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The ALPINE GARDENER

Journal of the Alpine Garden Society





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The international society for the cultivation, conservation and exploration of alpine and rock garden plants, small hardy herbaceous plants, hardy and half-hardy bulbs, hardy orchids, hardy ferns and small shrubs.

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Editor's letter

As much as we love alpinists, most of us have to agree that rock gardens fell out of gardening fashion for some time. This makes it even more satisfying to include articles in this journal that point to something of a rock garden revival. Our publication has described the substantial restoration project at Newby Hall in North Yorkshire before, and in this edition we return to look at its progress as well as some of the major challenges the rock garden restoration has had to overcome.

I have recently viewed the new rock garden at RHS Garden Harlow Carr. Even though it is bare of plants, the rocks are in place and it creates an impressive foreground to the garden's Alpine House. We take a look at the considerations behind the rock garden's design, its construction and the working methods of its designer. There are plenty of garden design courses available, but I don't remember any that focus on designing with tonnes of limestone rock. Neither can I recall a new rock garden of this size being built in the UK for years.

Gardening on a smaller scale is also covered in this issue, with articles on trilliums, arisaemas and the changes in a garden bed over the course of a year. The threats to our native alpine plants at Ben Lawers makes for more sobering reading: alpinists are being pushed further up mountains to survive, but will eventually run out of room.

We also make a call for volunteers who can share their alpine-growing expertise at a couple of historic gardens. So many horticultural

“This makes it even more satisfying to include articles in this journal that point to something of a rock garden revival”

organisations, gardens, gardening societies and charities (including the AGS) could not survive without numerous volunteers who contribute so much. As organisations find themselves with smaller budgets because of the cost of living crisis, volunteers have never been more valued. If you want to pass on your alpine-growing know-how to a younger generation or less-experienced gardeners and perhaps help inspire AGS members of the future, this is your chance. I have volunteered for several charities and found it rewarding – and enlightening – in so many ways. What's more, you know your contribution is truly appreciated.

Deborah Parker

Six months in the life of an AGS trainee

Josh Tranter sums up the first part of his AGS placement and looks forward to even more alpine-growing experiences

PHOTOS: JOSH TRANTER (UNLESS STATED)

Every year the Alpine Garden Society funds one placement through legacies left to the charitable trust. This gives a young horticulturist the chance to gain in-depth knowledge about the world of alpines. Previously the placements ran for a year. However, with so many great opportunities crammed into 12 months, the placement has been now been

extended to 18 months. This gives the trainee a chance to travel more and to gain greater experience in different working environments.

When I first heard about the traineeship, it was clear it involved many exciting opportunities. I gained a keen interest in alpines during my apprenticeship at Birmingham Botanical Gardens more than five years



Josh selected plants to be put on display in RBGE's Alpine House

ago now, and have built quite a collection of alpine plants at home. I gained more knowledge of alpiners while working for John Massey at Ashwood Nurseries for more than four and half years.

At the end of 2022 I decided to take the plunge and apply to be the next AGS trainee – and here I am, six months into my placement, thoroughly enjoying my time. I have already met many great people and learned lots from them.

During the trainee placement I will be based mainly at the Royal Botanic Garden Edinburgh (RBGE), working in the Alpine and Rock Garden areas. From there I get to attend a number of two- to three-week placements working in alpine departments at other gardens and specialist alpine nurseries. I will also be carrying out conservation work and attending numerous horticultural events during the scheme.

New to Edinburgh

In January 2023, I left the West Midlands and drove north to Edinburgh, a place I had not been to before but was keen to explore. I was welcomed with open arms by the staff at RBGE and it wasn't long before I got set to work in the Alpine Department. When I arrived, the team were busy sorting through freezers to dig out seed collected over the years from various expeditions around the world. I spent some time helping sow the seeds, many of which I hadn't come across before. Whenever I walk past the seed frames, I take a look to see what has germinated so far.

Every week the Alpine House display is changed ready for the weekend for visitors to enjoy. This task means you can browse the many Access frames and glasshouses, eyeing up which plants are looking good enough to be



AARON MARSHALL

One of Josh's highlights has been helping create an impressive snowdrop display



Josh contributed to RBGE's Gold Award winning display at the AGS/SRGC Kendal show

place into the display house. February was snowdrop season so Aaron Marshall and I created a band of snowdrops that snaked through the display plunge bed. We used more than 35 *Galanthus* cultivars. As I write, with spring on the horizon, the snowdrops are fading and other bulbs are starting to emerge and flower, so the snowdrops will be removed and replaced. I enjoy refreshing the display house because so many plants are coming into flower on a daily basis. It's good to know that visitors to RBGE will be seeing these plants at their absolute best.

It has been great seeing the *Fritillaria* collection at Edinburgh in flower. I am currently working on a project on them as part of my traineeship, which means I have been taking lots of photos of the collection. This task has inspired me to grow more fritillaries in the future; I will enjoy putting the skills and experience

I have gained into practice when cultivating them.

Helping with shows

At many Scottish Rock Garden Club shows and joint shows with the AGS, RBGE puts together a pot display of plants from their collection for visitors to enjoy. I was given the chance to get involved with the joint show at Kendal, creating a display with the RBGE team from start to finish. We started by selecting plants that we were sure would look good on the day and tidied them up. We loaded the van with crates filled with plants and headed to Kendal. It was great to be part of this task with the team, especially as we were awarded a Gold for the display. I look forward to being involved in future shows.

During the day I also had the chance to walk around with the show judges,



The Rock Garden and Davies Alpine House at Kew Gardens

who were assessing the wonderful plants people brought to the show benches. The judges showed me how to inspect the plants and what attributes they look for in award winners. Attending show events is a great experience, not least because it brings the opportunity to meet up with many like-minded people. Everyone exchanges hints and tips, and it's good to see all the plants that members have grown and brought to exhibit. Most importantly, there are always many tempting plants to buy from the plant stalls.

Time spent at Kew

No sooner had I settled in at RBGE than it was time to head off for three weeks and start one of my many placements. This first placement was working in the impressive Alpine and Rock Garden department at Royal Botanic Gardens,

Kew. During my short time at Kew I was involved in many different tasks, including refreshing the display in the alpine house, potting and propagation. I got to tour the gardens and glasshouses, and had the chance to see the herbarium that holds more than 7 million specimens.

One task at Kew I relished was planting into the tufa landscape in the Davies Alpine House. We drilled holes into the tufa and planted many tiny plants.

I value the chance to work in different institutions, as every place has its own way of doing things, whichever works best for them. I find it really interesting to witness these practices and have gained a great deal of knowledge and experience. I have made sure to take many notes for future reference, as I will be able to look back at these methods and find those that will work best for me.



DAVID MORRIS

Up close to *Saxifraga oppositifolia* high up in the Yorkshire Dales

Hunting for purple mountain saxifrage

I was invited by AGS President David Morris, Tom Freeth (AGS Trustee) and his conservationist friend Joe Clements, to visit Pen-y-ghent in the Yorkshire Dales to see *Saxifraga oppositifolia* growing in the wild on the limestone cliffs.

It was a really interesting day, even if the weather threw everything it had at us. We experienced a mix of horizontal rain, freezing cold sleet and then sunshine. The renowned Lakes and Dales guidebook author Alfred Wainwright wrote that Pen-y-ghent is the mountain of the purple saxifrage because of the way it decorates the white limestone cliffs. Wainwright compared its radiant beards to aubrieta draping on a garden wall. I can see why! I was pretty mesmerised by the sheer amount of the plant growing here.

Looking back, and ahead

At six months into my traineeship I have already learned so much, met so many great people and have gained a huge amount of experience on the way. My diary is full for the next 12 months with many more exciting opportunities ahead. One upcoming trip will see me travelling to Schachen Alpine Garden, nestled among the Bavarian Alps in Germany. There I hope to see many unusual plants that come from all over the world. I will work at Schachen for three weeks with Jenny Wainwright-Klein and her team. I am looking forward to it – and also to everything else that is lined up during my time as the AGS trainee.

If you want to find out more about my alpine adventures, follow me on social media or read my monthly diary entries on the AGS website. ●

AGS conservation grants

Six months after being awarded grants, the recipients report on the progress of their conservation projects

AGS conservation grants were awarded last year to two projects based in the UK and one in France. At the six-month mark, how are these projects progressing?

Cronkley Pasture, Upper Teesdale

On Cronkley Fell, the 'Teesdale Assemblage' is unique; nowhere else in the UK are these particular species found growing together in such a small area. The majority of them are thought to be relics of a flora that was widespread across Britain at the end of the ice age.

Many are arctic/alpine species, such as *Gentiana verna* and *Dryas octopetala*,

growing at the southernmost edge of their range. Others with more southern distributions, such as *Polygala amarella* and *Helianthemum oelandicum*, are at the northern extremity of their range.

Dryas octopetala, mountain avens, is a long-lived perennial that can be found clinging to the sugar limestone in and around the Whitewell enclosure on Cronkley Fell. This prostrate, semi-evergreen shrub can form deep roots in the shallow soils. However, the exposed edges are subject to wind erosion, which can cause the bare roots to dry out, threatening the plants' survival.

The pink-flowered form of *Polygala amarella*, dwarf milkwort, is found only ▶



GEOFF HERBERT

A view of Cronkley Fell in Upper Teesdale

on Cronkley Fell. This tiny plant thrives in the open, gravelly, limestone soils but is easily swamped by taller vegetation. At Black Arc there are a number of sites for dwarf milkwort, but it is thriving only in one location. In the others they struggle to reach the light.

Within the UK, *Gentiana verna* is found only in Upper Teesdale. These plants form a beautiful display of deep blue flowers studded across the short limestone turf on Cronkley Fell. Sadly, the populations of this iconic plant are also in serious decline. Hoary rockrose *Helianthemum oelandicum* subsp. *levigatum* is found only on Cronkley Fell, and nowhere else in the world. It is easily distinguished from the other two subspecies by the glabrous upper surface of its leaves and in having only up to three flowers on each stem. The small yellow petals reflex, exposing stamens to possible wind-pollination.

The importance of the current survey work being carried out across Upper Teesdale cannot be underestimated. Many of the rare species are declining, some very rapidly. The data from this survey will inform the decisions which must be taken to secure a future for the

rare flora. The support of the AGS has enabled Teesdale Special Flora Trust to fund the survey of a significant area on Cronkley Fell.

Royal Botanic Gardens, Kew

In the past six months, project members in Austria have collected fresh seed material of the three target species (*Gentiana asclepiadea*, *Scabiosa lucida* and *Silene alpestris*). The DNA data of the microbiota from fresh seed material has been extracted and analysis is under way. We are currently awaiting shipment of seeds stored at the Millennium Seed Bank (MSB) to the laboratory in Austria, where the same process for extraction and analysis of seed microbiota will take place – so a comparison can be made between fresh and banked seeds. Project members are currently organising a trip to Austria for further seed-collecting activities, and to visit the seed banking facilities in early September. The main challenge we have faced is the difficulties relating to the bureaucratic process of exchanging seed material for research following the UK's exit from the EU. This had delayed the shipment of seeds out of the MSB to



GEOFF HERBERT

Dryas octopetala

Seed collecting in Austria

the partner institution in Austria, and added strain on the project's timeline.

Jardin Botanique des Alpes-Maritimes (JBAM)

The AGS has donated a £5,000 grant to support the activities of a new botanical garden dedicated to the wild flora and habitats of the Alpes-Maritimes: the Jardin Botanique de la flore des Alpes-Maritimes (JBAM). Around 3,300 plant species can be found in this département, including 140 endemics, contributing to the richness of this biodiversity hotspot.

Practical construction of the plant nursery and propagation area for the botanic garden started in March 2023, after the construction permit and environmental impact assessment for the site had been approved. Development of the main garden site and the habitat zones will start later this year.

The AGS grant was initially planned for seed-collection activities and to contribute towards the construction of a rock and scree zone in the garden. It will now be focused entirely on seed collection, as this will be such a critical activity for the project over the next year. The garden's living collection will be composed entirely of plants grown from wild-sourced material, collected in collaboration with local botanical expert Matthieu Charrier.

A permit for the collection of seeds of more than 60 species of protected plants is due to be issued in early summer, which will lead on to focused collection trips this year and in 2024. Collecting seed from the wild, and visiting the natural habitats, will be invaluable in informing how these plants can be cultivated. The AGS funds will help pay for the time of the botanist, as well as essential equipment for seed collection, including a tablet and software to record the location data for each species: subscription to a botanical database: and reference materials. ●



BETH MARSHALL

Cuttings grown under shade at JBAM



BETH MARSHALL

Erodium rodiei is native to the area

Share your alpine expertise

Two gardens are looking for help – and knowledge – from volunteers to help preserve and develop alpine areas

Two historic gardens are looking for volunteers who can share their alpine-growing know-how.

Birmingham Botanical Gardens

Emily Hazell, Director of Horticulture and Curation, writes: following the development of the Alan King Alpine Garden over the last two years, Birmingham Botanical Gardens is seeking knowledgeable alpine and rock garden volunteers to start as soon as possible.

Since 1829, the botanic garden has been devoted to conservation, increasing plant diversity and public understanding. Embedded in Birmingham's scientific and people's history, social and emotional life, this green sanctuary has protected and brought the value of plants to millions, as well as to a vast urban population. The Gardens have a strong history of cultivating alpine and rock garden plants, with the Hugh Nettlefold garden being laid out in 1894–5, designed by Blackhouse & Son of York. This historic



The Alan King Alpine Garden at Birmingham Botanical Gardens

Nettlefold Alpine Garden still stands today. Yet this garden, planted with magnolia in the 1890s, is less suited to the cultivation of alpines today. Fortunately, the Alan King Alpine Garden was completed during the pandemic (with the help of an AGS conservation grant) and its associated glasshouses provide the opportunity for alpine plant conservation and cultivation. Planting has started but we still have a significant amount of planting and labelling to go.

