

THE ROCK GARDEN



THE JOURNAL OF THE SCOTTISH ROCK GARDEN CLUB

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Part 4

Number 105

Subscriptions for 2000-2001

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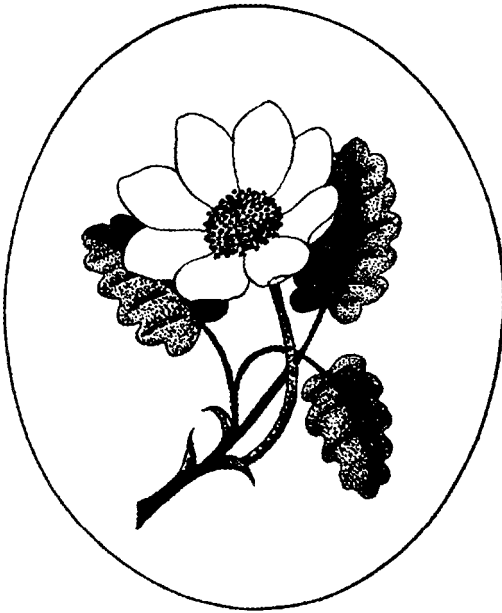
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The Editor welcomes articles on any aspects of alpine and rock garden plants and their cultivation. Articles, if submitted in manuscript, should be double spaced but it is hoped that authors will submit material on disk, either on Microsoft Word or some compatible software.

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SRGC WEBSITE

by Fred Carrie

In the early 1980s two of the most over used phrases were “get on your bike ”, first used by some forgotten politician and “silicon chip” – much abused by journalists who had little idea what it really meant. Well, many did get on their bikes, only to quickly fall off again; “silicon chips” had more of a lasting impact. They were part of the phenomenal advance in electronics and software technology that has turned once exclusive gadgets like programmable toasters into indispensable items of everyday use. Just as the non-stick frying pan was an offshoot of the 1960’s space program , the search for the ultimate programmable toaster led eventually to the development of the personal computer and that ultimate media buzz phrase “The Internet”.

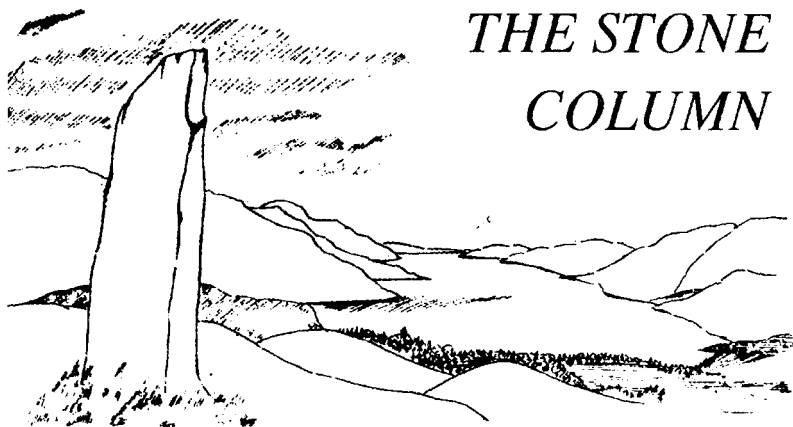
But, joking aside, what does it all mean? If we are to believe the media hype, within the next year or so we will all be working from home leading richer and more fulfilled lives. Others warn that we will be controlled and corrupted. Brush the hype aside and it is all about information exchange. Scientists and engineers have known this for years. For many it would be hard to imagine a world without electronic communications. More and more people are “logging on” daily and for all sorts of reasons. This has been recognised by businesses and organisations world wide and a presence on the World Wide Web is now considered essential for all forward thinking organisations. As SRGC members we have our own presence at www.SRGC.ORG.UK

The SRGC web site is intended both as a service to existing members and as a device to attract new recruits which is so important for the future of the SRGC. Remember that the Journal started as just a few pages of text. Look at it now.

The site contains articles on cultivation, plant portraits, show reports, a photograph library etc. You can join the club or renew your membership on-line by secure credit card transaction and buy that hard-back copy of the Millennium book you have been promising yourself. So why not “log on” and have a look?

The web site will only be as good as its content. We really need material and would welcome any contributions from the membership. The great beauty of the web is that information can easily be kept up to date. Articles and features can be updated at any time with minimal fuss and cost. If you have anything to offer I would be very happy to hear from you. Photographs can be accepted as digital images, prints or slides. All original material will be returned.

Please contact me by post (Fred Carrie, Westhaybogs, Tough, Alford, Aberdeenshire, Scotland AB33 8DU) or by e-mail at www.site@srcg.org.uk



THE STONE COLUMN

LIBERATION COMES TO THOSE WHO WAIT

Thanks to the intervention of the special SRGC Millennium publication, a whole year has passed since I last reported on the life and times at Askival, a year in which a great deal has happened of immense personal importance, though of less significance horticulturally. Perhaps the changes are best summed up by the wording on a card sent by our elder daughter: "Congratulations! You design a house, and 30 years later you buy it". It is frequently amazing how things can just fall into place. While over in Ireland in the autumn of 1998, we had determined to make a third attempt to purchase Askival, knowing that Fort Augustus Abbey had finally bought out the feus from the Lovat Estates. As reported last time, we arrived home to find that the Abbey had closed; subsequently their agents contacted us with an offer to sell. We eventually took possession on 1 July, shortly before we left for a celebration in the Great Basin (see below).

This change has liberated us in more ways than one, and we now have a much freer hand. An immediate and significant development has been the felling of half a dozen trees behind the potting shed and compost store. One was dead and another dangerously overhung the potting shed where Poll spends much of her time, wondering whether the next gale would bring it down on her head. The others were interlocked with the two rogues and so had to be sacrificed, but will provide fuel for the next two winters. The leaning tree had to be taken down piecemeal; a local handyman did the job with the

assistance of two retired but experienced friends, one to hold the ladder, and the other to handle the rope used to lower the sections. Although their lack of safety precautions would probably have horrified a professional arborist tied to the manual, no damage was done either to themselves or the shed. Now the way is clear to re-roof the shed and install electricity, so that Poll can join the 21st Century and have artificial heat and light during her autumn bulb marathons. The older we get the more we feel the cold and damp of the Highland winter; the climate suits many plants, but not our bones. The roots of the felled trees pass right under the old track upon which the shed, compost store and bulb house stand and infest the trough area below. This was the primary reason why this part of the garden was chosen to site troughs in the first place, as tree-roots cannot leap up and invade them. We have not lost any significant shelter, there are many more trees further back in the wood to the north. Unfortunately for posterity most of them are old, and regeneration is minimal thanks to the sheep; but that's another story. Am I the only person in the country who views the downturn in sheep farming with a less than jaundiced eye?

FRAME UPGRADING

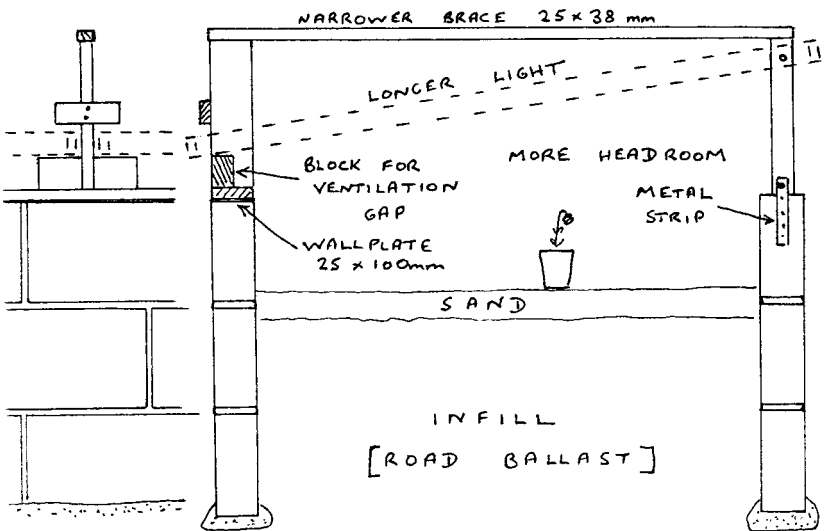
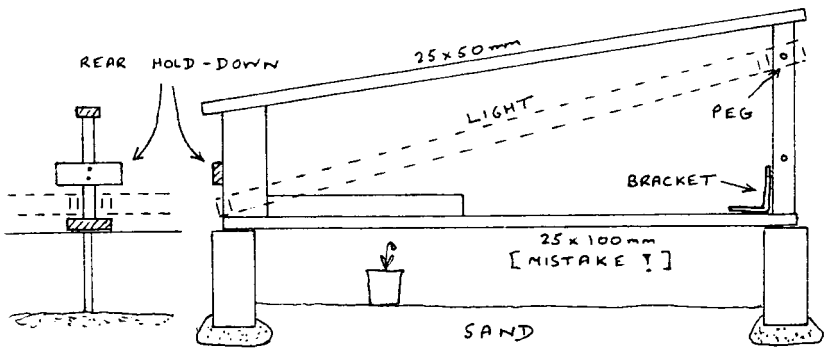
Visitors to Askival, especially non-specialist gardeners, often wonder why we have cold frames partly in front of, and to one side of, the house where as one put it: "normal people have lawns". Originally planning just an alpine garden, we built our frames here because the site was convenient, flat, and kept these formal structures away from the pseudo-natural purely ornamental areas. When a large extension of frame space became an economic necessity we had little choice but to take over the old orchard down below. This was a level, well-defined area behind a drystone dyke, and displaced the minimum of good plants. Once this expansion was complete, together with the high shading over both old and new frameyards in the summer of 1998, we could proceed to the final stage of the sequenced ABCD jobs detailed in the January 1999 Stone Column (The Rock Garden 103, p.92): the reconstruction and upgrading of the oldest three runs of low level frames right in front of the house. We had briefly thought of totally replacing these with our standard double-sided raised frames for their far superior ventilation; but only two runs, each 1.45 m wide internally, would fit into the available space, in place of three single-sided ones of 1.2 m

inside. This would have meant a loss of $(3.6-2.9) \times 6.2 = 4.34 \text{ m}^2$ of covered space over the 6.2 m runs. It was decided to compromise and use the existing layout as a foundation, adding an extra bay to each run, then two further courses of building blocks to raise the frames to a more convenient height, as befits our decreasing agility.

Originally built way back in May 1977, these old frames were described in a very early Stone Column in *The Rock Garden* (1983, No. 72, p. 207, Fig 54). Lacking experience, we looked around and found that many alpine nurseries simply laid heavy Dutch lights across their cold-frames during the winter. However, Poll had to handle our lights on her own, while I was at school, so we decided to use nylon reinforced plastic in place of glass. The former has the additional benefits of cost, is easier to use as it is simply stapled to the frame, and saves on timber as the lights can be less rigid. We have never regretted this decision; the oldest lights still in use date back to 1981, their longevity helped by summer storage out of the sun. Being lightweight, they have to be well secured against gales, and we still use the simple system of 4 mm fencing wire pegs we adopted in 1977. However, the superstructure used on these original frames was far from ideal (Fig A, p.261); we had simply extrapolated from conventional cold frames which have crossbars on which their lights slide. The 25 x 100-mm timbers we placed across the frame were actually unnecessary, no plants could be stood underneath; their elimination, together with the additional bays, has added 1.5 m of effective length to each run. In the current design, (Fig. B, p.261), the verticals through which the pegs pass are bolted to lengths of tie bar set into the mortar between the blocks. The old lights have also been replaced; they were too short, drips landed on the blocks at the back, while the occasional easterly wind drove rain and snow in at the front.

As there is always a chronic shortage of frame-space at Askival, the old runs had to be emptied and upgraded one at a time; the middle run first in the autumn of 1998, and the remaining two last summer, 1999. I wire-brushed the old block work to remove moss and loose mortar, added the bottom course of blocks for the extra bay set on simple concrete founds and then a second course all round. Next the infill was barrowed up a plank and into the frame. Lacking any old lawnmowers to bury, we obtained 3-4 buckets, JCB buckets that is, of road-making material from a pit half a mile down the road. This ballast had been graded to remove large stones and so

A: ORIGINAL, 1977



B: 1998/9 UPGRADE

was easier to shovel up from the drive where it had to be dumped. A third course of blocks came next and finally the new superstructure. Incidentally, all our timber is pressure treated, and the original woodwork was still sound.

One feature of the old frameyard which we had kept purely out of sentiment was the old 'brick frame'. Built of scavenged red bricks, and originally glazed with recycled windows from a demolition sale, this 1 x 1.5 m frame, divided into 'his and hers', was all that we thought we needed back in 1972. If I had known how much building would follow, would I ever have started? Nostalgia aside, this frame wasted the space between it and the standard raised frame behind; so it had to go, its old bricks added to the infill above. The double-sided raised frame could then be extended by two bays across the vacant space, building the usual three courses of blocks. In this case, however, it was not infilled; instead I set perforated ventilation bricks into the sides. This latest deep section will be very useful for Poll's reserve collection of taller bulbs, and additionally for overwintering any newly acquired shrubs or young trees in pots. Daylight may have been visible for quite some time now, but that tunnel portal is taking an awfully long time to reach; especially as we keep thinking of further improvements we'd like to make in the frameyards. Sometimes I doubt that I'll ever be out in the clear, and able to hang up my concrete mixer.

ISLANDS IN AN OCEAN OF SAGE — GREAT BASIN ODYSSEY 1999

Last year two major ambitions were realised, the first of which has already been mentioned in the opening paragraph. The second is rather more recent, dating back only to our 1992 field trip, when I picked up a copy, now somewhat tattered, of the Sierra Club's Totebook ® "Hiking the Great Basin". I had wandered the isolated ranges described therein many times in my mind before we finally plucked up the courage to tackle them for real. In this we were undoubtedly encouraged by Betty and Ned Lowry's decision to join us; two vehicles greatly increase the safety factor out in the desert. The trip turned out to be the toughest, but also one of the most satisfying we have ever made to the American West. We drove 6500 km, much of it on unmade roads, hiked over 160 km of trails with around 10,000 m of vertical ascent, and Poll photographed no less than 38 local endemic species of alpine plants. When a friend, a past

Director of Shows for the AGS, phoned earlier this year she wondered why we had gone out to the Great Basin, as she didn't think we should find many species suitable for Askival. Leaving aside the point that one can never tell (take *Penstemon pinifolius* for example), the introduction of new plants is not, and never was, the primary objective of our trips. We feel enormously privileged to have seen such magnificent alpinines as *Eriogonum holmgrenii* (Fig.87) in full flower high on their remote eyries and actually doubt whether any of the show stars could reproduce this fully in character for the bench, but we should be delighted to be proved wrong. As this trip was going to be a strenuous undertaking, we took time off to train seriously for once, culminating in a long ridgewalk on one of the major 1150 m ranges north of Cluanie in the West Highlands. *Armeria maritima* was in excellent dwarf form up on top, really tight and richly coloured.

THE UTAH PLATEAUS

We could train in Scotland for basic fitness but not for altitude, so naturally we started with some of the relatively easy hikes. Flying into Salt Lake City, we gave, as requested, a short talk on Askival to the local NARGS chapter, by way of thanks for all the help we had received at the planning stage, especially from Bill King. Heading on south for the Wasatch Plateau, we found Skyline Drive blocked by snowbanks so our initial dayhike was rather longer than intended, and Poll felt the altitude badly. Nevertheless we made our chosen summit to find the first of our endemics *Townsendia montana* var. *caelilimensis*, in full bloom dotting the earthy screes. This locally abundant variety differs from the type in its rounded leaf apices and paler pink to white rays. Yet further south and at lower altitude down in the Canyonlands the related *T. minima* had only a stray late flower or two, as had the dense cushions of the scarlet *Gilia caespitosa*, while the tiny running *Penstemon bracteatus* showed only immature seedheads above superb blue foliage, its intensity enhanced by the steep red talus it calls home. Another species adapted to these shifting slopes, with the same creeping habit, is *Silene petersonii*; its large, somewhat irregular, blooms of strident carmine, held on 5 cm stems, were totally adequate compensation.

Rainstorms passed through, and we returned to the heights in search of the legendary *Penstemon parvus*. While researching this trip we could only find one reference to this tiny, but brilliant blue,

member of the Section *Glabri* in either the SRGC, AGS, or NARGS; a comment by Dr. C.R. Worth in the SRGC Journal (1956, No. 18, page 37), that he had once spent a week on a dreary (sic) high plateau vainly seeking it out. Having found it ourselves, we cannot agree with Bob Nold's comment in his recent book that it is "more cute than beautiful". We would rank it alongside *P. Uintahensis* as one of the very best of the dwarf true blues. Over 40 years ago the Forest Service fenced off an area of its habitat to prevent grazing; but *P. parvus* is completely absent within this enclosure, the vegetation cover having become too dense. Two other endemics, *Castilleja aquariensis* and *Penstemon procerus* var. *aberrans*, were competing successfully, as was the widespread and distinctive *P. watsonii*. No doubt the cattle will eat the penstemons, especially their inflorescences and seedheads, but such depredations can be confined to, say, one year in three and still create the disturbed habitat that *P. parvus* clearly requires.

Another, but rather larger member, of the *Glabri* was prominent on our next mountain. *P. leiophyllus* with narrow greyish foliage and tubbier corollas of a vivid violet-blue, varies in height from 60 cm in meadows to 15 cm on the topmost ridges, where it grew with the densely pulvinate purple *Oxytropis oreophylla* and *Gilia tridactyla*. The latter is yet another endemic, a tufted dwarf herb with dark trifid leaves, and heads of many tiny cream flowers. By now we were becoming acclimatised and felt ready to tackle the highest of the Southern Utah plateaux, the Tushar, which at 3700 m supports a fairly extensive, if isolated area of alpine tundra. Here we were joined by an old hiking friend from our 1996 trip to the Pacific NW: Ron Ratko. Now resident in California, Ron still trades as Northwest Native Seed and produces what is undoubtedly one of the best lists extant. Poll was able to add two more local specialities to her slide collection: the yellow cushion *Draba sobolifera* which, as the name suggests, has a distinctive creeping rootstock, and the stunning dwarf brilliant pink *Castilleja parvula* var. *parvula* (Fig.88). Also in full bloom were a small relic population of *Townsendia condensata*, its only station in Utah; and the finest stand of *Senecio amplexans* var. *holmii* we have ever seen, all down a steep shifting scree, the sort Poll hates. Ron took her camera down for a picture, the nodding light yellow heads reminiscent of some choice cremanthodium. One should not despise a plant simply because most of its genus are weeds.

EASTERN NEVADA

The time had come to say au revoir to Utah and head west across the Sevier Desert and our prearranged rendezvous with Betty and Ned in the old mining town of Ely, Nevada. This we intended to make our base for a few days while we explored what Intermountain Flora refers to as the 'Calcareous Mountains Section'. On the way we called at the Great Basin National Park, one of the least visited in the 'Lower 48'. Chased off our first mountain by a thunderstorm, we continued past a gorgeous natural garden of *Primula parryi* along a little burn emerging from under an old moraine, to visit the famous stand of ancient Bristlecone pines, and the only glacier in the Great Basin. It was here that a misguided graduate student of geography cut down the oldest known tree (> 4900 years) in 1964, the whole unfortunate episode being documented in Michael Cohen's 'A Garden of Bristlecones' (University of Nevada Press, 1998). In the end we hiked more vertical feet that day than the ascent of Wheeler Peak, the highest point in the Park but far from the most interesting botanically. That honour belongs to a peak further south in the Snake Range which we explored with Betty and Ned. John Andrews had told us that the approach road was really bad, he had had to ballast his 4WD pickup in order to make it up. Local advice had also warned us that we should have to back up in order to negotiate some of the steep, totally unprotected, switchbacks on the way up the canyon wall, but neglected to add that the surface was loose stones and badly washed out. This was probably the most dangerous 'road' we have ever driven, one where the foolhardy or inexperienced could all too easily kill themselves. Crawling back down in bottom gear, low ratio, was even worse. To avoid tipping the vehicle, several of the deepest washouts had to be taken nose down the fall line, and the park brake used to stop her rolling over the edge while I got into reverse, the incline being too steep for the automatic transmission to hold. And was it worth it? Of course, hiking on up, all the species we had hoped for were in full flower, and I shall never forget Betty's exclamation when she found the first *Primula nevadensis* (Fig.89) clumps in the shade of the krummholtz. Clearly related to *P. cusickiana*, the Nevada Primrose is a somewhat more vigorous grower, in the wild, with a few coarse teeth towards the apex of the leaves, and 3-4, occasionally up to 6, flowers per stem. In colour, the corollas are an intense violet, some showing just a hint of red.

