THE ROCK GARDEN 151

July 2023

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The Rock Garden

The Journal of the
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July 2023

Number 151

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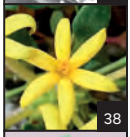

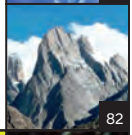

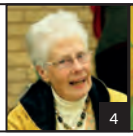

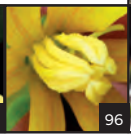

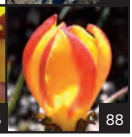

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The Editor welcomes articles, photographs and illustrations on any aspects of alpine and rock garden plants and their cultivation. Authors are encouraged to submit material electronically but articles may also be submitted in manuscript. Digital images are particularly welcome; high quality prints or drawings may also be submitted.

The normal deadlines for contributions are 1st November for the January issue and 1st April for the July issue. These dates also apply for material for the Yearbook and Show Schedules.

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The SRGC Discussion Weekend
Grantown-on-Spey, 13-15 October, 2023

Friday 13th October

14.00 – Registration
16.00 – 17.00 Plant staging
18.00 – Dinner
19.45 – President's welcome
20.00 – Scott Cook: '*Bulbs at the RBGE*'
21.00 – Small bulb exchange

Saturday 14th October

7.00 – 9.00 Breakfast
8.00 – 9.00 Plant staging
9.00 – Optional activities
9.30 – Guided walks in the area, organised by the hotel
12.15 – Lunch
13.45 – The Harold Esslemont Lecture, Adrian Cooper: '*A Plantsman's Garden*'
14.45 – Ian Christie: '*Scottish Natives*'
15.45 – Refreshments
16.15 – Geir Moen: '*Propagation and Cultivation of Alpines*'
18.30 – Drinks reception
19.00 – Gala dinner
20.15 – Presentation of show trophies
20.30 – Plant auction and raffle

Sunday 15th October

7.00 – 9.00 Breakfast
8.00 – Show opens
9.30 – The William Buchanan Lecture, Geir Moen: '*European Treasures*'
10.30 – Tea & coffee
11.00 – Ian Christie: '*Growing Alpines*'
12.15 – Lunch
13.15 – Show closes
13.30 – Scott Cook: '*Alpine Plants at the RBGE and other Gardens*'
14.30 – The John Duff Lecture, Mike Dale: '*A North of Scotland Plant Trail*'
15.30 – Closing address
15.45 – Tea & coffee

We are delighted to once again invite you to our Discussion Weekend. In the four years since our last conference the cost has risen only moderately to £287 per person for the weekend for two persons sharing (see the Secretary's pages in *Dryas* for full price details and an order form). The preceding Thursday or following Sunday nights are both available at £85-50 per person per night for Dinner, Bed & Breakfast. Outside this period the Grant Arms will welcome your company at the normal rate.

Apply to the registration secretary Julia Corden, 13 Butchers Lane, East Dean, West Sussex, PO18 0JF julia.corden@icloud.com The closing date is 31 August 2023, subject to availability. We look forward to seeing you in October 2023.

The SRGC, 90 Years Young

Colin Crosbie

I wonder if the seven who met in Edinburgh's Rutland Bar on the 27th July in 1933 knew that the club they were setting up would still be going (or *growing*) strong 90 years later! Earlier this year, the Royal Caledonian Horticultural Society or, as we affectionately call it, '*The Caley*', asked me to give a lecture covering the story of the SRGC. I decided one of the best sources of information would be to read through the journals of the SRGC.

We are fortunate that this great information archive is available through our website. Over the years, recurring themes have included calls for everyone to recruit new members, encouragement for people to exhibit plants at our shows, editors asking for more articles (still happens today!), discussions about finance, and occasional apologetic increases in annual subscription. All these are still relevant today. However, more interesting were the many articles regarding how our favourite plants can be grown. Over the decades, there have been many discussions on the best potting mixes for growing, and many wonderful mixes are listed in the journals. The SRGC pre-dates John Innes and peat-based composts. Today we deal with a new range of peat-free composts. It is easy to throw our arms in the air as we struggle to get used to growing plants in these new mediums, but our forebears highlighted their adaptability and willingness to experiment with composts and we must follow their example and do the same.

Many of the old articles were short but full of information as members shared their experience of growing a wide range of plants. Articles don't need to be long; just sharing knowledge of successes and failures can help gardeners of all ages and abilities to learn from each other. Indeed, as we look to the future, our social media reach is astonishing when you realise the number of people we communicate with throughout the world.

Our forebears could only use black and white photographs; what would they have thought of our digital images, online zoom lectures, and the ability to ask a question to someone at the other side of the world and get an answer in seconds? It is truly remarkable. The club has always evolved throughout its history and we must continue to adapt and evolve as the world and technology change around us.

Dryas octopetala, our SRGC emblem

After 90 years the SRGC is a club with a world-wide reach. Our passion for plants,

people and gardens is at the heart of everything we do; we will never forget that or those who have gone before us. We have much to be proud of and, as we celebrate our 90th anniversary, let us get ready for the countdown to our centenary. It is only ten years away so we had better start planning; the countdown has begun!

I wish you all good health and happy gardening.

A small party at the RBGE on May 14 marked the occasion of our 90th birthday. Members gathered to celebrate the club's achievements and its intimate links with other societies and institutions such as the RBGE itself, the Alpine Garden Society and the Caley. An "eminence" of past presidents cut the superb cake pictured here.

But we also remembered all those who through geography or circumstance could not attend and chat to each other in person. We therefore have started a small series of articles written by your council members, in which they describe some of their enthusiasms and personal history. This issue starts with an obituary for one of our most influential and formative past council and continues with four present members; we hope to share more in forthcoming issues.

Bette Ivey
1933-2022

Bette Ivey, the Honorary President of the Scottish Rock Garden Club, died on the 4th September 2022. The Club was important to Bette, and Bette was equally important to the Club. Along with so many other great names in the SRGC, Bette took the Club forward, but never forgot the membership with whom she spent so much time, encouraging them, chivvying them into doing things, be it growing or showing their plants, or just helping in many other ways.

Bette and husband Bill first came to be noticed in the SRGC in the early 1970s, when they restarted the Ayrshire Group, and this was just the start of a long relationship. Bette rose through the ranks, developing her growing and showing skills so that by the late 1980s she was a stalwart of the Club, growing, showing, and serving on our Council. Over fifty years ago Bette was involved in supporting the first Northumberland alpine show. Travelling from Dalry with Bill, she exhibited and won the first 'best in show' with a plant of *Cassiope* 'George Taylor', cementing relationships between the SRGC and the Alpine Garden Society through the Northumberland Group. On the back of this co-operation, many lasting friendships were forged.

As Bette grew more able and successful with growing and showing her plants, she was asked to become a judge at SRGC shows, which she did until the end of the 1990s. Her knowledge of growing more difficult plants was always valued during judging and her attention to detail, while also encouraging new exhibitors, was always foremost. She served as an SRGC member of the Royal Horticultural Society's Joint Rock Garden Plant Committee for many years. One small tribute is that she has a snowdrop named for her: 'Wee Bette' will continue to grow in many member's gardens!

In 1992 she was elected our President until 1994. During this time she oversaw the Club's Diamond Jubilee in 1993, welcoming Bill Mackenzie, one of the Club's founder members, to the celebrations at the Discussion Weekend in St Andrews. She visited many groups and lectured throughout

Scotland and beyond. After her presidency, Bette continued to serve on Council and in other ways. She supported and encouraged all of her successor presidents, and chaired the Exploration Fund, which provides younger members with support for trips overseas to explore Alpine regions and their plants. She was a long-serving member of the Fife Group in later years and worked hard to keep the group going against the odds.

Bette was the same age as the Club, which was founded in 1933 in Edinburgh. As we approached our 90th anniversary in 2023, plans were developed to embrace all that Bette brought to the organisation – passion for plants, skills in growing, but most importantly the friendship of belonging to a community that valued all of these elements. It's a great shame that she won't be there to share it with us all in person.

Bette was a good friend to many and forged links with other societies and individuals both at home and overseas through international meetings. Special to her was a close group of friends, known in the early days as the 'Three Degrees', who travelled extensively throughout Europe, visiting Alpine locations annually to boost their knowledge of alpine plants, eat cake and enjoy a wee dram before dinner. The original three – Bette, the late Audrey Leach and Kath Rimmer – even toured the Rocky Mountains. Later the three were joined by Helen Greenwood to become four, and branched out to organise nineteen European trips themselves, masterminded by Bette, often with Brightwater Holidays; these were days of great plants, fun and friendship.

Following the death of Alf Evans in 2001, Bette became our Honorary President, a fitting tribute to a lifetime's involvement. She continued to work for the Club for another twenty years, advising and encouraging right through until the start of the Covid pandemic. Truly, she gave us a lifetime of service; she touched so many people in so many ways, and for that we are all so grateful. She will be missed by us all.

Carole & Ian Bainbridge

Facing: Red Bette at the Club's 75th Birthday Party
She is succeeded as Honorary President by Sandy Leven

Trilliums

Carole Bainbridge

I like growing trilliums and have a modest collection. The various species of *Trillium ovatum*, *T. chloropetalum*, *T. erectum*, *T. grandiflorum*, *T. rugelii*, *T. luteum*, *T. sulcatum* and *T. vaseyii* all grow and flower well in our Galloway garden in south-west Scotland. We have a moist and normally mild climate with about 1300 mm rainfall and temperatures of -5 C° to +22 C°, conditions which most of these species enjoy. I grow smaller trilliums such as *T. nivale* and *T. pusillum* in pots in a sheltered frame.

In 2009 and 2010 I started a project to raise and select several colour forms of *Trillium erectum* from seed that was derived from a yellow clone purchased many years ago at a club plant sale. A decade or more later, we now have deep red, apricot, cream with red edge, and various other colour forms, all growing and flowering in the garden.

In our Edinburgh garden we grew a few of the short or dwarf forms that always clumped up well and were consistently shorter than my standard garden *Trillium erectum*. I lifted them and brought them with us to our new garden in Galloway where they have continued to thrive. Most attractive is a dwarf maroon plant, which throws the odd seedling that comes true. Also very attractive is a cream-flowered form with an almost black ovary providing a strikingly good contrast. These are the only two dwarf forms I grow; the rest are about 30 to 50 cm tall and normally flower a bit later than the dwarf forms.

Trillium erectum normally flowers for us in May but *T. chloropetalum* comes into flower at the tail end of March. soon followed by *T. albidum*, *T. ovatum* and *T. grandiflorum* through April and into May. In this way the trilliums provide us with continuous garden colour, interest and form as spring develops.

Carole is a present member of council. She and her husband Ian are both ex-presidents of the club. With strong practical and academic interests in plants, gardens and conservation of all sorts they have been greatly influential in shaping club growth and activities for many years.

My Favourite Rock Plant!

Sandy Leven
SRGC Honorary President

Heather moorland
(Photo: Courtesy of the Moorland Association)

I have many favourite plants and my choice at any one time probably depends on the season. Nature allows me to be fickle. A favourite plant is not like a favourite dog. You can't easily change your pet but one's favourites in the plant world can alter with the passage of time and circumstances. Dogs are long-lived compared to many plants so your commitment to each other is so much stronger. Plants are more easily replaced. My choice of favourite is not based on rarity or monetary value.

Anyone visiting my garden and alpine house would deduce that either *Cyclamen* or any one of several bulb species was my favourite. I have a decent collection of both. Most of my cyclamen flower in the autumn (*C. hederifolium* and *C. graecum*) and my bulbs in spring (*Galanthus*, *Scilla*, *Narcissus*, *Crocus*). I once had a collection of *Fritillaria*. All of these are summer dormant. However they take most of the summer to sort, clean, spilt and repot. This requires a lot of lifting and shifting. After a while this becomes a wee bit tedious not to say exhausting. Added to which I can't lift heavy things nowadays. My collection of *Primula allionii* was killed twelve years ago when the roof of my aluminium alpine house collapsed under the weight of wet snow, covering all the plants in ice, snow and shards of glass. Many of my plants were killed that winter. I think Nature was trying to tell me something.

My favourite plant is one that needs far less attention and that looks good all year round. One that evokes happy thoughts and memories whether seen growing in a garden or in the wild. It has attractive flowers and foliage in a range of colours, and few pests and diseases. Once established it needs minimum attention apart from an annual haircut. My choice is *heather*. Not just one heather but almost all of the several species and hundreds of varieties available.

I have lived my whole life close to heather. However, right at the start of this article, I may be on a dodgy wicket. When I consulted books by the recognised experts of old I discovered that heathers may not really be rock plants. Reginald Farrer in his classic book *My Rock Garden* includes neither *Calluna* nor *Erica*. Did he decide that they are not rock garden plants? Samson Clay also omits them. Royton Heath mentions in his tome *Collectors Alpines* that "a few *Calluna* are useful for decoration in the alpine house ". He doesn't mention *Erica*. The SRGC's own publication *Scottish Rock Gardening in the 20th Century* mentions only *Calluna vulgaris* 'Kinlochruel'. However, my hero, Alf Evans, in his book *The Peat Garden* lists three *Calluna* and fifteen *Erica* species. He was much fonder of rhododendrons, gentians, lilies and primulas.

Early Days

I grew up in Falkland in Fife and have lived for 45 years in Dunblane. The slopes of Falkland Hill (the East Lomond) and West Hill (the West Lomond) are clad in heather. On the southern slopes of the East Lomond there was a fabled clump of white heather. 'Fabled'?

– because many people talked about it but none admitted to having seen it. Any time I asked where it grew, I got the curt reply "*over there*", accompanied by a hand pointing to a large expanse of moorland. I have to confess that I have not seen a plant of white heather growing wild.

Sheriffmuir in the Ochil Hills near Dunblane has huge areas of heather moorland as well as increasing areas of commercial forestry. Before moving to Dunblane I lived and worked in Inverness for several years in the early 1970s. Consequently, I travelled north and south along the A9 trunk road. For much of its route it cuts through heather-rich country. When the Dalwhinnie bypass was being built in the early 1970s much of the land along the new route was disturbed and the natural vegetation was killed. Replacement plants for the destroyed heathers were needed. I understand that many of the new heathers were imported from Denmark as there were insufficient Scottish plants available. Today it is possible to buy bottles of Danish heather whisky but you would be more likely to buy the Dalwhinnie.

In mid to late summer when the heather blooms, the moors are exceptionally beautiful. This is the season for painting Scottish views or snapping pictures for calendars, post cards and shortbread tins. Heather and other ericaceous plants define some of most memorable Scottish landscapes. Whether it covers several acres of grouse moor or when it is an old woody plant growing over rocks by a burn, under Scots pines or on a stony cliff, these images of heather say 'Scottish'. Thistles may be the emblem of Scotland but they need a background of heather to set them off … purple and blue thistles supported by purple heather.

I have admired heathers in France, Scandinavia, Italy and Spain. Every time, they remind me of home. To paraphrase Andy Stewart, "*Although these heather hills are not highland hills, nor the island hills, they're not my land's hills and fair as these foreign heather hills may be, they are not the hills of home.*" BUT – they remind me of home. Heather grows on hillsides all over Scotland from the borders to Caithness. It also thrives in England and much of Northern Europe. It prefers slopes where it cannot become waterlogged. Bog myrtle (*Myrica gale*) claims these wetter places. I have always wrongly assumed that Myrtle was related to heather but I have just learned that it is more closely related to Birch and Alder. The most common species of heather in Britain is *Calluna vulgaris* (ling) and all the others are species of *Erica*.

When we moved to Dunblane in 1976 our ground was a patch of red clay mud with layers of sandstone. Where to start making our garden? I followed the standard advice. "*First dig it all over; add farmyard manure; plant potatoes*". The potatoes grew well enough but did not keep because they were afflicted by potato blight. Anne would not eat our cabbages because they were nibbled

by caterpillars. The best thing that resulted from the digging was that I dug up enough flat sandstones to build our dry stone walls and raised beds. Later, my own supply was supplemented by trailer loads of stone delivered by Jim, our nearest farmer.

These disappointing results with food crops helped me to decide that we should have a decorative garden and not a vegetable one. My first book on Alpines was Alan Bloom's *Alpines for your Garden*. The Blooms also promoted design themes with herbaceous perennials in island beds set in lawns. At that time Alan's son, Adrian – also of Bressingham gardens, was suggesting a new form of gardening using dwarf or slow-growing conifers and heathers. I was inspired by his writing and pictures in magazines. I sent for his illustrated catalogue. His vision influenced the design of many gardens besides ours.

As I wrote above, Alan advocated using conifers and heathers. For ease of maintenance the ground should first be covered in black polythene and the plants planted in holes cut in the polythene. A layer of gravel or chippings was then spread all over to hide the black polythene. Rocks, boulders, tree logs or stumps could be placed amongst the planting to enhance the aesthetics. So far so good! All is well for several years.