We would love to welcome volunteers with experience of tufa planting, alpine plant cultivation in rock gardens and plunge pots to work alongside our team. We need people who will be happy working from the rocks, weeding, cutting back, planting, labelling, stock checking, potting, propping, watering – anything you can think of relating to alpine plants. Once volunteers have completed a set number of hours, we are able to offer complimentary membership, which gives access to the gardens and a discount in our shop.

It is an exciting time to join the team as we are in the development phase of a project to restore the glasshouses and other aspects of the infrastructure at Birmingham Botanical Gardens – to ensure we will still be an ‘oasis of delight’ for the next 200 years.

If you can help, please contact emily@birminghambotanicalgardens.org.uk

The Weir Garden, Herefordshire

The Weir Garden is 4.6 miles west of the city of Hereford, writes its Senior Gardener Claire Tatler. It is a garden of mixed horticulture including a Woodland Garden, yew topiary, historic trees, Rockery and Kitchen Garden. The gardens cover approximately 11 acres; however, the Gardens and Parkland combined extend to 254 acres. In 1927 Roger Parr purchased The Weir. With his Head Gardener,

William Boulter, he created the gardens as we see them now, and constructed the ‘Alpine Rockery’ using limestone brought up from Cheddar.

Measuring 10 x 10m and sitting on a steep, south-facing slope, the Rockery has been designed as a peaceful haven with rills, waterfalls and small ponds.

Little is known about the planting scheme for this area and over the years the planting there has lost its structure and become untamed. We are keen to create a planting plan – it is a complex space, tied together with meandering paths that lead through the Rockery. One of the areas sits in shade, with the moss-covered drip waterfall, surrounded by ferns where *Hellebore* and *Epimedium* flourish. Another area sits in full sun, requiring a different planting vision. Acid-favouring plants have to be disregarded – throughout the gardens the soil sits between neutral and alkaline. We would welcome some expert advice on this initial phase.

Plants need to be as low maintenance as possible, to be easily sourced and peat-free. We are looking to completely renovate the planting over the next two to three years, with a view to having a National Plant Collection here one day. We have already had some fantastic advice from the AGS regarding options for mulch on the rockery, but now need help identifying what planting we have that is appropriate, what needs to be removed, and what can be added.

If anyone could also give their time to help with the initial clearing and weeding of the space, this too would be greatly welcomed. We would appreciate any time that someone could give – even just a few hours a month. It would be a fantastic opportunity to see this beautiful space transformed and given the attention it deserves. For more information and to express interest, please contact claire.tatler@nationaltrust.org.uk ●

Celebrating 90 years of Scottish Rock

SRGC returned to its roots to mark its anniversary; AGS President David Morris joined in the celebrations and looks at what links both societies, now and in the future

Scottish Rock Garden Club (SRGC) celebrated its 90th anniversary in May 2023. The society is just three years younger than the AGS. Fittingly, the celebration was held at Royal Botanic Garden, Edinburgh (RBGE) – its birthplace – and as one of its founders was a former curator of the botanic garden, Roland Cooper.

Anniversary celebrations

David Morris, AGS President – and a longstanding SRGC member – attended the celebrations led by his counterpart,

SRGC President Colin Crosbie. Both societies have similar aims and like-minded members whose ideas overlap.

David believes SRGC complements the work of the AGS and sees the groups as kindred spirits, sharing members, friendships and the same passion for alpine plants. David thinks that one of the major benefits of the SRGC is its friendly, online forum – a great source of information on alpine growing for those just starting as there is always someone who can answer questions and offer advice. The forum is not just for members but brings



Colin Crosbie (third left) and David Morris (far right) among those celebrating at RBGE

contributions from alpine growers from as far away as Asia and New Zealand.

If there is a general difference between SRGC and AGS members, David thinks it is which plants people grow and that is down to climate: those in the Scottish organisation can grow a different range of plants to those further south in the UK. Cushion plants and saxifrages are popular in the south; those in Scotland seem to favour bulbs, ericaceous plants and woodlanders.

Back to where it began

As the celebrations for the AGS 90th anniversary had to be cancelled due to Covid and the lockdown, David was particularly pleased to share in SRGC's celebrations in person with so many friends and colleagues in the alpine world, linking the AGS, SRGC, RBGE and The Cally. The event was held in the Old Herbarium at RBGE. David said, 'It was great to be in the natal home of SRGC at such a friendly and informal event. John Mitchell led us on a tour of the rock garden, alpine areas

and woodland to see trilliums, meconopsis and peonies in flower. It felt great to get together after so long.' He also appreciated the impressive and delicious birthday cake.

Looking ahead together

The President and Trustees of the AGS recognise the importance of closer working with SRGC in future, and the boards of both organisations have already had a joint meeting.

David said, 'We already hold the Young Person's Weekend in conjunction with SRGC, and of course hold joint shows with them in Kendal and Hexham, but there are more ways we can work more closely together. Perhaps we could have a joint show in Scotland or introduce joint Local Groups near the border.'

'We look forward to working together in future as we have so much in common, not least that both societies have reached a good age. I congratulate Colin Crosbie and all in Scottish Rock on reaching their 90th anniversary.' ●

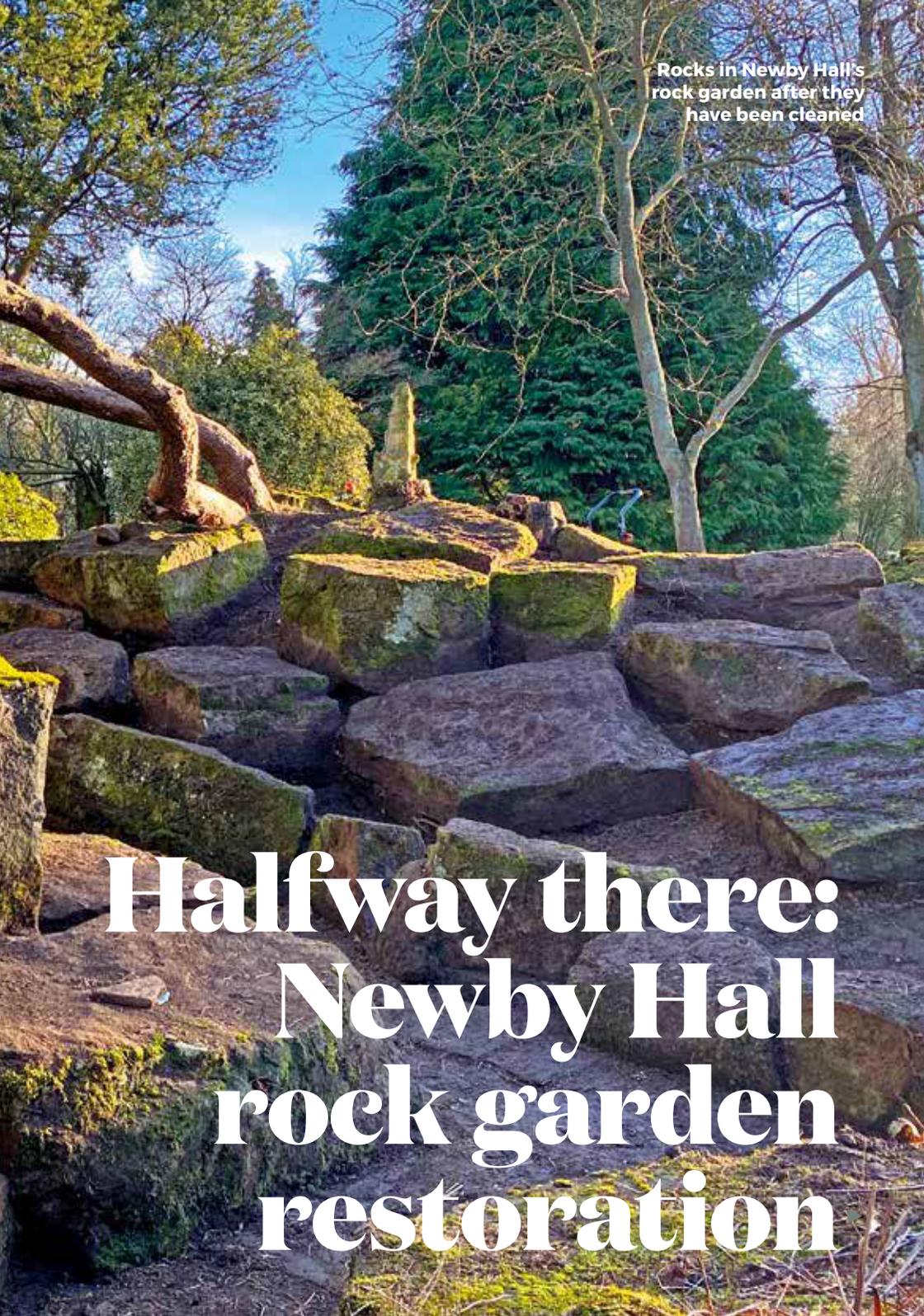


The Old Herbarium and rock garden



An edible trough atop the cake





Rocks in Newby Hall's
rock garden after they
have been cleaned

Halfway there: Newby Hall rock garden restoration

Restoration of the rock garden at Newby Hall in North Yorkshire has reached the halfway stage, as **David Rankin** and **Lawrence Wright** report. Flooding is just one of the challenges they faced

PHOTOS: DAVID RANKIN AND LAWRENCE WRIGHT (UNLESS STATED)

Take a 100-year-old rock garden, and embark on a complete rejuvenation, spread over four to five years. What could possibly go wrong? Not much, if you ignore weather (heatwaves, deep freezes, droughts, storms, floods), the plague – and small children. As we pass

the halfway point of this grand project we look back; and building on what we have learned, we look forward to finishing the job.

'We' in that last sentence is not the same as the team that started the project. (*The Alpine Gardener*, Vol. 88 no.4, pp376–385). When Covid struck,



DAVID PETHERBRIDGE AND EDWARD ROUND

Map showing the different zones of the rock garden and the different phases – each of which takes two years – of the restoration. Phases 1, 2 and 3 have been completed

almost all the garden staff at Newby Hall were furloughed, leaving the Head Gardener as the only working paid employee, while Lucinda Compton, wife of the owner Richard Compton, became even more hands-on than usual. Lucinda refers to herself as the curator, reflecting her sense of having responsibility for a garden that has existed for hundreds of years, passing it on to future generations. Astonishingly, through the Covid years, the rock garden renovation continued almost unabated, in parallel with maintenance of the rest of the garden.

But Covid had other consequences. As in many other gardens, staff were unsettled. The outcome has been a complete renewal. Lawrence, one of the authors of this article, is the new Head

Gardener. He says, 'I have been joined by a committed and enthusiastic team. We are all learning as we help finish the transformation of this part of the garden, while caring for the rest of the formal gardens – all 25 acres of them.'

That is the context in which we now take a look at where we have been, where we are, and where we are going. For all the gardening team, this is a project that was under way when we arrived. It is new to us. To Lucinda, and the consultants Stella and David Rankin of Kevock Garden Plants, it is a vision that is being realised – and modified as we all learn from our experiences. In this article we first show you something of what has been done. Then we consider all the constraints on what we can do, and how we have dealt with



The rocks before clearing (after clearing is shown on p142–143)



Zone L (see map p144) after initial clearing, ready for planting

them. Of course they influence future plans. So finally we discuss the remaining stages, which involve big challenges that we have not yet had to face. Learning never ends.

Plans and site preparation

The original plan was to complete the renewal in four phases, at one-year intervals. The practical and financial consequences of Covid made it sensible to extend that to five phases. In practice, each phase runs over two years, so they overlap. In the plan of the rock garden (p144), zones A–F and H were planted in 2020; G, I, J and M in 2021; and L and R in 2022.

Site preparation: this started with

removal of some of the trees, but by no means all. There was concern that opening space in the rock garden, which had become part of a wood, would make remaining trees vulnerable to wind. But despite several major storms in recent years, these fears have not been realised, although there has been extensive damage elsewhere in the garden. This clearing has opened up vistas, so that there is now a sense of the whole rock garden as a single entity. We hope to entice visitors to explore, including those who get a view from the narrow-gauge railway that passes below the garden.

Each phase of preparation begins early in year one with clearing existing



Planting under way in the damp valley (centre of the image, left) in zone L

planting that is not being retained, revealing the rockwork in all its glory. Exciting! Then perennial weeds are treated with herbicide as they appear through a whole growing season, as part of the procedure that aims to minimise maintenance time after new planting has been completed.

Over the following winter the planting areas, which may extend for anything from a few centimetres to tens of metres, are cleared and cleaned. Some rocks may need to be reset, but as far as possible we retain the original structure. The disturbance that occurs during excavation results in untold numbers of seedlings rising from the 100-year-old seed bank in the soil. These are again treated with herbicide to clean up the ground before fresh compost is added shortly before planting. About 10cm in depth is used,

and 5cm of topdressing afterwards, so quite a lot of the existing soil needed to be removed. Any gaps between rocks that would allow soil or topdressing to flow through were closed, sometimes requiring the addition of 'chock' stones. These may not look beautiful, but they are soon hidden by the planting.

Planting and topdressing

So far, planting has been done in autumn, shortly before the Harrogate Autumn Flower Show, which since 2021 has been held at Newby Hall. Stella and David lay out the plants, and with the full Newby team thousands of plants can be planted and topdressed in two or three days. In the 'alpine' areas the topdressing is 10–20 mm gravel, with some larger pieces of stone to make it more varied. Each year many tonnes have to be lifted in trugs and



The cascade – the water was turned off during planting

carefully placed around the plants. In the ‘meadows’ and more shaded areas we use bark, which is lighter and flows into position more easily – something the team is very thankful for.

The gravel originally chosen is too pale, and looks incongruous with the darker rocks, although it does darken as it weathers and becomes hidden by the growing plants. We have at last found a millstone-grit quarry that is willing to crush stone for us, so future areas will be better, and in time the original ones will be improved.