Out in the open, up on the summit scree the primula was just about over, with only a few late flowers in the hollows where snow lies late. Conversely, the other two specialities of this high limestone were only just coming into peak bloom: *Aquilegia scopulorum* (Fig. 90) and the aforementioned *Eriogonum holmgrenii*. As a rule, alpine gardeners like to have precise names for their plants, vide the arguments which can arise at shows. Unfortunately, as I have said before, Nature does not grow her plants in neat little sections called 'species', but in populations. How we assign names to these can be a matter of opinion, as the aquilegia illustrates very well. The high altitude Great Basin forms, with their tight almost cushion-like tufts of grey-blue foliage, the leaflets overlapping, and stems of 10 cm or less, appear totally distinct from *Aquilegia caerulea*, the State Flower of Colorado. The latter looks more appropriate for the perennial border, the stems up to one metre when growing in woodland; and the green foliage has non-overlapping leaflets. The two are, however, linked by intermediates; we have seen plants in the Canyonlands with glaucous overlapping foliage and blue flowers on 60 cm stems; while up on the plateau tops were plants with green overlapping foliage, their ivory flowers on stems of 15 cm or less. These last key as *A. caerulea* var. *ochroleuca*, which, like the type, is usually tall, especially in the shade. Some botanists have reduced *A. scopulorum* to a variety, as *A. c.* var. *calcareae*. Taxonomy apart, whatever their status, these Snake Range populations are undoubtedly one of the very finest dwarf columbines, their elegant long-spurred flowers varying from all medium blue, through bicolours, to all cream or ivory often with pink-flushed spurs, and even to all pink. *Aquilegia scopulorum* has been compared with *A. jonesii* which forms superficially similar foliage tufts, but its upward-facing flowers have short spurs. The well-known Big Horn plants of the latter are a uniform, deepish violet blue; but we have seen populations further north where the petals are rather paler than the sepals.

Like the aquilegia the endemic *Eriogonum holmgrenii* is a really outstanding plant. Related to the choice White Mountains Buckwheat *E. gracilipes*, it forms even denser silver mats and the larger pale pink to rich red heads are carried on stems of only 2-3 cm. While it is the rarities, such as the above, which always attract attention common species can be equally spectacular. As we hiked up towards the timberline, we passed through a zone where *Phlox*

pulvinata formed a ground cover amongst the scattered trees. In full bloom, it looked as if it had snowed, and the scent was overpowering. Many of the *Picea engelmannii* here were reduced to conical shrubs, less than two metres high and as dense as any dwarf cultivar.

Further north in the Snake Range, Mt. Moriah was high on my priority list, having read John Hart's comment in the Totebook that up there "you have the sensation not just of height but of deep remoteness, of immersion in wilderness". Then there is also 'The Table', a unique almost level meadow at 3350 m, 2 km long by 1 km wide, rimmed with ancient bristlecones and looking, as Cohen says, "like a gigantic Zen garden high in the sky". The north-facing slopes above the Table were home to a million or so plants of the dwarf *Aquilegia scopulorum*, so dense in places that it was difficult to avoid walking on them, and if anything even more variable in colour.

There were other good alpins here such as tightly pulvinate *Potentilla nivea* and a very compact form of *Gilia congesta* var. *montana* with silvery white globular heads spraying horizontally from tight rosettes of glaucous divided foliage. Poll even found a group of *Lloydia serotina*, a new record. As we hiked back to the trailhead, the moon rose above the summit behind us, a salute to another perfect hill day.

While in Ely, we also visited the Schell Creek Range, where amongst the outstanding plants up high were a superb large-flowered dwarf form of *Penstemon leiophyllus* var. *francisci-pennellii* and the even lower *Castilleja nana* with relatively large dusky-pink bracts. The species we had hoped to find, however, was the newly described *Penstemon rhizomatosus*, a high altitude derivative from *P. kingii* in the *Saccanthera* section, and one adapted to steep shifting talus. It was well that we had our tame mountain goat, Ron Ratko, along that day; he scrambled down into the cirque to obtain the essential photographs of its reddish-violet narrow-tubed blooms.

CENTRAL NEVADA

As indicated in its title, common sagebrush *Artemesia tridentata* is ubiquitous in the Great Basin, varying from tall shrubs in the steppes to, as on the last summit, flat silver dinner plates. Such extreme forms, a response to the harsh wind-swept environment, were also a feature of our next port of call, the massive, but remote, ranges of Central Nevada. Leaving Ely, we headed west on the

'loneliest highway', US 50, before tuning south on dirt roads for the Toquima Range. En route we passed a station for one of the classic cushion plants, *Lepidium nanum*, guarded by rattlesnakes. One cushion formed a doormat for some crittur's hole. This lives on our winter-covered scree, but is far too lax. The hike up to the summit plateau was the longest of the trip, but we were rewarded with masses of the smallest variety of *Penstemon procerus* var. *formosus* in full bloom, as was the endemic *Eriogonum ovalifolium* var. *caelestinum*. The former has been distributed as '*P. pulchellus*', an invalid name, and is often shy-flowering in cultivation, but not in the wild. I can find no reference to the latter in the horticultural literature, but it demands attention as the only variety with bright yellow flowers, from bronzy buds. The mats of tiny white foliage are as tight as those of the pink flowered *E. o.* var. *nivale* from the Californian Sierra. To reach our next camp ground in the Toiyabe Range we had to make a long loop to the south through Tonopah, well known to willing truckers. My curiosity had been aroused by a footnote in Intermountain Flora under *Erigeron compositus* that high on the Toiyabe crest two varieties grew intermingled, one really dwarf and pulvinate-cespitose, the other larger and looser. When we got up there we found that the dwarves had very dark green almost glabrous foliage and large white rays, while the taller, grey hairy plants were discoid. There was no sign of introgression between the two. Seed was collected from the tiny plants as this is easily the best *E. compositus* any of us had seen, even better than that from the Olympic Mountains.

A visit to the rocky ridge crests at the northern end of the Toiyabe Range saw two more endemic species under our belts. *Gilia nevadensis* closely resembles a dwarf variety of *G. congesta* in vegetative characters, but the ball-like heads vary from almost white to, more typically, a rich violet; on close inspection the colour made up of tiny flecks on a pale ground. *Cymopterus goodrichii* is unique amongst the spring-parsleys in having a long elastic pseudo-scape linking its taproot with the rosette of dark grey finely divided foliage on the talus surface. Another species adapted to such a shifting habitat is a second recently described relative of *Penstemon kingii*, which we came across yet further north. Bob Nold's comment that *P. tiehmii* appears to be of little interest to rock gardeners probably means that he hasn't actually seen it. We all agreed that it was a

beautiful small species, with pale blue foliage and rich dark violet flowers, quite large enough for a plant of only 15 cm.

Of all the ranges in the Central Great Basin the Ruby Mountains are the best watered and thus most closely resemble the Rockies. Here we had our one big failure; we couldn't find *Primula capillaris* on its sole station, but then neither could a party of botanists from a Nevada college a day or two before. Perhaps it was having a year off. There were endemics here too; *Eriogonum kingii* is yet one more tight alpine mat-former, the heads usually a slightly greenish yellow, but some were a lovely bronzy pink. There are enough species of these cushion buckwheats to more than fill any alpine house. This range also has its own variety of *Penstemon procerus*, var. *modestus*; a tiny *Lithophragma* and an equally small *Dodecatheon*, sometimes called *D. pulchellum* var. *watsonii*.

NORTHERN UTAH

Time was running out, the circle had to be closed by returning East across the Great Salt Lake Desert. We paused to hike Deseret Peak in the Stansbury Mountains where one can find two further endemic varieties of *Eriogonum*, perhaps of interest to specialists only. One place, however, where we simply had to take Betty and Ned was to the Bear River Range. Poll and I had been there twice, but never before right to the top. This time the weather was glorious, we'd never been in better shape, and our last hill day together was a fitting climax to the trip. This is a particularly rich area and to describe all the species we saw and photographed would take a whole article. There are stunning endemics like *Penstemon compactus*, quiet retiring ones such as the tiny saxatile *Erigeron cronquistii*; excellent forms of widespread species including, *Telesonix jamesii*, the brilliant yellow *Linum kingii* (Fig.91) and a wine-red dwarf *Clematis tenuiloba*; plus the ubiquitous eriogonums, for example *E. brevicaulis* var. *nanum* on the summit rocks. The following morning came the inevitable sad farewells, next year in Montana?

MISSED BY A MILE

Poll and I returned to Salt Lake City, and stayed up at Snowbird, where Bill King joined us for a morning, our hike together cut short by a thunderstorm. Two last alpine endemics were in the bag, both white-flowered: *Erigeron garrettii*, which closely resembles *E. flettii*



Fig. 87 *Eriogonum holmgrenii* (p.263) Polly Stone

Fig. 88 *Castilleja parvula* v. *parvula* (p.264) Polly Stone





Fig. 89 *Primula nevadensis* (p.265) Polly Stone

Fig. 90 *Aquilegia scopulorum* (p.266) Polly Stone

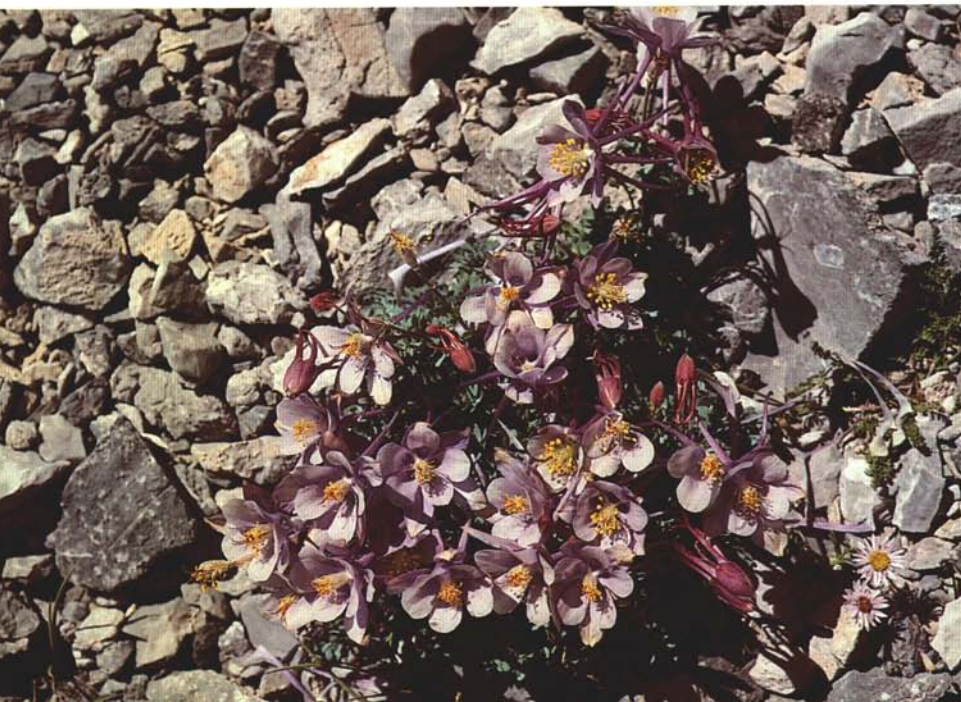




Fig. 91 *Linum kingii* (p.269) Polly Stone

Fig. 92 *Carduncellus mitissimus* (p.286) Francis Ferns





Fig. 93 *Aquilegia atrata* (p.298) Michael Almond

Fig. 94 *Paederota bonarota* (p.299) Michael Almond



from far to the West in the Olympics; and, unusually for its genus, *Ivesia utahensis*. Down in the city for some last minute shopping, Poll and I came out of R.E.I. to find people looking at a very, very dark cloud to the West. It's only another thunderstorm we thought, but as the lighting was really spectacular, Poll regretted having left her cameras behind. Back at Snowbird, we turned on the TV to find that a tornado had just missed us by a mile. The guardian angel from that road in the Snake Range was still looking out for us.

The isolated ranges out in the Great Basin may not be as rich in actual number of species as the major mountain chains like the Rockies or the Cascade-Sierra but they have an ambience all their own. The low humidity, intense light, and open windswept habitats mean that species able to cope often represent the very epitome of a desirable alpine, in their tight growths and brilliant colours. One can even get to love the desert; plants up against tough conditions have far more character than all those soft species one sees in 'favoured gardens.'

POSTSCRIPT

After describing what we certainly felt was an important field trip, there is little space left for garden news. Suffice to say that we have had no real winter, twice the normal rainfall, and little frost. On the plus side many shrubs such as *Corylopsis pauciflora* and our *Pieris* are flowering better than we can remember. Especially fine are *P. taiwanensis* from Club seed with its long dangling racemes, and Peter Cox' very hardy form of *P. forrestii*, with upright racemes of strongly scented white bells. His *Clethra delavayi* from the same high altitude is equally hardy, having reached three metres here. Fully deciduous, it has even started to self-sow. This all goes to show that what really counts is the conservation of genetic diversity in the wild. Most cultivars, except for rare mutations such as double flowers, may then be recreated or, even as Peter has shown, possibly improved from the wild gene pool.

RHS JOINT ROCK GARDEN PLANT COMMITTEE
Amendment to Recommendations made at SRGC Shows in 1999

The Award of Merit awarded to a plant named *Crocus gargaricus* 'Lyn's Pink' as exhibited at Dunblane on 20 February 1999 by Dr C. Jones should in fact have been awarded to :

Crocus gargaricus ssp. *herbertii*

ANNUAL GENERAL MEETING

The Annual General Meeting will be held at
Battleby Conference Centre, Redgorton, Perth
on Saturday 4 November 2000 at 2.00pm

TRIAL OF *POTENTILLA FRUTICOSA*

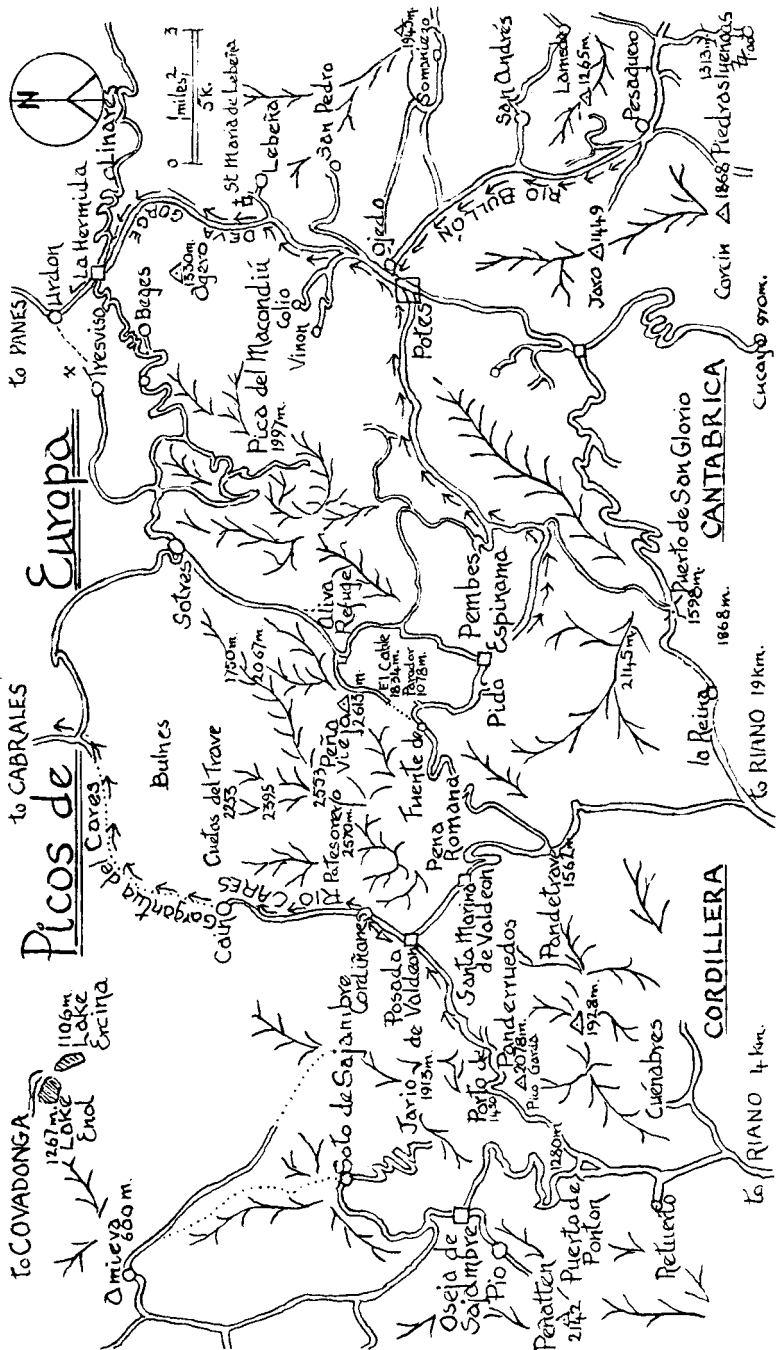
The Woody Plant Trials Committee of the Royal Horticultural Society is looking for material of *Potentilla fruticosa* var. *arbuscula* (D. Don) Maxim KW 5774 for a trial of shrubby *Potentilla* which is being conducted at Wisley. Anyone who has material of this wild collected plant is asked to contact Mrs Linda Jones at Wisley (Phone 01483 212331)

ASPECTS OF THE PICOS DE EUROPA NORTHERN SPAIN . . . HIGHS AND LOWS

by Francis Ferns

3.vi.99 . . . My note reads . . . “Surcease at last . . . stopped for a cup of tea and a welcome Spanish omelette . . . on the move for nine hours off and on but still, round that corner there might be a sudden tree or standing stone” . . . a brisk walk in the shifting dunes might reveal something new for the eye to see or the mind to ponder. We have stopped near Liencres. The grey Atlantic waves pound the shoreline to the north. The air is full of a subtle honeyed scent; not of downland heathers and herbs as one might expect in the shelter of such littoral areas in Britain but of a purplish coloured pink with finely fringed flowers. *Dianthus monspessulanus* L. covers the ground in patches as much as a metre across. It is untidy in growth and probably not the best of garden plants but the scent still lingers in the mind. *Ophrys apifera* Hudson and *Serapias cordigera* L. are also there, along with a salad of littoral plants, really neither eye-catching nor uplifting to a mind bent on alpine plants.

Somewhere along this north Spanish coast, a rare filmy fern, *Trichomanes speciosum* Willd. exists, recorded from at least 11 sites and also found on Madeira and the Azores. The furthest northern sites may be a surprise to many as it grows on Arran and the Mull of Kintyre. I read that it suffered heavy loss by collection in the early years of last century, more so “due to its beauty as much as its rarity”. None of us had ever heard of it. We found it listed and portrayed in one of the field reference books we carried. The picture did not, I think, do it justice. It is currently the subject of a Biodiversity Action Plan. One sage has, however, pointed out that . . . “the proposal to bolster the numbers of the sporophyte (the fully developed green plants) in south-west Scotland by transplantation, may provide a feel good factor but, in terms of actual species survival, such action is pretty useless”.



To begin at sea level when writing about plants of alpine affinity may seem strange to some but, under our feet, now sinking in the sand, lies the residue of the hills which we are going to explore. The dianthus can be found growing quite happily on alpine pasture at Fuente Dé at 1078 m.

Back to the road again, after an hour off the leash; ahead lies another three hour journey into the unknown before we make our base at the Hostel Nevandi in the village of Espinama so there is plenty of time to distil a few lines of statistics from the relevant texts.

RANDOM FACTS AND FIGURES

If you look at a proper map of the Picos de Europa with at least a 1:80,000 scale and contour lines, you will find that the Picos and the Cantabrian mountains run a little discontinuously from the north-west of the Iberian land mass, sometimes reaching more than 2600 m in height until they turn to run south-easterly to become the Pyrenees. The rock is mainly limestone, giving a brightness to the landscape, even on rainy days, though in some areas like that of the drowned village of Riaño, shales make the scene more drab and plant species inevitably diminish in variety. This situation is exacerbated by a recently created shallow lake in the name of industrial progress and employment.

The tree line fades out around 1300 m with a margin of plus or minus 200 m. The woodland cover varies; the easily identifiable hardwoods are ash, oak and beech. The beech at higher altitude forms the climax community as rather stunted trees in many places. The ash is found in the wetter valleys, for example in quantity around Espinama, although holm oak and cork oak can be seen in the lower drier areas like the Liebana valley.

For those who debate such matters, the opinion is that no part of the flora of the Picos can be defined as truly alpine in character. The area, although poorly developed has a rich flora; there lies its charm for rock gardeners and even for the old-fashioned naturalist.