I quickly learned the difference between slow-growing and dwarf. We had chosen several different spreading junipers, which eventually needed regular trimming. When one of these needed to be removed the black polythene became a ***** (veritable) nuisance. The conifer roots grew under the polythene as they were supposed to do. However – and no one tells you this – they simultaneously grew on top of the polythene, rejoicing in the humus rich compost formed by years of dropped juniper needles. Now we had a polythene sandwich. Digging out the junipers was very hard work. If I were to build a new heather and conifer bed I would use neither the polythene nor the gravel. I would top dress the area between the shrubs and heathers with composted bark. Rough bark on paths and fine grade close to the plants. Our former editor, Alastair McKelvie, who lived in Aberdeen, introduced me to the idea of using bark in the garden in the 1980's. I remember driving home from the saw mill in Banchory with six or seven big bags of bark in the back. In those days it was cheap because the sawmills considered it as waste. Then it became popular and now it is increasingly expensive.

St Kilda and Mr R J Brien

When I worked in Inverness I attended the meetings of the SRGC Highland Group. Local convenor Jim Sutherland ran the vibrant and enthusiastic group. One of the most memorable speakers was R J Brien (Jim Sutherland introduced him as Bob) of Perthshire Heather Farm, Pitcairngreen. He gave an inspiring account of the heathers on St Kilda, the remote island archipelago in the Atlantic, off the west coast of Scotland. For several summers he worked as a volunteer for the National Trust for Scotland, owners of the islands, restoring paths and

stonework on the islands. Naturally he recounted the history of the islands and how on the 29 August 1930 the remaining 36 islanders were evacuated to the mainland at their own request. St Kilda is a world heritage site. It is also part of MoD Hebrides Range, with Hirta, the main island in the remote archipelago, providing deep range tracking during exercises such as US-led NATO training. During the past decade old military buildings have been demolished and have been replaced by modern ones designed to blend sensitively into the landscape.

The long summer evenings allowed Bob time to botanise on the islands. He immediately saw that the island heathers were lower growing and more compact than those on the mainland. He reasoned that this was caused by exposure to the extreme weather and gales and by the lack of shelter. The sea cliffs at Conachair on St Kilda are the highest in the UK. They reach 426 metres. Natural selection has resulted in a population of very compact plants. Nothing between them and America!

Bob raised several clones of these St Kilda *Calluna vulgaris* from collected cuttings. Around 1980 he, along with the NTS, exhibited his St Kilda heathers at the Chelsea Flower Show. Dressed as he was in kilt and tweeds and accompanied by pipers he caused a quite a sensation. Folk liked the heathers as well.

I wondered what had happened to the St Kilda heathers, so I Googled them and found a priceless asset for heatherophiles. The web site, *Heather World* (www.heatherworld.org) set up by the Heather Society is a fabulous resource for identifying heathers. It lists and illustrates hundreds of cultivars. Unfortunately the Society closed in April 2021, leaving a big gap in the horticultural world. Thankfully, the *Heather World* website continues for the foreseeable future with the aim of making old and new cultivar descriptions available. It is a great source of heather growing information and news. I looked for some St Kilda entries. I am grateful for those that illustrate this article.

The first I found was a white-flowered one named *Calluna vulgaris* 'Alex Warwick'. It was "*... registered by Mr Brien in 1967; introduced in 1971 by The National Trust for Scotland, one of several clones collected from St Kilda. It is named after the founder of the St Kilda Club. Under the collection number K60, a white flowered plant*". Heatherworld reports that it is offered for sale in California.

I found a couple named after islands in the St Kilda archipelago. One, 'Soay' is described as having "*mauve flowers, reddish brown foliage in winter, turning brown-green with pink-red tips in spring.*" Another 'Boreray', as '*White flowers, mid-green foliage; shoots turning down at ends.*"

On the website *Backyard Gardener* I found *C. vulgaris* 'Hirta', named for the main island in St Kilda. It is very fully described as, "*a very low-growing cultivar with bronze foliage and mid-pink flowers. A densely branched, mat-forming evergreen ground cover with long clusters abundant, showy white or pink urn-shaped flowers into fall.*

Calluna 'Robert Chapman' (David Brown, www.heatherworld.org)

Rich green summer foliage turns bronze-green in winter. Ideal for rock gardens or along walkways. The only true Scotch heather." A warning is then attached, "*Beware: dogs seem to favour Scotch heather as much as fire hydrants*".

In 1993 one of the most powerful storms in recorded history (the Braer Storm) hit St Kilda, bringing 120 mph winds in its wake, along with blizzards, high seas, thunder and lightning. Scientists say that the extreme weather event was so strong it killed off much of this Scottish island's entire growth of heather for the year. It was also responsible for the destruction of the tanker *MV Braer* on rocks in the Shetland Isles. A project to study St Kilda's rare Soay sheep on the island has found that the amount of heather on the island declined remarkably after the 1993 storm. It too blamed the storm's severe winds, which carried salt from the sea on to the land, poisoning the heather and thus killing off much of that year's growth. Similar dieback from road salt may sometimes be seen along the verges of the A9 road. That salt kills heather had evaded me, but I realise that in Scotland it doesn't really grow at the seaside.

Our Garden

When we needed heathers to plant among the slow-growing Bressingham conifers, Anne and I visited Bob Brien at his nursery, *Perthshire Heather Farm*, more recently known as *Pitcairn Alpines*, owned by Bob's granddaughter Susan.

Erica carnea (Robert Flogaus-Faust, CC BY 4.0 <https://creativecommons.org/licenses/by/4.0>, via Wikimedia Commons)

He took time to guide us around and recommended several varieties. We chose those with different coloured foliage as well as flower colour. At the time *Calluna* 'Robert Chapman' and *C.* 'Blazeaway' were favourites, as well as *Erica carnea* 'Springwood White'. Forty years later the last is still going strong, growing out of a dry-stone retaining wall. At a Perth SRGC show, I exhibited *Calluna* 'Silver Knight', which has downy silver-grey leaves and lavender flowers, and was delighted when Bob stopped to talk to me about it. There are innumerable varieties of *Calluna vulgaris* to choose from. My advice if you want to grow these is to visit your local heather nursery, have a look round and make your choice from the plants which do best there. Plant them in in a humus-rich acid compost, water them in and make sure they do not dry out in the months following planting. Once established they don't need much else, just a trim.

Last autumn I visited Harlow Carr gardens where The Royal Horticultural Society has discovered the value of heathers in its expanded winter garden. One bed there is planted with *C. vulgaris* 'Zoe'. This variety has the reddest winter foliage I have ever seen. In summer it turns orange-yellow. I looked it up and discovered a new registered series of heathers, *Gardengirls*. The web site states "*Our Gardengirls® set the standards for premium assortments of various heather species. One of those species is the group of winter-hardy bud-bloomers.*

Calluna 'Robert Chapman' (David Brown, www.heatherworld.org)

This special group of our native heather (Calluna vulgaris) has specific characteristics. The plants do not have flowers opening. Instead, the buds remain closed to guarantee an exceptionally long period of colour. The numerous buds and colourful foliage come in bright shining colours. The late varieties of the bud-blooming heather keep their colour and magic appeal well into winter". I intend to buy some.

With careful attention and gentle pruning, *Calluna* make good trough plants. I planted some in our Ian Young style polystyrene troughs. Heather seedlings still occasionally pop up in some of them. Because the seedlings tend to differ I assume they are derived from my early plants.

Our most vigorous heather is a pink-flowered form of *Erica vagans*, the Cornish or wandering heath. It spreads and roots as it goes along; it could be described as rampant. It grows quickly and if not kept in place will cover surrounding plants. Be careful where you plant it. Beside a path or on a wall are good places. To keep mine in shape I prune it hard each winter after flowering. Although fewer varieties of *E. vagans* are listed, there are forms with white, pink and purple flowers as well as some with golden foliage. My neighbour's plant is now a bush a metre or more high and more across.

Our tallest heather is *Erica arborea* (a tree heather) that Ron MacBeath gave us over thirty years ago. It has purple flowers and stands over a metre tall and similar across. Every spring it flowers under our west-facing living room window. As *Erica arborea* is native to the warmer climes of the Mediterranean and North Africa I planted it close to the house, beside our *Embothrium coccineum* from Chile. I try to make it grow against the house but it wants to grow away from the wall, where it has formed an upright purple column. It too gets a good trim after flowering.

Unnatural

While we enthuse over our beautiful purple moorlands and hill sides we need to remember that the overall appearance is not that which Nature intended. It is a cultivated landscape. For many years, probably since the Victorian era, owners and gamekeepers on shooting estates have burnt heather in a controlled way to ensure an annual supply of young heather shoots for grouse to nibble. This has led to the elimination of plants other than heathers but the result is rolling acres of purple. If you look closely at a wild

population you will find that plants vary, most obviously in the shade of their flowers. How many shades of pink and purple can you imagine? You will also notice that some are fully in flower while others lag behind. There may be only one genus *Calluna* but it contains a seemingly infinite number of varieties. For over a century observant walkers and gardeners have selected forms with different foliage colour as well as for flower colour. Today, many hybridisers are working at helping Nature to produce better forms.

Most of our moorland heathers are *Calluna vulgaris*. Interspersed are patches of *Erica*. *E. cinerea* (commonly known as bell heather) grows on drier places while *E. tetralix* (cross-leaved heath) favours wetter places like peat bogs. Throughout, especially on drier moors and in Scots pine forests you will find blaeberries (*Vaccinium myrtillus*). All grow near Dunblane on Sheriffmuir. In early summer *Trientalis europea* flowers in grassy spots in short grass along the paths and often pops up in a clump of blaeberry or heather. Later in the year tall pinky-purple foxgloves (*Digitalis grandiflora*) and the blue powder-puffs of devil's bit scabious (*Succisa pratensis*) catch your eye. It is always a delight to find a white flowered foxglove or a pink scabious! Then is the time to seek and collect blaeberries. Interestingly I have a low-growing form of *Succinia pratensis* growing in our garden. I bought the original plant forty years ago from Jack Drake's Nursery at Inschriach. Jack himself was a regular speaker to the Highland group.

Lucky White Heather

The biggest thrill in the world of wild heather is finding a plant with white flowers. These have been considered "lucky" for a long time. Is this due to its rarity? Was it because it flowers near the summer solstice and was sacred to Druids? Queen Victoria, who loved everything Scottish, popularised the belief that white heather is lucky and spread the idea throughout her realm. For that reason sprigs of white heather are often included in bridal bouquets. There are several clones of white heather. Fred Hunt, the late master of SRGC flower shows, always sought out the best forms of rock garden plants. He chose *Calluna vulgaris* 'Kinlochruel" as being the best white heather. His own plant was awarded a Forrest medal at one of our shows. It is a magnificent clone with long spikes of pure large white flowers.

Calluna 'Kinlochruel' (David Brown, www.heatherworld.org)

Heathers in Perth's Rodney Gardens
(Photo: Courtesy of Flickr D168629K)

Perth Heather Garden

Heathers look good planted singly amongst conifers, in groups in their own areas where small bulbs can be planted amongst them. Stirling golf club used a line of different heathers to separate the first tee from the public path. Some public gardens use heathers instead of annual bedding. In central Scotland one of the best public displays is in Perth where their unique heather collection is planted in Riverside Park, adjacent to Rodney Gardens and the Rodney Fitness Centre, off Dundee Road. The garden is part of Perth sculpture trail and sits beside the River Tay. Its beds are carefully designed and the different coloured heathers are used for maximum effect. Several mature birches and a wonderful golden weeping willow dominate the centre grass area. The modern sculptures add to the overall interest. Entry to the garden is free but there is a small car parking charge. It is a great place to eat your sandwiches before strolling out along the riverbank. Although it is beautiful all year round, in late winter patches of brilliant *Erica* x *darleyensis* bring their kaleidoscope of colour to the garden, contrasting with the silver River Tay and grey winter skies. However, when the sun shines the bright hues bring pure joy to everyone. Joseph himself would delight in the colour combinations carefully contrived by Perth's heather connoisseurs.

Erica carnea* and *Erica* x *darleyensis

Horticulturally the winter flowering *Erica carnea* is very useful. The species is native to mountainous areas of north Italy as well as countries of the Eastern Adriatic, where it grows in coniferous woodlands or stony slopes. Unlike most others it tolerates alkaline soils. It flowers for long periods over winter and early spring. We have grown *Erica carnea* 'Springwood White' for many years. In Stirling the planting on the raised roundabout in Causewayhead is the responsibility of the local council. They have used *E. carnea* and dwarf pines in island beds surrounded by gravel, providing a beautiful welcome to the city.

Erica carnea has passed on its tolerance of alkaline conditions to its hybrid with the Irish heath (*Erica erigena*), *Erica* x *darleyensis*. The original was found in a nursery in Darley Dale in Derbyshire in the late 1800's. I have not grown any of the *E.* x *darleyensis* plants but know that it has

lately been the subject of deliberate breeding programmes. Many superb clones are available. It is reputed to be a good ground cover plant and very good at smothering weeds. There are certainly few weeds to be found in the Perth garden.

South African Heathers

I have not touched upon the heathers of South Africa, where over 500 grow. Their diversity in form and flower colours has to be seen to be believed. It's just a pity that they are not hardy in our northern gardens. This lack of hardiness did not diminish my joy while walking amongst them at the top of Table Mountain. The flowers are not restricted to purple, pink or white, for they also have reds and yellows. Despite having different shaped flowers they are all instantly recognisable as heathers. Francis Mason must have been in his element trying to sort out the myriad of species.

As you can tell, heathers and I interact regularly. I find fascinating the variation that occurs within just a couple of genera. Many are very similar but closer examination shows that they may flower at different times, have longer or shorter flower stems or are best suited to different parts of the country. They may be compact like the St Kilda forms or lax like those on the Lomonds. The fact that so many people have collected wild forms in the past or that nurserymen are still hybridising and selecting new clones tells me that I am not alone in my enthusiasm.

Uses of Heather

Heather has also had practical uses. It was used in the Scottish Highlands to thatch house roofs and to make brooms. It was also used for bedding – which sounds pretty uncomfortable. When the flowers and tips are boiled they make a yellow die used in tweed making. Everyone loves heather honey. If you don't want to spread it you can mix it with water and ferment it to make mead. In medicine its historical use has been advocated in 'curing' many illnesses, mostly related to abdominal problems. But there is insufficient evidence to show that the proposed remedies are effective in any way.

Since the 1960s distinctive Scottish jewellery has been made with coloured compressed heather stems. *Heather Gems*, now in Pitlochry, produce unique rings, pendants, bangles, ear rings and even pens. Each is different depending on the colour of the stems used. Their highly polished surfaces turn them into true jewels. Appropriately the founder, Hugh Kerr, started making them in his workshop in the heart of Glenlivet on Speyside.

In case you think I like all heathers I confess that I despise those plants that are artificially coloured red, blue, green or yellow. Nature and nurture provide us with enough beautiful varieties that I have no need of these fake travesties. As our garden has matured, so have the plants. We grow fewer heathers than once we did; rhododendrons take up much more room. They flower mainly from spring to mid-summer. Some flower

very early and are beautiful but these precocious rhododendrons are often frosted. On the contrary, heather flowers are hardy and untouched by frost, the undamaged plants looking good with a dusting of snow.

One last reminiscence. Do you remember in the 1950s and 60s when motorists would break off a branch of heather, stick it in the grill of their car, then drive round proclaiming to others that they had visited the Highlands? You can't do this today but you can take innumerable photos to remind you of our treasured heather-clad hillsides.

After writing this I know I must plant more heathers. Meanwhile I will sing to myself the *Uist Tramping Song*:

Come along, come along, Let us foot it out together,
Come along, come along, be it fair or stormy weather,
With the hills of home before us and the purple of the heather,
Let us sing in happy chorus, come along, come along.

Following the demise of Bette Ivey, our previous Honorary President, Sandy Leven was appointed her successor this year. Here is his written reaction to our president on an unexpected but entirely deserved honour.

Dear Colin,

Please convey to Council and my fellow SRGC members my thanks in choosing me as the Honorary President of the Club. As you realised last weekend I was taken completely by surprise and lost for words. It is difficult to express how much this honour means to me. Joining the SRGC was one of the best decisions I ever made. I quickly learned that the more I participated, the more I enjoyed my membership. I have enjoyed each office I have held in the Club. Through the Club I have made innumerable friends throughout the country and overseas. My life has been truly enriched by contact with other horticultural organisations like the AGS, RHS and the Caley. The enthusiasm and encouragement of various members and lecturers guided me to holiday in parts of the world I never would have dreamed of. I have enjoyed sharing my enthusiasm with others.