Varied planting zones

There is a great range of habitats, even in the areas already planted, shown in the map on p144 and our photographs of the rock garden. There is shade from trees, both around and some remaining within the site, and there are slopes to

north, south, east and west, with gradients up to nearly vertical. So, not surprisingly, there is the full range from open, well-drained banks to cool, damp places. There are also artificially wet places, particularly in zones G, I and J, the most extreme being the cascade, fed across an aqueduct – an unusual feature in a rock garden.

Working within these constraints, we have given areas their own special characteristics. At the southwest corner of zone J there is a stone arch (shown above right), where water from the cascade emerges. The roof of the ‘cave’ beyond the arch had to be made safe, and this was done by using all the tufa on site. In the extreme heat in the summer of 2022 some of the plants here suffered; those that thrived included *Lewisia* and *Lithodora*. The slope to the right beyond the workers in the photo



LUCINDA COMPTON

The Estate maintenance team help out, adding tufa around the stone arch in zone J

on p147 was planted as a ‘Tibetan plateau’, with dwarf rhododendrons, interplanted with some of the many alpine plants that grow with rhododendrons in the wild, such as *Incarvillea* and some irises.

The flat area at the top of this zone was used as an alpine lawn, a concept developed by Clarence Elliott, alpine specialist and author. The plants are predominantly low and spreading, but with a few upright ones interspersed. And the area on the left of the photo on p147 was used for New Zealand plants. It slopes slightly to the north, so is a little cooler than most locations. Despite

the hot, dry weather, most plants survived summer 2022; but the larger-leaved *Celmisia* gave up.

Challenges

The garden at Newby is open to the public from April to September, and for many years the overgrown rock garden was a playground for children – and sometimes for their parents, too. We want to welcome everyone, but most people want to see plants, which have to be protected. In a few places where clambering over rocks is inevitable, we used small plants in all the nooks and crannies, where they won't be too



The alpine lawn on a plateau in zone J includes various thymes, geraniums and armerias

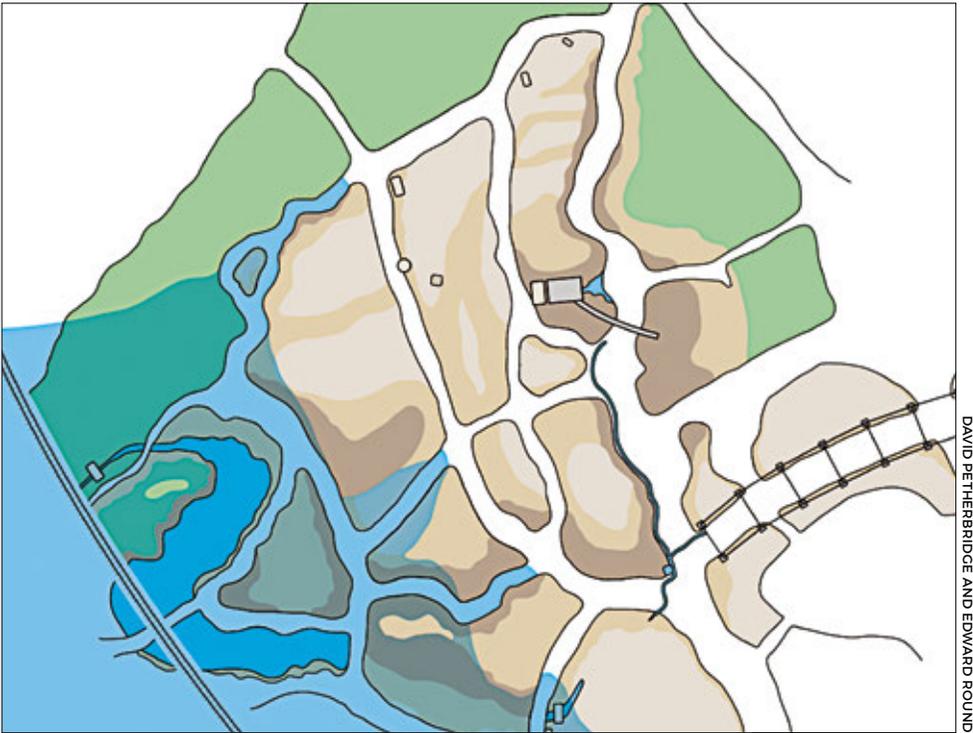
seriously trampled. Elsewhere we made the distinction between paths for walking and planted areas as clear as possible, by the colour of the gravel and by having fairly dense planting. At particularly enticing climbing points we used shrubs as blocks, and in a very few places hoops were placed along the edges. And where climbing would lead to dangerously high drops, a barrier of prickly plants found a home. *Berberis* and *Aciphylla* is not a combination encountered in the wild, but it is an extremely effective deterrent.

Squirrels are other animals that need to be deterred. On the morning after planting lots of crocus bulbs, we discovered that they had been used as a breakfast treat: but only where they

were under bark mulch. The gravel mulch was undisturbed. Tulips are also apparently delicious, but colchicums and fritillaries are treated by squirrels as if they are Brussels sprouts.

We have referred to the hot summer of 2022, when temperatures reached the high 30°s celsius. It is possible to water the rock garden, but not all of it at any one time, and not when there are lots of visitors. Some plants were lost, but not as many as was feared. One problem with extreme heat is that after watering, plants are susceptible to rot. The stony mulch and intermittent watering may have saved the day.

Wind, although severe, has not caused major damage, possibly because the site is sheltered by woodland,



DAVID PETHERBRIDGE AND EDWARD ROUND

Plan showing in blue the areas of the rock garden prone to flooding

particularly on the west side. There was also an exceptionally cold spell in December 2022, with temperatures down to -8°C , but thankfully this does not appear to have caused us much serious damage. In other places plants were lulled into thinking that spring had arrived in January, only to be caught by more frost in February and March.

Risk of flooding

Perhaps the greatest challenge remains to be tackled. Much of the rock garden that remains to be renewed is at the lowest levels, close to the river. Here it is called the River Ure, but a few miles downstream it changes its name to the River Ouse, infamous for periodically flooding the city of York. Almost every

winter, often on several occasions, it floods, and all the areas shaded blue in the diagram (above) are vulnerable. In more severe floods the water, can be over a metre and a half deep.

The consequences for our planning of the planting are enormous. First, although floods usually last just a few days, the plants have to survive being under water. Secondly, they have to hold on; beautiful as they are, we don't want them floating past York. That means that the areas below high tide mark will have to be planted in spring, and although these areas are wet – very wet – in winter, they can be very dry in summer. They will need to be looked after, so that they are well established before winter. A spring planting gives



A flood covers the lower part of the rock garden – but floods here can be 1.5m deep

the best possible chance of well-developed root systems before a winter inundation. Thirdly, floods leave a huge amount of detritus. This has to be cleared from the whole lower area at the end of March, when the chances of another flood are small, and just before the garden opens to visitors. It isn't feasible to lift it all by hand, so we have to consider a new property of alpine plants: rakeability. They have to be either herbaceous and late emerging, or tough.

So phase 4 will include all the remaining areas that are above the potential flooding area, in zones N, O and P, to be planted in autumn 2023, and a small experimental area lying low

down, planted in spring 2023. For once we will be wanting a flood, to test our ideas. The lower parts of N, O and P are to be planted in spring 2024, and the project will end with planting of the remaining lower zones in spring 2025.

Rock garden plants

We have hardly mentioned any plants by name in this article. We cannot list them all as we have planted about 13,000 plants and bulbs of nearly 700 cultivars. You will have to come and see for yourself. To whet your appetite, right and overleaf are a few images of just a few of them.

Our work here is not for the purist



Flood water recedes but leaves masses of debris that needs clearing

alpine gardener. We are in the middle of the renewal of a large historic garden, with many quirky features. We are not only reviewing progress and plans for the rest of the project; we are also revealing some of the 100-year history of the rock garden, and looking forward – aiming to please and inspire visitors. ●

References

David Rankin and Lucinda Compton (2020), *The Alpine Gardener*, Vol. 88, no. 4, pp35-45.

Clarence Elliott (1936), *Rock Garden Plants*, Edward Arnold Publishers Ltd, London.



Fritillaria raddeana



Helleborus thibetanus



Pulsatilla vulgaris 'Alba'



Anemonopsis macrophylla



Cyananthus microphyllus



Iris 'Harmony'



Meconopsis flourish in zone L in the rock garden at Newby Hall

Fritillaria meleagris

CM Jackson-Houlston



ARTWORK AND WORDS: CM JACKSON-HOULSTON

For the artist, snake's head fritillary (*Fritillaria meleagris*) has the advantage of being widely available commercially in the same form and colour variations as the wild plant (white with shadowy markings, or pale mauve-pink). This avoids the risk of damaging them if painting in a protected site, or of getting a wet bottom. The sparsely

elegant narrow leaves do not distract effort or attention from the relatively large and intricately chequerboard-patterned flowers. For the gardener, the problem is often persuading a purchased plant that it is not an annual. I have little luck in establishing them, and none since the arrival of lily beetle in the garden about five years ago.

Encountering eastern Turkish delights

Cedrik and Štěpánka Haškovec travel up Palandoken mountain in eastern Turkey in search of botanical treasures

PHOTOS: CEDRIK HASKOVEC

Most people travel to Turkey (Türkiye) to enjoy the sights, historical landmarks and swimming at its beaches. But there are also plenty of

people who also go there for flowers, and we are among them. There are many beautiful, interesting and often endemic plants there. (Nearly a third of plant species in Turkey are endemic



Tchihatchewia isatidea growing on a roadside clay embankment



A delightful natural rock garden found among the mountains



Fritillaria alburyana

– they do not grow anywhere else.) Much of the country is a plateau at an altitude of 1,000–1,800m above sea level; elsewhere mountains tower to 2,000–3,000m. In addition, it is hot in summer and rain is scarce, which means alpinists face little competition from grasses and other plants that are of little interest to those that love flowers.

One of the places that interested us from a botanical point of view is the Palandoken mountain, which lies south of the university city of Erzurum and is part of the Pontic Mountains of northeastern Turkey. There is also a ski resort on the slopes of Palandoken, where international skiing competitions are held. Erzurum itself is at an altitude of 1,900m and we chose it as a suitable starting point for trips to Palandoken and to other locations. En route to the mountains we saw several robust endemic plants on roadside embankments. They were plants of *Tehihatchewia isatidea*, named after the



Allium akaka, found at 3,000m, has a leaf or leaves reaching around 20cm in length



Iris caucasica subsp. *turcica* is found in central and eastern Turkey

Russian geologist Tchihatcheff (1812–1890). Above one of the passes we also found mountain rhubarb *Rheum ribes*, which grows at and above 2,000m. It is very similar to the rhubarb that people cook in pies and compotes.

Turkish tulips and alliums

We were in the area in early June, when most of the snow had already melted but there were still remnants of it at higher altitudes. By car, we reached a height of about 3,000m where we saw, among other plants, a number of wild red and yellow tulips (*Tulipa* species) on a stony slope. This was not surprising; the tulip is the Turkish national flower, which appears as a number of floral images, for example as patterns on ceramics. The name of the turban is

said to be derived from the word tulip. Tulips came to Europe via Vienna as a gift from a Turkish sultan; they became domesticated in Europe and now perhaps a thousand cultivars are grown.

There was also interesting, low-growing purple *Allium akaka* with its one or two large leaves close to the ground. This *Allium* grows in neighbouring Iran as well as Turkey, and is also used for culinary purposes – for example, in a pilaf.

Right at the start of our travels, at an altitude of around 3,000m, we were most delighted to find rare, low-growing (up to 10cm), wine-colour checked *Fritillaria alburyana*. It grew where the snow had just melted and is named after Sidney Albury, one of those who discovered the plant, but who later



Corydalis nariniana

died while plant collecting in Nepal.

During our journey we enjoyed flowers including low-growing, yellow-green flowered *Iris caucasica* subsp. *turcica*, rare *Corydalis nariniana* and *Ranunculus dissectus*. In a number of places we saw charming *Colchicum szovitsii* near the melting snow. It is interesting that in Turkey, as well as in a number of southern European countries, crocuses as well as alliums bloom in both spring and autumn, whereas in our home country (Czech Republic), crocuses bloom only in spring and alliums in autumn. We really liked just-blooming white *Erodium amanum* and violet-flowered pasqueflower *Pulsatilla armena*. It is impossible to enumerate everything we saw on our travels, but would at least mention white-flowered *Pedicularis caucasica* and blue *Veronica caespitosa*. Our attention was also drawn to bunches of



Ranunculus dissectus



Colchicum szovitsii



Endemic *Erodium amanum* grows in the mountains of central and eastern Turkey



Yellow-flowered *Alyssum lepidotum* growing with white *Androsace villosa*

Thlaspi sintenisii, which were similar to the ones we have seen in the Dolomites. We concluded our wanderings in search of flowers in this beautiful corner of the country with the charming and endemic *Alyssum lepidotum* and yellow-flowered perennial *Erysimum uncinatifolium*.

Near the summit

At an altitude of around 3,000m, we were surprised by a small Palandoken bastion, which was a remnant of battles between the Turks and Russians in the 19th century. In this area there is a lack of trees that could provide wood for

heating. As a result we passed villages where we saw the bricks, used for heating and made from cow dung, being dried in front of the houses. We were often surrounded by curious children, who only knew a single English sentence: 'Which country are you from?' We found the Turks to be friendly people; Turkey is an interesting country, rich in natural beauty and one worth visiting. ●

The authors would like to thank Karel Sigler for his assistance in translating this article. Any questions, please contact cedrik.haskovec@gmail.com



Veronica caespitosa

Thrilled by trilliums that thrive in an Irish garden



Trilliums thrive in the author's garden in southeast Ireland

His first experiences with trilliums may not have been successful, but **Paddy Tobin** has become entranced by these plants and picks some favourites

PHOTOS: PADDY TOBIN

My wife and I garden in the southeast of Ireland, on the outskirts of Waterford City, a rural setting surrounded by agricultural land. We have been here since 1987 and our original small garden has since been extended to approximately an acre. It is north-facing with good rich loam that is slightly acidic and is wet in winter with a high water table, but good to dry in spring as there are deep deposits of gravel below. Gardening has been our shared

pastime for just touching 45 years and the garden might be described as one of general rather than specialist interests, although we do have a particular attraction to snowdrops – everybody is entitled to one fault in life, surely!