The limestone dates back to the early Carboniferous age, together with the flanking conglomerate slates and shales. There are also rocks that were laid down in Silurian and Devonian times. The countryside is rich in plant species but there are few truly endemic species in the Picos de Europa. Teresa de Farino, our guide and mentor on this visit, supported by Mike Lockwood, in her up-to-date

monograph on what she calls 'her patch', lists what she considers to be only four truly endemic plants, namely: *Aquilegia pyrenaica* ssp. *discolor* Lev. Et. Ler., *Genista hystrix* Lange ssp. *legionensis* (Pau) P. Gibbs., *Linaria faucicola* Lev. et. Ler. and *Petrocoptis glaucifolia* (Lag.) Boiss. She points out that, since the area contains parts of the Cordillera Cantabrica, a range which touches the border of Portugal to the west and reaches almost as far east as the Pyrenees, the Picos have been in no way truly isolated or cut off from adjoining floras, a condition necessary for life forms to develop recognisable fixed eccentricities from others of their genera. Nevertheless she gives an additional list of notable species which she considers have their world-wide distribution limited to those mountain ranges. I have to say that of the 45 species on her list, only 15 would be of merit in the eyes of the rock gardener in the horticultural sense. I do not propose to list those which I think lack eye-catching or garden merit. There are books for those who wish to study them. The list only relates to those found in the Picos area and environs, though it might be an exercise for a wet day to argue why plants found in the Pyrenees have not yet been found in the Picos.

The bus has stopped outside the Hostel Nevandi. Memories of paradors and hotels in the Pyrenees, albeit some 30 years ago, oppress a drowsy mind. They all, one way or another, fitted Hilaire Belloc's apt description of Miranda's inn, where the fleas teased, the bedding was straw and the wine tasted of tar. I uncoiled myself to inspect this offering. The entrance was spotless, the bedroom small, comfortable and warm; the bathroom taps spouted hot water on demand and the food was good. Oh, yes, definitely good.

The Spanish infra-structure has changed in 30 years. Most of the feeder roads are now graded and asphalted. The old crumbling and castellated stone barriers, the only protection between the next stop and eternity, have been replaced by modern galvanised steel fit for a motorway. Off piste, however, four wheel drive and two flat feet are the preferred locomotion. One cable run exists at Fuente Dé which lies just three kilometres up the road; others I hear are threatened elsewhere, so the advice is to go there whilst you can if you like really unspoiled countryside.

FUENTE DÉ (1078 m)

The name identifies a vast cirque at the end of the road, the source of the river Deva. A parador, cable-car station and people are

Fritillaria pyrenaica



Serapias lingua



Centaurium calcitrapa



Antirrhinum braun-blanketii



Linaria supina



Lilium martagon



Scale to 1 cm approx. 7.00

Lilium pyrenaicum



Merendera montana

gathered at its mouth. The whole is dominated by the mountains. Peña Romana (2227 m) to the west and, panning easterly, Pico de la Padierna (2319 m), Peña Vieja (2613 m) due north of El Cable (1834 m), with the cable-car itself whizzing overhead, some 800 m in three minutes. A wonderful circlet of jagged peaks is filled with sun for most of the day, cloud cover excepted, and well endowed with plants, butterflies and Griffon vultures. There are a few sheep and still fewer people as one walks from the visitor centre.

ORCHIDS AND YET MORE

Crossing the hay meadow you can see a surprising variety of orchid species on the slope beneath the cable run, all growing at a height of around 1100 m; they must suffer from frost and snow during the winter and early spring.

Ophrys insectifera L. is surely the drabbest. Lumped by Linnaeus in his day with the rest of the ophrys, partly because he could not fathom their varied make-up, there are whole books on the genera nowadays. *O. fusca* Link., another sombre brown species, occasionally with variations of the lip marking which have received recognition, is here in ones and twos. *O. scolopax* Cav. wears a brighter dress, the three pink sepals framing a tubby brown lip covered in yellow hieroglyphics, looking like some little gnome. It is called the woodcock orchid. Then there is the still brighter *O. tenthredinifera* Willd., the sawfly orchid, with a larger lip. Both these are of a similar style and colouring to the bee orchid, except that the latter is self-pollinating, with pollinia that usually hang free, whereas the others need an insect to release and carry away the pollinia. A pencil will do the trick for the inquisitive.

These ophrys are widespread in Mediterranean Europe, together with many other genera and species; their attraction never palls. Also to be found is *O. sphegodes* Miller, the early spider orchid which can, like *O. apifera*, be found in a few places in Britain. I always associate ophrys with Mediterranean shores; rocky limestone places where blue sea is in sight or sound and the climate is frost-free. Therefore it is strange to see them flowering around the 1000 m contour, only 800 m below the upper cable station, in mid-June.

Serapias cordigera L. and *S. lingua* L. are also there. Those I saw were all single plants, seemingly at the limit of their range; nothing like those in Crete or Corsica where serapias can be seen growing knee high in patches a metre wide under cistus scrub. Other

writers, however, have over the years noted that they have seen orchids in the Picos, often at the roadside, growing as strong plants and in quantity. Well, so have I and photographed *Himantoglossum hircinum* (L.) Spreng, growing over a metre tall in a ditch beside Highway C627 to the south of Potes. Twenty orchids were seen in flower in the cirque before lunch, an exceptional count for such a habitat.

I have not listed them; lists fill me with gloom, like skeletons of plants fossilised between sheets of herbarium paper. Even when fleshed out by technical data there is still no picture in the mind of the plant or the landscape in which it thrives or survives, namely the ecological scene, the alpine scene of which they form a part.

Among the orchids we did not see were *Listera ovata* (L.) R. Br., the twayblade, and *Orchis coriophora* L., the bug orchid. The latter is to my eye a rather insignificant little orchid with a reportedly shrinking range.

Farino reports it in the last decade on her patch, also *Limodorum abortivum* (L.) Swartz and *Anthericum liliago* L., the St. Bernard's lily, both quite striking plants even to the inexperienced eye. The more insignificant *Simethis planifolia* (L.) Gren. in G. & G., the Kerry lily, another of her scalps, might be overlooked even by botanists with knowledgeable eyes.

Once found and recorded, where and when, the harder question to answer is . . . why? Why were these plants missed for so long? I take one at random from the list above. I have read that *Orchis ustulata* L. has an unusually long mycorrhizome stage; it takes about ten years or more before the first green leaves appear and it has been found up to 2100 m elevation. It is also listed in the British Red Data books. Deduce what you will; perhaps the answer may be much simpler . . . the native slug and snail population or a sheep got there first, before the naturalist snuffling in the grass came that way. Nevertheless, keep hunting.

POSSIBLE REDISCOVERY

There is a flip side to genuine discovery, evidenced by errors in identification, albeit unintentional in most cases, but always to be on guard against. Once in the past 80 years, *Ramonda myconi* (L.) Reichenb. has been recorded from the Picos; it has never been found since. Another writer identified *Sempervivum tectorum* L. and *S. montanum* L. (Fig. 102); they have never been found since. It would

not surprise me to learn that many of the notable Pyrenean plants had been found in the Picos in the next few years, especially saxifrage and sempervivum species. It does surprise me that they have not been found before now; but then botanical eyes are not always supported by the cross country hikers' legs needed to take the roads least travelled by exploring the last limestone outcrop or scar. I also wonder what barrier has prevented *Cypripedium calceolus* L. or *Dryas octopetala* L. from spreading to apparently suitable adjoining habitats. Have they been there and died out leaving footprints in the sand?

As recently as last year, a genista was photographed and specifically named in an article which I read. Farino has pointed out to me that *Echinopartium horridum* (Vahl.) Rothm. does not occur in the Picos de Europa so the plant was most likely to be *Genista hystrix* Lange. ssp. *legionensis* (Pau) P. Gibbs which she says, as noted above, is endemic to the Picos. Nor does she think that *Hieracium villosum* Jacq. occurs in Spain. She suggests that the woolly leaved hieracium referred to in the same article is probably *Hieracium mixtum* Froelich. Such apparent errors, once spotted and confirmed should be corrected as soon as humanly possible; not only do they detract from the long term credibility of the author but of the journal as well. I may also be perpetrating errors as I write, as to name and place. If so, I bow my head in anticipation of correction; accuracy still remains paramount in these hasty days.

BIOLOGICAL DIVERSITY

A surfeit of orchids caused my eye to wander. Waiting for the sun to emerge from drifting cloud to give some modelling to a burnt orchid flower, I noticed a pale yellow Brimstone butterfly fluttering round the tips of the leaves of a small shrubby tree nearby. It turned out to be the alpine form of one of the food plants of the Brimstone caterpillar, *Rhamnus alpina* L., the alpine buckthorn. Twice she came back when I disturbed her. She flew away as I moved in to search the leaves. I found two eggs. Noting other biological genera in the landscape may give a clue to the existence of other plants, especially when the choice of food is specific. Another example is the Small Copper whose larvae feed on dock or sorrel.

Wandering back over a scree extending well up the slope to the west and fanning out into the meadow where the grass swallowed it up, putting names to plants became so continuous that I lost the

place completely. Many to me were herbaceous weeds, they still are, although undeniably beautiful, like the foxglove, *Digitalis purpurea* L. or field poppy, *Papaver rhoeas* L.; others were just interesting for one reason or another; perhaps intricacy of flower, peculiarity of lifestyle or a combination of factors which have made them outstanding to herbalists, botanists, gardeners and others since before the time of Theophrastus, a Greek botanist who devised the earliest systematic classification of plants.

THOUGHTS OVER LUNCH

To do justice to a small geographical area like the Picos de Europa creates a problem; one is bedevilled by my dislike of lists that have no garnishing, by limitations of print space and relevance to the rock/alpine content. I considered the problem over lunch, a glorious spread, like the plants, fit for all tastes. Should I highlight only those Pyrenean, Cantabrian and Picos plants which I consider palatable and list the rest as Pyrenean salad, liberally sprinkled with oil and vinegar; that is with my comment sweet and sour . . . perhaps a little of both in trying to give a fair picture of a very varied landscape with many different locales.

There are two possible approaches, the alpine zone one and the habitat one; neither is capable of precise definition. Nowadays a factor still often overlooked comes into play, namely the impact of man; not just his motor car or his tractor, but in his grazing and farming methods. I had not really noticed this before; beyond being irritated over the years, particularly in Greece and more so in Morocco, by the fact that a lovely specimen plant had been chewed off in its prime, consequently denying me a good picture and far worse denying the plant a chance to re-seed and so regenerate its species.

It has been a long time since I have seen ungrazed alpine meadows in full flower with such a diversity of flower and grass, helped by farming methods really very little changed in the last few hundred years, except for greatly improved hygiene, in the basic handling of productive land. This is subsistence agriculture, which makes the use of herbicides and pesticides uneconomic, combined with terrain which makes extensive mechanisation well nigh impossible. In the Picos the alpine zone has been described as "Poorly developed but with a rich floristic composition". Before getting too precise I will limit my habitats to (a) alpine and sub-

alpine meadow, (b) scree and (c) natural rock with more or less soil on ledges and in crevices. We must always remember, however, that plants are surprisingly tolerant of their living conditions.

So, lunch over, back to the list.

SCREE AND CABLE CAR SLOPES

Most of the plants in flower were on or around the fan-tailed stable scree or on the slopes below the cable car run. *Antirrhinum braun-blanquetii* Rothm. is to me an attractive though quite robust plant, with creamy yellow flowers and a deep yellow chin, flowering here and there on the scree. Acceptable in cultivation, it was offered in both the AGS and SRGC seed lists last year. *Asperula hirta* Ramond. is a hairy woodruff with balls of pink flowers but, to my taste, not worth a place in the garden or alpine house. *Draba dedeana* Boiss & Reuter is a tight little white flowered crucifer which can be found 800 m higher near the top cable car station. *D. cantabrica* Boiss & Reut. is close to the yellow *D. aizoides* L. of south Wales and elsewhere, also ticked on my list and marked as endemic. *Pinguicula grandiflora* Lam. is confirmed as being found in western Ireland near Lindsvarna and further afield in Europe. Its native origin in the Galway Bay area was disbelieved for many decades. It is very attractive but needs the wet conditions and protection of the resting bud that only an alpine house or window sill can give.

The genistas muster about 22 species in Spain alone. Some are very prickly and some are not; all are yellow in colour. Some cover the hillsides in golden yellow bloom, others can nestle demurely on a scree. *Genista hystrix* spp. *legionensis* is endemic and spreads to about half a metre; it differs from the type in having spiny sort of stipules called pulvini. *Genista obtusiramea* Spach. on the other hand is a spreading graceful spineless shrub. Among the toadflaxes are some very fine and beautiful invasive weeds which should never be allowed into any garden, let alone a rockery. *Linaria alpina* L. ssp. *filicaulis* Boiss ex L. & L. is a charming little scree plant on its native limestone with deep violet flowers, but short lived in the garden. Likewise, *L. faucicola* L. & L., but with more upright rather than scrambling growth. *L. supina* (L.) Chaz. is usually pale yellow with an orange chin. Besides having an extended range to south-western Europe and northern Italy, it can be found in Cornwall and

is listed in the Vascular Plants Red Data Books. Dare I call these books the Debrett of the plant world?

The monster of these linarias is *L. triornithora* (L.) Willd. with violet purplish-veined flowers, nearly as big as a small snapdragon on stems up to a metre tall when found in roadside ditches; really not for rockeries smaller than Kew. On the other hand, *Chaenorrhinum organifolium* (L.) Kostel is a modest little charmer with pinky-mauve little snapdragons sporting a yellow chin. This can also be found in the seed lists.

Matthiola fruticulosa (L.) Maire ssp. *perennis* (formerly *M. tristis*, the sad stock or *Cheiranthus perennis*, another synonym) is described as a woody perennial up to 60 cm. I have never seen it more than ankle high, usually with tawny-violet flowers with thickish crenate petals. A yellow form has been reported recently near the track from El Cable towards Peña Vieja. It is suggested by Farino that such a colour variety is unlikely and could arise from confusion with an *erysimum* such as *Erysimum grandiflorum* which sometimes has similar linear leaves. Another crucifer in full flower on the scree was *Iberis spathulata* J. P. Bergere.

PYRENEAN SALAD

Though largely unsuitable for garden use, I make mention of some other plants likely to be seen by a walker in the cirque or from El Cable, the upper funicular station. *Ranunculus gouanii* Willd. is a hairy buttercup of the *R. montanus* group, hopeless to identify with certainty in the field from a pocket flora. This one is endemic to the Pyrenees. *Valeriana pyrenaica* L. is a herbaceous woodlander, up to a metre high, with bright rose-pink flowers which also frequents damp meadows. *Teucrium pyrenaicum* L. has a good style of growth in crevices and on quite high screes. I cannot raise any enthusiasm for its purple dead-nettle flowers. I do like *Campanula patula* L. with its wide bells, for their luminous violet hue and *C. rapunculus* L. The latter used to be grown as a salad plant; both are listed in the Red Data Books.

So many plants which are considered at risk of survival in Britain can be seen growing happily in the wild here, without having to travel all over the country. *C. glomerata* L. with the royal purple cluster of bells can also be spotted. However, to find *C. arvensis* Lag. whose violet stars make it one of the gems in the Picos crown,

you must search higher up the mountain, a little later in the season. It is reported from near the upper cable station.

The star thistles can be found among the knapweeds in the books and on stony ground in the field; nevertheless they have straw-coloured prickly bracts unlike most knapweeds. *Centaurea calcitrapa* L., the red star thistle, is very rare in Britain; there is also the yellow one, *C. solstitialis* L. The metallic blue holly thistle, *Eryngium bourgatii* Gouan., a sub-alpine endemic, also occurs, nothing like as stylish a plant as the sea holly, *E. maritimum* L. of some shorelines. Of course, they are neither holly nor composite, they are actually in the carrot family. Look more closely next time you find one. I must say they fooled me once.

Many other plants are poor shadows of better things in their genera; although unique to the area and in many cases striking herbs, but not so *Reseda glauca* L., a rather small whitish flowered mignonette with glaucous foliage. *Sesamoides* species in the same family are not worth a second glance, likewise *Scorzonera graminifolia* L., another endemic, thin leaved and straggling or *Thymus mastichina* L., an aromatic dwarf shrub with whitish flowers, quite different from the pinkish-purple neat bushy or ground hugging plants the name 'thyme' brings to mind.

All are reminders that just because a plant is listed as rare, native or endemic does not make it attractive or suitable for cultivation.

EL CABLE AND PEÑA VIEJA

There are three ways out on foot from Fuente Dé; one to the west via Tornado and Collado (pass) de Liordes zig-zagging between Peña de Romana and Pico de la Padierna before turning south and descending to Santa Marina de Valdeon, if you have not lost your way in the rugged country in between. This route branches very shortly east up another zig-zag through the Canal de la Henduda to pass below the screes coming down from Peña Olvidada and Peña Vieja moving easterly to the Aliva refuge and so down to Espinama. Having little time and facing misty conditions we made a flying start and took the cable way. There was never time nor safe weather to get out and up and above the lower level of what is sometimes called the 'upper pre-alpine zone' at 1850-2600 m, well above the tree line around 1300 m.

Research, limited to reading the available journals and books, shows that if conditions had allowed full coverage of the lightly

grazed areas around the 2000 m contour, besides the tussocks of *Carex sempervirens* Vill., *Festuca* and other grasses of which *Poa alpina* L. is the highest occurring plant on these mountains, we should have found *Botrychium lunaria* (L.) Sw., *Arenaria purpurascens* Ram. ex D. C. and other *Arenaria* species, *Aster alpinus* L., *Campanula cochlearifolia* Lam., *Carduus carlinoides* Gouan. and other thistles, especially on the heavily grazed and trampled areas around the Aliva Refuge, where the little starry autumn crocus is so plentiful in late summer, *Merendera montana* (L.) Wilk. & Lange.

Helianthemum canum (L.) ssp. *piloselloides* (Lapeyr) M. C. F. Proctor has the same or a very closely related species in western Ireland, on the Burren at sea level; the stamens vibrate at the slightest breath of wind; most noticeable if you want to get a photograph. Forms of *H. nummularium* (L.) Miller are also to be seen. *Hippocrepis comosa* L., the horseshoe vetch, *Minuartia villarii* (Balbis) Chenevard, *Jasione crispa* (Pourret) Samp. ssp. *cavanillesii* (C. Vicioso) Tutin (noted as *J. amethystina* L. & R. which seems to be a plant of the Sierra Nevada, south Spain). *Pimpinella siifolia* Leresche, a pink burnet saxifrage, endemic to the Picos and the Pyrenees, *Polygonum viviparum* L., the little white bistort which has, like a few other alpine species, the ability to clone itself, *Reseda glauca* L., *Valeriana globulariifolia* Ram. (?). *Androsace villosa* L., *Lithodora diffusa* (Lag.) I. M. Johnston and *Silene ciliata* Pourr. all grow into small cushions whilst the others have a more rambling habit. *Viola biflora* is also mentioned by Dresser. Other genera occur but are not specifically named.

SCREES AND ROCKY LEDGES

Compared with these alpine lawn conditions, screes and unstable slopes give a contour 200 m higher and further deter grazing animals. Besides the above, armeria should be seen as well as *Erodium petraeum* (Gouan) Willd. ssp. *glandulosum* (Cav.) Bonnier, *Hutchinsia alpina* ssp. *auerswaldii* (Willk.) Lainz goes all the way up to the top of the hill at 2600 m and *Ranunculus alpestris* L. can probably be found with its shining white flowers and, at first glance, deceptive rounded leaves with actually quite deeply cut and overlapping toothed lobes. *R. seguieri* Vill. has been recorded as long ago as 1944 but sounds a misnomer. *R. amplexicaulis* L. with

its good sized glistening white flowers and rosettes of flat oval leaves covers the ground at the height of its flowering season.

The remaining sites to consider are those of a more rocky nature, the less accessible ledges and deep fissures in the rock which are the preferred homes of many truly alpine species up around the 2200 m contour.

ALPINE SAXIFRAGES

The Picos crown sports another jewel in *Saxifraga aretioides* Lap., an aretian saxifrage which fixes itself as tight as a limpet to the rock crevice from which the rosettes, seemingly as hard as the rock itself, spread. All reports say that the plant is a shy flowerer; when found the petal veins should be looked at, because the petal tips are notched and the veins end in minute pores. The flowers are a cheerful bright yellow colour. *S. canaliculata* Boiss. & Reut. is another endemic to the region, filling the odd rock crevice with its dark sticky divided leaves hidden by a shower of white blossom, reputedly difficult in cultivation. *S. conifera* Coss., is another Cantabrian endemic of the group that bears summer dormant buds. *S. oppositifolia* L. should need no description, always there near the top of the mountain or the snowy limits of plant life. Nava suggests this one is the *murithiana* ssp. at 2550 m, on the evidence of the glumes on the tips of the calyx cilia. *S. paniculata* Miller is another old friend with its lime-encrusted rosettes (formerly *S. aizoon*) and, then *S. praetermissa* R. A. Webb, well named the neglected saxifrage, a scrambling mat retaining last season's dead leaves. And finally, *S. trifurcata* Schr. with the same habit.

