, with the advantage of reliable access. The Itinerary has been devised by Chris Chadwell and the tour, which will involve daily excursions in the mountains to look at flowers but is non-trekking, will be led by Alastair McKelvie who has participated in three Himalayan Plant Expeditions.

Contact Chandertal Tours for more details:
10 Station Parade, Eastbourne, Sussex BN21 1BE. England. Tel. (0323) 646604.

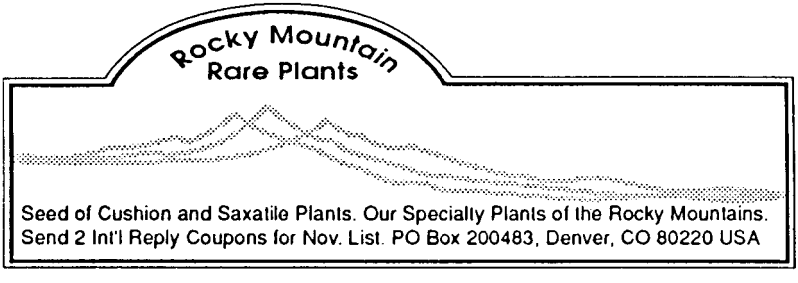
BRITISH CACTUS AND SUCCULENT SOCIETY

The Society has over 100 branches throughout the British Isles including Aberdeen, Edinburgh, Glasgow, Kilmarnock, Kirkcaldy and Newcastle. The benefits of membership include:

1. A quarterly Journal with numerous excellent illustrations of cacti and other succulent plants.
2. Help with any problem in growing and propagating your plants.
3. Advice on soil mixtures, potting, pots, watering, heating, etc.
4. Help in naming plants correctly.
5. Distribution of seeds as these become available.
6. A welcome and newly-found friendship at ANY Branch.

MEMBERSHIP FEES: Adult Membership £8.00 (US $15.00); Senior Citizen £5.50; Junior under 18 years £4.50; Associate Member £2.00

For further information and enrolment form contact the Membership Secretary:
Mr K. Harrow, 23 Linden Leas, West Wickham, Kent BR4 0SE.



Daphnes, Named Rhodohypoxis, Rare Bulbs, Gentians, Pieris, Cassiope,
Dwarf Shrubs, Dwarf Rhododendrons,
Rare and Dwarf Conifers, Primulas particularly Asiatic.
Masses of rare items in small numbers
Visitors preferred Saturdays and Sundays (weekdays by appointment)
Plantsman's Garden
List and Supplements available for four 2nd class stamps

S. W. BOND

Thuya Alpine Nursery, Glebelands, SRGC, Hartpury, Gloucester, Hartpury 548.

THE ROCK GARDEN CLUB OF PRAGUE, CZECHOSLOVAKIA

After forty years behind the Iron Curtain we are now able to offer membership to our friends from foreign countries. Our club has more than 1200 local members many with professional contacts with Societies and botanic gardens abroad.

Our activities concentrate on the following:
(1) Seed Exchange (the seed list contains more than 1700 items); (2) Bulletin SKALNICKY (4 issues per year); (3) shows; (4) monthly lectures; (5) garden visits and holidays; (6) membership directory; (7) library and slide collection. Membership US $15 DM25

Enquiries and subscriptions to Mrs Eva Hájková Mimŏnská 12/639, 190 00 Prague 9 Czechoslovakia.
Cheques made payable to Komerčni banka – Prague Nonet.

ADVERTISING RATES IN THE ROCK GARDEN 1993

Full Page £133 inclusive of VAT; Half page £71; Quarter page £40.
Small advertisements 41p per word including VAT (members 36p per word). Orders must include the advertiser's name and address and must be accompanied by the remittance.
An order for the same advertisement in consecutive issues – 10% discount.

Advertising Manager: Dr Robert M. Edge,
6 Connell Crescent, Milngavie, Glasgow G62 6AR.
Telephone 041-956 2865.

STREPTOCARPUS species

From the mountains of tropical and South Africa. Not exactly alpines, but lovely houseplants.
SAE for list. LACROIX, 9 Port Henderson, Gairloch, Ross-shire IV21 2AS.

SPEEDWELL NURSERY

Send S.A.E. for list of over 300 alpine plants and seeds, many unusual.

To G. Young, 48 Middleton Way, Fen Drayton, Cambs. CB4 5SU.

INDIA KASHMIR LADAKH

Personally escorted tours – high quality operation.

Special interest departures June/July/August/September.

Alpine Flower Trek/Wildlife/Taj Mahal/Srinagar houseboats.

For details and brochure contact Muriel Scotchmere
Voyager VIP Tel/Fax 0737 249582

Back Issues

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

Discount Offer:
15% discount on orders of 10 Journals or over.

There is NO discount on Journals bought from the Waiting List, or on reprints 1–8.

CURRENT AVAILABILITY AND PRICES (PER COPY) TO MEMBERS

Journal	*Pence*	*US Dollars*
1-8 (Waiting List closed)	300 (when available)	$5.10
1-8 (Reprinted version–no discount)	250	$4.25
9-38, 40-51, 53, 54, 56, 57, 65, 74	150 (waiting list only)	$2.55
39, 52, 55, 58-64, 66	50	$0.85
67-73, 75	100	$1.70
77-81, 83-86	175	$3.00
76, 82	300 (waiting list only)	$5.10
87, 88, 89	225	$3.85
Index 1-19	45 (post paid)	$0.77
Cumulative Index 20-69	240 (post paid)	$4.10
Index & Cumulative Index	265 (post paid)	$4.50

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

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

Early numbers of the Journal are now urgently required for the 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 and binders are available from Mr T. G. Sprunt, 17 Claremont Drive, Bridge of Allan, Stirlingshire FK9 4EE, Scotland, UK. Tel: 0786 833607 (evenings only)

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

Designed and Printed by INGLIS ALLEN *Kirkcaldy, Scotland*