I hope I can be as successful in my tenure of my new office as Bette Ivey was during hers. I am still not sure what will be required of me but be assured that I will do my best when asked. I marvel at the secrecy involved in keeping me in the dark about the decision as I had no idea what was happening. I look on the Club as my extended family.

Once again, Thank you all
Best wishes
Sandy

From a Favourite Genus

Anton Edwards

Fritillaries delight. I know too little of the detail of the hundred or more species from Europe, North Africa, Asia and western North America but each that I meet captivates with its form, patterns and colours. In our Perthshire garden in Scotland we started with *Fritillaria meleagris*, the snake's head fritillary. In my own naivety I used to count them but as time passed they multiplied beyond count and now grow like weeds wherever they are permitted. And which sane gardener would weed out such delicate beauties? Hardy and trouble-free, they grow in the grass that some might aspire to call a lawn but which is really a spring meadow; they blanket the *Cyclamen* patch under our tall and century-old sycamores; and we have scattered their seed to the four winds in the hope they will colonise the countryside around.

Fritillaria meleagris in white and purple forms under the sycamores

I like colour. It is one of my pleasures in editing this your journal that I can share the enormous kaleidoscopic variety of colours and forms of your plants. My common tastes and primary-school brain are easily stimulated by a bit of gaudy colour, so it seems natural to enthuse about the splashes of red and orange that come from our *F. imperialis*. This species has been cultivated in Britain since the sixteenth century, meriting a mention in *Gerard's Herbal*; he had bulbs from Constantinople

in the names of *Corona imperialis* and *Lilium Byzantinum*. He commented that it flowers in April and smells like a fox; others compare it to skunk; no doubt this explains its noted efficacy in deterring rodents.

F. imperialis is a bulb native to mountainous regions of Turkey, western Iran and on through Iraq into Kashmir. It consequently is associated with dry open places, cliffs, rocky slopes, scrub, scree and grassy areas, all well drained, preferably with humus, and fairly nutrient-rich. Now, Scotland and woody Perthshire may be nutrient and humus rich, but are not the Middle East and are noted neither for their dryness nor their heat. Consequently, some of our friends report losing their bulbs to rot associated with wetness. Nevertheless, like the snake's head species, our Imperials thrive in the shade of the two sycamores that loom over them. Why might this be? We have come to the notion that the sycamores are acting as careful nurses.

Fritillaria imperialis with sycamore boles

In spring when the sycamores are bare there is plenty of light on the emerging shoots. By May the canopy is developing and it keeps the bulbs dry during summer and autumn rains. The ground is dried out by the thirsty trees whose roots underlie the *Fritillaria - Cyclamen - Scilla - Erythronium* patch. Throughout this period, the canopy is many metres clear of the ground so even when it is fully green, the rays of the sun are so inclined in these northern latitudes that they stretch under it

Fritillaria raddeana

Fritillaria imperialis 'Red Beauty'

to illuminate the fritillary leaves and warm the soil. We then leave the gaunt dead stems and seed-heads to the mercy of sun and wind until August when for a short month the ground is bare and may be cleaned of the few relict weeds and detritus before dressing it with three cm of three- or four-year compost, with a hint of bonemeal or blood and bone. Soon afterwards the *Cyclamen hederifolium* start to appear and the fritillaries become a memory till next March when the riot starts again. Fortunately, we have so far seen nothing of the pestilential lily beetle.

Fritillaria imperialis 'Lutea' is slower to spread than *F. imperialis*

Our good fortune has encouraged us to extend the range, so we now enjoy the company of *Fritillaria imperialis* 'Lutea', *F. imperialis* 'Castor', smaller *F. raddeana*, and the memory of *F. imperialis* 'Pollux', who died without trace. "*Win some. Lose some. Lose some more ...*"

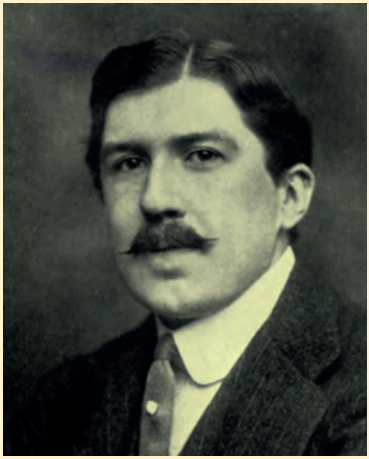
Anton is on the SRGC council as your editor. He retired from oceanography to central Perthshire – as far from the sea as he could – to cultivate a garden together with his wife Margaret. He took on the editorship of this journal with issue 118. Since then he has benefited from and appreciated the patient efforts of the many supportive authors who have generously supplied almost four thousand pages of prose and photos, tolerated his editorial idiosyncrasies, and educated him to the extent that he now even knows a few plant names and has the occasional moment of lucidity in recognising species. On behalf of all members, he is grateful to those who have brought their expertise and knowledge to the horticultural table of *The Rock Garden*!

Winter: the two nurses in the bulb patch

Where Once Bloomed
Primula wattii
Peter Semple

I was about three or four years old in the early fifties in our small garden in North Finchley when I planted a chrysanthemum for which a neighbour, who had lost an arm in WW1, gave me a *Plantoid* pilule, which I accordingly inserted at the base of the plant. In due course a yellow flower appeared and thus my lifelong interest in gardening began.

Later in the fifties we moved back to Scotland and I was assigned a part of the family garden in Dundee; at the bottom, immediately adjacent to the compost heap. This area was edged on one side by tufa blocks, which is an unusual rock for Scotland and probably came from south of the border. The tufa was covered with a form of *Sedum spurium* that had rather dull pink flowers. I laboriously cleared the stone of vegetation and started to build a small rock garden. I was now thirteen. A very early planting was a form of *Primula rosea* bought from Laurie's Nursery in Dundee. It is a common and striking high meadow plant in Kashmir, often flowering during snow melt.


Reginald Farrer

It was probably in the late 1950s that we first visited Jack Drake's Inshriach Nursery during a family holiday in Speyside and I joined the Scottish Rock Garden Club shortly afterwards. At that time Margaret Taylor had me down as the only Junior Member in Tayside – and possibly in Scotland! She remembers delivering my membership card on her bicycle. I sought advice on rock garden construction in the Dundee Reference Library – or the Ref as it was called, situated in the Albert Institute in the centre of the city. The clientèle of the Ref was predominantly elderly men reading the free newspapers and "getting a heat". I duly unearthed a copy of Reginald Farrer's *The English Rock Garden* and suspected I was the first to consult it for some years. Buried in the purple prose I found dogmatic as well as useful advice on placement of stones and the cultivation of alpines. Some of his descriptions of plants, using terms such as *miff* or *mimp*, could be cringeworthy. Much later as Club Librarian I was custodian of several volumes of Farrer's plays. I suspect the plays were never performed, but his enthusiasm for alpine plants was infectious even if his style of writing was not to modern tastes.

It was not long before my interest in alpines spilled over into membership of the AGS and NARGS. Linc Foster was the president of NARGS at the time and I still remember articles about his garden, Millstream, in Connecticut. He raised a lovely hybrid *Hepatica* with dark-blue flowers known as 'Millstream Merlin', although its parentage is uncertain. About the same time there were several articles in alpine journals about *Pyxidanthera barbulata*, a plant of the Diapensaceae native to the pine barrens of New Jersey but perhaps not amenable to cultivation, as I have never heard of it since.

A small area of my garden was given over to low terraces of peat blocks inspired by the Edinburgh Botanics (RBGE) and the writings of Alf Evans. I managed to dig a few blocks from the Moss of Achnacree in Argyll at North Connel, owned by an uncle. One of the plants which


Primula rosea

Hepatica 'Millstream Merlin' (Photo and plant: Alan & Jeannie Thomson)

thrived there for a period was *Primula wattii*, which I had sandwiched between two blocks. It is a very fine Soldanelloid species with characteristic rugose leaves, hairy undersides and lovely bell-shaped blue flowers on farinose stems. It is named after Sir George Watt (1851-1930), a Scottish physician and botanist who collected many Indian plants. The RGBE archives contain twenty-two thousands of his specimens. I purchased *P. wattii* from Jack Drake, who had wonderful catalogues in the 50s and 60s with a great variety of Himalayan primulas under their various sections. Many of the species he listed have been lost to cultivation and there may now be few opportunities for reintroduction.

An interest in alpine plants did not carry much street cred with boys in their teens, but I did manage to visit the Edinburgh Botanics on Sundays, as the gardens were only a short walk from school. The rock garden and scree were of obvious interest but I was also taken with the variety of petiolarid primulas planted between shrubs on the way from the main entrance to Inverleith House. They were protected in winter from rain by panes of glass. *Primula sonchifolia* with farinose resting buds was one that caught my eye on these visits. George Sherriff shipped resting plants by air from India in the late 1940s with the buds protected in bamboo tubes.

Primula wattii
(Photo: Margaret Thorne)

Bhutan, 1949: Betty Sherriff and Wangmoo Takila

I went to an open day at Ascreavie in the company of my parents; my father had attended the Sherriffs as a physician. As a result we were ushered into the house and I remember shaking hands with Major Sherriff. I was impressed by several large watercolours depicting *Meconopsis* in their sitting room and have since learned that the artist was Margaret Stones (1920-2018), who painted from plants in their garden. Meeting the Sherriffs that day now reminds me of the words of a popular song of 1927: "*I've danced with a man who has danced with a girl who has danced with the Prince of Wales*". The only plants I remember seeing at Ascreavie were *Primula kingii*, a member of the Amethystina section with striking red purple bell-shaped pendant flowers. Also in the sixties the SRGC journal had an excellent series of articles entitled *New to my Garden*, by Major General Murray-Lyon, then living at Ardcuil, Pitlochry.

Amongst plants that did well for me in early years was *Ranunculus lyallii*, which once produced a very impressive spike of flowers. The recipe for success was gravelly soil laced with rich garden compost, but since that time I can only report failure. Another *Ranunculus* from the same period was the easy Pyrenean and Spanish endemic *R. amplexicaulis*. I planted these in the 1960s and some were still flowering when my mother died in 1997; the species is long lived and easily grown. Most of my plants came mail order from Jack Drake, but there were also visits to the nursery in the summer holidays. Plants I remember in his alpine house were *Jankaea heldreichii* growing in tufa and a raised bed planted with orange-flowered *Tropaeolum polyphyllum* that made quite an impact. I realise now that the tubers are quite deep so that it is tricky to propagate and not often seen for sale. The catalogues of the time listed several *Cremanthodium* and also species of *Omphalogramma*.

Tropaeolum polyphyllum

In 1964 I moved to St Andrews to study medicine. My first two years of pre-clinical studies were conducted in the Bute Medical Building adjacent to the old Botanic Garden which we walked through to and from lectures. At that time the garden was curated by John Mowat, whose name appeared on the blue cover of the SRGC journal as J L Mowat, editor. His interest in rock plants was evident in the garden, but I never met him.

After moving to Glasgow as a junior doctor in 1970 I resumed growing alpines in our own small back garden, progressing from a rickety cold frame to an alpine house that replaced the garage. The first show at

Gentiana acaulis

Primula kingii (Photo: Anne Chambers)

which I exhibited plants was at the Pollock Halls in Edinburgh. There were some modest successes, including a pan of *Saxifraga retusa* which is like a compact *S. oppositifolia*, a plant I had first seen on Ben Lawers above the dam on Easter visits in the 1950s. The show was covered by *The Scotsman*, which published a picture of my daughter holding a fine specimen of *Epigaea gaultheriodes* (syn. *Orphanidesia gaultherioides*) exhibited by Dennis Graham; it was awarded the Forrest medal. It is a difficult shrub to grow and flower and was formerly named after Theodorus Orphanides, a Greek botanist.

The alpine house allowed me to extend my range of plants. *Dionysia aretioides* 'Paul Furse' was relatively new in Scotland and gained an FCC in Perth. My memories of the Perth show include the late John Duff as he punctiliously rearranged the exhibits. He published formulae for compost to grow alpines in pots and I followed his recipes for a while. Showing in the 1970s was dominated by Harold Esslemont to such an extent that the A O Curle memorial silver salver for three plants grown from seed is inscribed with his name 14 times between 1962 and 1975. After I exhibited a reasonable *Gentiana verna* 'Angulosa' in Aberdeen, Harold invited me for "a bite of lunch" at his home in Queen's Road, where I was entertained by Agnes. Harold himself, immaculate in a tailored suit as ever, showed me round his garden and fine traditional alpine house. His collection of cushion plants and many newly introduced species of *Dionysia* was impressive. I subsequently tried to grow various species of *Dionysia* in Glasgow, small plants collected from Geoff Rollinson in Holmfirth, but I did not have much success in the wet climate of the West of Scotland.

During summer holidays we quite often visited alpine nurseries. I dragged my young family to *The Plantsman* in Dorset, where I remember a fine specimen of *Eritrichium howardii* in Jim Archibald's alpine house. I interrupted Eric Smith as he tried to follow a bird of prey with his binoculars. We also went to Joe Elliott's nursery in Moreton-in-Marsh and saw pans of *Campanula morettiana* and *C. raineri* in flower. A different and eccentric nurseryman of the same period, he had rather poor personal hygiene so we did not linger!

Edraianthus pumilio

Since the 80s I have grown the deciduous *Ranunculus calandrinioides*, which flowers well every year in the alpine house. It is native to the Atlas mountains and for some years I had only a single plant that never set seed ... that is until it was cross pollinated with a form grown by the Carole & Ian Bainbridge. I now get viable seed every year and when sown fresh they germinate freely in the autumn. The plants can be very long lived but are perhaps most attractive in their early years.

I have had some experience of the *Joint Rock Garden Club Committee* in Scotland. The late Mrs Knox Finlay from Keillour could be intimidating and I witnessed her beating her walking stick on the ground to emphasise her proposal of an FCC for *Phylliopsis* x *hillieri* 'Pinocchio'; there was no dissent. Sir George Taylor was in the chair in the early 80s and joint prostheses sometimes made it difficult to get him seated.

In the late seventies we moved about half a mile in Glasgow to a larger house on a corner site. This involved removing the glass from the alpine house and persuading friends to walk the frame through the streets to the new location – an odd spectacle indeed. In the 1980s I subscribed to several

Dactylorhiza purpurella

seed-collecting expeditions including those of Jim Archibald in Turkey and John Watson in South America. For a time my alpine house contained the likes of *Tchihatchewia isatidea*, the odd rosulate viola and a large variety of hardy species of *Calceolaria*. The stinging leaves of various species of *Loasa* could make visits to the glasshouse distinctly hazardous. Around the same time I managed to buy six sandstone troughs from a farm in Gartocharn for about £100. When we finally moved in 2006 to our present house at the wet end of the Forth valley the removal men did heroic work to transport the troughs that had previously been on a patio towards the bottom of a steeply sloping garden. Memorable plants in the troughs over the years have included a large *Gentiana acaulis*, *Linum* 'Gemmell's hybrid', *Saponaria* x *olivana* and *Edrianthus pumilio*. At one time one of the troughs in a shaded site was filled with *Primula reptans*, a west Himalayan species in the Minutissima section with attractive violet to purple flowers. I have also grown *Primula primulina* from the same section with flowers characterised by a tuft of white hairs in the throat, but both species have proved transient in cultivation. *Dactylorhiza purpurella* has become something of a weed in the troughs, but an attractive one in the main except when it appears in the middle of a cushion plant.

We now have a much larger garden and I have enjoyed planting a wide range of shrubs and small trees. The genus *Sorbus* is a favourite and nearly all I have grown have been raised from seed that germinates readily. Hybridisation, polyploidy and apomixis (reproduction without fertilisation) are all features of this complex genus in the wild, so the Sino-Himalayan region has given rise to many named apomictic microspecies. In the alpine house I now concentrate on bulbs. As I write in January 2023 there is a fine pan of *Narcissus romieuxii* ssp. *albidus* raised from seed in full flower. In my opinion it is one of the earliest and best forms of this diminutive *Narcissus*, always guaranteed to brighten a dull winter's day.

Allium beesianum – An Aristocratic Onion

Cyril Lafong

Alliums include many familiar edible plants such as onions, shallots, garlic and leeks as well as beautiful ornamental types suitable for the flower garden, with their attractive flowerheads that come in a wide range of colours – pink, purple, mauve, blue, yellow and white – and with a range of flowerhead sizes ranging from just a few to twenty centimetres in diameter. They also make good cut flowers, with the dried flowerheads providing a long-lasting display.