In the same area we found plants of *Gentiana acaulis* L. persuasion; I cannot give it a more precise name. It was a good gentian blue not the purply-blue so often sported by *G. kochiana* Perr. & Song. It has broad leaves and a short open calyx. Some writers call it *G. occidentalis* Jakowitz. Some call it *G. clusii* Vill. on the grounds that it is growing in turf on limestone rock. Nava hedges his bets by calling it *G. angustifolia* spp. *occidentalis* (Jakovitz.) Laing. The experts and specialists are not consistent and I cannot say whose evidence I prefer. Anyway it was a nice cheerful blue trumpet gentian flowering in the mists above El Cabel in close cropped turf.



Fig. 95 *Petrocallis pyrenaica* (p.299) Michael Almond

Fig. 96 *Soldanella minima* (p.299) Michael Almond





Fig. 97 *Primula auricula* (p.299) Michael Almond

Fig. 98 *Primula tyrolensis* (p.299) Michael Almond





Fig. 99 *Pinguicula alpina* (p.292, 299) Michael Almond

Fig. 100 *Aster alpinus* (p.302) Lynn A. Almond





Fig. 101 *Silene acaulis* (p.302) Lynn A. Almond

Fig. 102 *Sempervivum montanum* (p.278, 317) K. J. van Zwiene



BACK TO LOWER LEVELS

Once off the high plateau and to avoid walking back to Espinama on the highway there is the third way out from Fuente Dé which I first mentioned. A portage track runs a little above and to the right of the road between hay meadows in full blossom in June when little of alpine interest can be seen except of course the view. One plant occurs in an area near the end of the track. *Carduncellus mitissimus* (L.) DC. (Fig.92) is a miniature thistle with soft lavender blue flowers, more blue than mauve, which at first nestle in the rosette of finely cut leaves, although as the flowers fade they may reach a handspan. It has been noted as hardy as recently as 1957. Flora Europaea states that the distribution is limited to south, west and central France and north east Spain. Little reported, little known and without even an Anglo-Saxon name it is quite the softest thistle I have ever touched. It should surely have the descriptive monicker given by Linnaeus . . . “the gentlest thistle”.

My lists are not comprehensive in that they do not include the last blade of grass or squinky crucifer but they may help to track down names and possible misnaming. Anyone visiting the area in August would not see the ophrys and orchids of June nor would the June visitor see, except for the fading leaves and seed capsules, the narcissi and early bulbs of spring. Some seemingly comprehensive lists suffer this blinkered seasonal approach.

FURTHER READING

AGS and SRGC Journals. See respective indices.

Bacon, L. (1979) Mountain Flower Holidays in Europe. AGS.

A concise introduction to the area, gives access routes and accurate plant lists; limited to 6pp on the Picos.

Dresser, D. W. (1959-60) Notes from the RBG Edinburgh, Vol. XXIII and XXIV

A specialist survey limited to the area around Fuente Dé and Espinama in July-August. Comprehensive reference lists with habitats and maps.

Flora Europaea Vol. 1-5. No equal, no illustrations.

Nava, H. (1988) Ruizia, Vol 6, Madrid Real Jardin Botanico CSIC.

Flora and vegetation of the Picos. Comprehensive list of plants and sources with occasional flashes of useful information.

Polunin, Oleg and Smythies, B. E. (1973) Flowers of South-west Europe. OUP

The most comprehensive field botany for the general reader on Spain and Portugal. Illustrated.

Farino, Teresa (1996) Landscapes of Northern Spain, Picos de Europa.

Sunflower Books.

Maps and routes for the traveller on foot or by car. A walker's guide.

Farino, Teresa (1999) Flora and Fauna of the Picos de Europa. Contact address:

Potes, Cantabria Spain. (Fax: 34 942-736202 e.mail: Farino@quercus.es

SEED EXCHANGE

A few pointers to help us do our work with the Seed Exchange.

Please PRINT the name of the seed at the TOP of the envelope and your name at the bottom (both on the same side). Some members have been putting a number on each packet which corresponds with a list but I have to write the name on the packet which takes time. Other people write the name on a loose piece of paper and put it inside with seed which is difficult to find. Please do not send duplicate packets of seed. Ensure the seed does not leak out of the packets.

Polythene envelopes are not good. The writing is often difficult to read and if the seed is not dry it rots. Also seeds slide around and are difficult to handle. Home-made envelopes are fine if the paper is not too thick.

Berried seed should be cleaned from the pulp. When we get it, it has either become mushy or hard. Other seed should be separated from the seed capsule and detritus before you send it. UK members should enclose a self-addressed label for their seed list and all members should enclose a second one if they require an acknowledgement.

Tiny packets are difficult to find in the bulk envelope and if full they can split open very easily. Very large packets take up a lot of space especially if they don't have much seed inside.

A list of the seed you are sending is very helpful; sometimes we can't read the writing on the envelope so it is a double check.

The last date for receiving seed is 25 October. If you have seed to come later please send us a note about it before the 25th.

As stated in the Year Book, if your Seed List does not arrive when you know that other members have received theirs or by the middle of December please contact me.

My address and that of Maurice Wilson are in the Year Book and on last year's Seed List. Information for non-donors is on page 9 of the Year Book.

Cheques for seed should be made out to the SRGC Seed Exchange.

Ten packets of easy seed can be ordered from Maurice Wilson (they differ each year). Mark your order Easy Ten and send it to him.

If you are sending for surplus seed using a \$ cheque, please add \$2 to cover costs.

The instructions on the order form are very important so please read them carefully. It is not possible to handle seed requests received after the end of January.

Have a good gardening year and a good seed harvest and we hope to see you at Alpines 2001 in Edinburgh.

Since many members seem to lose their Year Book here once again is my address:

Mrs Jean Wyllie, 1 Wallace Road, Dunblane, Perthshire FK15 9HY, Scotland, UK.

TROUGHS, A FISHY TALE

by Ian Young

Polystyrene fish boxes make wonderful containers for growing plants. I cannot remember where or when I first saw them in use but they have been used in many nurseries and gardens for raising plants.

I remember John Aitken had a polystyrene box which he had painted grey, planted as a trough in his garden near Aberdeen.

The Aberdeenshire Group had put on a display featuring a small raised bed at a local horticultural show for two years and it was time for a change. Troughs would be a good idea but they would have been too heavy to transport so I started to experiment with fish boxes.

After a few prototypes I found a method of producing a convincingly realistic looking lightweight trough that could be transported to shows.

Fish boxes come in many sizes from small ones that hold a kilo or two of fish fillets to large strong boxes capable of holding 50 kg plus of large fish such as salmon. I suppose that I am lucky living in a fishing port where there is an endless supply of these boxes being disposed of around the fish houses. They would normally be crushed and go to a land fill site so every one I rescue for a new life as a trough has to be good primary recycling policy. Another source if you are not near a port is your local fishmonger or supermarket: they will usually save you some if you ask nicely.

Polystyrene boxes are also used to pack fruit and flowers but these are not always suitable as they are made of a more expanded form of polystyrene and are not strong enough to take the weight when filled with compost.

GETTING STARTED

My favourite tools for sculpting the box are a hacksaw blade and a small stick one centimetre in diameter with one end rounded and one end rough.

I start by cutting off the narrow strip from the rim of the box,

then, using cuttings from the lid or another broken box, I fill in the four rectangular drainage slots at the ends cutting any surplus off flush with the box. I do not glue these and provided you cut the inserts to be a tight fit they will stay in place. If you want to use an adhesive then PVA glue is the best; it is also suitable for mending any broken boxes. I have mended several boxes that were damaged when I collected them by gluing them with PVA using string to hold them until the glue is dry then proceeding with the next stage.

ROUGHENING AND CARVING

Next I start to roughen up the surface on all four sides of the box. Pay particular attention to remove any printing that may be on the box as it will show through the paint. Once the box is roughened the fun starts; you have to think stone, look at any real stone troughs or stone walls and memorise the characteristic marks. Now you can start to carve the box. Do this in a shed or garage away from any wind as you will produce a lot of polystyrene balls that could scatter in the breeze and be impossible to tidy up. Be bold and make some deep cuts; you can cut to a depth of half the thickness of the wall. Continue cuts round the corners to suggest chips breaking off from real stone. Carve around any finger slots that are on the ends of many boxes, to make them look like large chips. Round over the top, bottom and corner edges to suggest ancient worn stone and make the occasional sharp edge where a recent chip could have flaked away. A 'v' shaped cut in the rim with a scraped line to imitate a crack can also be very effective.

Once I have done the carving with the hacksaw blade I use the stick to round off some of the inside edges of the cuts to better imitate real carved stone. Then with a medium sand paper I lightly rub all over paying particular attention to the top and corner edges to get a weathered stone look.

Next I turn my box upside down and make two drainage holes in the base by pushing my stick through the bottom.

THE SECRET WEAPON

Now comes the secret weapon, the hot-air paint stripper. In a well ventilated area go over the box with the hot-air gun. If you watch carefully you will see the surface glazing over as you pass. Do not hold the gun in one place for too long or the polystyrene will start to shrink away then it will melt. You just want to pass over the surface

so it glazes and hardens up. You will notice a big difference to the touch with the glazed area being hard and rough while the unheated area is still soft and crumbly. Do not forget to glaze over all carved surfaces including the drainage holes you make in the base. Uncarved surfaces do not need this treatment. A final light rub over with a smooth sandpaper finishes off the carving of the trough.

AND NOW FOR THE PAINT

The best paint to use is an exterior masonry paint in smooth or textured finish. These come in many colours and are readily available in DIY stores. If you are only making one or two troughs many manufacturers sell small pots as colour samples: these will paint one large trough or up to three smaller ones.

I have found that it is best to use a combination of three different colours: light sandstone, chocolate brown and black. This gives the best effect to date. I apply the paint quite thickly in strips and blobs resembling army camouflage with the white of the box showing through; the black is placed on the deepest cuts and the other two colours at random. Using a stippling motion start to blend the colours. By experiment you will be able to detect that you get a different effect by blending from black into one of the colours than you get blending the colour into black. The idea is to blend the paint until it is nearly a uniform colour but, like real stone, is made up of several hues when viewed closely. The overall tone can be made as light or dark as you require depending on the mix of the three colours. If you want to be different or to encourage children you could use bright colours, the painting need only be limited by your imagination.

Once the trough is complete I pass a piece of material to act as a wick through the drainage holes which I cover with perforated zinc or plastic mesh and hold them in place with a small nail pushed into the box. This wick helps the excess moisture to escape from the trough especially if it is placed directly on the ground.

NOW READY FOR PLANTING

The trough is now ready to be used and it has many uses other than just as a traditional planted trough. They are great for sowing larger quantities of seeds in. Bulb seeds can be left to flowering size before they need to be knocked out. We use them as portable frames and mini-greenhouses filled with square plastic pots. Covered with a

barn cloche or similar they give valuable adaptable light weight space in the garden.

We have found many plants like Asiatic primulas, *Meconopsis delavayi* and dwarf trilliums do exceptionally well planted in bulk in their own trough. By keeping groups of these plants together it also improves their seed production.

LONG-LIVED AND INDESTRUCTIBLE

Our original fish box troughs are now over ten years old and are still going strong. Any scrapes caused by contact with sharp objects will allow the white of the polystyrene to show through, but they are easily touched up with some paint.

Planted boxes are strong enough to be moved provided you use some care. They should always be lifted evenly from the base; this will require two people for all but the smallest size.

Never try and slide them by pulling on a side as this will always result in a breakage. If you are sliding them in and out of a car then place them on a sheet of newspaper and push them from near the base.

I hope that this will encourage more of you to try and make your own troughs. There are many alpine and rock plants that thrive better in a trough than in the garden or alpine house. They also make very popular and attractive subjects for displays and with three RHS Gold Medals and the Farrer Trophy for the 'Best exhibit of rock garden or alpine plants at any RHS show in 1999' the SRGC has used them well.

LOST AND FOUND IN THE SCOTTISH HILLS

by Bill Paton

In the 8000 years since the ending of the last Ice Age, mankind has created major changes in the world's vegetation, affecting upland as well as lowland species. The removal of tree cover in pre-historic times, the more recent burning of heather and the introduction of new agricultural and forestry practices have all led to the loss of upland species.

Now, ominously, man is influencing the climate and this, along with the threat of genetic modification, is giving rise to concern as to the potential effect of these developments on our present flora.

Despite these changes and the deliberate collection of wild flowers, remarkably few of the upland Scottish species have completely disappeared. Indeed, the discovery of new species and the spread of species into new areas have more than compensated for the losses.

PINGUICULA ALPINA

One of the most regrettable losses was that of the lovely *Pinguicula alpina* (Fig.99).

This was found and lost again within a period of 88 years. It was discovered at the Bog of Auchterflow near Avoch on the Black Isle in Ross and Cromarty in 1831, where it was initially believed to be *P. lusitanica*, which had been found growing in easter Ross, beyond its normal easterly range. There are, however, significant differences between the two species. *P. lusitanica* overwinters in rosette form, has smallish flowers, light violet in colour and tends to grow in the west of Scotland. By contrast, *P. alpina* forms a winter bud, has handsome white flowers each with two yellow spots in the throat and its Avoch site is very definitely in the east of the country. It was correctly identified by H. C. Watson and included in the British list in 1836.

Throughout the following two decades it was a target for many eager but unscrupulous collectors and also suffered as a result of land drainage.

The landowner was sensitive to the importance of the site and built a wall round it but this did not halt its demise around 1919, a victim both of collection of plants and of site degeneration.

However, *P. alpina* still thrives in parts of arctic and alpine Europe and from time to time seeds are available from the SRGC Seed Distribution.

RUBUS ARCTICUS

In the 18th and early 19th centuries, *Rubus arcticus* was recorded in a number of sites including Ben Lomond, Ben Lawers, Glen Tilt, Mull and “the higher regions of Ben y Glo (389 m)”. Sadly it has not been positively seen since 1841 and any reports from around the middle of the century can be treated with scepticism.

Above ground it has trefoil leaves on slim spineless stems. The flowers have five reddish pink petals and the berries are dark red. Below ground it is rhizomatous and in cultivation it quickly becomes invasive.

It is a lovely little plant; it blooms not abundantly but regularly throughout the whole summer season and its flowers have a brightness which contrasts strikingly with its surrounding vegetation. It is strange that a plant apparently well established in a number of sites and well equipped for vegetative growth should be completely lost. That it seems not to have self-seeded is less surprising; it is not unknown for arctic plants to have difficulty producing viable seeds at their more southerly sites.

Strangely, although unknown for 150 years, there is a reluctance on the part of some botanists to accept that it is now extinct. Indeed, who is to say that it is not blooming somewhere on the remote south and east screes of Ben y Glo?

ARTEMISIA NORVEGICA

1950-51 were surely *anni mirabili* for Scottish plant finders because in these two years four highly distinctive montane plants were discovered. In addition to the *Artemisia*, there were *Diapensia lapponica*, *Homogyne alpina* and *Koenigia islandica*.

The most noteworthy was *Artemisia norvegica* because it was known world-wide only in limited areas of central Norway and the northern Russian Urals, whereas the other species are known in a wide range of European sites.

It was found by Sir Christopher Cox on top of an exposed ridge near Glenfinnan in Inverness-shire. He wrote detailed notes on the discovery, indicating among other things that he saw between 500 and 1000 plants at the main site. The 1999 edition of the Red Data Book states that the largest site now holds many thousands of plants and consequently, even allowing for annual fluctuations, the site is more than holding its own. *A. norvegica* has now been discovered on another two mountains in Wester Ross, growing in conditions similar to those of the first site, namely at a height of 770-800 m and in very exposed situations.

It is a small plant, some 5 cm in height, with a basal rosette whose leaves are virtually stemless, deeply incised and heavily pubescent. The long hairy flower stems each bear one or two complex heads which, as buds, are surrounded by attractive green bracts edged with brown. The buds droop before straightening again and opening into bright yellow flowers.

It is, consequently, well equipped for life in exposed rocky conditions, protected as it is from hot dry spells by its rosette form and from the extreme winds and cold of winter by its pubescent leaves and stems.

It has been claimed that the Scottish plant is different enough from the Norwegian and Russian plants to merit endemic status but this claim has its challengers.

DIAPENSIA LAPPONICA

This arctic plant was first found near Glenfinnan in Inverness-shire by C. F. Tebbutt, at a height of between 760 and 850 m. It is now also known on another exposed mountain at the same altitude and only 24 km distant. The surrounding rock at the first site is a barren type of schist, but in one area there is a band of softer rock and this is where the *Diapensia* abounds, both as well established and indeed long established cushions and as new young plants.

It is an evergreen shrub and forms dense cushions of close-packed shiny, leathery leaves and large white flowers growing in profusion in a good year and making altogether a splendid sight.

The species is well adapted to cold exposed conditions; its dense cushions withstand high winds and help to retain heat and minimise water loss. It is, however, vulnerable to hot summers and is subject to good and less good flowering years, although over the years there

has been little change in the area covered or the total number of plants.

It is worth noting in passing that the *Diapensia* and the *Artemisia* both grow in extremely exposed, cold and windy conditions, yet in structure they are quite different. The *Diapensia* hugs itself in tight cushions while the *Artemisia* spreads its foliage and flowers to the coldest of winds and frosts. Clearly, mother nature has more than one tune to her repertoire.

Under Schedule 8 of the Wildlife and Countryside Act 1981, no plant parts or seed of *Diapensia* may be taken but seed from Iceland is sometimes available from a commercial supplier. Its cultivation is a challenge to all plantspeople and a frustration to almost all who attempt it.

[An earlier account and photograph of this species was given in 'The Rock Garden, 1992, 22 pp. 428-429' by Henry and Margaret Taylor.. Ed.]

HOMOZYNE ALPINA

George Don of Forfar found this in 1813 and described its site as "... rocks by the side of rivulets in the high mountains of Glen Clova in Angus as on a rock called 'Garry Barnes'...". It was not seen again until 1951 when A. Slack found a little of it in what has been taken to be the same place. It is a stoloniferous plant with rounded basal leaves, dark shiny green above and purplish underneath. Long flower stems emerge from these and bear purplish flowers with tubular florets, the outer female and the inner hermaphrodite, much the same as with *Artemisia norvegica* since both are Compositae (syn. Asteraceae).

Don's original account of the *Homogyne* finding has been challenged; some believe he mistook some other plant for it, possibly its common cousin *Tussilago farfara* or *Erigeron borealis*. Others suggest he may have been less than honest in his initial claim. Certainly its European distribution is unusual for a plant which also grows in Scotland. Clive Stace comes straight to the point, describing it as "probably originally planted". Nevertheless, it is still holding its own at what is probably the original site and three additional sites have been planted nearby.

Seed is sometimes available through the SRGC Seed Distribution. In cultivation the plant grows vigorously.

KOENIGIA ISLANDICA

This is one of the most inconspicuous yet intriguing members of our montane flora.

The initial discovery was made in 1934 when it was found at around 700 m near the summit of the Storr in Skye. However, it was not recognised for what it is until 1950 when it was also found on Mull and was added to the British flora. Globally its Mull site represents its most southern penetration.

It is one of only four species of montane annuals in the British flora, the others being *Gentiana alpina* and upland versions of *Euphrasia* and *Rhinanthus*. As an annual it is faced with the need every summer to build a new plant from the roots upwards and to set and scatter seeds before succumbing to the next winter. It is small, with its green oval leaves measuring at most 5 mm. Its tiny greenish-white petals are only 5-6 mm. It quickly collapses if not handled with the greatest care. It has two over-riding needs, namely constant dampness at its short roots and an absence of competition from other plants and it has one particular enemy, namely a hot day.

Clearly with growing evidence of global warming we must fear for this northerner which has had a toe hold in our land since and, perhaps prior to, the last Ice Age. Its numbers are already reducing alarmingly, at one site to only 20% of the population of a few years earlier.

It is a relief to know that seeds have already been collected and frozen for future use under the Scottish Rare Plant Initiative of the RBGE.

DR WILLIAM BOYD

The next two species, *Sagina boydii* and *Salix x boydii* have a number of incidental features in common. They were both found by Dr William Boyd of Melrose and the circumstances of their finding are unclear. Further, both can be said to have been found and lost again; certainly there are no known instances of either plant now growing in the wild in the UK.

SAGINA BOYDII

In 1878, Dr Boyd found *Sagina boydii* in his potting shed. He had brought it back from Braemar. He had a recollection of finding it on Ben A'An in the Cairngorms but was not confident of this. This situation attracted the attention of a number of eminent botanists

and, finally, Francis B. White of Perthshire decided that its structure was sufficiently different from other saginas to merit species status and he gave it the name of its finder.