In recent years, trilliums have begun to thrive in our garden and I have come to appreciate them more and more. There was a time when I was quite nervous about growing them as I imagined they would be difficult to



Trillium chloropetalum

please, and my early experiences with them certainly bore this out. My first attempts at cultivation were with dried rhizomes supplied via mail order. While I still have them in the garden, they have hardly increased to any worthwhile degree in perhaps 15 years. That was obviously a disappointment and a discouragement. However, my recent reading of *Trilliums* by Frederick and Roberta Case (Timber Press 2009) has led to my realisation that the plants then supplied as *Trillium grandiflorum* are in fact *T. flexipes*; *T. erectum* is really *T. sulcatum* and *T. recurvatum* is simply another *T. sulcatum*: all bearing out the unfortunate comment in the Cases' book that nearly all trilliums supplied in the trade are misnamed. Indeed, a plant recently purchased as *T. flexipes* white form turned out to be a white form of *T.*

sulcatum. As you may have guessed, by now, and as my wife has said, I may well be on the way to becoming a trillium bore.

Gifts of garden plants

My miserable experience with trilliums changed with plants gifted from two wonderful gardeners. AGS members in Ireland will certainly know of the late Bob Gordon, who gardened in Portglenone, County Antrim. He was a man who had a fabulous garden with a wonderful selection of plants and for whom trilliums grew and self-seeded with extraordinary fecundity and vigour. *Trillium chloropetalum* flourished in Bob's garden as though it were on growth hormones and produced some wonderful variations in its seedlings. Bob gave me good clumps of *T. chloropetalum* and



Trillium albidum



Trillium albidum



Trillium flexipes



Trillium chloropetalum 'Val Mulvihill'



Trillium kurabayashi



A plant with a pink tinge: probably a cross between *T. albidum* and *T. chloropetalum*

T. kurabayashi and they continued their vigorous growth habit with me; with regular division they have now made more fine clumps. Some beautiful and interesting seedlings from Bob's garden have also reached me via other kind gardeners.

Trillium albidum came to me from the late Miss Rita Rutherford, a stalwart of the Royal Horticultural Society of Ireland. I had visited her to see and receive bulbs of *Galanthus* 'Lady Moore', which she had kept growing over the many years since she and her mother had received bulbs from Phyllis Lady Moore herself at a Sale of Work at the Mansion House in Dublin at the beginning of the Second World War. Along with the snowdrops, Rita also gave me a plant of *Trillium albidum* that grew very well with her and has continued to grow exceptionally here, seeding about with

almost an extreme generosity (becoming a weed?) so that there are now at least 100 plants in the garden – I planted out more than 80 seedlings along a narrow border two years ago, and most are now into flower. I look forward to their bulking up and making an impressive display.

These plants changed my experience of and attitude to trilliums completely – now I had plants that would grow and increase and make a decent contribution to the garden, rather than simply exist as a single stem supporting a single flower for years on end. Having good, strong-growing garden plants that were robust and healthy and could be divided regularly brought impact to the garden. These trilliums were not the Cinderella plants I had grown poorly for years, but ones which were worth their place in the garden for their vigour, performance, and beauty. ▶



Trillium kurabayashi

Star garden performer

Trillium albidum is a native of western North America, from San Francisco Bay northwards into Oregon and is without doubt the best performer in the garden here. It has vigour, good health, length of flowering, ease of cultivation, hardiness and, to my eye, a strikingly beautiful flower. Few herbaceous plants equal the two months of flowering provided by *T. albidum* as it opens here in mid-March and continues in excellent condition to mid-May. As the name suggests, the flower is white but the base will regularly have a tinge of pink. I have found that if it is grown in the company of *T. chloropetalum*, seedlings with more extensive pink markings, even entirely pink flowers, will appear in the garden. For me it has proven a wonderfully easy plant to increase through division of the robustly growing clumps or through seed, although I must say that I have never

gathered seed for this purpose but have simply lifted self-sown seedlings as I've wanted them or – as has more often been the situation – to prevent them swamping groups of precious snowdrops. I never imagined I would come to the day when trilliums became a nuisance in the garden.

Of mixed appeal

There is something about the colour of *Trillium kurabayashi* that divides opinion: appealing to some while appalling others. It is certainly an eye-catching, yet not gaudy colour and my opinion vacillates between admiring its dark purple-red richness and feeling at times that it is a little sombre.

Though I treated my original planting rather poorly, allowing it to become overrun by a vigorous hosta, when rescued it gave me a dozen or more excellent plants that have formed a very pleasing group. There are seedlings



Trillium chloropetalum (ex Hilary McKelvey)

still to be rescued from among that hosta and it may make more impact in coming years. As with *T. albidum*, *T. kurabayashi* is native to California and Oregon in the USA, perfectly hardy and amenable to open-garden cultivation.

More US natives

Pedicellate trilliums (those with flowers borne on a stem) generally have smaller flowers than their sessile relatives but have an elegance and daintiness about them that I find most appealing. *T. flexipes* and *T. sulcatum*, both natives to eastern USA, are especially attractive to me. I wish they would grow more strongly although I am heartened by the way some plants of *T. sulcatum* have responded to a change of position and feel a similar move would benefit the others – out from the shade of trees to a more open situation with less competition. They will never make as significant a contribution to the garden

as *T. albidum*, *T. kurabayashi* or *T. chloropetalum*, but will be given special spots and will still be enjoyed.

The Californian native *Trillium chloropetalum* is an excellent garden plant, both in the usual form we grow – *T. chloropetalum* var. *giganteum* – and



Trillium sulcatum



Trillium chloropetalum 'Bob Gordon'

the several varieties and seedlings that have arisen. These robust plants with their striking purple flowers are most amenable to open garden cultivation and respond well to regular division. After several years it has made a good display here and self-seeds generously. *T. chloropetalum* has both purple and yellow pigment in its flowers; the purple generally dominates, but the yellow occasionally comes to the fore in seedlings.

I grow two that came from Hilary McKelvey, an AGS member who gardens in Bessbrook, County Armagh. Both are predominantly yellow with an intense wash of green infusing the petals and show more yellow as they fade (pictured on p171). Both forms are robust growers, shorter in form than the species, and make attractive and interesting ornamental plants. *T. chloropetalum* 'Val Mulvihill' is a light yellow fading to a rich creamy yellow and is of short stature, a gentle presence in the garden.

Firm favourite

I have held my favourite till last, a wonderful plant which Bob Gordon passed on to Billy Moore among other seedlings. As it grew and flowered, Billy realised he had something truly special for the yellow of the flowers is bright and clear and the plant strong-growing and generous to flower.

Billy has shown it over several years at AGS Shows, when it has invariably received awards and always been admired. When it was shown at the 75th Anniversary Ulster Group Show the plant received a Farrer Medal and was given an Award of Merit by the Joint Rock Garden Plant Committee. It was suggested Billy should name the plant and he duly did so, giving us *Trillium chloropetalum* 'Bob Gordon'. I treasure it for its attractiveness but even more so for the memory it carries of a wonderful man and for the generosity with which it was shared with me. A plant of beauty and with good connections! ●



Trillium albidum growing with *T. chloropetalum*



Trillium kurabayashi, *T. chloropetalum* and *T. albidum* grow under an ash tree



Mastering the art of a new rock garden



New, sizeable rock gardens are a rare occurrence these days. During her alpine-based placement at RHS Harlow Carr, **Lauren Fear** enjoys being involved in all aspects of the new garden's creation

PHOTOS: LAUREN FEAR (UNLESS STATED)

It has been a very good year in which to be completing the Alpine Professional Work Placement at RHS Garden Harlow Carr in North Yorkshire. This is a paid position that gives students the opportunity to spend a year contributing to the day-to-day activities of the alpine team, gaining knowledge and learning specialist skills as they work alongside professional alpine gardeners Amy Smethurst and Bertie Swainston. A highlight for me has been that, as a student, I am trusted to look after my own small parts of the collection, which has given me the opportunity to gain an even deeper understanding of those particular plants.

Since starting last September, I have seen many things change and progress in the alpine department. The

development of a large new woodland alpine area, the addition of a cactus bed in the Alpine House and of course our biggest project of all: the installation of a new limestone rock garden.

I am of course biased, but in my opinion, at Harlow Carr, the Alpine House is definitely the main highlight of the gardens. Outside, it is backed by vertical slate and tufa planting and is surrounded by carefully designed troughs. Inside, our sandstone landscaped beds are filled with plants showing huge variation in colour, origin and form, while the plunge beds always display our best and most interesting specimens. It truly is quite beautiful. That being said, the front aspect of the Alpine House has always appeared as if floating in a sea of lawn, creating a harsh buffer zone that made it seem



SAM BOOTH

Amy Smethurst, from the Alpine Department, and Tim Roberts unload rock that has been transported from a site behind the old Bath House at Harlow Carr



AMY SMETHURST

Rock garden designer Tim Roberts assesses the placement of rocks by eye

an island of alpines, separate from the rest of the garden.

Initial idea for the garden

It is this disconnect that initially gave rise to the idea of the new limestone rock garden on the western lawn. The topography of this area begins level along the path, and then forms a shoulder and smooth slope down to the top of the Kitchen Garden. This undulation makes it an ideal space to cut back into and put down a craggy, natural-looking escarpment.

The site of the new rock garden is south-facing, so there will no doubt be issues with heat and dryness. One of the ways we hope to counter this problem is by angling the escarpment back, so it appears to crop out and up from the ground. This not only creates a more natural look, but will also slope

the beds themselves slightly away from the sun. We hope this will give them a touch more of a northern aspect and help reduce the possibility of plants getting burned off.

Rock garden designer

Substantial rock gardens, such as this, do not come as a kit, so outside expertise was required. Tim Roberts, a lifelong member of the Alpine Garden Society, was called in to lead the build. Tim has been working with rocks, man and boy. 'I got started at an early age: my brother and I used to go to work with Dad in the school holiday,' he says. His father was Michael Roberts, rock-garden architect and owner of Holden Clough Nurseries from the early 1970s. On Saturdays, Tim and his brother Nick would help at the nursery, moving stock around, preparing the plants for ▶



The telehandler was an essential piece of kit during construction



The rock garden turns muddy as the limestone rocks continue to be positioned

delivery and refilling the plunge beds. 'We also used to spend a lot of time walking in the countryside. That's where my love of nature came from, in among the rocks of the Yorkshire Dales and the Lake District, Welsh hills and the Scottish mountains,' says Tim: 'It was an idyllic upbringing.'

Upon leaving school, Tim and his brother joined their father designing and building gardens. Tim's most memorable project, completed in his mid-teens, was helping to create a mountain-like landscape for Markhor goats. 'Blackpool Zoo was a favourite as 1,200 tons of huge sandstone rocks were used; the sheer scale was impressive.' The rocks remain there to this day, although now are home to a troop of gorillas, providing them greater freedom to forage in a more naturalistic setting. Tim's father

died aged 51, but he and his brother continue working together on rock gardens till this day.

'A successful rock garden is one that looks like it belongs there or as if it has been there for a long time,' says Tim. 'There is no fixed design, simply an idea of the best way the rocks will sit in the landscape.' So, with his experience and keen eye, we hope the finished article will be a natural-looking, angled outcrop with paths running along key sections to allow for closer viewing of the plants, as well as the rocks themselves.

Building the rock garden

The building of the rock garden began during the driest February in 30 years, and moved well into the wettest March in 40. This meant initially construction could start in



Close-up work with the rocks during construction to ensure stability

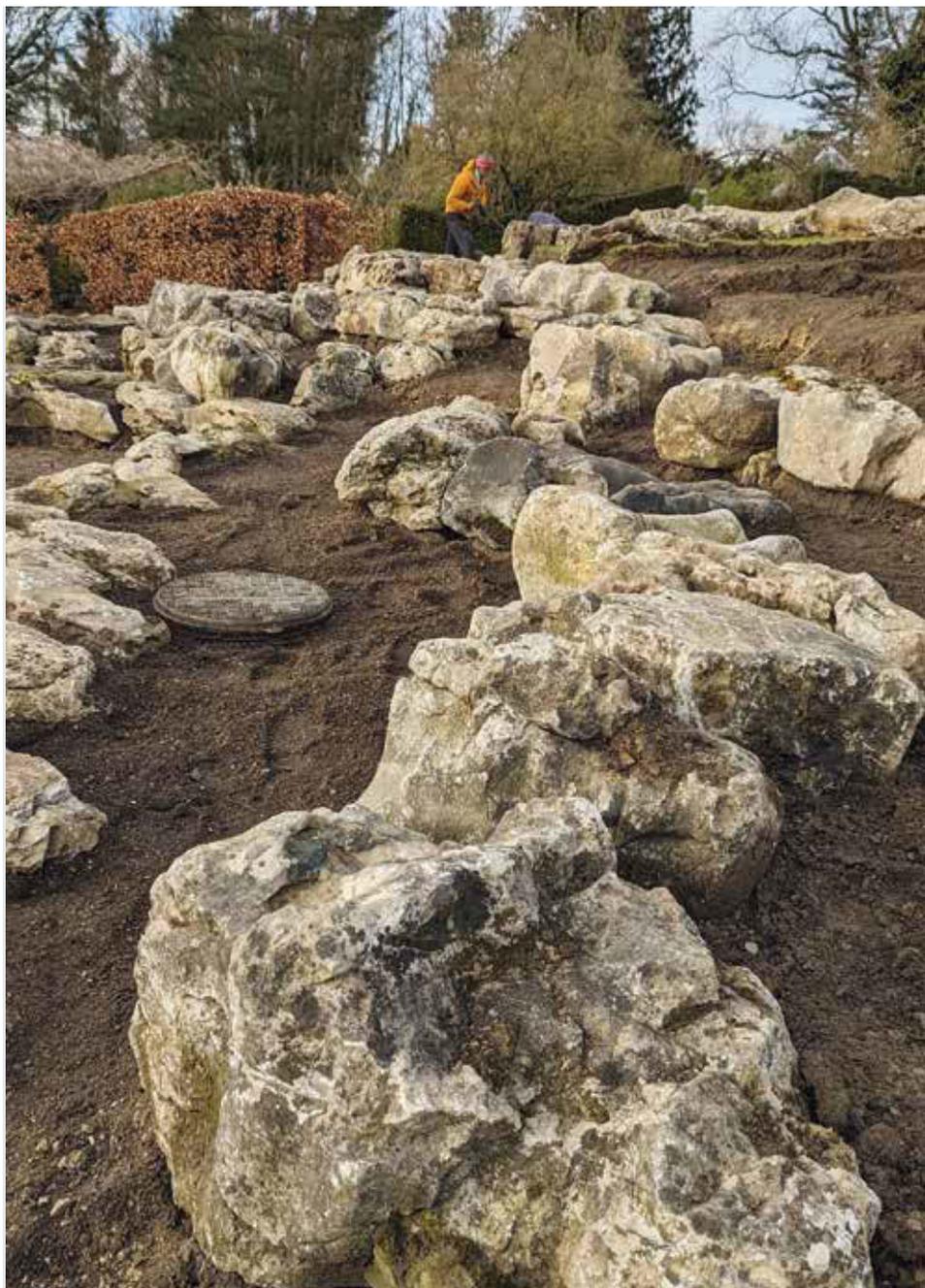
earnest, with the largest rocks being moved by telehandler onto pallets ready for transporting to their new home. Smaller rocks were lifted into trailers and tipped at the rear of the Alpine House, where we then laid them out ready to be selected when they became of use.