The majority of *Allium* species are native to the temperate climates of the Northern hemisphere, predominantly in Asia, except for a few species occurring in Chile, Brazil and tropical Africa. Some *Allium* species have a bad reputation owing to their invasive nature. *Allium* species that bear small bulbs in the head or several bulblets at the base of the stems should be planted with caution. Other alliums such as *Allium vineale*, *A. triquetrum*, *A. paradoxum* var. *paradoxum* (*A. paradoxum* var. *normale* is its more ornamental cousin) and *A. carinatum* ssp. *carinatum* (*A. carinatum* ssp. *pulchellum* is an excellent garden plant) are noxious weeds which can take over a garden in a short time. However, there are some well-behaved decorative small species well suited to the rock garden, trough or raised bed.

Allium beesianum is one such exceptionally appealing species, indeed my favourite *Allium*. It was originally collected by George Forrest in 1910 in the Lichiang range of north-west Yunnan in southern China, growing in stony areas from 3000 to 4000 metres, and is named after one of his sponsors, the Bees Nursery of north-west England (now closed). *A. beesianum* has pendular clusters of rich cobalt-blue flowers amongst grass-like leaves. The plant can be grown in full sun in Scotland as long as the soil does not dry out over the summer, as it is not one of the bulbous summer dormant types that enjoy dry, sunny and well-drained mineral soils. In hotter climates it is best grown in a semi-shaded position. This aristocratic onion is unquestionably beautiful but although reported as easy to grow is slow to establish, needing a well-drained but fertile humus-rich soil. It is fickle and in the long term often sulks or dies out in many gardens. The best guard against this happening is to lift, divide and plant it in fresh soil from time to time during the short period of dormancy between November and February. This keeps it in good health. The plant will also set seeds, which is another effective means of increase.

Front cover of this issue 151: *Allium beesianum* in my garden

The coveted true species is not often seen; many impostors are grown under this name, such as *A. cyaneum*, *A. sikkimense*, *A. kansuense* (a variety of *A. sikkimense*) and *A. cyathophorum* var. *farreri*. *A. sikkimense* flowers in July whereas *A. beesianum* is later, late August to September. *A. sikkimense* is also dwarfer at about 15-18 cm tall (*A. beesianum* is 20-25 cm tall) and the finer leaves usually start to die away at flowering time whereas the slightly broader grass-like leaves of *A. beesianum* persist until mid-October. *A. cyaneum* also has grass-like foliage but the blue bell-shaped flowers have protruding stamens, giving it a 'feathery' appearance, whereas *A. beesianum* has pendant bells with the blue stamens barely protruding from the bell, an important distinguishing feature. *A. cyathophorum* var. *farreri* is a fine dwarf species with nodding clusters of deep purple flowers in summer, so the colour alone distinguishes it from *A. beesianum*.

My plant was obtained from Christie's Nursery in 2005 as *Allium beesianum* 'Edrom'. Ian Christie told me he got it from Alex Duguid, who took over from Edith & Molly Logan Hume, the originators of Edrom Nursery in Scotland, and grew this stunning plant in a trough. My own plant initially grew well in humus-rich well-drained soil on a raised bed and was at its best during the period 2011-2016. The plant was never lifted and by 2020 the clump was in decline and had been reduced to just a few bulbs when it was dug up and planted in a different place on the raised bed. It is still alive but has not yet settled down to start clumping up again. The plant is self-fertile and the few seeds I collected in 2020 were sown in November and germinated in March 2021. The first few flowers appeared in 2022 but it will take a few more years for the clump to mature and show its full potential. I do not know how variable the plant is as I have only grown this clone of *A. beesianum* as a compact eye-catching form, perhaps deserving the name *Allium beesianum* 'Edrom'. A search for photos on the internet shows the true plant to be variable with the vast majority being looser, more open and less appealing. I did find a couple of specimens that look similarly compact to the plant I grow but on closer inspection the photos were actually of my own plant. The first one was from Olga Bondareva who visited my garden in August 2014, took a photograph of the plant on 19 August 2014 and posted it* on *Plantarium*, an atlas of species and an illustrated online guide to plants, intended for a wide range of amateur and professional users – botanists, geobotanists and ecologists The second photo was from *Phoenix Perennial and Specialty Plants*, a nursery in Richmond, British Columbia, Canada, in which a selection from Olga's photo was flipped horizontally to illustrate the plant on their website**, When the plant was growing well it set plenty of seeds that I passed on to friends and sent to alpine plant societies seed-exchanges. So – hopefully – plants grown from this superb form are now in cultivation somewhere.

** https://www.plantarium.ru/lang/en/page/image/id/416250.html*
*** https://encyclopedia.phoenixperennials.com/plant.php?plantId=8835*

Oreopolus glacialis (syn. Cruckshanksia glacialis)

Cyril Lafong

Oreopolus is a monotypic genus with *O. glacialis* the only species. *Oreopolus glacialis* is a hardy, cold-loving (*glacialis*) plant native to a wide range of habitats from Neuquén to Tierra del Fuego and adjacent Chile at altitudes ranging from around 3500 m in Central Chile to less than 300 m in Tierra del Fuego. The plant tolerates low temperatures (-15° C or even -20° C) and may be covered by snow for long periods (one to eight months). Flowers on *Oreopolus glacialis* vary from deep to pale yellow, but most are a rich golden yellow. The best forms seem to be from central to southern Argentinian Patagonia. Those further north and in Chile are much looser in growth and have fewer, often paler, flowers. In its native habitats this low-growing perennial grows best in humid conditions at high altitudes and prefers sunny, level areas or slopes facing north.

Cultivation: In the wild, plants forms large clumps covered in short-stemmed bright yellow flowers – a stunning sight – and people who see it in full flower want to grow it (photos abound on the internet). On paper, it is a plant that should be easy, growing in a wide range of habitats from dry sandy steppe to high mountain windy ridges but, although it has been flowered by a few dedicated growers, the experience of several people has been frustrating, with plants being both short-lived and reluctant to flower well. I have flowered *O. glacialis* a couple of times (two different plants) and I describe my experience regarding cultivation below.

First seeds: *Oreopolus glacialis*: roots and plant

First: Seeds from *ChileFlora* (a seed company based in Chile), collected in Chile, sown at the beginning December 2010 and germinated in April 2011. Of the few seedlings that appeared, only one survived. I potted it on in a bigger pot twice. The first image shows the plant out of a 15 cm clay pot with an extensive root system. The plant was potted on into a 20 cm pot when it grew on into a fairly compact plant to fill the pot and flowered for the first time in early June 2015. It had three clusters producing seven flowers of a disappointingly pallid yellow. The plant grew for a further couple of years but did not flower again. It was not such a big loss when it decided to bite the dust.

Second: Seeds collected by a friend in Lago Lolog, a small town north of San Martín de los Andes in Neuquén Province, Argentina, were sown mid-March 2015 and germinated in June the same year after treatment with gibberellic acid (GA3). One was more vigorous but formed as a lax plant, probably due to the effects of GA3. When the plant was four years old,

Second seeds: *Oreopolus glacialis*: roots and plant

I took four cuttings in September 2019 and placed them into a propagator in an unheated but frost-free place. In January 2020, the cuttings still looked healthy and had formed a callus but had still not rooted. They were then taken indoors under artificial lights where they eventually rooted after eight more weeks. I potted the cuttings individually in 9 cm square plastic pots in late February 2020 using a compost consisting of 20% JI No. 3, the rest being made up of grit, coarse perlite, vermiculite and propagating bark (medium coarse). This new plant is more promising, flowering when still small with flowers of a good vibrant yellow. Of the four resulting plants, one was given away to a friend who did not succeed with it and another did not persist for long. A third plant was grown in a mixture of leaf-mould and grit, ratio 1:3, in a 15 cm clay pot and grew for a while before failing; I sometimes use this mixture for sensitive difficult high alpines. The fourth plant was potted on in a 15 cm clay pot in June 2020 and in a 20 cm clay pot in June 2021 using the same compost that cuttings were potted in. In May 2022 it produced 8 clusters with 45 flowers, the best flowering to date. However, in early November, it became clear the plant was not healthy as a few stems had become soft. I managed to take cuttings from healthy stems before the plant died in early December.

Second seeds, fourth plant: *Oreopolus glacialis*

In 2022 I had seeds from Josef Jurasek collected in Chile, Laguna del Laja 1450 m. I am not sure when he collected the seeds but they were in his 2020-21 seedlist. I suspect this would be the inferior form but time will tell. I have some seedlings that were pricked out last year and if I can get two flowering plants at the same time, it might just be possible to get seeds. I have dissected the flowers and the style is quite a long way down the floral tube but the flowers are heterostylous (styles of different lengths). The plant is probably self-sterile and two different clones are needed to obtain seeds following cross pollination.

In summary, a very well drained compost and full exposure to light in an alpine house is essential to grow this plant. During growth, watering and feeding are required but during winter the compost should be kept barely moist. Propagation is essentially by seed sown as soon as possible and kept cool until germination takes place. Gibberellic acid helps with germination but plants tend to etiolate following such treatment. Cuttings will root, probably best in summer under good light but may take many months to do so.

I feel this plant is growable but may not be long-lived in cultivation. We need to grow many plants and select the most vigorous to grow on and perhaps if we can get our own seeds the resulting plants might adapt better to our conditions.

Pulsatilla kostyczewii syn. *Anemone kostyczewii* & *Pulsatilla jarmilae*

Cyril Lafong

Pulsatilla kostyczewii is named after the Polish botanist Jan Kostyczew, who studied the plants of Central Asia in the late 19th century. It was first described and the name validly published by Sergei Ivanovitsch Korshinsky in 1897 (as *Anemone kostyczewii*) but was revised and reclassified as a *Pulsatilla* by Sergei Vasilievich Juzepczuk in 1937. In 2000 Halda published the name *Pulsatilla jarmilae*, which is considered a synonym.

Pulsatilla kostyczewii, also known as Kostyczew's Pasque Flower, is a plant native to Tien Shan and Trans-Altai mountain ranges in Northwest China (Western Xinjiang) and Central Asia (Kyrgyzstan and Tajikistan). It grows in rocky, stony and grassy slopes at altitudes around 2700-2900 m and flowers in May to early July. In spring the area becomes damp but dries out completely in the summer. The plant has unique characteristics different from other *Pulsatilla* species. It resembles an *Anemone* with the bowl-shaped upward-facing flowers and the stoloniferous nature. It is also unusual for a *Pulsatilla* in having purple rather than yellow to orange anthers. There is another species, *Pulsatilla occidentalis* (syn. *Anemone occidentalis*), which is placed between the two genera.

P. kostyczewii is a small plant, typically growing to a height of around 15 cm. The leaves are finely divided with the ultimate segments thin and linear, and the plant produces large, showy purplish-red flowers. It is not a well-known species and is not commonly cultivated. It is considered a rare plant; the main threat to this species is habitat destruction, as the mountainous regions where it is found are being increasingly developed for agriculture and urbanisation. In cultivation, *P. kostyczewii* prefers well-drained, sandy or rocky soils, and full sun to partial shade. It is also

Successful budding of flowers on the second plant

cold hardy and can tolerate temperatures as low as -30°C, Royal Horticultural Society hardiness rating H7. The plant is drought tolerant and does not require frequent watering.

I describe here my cultivation experience of this rare plant, which in flower sets the gardener's heart beating faster. Seeds collected in the Pamir mountains in Kyrgyzstan were sown in December 2016 and germinated in April 2017. The resulting few seedlings were grown in a well-drained loam-based compost, watered and occasionally fed in spring and early summer; only two plants survived. One flowered in 2020, producing one flower on a stem twenty cm tall and two flowers in the succeeding two years. The other plant first flowered (two flowers) in 2021 but after being moved from a 12.5 cm to a 17.5 cm clay pot grew very well


Successful flowering of the second plant

and produced a fine display of 17 flowers on stems up to 18 cm tall in 2022. I tried cross pollination with the other plant both ways but, although looking promising, viable seeds were not set. In late summer the plant goes dormant and is completely deciduous; watering is withheld until growth reappears in spring. In May 2022 the plant was shown at the Joint Rock Plant Garden Committee at the Glasgow show when it was recommended for a Preliminary Commendation, an award given to a new plant of promise.

Propagation is essentially by seeds – ideally sown fresh but stored seeds sown in autumn will germinate in spring. Root cuttings can be attempted in winter. Since the plant is stoloniferous it is possible to gently tease the plant apart and divide it so each piece has some good roots attached. The best time to do this is in spring just when the plant starts into growth in March.

This little-known plant has not been in cultivation until recently when seeds were offered by Czech collectors. However, it has not proved easy to cultivate and there is limited report of success. A few people have flowered it in pots, usually with only two or three flowers, but Ken Curtis in North America grew it outside in the garden. In 2019 he showed a photo of the plant with thirty flowers that was judged the first* among four entries in the AGS online show in class 58: Pulsatilla.

*http://shows.alpinegardensociety.net/competitions/online-show/2019/Pulsatilla/1770#top

Promising, beautiful, but unviable seed heads after cross pollination

The summer is likely to be dry in this part of North America but I do not know how the plant is now faring. It is undoubtedly not growable outside in our Scottish climate as it comes from a place with an annual climate that does not naturally occur in our Central European latitudes.

Nothing to see: grim reality of deciduous over-wintering in the alpine house

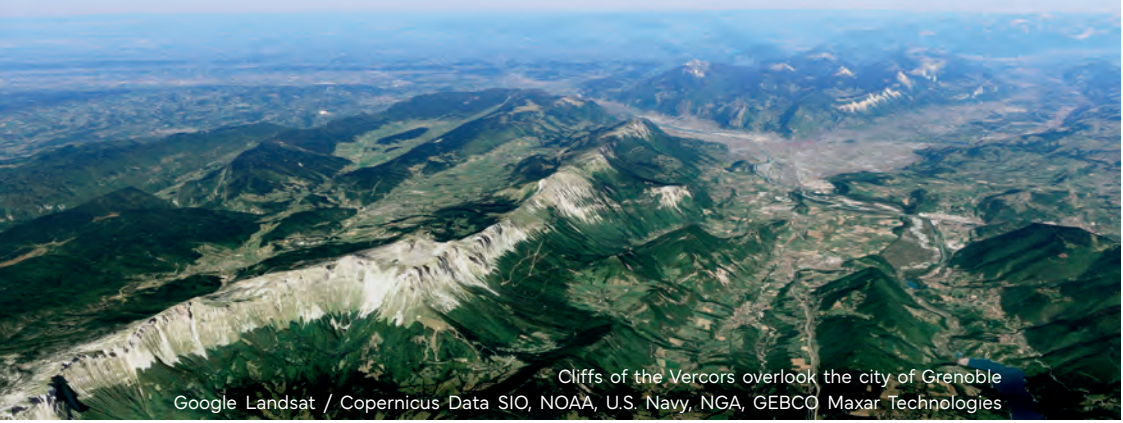
Around the Vercors

Michael J B Almond*

The Vercors massif, with its sheer walls thousands of feet tall, dominates the plain of the Rhône and Isère rivers like some vast, monolithic cathedral. From every direction those immense, gaunt ramparts form a high, often endless horizon. For long stretches they are bare white, sometimes furrowed into semi-pillars, sometimes darkened by scrub or trees thrust out from the rock face, sometimes enfolded for a few miles within rugged mountain peaks. Mostly, however, they are stark and monotonous, forming a great natural acropolis that stands isolated, its foothills washed by four rivers – near, but not linked to the great alpine mass that spreads east to Switzerland and Italy.

The Vercors is shaped like a giant arrowhead, thirty miles long by twenty miles wide – a geological phenomenon, fashioned by erosion. It is made of limestone – not of granite, like the higher alps – and bitter weather has combed it into gorges, gouged from it deep grottoes, and formed within it a huge plateau that, enclosed within soaring cliffs, is remote indeed. It can be reached from the surrounding plain only by a few steep, narrow roads that have been hewed and tunnelled from the mountain, that span deep ravines by way of slender bridges.'
(from the introduction to Michael Pearson: *Tears of Glory*,1978)

Orchis militaris



Cliffs of the Vercors overlook the city of Grenoble
Google Landsat / Copernicus Data SIO, NOAA, U.S. Navy, NGA, GEBCO Maxar Technologies

'Nowhere in France is there a natural citadel comparable to that of the Vercors.... On its north, east and south sides it is protected by an almost continuous mountain chain (with summits of from 1600 to 2300 metres) which present to the outside a series of steep limestone slopes with a drop of several hundred metres. Towards the west, beside the lower valley of the Isère, there are some gaps which correspond to rock falls. But even there the rim of the plateau seen from the outside is a sheer drop.' (Pierre Dalloz, writing in December 1942 on the potential of the Vercors as a guerrilla base behind German lines, quoted in Paddy Ashdown: *The Cruel Victory*, 2014)

We made our first trip to the Vercors at the end of May and beginning of June 2019 but, owing to circumstances beyond our control, so far it has been the only one. This means that the following survey is inevitably somewhat patchy and disjointed – but everywhere you look at that season of the year the Vercors is full of wonderful flowers.