Small and dense, it develops into rounded tufts. Its leaves are dark green, recurved; flowers are minute with tiny white petals.

In cultivation, it is not happy with excessively cold or wet conditions and is subject to invasion by moss. Tufts can, however, be successfully opened, cleaned and replanted.

SALIX X BOYDII

This is a hybrid, dwarf willow, erect, slow-growing and seldom rising above one metre. As a young plant it comes well clad, with gnarled trunk and stems, giving it a somewhat Bonsai appearance.

The catkins are yellow and silky and its leaves are obovate in shape, bluish-green in colour and appear to glisten in sunshine, the whole effect being very attractive.

A single plant had been found by Dr Boyd when he was plant hunting in the Forfar hills in 1870. He took two cuttings, kept one in his own garden and gave the other to the Misses Logan Home of Edrom Nurseries. All of the many plants now in cultivation are developed from one or other of these.

There has been controversy about its parentage. *Salix reticulata* is generally accepted as one parent with *S. lanata* or *S. lapponum* as the other. All three grow in the same area.

What are we to make of the finding of these two plants and their present status? Professor Clive Stace, author of the authoritative "New Flora of the British Isles" gives them a ringing vote of confidence. He shows *S. x boydii* to be a hybrid of *S. reticulata* and *S. lapponum* and consequently an endemic. Of *Sagina boydii* he states "presumed to have been collected in south Aberdeenshire in 1878; not seen in the wild since, but still in cultivation and so also an endemic species".

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PLANT HUNTING IN THE DOLOMITES

by Michael J. B. Almond

PART 4 THE WESTERN DOLOMITES

West of a line southwards down the Agordo Valley and south of a line drawn westwards from the Agordo Valley across the San Pellegrino Pass to the Val di Fassa; west of the Val di Fassa and the Sasso Lungo; and west of the Val Badia/Gadertal. To cover the places mentioned in this part you will again need *Tabacco* 1:25,000 map sheets nos 05, 06, 07 and 022, or else the *Tabacco* 1:50,000 map sheets nos 2 and 7 cover most of it.

This last part of my guide to the Dolomites covers a wide area and cannot reasonably be explored from one base. The best places to stay are San Martino di Castrozza for the southern part, and Canazei or the Val Gherdeina for the northern part; you are spoilt for choice for places to stay in the Val Gherdeina, although the nearest camping site is on the other side of Seis. Another base, which would allow for exploration over a wider area of the northern Dolomites, would be Corvara, on the other side of the Gardena Pass.

As you approach San Martino di Castrozza from the south, up the Val Cison, the woods and meadows alongside the road and up the side of the valley are already bright with flowers: *Aquilegia atrata* (Fig.93), *Campanula barbata*, *Corallorhiza trifida*, *Gentianella* ssp., *Gymnadenia conopsea*, *G. odoratissima*, *Lilium bulbiferum*, *L. martagon*, *Listera ovata*, *Neottia nidus-avis*, *Orchis ustulata* and *Platanthera* ssp. The woods in this valley are also reputed to contain *Cyclamen purpurascens*. San Martino is the best base for exploring the places mentioned in the first (southern) half of this part, but Canazei would be more convenient for the second (northern) half).

From San Martino (1470 m) you can take the chair lift to the Col Verde (1965 m) up on the flanks of the Cimon della Pala to the

north-east. As you sail over the woods you can see lots of the dark maroon *Aquilegia atrata* below you in the undergrowth and the boulders around the top of the chair lift are fringed with the purple flowers of *Paederota bonarota* (Fig.94). If you explore the cliffs and scree above and to the north of the Col Verde, you can find *Daphne cneorum*, *Gentiana acaulis*, *Pinguicula alpina*, *Potentilla nitida*, *Papaver rhaeticum*, *Petrocallis pyrenaica* (Fig.95), the last few flowers of the early-flowering *Primula auricula*, *P. tyrolensis*, *Rhodothamnus chamaecistus*, *Silene acaulis*, *Soldanella minima* (Fig.96) and *Valeriana alpina*. There is a cable car from the Col Verde up to the top of the Passo di Rossetta (2572 m); the path is very steep and uneven, however, and if you want to see all the interesting plants growing alongside, it is better (and safer) to walk up and take the cable car down again. As you set off, to start with you pass through the last of the woods and can see *Atragene alpina*, *Campanula morettiana*, *Daphne striata*, *Dryas octopetala*, *Gentiana acaulis*, *Gymnadenia odoratissima*, *Pinguicula leptoceras*, *Polygala chamaebuxus*, *Primula auricula* (Fig.97), *Rhododendron hirsutum* (which has hairier leaves than *R. ferrugineum* and tends to grow only on limestone and *Rhodothamnus chamaecistus*.

When the path leaves the woods and you are winding up by the screes and cliffs below the Passo di Rossetta you can see *Primula tyrolensis* (Fig.98), varying in colour between pink and magenta, and *Campanula morettiana*, which unfortunately does not come into flower until the flowers of most of the other plants mentioned here are well over. Also on the cliffs and the screes there are *Gentiana terglouensis*, *Papaver rhaeticum*, *Petrocallis pyrenaica* (with some good dark forms), *Pinguicula alpina* (Fig.99), *Potentilla nitida*, *Primula auricula*, *Ranunculus bilobus*, *Rhododendron hirsutum*, *Rhodothamnus chamaecistus*, *Soldanella alpina*, *S. minima* and *Thlaspi rotundifolium*.

At the top of the Passo di Rossetta you come on to the great high karst plateau that is the Pale di San Martino. Unfortunately our own experience of it is limited to taking coffee in the Rifugio Rossetta, just a couple of hundred yards beyond the top of the pass, as the visibility was limited to about fifty yards and the gale force wind was bitterly cold – not the conditions for exploring a relatively featureless limestone plateau surrounded by cliffs and criss-crossed with grikes.

THE ROLLE PASS

North of San Martino the main road climbs up to the Rolle Pass (1984 m) and among the woods and screes that clothe the lower slopes of the Cimon della Palla on either side of the road it is possible to find the slipper orchid, *Cypripedium calceolus*, together with *Anemone trifolia*, *Aquilegia atrata*, *Dactylorhiza fuchsii*, *Globularia cordifolia*, *Leucorchis albida*, *Lilium martagon*, *Listera ovata*, *Nigritella nigra*, *Phyteuma nigrum*, *Saxifraga caesia*, *Stachys alopecuroides*, *Thesium alpinum* and *Tofieldia calyculata*.

The Rolle Pass itself is disfigured by a clutch of unprepossessing buildings, but south of it stretches the ridge of Tognazza (2209 m) and Cavallazza (2324 m), composed of non-calcareous rock and on which can be found *Eritrichium nanum* (on broken rocky scree and on the cliffs that tumble down into the Castrozza valley to the south – and also growing up through clumps of *Saponaria pumilio*), *Loiseleuria procumbens*, *Pinguicula leptoceras*, *Potentilla crantzii*, *Primula glutinosa*, masses of *Saponaria pumilio* (not in flower in early July) and *Soldanella minima*.

THE LAGHI DI COLBRICON

At the opposite end of the Cavallazza ridge from the Rolle Pass lie the picturesque Laghi di Colbricon and the path through the woods to them from the main road just below (west) of the pass makes a pleasant all-weather walk. There are masses of several types of lichen, similar to “Spanish moss”, festooning the branches of the trees. The woods are thick to start with and gradually thin out as you approach the lakes. Along the path you can see *Adenostyles alliariae*, *Ajuga pyramidalis*, *Antennaria dioica*, *Campanula barbata* (named after the distinctive fringes to its petals), *Cirsium erisithales*, *C. spinosissimum*, *Dactylorhiza fuchsii*, *Gentiana punctata* (with its attractive, usually upward-facing, bright yellow bells spattered with maroon spots), *Geranium sylvaticum*, *Geum rivale*, *Gypsophila repens*, *Homogyne alpina*, *Lonicera alpigena*, *Leontopodium alpinum*, *Leucorchis albida*, *Maianthemum bifolium*, *Moneses uniflora*, *Oxalis acetosella*, *Pedicularis leptoceras*, *Phyteuma hemisphaericum*, *Pinguicula leptoceras*, *Potentilla crantzii*, *Pulsatilla apiifolia*, *Ranunculus aconitifolius*, *Rhododendron ferrugineum*, *Rumex alpinus*, *Saxifraga rotundifolia*, *S. stellaris*, *Senecio alpina*, *Silene rupestris*,

Streptopus amplexifolius, *Trollius europaeus*, *Vaccinium vitis-idaea*, *Veratrum album*, *Veronica fruticans* and *Viola biflora*.

The lakes are surrounded by a sea of bright red *Rhododendron ferrugineum*. On the alluvium by the lakes and on the screes above, up to the col at the end of the Cavallazza ridge (with its superb view across San Martino to the Pale di San Martino beyond) there are also *Gentiana punctata*, *Pulsatilla apiifolia* (with brilliant sulphur-yellow petals) and *Saponaria pumilio*.

THE VAL VENEGIA

East of the Rolle Pass is mainly limestone and, over the whole area, tower the massive spires of the Cimon dalla Pala (3184m) and the Cima di Vezzana (3192m). It is possible to drive to the top of the Passo di Costazza (2174 m) from the Rolle Pass, but there the road is barred. The Val Venegia must be explored on foot, either from here or from the car park at the bottom of the valley, just off the road to the Passo di Valles. The view east from the Passo di Costazza, and the whole of the upper Val Venegia, is dominated by the steep limestone screes at the base of the Cima di Vezzana, which rise up to over 2500 metres. It is not easy to walk across the screes, but if you do it is possible to find some interesting flowers on them, including *Gentiana punctata*, *G. terglouensis*, *Primula minima*, *P. tyrolensis* and *Ranunculus bilobus*. On the lower screes, down near the track as it descends the valley, there are *Gentiana terglouensis*, *Papaver rhaeticum*, *Potentilla nitida* and *Thlaspi rotundifolium*. On the more stable areas below the pass can be found *Anemone baldensis* and *Dryas octopetala* (on boulders), and *Papaver rhaeticum* grows in large clumps at the roadside. In a walk down the Val Venegia you can also see *Atragene alpina*, *Corallorhiza trifida*, *Dryas octopetala*, *Gentiana acaulis*, *Geum rivale*, *Gymnadenia conopsea*, *Moneses uniflora*, *Paederota bonarota*, large-flowered *Pinguicula alpina* with bright yellow patches in the middle of its white flowers, *Primula auricula*, *Pyrola rotundifolia*, *Rhodothamnus chamaecistus* and *Valeriana alpina*.

TO THE PASSO DI VENEGIOTA

If you drive up to the top of the Passo di Valles (2031 m) after having explored the bottom of the Val Venegia, it is possible to walk then along the ridge on the north-east flank of the lower valley. From the pass a path takes you up to the Forcella Venegia (2217 m) at the



Fig. 103 *Polemonium brandegei* (p.310) Dianne Nichol-Browne

Fig. 104 *Polemonium pulcherrimum* var *delicatum* (p.310) Dianne Nichol-Browne





Fig. 105 *Gentiana bavarica* (p.317) K. J. Van Zwienen

Fig. 106 *Androsace alpina* (p.318) K. J. Van Zwienen





Fig. 107 *Campanula scheuchzeri* (p.319) K. J. Van Zwienen

Fig. 108 *Campanula excisa* (p.319) K. J. Van Zwienen





Fig. 109 *Saxifraga cotyledon* (p.319) K. J. Van Zwienen

Fig. 110 *Celmisia sessiliflora* 'Awadale' (p.328) Jean Wyllie



top of the ridge and thence along the top of the ridge, on the southern side overlooking the Val Venegia, as far as the Passo di Venegiota (2303 m). Apart from the fine view, there is a lot of interest along this path. In particular it is possible to see *Eritrichium nanum* growing on limestone; it usually grows in acidic conditions. The colour of the flowers does not appear to be so intensely blue when they are growing on limestone. Other flowers along this path include *Anemone baldensis*, *Aster alpinus* (Fig.100), *Coeloglossum viride*, *Gentiana acaulis* (in great numbers), *G. verna*, *Leontopodium alpinum*, *Linaria alpina*, *Lloydia graeca*, *Nigritella nigra*, *Pinguicula alpina*, *P. leptoceras*, *Primula farinosa*, *P. halleri*, *P. minima*, *Pulsatilla vernalis*, *Salix reticulata* (and various other willows), *Silene acaulis* (Fig.101), *Soldanella alpina* and *S. minima*. On one particular rocky exposure we found all of the following growing together: *Erigeron alpinum*, *Eritrichium nanum*, *Paederota bonarota*, *Phyteuma* sp. (in bud), *Potentilla nitida*, *Primula auricula* and *P. tyrolensis*(? - in seed).

THE COL MARGHERITA

North of the Passo di Valles (and south of the Passo di San Pellegrino, which was mentioned in part one of this guide) is the Col Margherita (2550 m). Access is easiest from the Passo di San Pellegrino (1907 m). The climb is steep and the hillside has been damaged by the bulldozing of ski runs; if it is working (it tends to start rather late in the season) the best approach is to take the cable car from the pass to the top. At the top of the cable car you are faced with a high plateau, dipping gently to the south, with the mass of the Cimon della Pala, Vezzana and the other peaks of the Pala di San Martino as backdrop. One of the main reasons for coming to the top of the Col Margherita is to see *Primula glutinosa* and *P. minima* growing together in considerable numbers (especially as regards *P. glutinosa*, which covers the ground with a purple carpet in places) and to see the natural hybrids between the two in all their variety. The hybrid is called *Primula x floerkeana* and has been divided into forma *biflora* (near to *P. minima*), forma *huteri* (midway between the two) and forma *salisburgensis* (near to *P. glutinosa*); all three forms (and virtually every conceivable intermediate gradation) can be found on the top of the Col Margherita.

Other flowers to be found in the acidic conditions of the Col Margherita include *Gentiana acaulis* (including pale blue and white

forms), *G. verna*, *Lloydia graeca*, *Loiseleuria procumbens*, *Pulsatilla apiifolia*, some *Ranunculus glacialis* on damp scree along the edge of ridge (west of the cable car station), *Silene acaulis* and *Soldanella pusilla*, which replaces *S. minima* in acidic conditions.

ROSENGARTEN

We now move to the area west of the Val di Fassa and the mountain group known as Rosengarten (Catinaccio) – the original “King Laurin’s Rose Garden” celebrated by Reginald Farrer in his book on the Dolomites. The view of the rosy spires of this rugged rocky crest from the west in the light of a late afternoon sun goes some way towards explaining the name. The road over the Karer Pass (Passo di Costalunga) (1745 m) gives access to the high level road along the western flanks of the ridge above the Eisack (Isarco) valley, leading eventually to Seis (Suisi). The best walk from a scenic point of view, however, is undoubtedly that up the Val del Vaiiolet, even if (as was the case with us) you miss a great deal of the scenery because of the weather. It used to be possible to drive up to the car park at the Rifugio Stella Alpina (1975 m) before starting up the valley. Unfortunately the road up from the main road along the Val di Fassa has now been barred and the only alternatives to walking up from the road end (at 1350 m) are an irregular and unreliable minibus service or the cable car up from Vich (Vigo di Fassa) which gets you up to the right height (1997 m) but still leaves you a walk of about three kilometres to the former car park; although I have not tried it, I would suggest using the cable car. The upper valley can be said to start at the Rifugio Vaiiolet (2243 m) and alongside the path on your way up to here you can see *Atragene alpina*, *Gymnadenia odoratissima*, *Leucorchis albida*, *Paederota bonarota*, *Polygala chamaebuxus* (white and purple), *Potentilla nitida* and *Rhododendron ferrugineum*. On the screes there are *Daphne striata*, *Globularia cordifolia*, *Linaria alpina*, *Papaver rhaeticum*, *Potentilla nitida* (some with very dark red flowers) and *Valeriana supina*. On the cliffs below the Rifugio Vaiiolet we saw a very photogenic small *Phyteuma* which we have not been able to identify with confidence and on the cliffs above the refuge we found *Androsace hausmannii*.

THE VAJOLETTURME

The upper valley is guarded by the spectacular Torri del Vajolet (Vajolettürme) (2813 m) which tower directly above the path. Alongside the path up the valley are masses of *Silene acaulis* and also *Anemone baldensis*, *Gentiana verna*, *Soldanella alpina* and *S. minima*. On the screes can be found *Gentiana bavarica subacaulis* and *Thlaspi rotundifolium* in abundance. If you are blessed with fine weather you will, no doubt, be able to find more than we did and may be able to continue your walk as far into the starkly impressive valley north of the Passo Principe (Grasleitenpass) (2599 m); otherwise you can do as we did, and console yourself with some hot soup in the hut at the top of the pass before trudging down again in the rain.

THE SEISER ALM

South of the Val Gherdeina and north of the ridge running from the Sasso Lungo in the east to Schlern in the west lies the Seiser Alm (Alpi di Suisi), a large, undulating tract of grassland at a mean height of just under 2000 m. It is said to be the largest "alp" in the Alps. In summer it is awash with meadow flowers, including *Antennaria* sp., *Aster alpinus*, *Campanula barbata*, *C. glomerata*, *Gentianella germanica*, *Gymnadenia conopsea*, *Leucorchis albida*, *Nigritella nigra*, *Orchis mascula*, *Pinguicula leptoceras*, drifts of *Polygonum bistorta*, *Primula farinosa* and *Pulsatilla apiifolia*.

Closing the south-western end of the Seiser Alm is the great bulk of Schlern (Sciliar) (2563 m), a flat-topped lump of rock with sheer cliffs on three sides and a ridge leading off the fourth towards the Sasso Lungo. Looking at it from the Seiser Alm it seems impossible that a path could find its way up these ramparts, but it does. It is known as the "Touristensteig" presumably to differentiate it from the even more arduous routes up from the west and south!

If you can spare the energy there is quite a lot of botanical interest along the way: *Aster alpinus*, *Atragene alpina*, *Callianthemum coriandrifolium* (noticeably more compact and attractive as you get higher up towards the top of Schlern), *Daphne striata*, *Dryas octopetala*, *Gentiana acaulis*, *G. verna*, *Gypsophila repens*, *Leontopodium alpinum*, *Lilium bulbiferum*, *Phyteuma* sp., *Pinguicula alpina*, *Potentilla nitida*, *Primula elatior*, *P. farinosa*, *P. halleri*, *Rhododendron ferrugineum*, *Silene acaulis*, *Soldanella alpina*, *S. minima* and *Trollius europaeus*. Many of the rocks on the

relatively flat top of Schlern are carpeted with *Potentilla nitida* but most of it was not yet in flower at the beginning of July. In case of bad weather, the hut on the top is large and well appointed. If the weather is at all favourable, the view from the top is superb, both south to Rosengarten and north across the Seiser Alm to Seceda.

NORTH TO SECEDA

Immediately to the north of the Val Gherdeina, across the valley from the Seiser Alm rises the jagged ridge of Seceda (2518 m) and Geisler (Le Odle), rising to 3025 m at the summit of Sas Rigais. The high alpine pastures just below the saw-toothed ridge itself (the vertical drop is on the other, northern, side) can be reached by cable car from Urtijei (St Ulrich/Ortisei).

As you stand on the edge of the abyss, just above the Seceda cable car upper station, the view eastwards along the Geisler ridge is unique, like the sharp edge of an axe pointing up into the sky: the southern side is a steep, grassy slope and the northern side is vertical cliff. If the wind is from the north, the air will be blowing up the cliffs and the moisture condensing into cloud as it rises. The air on the dip slope, to the south, is clear but a curtain of cloud billows upwards all along the top of the ridge, eventually dissipating – so that the peaks are in view but the valley below to the north is not.

The southern slope of the ridge is covered in flowers. The massed, bright-yellow flowers of *Trollius europaeus* make a particularly splendid show. As you walk further east you drop down below the ridge top (there is no safe path up on to the summit) and eventually come to a group of massive boulders, the Piera Longia, which provide a large variety of habitats. During this walk you can see *Androsace chamaejasme*, *Anemone baldensis*, some fine, large specimens of *Aster alpinus*, *Campanula barbata*, *Coeloglossum viride*, *Daphne striata* scrambling around the rocks, *Dianthus glacialis*, *Gentiana acaulis*, *G. verna*, *Gymnadenia conopsea*, *Leontopodium alpinum* (including some unusually large-flowered plants), *Nigritella nigra*, *Paederota bonarota*, the small and delicate, dark-red flowered *Pedicularis kernerii*, good examples of *Potentilla nitida* in varying sizes and colours of flower, *Primula elatior*, *P. farinosa*, *P. halleri*, *Pulsatilla aptifolia*, *P. vernalis*, *Ranunculus glacialis*, *Saxifraga caesia*, *Silene acaulis* and *Trollius europaeus*.