The site itself was originally a smooth, shouldered shape. Mini diggers were used to create terraced platforms into which the rocks could be placed. Rather than doing all the platforms at once and then laying the stone, the area was terraced on an ad hoc basis to make sure that all the rocks and their newly created, rock-framed beds looked right using the stone available. It also allowed the garden to form itself around the statement stones, creating a more fluid and natural look.

While working the Harlow Carr team

were gaining a master class in rock garden construction. 'Select the largest, tallest rocks and lay them to the strata you think will suit the site,' says Tim, 'Get the first few rocks laid to strata. They are then used as a reference for the following rocks.' The rocks would descend in size along each section, holding the same angle and tipping slightly back. Experience comes in handy, but having a good eye, and as Tim says, 'Being able to decide which way the rock was orientated in nature,' is also crucial.

Once rocks were placed and given their correct levels using small slabs and packing, gaps showed underneath and needed to be packed tightly with soil and clay. This was to stop any erosion between the beds, but also to give the rocks their overall stability. After all, the rocks will in the future ►



The undulations of the site are evident in this view of the rock garden



The Alpine House forms a backdrop to the newly constructed rock garden, which adds another range of habitats to the Alpine Department at Harlow Carr

need to be walked on by gardeners undertaking their duties. No doubt the occasional child will also set off across the stones, so their stability is most important for safety.

Currently RHS Gardens are 98% peat-free. We have pledged to become 100% peat-free by 2025 as we trial alternative, responsibly sourced growing media. The media going into the new limestone rock garden will follow this pledge. The bottom of the newly created beds will be lined with a very coarse grade limestone chip, to help with drainage, and then will be filled up two-thirds with a base mix made from equal parts of native soil; 20mm limestone chips; horticultural sand and composted bark. The top layer of soil will be Harlow Carr's in-house peat-free alpine mix, which is comprised of well-composted bark; loam; horticultural grit and

horticultural sand. Each bed will then be topped with a thick layer of limestone chip mulch, to keep moisture in and the roots cool.

Recycling the limestone

Quarrying of limestone is of course an unsustainable enterprise. Gaining new rock sections with natural strata, like those we are using, would be difficult and is definitely not environmentally sound. We are therefore exceedingly lucky that all of the limestone we have used to create the new escarpment has been at Harlow Carr for more than half a century.

Our original, historic limestone rockery, that was located down by the Bath House, has over the years been drastically reduced in size, with rocks taken away to be stored in the site yard. All of this stone, including that within the remaining garden, will be reused



Many alpine plants have been sown for transplanting to the rock garden in future

for the new project. The remainder of the stone was donated by nearby Parcevall Hall in the 1950s. It had been removed during clearance of land destined to be converted into arable pasture. Some of these rocks have cracks and crevices where moss, miniature ferns and saxifraga grow and which have been left in place to help create a more established look.

As the stone we are using is not from one location originally, it is quite varied in its aesthetic. We have some classic, rougher sections with deep, parallel striations along their faces. Elsewhere, there are tooth-like rocks showing a smoother, more undulating shape. 'Good-quality waterworn limestone is a pleasure to work with, as it is obvious which way to lay it – it has a top and one or two good faces,' says Tim. Unfortunately with our rock having differing provenances, the quality was

not the best, but 'it was what we had, so it got laid.' Nothing will go to waste!

Drainage difficulties

Harlow Carr has historically been a garden set on heavy clay, so soil improvement in beds and borders has been a longstanding job for the team. Below the lawns of Harlow Carr, however, this work has not been undertaken. Therefore we have run into some classic drainage problems, such as pooling and surface runoff. We knew that these were issues we would face as soon as we started terracing the site and saw that gold and red sticky soil. Each time it rained, which happened often, we would find ourselves slowly slipping and sliding down the hill as the beds we had already filled with our compost mix turned to soup.

During a particularly long period of rain, and from March there were many, ►



Tulips, including pink-petalled and yellow-centred *Tulipa saxatalis*, being grown behind the scenes, will be added to the rock garden display

we found ourselves not with a rock garden, but a series of muddy ponds. Yet this did turn out to be very useful, as it gave us the means to visualise the issues on the site. We were able to see where the most problematic areas were, and so dig channels to sweep the water out of the beds and away.

Propagating and planting

The aspect of the rock garden being south-facing poses a challenge. As we are all finding, more so in recent years, due to the drier periods and warmer temperatures we are experiencing, plants are often either greatly struggling or entirely burning off. In our own experience within the Alpine House, we had such trouble with intense heat and light in the southeast corner that the plants were initially switched to Mediterranean species. However, more recently they have been

replaced with cacti! And so in the rock garden, we will be mainly planting tried and tested alpine plants from our collections that are usually kept behind the scenes. These have been undergoing a propagation programme of cutting and division to bulk up their numbers. Plants such as silver *Saxifraga* will be used, along with *Dianthus*, *Aubrieta*, *Campanula* and alpine *Aquilegia*. Use of these familiar plants will give the rock garden a classic style. Scattered around there will also be various spring-flowering bulbs, including *Tulipa turkestanica* and *T. saxatilis* along with *Narcissus abscessus* and *N. bulbocodium*.

With the difficulty of dry summer spells and heat, the vast majority of the planting will be delayed until autumn. By this time a portion of the seeds we sowed in January will have matured to a size where they can take

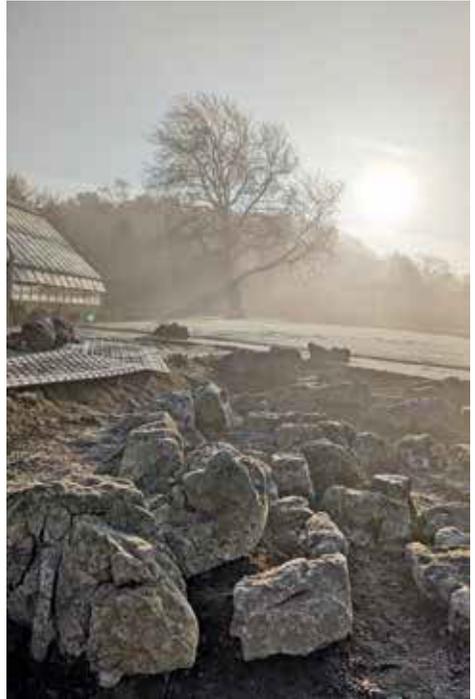
their chances out in the beds and, with luck, flourish. The vast majority of seeds we have sown were acquired through the Alpine Garden Society and Scottish Rock Garden Club seed exchanges. One of the many advantages of these schemes is being able to select individual gems or entire genus groups to grow. This will allow us to create a cohesive planting design, without relying on too much repetition. While many of the seeds sown may not be going out in the first phase of planting, we will be able to keep introducing them as new elements as the garden progresses.

Specimens growing in the old limestone will not be lost, but will be relocated to the new rock garden, including gentians, primulas, phlox and various mounds of pasque flowers. These are notorious for hating root disturbance, so will be carefully transplanted directly into their new homes.

Future developments

Beginning in January 2024, there are plans to improve and extend the limestone rock garden. Areas of large rock will be introduced at the westernmost side, running north to south, to create an area which is a shadier, more sheltered section. Here we will be able to grow more delicate plants, such as spring-flowering *Porophyllum saxifrage*. Work will also be done to create sections mimicking looser and less definite scree, with more viewing paths winding through the garden.

Additional future plans include the planting of an alpine bulb meadow in the eastern alpine lawn. At its best in spring, it will contain fritillaria and crocus, along with species tulips and narcissus, some of which will reflect those planted within the rock garden to tie the two halves together. Wide paths



The alpine area and rock garden at Harlow Carr will continue to develop

will be mown through it creating space for visitors to sit.

The initial creation of this garden has been an exceedingly interesting project to be a part of and something that I am sure will stay with me. These types of developments do not come along very often, and to be able to contribute to something that will be a lasting part of the garden really does make me proud.

Although my placement here will soon be coming to an end, I will make sure I come back and will be pleased to see how this major new rock garden matures into the landscape of RHS Harlow Carr. ●

AGS members attending the AGS Show at Harlow Carr on 14 October have free access to the RHS Garden on that day

A year in the

Tim Ingram, of Copton Ash Garden nursery in Kent, examines the progress of plants in a bed in his garden throughout the year, highlighting some of the alpine and woodland plants that enliven it

PHOTOS: TIM INGRAM



The author's Bulb Bed in spring, filled with shades of blue from grape hyacinths

life of a bed

As a garden matures, plantings change and adapt with time and space. One bed in our garden demonstrates successional variation across the year like no other.

This small, fairly circular bed began

life as a weeping cherry planted in the lawn with a small ring of bulbs around its base. In time the cherry developed serious die-back and was eventually removed. The spot seemed ideal to develop into a bulb bed, inspired by the remarkable Lime Walk at Sissinghurst ▶



Castle Garden, which is spectacular in spring.

Finding its balance

Our natural garden soil is a deep and fertile loam; a cubic metre or so of pea gravel was added and dug in to the bed to provide a more open and loose texture for a wide range of bulbs, as well as various alpine and small perennials for interest later into the summer. Steadily this bed grew as some species thrived and self-seeded and others faded away. Over several decades it has developed a much wilder and more naturalistic character, many of the choicer bulbs declining and dying out, while others have multiplied, intermingled and taken their own course.

Not surprisingly, certain species have come to dominate, most especially *Muscari armeniacum* in its various colour forms, *M. azureum* and *Anemone blanda* in spring, and in autumn, *Cyclamen hederifolium*, *Crocus speciosus* and *Crocus goulimyi* but many more have persisted in smaller clumps and colonies resulting in a rich tapestry of colour and form at its peak in spring, followed on by the stronger growth of perennials through summer into autumn. It has prompted me to make a photographic record of change and progression across the year, finding a dynamic ecology in the plant community which we can easily forget in the contemplation of the individual plant.

In the varying climate and growth of a garden over 15 or 20 years, a bed such as this finds its own balance, reacting to drought and flood and varying degrees of maintenance and neglect by the gardener. It has become partially shaded by nearby trees, though still relatively warm and open, and the surrounding garden has matured and naturalised along with it. Though it is richly planted and extremely diverse,



Crocus flavus

the theme has changed from the more careful and cared-for bed in its early days to one in which serendipity and succession play the larger part.

Winter into spring

The drama of the bed builds slowly from its most quiescent moment in winter. Even then, around Christmas, the first brave flowers of *Crocus laevigatus* 'Fontenayi' appear among the early foliage of other crocus, muscari and cyclamen, and before long in January and February *C. tommasinianus* follows, while snowdrops steal the wider garden scene. A clump of glowing yellow *Crocus flavus* never fails to brighten the bed for three or four weeks through February into March and the bed would benefit from many more winter crocus. For a



ABOVE Early spring in the Bulb Bed: *Narcissus* 'Gipsy Queen' and *Muscari azureum*; pink *Ipheion uniflorum* 'Charlotte Bishop' is about to open **BELOW** *Corydalis henrikii*

time the lovely dwarf *Iris histrioides* 'Lady Beatrix Stanley' and *Iris* 'Katharine Hodgkin' lent their unique flowers to the scene, but have more recently died out in the hurly-burly of the bed and would definitely be worth re-introducing. Strong clumps of leaves of *Scilla peruviana* and *S. hyacinthoides* provide contrast among the more grassy leaves of other bulbs but sadly do not flower reliably later in spring and must really need a much warmer situation. In March, the beautiful small daffodil *Narcissus* 'Gipsy Queen' begins to flower and carries on for a month or six weeks, heralding the rich emergence of little blue bulbs, from muscari and chionodoxa to *Anemone blanda* and *Scilla siberica*. *Ipheion uniflorum* 'Charlotte Bishop' adds a touch of pink to the medley of flowers. The spring ▶





Iris histrioides 'Lady Beatrix Stanley'



Iris unguicularis subsp. *cretensis*



Mid-April and *Magnolia* x *loebneri* 'Leonard Messel' and naturalised daffodils, including a drift of white *Narcissus* 'Thalia', complement the colourful Bulb Bed



Pulsatilla vulgaris is another alpine inhabitant of the Bulb Bed

ephemeral *Corydalis henrikii* has persisted for more than two decades, hardly changing at all in that time and surprisingly surviving ever-increasing competition.