The cliffs at the north-eastern end of the Vercors overlook the city of Grenoble and the river Isère. A few miles further south, looking across the valley of the river Drac to the mighty Massif des Écrins to the east, is the Col du Serpaton (1586 m). On the rocks above the south side of the pass (just beyond the radio mast) we found *Dryas octopetala* and *Primula lutea* (*auricula*). The steeply sloping meadows

Orchis mascula (Inset photo: Patrice Bon)

Dryas octopetala
Primula lutea

down from the pass to the car park some 100 metres or so below were also full of interest: *Primula veris*, *Gentiana verna*, *Viola cornuta*, *Pulsatilla alpina* (in flower higher up and in seed lower down), *Narcissus poeticus* and some orchids – *Dactylorhiza sambucina* (yellow) and *Orchis mascula* in considerable numbers. At the car park was an official notice

Mont Aiguille

Roadside *Orchis purpurea*

Dactylorhiza sambucina and *Primula veris*

restricting the picking of *Narcissus poeticus* and *N. pseudonarcissus* (the latter not in flower here when we visited) to one bunch of no more than 15 blooms per person – but not forbidding picking altogether. This car park is also notable for our first sight of Mont Aiguille ("Needle Mountain", 2085 m), an outlier of the main Vercors massif which with its clear prominence of 465 metres and its small, virtually flat top buttressed by vertical cliffs on all sides dominates the landscape for miles around.

Cypripedium calceolus in shade and light near les Fourcheaux

Orchis spitzelii *Ophrys insectifera*

To the west of the Col du Serpaton, beyond Gresse-en-Vercors, lies the Col des Deux (1222 m). In the woods on the north side of the pass we found many interesting orchids: *Cypripedium calceolus*, *Orchis militaris*, *O. purpurea*, *O. spitzelii*, *Ophrys araneola* and *Corallorhiza trifida*, together with *Pinguicula grandiflora* and an attractive, pale blue *Ajuga* species (probably *A. reptans*). In the meadow at the top of the pass there were *Platanthera longifolia*, *Orchis militaris* and *Ophrys insectifera*. Further south, in the meadow at the top of the Col de l'Allimas (1352 m), there were *Pulsatilla alpina* still in flower. In the woods near the hamlet of La Bâtie we found more *Cypripedium calceolus* and *Cephalanthera longifolia*, together with *Globularia nudicaulis* and some *Gentiana acaulis* enjoying the sunshine. Alongside the track from La Bâtie up towards the foot of Mont Aiguille,

Gentiana acaulis

we again found *Cypripedium calceolus* and also *Orchis mascula* and *Paris quadrifolia*. In a marshy meadow below Mont Aiguille there was a mass of *Orchis mascula* and also drifts of *Narcissus poeticus* and *Trollius europaeus* together with some *Pinguicula grandiflora*.

Further south, on the road from Chichilianne to Trésanne we saw *Anacamptis pyramidalis*, *Orchis purpurea*, *Platanthera chlorantha* and *Neottia ovata* on the roadside verge and, further on, in a patch of woodland beside a sweeping bend in the road, *Cypripedium calceolus* and a vivid blue *Polygala vulgaris*. In the scrubby woodland at the Col du Rocher we found lots of *Orchis purpurea*, together with scattered *O. spitzelii*, *O. militaris*, *Gymnadenia conopsea* and some bee orchids (probably *Ophrys araneola* or *occidentalis* in one case and *O. araneola* or *virescens* in another). While walking up the valley west of La Richardière, we found *Cypripedium calceolus*, *Dactylorhiza fuchsii*, *Gymnadenia conopsea*, *Neottia ovata*, *N. nidus-avis*, *Phyteuma spicatum* ssp. *coeruleum*, *Paris quadrifolia*, *Convallaria majalis*, *Trollius europaeus*, *Cephalanthera longifolia*, *Orchis purpurea* and what appeared to be a cross between *O. militaris* and *O. purpurea*. We finished our walk at the Resistance Monument at les Fourcheaux, which commemorates the holding of the Pas de l'Aiguille above against a strong force of German alpine troops by a small band of maquisards in July 1944.

Mont Aiguille towers over the village of Chichilianne on the north-west. South of the village, the road climbs up to the Col de Prayet (1197 m).

Narcissus poeticus and *Trollius europaeus* above La Bâtie

Orchis militaris x *purpurea?*

Neotinea ustulata

On the way up to the pass we saw *Orchis purpurea* and *O. anthropophora*. At the top of the pass there was an abundance of orchids: in the meadows *O. purpurea*, *O. militaris* (and probable hybrids), *O. mascula*, *Coeloglossum viride* and *Neotinea ustulata*; in the woodland margins *Neottia nidus-avis*, *Ophrys araneola*, *O. sphegodes* and *O. insectifera*. On the woodland margins there were also gentians (possibly *G. angustifolia*

Orchis pallens at Col de Menée, looking south-west

or *G. acaulis* or both) and wood violets (probably *Viola riviniana*). In the meadows were drifts of *Trollius europaeus* and *Narcissus poeticus*. Beyond the Col de Prayet the road continues south along a corniche to the Col de Menée (1457 m). On the open hillside at the top of the pass (above the road tunnel) there are trumpet gentians (probably *G. acaulis*), spring gentians (possibly *G. verna* ssp. *delphinensis*), *Primula veris*, *Orchis mascula* and *O. pallens*. The view south-west from the top of the pass encompasses the valley leading down to Châtillon-en-Diois; this is an area we shall return to later, after continuing south along the eastern edge of the Vercors massif for a little way further.

The main road below continues south over the Col de la Croix-Haute until, just past the village of La Croix-Haute, there is a turning west up to the Col de Grimone (1318 m). In several places on the drive up to the top of the pass the embankments beside the road were ablaze with brilliant blue trumpet gentians (probably *G. acaulis*) – one of the most spectacular displays of them we have ever seen. On the other (north-west) side of the pass there is an area of open grassland and scrub above the road. Here we found a mass of *Salvia pratensis*, together with many other species: *Orchis purpurea*, *Gymnadenia conopsea*, *Neotinea ustulata*, *Dactylorhiza alpestris*, *D. sambucina* (yellow), *Ophrys insectifera*, *Globularia cordifolia*, *Aster alpinus*, a very attractive pale-yellow *Lotus maritimus* with dark markings on the upper petals, the bright pink *Anthyllis montana*, a large-flowered *Helianthemum* (probably *H. nummularium* ssp. *grandiflorum*) together with a few of the white *Helianthemum apeninnum*, *Cynoglossum dioscoridis*, and what was probably an *Arenaria*. In a

Orchis anthropophora, Col de Mezelier

roadside wood below the village of Grimone, we found *Campanula trachelium* and an *Ornithogalum* (possibly *O. umbellatum).* The road leads down to Châtillon-en-Diois, but if you turn off right after the picturesque village of Glandage, as you come down into the spectacular Gorges des Gats, you can drive up the valley to Borne. Here there is a pleasant walk up a side valley through woods and clearings to Les Sucettes de Borne (the "Borne Lollipops"), a picturesque rock formation. Along the way we saw *Cephalanthera longifolia*, *C. damasonium* (in bud), *Dactylorhiza fuchsii*, *Neottia ovata*, *N. nidus-avis*, *Paris quadrifolia*, *Pyrola rotundifolia*, *Salvia pratensis*, *Campanula trachelium* and a *Phyteuma* species (possibly *P. michelii*) – but not the *Cypripedium calceolus* we were instructed "above all not to pick" by a notice at the car park. Back on the road to Châtillon, we saw some *Aquilegia vulgaris*, *Vinca major*, an attractive *Linum* (either *L. austriacum* or *L. narbonense*) and a marshy area with large clumps of bright yellow *Iris pseudacorus*.

At the end of the paragraph before last we paused at the top of the Col de Menée to look south-west down the valley leading to Châtillon-en-Diois. The open hillside there above the road was bright with pink *Anthyllis montana* and yellow *Helianthemum nummularium* and, on unstable embankments, there were large patches of *Saponaria ocymoides*. On the margins of some woodland below the Rocher de Combeau we found some *Ophrys insectifera*, *Cephalanthera longifolia*, *Orchis purpurea* and what was probably a pink *Dactylorhiza sambucina*. Above the village of Les Nonières we turned off onto the road leading up the Vallon de Combeau,

Cypripedium calceolus (L) and *Tulipa sylvestris* (R) in Vallon de Cambeau

beneath the looming Rocher de Combeau. On the rocks at the side of the road we saw *Erinus alpinus* and *Globularia nudicaulis.* Further up, where the woodland comes down to the road, there were patches of vivid blue *Gentiana acaulis* and bright purple *Pinguicula grandiflora*, together with *Orchis spitzelii*, *O. militaris* and a very large and striking clump of *Cypripedium calceolus*. The valley opens out higher up and, in the open grassland and in the shade of small trees near the stream we found scattered flowers of *Tulipa sylvestris*. There were a few more tulips in the shade of some trees by the car park at the end of the road (at about 1500 m altitude) and a wealth of flowers in the meadows above: *Narcissus poeticus*, *Dactylorhiza sambucina* (yellow and red), *Orchis mascula*, *Gentiana acaulis*, *G. verna* and *Primula veris*. Back on the road to Les Nonières, there was more *Linum* and also some *Paradisea liliastrum*. Below, at the village of Menée, we turned off again, up the road to Archiane. Below the imposing Cirque d'Archiane we found more *Aquilegia vulgaris* and some more *Phyteuma michelii* (?) .

Having completed our tour of the eastern flanks of the Vercors, we now head back north through the centre of the massif. Our access is via the Col de Rousset (1254 m) north of Die. The top of the pass is nowadays bypassed by a tunnel but there is a car park at the bottom of the ski slopes to the east, at about 1400 m. Here again, in addition to several clumps of *Helleborus foetidus* nearby, there was an abundance of mainly now-familiar alpine flowers: *Gentiana verna*, *Orchis mascula*, *Dactylorhiza sambucina* (yellow and red), *Armeria arenaria*, a yellow *Anemone*

Narcissus pseudonarcissus, Font d'Urle

(probably *A. ranunculoides*), *Helianthemum nummularium*, the same vivid blue *Polygala vulgaris* we had seen earlier (but lower-growing), *Viola calcarata*, *Corydalis intermedia*, a few *Ranunculus kuepferi*, *Primula veris* and here also *P. elatior*. In the fields north of the village of Rousset there were lots of *Narcissus poeticus*. Further on, in the verges of the road between St-Agnan and St-Martin, there were numerous orchids: *Cephalanthera longifolia*, *Orchis mascula*, *O. militaris*, *O. anthropophora* and *Ophrys insectifera*.

Between St-Martin and St-Julien a road heads up out of the valley over the Pas de St-Martin (1280 m) and into the hill country beyond. Along this road we saw more orchids (*Orchis mascula*, *O. pallens*, *O. anthropophora*, *Cephalanthera longifolia*, *Neottia nidus-avis* and the spectacularly mottled leaves of an *Orchis* or *Dactylorhiza* not yet in flower. There was also a tall, thin *Gentiana verna* – probably *G. verna* ssp. *delphinensis*), wood violets (probably *Viola riviniana*), *Arum italicum* (? – just coming into flower) and a *Helleborus foetidus*. Beside the minor road above La Balme de Rencurel there were more *Cephalanthera longifolia* and *Orchis mascula*, together with *O. simia*, *Lilium martagon* leaves and *Polygonatum odoratum*. Down in the Gorges de la Bourne, there was *Erinus alpinus* and a *Saxifraga* species on the rocks. At the gorge mouth we turn to the south once again and proceed in that direction on the western side of the Vercors massif.

Scilla bifolia, Font d'Urle

Our first port of call is the Col de Mézelier (534 m). Here the meadows are dotted with orchids – *Orchis anthropophora*, *Platanthera chlorantha* and *Anacamptis pyramidalis*, and there is a fine view up the Vernaisson valley. Down in the valley we found a bank dotted with *Aquilegia vulgaris* and on the verges there were numerous orchids: *Anacamptis pyramidalis*, *Cephalanthera longifolia*, *Neottia ovata*, *Orchis militaris*, *O. purpurea*, *O. anthropophora*, *Platanthera chlorantha*, *Ophrys fuciflora* and *O. insectifera*. Beside the road we also saw *Globularia nudicaulis*, *Melittis melissophyllum* and *Paradisea liliastrum*. At the head of the valley is the Tunnel des Grands-Goulets, completed in 2008 and just under two km long. The old road, which the tunnel replaces, runs above the Vernaisson river, and took you under cliffs, through rock arches and eventually through a section where only a little light penetrates. The road, a "balcony road", was built between 1844 and 1851 and finally closed after a series of fatal accidents and rockfalls in 2003 and 2005 – and was replaced by the new tunnel in 2008. Today the old road, one of the most famous balcony roads in France, is closed even to cyclists and walkers and les Grands Goulets and its spectacular sights are inaccessible. The old road is still the emergency exit of the tunnel (to which it is connected by galleries) and, as such, is maintained and cleared of snow in winter, even though no one is allowed to use it.

Above the tunnel is the hamlet of Les Barraques; the roadside south from here to la Chapelle-en-Vercors proved to be of interest in several places. There were flowers of *Orchis militaris*, *O. simia*, together with what looked like a hybrid between *O. simia* and *O. anthropophora* (although we saw no flowers of the latter in the vicinity) and also what appeared to be *Dactylorhiza alpestris*. There were also clumps of *Globularia nudicaulis* scattered along the embankments. Travelling on further south, on the road between la Chapelle and Vassieux there was more: swathes of *Orchis mascula* with *Polygala vulgaris* and a *Veronica* (probably *V. chamaedrys*) on roadside verges, *Dactylorhiza sambucina* (more yellow than red) in woodland clearings and *Primula veris* on the edges of clearings together with buds of what was probably *Maianthemum bifolium*. At the road junction just north of Vassieux, below the Col de la Chau and with fine views across the peaceful countryside to the mountains beyond, is the Nécropole de la Résistance, where lie the bodies of the over 200 victims of the German massacre of July 1943 – at least 73 of them non-combatants. If we continue west, over the Col de la Chau (1337 m), where we found *Helleborus foetidus* and *Mellitis melissophyllum*, we will reach our final destination on this rather disjointed journey – Font d'Urle. Before doing so, however, and at the risk of confusing anyone trying to follow our route on a map, I should just like to mention the very impressive population of the Lizard Orchid (*Himantoglossum hircinum*) we found at the roadside just north of Beaufort-sur-Gervanne, some way to the south-west of here, accompanied by *Anacamptis pyramidalis*.

The floor of the open valley at Font d'Urle lies at an altitude of about 1500 metres and had an overwhelming multitude of flowers to admire. Near the car park the ground was white in some areas with *Ranunculus kuepferi* and in other areas purple with *Viola calcarata*. There were patches of what appeared to be a white *Draba* species (possibly *D. thomasii*) and drifts of *Primula veris*. Dotted around were yellow and red *Dactylorhiza sambucina* in singles or small clumps. In one place the ground was covered with vivid, sky-blue *Scilla bifolia* and next to them a considerable number of *Crocus vernus*, both white and mauve. There were odd patches of a *Gagea* species, a yellow *Potentilla* species (possibly *P. crantzii*) and *Gentiana verna*. Further up the valley, in addition to further sheets of *Ranunculus kuepferi*, there were more *Crocus vernus*, a few *Soldanella alpina* and, near the melting snow, a multitude of *Erythronium dens-canis*. The *Dactylorhiza sambucina* was thicker on the ground than lower down and there were still odd patches of *Gentiana verna* and *Viola calcarata* together with the yellow *Draba aizoides*. But then daffodils took over as the dominant flower in the valley: *Narcissus pseudonarcissus* first as scattered clumps and then as whole vistas of yellow. almost as far as the eyes could see: "*Ten thousand saw I at a glance, Tossing their heads in sprightly*

Erythronium dens-canis, Font d'Urle

dance." In one or two places we also found a few *Narcissus poeticus* coming into flower and, where the two species were in close proximity, hybrids between *N. poeticus* and *N. Pseudonarcissus*.

The most vivid memories we shall treasure of the Vercors and its wonderful flowers are undoubtedly the superabundance of orchids of all shapes and sizes, the vivid blue of its gentians and the overwhelming profusion of daffodils at Font d'Urle. Our visit was a very enjoyable introduction to this fascinating area!