THE VALLUNGA

One of the areas long favoured by alpine plant enthusiasts is the Vallunga (Langental) which comes down to the Val Gherdeina at Selva (Wolkenstein). For most of its length it is bounded on each side by massive limestone cliffs. At the mouth of the valley, just above the car park (1620 m), the old Wolkenstein castle clings to the cliff face. Here, if you are willing to risk life and limb on the crumbling walls, it is possible to photograph the devil's claw rampion (*Physoplexis comosa*) at close quarters in an open, sunny position where it comes into flower relatively early; as well as the impressively sinister flowers, the bluish bloom on the leaves is particularly attractive. In the woods around the castle you can find *Codonopsis*, tall *Dianthus*, *Gymnadenia conopsea*, *Lilium bulbiferum*, *Listera ovata* and *Platanthera* sp.. As you walk up the floor of the main valley you can note many different species, mostly around and in the patches of scrub dotted over the valley floor, which are not grazed to the same extent as the more open ground.

They include *Achillea clavенаe*, *Acinos alpinus*, *Aquilegia atrata*, *Aster alpinus*, *Atragene alpina* (the alpine clematis), *Berberis vulgaris*, *Campanula cochlearifolia*, the golden orange dandelion *Crepis aurea*, *Daphne striata*, *Dryas octopetala*, *Gentiana acaulis*, *Globularia cordifolia*, *Gymnadenia conopsea* and its smaller, more delicate relation, *G. odoratissima*, *Horminum pyrenaicum*, *Leontopodium alpinum*, *Leucorchis albida*, *Maianthemum bifolium*, *Melampyrum pratense*, *Moneses uniflora*, *Nigritella nigra*, *Paederota bonarota*, *Pedicularis* sp., *Pinguicula leptoceras*, *Plantago* sp., *Phyteuma orbiculare*, *Polygala chamaebuxus* (in both red and yellow colour forms), *Primula auricula*, *P. farinosa*, *Rhododendron ferrugineum*, *R. hirsutum*, *Salix reticulata*, *Sideritis hyssopifolia*, *Silene vulgaris*, *Thesium alpinum*, *Tofieldia calyculata*, *Trollius europaeus*, *Vaccinium vitis-idaea*, *Veronica bellidifolia* and *Viola biflora*.

THE PUEZZHÜTTE

Eventually you leave the cliffs behind and climb up out of the valley to the Puezhütte (2475 m) at the end of the ridge of the Pizes de Puez. On the higher slopes at the head of the valley can be found *Daphne striata*, *Pinguicula alpina*, *P. leptoceras*, *Primula farinosa* (including several white ones), *Rhododendron hirsutum* and *Rhodothamnus chamaecistus*.

An alternative route to the Puezhütte from the car park near the Wolkenstein is via the Val Chedul. This route is very scenic and the return can be made down the Vallunga, but is only for the energetic as (unlike going up the Vallunga) the steep climb (and very steep it is up through the woods to start with) comes right at the beginning. The path up the Val Chedul climbs up to the Passo Crespëina, at 2528 m and then proceeds across the high limestone plateau past the charming little Lech de Crespëina, via the Forcella de Ciampac (2366 m) to the Puezhütte. On the way up through the woods at the bottom of the Val Chedul you can see *Atragene alpina* (Front Cover), *Daphne striata*, *Dryas octopetala*, *Gentiana acaulis*, *G. verna*, *Horminum pyrenaicum*, *Polygala chamaebuxus* (both colours), *Primula auricula* on a cliff overhanging the path, *P. farinosa* and *Rhododendron hirsutum*. On the scree above the woods we saw *Globularia repens*, *Linaria alpina*, *Papaver rhaeticum*, *Potentilla nitida* and *Silene acaulis*.

Higher up still towards the Passo Crespëina there was *Anemone baldensis*, *Primula halleri*, *Ranunculus seguieri*, *Saxifraga oppositifolia*, *Soldanella alpina*, *S. minima* and some impressive specimens of *Thlaspi rotundifolium*. On the high plateau, around the Lech de Crespëina there were a few *Pulsatilla vernalis* in flower and also *Potentilla nitida*, *Primula minima* and *Viola biflora*.

Unless you are an experienced mountaineer, with the skill and stamina to cross the ridge of the Odle/Puez to the alpine meadows to the north, then the approach must be by road – and it is a long way round, via the Gardena Pass, Corvara and the Val Badia. Near the top of the Gardena Pass (2121 m) you can see masses of *Lilium martagon* in flower – many with very fine large flower spikes, and also *Aquilegia atrata*, *Aster alpinus*, *Campanula barbata*, *Gentianella* sp., *Gymnadenia conopsea* (lots of pink flower spikes sticking up through the snow on one occasion), *Lilium bulbiferum* and *Nigritella nigra*. There are also lots of brown broomrapes in the fields below, to the east of the pass.

THE WÜRZJOCH

If you turn off west from the main road down the Val Badia, up through St Martin de Turm (St Martin in Thurn/S Martino in Badia) you will eventually reach the Würzjoch (Passo delle Erbe) (1987 m). From here a path leads up south, round the flanks of the Peitlerkofel (Sas de Putia) and up to the Peitlerscharte (Forcella de Putia) at a

height of 2357 m. It is rather a scramble up the last part of the path to the pass, but when you get there you are faced with a nice, easy, virtually level path across the gentle slope of the other side of the ridge. This path, with its fine views of the Pizes de Puez to the south, leads first to the Kreuzkofeljoch (Passo di Poma) (2340 m) and then on to the Kreuzjoch (Forcela S Zenon) (2293 m) beyond, beneath the great northern cliffs of Geisler and Seceda. On the first part of the way up from the Würzjoch you can see *Coeloglossum viride*, *Gentiana acaulis*, *Gymnadenia odoratissima*, *Leucorchis albida*, *Polygala chamaebuxus*, *Rhododendron hirsutum* and *Saxifraga oppositifolia* (on shaly scree). As the scree gets steeper and you climb up to the Peitlerscharte, you are on dolomite again and there are tight clumps of *Gentiana terglouensis*, *Papaver rhaeticum*, *Soldanella minima* and *Thlaspi rotundifolium*.

Up on the grassy ridge can be found *Androsace obtusifolia*, *Anemone baldensis*, *Aster alpinus*, *Daphne cneorum*, *Gentiana acaulis*, *G. verna*, *Globularia cordifolia*, *Leontopodium alpinum*, *Nigritella rubra*, *Pinguicula alpina*, *Polygala alpestris*, *Primula farinosa*, *P. halleri*, *Pulsatilla apiifolia* and *Trollius europaeus*. In the area around the Kreuzkofeljoch there are also *Gentiana punctata* and *Primula minima* in the grassy areas, *Pulsatilla vernalis* in the drier banks, *Soldanella alpina* in damp patches and *Paederota bonarota* and *Potentilla nitida* on rocky outcrops.

THE HALSL

A little further on (west) from the Würzjoch the road crosses the Schartenbach (Rio Lasanca) near the head of the Lüseneral (Valle di Luson) before climbing up again to the Halsl (Passo Rodela). If you park by the Schartenbach (at about 1750 m) you have plenty of scope for exploring the head of the valley and around. You can walk up the path beside the stream to just below where it joins the path from the Würzjoch and then turn sharp right onto the G Messner Steig (signposted to the Russiskreuz), follow it across the almost vertical northern flank of the Aferer Geisler ridge (rising to 2652 m) and then come down again through the woods to your starting point. On this walk, as well as enjoying the open views to the north, you can see *Anemone baldensis*, *Aster alpinus*, *Atragene alpina*, *Coeloglossum viride*, *Daphne striata*, *Dryas octopetala*, *Gentiana acaulis*, *G. verna* (short and tall, including dark and purple-coloured examples), *Geum rivale*, *Lilium martagon*, *Linaria alpina*,

Nigritella nigra, *N. rubra* (and intermediate colour forms between these two supposedly different species), *Papaver rhaeticum*, *Pinguicula alpina*, *P. leptoceras*, *Polygala alpestris*, *P. chamaebuxus* (both colours), *Potentilla nitida*, *Primula farinosa*, *P. minima*, *Rhododendron ferrugineum*, *Saxifraga caesia*, *Silene acaulis*, *Soldanella alpina*, *S. minima* (and possibly hybrids between the two), *Thlaspi rotundifolium* and *Trollius europaeus*. If you continue on the road over the Halsl and down into the Eisack valley you will end up at Brixen and the motorway to the Brenner Pass.

This now completes the series of articles on Plant Hunting in the Dolomites.



Primula minima (Joel Smith)

ALPINE POLEMONIUMS OF NORTH AMERICA

The holder of the National Plant Collection® of *Polemonium*
describes some of the species she has grown and also seen
in the wild

by Dianne Nichol-Brown

Polemonium species are more often misnamed than not in seed lists, and even in commercial seed. For example, this year, Unwins were selling *P. boreale* (a 40 cm herbaceous species) as *P. viscosum* in their prestigious National Trust range for £2.45.

In the National Plant Collection® of *Polemonium* in Trimdon Grange, Co. Durham, I grow or have grown as many different accessions of all the alpine species as I can get my hands on. This has been mostly from wild collected seed from Ron Ratko, which I have been sowing for over six years, and last year from seed I collected myself in Colorado. The plants that I have grown vary in height from 5 cm to 20 cm in flower, with flowers in every shade of blue, pink, white and yellow. Apart from the length of flower tube, the main distinguishing feature is whether the leaflets are sub-divided or entire, with *P. viscosum*, *P. brandegei* (sometimes spelt *brandegeei*) (Fig.103), *P. confertum*, *P. eximium* and *P. chartaceum* in the first category, and *P. pulcherrimum* ssp. *pulcherrimum*, *P. pulcherrimum* ssp. *delicatum* (Fig.104) and *P. elegans* in the second – and *P. nevadense* showing characteristics of both groups.

Polemonium viscosum Nuttall is native to the arctic-alpine zone along the Rocky Mountain ranges from British Columbia south to New Mexico and some of the coastal ranges. There is geographical variation in corolla length and in plant height which decreases with the tallest plants at 28 cm in Colorado and dwarfer plants in the west and north. Flower colour is related to habitat, with the darkest flowers usually occurring on the open tundra, with lighter blue in shadier areas, with contrasting orange anthers at the mouth of the flower. White flowered forms, *P. viscosum* forma *leucanthum*

Williams, have also been recorded from Wyoming, and I have recently acquired seed of a white form of *P. brandegei* which may turn out to be this.

I have grown *P. viscosum* from many different areas, with a further seven packets sown this spring. The best plant I have seen in flower in this country was growing and spreading in a newly created garden in a Cotswold field. Fred Hunt also grows this species well in pots in an alpine house as well as exhibiting it.

Polemonium brandegei Greene is sympatric (growing in the same area as) with *P. viscosum* in Wyoming and Colorado with a few other occurrences in surrounding states. It differs in having a more open racemose inflorescence and yellow corolla.

Weber (1987) reported hybrids of *P. brandegei* x *P. viscosum* in a collection from Trail Ridge Road in the Rocky Mountain National Park where the two parental types and a variable series of intermediate types were found. Unfortunately, I was unable to visit this site on my recent trip there due to lack of time, but it will be top of the list for the next visit. Although this species has twelve entries in the 1999/2000 Plant Finder, the plants available are all forms of *P. pauciflorum*, as is all the seed in the seed lists. I did grow plants from wild collected seed for several years in our previous garden, but lost them all one winter, and have still not been able to replace them.

Polemonium confertum Gray is sympatric with *P. viscosum* in Colorado above 3000 m, but is found on steep screes where the more common species is found on the stable tundra areas. The flowers are more numerous, the inflorescence capitate and globular. The corollas are pale blue, 17-25 mm long and 10-15 mm wide, commonly with more than 20 flowers per head. Although I have seen many plants in Colorado in full flower, there was no seed set, and I lost my only plant after several years, so this is another one I hope to replace.

Polemonium eximeum Greene is found on the highest mountain peaks in the Sierra Nevada, California. Like *P. confertum*, the flowers are in a more congested head, corolla 14-17 mm long, with white or yellow anthers. The plants in the open garden die down completely in the winter, but rapidly put on new growth in February but have not flowered for me yet.

Polemonium chartaceum Mason is endemic to three mountain peaks in California. Plants are 6-15 cm tall in flower, the individual corollas are smaller, 8-10 mm long, and the anthers are white or pale

yellow, exerted beyond the corolla. This species is situated between *P. eximeum* and *P. elegans* and has characteristics of both taxa. I have found it grows better in screes than in troughs, and have seen it flowering well at the Royal Botanic Garden, Edinburgh.

Polemonium pulcherrimum ssp. *pulcherrimum* Hooker is a widespread and variable subspecies found from California north to British Columbia. The plants form spreading mats of foliage with small entire leaflets, and the small 7-12 mm long flowers are carried in open cymes, typically spread out horizontally as opposed to the upright sturdy stems of the above species. The anthers are always white. I have also grown pink and white forms as well as the more typical blue with a yellow throat. Plants are usually in flower in the first year from seed, and sometimes a small quantity of seed is produced. This is one of the easiest to grow and flower well, and I have it in both troughs and the open garden. The specific epithet means prettiest and the flowers are often finely marked with fine purple veining.

Polemonium pulcherrimum ssp. *delicatum* (Rydberg) Brand is found in Colorado and Utah, and northern New Mexico and Arizona. We found it common in Colorado associated with conifers and shrubby willows, where it was often flowering profusely right up to the tree trunks in heavy shade. A more robust form than the previous subspecies at 10-20 cm, it spreads by underground stems where few other plants will grow. This makes it an ideal candidate for growing under evergreen shrubs in the garden, and I have also grown it in a long wooden box that has travelled to shows for many years.

Polemonium elegans Greene is endemic in the Cascade Mountains of Washington. Plants are 7-10 cm tall in flower with small 3-4 mm long leaflets. The inflorescence is subcapitate (forming a one-sided spike rather than a completely round head of flowers) and fan shaped, the corollas funnelform, 12-16 mm long, with a yellow throat and tube.

Polemonium nevadense Wherry is endemic in the Santa Rosa Range, Nevada. Having grown this plant from seed collected by Ron Ratko, I agree with Wherry (1967) who writes that 'on the mistaken basis that the only distinctive feature of this taxon consists of its verticillate leaflets (with the leaflets divided and spread out round the midrib of the leaf), it has been made a synonym of the actually unrelated *P. pulcherrimum*'. It also has the sub-thyrsoid inflorescence, with the flowers held in a tight head, of the *P.*

viscosum group, and yellow anthers, but the smaller flowers of *P. pulcherrimum*, and therefore represents a promising subject for the study of evolution within the group. It is of interest that the widely known *P. caeruleum* also produces a form with divided leaflets, *P. caeruleum* forma *dissectum*. This has been shown to be a recessive character, but some of my plants do come true from seed. Grant (1989) states that an alpine form of *P. pulcherrimum* is the probable ancestor of the *P. viscosum* group, and this plant would seem to provide a link between the two. It would be interesting to try and hybridise these taxa in future.

GROWING THEM IN THE GARDEN.

I have no alpine house, and all my seeds are sown in 7 cm square black pots and put in an open wooden box built to accommodate 17 x 4 of this size. The bottom is lined with black woven fleece and covered by approximately 3 cm of sand. This stands on a concrete path by the garage wall in the back garden, under the outside tap for convenience. The wall is south-east facing and gets sun even in winter until early afternoon. It can be warm enough in February to sit out in this part of the garden to record which seedlings have emerged each morning.

As the seeds germinate, they are pricked out into individual pots, and given temporary accommodation in seed trays before being planted out or sold on Open Days and at lectures. Last autumn as an experiment I planted newly germinated seedlings of *P. viscosum* directly into a scree area, and they have survived the winter well, now starting into new growth. At this stage I have found a dilute feed of tomato fertiliser every week encourages flowering. In addition to the scree areas and troughs, a new project this year was the addition of a 1.2 m diameter raised bed, which requires yet more concrete to be broken up, to provide another home for the ever expanding collection. There are many forms of each species, and I want to grow them all.

VISITING THEM IN THE MOUNTAINS.

In July 1999, my husband and I spent 10 days in Colorado. Our visit was inspired by our friends and fellow SRGC members, Walter and Joan Massingham who had brought me slides of *Polemonium* species found on their visit in 1993. We did a circular tour from Pike's Peak to Mount Evans up and over every mountain pass in

between, where most of the plants were easily seen from the road. At times, the 'road' was only passable with care, and on two occasions my husband informed me there would have to be a change of route. However, we did manage to find, measure and photograph four of the five species we sought. Although the tundra areas are dry, warm and windy in the mornings, afternoon thunderstorms ensured a regular daily watering. The many small 'critters' we saw must also provide abundant fertiliser. We hired a vehicle for our stay, and usually stayed out in the wilderness for several days before returning to civilisation for the necessaries. This first hand experience of the plants' natural habitats has increased my understanding of their requirements, and provided a wealth of wonderful slides for future lectures.

Finally, I must record my thanks to the staff of the library and herbarium of the Royal Botanic Garden, Edinburgh and Newcastle University, who have provided photocopies of much of the literature I have needed to research and write the booklet in the NCCPG series on the genus due to be published this year. Also thanks to Mike and Polly Stone and Fred Hunt who provided slides of *Polemonium* taxa that they have grown.

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This article is the result of correspondence we have had with Dianne where she felt that in "Scottish Rock Gardening in the 20th Century" we had not done the NCCPG justice. We are delighted to have this authoritative account of her work with Polemonium. Ed.

ALPINES IN THE SWISS ALPS

Some alpines in the Swiss Alps and how to grow them

by Kees Jan van Zwiene

Switzerland is well known for its great mountains but perhaps less so for its plants. This short article discusses some of the alpine plants of south-east Wallis (Valais) and the area just east of this. This area is part of the Central chain of the Alps which contains mostly siliceous rock, and was covered by glaciers during the ice ages. Because of this it is not renowned for endemic plants; none the less, there is still a great diversity in plant life.

In this article I will discuss some of the special plants that I have seen during several visits to this area, and give information on the conditions under which these plants grow, which might give clues to their cultivation requirements. Sometimes I will be able to draw on my own experiences with a particular plant in cultivation.

A good place to stay as a base for botanic exploration is the upper part of the Rhone valley. I stayed at a quiet campsite in Ritzingen, a small village, but there are many fine hotels in the area as well. If you have a car it is not far to drive up to the Grimsel, Furka or Nufenen Passes. The Furka Pass is an especially good point to start botanical excursions, with very easy access to high alpine habitats. If you don't have a car it is good to know that the public transport in Switzerland is relatively good, especially the bus service which is run by the Swiss postal service and can be used to reach the passes. For fit people it is also quite possible to reach the true alpine zone hiking, because the valley floor is at approximately 1300 m.

If you descend the east sides of the Furka or Grimsel Pass you will arrive at the beginning of the Susten Pass which provides easy access to an area of botanical interest just east of Wallis.

The plant season can differ from year to year, but generally July is a very good time to visit this part of the Alps. If there is heavy snowfall in winter the season can be delayed; in 1999 for instance there was still quite a lot in flower as late as the first part of August.

THE ALPINE MEADOWS

There is a great difference in meadows, from lush plant growth on deep and moist soil to stony grassland on very thin soil and everything in between. Consequently there are enormous differences in plant life to be found in all these different types.

On the richer soils around the tree line and depending on environmental conditions up to at least 2000 m one can expect to find tall perennials such as the larger gentians. Very common in this part of the Alps are purple flowered *Gentiana purpurea* and *Gentiana punctata* with yellow flowers. Unlike most of the gentians, these plants are completely herbaceous, dying back to the ground in winter. They are hardly seen in cultivation, probably because they take a long time to flower from seed.

A plant much more often seen in cultivation is *Lilium martagon*. This lily occurs in large numbers in the meadows under the Susten Pass and Furka Pass. Sometimes they make impressive clumps of approximately 10 flowering stems which seem to have developed by vegetative increase of the original plant, but many specimens have just a single flowering stem.

The spiniest thistle, *Cirsium spinosissimum* indicates higher levels of nitrogen in the soil. It is often seen in meadows but can also be seen in nutrient-rich disturbed stony places. The flowers and bracts are pale yellow, held in clusters on a plant that can reach half a metre or so in height. Although not of much horticultural merit it adds a lot to the alpine landscape in the wild.

Where plant growth is a bit less luxuriant one can find *Campanula barbata* and *Arnica montana*. They have very similar habitat requirements, and are both very typical of acidic soil conditions. The campanula has beautiful hairy flowers in a one-sided raceme. The flowers can vary from a pure white to a good pale blue but I think the forms in between, especially the washed out blues, are horticulturally inferior. Both make excellent garden plants for a sunny peat-bed or acidic rock garden. The arnica is a reliable perennial; the campanula is a short-lived plant but seeds around on peat blocks.