By April, lit up by a few vivid sparks of a red tulip, the bed is the most colourful place in the whole garden of an acre and half. Self-seeded warm-purple young foliage of *Euphorbia dulcis* ‘Chameleon’ sets off the wealth of blues that dominate the picture and has naturalised right across the bed. Drawing inspiration from the Lime Walk at Sissinghurst, various clumps of *Pulsatilla vulgaris* compete well with the rapidly emerging grassy leaves of autumn *Crocus speciosus*, which fill nearly half of the bed through spring, feeding bulbs and flowers that will appear later in October. One of the most exciting plants now is Cretan *Iris unguicularis* subsp. *cretensis*, a kind gift

from Michael Baron (owner of Brandy Mount House) though this doesn’t always flower as well as pictured (left).

Late spring and early summer

By now the Bulb Bed becomes part of the wider garden scheme in which *Narcissus pseudonarcissus* and primroses naturalise in the nearby grassy meadow beneath a specimen of *Cornus controversa* ‘Variegata’. The first flowers open on *Magnolia x loebneri* ‘Leonard Messel’ and a distant cherry; this is perhaps the loveliest moment in the whole year and has become a regular time to open the garden for the National Garden Scheme, following on from snowdrop time. Inevitably by late spring and early summer the vigorous and then dying foliage of bulbs gives the bed a more dishevelled appearance but still



ABOVE The frosted Bulb Bed in late winter

BELOW *Crocus flavus* adds a dash of gold to the early spring Bulb Bed





ABOVE The Bulb Bed in mid-April **BELOW** Purple tones of *Ajuga reptans* 'Atropurpurea' and *Euphorbia dulcis* 'Chameleon' contrast with the emerging foliage of sedums





ABOVE Early summer and *Scilla hyacinthoides* and *Centranthus ruber* add height at the back of the bed **BELOW** Flower spikes of *Scilla hyacinthoides* and *Centranthus ruber*



colour comes from *Ajuga reptans* 'Atropurpurea', which has spread widely and can hold its own with the stronger perennials to come. Various of the sturdy herbaceous sedums begin to fill and grow as the bulbs die down and will carry on right through to their flowers of autumn. The bed is no longer so much the focus of attention, as woodland plantings elsewhere make their wonderful spring tapestry under the blossom of fruit trees, yet there is colour still from red valerian (*Valeriana ruber* syn. *Centranthus ruber*), which has seeded in from the adjacent herbaceous border, and various small alpine campanulas and *Geranium dalmaticum* flower to fill the space left by the now dormant bulbs.

After especially hot summers *Scilla hyacinthoides* brings real drama to the bed in late May and June, resembling a



ABOVE The Bulb Bed at its fullest in high summer

BELOW *Crocus speciosus* and *Cyclamen hederifolium* dominate the bed in autumn





Triteleia laxa



Blue *Eryngium bourgatii*, airy *Oryzopsis miliacea* and pink *Acanthus dioscoridis*

pale-blue eremurus towering above all other plants as the feathery seeds of pasque flowers are set below. The vertical accents of *Ornithogalum pyramidale* follow a little later and would be well worth growing in greater numbers.

By high summer most bulbs are now dormant but the vivid blue of *Triteleia laxa* now consorts with a strong self-seeding colony of that wonderful selection of the Pyrenean *Eryngium bourgatii* introduced by Graham Stuart Thomas. This latter excels for its neater and more refined form, silver-white marbled foliage and long-lasting steel-blue flowerheads, so attractive to bees. Over time this has filled an entire arc of the bed and makes a sophisticated 'meadow' in combination with the Mediterranean grass *Oryzopsis miliacea* and the surprising small pink

Acanthus dioscoridis, which runs around among the foliage of sedums. The character of the bed has now changed completely from that of spring and makes an appropriate backdrop to the grassy meadow we are steadily aiming to develop in the nearby lawn. The flowerheads of *Oryzopsis* are especially compelling in summer, catching the slightest breeze and complementing the native grasses flowering in the meadow nearby. Like a meadow there comes the time to cut back most of the perennial growth and remove it before the autumn bulbs begin to flower, and we normally do this in late August or early September, leaving the flowering shoots of the sedums, which have also self-seeded in variety across the bed. These take it through into autumn with *Cyclamen hederifolium* flowering and then the



Autumn highlights include sedum and cyclamen



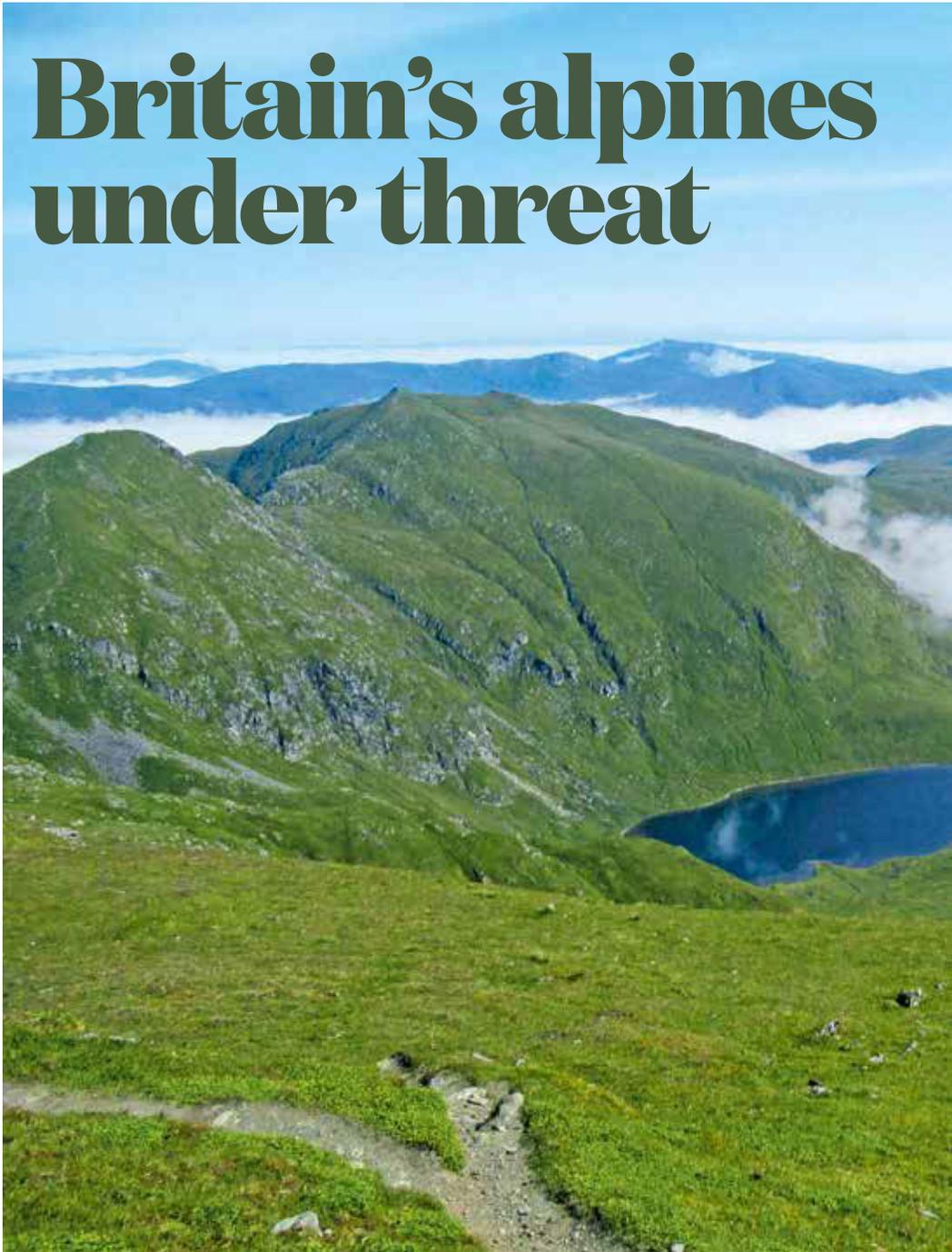
Allium callimischon subsp. *haemostictum*

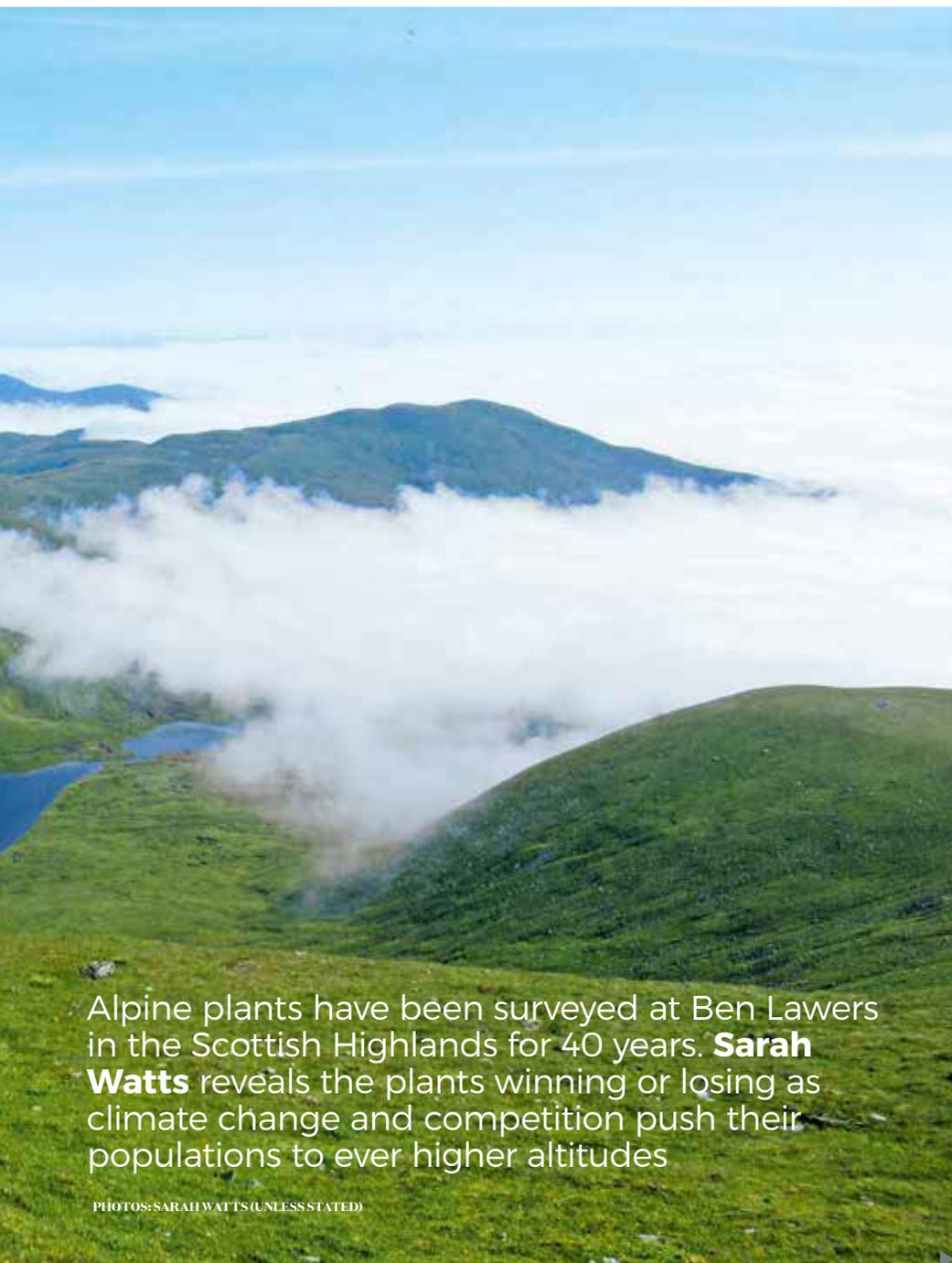
exquisite autumn crocuses *Crocus speciosus* and *C. goulimyi*, which are at their peak in October. At this time too, diminutive and easily overlooked *Allium callimischon* subsp. *haemostictum* produces its finely speckled white and purple flowers. Finally the bed is tidied up for the winter during November, clearing the surprising number of weed and grass - even tree - seedlings that have infiltrated during the year, and every few years topdressing with fresh pea gravel.

This small and intensely planted bed is an ongoing experiment and at times does need small sections working on and renewing, enabling the introduction of new bulbs and refreshing previous ones that may have gone back. It acts in its way as a microcosm of the wider garden and suggests that we should plant many more bulbs generously across the

garden in the increasingly hot and dry summers we now experience in the southeast and as climate change clearly influences our gardens. The long and parching drought and heat of summer 2022 has been a wake-up call for gardeners everywhere. More than that though it illustrates one of the more successful plantings in a mature garden over a period of decades, during which many other parts of the garden have had to be radically cleared and replanted with greater regularity. The intensity of planting in this small bed resembles the remarkable richness and diversity of long-established wildflower meadows, which can sometimes have the amazing number of well over 100 different plants in a 2 x 2m quadrat, and has achieved a balance of sorts over time and a wealth of interest for pollinators and gardener alike. ●

Britain's alpin under threat





Alpine plants have been surveyed at Ben Lawers in the Scottish Highlands for 40 years. **Sarah Watts** reveals the plants winning or losing as climate change and competition push their populations to ever higher altitudes

PHOTOS: SARAH WATTS (UNLESS STATED)

If you ask any British botanist to make a list of favourite or most desirable places in the country to visit for their flora, there is one quintessential mountain that will almost invariably feature. The Ben Lawers range in the Breadalbane region of the central Scottish Highlands contains the highest density of montane vascular plant species in Britain, and the highest density of Nationally Rare arctic-alpines.

The site is highly designated within different boundaries as a Site of Special Scientific Interest (SSSI), National Nature Reserve (NNR) and a Special Area of Conservation (SAC). The 5,963ha of SSSI encompass nine mountain summits, including Ben Lawers itself – the tenth highest mountain in Britain and from which the whole range takes its name. Reaching to 1,214m above sea level, the underlying geology includes soft, crumbly Dalradian mica schist, which gives rise to rich and highly alkaline soils.