**All unattributed photographs by Lynn & Michael Almond*

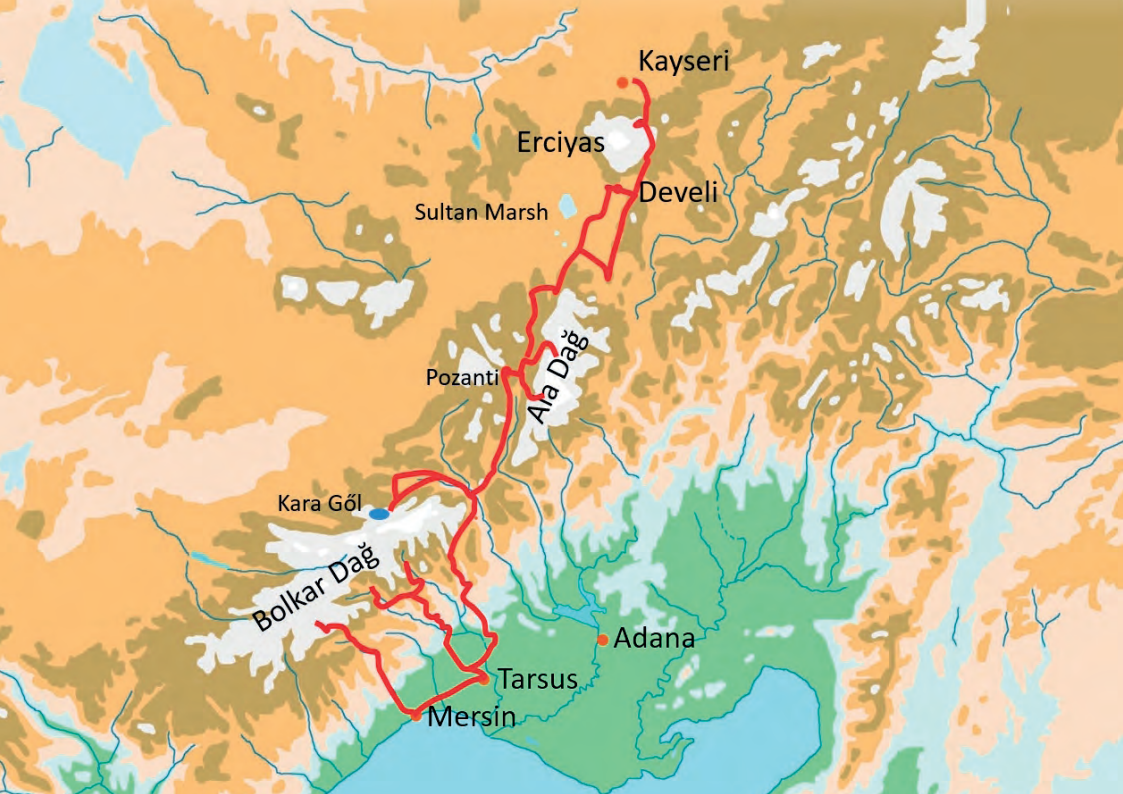
Mont Aiguille from Chicilianne

Turkey

Liam and Joan McCaughey

We have had the good fortune to have visited Turkey three times on flower-focused wildlife trips. The first of these was in 2007, a Greentours excursion to the Cilician Taurus mountains, the Bolkar Dağlari and Aladağlar, when we were led by Adil (Director of the Istanbul Botanic Garden) and Başak Güner.

Turkey has a rich and diverse flora – around 9200 higher plant species, which compares with 11500 for the whole continent of Europe, which is thirteen times larger. About one third of the Turkish species are endemic; several factors contribute to this. Firstly, Turkey is tectonically active (as has been demonstrated so painfully in early 2023), being at the junction of four tectonic plates, and this is a major factor in formation of its rugged terrain, its different mountains and mountain ranges. Secondly, ice age (Pleistocene) glaciation affected only the mountain peaks in Turkey rather than the lower ground, thus allowing isolated populations to survive – in contrast to the Alps further north, which were covered by ice. Lastly, there is a great variation in climate, between the relatively damp and milder Mediterranean and Black Sea coastal regions, and the harsher and drier Anatolian Plateau at around 600 – 1200 metres.



The Bolkar Dağlari and Aladağlar (mountains) mark the eastern edge of the Anatolian plateau, and are on the 'Anatolian Diagonal', which runs SW to NE and marks the change between the drier highland and more moderate Mediterranean climates. These limestone mountains were, like the Alps, pushed up as the Tethys sea closed at the end of the Mesozoic – beginning around 65 million years ago. They are heavily eroded, with deep valleys on the south-eastern side, and they present an almost insurmountable barrier between the central Anatolian plateau and the Mediterranean coastline.

Our 2007 tour group was based for the first few days in Mersin, on the Mediterranean coast and just a few miles south of the town of Tarsus (the birthplace of Paul the Apostle, and where Anthony and Cleopatra began their fatal love affair).

East of the Mountains

On the first three days, we explored the valleys that dissect the south-eastern aspect of the mountains, travelling in two very comfortable Mercedes coaches. The first day was a long drive up to the Dümbelek Pass at 2255 metres. Our route began in the Cilician plain, which is good agricultural land with a rich soil capable of three harvests a year, and producing a wide range of foodstuffs including half of Turkey's export of citrus fruits. However, we passed quickly through the small towns and farms of the plain, heading for the high pastures.

The flora is rich too, and at roadside stops on the way a small selection of the prettiest of what we saw included *Asphodeline damascena*, *Brunnera orientalis*, *Coronilla varia*, *Cynoglossum montanum*, *Adonis flammea* with its flame-red flowers, and much more. In some places there were rows of bee hives, honey being another major product of the region, and at our lunch stop on the way (1580 m) we shared the drinking fountain with a traditionally dressed local lady and her cattle.

The Bolkar Mountains (Photo: Zeynel Cebeci, CC BY-SA 4.0 https://creativecommons.org/licenses/by-sa/4.0, via Wikimedia Commons

Pedicularis cadmea

Then on up to the Dümbelek Pass (2250 m) where we found a scattering of attractive small alpines in a dry rocky landscape heavily grazed by sheep: *Pedicularis cadmea*, *Ornithogalum lanceolatum*, *Muscari anatolicum*, *Aubrieta canescens*, *Gagea villosa*, and just one saxifrage, *S. kotschyi*. The only taller plant left untouched here was an *Asphodeline taurica*.

Next morning at the crack of dawn, several of us went with Başak to an area of reed beds by a canal to indulge in bird-watching. Here the star was a pied kingfisher (*Ceryle rudis*), and later and higher up that day we were to spot and photograph a roller (*Coracias garrulus*) and a booted eagle (*Hieraaetus pennatus*).

Saxifraga kotschyi

Gladiolus italicus

On each of the next two days our route was further north, and there was a long drive; on day two it was up to the Çamlıyayla district, with its streams & lakes and pine & cedar woods, where the flora was somewhat different, the more photogenic including *Iberis attica*, *Polygala anatolica*, *Globularia orientalis*, *Muscari comosum*, *Gladiolus italicus* and a few terrestrial orchids, *Anacamptis pyramidalis* and an *Ophrys* (perhaps *holosericea*).

On the third day we were back to the eastern slopes, but this time up Cehennem Deresi – the 'Valley of Hell'! Here the flora was similar, but the highlight was *Cephalanthera*

Asphodeline taurica

Ophrys species

rubra in perfect condition. Unfortunately, Jim was changing lenses to photograph it when he accidentally dropped his macro lens, which trundled over the edge to a thousand foot drop to the river.

Through the Cilician Gates

So far, we had been based in the coastal Cilician Plain but now we ventured up through the Cilician Gates, a route that has been used for millennia by traders and armies to travel between the Anatolian Plateau and the plain. This is the way by which in the year 333 BCE,

Gladiolus italicus

Alexander the Great led his armies down to the coast before meeting and defeating the Persians led by Darius III at the battle of Issus, and it is the route taken much later by St Paul of Tarsus. In ancient times it was a narrow, winding and precipitous path, but now a modern highway runs through and we followed this (with many diversions) to our next hotel in the small town of Pozanti, which sits at around 800 metres in a valley between the Bolkar mountains and the Aladağlar. One of these diversions was made up an initially promising side-valley, which turned out to now be used as the local council landfill dump. However, while Adil was facing rebellion from the drivers, we explored the woods and found an excellent *Cephalanthera kurdica*, a much more robust plant than the *C. rubra* seen the previous day.

Cephalanthera kurdica

The Black Lake

The highlight of the next two days was the visit to Kara Gől – the Black Lake, which lies in a glacial cirque at 2600 metres behind the highest peaks of the Bolkar Dağı. A dusty drive to get there, but through spectacular scenery. We stopped initially on a ridge just above the lake, where the flora included *Arnebia densiflora*, and a magnificent selection

Iberis taurica

Lamium garganicum ssp. *pulchellum*
Onobrychis cornuta

Fritillaria aurea
Tulipa humilis

Veronica caespitosa

of mostly cushion plants in excellent condition. Best of these – at least to the photographers – were *Anemone blanda*, *Aubrieta canescens*, *Asphodeline taurica*, *Erysimum thyrsoideum*, *Iberis taurica*, *Onobrychis cornuta* (very prickly if one sat on it while photographing), *Pedicularis cadmea* and *Veronica caespitosa*.

We then walked down the slope to the lake, where some small *Fritillaria aurea* were growing in the short turf, accompanied by a pretty little dead-nettle, *Lamium garganicum* ssp. *pulchellum*, and just one *Tulipa humilis* in good condition. As we lunched we spotted a pristine Green Hairstreak butterfly resting.

There was one more day in the valleys of the Cilician Gates. Just as we started out in the morning, a *Michauxia tchihatchewii* was spotted growing against a rock-face by the road. It is an attractive *Campanula* relative – apparently used in Turkish folk medicine as a treatment for wounds. We were then back in the high country; plants seen and photographed included *Althaea pallida*, *Daphne oleoides*, *Glaucium*, *Linum mucronatum*, *Papaver rhoeas*, *Saponaria prostrata*, *S. kotschyi* and *Stachys lavandulifolia*, but the most memorable sight was a sea of *Papaver lacerum* in a field of fruit trees, with the heights of the Bolkar Dağlari as a background. Bright red, like the colour of the Turkish flag – as our drivers said with delight as we took our pictures.

That day ended with a guilty pleasure – we had stopped in a town for some essential supplies when we spotted ice-cream – not any ice-cream, but *Salop*, made with the roots of orchids, and we fell to temptation.

Michauxia tchihatchewii


Papaver lacerum

Stachys lavandulifolia

The Aladağlar

Our next hotel was just below the mountain massif, and close to the start of the Emli valley. After a short drive, with a roadside stop where we photographed *Morina persica*, and a damp meadow with a good display of orchids – *Dactylorhiza* and *Orchis laxiflora*, we reached the Emli valley. Passing some very basic rock-cut tombs at the entrance, we hiked on up the valley to the glacial cirque at its head. A beautiful walk; in the lower stretches we were among mixed coniferous forest, mainly pine and fir but also some cedar, and there was added interest from a pair of duelling ibex framed in an arch in the cliffs.

The Emli Valley

This is a dry valley, and one grazed by sheep, so there were no dazzling displays. However, there was a respectable tally which included *Arnebia densiflora* (just one plant), *Androsace villosa*, *Convolvulus compactus*, *Campanula glomerata*, *Globularia trichosantha*, *Omphalodes luciliae* ssp. *luciliae*, and on through the alphabet to *Vinca herbacea*.

Next day was threatened by occasional thunderstorms but nevertheless we set off again into the Aladağlar. This time the route lay further north, along a very rough track leading toward the highest peak in

Androsace villosa *Morina persica*

The Emli Valley

the range, and Adil had engaged three 4WD cars to take us. Unfortunately the enthusiastic driver in the car we shared with Jim and Eileen seemed to think we were teenagers, and drove like a maniac until strong words were said. We then had a brief stop while our driver threw a can of water over the radiator to cool it off. Up at 2400 metres in a very steep valley below the peak of Demirkazik (3756 m) there were some very attractive plants.

Arnebia densiflora

Perhaps the prettiest was the very small *Lamium eriocephalum* that grew on a rocky dry slope, and close by a neat cushion of *Veronica*, this time a beautiful *V. bombycina* ssp. *bolkardaghensis*, which we have seen back home on the show bench. In the damper areas on the valley bottom were *Daphne oleoides*, *Primula auriculata*, *Scilla ingridiae*, and *Muscari neglectum*.

Leaving this valley, we moved on to our last hotel in Develi, beside the famous Sultan Marshes. However, we were not finished with the Aladağlar,

Omphalodes luciliae
Lamium eriocephalum

as we discovered that, unknown to the rest of the world, the marshes have now been largely drained. Although we did visit them and saw a few birds, they were not up to our expectations. This gave an opportunity to return to some of the northern slopes of the Aladağlar, and a few more interesting flowers.

Lower down and near the town, meadows were full of orchids: *Orchis palustris* and *O. coriophora*, mixed with

Veronica bombycina ssp. *bolkardaghensis*

Scilla ingridiae

Primula auriculata

Primula auriculata

Pedicularis comosa, *Glaucium corniculatum*, *Linum hirsutum* ssp. *anatolicum* and – outlined against the mountains – tall plants of *Salvia sclarea* and *Eremurus spectabilis*. Going higher, up to 2800 metres, and into the mists again, the birders in our group were rewarded with the distant eerie calls of Caspian snowcock – high above us and invisible in the low cloud, while closer to us were snow finches and wallcreepers. *Draba acaulis* was plentiful, its neat cushions clinging to vertical faces; *Onosma alborosea* occurred in varying colours and there were

Salvia sclarea

Draba acaulis

just a couple of *Ixiolirion tataricum*. It was here that we saw the first iris of our trip, *Iris sari*, very attractive with its standards and falls in a rich blend of shades from yellow to reddish brown. It was apparently known to Armenians as 'wolf ears', which led to an earlier name, *Iris lupina*.

At last, on the final day we left Develi and drove over the shoulder of Mount Erciyes to Kayseri where we would take the flight to Istanbul and then home. Mount Erciyes is a stratovolcano; a former name was Argaeus – and Mons Argaeus on the moon has been named after it. We had one final botanical halt, stopping

Eremurus spectabilis

Iris sari

Iris schachtii

Green Hairstreak

at 2140 metres and ranging across the mountainside in cloud and drizzle. Having just found the *Iris sari* on the slopes of the Aladağlar, it was a bonus to see great sheets of our second, *Iris schachtii*, here on Erciyes. A good finish to our visit to the

Lamium eriocephalum

Taurus mountains, and perhaps an introduction to our later trip with Greentours in 2014 (led by Başak) to the Lake Van area further east, where along with a varied and extensive flora we were to see many different oncocyclus irises.

Ixiolirion tataricum

There was one final highlight when we reached our hotel in Istanbul where we stayed overnight before flying home. As we sipped our evening coffee on the balcony we found ourselves looking straight out at the Blue Mosque just a stone's-throw away at the end of the street.

The Baltoro Glacier

Saxifraga baltistanica in the Karakoram

Marijn van den Brink

Here is the story behind my encounter with *Saxifraga baltistanica*, its type locality and the surrounding flora.

Androsace baltistanica after flowering

In 2008 I joined a 15-day mountaineering expedition in the Karakoram Mountains, in north-west Pakistan, west of the Himalayas. Alongside the sporting challenge, one of the goals was getting to know the high mountain flora of this rugged region. On the border with China, Gilgit-Baltistan, formerly known as the Northern Areas, this is where villages are merely oases in a vertical wilderness of rock, ice, glaciers and towering peaks.

The starting point was Thungol at 2850 metres, the last village in the Braldu River valley. After three days of walking we reached the Biaho River, which originates from the Baltoro Glacier, still two and a half days away. When we arrived at camp Paiju (3450 m) after our total of five days of walking, I found *Androsace baltistanica*. The plants had finished flowering and were partially in seed. The rock here is white granite and several other interesting plants grow in its eroded material. Not far away is the mouth of the 64 km long Baltoro glacier, covered in many places with glacial detritus of crushed stone and boulders.

On day 6 we reached camp Khoburtse at 3930 m. This camp site is located on a fairly flat stone field on the edge of the glacier, fringed by imposing, steeply rising, granite walls. On the other side of the glacier there is a beautiful view of the Trango and Cathedral Towers. We set up

Trango and Cathedral Towers

Saxifraga baltistanica after blooming at the type locality at our Khobursai Camp

Above: *Saxifraga stenophylla*

Below: *Thymus linearis*

Androsace baltistanica

the tents and I went to explore. Porphyrion saxifrages grow here in crevices and in irregularities in the granite that are filled with eroded material. Some were quite large and had now finished blooming. Their name is a question mark! It was July 24, the plants had flowered profusely and were already in seed. Nevertheless, I still hoped - vainly perhaps - to find flowering specimens later, in higher places where the lower temperatures would have delayed flowering.