Another campanula that can be found in more or less similar meadows is *C. thyrsoides* with pale yellow flowers in a dense spike. You can't miss this unusual plant in the meadows under the Furka Pass. Unlike *Campanula barbata*, this is not an indicator of acid soil, but likes a soil richer in bases. In cultivation I have never seen it in the

same quality as in the wild, where the flowering spike stays much more compact. Before all these plants are in flower *Pulsatilla alpina* ssp. *apiifolia* with yellow flowers and the blue flowered *Gentiana kochiana* provide interest earlier in the season.

Higher on the mountains, or on more exposed sites at lower altitude, the plants are shorter and better adapted to more extreme conditions. On the dry slopes the grass thins out and more stones are visible. Such places are usually inhabited by drought-tolerant plants like *Sempervivum arachnoideum* and *Sempervivum montanum* (Fig.102) which store moisture in their succulent leaves. Also seen in such conditions is a very fine dwarf achillea, presumably *A. nana*. It is rarely more than 10 cm high, slowly creeping to form a tight mat. It has very beautiful densely woolly silver-grey leaves, another example of adaptation to dry conditions, preventing excessive evapotranspiration. The flowers are white, as in most achillea species.

In the moister meadows, fed by melt water and covered by snow for a long time, *Soldanella pusilla* can be found in very large numbers. *Gentiana bavarica* (Fig.105) and quite a few species of the semi-parasitic genus *Pedicularis* can also be found on meadows with long snow cover, but less wet than the typical soldanella habitat. The gentian is a close relative of the spring gentian (*Gentiana verna*), but can be distinguished by its leaves which are usually more rounded and yellowish green, and overlap along the stem. It is also characterised by the absence of true leaf rosettes. Near the summit of the Susten Pass *Primula integrifolia* grows in large numbers under similar conditions. You need to be earlier in the season than I have ever been there to enjoy the pink flowers on this small primula. I think the second half of June would be a good time.

SCREES AND MORAINES

For the real alpine plant enthusiast these habitats will surely prove to be the most fruitful habitats in this part of Switzerland. The total number of species is certainly less than in the alpine meadows, but many of the plants that do grow here belong to the most special of the alpine treasures. *Ranunculus glacialis* is characteristic of places where the snow stays for a long time, and where the ground is moist or wet during their short growing season. In the wild it is one of the most beautiful alpine ranunculus species. The flowers open pure white but after pollination the petals can change to red shades. *Geum reptans* is



Fig. 111 *Primula deuteranana* (p.324) Peter Wallington

Fig. 112 *Primula obliqua* (p.324) Peter Wallington





Fig. 113 *Roscoeae auriculata* (p.322)
Heather Salzen



Fig. 114 *Roscoeae humeana* (p.322)
Heather Salzen

Fig. 115 *Roscoeae alpina* (p.323)
Heather Salzen



Fig. 116 *Roscoeae scillifolia* (p.323)
Heather Salzen





Fig. 117 *Roscoea cauleoides* (p.321) Heather Salzen



Fig. 118 *Euphorbia wallichii* (p.324) Peter Wallington

Fig. 119 Wallington camped amongst *Primula calderiana* (p.326) Peter Wallington



another wonderful plant from such a habitat and is, like the ranunculus, rarely if ever grown to the same standard as in the wild. It has large yellow flowers on 15 cm stems and, after flowering, develops interesting pulsatilla-like fruits. It colonises the moraines by strawberry-like stolons.

Saxifraga oppositifolia enjoys more or less similar situations. This one is surely my favourite among the Porphyrion saxifrages, and as usual with this species there is an amazing range of variation in petal shape and colour. I prefer the darker coloured forms. Its close relative *Saxifraga biflora* is not rare in this part of the alps. It seems to be more restricted to moister sites than *S. oppositifolia* and is also more restricted to high alpine terrain. *S. biflora* is also quite variable in flower colour, which can be pure red to dull purple. The true red colour seems to be unique among European Porphyrion saxifrages, I have never seen true red in *S. oppositifolia* or any other Porphyrion species. Although the specific epithet *biflora* suggests two flowers on a stem this can in fact vary from one to nine, but 2- or 3-flowered shoots do indeed seem to be most frequent. This difficult and rarely cultivated plant has much narrower petals than *S. oppositifolia*, and much softer and fleshy leaves. These soft leaves are probably a cause for its susceptibility to greenfly in cultivation. Seed is sometimes offered in the exchanges and this unique saxifrage certainly deserves some effort in growing it. Among large mixed populations of these two Porphyrion saxifrages from the subsection *Oppositifoliae* there is a fairly good chance of finding their hybrid *S. x kochii*. This is also rarely grown and is supposed to be characterized by its wider petals than *S. biflora*. Unfortunately I have not been able to trace its original description, but it seems to be very likely that this hybrid can vary a great deal with such variable parents. I have found a few plants that seem to represent this hybrid.

Androsace alpina (Fig. 106) is a true jewel and can be found in pure white as well as pink flowering forms. I have never been successful in growing it longer than a few weeks as slugs, snails and woodlice seem to be just as fond of this plant as I am. This androsace is one of the many species that show how environmental differences can influence certain morphological characteristics because under very harsh conditions it makes a cushion, whereas more usually it is mat forming. The plants described so far are all more common on moraines than on

drier screes, *Saxifraga biflora* and *Ranunculus glacialis* are even restricted to moist locations with meltwater in the ground.

The drier screes have their own typical plants. The campanulas are especially well represented in such places, and there are two that I would like to mention here. The first is *Campanula scheuchzeri*, (Fig. 107) which is very common on screes and in short stony meadows. It has large dark blue nodding solitary flowers on 10-15 cm. stems. The leaves are all more or less linear. The second campanula is the so-called perforate bellflower, *C. excisa* (Fig. 108). This is a much rarer plant, more or less endemic in Wallis. The flowers are much narrower than in the previous species; they are solitary on 10-15 cm stems. They have a unique feature in that the lobes are narrowed at the mouth which gives the flowers a perforated look. It is a very elegant species, that I found colonising the gravelly debris along a stream on the north-facing slopes above the village of Ritzingen.

ROCK FACES

In this part of Switzerland the flora on rock faces is certainly poor compared with many European limestone regions. Besides calcifuge *Auriculastrum primulas* and a *phyteuma* species there is one plant in particular that is of much interest for the alpine gardener; this is *Saxifraga cotyledon* (Fig. 109) which can be found on both sides of the Susten Pass and on the northern side of the Grimsel Pass. This saxifrage is one of the largest species of section *Ligulatae* (silver saxifrages). It is typical of non-calcareous rocks which are poor in nutrients. All the plants that I studied grew on vertical rock faces. Usually it forms only a few rosettes. The rosettes can grow to more than 12 cm in diameter, and the inflorescence is very large, sometimes 60 cm long with many hundreds of flowers. The flowers in the populations I studied all had pure white flowers but, as with many other species in section *Ligulatae*, red dots at the base of the petals are sometimes reported. I once found a specimen of this species at the beginning of a tunnel on the Nufenen pass growing completely upside-down.

A well known relative of this saxifrage is *Saxifraga paniculata*. Unlike the previous species it is not restricted to rock faces, but can be seen in meadows, screes and even on moraines. The plants of *S. paniculata* that I studied near the Nufenen and Furka Passes had leaves that were, on close inspection, covered with small hairs on both sides.

This seems to be quite an uncommon phenomenon in this species, or indeed in the whole *Ligulatae* section of the genus.

A brief inspection of the ridge just above the Susten pass revealed a single plant of *Eritrichium nanum*, and some *Saxifraga oppositifolia* on the rocks. The eritrichium, also known as the King of the Alps, is a typical cliff plant; the saxifrage, already discussed, is more usually seen on screes and moraines. Although much poorer in number of species compared with rockfaces in limestone regions, the plants that are found on siliceous rocks can be just as exciting.

DWARF SHRUBS

Two groups of dwarf shrubs are very frequent in this area: the dwarf willows and the ericaceous plants. The creeping willows can cover large surfaces above some 2400 m where there is a long snow cover. The best species for small alpine gardens, and one of the easiest to identify, is *Salix reticulata*. This is a mat-forming plant with very beautiful venation in the leaves. I understand that this desirable plant grows wild in Scotland as well, where it acted as a parent to the excellent Scottish natural hybrid *S. x boydii*. *Salix reticulata* is quite common as are some other creeping willows, but I have not been able to sort them all out.

Of the ericaceous plants that can be found in this area only *Loiseleuria procumbens* is really suitable for cultivating in small alpine gardens. Due to the lack of snow cover in its windswept habitat it experiences and survives extreme climatic circumstances. In fact it is said to withstand frost to -30°C or even -60°C . It is sometimes cultivated but has a reputation of being difficult to flower in captivity. Wild collected seed is always offered in the major seed exchanges and my one-year old seedlings seem to be in good condition at the moment.

Of the other ericaceous subjects found in this area *Rhododendron ferrugineum* can't be omitted here. It grows most prominently where the fir and larch trees are struggling for survival and above the timberline. Higher still, on exposed mountain slopes, one can find *Vaccinium uliginosum* and extremely short specimens of *Empetrum hermaphroditum*. It would be interesting to find out to what extent such dwarf empetrum remains small in cultivation.

The upper part of the Rhone Valley is relatively unspoilt by tourism and development. Let us hope it will remain well preserved for a very long time.

ROSCOEIA

by Heather Salzen

The genus *Roscoea* has interested me since moving into a new garden some years ago I dug up a bunch of small white tubers. After replanting them I had to wait until early June the following year for the emergence of a stem with long green leaves enclosing salmon-pink bracts from which pale yellow hooded flowers quickly emerged. This was *Roscoea cautleoides* (Fig.117) (see note about spelling of the specific name at end of the article). I was intrigued by the orchid-like flowers of this plant which had survived a cold wet winter in north-east Scotland. Within a few years this plant had expanded into a large clump.

Roscoea (named after William Roscoe of Liverpool 1753-1831) is a hardy genus of the mainly tropical family Zingiberaceae, the "gingers". About 17 species are recognized, of which only about seven or eight are at present in cultivation. In the wild they occur along the Himalaya from Kashmir in the west through Nepal, Sikkim and Bhutan and into south-west China (Yunnan and Sichuan) in the east. This is a region of wet summers and cold dry winters. In spite of our generally wet and not very cold winters with little continuous snow cover *Roscoea* species are of generally easy cultivation in cool moist garden conditions. Propagation is simple by separation of the tubers and by seed which is not easy to find as the ovary is often hidden in a tube formed by the bracts and the sheathing leaf bases.

BOTANICAL STRUCTURE

The stem bears leaves in two ranks and prominent, often coloured, bracts. The long-tubed flowers show extreme zygomorphy (symmetry through one plane only) being highly adapted to pollination by long-tongued insects. A tubular membraneous calyx arises above the ovary and surrounds the long perianth tube which separates into an upper hooded petal, two narrower lateral petals and a large lower lip which bends downwards and is usually divided at the tip. Two small petal-like staminodes (sterile stamens) are attached to the base of the lip and one fertile stamen which has two small appendages on the filament, to the upper petal. An insect

landing on the lip and probing the flower tube touches these appendages; pressure on them brings the anther (and the stigma which projects beyond it) down upon the insect's back. The flower is protandrous i.e. the stamen is ripe before the ovary.

THE SPECIES

Figs 113 to 117 illustrate five of the six *Roscoea* species I have grown in Aberdeen.

R. cautleoides (like *Cautleya*, a closely-related genus). Fig. 117.

Native to SW China, on grassy slopes up to 3,500 m. The most commonly-grown species in cultivation and one of the earliest to flower while the leaves are still poorly developed. The six or seven quite large flowers can vary in size; the lip can be 2.3 to 4 cm long. The form usually seen in cultivation has pale soft yellow flowers which contrast well with the salmon-pink bracts. White and purple forms occur in the wild. The form sold as *R. beesiana* has the upper petal yellow and the lip striped purple.

R. auriculata (from the auriculate leaf bases). Fig. 113

Native to Nepal, Sikkim and Tibet, in open woods and meadows. This is a robust leafy plant up to 40 cm tall with the leaves well-developed at flowering time and prominently eared (auriculate) at the base of the blade where it begins to sheath the stem. The flowers, which appear in late summer, are large with a hooded pointed upper petal and a striking broad lip which can be up to 5 cm long and only slightly bilobed at the apex. The flowers are purple in my garden form but can be white or bi-coloured in the wild.

R. purpurea (*R. procera*)

Himalaya from 1500 to 3000 m. Another robust large-flowered species, rather similar to *R. auriculata* but the leaves are not conspicuously eared where the blade meets the stem and the flower lip is not so sharply deflexed. The few flowers are closer together in a terminal spike at the end of a leafy stem.

R. humeana (after David Hume, a gardener at the Royal Botanic Garden, Edinburgh, who was killed in the First World War). Fig. 114
Native to SW China, on grassy slopes up to 3,800 m. A distinctive early-flowering species with large purple and lilac flowers which

open before the heart-shaped leaves are fully developed. Yellow and white forms occur in the wild. The broad frilled lip is bilobed for more than half its length. After flowering the stem elongates up to 60cm. in height.

R. alpina. Fig. 115.

From Kashmir to Bhutan on rocky slopes from 2,500-4,000 m. This is a small plant only 10-20 cm high with two to four narrow leaves and few flowers which vary in colour from purple to lilac, pink and white. The long, narrow perianth tube which carries the flower lobes well above the bracts and calyx is a diagnostic feature. The small upper lobe is rounded, the lateral petals are reflexed and the bilobed lip is 1.5-2 cm long. A rare species in cultivation. The easy *R. scillifolia* is often incorrectly named *R. alpina* in gardens

Fig. 115 illustrates the *R. alpina* which I have grown from Indian seed.

R. scillifolia. Native to Yunnan in SW China. Fig. 116

Another small species, slenderer than *R. alpina*, with two narrow pointed leaves which are well-developed at flowering time. The stalk bears green bracts below the small flowers. The flower tube is short and the lobes rather narrow and pointed. This species is of easy cultivation and will seed around. The plants illustrated with pink flowers actually flowered in their first year from seed.

The illustrations are from paintings by Heather Salzen.

[There is some confusion about the spelling of *cautleoides*. Since it is named after the closely related genus *Cautleya* one would suppose *cautleyoides* to be the correct spelling.

Several authorities including The Plantfinder, the AGS Encyclopedia of Alpines and Rix and Phillips in 'The Bulb Book' spell it *cautleyoides* but the RHS Dictionary, The European Garden Flora and Professor Stearn in his 'Dictionary of Plant Names for Gardeners' have it as *cautleoides*. The account in The European Garden Flora (1984) is written by E. J. Cowley who also wrote "A revision of the genus *Roscoea*" in the Kew Bulletin in 1982 and it is his spelling we have used here. Ed.]

PLANT HUNTING IN THE LUMBASUMBA HIMAL, EAST NEPAL

A tribute to the late Peter Wallington

by Chris Chadwell

Peter Wallington's passion for the eastern districts of Nepal became apparent to those members of the Sino-Himalayan Plant Association fortunate enough to hear him lecture during a meeting held at the Threave School of Gardening, Kirkcudbrightshire in 1993. I was in the audience that day and can vouch that the photographs of scenery and of the locals were of a very high standard indeed. Peter was building up a selection of plant slides with a view to compiling a presentation specifically aimed at rock garden society audiences. These included *Primula deuteronana* (Fig. 111), *P. obliqua* (Fig. 112) and *Euphorbia wallichii* (Fig. 118).

It must be admitted that Peter was not an alpine specialist, trees being very much his first love. The "East Himalayan Silver Fir" (*Abies densa*) took pride of place. He considered this the most beautiful of all silver firs — no other has a comparable silvery tinge to the lower surface of its leaves. They are especially picturesque on ridges in the Arun Valley where monsoon storms often shape ancient groves into classic "Song Chinese Landscape" trees. A collection of cones was made at some 4000 m in the Upper Milke Dara (Danda) thanks to an agile young porter turned tree climber. The seeds germinated well and a highly ornamental specimen is to be found in the garden of the family home — an idyllic rock cottage in Wales.

During his travels he reached the upper limits of flowering plants where the true "high alpiners" are to be found, regularly slogging his way up to between 4800-5200 m. These elevations, mind you, were reached, not on well-worn tracks leading to familiar passes but through boulders, over scree and across snow fields, an altogether more demanding task. He was always accompanied by his Nepalese friend, Pemba, who acted as a porter and guide. Peter often brought

along a travelling companion from the UK, usually a doctor. Impressive stamina was frequently exhibited, as anyone who has scrambled about above 4000 m will surely testify. However, on occasion, practicalities were found wanting, such as early one evening when his small team finally reached a spot which would have constituted the highest elevation he had ever camped at, only to find that while they boasted a giant glass flagon full of the local whisky, no drinking water had been carried up. A descent of nearly 2000 metres was required to find some.

His explorations for seed took place in late autumn, the peak period for gathering tree seed, which he could readily identify to genus or even species. The situation at higher altitudes was a different matter altogether since the vegetation consisted largely of a shrivelled mass of stems, leaves or seed capsules which had mostly dispersed their contents. He honestly admitted that he could hardly recognise a thing. Being able to identify species reliably when in the fruiting stage is considerably more difficult than is widely imagined.

In 1993 he mounted a formal seed gathering expedition to the foothills of the Lumbasumba Himalaya, covering the Milke Dara and Jaljala Himal. His introductions from that expedition include:

Meconopsis sp. ? *paniculata* (Wall 10) — from 4100 m on the lower slopes of the Upper Milke Dara with yellow or sometimes white flowers. All parts of the plant, which can grow to 1.8 m, are covered with long bristly golden hairs.

Rheum nobile (Wall 11) — from 4150 m on Jaljala Himal. This plant was once mistaken by British troops in the Sikkim-Tibet borderlands over 100 years ago for advancing Tibetan soldiers in the snow. Several plants were shot to death before the mistake became apparent. This very distinctive plant which can grow to over 1.2 m tall is truly alpine and I imagine would be very difficult to cultivate. As far as I know nobody has managed to grow it yet. The pH of the soil was acid but not “super-ericaceous”

Arisaema intermedium ssp. *biflagellatum* (WALL 13) — from Tinjure Dara at 2700 m. Highly impressive fruiting body. Two plants, boasting trifoliate leaves, have been raised at Hergesy Croft gardens but have not reached flowering size.

Lilium nepalense (Wall 15). — from Phulchoki Mountain, Kathmandu Valley.

Peter's familiarity with eastern Nepal dates back to the early 1970s when he worked for the Britain-Nepal Medical Trust as a TB vaccinator. He was educated at Shrewsbury School and completed a degree in archaeology. Then a short spell as an entomologist before several visits to Nepal during the 1990s when he expressed concern about the threat to the ecological integrity of the Upper Arun Valley. Had he lived, I am sure his voice championing the cause of conservation in Nepal would have been heard more widely.

I consider it fitting to end this brief acknowledgement of Peter Wallington's contribution to our understanding of Nepalese plants by quoting his description of the GIANT HIMALAYAN NETTLE (*Girardiana diversifolia*). Not a subject for a rockery in terms of dimensions (up to three metres) many a plant enthusiast visiting the Eastern Himalaya for the first time soon 'locates' this species and learns not to venture too enthusiastically into the undergrowth.

Collection No. (Wall 8). At 2700 m on the wet side of Milke Dara around abandoned Goths' (herders) huts. This plant first stung me in September 1972. I have been wary of it ever since. It will penetrate thick denim jeans like a hot knife through butter. If you have very young children, do not grow this plant; it will give you a very severe sting. It is a vegetable Rottweiler. The young leaves are edible. Leaf form is quite variable. I find it a dramatic looking plant. If you have a problem with burglars, they would require total body armour to penetrate a thicket of these plants.

Given such ample descriptive skills it is pity that he never completed, before his untimely death in 1996 aged only 39, the article about Himalayan travels I was encouraging him to write for the SRGC. Peter was perhaps never destined to become a 'leading figure' but he cared about things that really matter and the world is always a poorer place without such individuals. Let us instead remember him positively, camped beside a slope covered in *Primula calderiana* ssp. *strumosa* (Fig.119), no doubt peering down to a grove of his beloved East Himalayan Silver Firs.