This unique combination of high altitude and calcareous substrate supports a dazzling array of specialist upland calcicoles (lime-loving plants) including celebrated treasures such as *Gentiana nivalis* (alpine gentian), *Myosotis alpestris* (alpine forget-me-not) and *Micranthes nivalis* (snow or alpine saxifrage), as well as some remarkable plant species for which Ben Lawers is their only British location – including *Sagina nivalis*, *Carex microglochin* and *Taraxacum cymbifolium*.

International importance

The biological importance of Ben Lawers also extends beyond our own shores and is revered internationally. The British Isles are positioned at the edge of Europe; not only at the northwestern limit of many continental species' distributions, but also at the



Gentiana nivalis

southernmost limit for a notable collection of taxa from arctic-alpine regions. We therefore host mountain outpost sites that are biodiversity hotspots, harbouring populations of rare plants with distinct local genetic adaptations situated well away from their main range. However, these isolated 'disjunct' populations are restricted geographically to islands of suitable habitat within an otherwise inhospitable climate, and are potentially more vulnerable to environmental change. Alongside other key locations, such as the Angus Glens, Cairngorms, Teesdale, The Lake District and Snowdonia, Ben Lawers may be the jewel in the British arctic-alpine crown, but its flora also functions as a canary in the coal mine for escalating threats from the interacting climate and biodiversity



ABOVE *Myosotis alpestris*
RIGHT *Micranthes nivalis*
BELOW *Sagina nivalis*



crises. Yet the celebrated collection of montane plants at Ben Lawers demonstrates significant conservation impact from long-term monitoring and, at the same time, opportunities for nature recovery through pioneering habitat work. The latter topic will be discussed in more detail in a future article focusing on arctic-alpine willow scrub and tall herb communities.

Ben Lawers

Owned and managed by the National Trust for Scotland (NTS), in 1950 Ben Lawers became the first NTS property acquired for the primary purpose of nature conservation. Like upland areas across Britain, the site had been subjected to centuries of habitat degradation and loss principally due to overgrazing, and over-exploitation for timber, firewood and charcoal. Woodland and peatland habitats were the most obviously affected by these pressures, but in 1981 the NTS had the foresight to implement rigorous long-term monitoring of the 16 Nationally Rare arctic-alpine plants occurring at Ben Lawers.

Operating on a rolling cycle of approximately six years, this scheme was initiated in part due to concerns of population declines linked to historical over-collecting of plants. However, four decades later the data are providing a crucial insight into the changing fortunes of the site's iconic species under escalating climate change.

Mapping begins

Initially population sizes were estimated while distribution mapping across the mountain range was the main focus, but by the 1990s this method was replaced with full population counts where possible. Individual plants were marked with a temporary tag as an aid to counting, because meticulously searching for



The author tagging *Cystopteris montana*

small and often inconspicuous arctic-alpines can be slow and time-consuming. The markers were typically a 'flag' of plastic adhesive tape on a 40mm zinc-coated panel pin, thus causing negligible habitat damage and being an optimal size for photographic recording. Hours of careful concentration at each survey location were required to count hundreds or even thousands of plants at a time, many of which were non-flowering and therefore warranted expert identification skills. Areas of suitable arctic-alpine habitat across the Ben Lawers range were also explored during each re-survey to account for any sites newly colonised by the target species. The monitoring meant working in remote, high-altitude places on very steep ground among calcareous mountain outcrops, or crawling,



Dan Watson monitoring *Sabulina rubella* on Ben Lawers

dripping wet, on hands and knees within saturated alpine flushes. In such treacherous and exceptionally cold conditions, even at the height of summer, this is British botany at its most extreme.

The NTS has previously benefited from exceptional long-term staff continuity since 1981, allowing knowledge retention and outstandingly high methodological consistency in plant identification and survey implementation. The programme was created and supervised by property manager and visionary conservationist David Mardon, with this role passing to his long-standing colleague Helen Cole when he retired in 2008. Dan Watson, one of the most experienced mountain botanists in the country, provided a vital contribution to staff training and fieldwork while employed as the

full-time NTS ecologist shared between Ben Lawers and Glencoe during 2010–20. But a large proportion of the rare plant surveys were typically led by whoever was the Ben Lawers seasonal ecologist at the time. It is testament to the enjoyment and fulfilment of the task that many of these individuals returned for successive summers of fieldwork.

This is where my own contribution fits in as the longest-serving NTS seasonal ecologist from 2013–20. Crucially, our work was also assisted by numerous volunteers who afforded good company and keen pairs of eyes during plant hunting. In fact I originally joined Ben Lawers in 2010 as a volunteer for three years before taking on an employed role, and to this day remain hugely grateful for the opportunity. ►

*Sabulina rubella**Cystopteris montana*

Results of the research

The tenacious efforts of NTS staff and volunteers during 40 years of monitoring has recently culminated in our major publication in the journal *Biological Conservation*: Riding the elevator to extinction: Disjunct arctic-alpine plants of open habitats decline as their more competitive neighbours expand (Watts et al., 2022). Realising that we had an immensely valuable story to tell in the context of global change ecology, I collaborated with colleagues at the University of Stirling (Catherine Mercer and Prof. Alistair Jump) to investigate the population trends of the ten species with the most comprehensive and consistent survey data. The results of our statistical analyses were even more startling, and divergent, than we had anticipated. This article describes the key

highlights, but our scientific paper is available through open access, and is suggested as further reading, see p211.

Changes in populations

Firstly, we discovered that three arctic-alpine plants had undergone population increases of more than 50% between the early 1990s and 2020 (see p210): *Cystopteris montana* (mountain bladder fern), *Carex atrofusca* (scorched alpine sedge) and *Veronica fruticans* (rock speedwell). Three other species remained relatively unchanged: *Carex norvegica* (close-headed alpine sedge), *Woodsia alpina* (alpine woodsia) and *Erigeron borealis* (alpine fleabane). Unfortunately, one of the most famous Ben Lawers' plants, *Myosotis alpestris* (alpine forget-me-not), showed a population decline of 32% between 1994 and 2015. Yet most worryingly, three



Carex atrofusca



Erigeron borealis



Silene acaulis in flower at Ben Lawers



Cherleria sedoides



Saxifraga cernua

species – *Saxifraga cernua* (drooping saxifrage), *Sabulina rubella* (mountain sandwort) and *Sagina nivalis* (snow pearlwort) – experienced losses of more than 50% since the early 1990s.

These trends were significantly related to altitude. The declining species generally reside at higher elevations than the other six, and had declined more rapidly over time at their lower altitude sub-populations than those located further up the mountain. In fact, *Saxifraga cernua*, *Sabulina rubella* and *Sagina nivalis* have been completely eradicated from their lowest altitude sites on Ben Lawers and are now only found above 900m. This result provides conclusive evidence of elevational range contractions for these three species, which also possess the most strongly arctic-alpine global distribution of those we studied. For

example, *Sabulina rubella* and *Sagina nivalis* have their southernmost European limit at Ben Lawers itself. These two plants are low-growing pioneer cushion formers, a distinctive functional group which includes other more common species at Ben Lawers such as *Silene acaulis* (moss campion) and *Cherleria sedoides* (cyphel). High-altitude plants with these traits play a key role in arctic-alpine dynamics by modifying and stabilising microclimate through soil moisture and nutrient retention, while also hosting a notable diversity of associated invertebrates.

Reasons for decline

Through a detailed photographic record of monitoring sites we were able to deduce that the declining trends were related to visual habitat pressures and disturbance. The open, gravelly snowbed habitats of *Saxifraga cernua*, *Sabulina rubella* and *Sagina nivalis* have been clearly affected by vegetation encroachment, landslip and rockfalls. These results can be explained by the reduction in snow cover that has been observed at Ben Lawers and across the British uplands during the last few decades. Snow protects fragile montane soils from weathering, freeze-thaw and other causes of erosion, while earlier snow melt will alter vegetation phenology, lengthen the growing season and facilitate the invasion of more vigorous species previously restricted to lower altitudes. Our data are contextualised by considering broad European trends of thermophilization (where warm-adapted species increase) and biotic homogenization (where plant communities become more similar). Through these processes the rarer, cold-adapted specialist species are being displaced by generalists, including common graminoids (grass-like plants) or warm-adapted forbs

(herbaceous plants that are not graminoids). Indeed, the species we studied that had stable or increasing population sizes at Ben Lawers are taller and have less reliance on sparsely vegetated habitats, free from competition than the three declining high-altitude snow-bed specialists.

Irreplaceable flora

Our research has serious implications for regional hotspots of mountain biodiversity such as Ben Lawers. It shows that low-latitude arctic-alpine plant populations already situated at maximum local elevations face ‘mountaintop extinction’ because there is no higher ground left for them to retreat to as temperatures continue to rise. This scenario threatens the loss of a unique suite of genetic variations existing at the margins of species’ global distributions that are more adapted to climatic extremes, relative to populations at their geographical centre. If these reservoirs of edge of the range genotypes (genetic variations) vanish, there would be a reduction in the ability of their species as a whole to survive in the face of climate change.

Given that Ben Lawers holds virtually the entire British population of *Sagina nivalis*, our data showing a 66% decline since the early 1990s has directly led to a recent change in its IUCN GB Red List conservation status from Vulnerable to Endangered; the first vascular plant in the country to do so specifically due to the threat of climate change. *Sabulina rubella* and *Saxifraga cernua* both have a few other populations in Scotland further north than Ben Lawers. If additional surveys indicate that they are also in decline, as is likely, then these species may also have their conservation status changed to Endangered. Additionally, our work indicates extinction risks to other rare British arctic-alpines associated



The author monitoring populations of *Sagina nivalis*

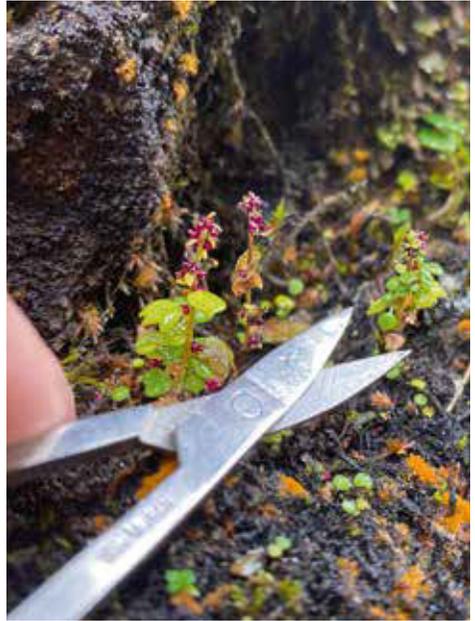
with late-lying snow, such as *Saxifraga rivularis* (Highland saxifrage), *Saxifraga cespitosa* (tufted saxifrage) and *Phyllodoce caerulea* (blue heath). Similarly, another high-altitude specialist *Taraxacum cymbifolium*, the Ben Lawers dandelion, may likewise be declining at the site but unfortunately it has not been comprehensively monitored due to identification challenges. It is imperative that the plight of inconspicuous flora, such as *Sagina nivalis* and *Taraxacum cymbifolium*, are not overlooked in favour of more well-known and flamboyant plant groups.

As well as denoting a reduction in our internationally important arctic-alpine flora, the local extinction of threatened plants at Ben Lawers would signify a loss of the cultural and inspirational value that such rare species represent. I can use my own career trajectory to illustrate this point. When I started

volunteering for the NTS in 2010, I was an undergraduate student who had so far been drawn more to animal biology than to plants. But encountering the incredible diversity of arctic-alpine vegetation at Ben Lawers transformed me into an enthusiastic botanist almost overnight. Although I left the NTS in 2020, my time at Ben Lawers was so influential that I was inspired to continue working in plant ecology and conservation. I am now employed by a large private Highland estate, working towards landscape-scale restoration of upland habitats to combat climate and biodiversity breakdown. In a part-time role, I am also undertaking a PhD at the University of Stirling on the conservation management of montane woodland, in particular arctic-alpine willow scrub (more about that in a future article). I doubt I would be doing all this if I had not been so motivated by the irreplaceable flora of Ben Lawers.