A day later near camp Urdukas at 4050 m I found no kabschia saxifrages but I did succeed in finding the yellow summer saxifrage from the Ciliatae section, *Saxifraga stenophylla*. It was wonderful to see that *Androsace baltistanica* was flowering here, accompanied by another striking display of richly-flowering *Thymus linearis*.

Understanding that few people will have the opportunities given to me, I have tried in this short article to give you an impression of the location, habitat and circumstances of *Saxifraga baltistanica*. I gave the collected seed to Ger van den Beuken in the Netherlands in 2008.

To read more about the flora and the continuation of the expedition to Concordia (4650 m), K2 B.C. (5135 m), Broad Peak (5000 m), Gondogora La (5940 m), and Hushe (3050 m), please look at: https://photos.v-d-brink.eu/Flora-and-Fauna/Asia/Pakistan-new/i-Lncdfcv for many more depictions of the beauties of this challenging but rewarding region.

Some Andean Treasures

Harry Jans*

The Andes, or Cordillera de los Andes, is at 7000 km the longest mountain range in the world; it starts in Columbia and ends in the southern tip of Argentina with Aconcagua as the highest mountain rising up to 6961 metres. Most countries close to the Andes are at a high altitude between 3000 and 4000 m. The climate can be very dry, with the Atacama Desert as a good example, but closer to the big snow-packed peaks the rainfall is much higher and a wealth of plants may be found there. I had the opportunity to visit Peru on three occasions, always between March 15 and April 15. There are many very fascinating plant species in Peru, among which I would like to mention just a few in this article.

The author is dwarfed by *Puya raimondii*

One One of the most special plants is *Puya raimondii.* This botanical skyscraper, known as *Queen of the Andes*, is the largest bromeliad in the world. The species is ancient and very rare, with less than a million specimens remaining, often scattered in small populations of only a few hundred plants. It may be found in the high and arid Atacama plateau (*La Puna*) at altitudes from about 3600 m to 4800 m. In some preserved areas of Peru and Bolivia you can see its gigantic inflorescence reaching up 15 m or more in height and 2.5 m in diameter. *P. raimondii* is considered to have the largest inflorescence in the world with around ten thousand flowers and six million seeds on each plant.

To grow such a magnificent inflorescence, puyas save their strength all their life, which is quite long. On average the they start to flower after fifty years or more. However, there are some that start flowering after 150 years. *Puya raimondii* is pollinated by bats and large insects. It is monocarpic and the parent plant dies after it has flowered and fruited. The species is now endangered in the wild (an endangered species in the IUCN Red List) with only a few small populations per square km. Nevertheless, very nice examples may be found in the Cordillera Blanca on the road to Carretera Pastoruri, a glacier that is easily accessible by car.

Half-way round the globe in New Zealand, one of the special plants is *Raoulia eximia*. In Peru there is a plant called *Mniodes pulvinata* that looks very similar, with small very hairy rosettes and compact cushions. However, I haven't seen very large cushions such as those *Raoulia eximia* can make in New Zealand; the biggest *Mniodes pulvinata* I found was 40 cm wide.

Mniodes pulvinata

*A version of this article was in *International Rock Gardener*, October 2022

Gentianella brunneotincta in habitat

Gentianellas are a favourite plant species for me. Here in the Peruvian Andes they cannot compare with the ones in Europe or Asia. Those in Peru are all real treasures. *Gentianella brunneotincta* is deep yellow in colour and makes flat rosettes. It grows in full sun in reasonably dry conditions. More spectacular is *Gentianella scarlatina* with its yellow and red balloon-shaped flowers; this species is about five cm tall and I have found it on only one occasion, so it is not widespread. It is very similar to *Gentiana hirculus* from Equador. *Gentianella ruizii* is pale pink, 25 cm tall with beautiful large hairs in the centre of the flower. *Gentianella luteomarginata* is very wide spread in Peru and grows in more moist conditions.

Gentianella ruizii Facing: *Gentianella scarlatina*

Very different from the preceding species, with large pink flowers on fifteen to twenty cm stems, is *Gentianella ernestii*, but the most special *Gentianella* I have seen so far is *G. weberbaueri*; this is a tall species with a flower spike up to forty cm long, with deep pink to reddish flowers.

I would like to end with a few examples from my favourite genus from Peru, *Nototriche*. So far, there is only one species of *Nototriche* in cultivation and that is *Nototriche macleanii*. It is not easy and is better grown like *Dionysia* – in the alpine house. Peru and Bolivia are the hotspots for this species. Some have

Gentianella brunneotincta (detail)
Nototriche digitulifolia

a wide distribution and are more or less common, but others are restricted to just a few locations. *Nototriche digitulifolia* is a quite common species. It makes a nice compact plant with tight rosettes and always has stemless white flowers. Very different in shape is *Nototriche salina* with larger open leaves and red-brown flowers. Up at 4800 m high in the Cordillera Blanca is the habitat of the blue-flowered *Nototriche obtusa*, a species that can make very large cushions up to 0.5 m across. *Nototriche pinnata* also grows at very high altitude and has extremely large white-blue flowers which from a distance

Gentianella weberbauri
Nototriche aristata

look like crocus flowers. *Nototriche* species are mostly white or blue – with a few exceptions, and one of these is *Nototriche aristata* with its deep pink flowers. I have seen pictures of a deep-red *Nototriche* species but so far they

Nototriche pinnata

have eluded me in the wild. That means I have to continue going back to the Andes and try to find it!

Should you like to see more images of Andean Treasures, look at my website www.jansalpines.com and check the extensive photo gallery.

Nototriche obtusa in *Austrocylindropuntia floccosa*

Gentianella ernestii

Perfoliate *Uvularia*

Frank Rhodes

The perfoliate uvularias have had a complex history. The binomial *Uvularia perfoliata* was introduced by Linnaeus in 1753. At the time, it was the only species of *Uvularia* with perfoliate leaves, and it included what would now be called *Uvularia grandiflora*, a name introduced by Charles Edward Smith in 1805, together with *U. flava*. For the next 160 years there were these three perfoliate *Uvularia* species: *U. grandiflora*, which had smooth petals; *U. flava* and *U. perfoliata*, whose petals were papillose or rough on the inside. *U. flava* was problematic from the beginning. Smith said: "*Many people suppose it is a variety of the plant in our last plate (Uvularia perfoliata), but we presume them to be distinct, though it is very difficult to express a specific distinction*". It was thought to be a hybrid and was gradually dropped. When Briton and Brown wrote their Illustrated Flora in 1913, they did not mention *U. flava*, and they left the boundary between *U. grandiflora* and *U. perfoliata* rather fluid. They said of the latter "*perianthe-segments granular-papillose, sometimes but slightly so*", and of *U. grandiflora* "*perianthe-segments smooth on both sides or very slightly granular within*".

Above: *Uvularia grandiflora*, flowers on long pedicels free of the leaves

My tightest
Uvularia perfoliata

A typical
Uvularia grandiflora

Uvularia perfoliata,
revealing anthers

Then in 1963, Wilber revised the genus, formally reduced *U. flava* to a synonym of *U. perfoliata*, and created a firm boundary between *U. grandiflora* and *U. perfoliata* by placing those with smooth petals in *U. grandiflora* and all others in *U. perfoliata*. Since 1963, most taxonomists have followed in accepting Wilber's two perfoliate species, most easily distinguished by whether the insides of the petals are smooth or not. There is so much variation within each of the two species that non-flowering plants can not be easily separated into the two species. Robert Diez in 1952 applied statistical methods to 20 characteristics of 34 collections of mature (that is, post flowering) perfoliate *Uvularia* from eight states and provinces. He concluded that, although two species could be separated in New England collections, hybridization became increasingly problematic in the outer regions and the two species could not be separated.

The various changes in the meaning of *U. perfoliata* suggest the wisdom of identifying old illustrations and herbarium sheets in the light of current taxonomy, rather than accepting the given name. Indeed, most 18th century *Uvularia perfoliata* herbarium sheets are now identified as *U. grandiflora*, including the one chosen by Wilber as the lectotype for

Uvularia grandiflora, some leaf colours

U. perfoliata (Sp. Pl. 304 in the Linnaean herbarium). To conserve the names of the *Uvularia* species, a different lectotype for *U. perfoliata* was chosen by James Reveal in 1992 - Clayton 258 BM, now in the Natural History Museum.

While botanists have for many years been looking inside *Uvularia* flowers to check for papillae, it is only recently that they have started to publish the end view of flowers. Leading the way were two major American botanist organizations, the *Native Plant Trust* (gobotany.nativeplanttrust.org) and *U.S. Wild Flowers* (uswildflowers.com). Their websites show end and side views of *U. perfoliata* flowers. Taking a lead from them, in 2022 I photographed both views of all the *Uvularia* that flowered for me. Of my five different *U. perfoliata*, one looks like those on the two American websites. When the flower first

Uvularia grandiflora, pale cream specimen

Uvularia grandiflora, with green bleeds down the petals

opens the petals are tightly clasped in an inner and outer cylinder with the ends turned out sharply, while the end view shows a six-point star with a small triangular hole in the centre; later in the season the cylinders relax a little. Of the other four, one is not quite so tight, while the other three are more open from the beginning, revealing the anthers.

The forty different *U. grandiflora* that flowered for me in 2022 show something of the variations within the British nursery stock of the species. They vary in height from 15 cm – with thin wiry stems, to 35 cm – with thick robust stems. The colour of the leaves ranges from golden to very dark green. In some the colour varies across the leaf. Although I do not grow a true variegated *U. grandiflora*, they do exist. The colour of the petals

Uvularia grandiflora, narrow-petalled form

Uvularia grandiflora, bunched flowers on short pedicels among the top leaves

Uvularia grandiflora, veined petal form

ranges from pale creamy yellow to orange. Sometimes there are darker lines running down the length of the petals. Most have a green mark at the top of the point of attachment, which is sometimes visible from the side, and in some cases the green colour bleeds down the petals. While in most cases the petals are wide enough to overlap, some are very narrow. Some plants present their flowers singly on long pedicels free of the leaves, while others bunch their flowers on short pedicels among the top leaves. There are early season plants that set their seed at the time later ones are coming into bloom. And while most are 'clumpers' with stems rising close together, others are 'spreaders' with stems rising widely spaced, with long stolons, which sometimes emerge above ground.

Uvularia grandiflora is not difficult to grow, although care needs to be taken to establish new plants. I grow mine in a leafy, neutral-to-acid soil in the shade of two apple trees. Established plants cope with dry summers, but young ones benefit from being keep moist and free of competition. In very dry springs, I water to help them into growth. I find *U. perfoliata* harder to establish, and much slower to increase than *U. grandiflora*.

There are very few varietal names to help one when buying these plants. The name *U. grandiflora* var. *pallida* is used in a relative sense. Most, but not all, '*pallida*' plants sold by British nurseries have pale flowers. *U. grandiflora* 'Lynda Windsor' has yellow to green leaves, whereas *U. grandiflora* 'Wisley Variety' is tall with dark green leaves. Otherwise, to obtain particular varieties, buy plants in flower and grow them on in their pots to plant out in the autumn or the next spring.

References. The books may be read on the open website https://www.hathitrust.org, but it helps to know their catalogue details.

- The Linnaeas book is catalogued as Linné, Carl von, *Caroli Linnaei ... Species plantarum, exhibentes plantas rite cognitas, ad genera relatas, cum differentiis specificis, nominibus trivialibus, synonymis selectis, locis natalibus, secundum systema sexuale digestas* (Holmiae : impensis Laurentii Salvii, 1753). pp. 304, 5.
- Charles Edward Smith described and illustrated his Uvularia in Vol. 1 of *Exotic Botany: consisting of coloured figures, and scientific descriptions, of such new, beautiful, or rare plants as are worthy of cultivation in the gardens of Britain; with remarks on their qualities, history, and requisite modes of treatment.* (London, Printed by R. Taylor and co., 1804-05), Vol. 1, pp. 93-99.
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Edinburgh & the Lothians

15 April 2023

A bright and frosty day dawned in Edinburgh when exhibitors started to arrive, eagerly anticipating a 'good' show. They were not to be disappointed, with some stunning plants among the 230 on the bench in 167 entries from twenty exhibitors, a welcome and significant improvement upon last year and only a little below those seen pre-pandemic. Furthermore, visitor numbers returned to pre-pandemic levels.

Fritillaria tuntasia

The show offered a wide variety of rock plants and bulbs, ranging from the commonly seen and easily cultivated to the rarer and more difficult to grow. Evidence for an early season included the almost complete absence of *Primula allionii* and its hybrids, the appearance of a solitary campanula and a *Lewisia* normally not seen until May. Cushion plants are a key feature of the alpine ecosystem; this adaptation helps the plants to withstand high winds; and the air trapped within the cushion keeps the interior of the plant at a consistently higher temperature compared with that outside. Notable examples of this form included a fine well-flowered dome of *Draba acaulis* in class 6 from Nick Boss (Kincardine O'Neil). Bulbs were abundant and included many dwarf daffodils, tulips and members of the Asparagaceae family. Among the small number of fritillaries present was a large pan of seed-raised *Fritillaria tuntasia* from Sam Sutherland (Kincardine), along with large pans of *F. pallidiflora* and an unusual striped pale form of *F. pyrenaica*. Erythroniums included *E.* 'Citronella' and a lovely group of *E. helenae*, native to dry serpentinite soils of the western USA. As usual, there were many dwarf daffodils, including *Narcissus* x *cazorlanus*, which in most years is expected in late April or early May.

Narcissus x *cazorlanus*

Erythronium helenae

The centre pieces of the display were two remarkable pans of *Pleione* Shantung gx 'Ducat' in class 31, shown by Cyril Lafong (Glenrothes) and Francis & Margaret Higgins (Berriedale). The judges debated these magnificent entries long and hard before awarding first prize and – later – a Certificate of Merit to Cyril Lafong's pan. Among other eye-catching plants was the Higgins's *Paraquilegia grandiflora* in class 26, quite the largest example of this difficult classic rock plant seen for some years. Richard Green's (Balfron Station) *Iris magnifica* stood tall and elegant in class 49. Peter Semple (Buchlyvie) won the Henry Tod Carnethy quaich for best bulbous plant with his *Narcissus bulbocodium* from his A O Curle memorial trophy '3 pan from-seed' class 5

Paraquilegia grandiflora anemonoides

entry, which also included *Primula denticulata* and *Fritillaria pallidiflora*.

Many observers thought that the George Forrest memorial medal would be found among the foregoing large entries. However, that accolade was accorded to the perfect cushion of Cyril's *Androsace vandellii*, which had also been judged as the best plant in a pot not exceeding 17.5 cm (the Kilbryde Cup). It has seemed for some time now that the 'best in show' has to be an enormous specimen, but it is a relief and inspiring to see that a superbly grown small one can still succeed.

The Henry Archibald rose bowl for class 2, three pans rock plants of different genera, was won by David Millward (East Linton) with his

Erythronium 'Citronella'

Pulsatilla vulgaris 'Rubra'

Rhododendron dendrocharis 'Glendoick Gem', *Trillium hibbersonii* and *Lewisia* 'Carousel' hybrid. The rhododendron is native to China and is usually epiphytic. A small number of other rhododendrons from Stan da Prato (Tranent) were on the bench and he was awarded the Midlothian vase for best one with *R.* 'Pintail'. He also won the Alfred Evans quaich for best pan of Ericaceae, excluding Rhododendron, with *Andromeda polifolia* 'Compacta' and the Reid rose bowl for most points in section I.

Pleione Shantung gx 'Ducat'

Primula auricula 'Minstrel'
Ipheion uniflorum

Entries to section II were sadly thin once again but a nice *Primula marginata* 'Late Frost' with its clean brilliant white flowers ensured that the Midlothian Bowl for best plant in the section went to Chris Kelnar (Edinburgh).

However, the day belonged to Cyril Lafong who, in addition to the premier award, received Certificates of Merit for *Daphne modesta*, and *Iris suaveolens*. He also won the R E Cooper Bhutan drinking cup for best Asiatic primula with *Primula henrici* and the K C Corsar Challenge trophy for best European or American primula with *P. renifolia*. These primulas have become popular among exhibitors in recent years, with *P. renifolia* from different exhibitors winning them the latter trophy in successive years.