Those members wishing to hear more about Peter's travels in Nepal and view for themselves his fine slides, can look out for a series of Wallington Memorial Lectures which Chris Chadwell will be giving to various horticultural societies around the UK or contact Chris on 01753 542823

BOOK REVIEW

Silver Saxifrages

by Beryl Bland

Published by AGS Publications 2000

Price £17.50 ISBN 0 900048 69 7

Until now there has been no specialist monograph on these glorious plants. Beryl Bland should be congratulated for *Silver Saxifrages*. She has put enormous care and attention in to these plants over the last decade, building up a National Collection, and now making available the results of her enthusiasm. The new RHS trial is a tribute to Beryl.

Every species, wild hybrid and cultivar is described and discussed - the chapter on cultivars is of immense value in bringing together notes on (by my count) 168 cultivars. These 55 pages are the heart of the book - it is possible to find other accounts of the species in particular but in tracing cultivars and matching plants to references, with an understanding based on growing the plants, Beryl Bland has done us an immense service. Identification is dealt with authoritatively and confusions, whether current or historical, are usually cleared up effectively.

A chapter on morphology, valuably illustrated, concentrates on things that matter to the subject in hand, and a final chapter on cultivation summarises various approaches very effectively and provides lists of recommendations both for the beginner and the more experienced enthusiast. From such a source these are to be taken seriously indeed - the only problem will be getting hold of the more obscure cultivars - perhaps a nursery list might help, although *The Plant Finder* may come to the rescue.

The one area of serious difficulty I have had with using the book is in relation to the diagnostic codes which have immense potential but which are not intuitive in construction and are very complex. The explanations for these codes (and for the multi-access key unfortunately tucked away in an appendix) can be found on p.17 but the codes are too complex to memorise - I shall be photocopying p.17 as a bookmark.

This is a handsome volume with high production standards liberally illustrated with black-and-white drawings by John Howes and the late Duncan Lowe and by over 50 colour photographs. The illustrations are never less than competent, and the best are excellent. Such lack of attention is untypical although the reproduction is in some cases a bit thin. The selection of photographs might be criticised.

In the best sense this is the work of an amateur. It has idiosyncracies; it results from enormous and painstaking study; it is a work of love. Anyone interested in these plants will be delighted to have this invaluable reference and it will provide a new impetus to those who have neglected these plants in recent years.

MM

PINK CELMISIA

by Jean Wyllie

Last year we had two visits from friends from New Zealand. Joan and Ian Whillams came to the UK to visit their youngest son, Mark, who was on a GAP scheme tutoring in computer skills and coaching sports at Hurstpierpoint School in the south of England. It was good to see them again and talk turned to when we would go back to NZ. Then in October, Steve Newall and his father came. Steve was the Travelling Speaker for the SRGC and stayed with us for two nights. Again the subject of our next visits came up. My husband, Jim, is not a 'rocker' but he was very enthusiastic as Steve's dad, Bruce, promised to take him fishing.

We got in touch with Ian and Joan again and fixed the dates which covered the Study Weekend in Christchurch. My day was made; things could not get much better. Kit Grey-Wilson and Ron Mcbeath were to be the main speakers and I would have time to meet up with people I had met at the Interim Conference in 1996. More trips to the mountains were planned and after the Weekend, Joan and I arranged to meet up with the other Brits and Ann and Joe Cartman in Central Otago. Fate seemed to be against us. It snowed and did not melt. Joan pointed out that it was hopeless to go just to sit around waiting for better weather so why not go north? She rang friends who have a farm in the Marlborough region who confirmed that there was no snow and would we like to stay with them?

We spent a day driving up north from Ruapuna (Mid-Canterbury) to David and Robyn's farm. We stopped to watch dolphins in the sea at Oaro and enjoyed seeing the baby seals playing in the rock pools just north of Kaikoura. Lots of ripe seed of *Pachystegia insignis* was noted on the plants growing on the cliffs as we drove past.

We had two wonderful days looking at plants in the Marlborough mountains with David. The weather was not ideal, being very cloudy and cold but at least it was not snowing. We were heading back to Joan's car for lunch, very cold and hungry, with David and Joan well ahead of me. I could not take my eyes off the plants even although I

had no energy left. They were back at the car when I spotted 'IT' at my feet surrounded by a carpet of its white friends (aren't all New Zealand celmisias white?) - - -a PINK CELMISIA (Fig. 110).

I sank to my knees - - -what else would you do? I took some photographs, crossed my fingers that they would turn out OK, noted where the plant was and joined the others for lunch. When we felt warmer we returned to my find, taking more photographs and discussing what to call it. The only answer was *Celmisia sessiliflora* 'Awadale' after David's farm. He has lived in this area all his life and has an extensive knowledge of the region and its plants.

Celmisia sessiliflora is a common plant on these mountains, forming dense silver-leaved mats with sessile flowers. It mostly grows on cool well drained south facing sites which contain plenty of humus not getting much full sun but it will try other areas.

'Awadale' is a lovely raspberry pink in the bud with the flowers opening pink in the centre grading to just pink at the edge. The colour fades as it matures but never goes completely. *Celmisia spectabilis* also grows in the area and occasionally hybridises with *C. sessiliflora* so if our new discovery stays pink at a lower level and in different soil it will be interesting to see if crosses can be made and how they turn out.

A pink *C. sessiliflora* has not to our knowledge been recorded before. Other species in the genus have been found pink in the bud or fading to pink but they have not performed at lower levels or even in other years. Joan will have to return to check out our find. Why don't I go also?

The disappointment of not going south to Central Otago was well compensated for by making this find. The mountains will be there even if the pink celmisia is only to be seen occasionally.

BOOK REVIEWS

The Genus Galanthus

by Aaron P. Davis

(Illustrations by Christabel King)

Timber Press in association with the Royal Botanic Gardens, Kew 1999

300 pages. 56 colour plates.

£32 ISBN 0 88192 431 8

This is the first full monograph of the snowdrop genus since 1956. It incorporates a new classification for *Galanthus* and describes fully all 18 species and 120 of the most notable of the 500 named cultivars. It will obviously be an essential book for botanists interested in bulbs but also for gardeners who want to identify the snowdrops in their own garden and also how to grow them.

To most non-galanthophiles, all snowdrops look more or less alike but this book explains clearly the essential morphological differences between the species. The identification key for the species is comprehensive although a shade too difficult for the ordinary gardener who will be confused at the differences between appanative or explicative vernation even though there is a good glossary.

However, the excellent detailed paintings by Christabel King and the beautifully reproduced colour photographs by a variety of people go a long way to making up for the complexity of the key. They are meticulously presented and ideal for gardeners wanting to identify a species in bloom. The identification of cultivars is more difficult and, without illustrations, it is difficult to decide on correct names but at least it points one in the right direction.

PC

Penstemons

by Robert Nold

Published by Timber Press 1999

260 pages. 55 colour photographs including 12 paintings

£25.50 ISBN 0 88192 429 6

Fashions come and go in gardening as in everything else. Without a doubt, penstemons are becoming the 'in thing' to grow.

This is a vast genus of around 270 species, all North American (a definition which can be extended south to Guatemala), and ranging from tall shrubs to dwarf cushions. They grow in diverse habitats from deserts to moist shade. More than 100 species are now available in the trade. The author of the book, Robert Nold, actually grows 200 of the species in his own garden so is well equipped to produce a book on the genus.

The lack of an identification key is a drawback because of the large number of species and the, often, slight differences between them. However, there is still no good monograph for the genus so producing a key would be extremely difficult. As the author points out, identifying species in the wild is fairly easy as they tend to have distinct distributions but in the garden this is less easy, especially as bought plants are often wrongly named.

The excellent illustrations will help the gardener to identify unknown plants. The species descriptions do include a number of technical terms but the glossary at the end of the book is of value in this respect.

AM

THE SCOTTISH ROCK GARDEN CLUB
MILLENNIUM CONFERENCE – YEAR 2000
Friday 27 October – Sunday 29 October
At The RADISSON SAS AIRTH CASTLE HOTEL
and COUNTRY CLUB

We return to the 'Braveheart Country' in central Scotland for this our special millennium conference. Airth Castle Hotel sits on the south bank of the Firth of Forth beside the Kincardine Bridge. Situated between Stirling and Falkirk it is less than 35 miles from Edinburgh, Glasgow and Perth. Here in Stirlingshire the Highlands and Lowlands meet. North over the water are the Ochil Hills and to the West are the Trossachs, Ben Ledi and Ben Lomond. The Wallace monument stands silhouetted on the Abbey Craig just a few miles upstream at Stirling. Many of Scotland's most popular visitor attractions are close by, including:- Stirling Castle, Bannockburn, Linlithgow Palace, The Forth Bridges, Deep Sea World, Culross, Dunfermline Abbey and the Royal Botanic Garden in Edinburgh. There are modern shopping centres in Stirling and Falkirk. Lists of attractions and hotel and B&B accommodation will be sent on request. (SAE please).

Airth Castle is 0.5 miles west of the roundabout where the M876 joins the A876 and the A905. The M876 has junctions with the M80 and M90. Follow motorway signs for 'Kincardine Bridge'. The closest Railway station is Larbert but Stirling and Falkirk stations are also quite close.

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

As usual there will be a PLANT AUCTION and 50:50 PLANT SALE. If possible please support these by donating some of your own plants. Please also support the PLANT SHOW and THE HOLIDAY PHOTOGRAPHIC COMPETITION, especially this year as the weekend is later than usual. Details are in the Year Book. If you have lost your copy ask for a show schedule when you book.

Please use the booking form enclosed with the Secretary's Page.

Members should have their bookings made before 8 October 2000.

Applications for bookings together with the appropriate remittance should be sent to

The Registration Secretary,

Mrs. Liz Mills, Upper Kinnedar House, Saline, Fife, KY12 9TR

Members wanting further information should

write to Liz at the above address.

**THE 2000 SRGC DISCUSSION WEEKEND PROGRAMME
FRIDAY 27 OCTOBER**

- 16.00 REGISTRATION
19.45 PRESIDENT'S WELCOMING ADDRESS
20.00 THE BULB GROUP LECTURE
- **JANIS RUKSANS**
- **Crocus from the Wild and Breeding Possibilities**
22.00 SMALL BULB EXCHANGE AND BULB SALE
- Donors to the bulb exchange will have priority for the first 10 minutes

SATURDAY 28 OCTOBER

- 08.30 REGISTRATION
08.30 - 09.45 SHOW EXHIBITORS SETTING UP TIME
10.00 **JIM SUTHERLAND**
- **The Altai**
12.00 SHOW OPENS
14.00 THE HAROLD ESSLEMONT LECTURE
BRIAM MATHEW
- **Erythroniums**
15.30 **DAVID MARDON**
- **Ben Lawers and its plants**
1930 Dinner
Guests: Dr Alf Evans and Captain Peter Erskine
22.00 PLANT AUCTION

SUNDAY 29 OCTOBER

- 08.30 REGISTRATION
09.30 THE WILLIAM BUCHANAN LECTURE
- **JANIS RUKSANS**
- **Growing Bulbs in a Northern Climate**
11.15 **HENRY AND MARGARET TAYLOR**
- **Andalucia —Early Spring Bulbs**
14.30 THE JOHN DUFF SCOTTISH LECTURE
- **RON MCBEATH**
- **Growing Choice Alpines**

The 7th International Rock Garden Plant Conference

28 June to 2 July 2001

Heriot-Watt University Edinburgh

The 7th International Rock Garden Plant Conference will be held at the Edinburgh Conference Centre, Heriot-Watt University, Edinburgh from 28 June to 2 July 2001. The venue and the timing of the Conference will give delegates the opportunity to see the attractions of Edinburgh in the early summer, the Royal Botanic Garden and gardens further afield, as well as the chance to go on alpine plant tours to Scottish gardens or the European mountains before or after the Conference, when they are at their best.

This prestigious, major international ten-yearly Conference has only been to Scotland once before, and you are assured of a warm welcome. The Conference is being organised jointly and hosted by The Scottish Rock Garden Club and The Alpine Garden Society.

The Conference's formal programme extends from Thursday evening 28 June to Monday afternoon 2 July; more than four days of lectures and workshops, with the best speakers from around the world. The main speakers are Ron McBeath on Chinese plants, Baldessare Mineo on Siskyou Nursery and the American north-west, Verna Pratt on Alaskan alpines, Peter Erskine on the Southern Andes, Kenneth Cox on rhododendrons and alpines in Tibet, Finn Haugli on Asian alpines in Norway, Harry Jans on innovation in growing alpines, Robert Rolfe on new introductions, Rannveig Wallis on Mediterranean monocots, Ian Young on bulb growing, Chris Grey-Wilson on Greek and Balkan bulbs, Joe Cartman on growing and Steve Newall on finding New Zealand alpines, and Panayoti Kelaidis on South African introductions.

There will also be contributions from Graham Nicholls, David Rankin, Jimmy Persson, Dave King Alan Furness, David Mowle, Sandy Leven, Zdenek Zvolanek and John Richards, either speaking on their special subjects, or presenting one of six workshops on Meconopsis, gesneriads, cushions, troughs, crevice gardens and primulas. There will also be question times on bulbs and southern hemisphere plants, and time to enjoy the Show, art exhibition, photographic displays, poster presentations and plant and book sales, or just to have a chat with conference delegates from around the world.

The Royal Botanic Garden (RBGE) is an essential part of any alpine conference in Edinburgh. We have arranged a special Friday evening visit and reception at the RBGE, hosted by the Regius Keeper, and including

guided tours with the staff to the main areas of interest, including those not generally open to the public.

Conference Proceedings will be published, edited by Chris Brickell and Chris Grey-Wilson, and will be provided free to all delegates.

The James Watt Centre on the Riccarton Campus of Heriot-Watt University, just to the west of Edinburgh, close to the ring road and ten minutes from the airport, is the venue for the conference. The Conference auditorium and exhibition area form a self contained venue and all accommodation is in en-suite study rooms on the campus itself. Riccarton campus is set in landscaped grounds developed from gardens dating back to the early nineteenth century, well worth a walk in a spare moment.

Around the time of the Conference there will be botanical and garden tours, organised on our behalf by AGS Expeditions Ltd. Before the Conference there will be tours around Scotland, and the Spanish Pyrenees, and after the Conference to the Bernese Oberland in Switzerland and the Dolomite Mountains in Italy. Informal arrangements will also be made for visits to private gardens in central and southern Scotland and northern England, both before and after the Conference.

Full details of the Conference will be available after **1 August 2000**. These will contain a conference programme, details of the accommodation available, and outline information for prospective plant exhibitors, artists, photographers, trade stands and those interested in the alpine plant tours.

Please write for details to :

Mr Peter Bland, Bookings Manager Alpines 2001, Inglewood, Inglewhite Road, Goosnargh, Preston, England, PR3 2ED.

or

e-mail your name and full postal address to
alpines2001.conference@care4free.net

Information on the Alpines 2001 Conference will also be posted on the web pages of The Scottish Rock Garden Club: <http://www.srgc.org.uk> and The Alpine Garden Society: <http://www.alpinegardensociety.org>

We are looking forward to a superb Conference, and we hope to see you there, so write or e-mail now for the full details, which will be sent to you after 1 August.

SHOW REPORTS

Northumberland - 1 April

It can not often be that an exhibitor has to be persuaded by friends to show the Forrest Medal exhibit but this was the case with Mr B. Graham who had on display a large specimen of *Kelseya uniflora* in excellent flower. Also considered for the Forrest was *Draba mollissima* shown by Mr G.P.Mawson. Mr. I.Kidman won the R.B.Cooke Plate for the most points in the Open Section. In addition to several pans of *Dionysia* he presented a large pan of *Primula magellanica* in prime condition, an excellent cushion of *Haastia pulvinaris*, *Raoulia grandiflora* in flower, and several *Androsace* of which his *A. vandellii* (grown in 33% leafmould and 66% grit) was outstanding. The Sandhoe Trophy for the best plant in a pan 19 cm or less was won by Mr.D.L.Newsme with *Rhodothamnus chamaecistus*. The E.G.Watson Trophy caused discussion among the exhibitors with show secretary Mr.A.Newton being victorious with *Androsace bryomorpha*. Finally in Section I, Mr.T Anderson won both AGS Medals in the large and small six pan classes with plants such as *Primula* 'Wharfedale Village'.

Entries in both Sections II and III were down on expectations. The winner of the Gordon Harrison Cup and the SRGC Medal for most points in Section II was Mr.A.C.Hamblin, the Cyril Barnes Trophy for the most points in Section III were Mr.& Mrs.T.& L. Garnick whose *Dionysia bryoides* in a three pan class was a credit to their skills. The Northumberland Cup, which is awarded to an exhibitor who has not won a first prize at an SRGC or AGS show was won by Mrs.S.Leighton.

Of the many plants that filled the tables on such a fine day the following were ones that I would have liked to have at home. *Fritillaria bucharica* and *F. bithynica* by Mr.F Hunt, *Larix kaempferi nana*, surely one of the best dwarf conifers, and a sumptuous rich blue flowered *Clematis columbiana* var. *tenuiloba*, grown in a mix of 50% limestone, 50% equal parts JI 2 and leaf mould, both by Mr.I.L. Betteridge. Other desirable plants were a large pan of *Sebaea thomasii* by Mrs.H.Kidman, *Androsace mucronifolia* by Mr.D. Peace, *Soldanella austriaca* by Mr.R.Fairbairn, who questions the validity of the name but which is an extremely fine plant none the less, *Cyclamen repandum* spp. *peloponnesiacum* by Mrs.P.A.Turtle and finally *Dionysia microphylla* GW/H 1302 by the dionysia expert Mr.E.G.Watson.

George Young

Stirling - 8 April

Margaret and Ian Young, to no one's surprise, had most points in Section I and consequently received the Carnegie Dunfermline trophy. The Ben Ledi Trophy for the best European plant in the show, *Ranunculus montanus* 'Molten Gold', and the Institute of Quarrying Quaich for the best non-European plant, *Androsace muscoidea* 'Schacht's Form', were awarded to Cyril Lafong. This beautiful, unerringly grown androsace was also judged the best plant in the show, winning for Cyril the George Forrest Memorial Medal, his fourth so far. The Spiller Trophy for the best primula went to an intrinsically lovely *Primula rosea* -shown by Anne and Viv Chambers. Certificates of Merit were awarded to Bob Maxwell for *Fritillaria tubiformis* and to Cyril Lafong for both *Alkanna siehana* and *Sebaea thomasi* CDR 992A.

Winner of 'one rock plant new or rare in cultivation; was Cyril Lafong's *Linum aretioides*, a slow growing limestone scree native of Western Turkey. Obtained from Ron McBeath as a tiny plant in 1996 it is now a 5 cm diameter green hummock surmounted by tiny yellow flowers.

Bob Maxwell's prize-winning *Erythronium dens-canis*, a large plant rounded in all parameters, the selected pot in perfect scale, astonishingly had been lifted from where it had been growing unprotected in the open ground. Its handsome, blemish free dark green leaves, dramatically contrasted with the poignantly fragile immaculate flowers. Perhaps this will encourage some newer members to look around their gardens in time for next year's show and become first time exhibitors.

Nick Boss' three bewitching little plants of *Saxifraga cespitosa*, a native of Scotland and rarely seen, won Class 7. Sandy Leven also won with his '2 pans *Narcissus* distinct'; both plants were improbably perfect in flower and leaf, the affable open-faced *rupicola* in teasing counterpoint to the senatorial solemnity of the *bulbocodium*.

In '1 pan Fumariaceae' Cyril Lafong won with a compact *Corydalis solida* which made a strong statement in zingy pink. Eschewing symmetry, Betty Craig's *Rupicapnos africana*, also pink, but here in delicate hue, with its winsome contours, won second prize in this class.

There were many eye-catching plants. Graeme Butler's *Ranunculus ficaria* 'Brazen Hussy', so aptly named, had six slender flowers in glistening yellow attire, disported atop the wickedly dark chocolate leaves. The Bainbridge's *Saxifraga aretioides* was perky and elegant.

In Section II, Angela and Ben Wilson relative newcomers to alpine growing, won the Fife Trophy for most points and a Bronze Medal. Andrew Radley with *Fritillaria lanceolata*, first in Class 71, paid eloquent testimony to the 1995 SRGC Seed List. In the Junior Section, Johanna Leven won Class 90 with *Narcissus* 'Minnow' and Mark Tosh won Class 91 with *Saxifraga griesbachii*.

Lila McIntyre

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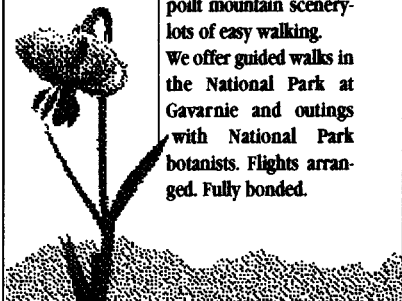
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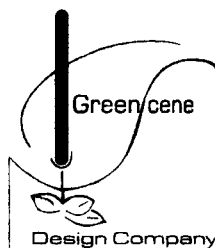
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