It was a delight to see the return of the Royal Botanic Garden Edinburgh's display of bulbs and rock garden plants following a three-year absence. Included in the Gold Medal display were many different fritillaries and tulips; by contrast, iris and narcissus were few, another reflection of the early season. Among the gems on display was a large pot of the rarely seen South American geophyte *Tristagma nivale*, which was awarded a Certificate of Botanical Interest.

In short, we had a successful show, greatly enhanced by the plant stalls providing much-needed retail therapy following a winter when many gardens suffered significant losses, and teas and home-baking to accompany the chance to catch up with friends. None of this could have been achieved without the amazing teamwork of the local group – thank you!

David Millward

Photos: *Liz Cole*

Helleborus lividus

Please send donations to Ian & Carole Bainbridge, 01557 814141, Luckie Harg's, Anwoth Road, Gatehouse of Fleet, Castle Douglas, DG7 2EF, Scotland

One Person's Seed Exchange

Jeanie Jones

I have discovered the pleasures of Seed Exchanges. Not only do they provide many of us with seeds that would never be obtainable elsewhere, but our own allows me to contribute to the club in a constructive way.

How I Collect Seeds

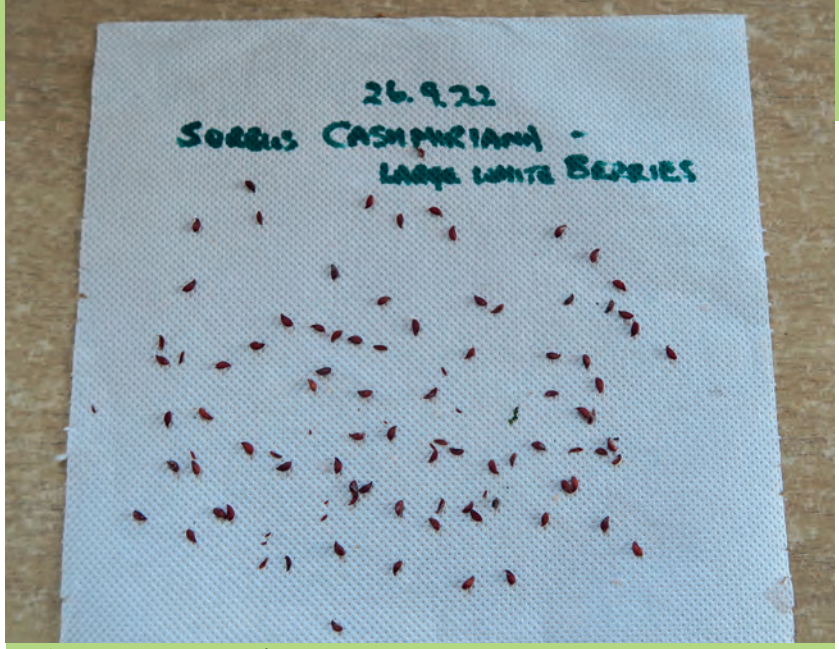
Besides collecting seeds for myself, I gather, clean, pack and despatch seed to various societies. It is well worth it as there are bonuses: the SRGC and AGS give you extra seeds, and others process your seed application as a donor before non-donors. Each year I never think soon enough about collecting seeds. I have consequently missed early flowering plants, bulbs, erythroniums, primulas and so forth and I resolve to put an entry in the diary for April.

Eryngium giganteum seed pods showing the change to brown when mature

Nets or tea-bags for special seeds

Wool-labelled stems

For special plants and for hand-pollinated seed pods I use empty tea bags or little net bags that can be bought online as wedding favours. I put them onto those flowers that might shed their seed before you collect it, or onto hand-pollinated ones with a label noting the details with a permanent pen. Seed pods often change colour as they ripen, and usually turn a shade of brown. Another problem I have had is remembering different plants, especially as pheasants and my dogs seem to love pulling out all my labels. I now put a wee label on the stem or attach an appropriate coloured strand of wool when the flowers are going over. Some plants such as *Meconopsis* need to have dehisced before collection. That is, the '*pepper pot*' must have split open. Many others such as species of *Primula*, *Trillium*, *Pulsatilla*, *Daphne* and *Ranunculacae* may be collected green and sown straight away. If kept they need to be ripe and dried.



Drying on a paper towel

Once the seed heads are ripe they may be collected, hopefully on a warm sunny day, by cutting off the seed heads or stems and putting them into paper bags or envelopes (*never* polythene bags, which encourage rot and disease) that are well labelled with name, variety, date and any special information. You may think you will remember but it is unlikely – I certainly do not! I leave the bags and envelopes in a warm but not sunny place before I clean them. If you think your plant is rather special but do not know what it is, take a photo and contact the seed exchange to ask what it is – and whether they would like some seeds.

Cleaning and Storing Seeds

Usually I have many envelopes and paper bags full of stalks, or just seed pods, or berries with ripe seeds that need cleaning. There are various methods to clean material, the easiest being where there are numerous large seeds such as *Meconopsis* or other poppies in pods; you may simply shake out the seed, there being no chaff to remove.

Berries are some of the first I clean, while their flesh surrounding the seeds is still soft. I place them in a sieve, squash them and flush with cold water to remove all the flesh, then put them on a kitchen towel until they are dry. If doing a number of berries it is best to mark each towel with details. You may check if the fresh clean seed is viable or not by putting it in water: the fertile seeds will sink and those that float are not.

The SRGC has a wonderful set of gold-panning sieves of various grades. I looked into getting such a set but they are expensive so my husband kindly made me a set of four boxes with different sized mesh. This sieve set has cut down the time for cleaning seeds; it is rather better than improvising with different mesh kitchen sieves, colanders and tea strainers.

A simple sieve set

The sieved chaff
One of the sieve meshes

The larger mesh boxes keep back the big pieces of chaff and let the seeds pass through. The smallest one retains seeds and lets the smaller pieces of chaff pass through. Sometimes you may be left with dust and other matter with your seeds; if so, I find winnowing them works well, placing the mixture in a shallow bowl and gently blowing. I usually do this at the back door and have had some interesting seedlings of *Meconopsis*, *Primula* and others growing in the cracks between the slabs!

Another way of cleaning round seeds such as *Meconopsis* is to place them on a sheet of paper held at a slight angle over a container – and gently tap. The seeds will roll down into the container. Remarkably, David Rankin and Ian Scott have discovered that they are able to distinguish *Meconopsis wilsonii* sub-species by the tilt angle at which they roll down a sheet of paper. The *tumbleweed* method can be used for round seed heads such as those of *Allium*. You need only roll them around on a tray – and the seeds fall out. Cones, however, need to open to shed seed and you may heat mature cones in an oven at 80º to 100ºC with the door partly open for half an hour. If they have not opened by then, continue in the oven, checking until they do. Alternatively, I find that putting them on a sunny windowsill works well for me.

Sorting by gentle shaking

Once you have cleaned the seeds, place them in secure glassine or paper envelopes – reinforce the joins with tape if necessary to avoid losing any of your precious content. A small funnel is useful to fill the envelopes before placing them in a glass jar in the fridge. I find Kilner or similar jars with a hinged lid very useful, as you can get them in many sizes. Plastic boxes are not as good because water vapour may penetrate to the walls and there may be condensation within. And finally, seeds can be frozen, as in the Norwegian Svalbard Global Seed Vault (https://www.seedvault.no), which opened fifteen years ago and at the time of writing has about a million and a quarter seed samples from almost a hundred gene banks with around six thousand species.

I am grateful to David Rankin for the following seed storage and recovery advice. Long term seed of many species can be stored for years in a domestic freezer or the freezer compartment of a fridge (-20°C), if it is perfectly desiccated using silica gel. If it is not completely dried, ice crystals form within the seed, destroying the cell structure and making the seed unviable. Dried seeds in glassine envelopes should be placed in a self-seal polythene bag and completely immersed in self-indicating silica gel beads. Several packets of seed may be treated in a single polythene bag and drying is normally complete in a day or two. The gel is orange when it is dry, changing to green when it has absorbed

Seeds and chaff

water. If it is entirely or substantially green it should be replaced by fresh silica gel. Green hydrated silica gel can be restored to its dehydrated orange form by heating on an oven baking tray for an hour at 120° C. When the seed is completely dry, enclose the polythene bag in a second self-seal polythene bag or – better – a rigid sealable container such as Tupperware. Then store it in the freezer.

Seeds into the envelopes

When you want to take seeds out of storage, allow the container to warm fully to room temperature. Then remove the seeds that you need, but make sure that the polythene bags are open for the shortest possible time, so that the silica gel does not absorb water from the atmosphere. After resealing, leave the bag for at least half a day, and check that the silica gel is orange. If necessary, replace it. Then the bag should be returned to the freezer.

Now, it is time to sort out what clean seeds **you** wish to donate to the SRGC Seed Exchange. Please bag up, label and send them, having checked the last date for receiving seeds (usually the end of October). If some of your seeds are not dried enough to send, let the Exchange know what you have and when you hope to send them. If you have not donated seeds before, I hope you that I have persuaded you to do so now.

Packing for the SRGC Seed Exchange

A number of years ago I volunteered to pack seeds into little glassine envelopes from the bigger envelopes that donors had sent. The seeds had all been checked beforehand by the reception team. What happens? A brown cardboard box arrives by post, containing very good and easy-to-follow instructions. There are packs of a hundred envelopes, pages of little labels to stick onto them, and detailed lists of how many of the various varieties must be packed. The lists include your own details of how many you have packed and how much seed is left over. There is wrapping paper, address labels and stamps for returning the finished box.

Filled envelopes ready for posting

My first effort was to prepare *Paeonia*; this made a lovely introduction because the seeds are large and it is easy to count the basic minimum of eight seeds. A flat white plate to sort them on is ideal and

here is how I count them out before scooping the seeds over the edge into a spoon and fill the envelope. Round seeds, especially small ones, can be fun and games whenever they develop a life of their own take off in any direction. It can be handy to place the plate in a tray to catch any escapees.

Counting seeds on the plate

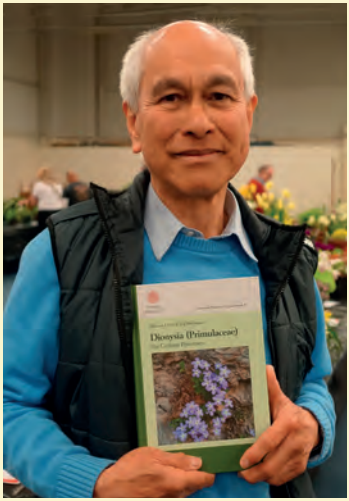
It is important that the box of seeds is kept somewhere cool when you are not working on it. Some seeds are very sensitive to heat and may be killed if left somewhere too hot or where the sun's rays fall on them. Why garden centres place their racks of seeds in areas where this happens, I do not know, and I would never buy *Primula* or *Meconopsis* seeds displayed that way, for the seeds are probably long dead.

Fulfilling the order

List Number	Plant name	Box Number 34	Asked For	Comments	Number Done	(Seed Packer) Remainder S / M / L	Live Material	(Box Packer) Reserve Y / N
1849	PAEONIA daurica mlokosewitschii		35	Was 30	20	0		N
1850	PAEONIA daurica mlokosewitschii	hyb cream, pink centre	15	Was 20	10	0		N
1851	PAEONIA delavayi		25	Was 20	14	0		N
1852	PAEONIA delavayi	hyb. Souvenir de Lothar Parlasca	5	Was 10 maybe 3 pcks	3	0		N
1853	PAEONIA delavayi lutea		10	Was 15	9	0		N
1854	PAEONIA emodi		15	Was 25	4	0		N
1855	PAEONIA emodi	hybrid	15	Was 20	13	0		N
1856	PAEONIA kavachensis		10	Was 25 maybe 7 pcks	6	0		N
1857	PAEONIA lactiflora	hyb double pink	10		7	0		N
1858	PAEONIA lactiflora Sea Shell		5		5	0		N
1859	PAEONIA ludlowii		15	Was 10	13	0		N
1860	PAEONIA mascula		15	Was 10	14	0		N
1861	PAEONIA mascula mascula		10	Was 15	7	0		N
1862	PAEONIA mascula russoi		20					N
1863	PAEONIA mascula triternata		10					N
1864	PAEONIA obovata		20	Was 15				N

Dionysia (Primulaceae) the Cushion Primroses

Magnus Lidén & Iraj Mehregan
Octopus Publishing
Symbolae Botanicae Upsalienses
vol. 41. 256 pages
ISBN: 978-91-513-1674-1



The genus Dionysia is a group of small, mostly cushion-forming alpine plants, highly prized by rock gardeners. Many new species have been discovered since Magnus Lidén wrote his 2007 Dionysia synopsis. This long-awaited book now describes all 64 known species including 12 new taxa (1 section, 9 species and 2 subspecies).

The book begins with an introduction to the genus, its recognition and status in the *Primula* group. There are overviews on phylogeny, breeding systems, habitats, ecology, biogeography, morphology, scientific history, uses and conservation. The heart of the book is a taxonomic treatment of *Dionysia* with a key to species, nomenclature, descriptions, distribution maps, photographs and line drawings. The 64 species and any subspecies are minutely described; closely related species are mentioned with relevant distinguishing features for accurate identification. There is a brief mention of wild hybrids and artificial or accidental hybrids in cultivation. Not all species are in cultivation and some exist only as herbarium specimens, having never been found again in the wild after their initial discovery.

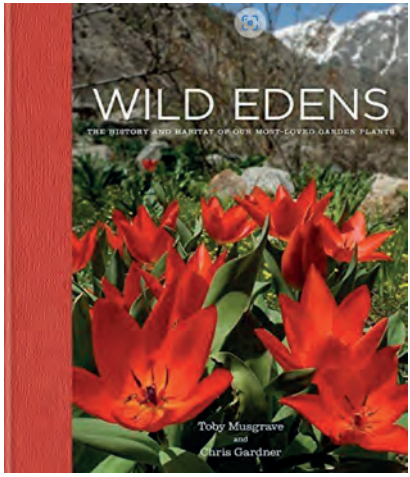
With so much detailed description and scientific information, this book is mainly targeted at the botanist. However, towards the end, Marika Irvine from Gothenburg Botanic Garden contributes a short but useful section on growing, propagation and care; and Jiří Papoušek, the Czech 'Alpine Parrot', shares his expertise on tufa culture, making the book valuable for both professional and amateur enthusiasts. For those wishing to read more, an extensive reference list covers nearly five pages.

A unique aspect is the stunning photography, showcasing the beauty and complexity of *Dionysia*. The authors include numerous full-colour photographs, and many are close-ups highlighting the intricate details.

In summary, this beautifully illustrated book is a comprehensive, well-researched guide to *Dionysia* that will be appreciated by botanists, horticulturists, plant enthusiasts, and rock gardeners alike. If you have an interest in growing and cultivating these beautiful cushion plants, whether experienced or just starting out, this book will provide you with valuable information and inspiration.

Cyril Lafong

Wild Edens: The history and habitat of our most-loved garden plants



Toby Musgrave and Chris Gardner
ISBN: 9781914239250
Octopus Publishing
256 pages & profuse illustrations

This book is an ambitious and surprising revision of many of our normal perspectives on gardening, and a successful one. The authors interleave most effectively the stories of many important ornamental plants, their origins, discoverers, histories and cultivation. How do they do it? They focus on hotspots (Edens) of biodiversity that have provided many of our most valued species. The main chapters deal with the Mediterranean, North America, Antipodes, Western Cape, Chile and Patagonia, Himalaya & Tien Shan, Pontic Alps, Japan, and Western China. Here are combined authority, enthusiasm and creativity in equal measure.

Let me take the chapter on Japan as a microcosm of the whole. The introduction gives a map, fine sense of place, realities of travel, personal experience and Japanese culture, complemented by inspiring images. A brief overview of climate and geography sets the stage for an account of the main eco-regions and habitats; this is when the various species start to appear in the story. There follows a fascinating ten page interweaving of Japanese history and the plant hunters who were eventually allowed entry to what had been a closed world. The entertaining tales of the hunters and their plants are inextricably linked, with detailed credit given to each for their species. I have never before found such pleasure in comparing the discovers' lives and fortunes; Fortune, for example, retired comfortably from his efforts; Veitch died young. There are many such contrasts to enjoy.

Selected specialised recommendations are given for woody plants, trees, *Lilium*, and perennials. Each is described in relation to its natural habitat and potential for garden use. A near-last *Garden Legacy* offers a species-rich and critical journey through the influence of Japanese gardens on the West. The chapter concludes with an inspiring overview of the species, nature and significance of several key sites that – should you be so fortunate as to visit – exemplify much of what you have read.

Eye-catching illustrations of plants and sites abound in this deliciously different work. There is a comprehensive reference list and links to online material. This is a book to inform, delight and inspire.

Anton Edwards