Carefully collecting seedheads of *Sagina nivalis* (ABOVE) and *Saxifraga cernua* (RIGHT). Research by Sarah and the team has shown that populations of both plants have halved in around 30 years



Continuing conservation work

Even more happily, there is another epilogue to this story. In 2022, the NTS team at Ben Lawers began a collaboration with University of Dundee Botanic Garden, led by curator Kevin Frediani, to develop ex-situ conservation collections of the three species which have suffered the largest declines. Last September, Dan Watson and I were joined by Dundee horticulturist Sarah Carlton for a day on the mountain gathering propagation material. For *Sagina nivalis* and *Sabulina rubella* we carefully picked ripe seedheads from healthy, robust individuals. Despite studying these species for years, this was the first time I had actually seen and held their seed. The plants and the site they grow on are so heavily protected that a licence from NatureScot is required to collect or disturb them. The seed has been held in cold storage over the winter and germinated at Dundee in the spring. ▶



Saxifraga cernua germinated quickly

SARAH CARLTON

The baseline and most recent population counts for arctic-alpine species monitored at Ben Lawers during the period 1993–2020, listed in descending order of percentage population change between these surveys

Taxon	Unit of measurement	Baseline count (year)	Most recent count	% change	Trend over time
<i>Cystopteris montana</i>	Number of fronds	1,224 (1993)	2,437 (2018)	99%	Increase
<i>Carex atrofusca</i>	Number of flowering spikes	1,866 (1993)	3,025 (2013)	62%	Increase
<i>Veronica fruticans</i>	Individual plants	913 (1993)	1,387 (2016)	52%	Increase
<i>Carex norvegica</i>	Number of flowering spikes	150 (1993)	191 (2014)	27%	Stable
<i>Woodsia alpina</i>	Individual plants	167 (1994)	180 (2012)	8%	Stable
<i>Erigeron borealis</i>	Individual plants	560 (1996)	557 (2012)	-0.50%	Stable
<i>Myosotis alpestris</i>	Individual plants	9,641 (1994)	6,525 (2015)	-32%	Decline
<i>Saxifraga cernua</i>	Number of leaves	5,114 (1996)	2,337 (2018)	-54%	Decline
<i>Sabulina rubella</i>	Individual plants	2,051 (1997)	852 (2020)	-58%	Decline
<i>Sagina nivalis</i>	Individual plants	3,514 (1996)	1,189 (2019)	-66%	Decline



Sarah's enthusiasm for the project meant she climbed Ben Lawers even when pregnant

Saxifraga cernua in Britain rarely flowers and does not yield viable seed; reproduction is instead achieved via vegetative bulbils that are clones of the parent plants. We retrieved these tiny, bright red structures from the leaf axils and also gathered some that had recently fallen onto the surrounding substrate. The bulbils germinated immediately and are already growing under Sarah Carlton's care. Following this initial trial, more propagation material will be collected from each of the three species across the Ben Lawers range over the coming years. Not only will these actions preserve their threatened Scottish populations, but they will also provide an opportunity to conduct scientific research without the need for more intrusive fieldwork in the fragile mountain environment. Options for translocations of plants from the ex-situ collection to other suitable mountain sites could also be explored in the future. We hope that this developing conservation work will allow the unique arctic-alpine flora of Ben

Lawers to be enjoyed by botanists, mountaineers and the wider public for generations to come. The rare plants could also operate as flagship species, embodying the urgent need for global climate change mitigation measures to protect biodiversity. ●

Further reading:

Watts, S.H., Mardon, D.K., Mercer, C., Watson, D., Cole, H., Shaw, R.F. & Jump, A.S., 2022. Riding the elevator to extinction: Disjunct arctic-alpine plants of open habitats decline as their more competitive neighbours expand. *Biological Conservation*. 272, 109620. <https://doi.org/10.1016/j.biocon.2022.109620>

Mardon, D.K. & Watts, S.H., 2019. Population dynamics and life history of the rare arctic-alpine plant *Sagina nivalis* (Caryophyllaceae) on the Ben Lawers range, Scotland, UK. *British and Irish Botany*. 1, 50–69. <https://doi.org/10.33928/bib.2019.01.050>

Three arisaemas and their good garden friends



CHRISTOPHER GREY-WILSON

Arisaema candidissimum bears a green and white hooded spathe, striped with pink on the inner, that encloses the green, spike-like spadix

Robert Rolfe highlights three hardy arisaemas from southwest China, and chooses some plants that associate well with them in the garden

Some 20 years ago, at an RHS London Show in early June, I witnessed (and judged) a display composed entirely of arisaemas, many of them Chinese. Celebrating a recent influx of that genus into British horticulture, it was impressive and definitive but slightly too sombre in its sophistication, too muted for my taste. The multifarious variations on a theme were educational and often ingenious – but a few companion plants would have been welcome.

To adapt the title of the celebrated painting by Hieronymus Bosch, it was a veritable *Garden of Earthly Delights* for the fungus gnats and sundry *Diptera* (double-figure families) that are these plants' main pollinators. Yet a hazardous one for the insects, for the musty/mushroom-like aroma (in most cases not apparent to the human nose) exuded by the spadix (spike) cunningly attracts these insects to the base of the spathe tube, brighter than the rest of the structure and acting as a deceptive Way Out sign. All well and good if the plant is male, since while the inner parts are coated in a slippery wax, preventing upward escape, a small orifice at the base of the spathe remains. Female morph inflorescences have no such opening; the insect is doomed and consumed. Note that a change of sex from one year to the next, based on vigour, is an inconstant facility. Some species are simultaneously hermaphrodite.

In a horticultural context, any *Arisaema* is an infallible indicator plant, denoting an input into an out of the

ordinary, discerning planting scheme. Cyripediums can be bought in some garden centres these days, but arisaemas, lacking mass appeal by and large, are absentees. To obtain them, a specialist catalogue foray or a nursery visit is needed. While tissue culture of a few selections has been pioneered in North America, a widespread take-up is unlikely.

The present state of play

Thirty years ago, just over 120 species were recognised, since when that number has increased to around 200 (some suggest a present count of c.250), spread from Mexico and North America to Arabia, Sri Lanka, India, the Sino-Himalaya and Japan at up to around 4,500m. Often treated as woodlanders one and all, with a sizeable number restricted to oak or pine forest, in truth others inhabit dry, steep rocky slopes, colonising roadsides or favouring the margins of montane grasslands. A few (Section *Anomala*) are more or less evergreen but the majority are deciduous, emerging in early summer and at their best in the first half of June, others – exceptionally – earlier, in mid to late April. The spathes can persist for several weeks but appear to best advantage before the leaves expand and overtake them, particularly when these are substantial and fleshy rather than narrow, like the naked, improbably ribbed spokes of an umbrella, drip-tipped depending on climatic conditions.

The three discussed here, all reliably hardy, are from southwest China. One is stubbornly solitary, its



ROBERT ROLFE

Podophyllum delavayi

propagation reliant upon seed production (most require male/female cross-pollination, though not universally: there are also self-fertile species). Other methods of increase will be outlined in conclusion, some of these not widely practised to date. The earliest of those described, *A. tortuosum*, dates back 190 years to 1832, but comes last in this pecking order, given that *A. candidissimum* was (to quote from EB Anderson's *Hardy Bulbs*, published in 1964, for a long time 'the only species ... available in the ordinary course of events, though this is a very beautiful one'. If you choose just one, choose this.

Arisaema candidissimum

Having said at the outset that most species emit a scent imperceptible to you or me, this is an exception, the

inflorescences subtly rose-scented when they first rear up but demanding close sniffing proximity during this period. The pure white, diagnostically named Yunnanese *A. odoratum*, described as 'extremely fragrant' and (from memory) wine-scented, also falls into this category. Other members of Section *Odorata* such as *A. mairei* and the recently described *A. longitubum* are, presumably, comparably imbued.

Introduced by George Forrest from both Yunnan and Sichuan, *A. candidissimum* is now also recorded from Xizang, its altitude range having broadened to 2,200–3,300m when compared with that ordained when an account was published in December *AGS Bulletin* vol. 38 (1970) after a First Class Certificate was awarded in April of that year. Exhibited by WV (Bill) Bishop, Harrogate's Director of Parks

(and a one-time AGS Committee member), it had performed some six weeks ahead of schedule, the black and white photograph published on page 409 depicting the leaves still tightly furled – the ideal presentation. The flowers of this form, the accompanying account clarifies, were pink-flushed. Other morphs at that time were white, and green-striped or greenish forms are now recognised following field work dating from the first half of the 1990s. The original introductions cover the years 1914–1932, after which it was rediscovered by Roy Lancaster and others north of Muli (Sichuan) at 2,300–2,400m, sometimes locally abundant, in June 1993, and then by the ACE expedition in June 1994 at a new site, on a steep, shaley slope, on the way from Dali to Zhongdian (Yunnan).

Once established, it will increase freely, tolerating drier conditions than most of its kin. The group illustrated (on p212) was photographed in mid-June at Fullers Mill (Suffolk), where there is a high water table, underlining the old advice that ‘it will succeed in many different types of soil’, in sun or light shade. Given the opportunity, position on a southwest-facing slope to bring closer to eye level and engineer a midday backlighting of the spathes. Some have advocated planting against a west-facing wall, where the sun provides reflected warmth. A free-draining, sandy soil is probably ideal, the tubers buried at least 10cm deep. Offsets take several years to reach flowering size and have a protracted subsoil period, from late summer until May, occasionally June the following year.

Coincidentally, the largest colony I’ve seen was also in East Anglia, near to the Norfolk coast, which I’m told evidenced a mass purchase rather than increase in situ. Growing behind, at the edge of a small wood, *Sinopodophyllum hexandrum* was a subtle, thirstier



ROBERT POLHE

Incarvillea mairei

neighbour. The usually white or pale pink flowers are presented singly, upward gazing and of good size, before the leaves expand, in April or early May. You might prefer to substitute *Podophyllum versipelle*, whose leaves are more eye-catching, especially in Terra Nova Nurseries’ popular 2005 introduction ‘Spotty Dotty’. This importantly has a steely hardiness in common with *S. hexandrum*, as long as the emergent shoots aren’t hit by a late frost. If you employ the old dodge of keeping plants in pots, under cover, parachuting them into the border for a month or two, as gardeners are apt to treat some lilies, most exotic of all in leaf *P. delavayi* is worth trying, before its return to the shelter of a shade tunnel. This is happier so housed during the ►



CHRISTOPHER GREY-WILSON

Arisaema ciliatum

colder months of the year. The foliage is in its prime longer than has usually been acknowledged (our image was photographed in early July) and exuberantly hides the pink or red, fleshy flowers, which are an acquired taste.

Arisaema ciliatum

Far more vibrantly-striped than the last but always in a deep brown/greenish-purplish and white tonal alternation, this species has the decided advantage of spreading stoloniferously (through runners) when established, making it suitable for dividing with a spade into portions come the autumn. It too is

usually in full fig by early June, in most years an equable period, but one also occasionally subject to storms. You should aim to provide some shelter and avoid an open, east-facing aspect. A backing hedge, an interplanting among medium-sized shrubs, or a siting under trees, the ground always thoroughly prepared and comprising a well-drained but leaf-mould rich, fibrous tilth, will all offer encouragement.

At around 2.5cm in diameter, the rounded tubers don't quite attain the ultimate dimensions of either of the foregoing species or the next (which can swell to at least 6cm). But they will

proliferate and can produce stems to 60cm tall, rather more in fruit. The multi-sectional leaves are also far less coarse than the tripartite ones of *A. candidissimum*, by comparison made up of 11–14 narrowly elliptic divisions that appeal in their own right. It is said that the genus is not prone to pest (I'm so sorry, 'unwelcome garden visitor' evidence as it has latterly been rebranded) damage, but vine weevil can be problematic, and I've seen the foliage riddled with small holes, indicative of caterpillar or else weevil activity.

Flora of China records it from *Pinus* forests, *Quercus* thickets and grasslands at 2,600–3,600m in Sichuan and northwest Yunnan. In some sites

there you will also come upon *Incarvillea mairei*, illustrated here (p215) from a 1990 CLD 861 introduction. Two or three flowers per stem is a typical count. Traditional advice was either to divide this in spring or sow in March, under glass, but if you can obtain seed as soon as the attenuated, upwards facing beaks split in July, this is a much better time, germination taking place very quickly.

Those who think that such plants team up best with their natural associates – for just once a benign form of segregation – will be content to add creamy yellow, fellow Chinese *Iris forrestii* to the mix, in one of its dwarfer forms. The flowering period of some of



Iris haussknechtii

MARY RANDALL



ROBERT ROLFE

Iris forrestii

these is spot on but their moisture requirement is greater. Instead, I suggest northern Turkish *Iris haussknechtii* (a *Spuria* long grown as *I. kerneriana* and sometimes still labelled as such). This is long-lived, will tolerate light shade, and comes freely from seed, dying back to bulbous, deep-rooted bases in a hot summer.

The plant shown is from last summer in the Hampshire garden of David and Mary Ridley. Other versions can be almost white/yellow bicoloured. A three-year wait to first flowering is usual, in line (or ahead of) the *Arisaema*. Dwarf to thigh-high lilies are also compatible, one of them in bud as glimpsed here.

Arisaema tortuosum

In flower, the spectacularly snaking spadix aside, this reminds me of an organ stop, the bolt upright congregation of a lofty *Sarracenia* at full belt. It brings an other-worldly injection to the garden, lofty and exuberant in its performance,

soaring to a height of two metres. Benefitting from a particularly deep planting, down to 20–25cm, and a fertile, rich soil, it is like no other, towering above almost any other in the genus.

The specific epithet references the green or purplish, sigmoid spadix, projecting up to 30cm in reach-for-the-sky mode, contrasting with the pale green (rarely purplish) spathe that is furled at the base. If you factor in the lush, palmate two or three leaves, its appearance is nigh tropical. And its distribution is in part from such climes, from northern India to western China, at 1,300–2,900m, alongside streams, rudimentary paths, and rocky slopes.

It belongs to a loose grouping that seldom produce offsets (Japanese *Arisaema sikokianum* comes under the same heading) but will set seed spontaneously without the need to pollinate artificially. Again, its siting in a garden setting requires careful forethought, and as illustrated could hardly be bettered, perfectly



ROBERT ROLFE

Arisaema tortuosum and *Cornus kousa* var. *chinensis*



ROBERT ROLFE

Paris polyphylla

complementing countryman *Cornus kousa* var. *chinensis*. That same day, the third week of June 2021, I came across a scattering of *Paris polyphylla* not far distant. Earlier in the year, at the first sign of them stirring, I would straightaway have lifted one or two of the clumps, taking great care, and transported them to join the throng, at the front. They transplant best in late winter or at that stage but must not be allowed to dry out. Best to leave the majority in their original site: eggs in one basket and all that.

Notes on propagation

The progression of events is a predictable one. You buy a few corms. If all goes well, you notice either vegetative increase or the production of seed in your first-year purchases. You wish to increase numbers but look

at catalogue prices, baulk, and rethink the retail option.

Propagation is primarily from seed, once the encompassing pulp has several times been sluiced away in early autumn (in a few cases later still, in December), donning latex gloves in the process to prevent any possible skin contact with the irritant sap. Either sow straight afterwards or soak seed exchange material on arrival: some species store well in a dried state for at least a year, but might require an extra season to progress. Careful watering is necessary to prevent rotting. Twice a month is ample. Expect to wait a minimum of two years, more often four or five, from germination to flowering size. Of those species hitherto mentioned, *Arisaema candidissimum* and *A. tortuosum* are among the quickest to mature. Pricked out 1cm deep and spaced several times more from one to another, they will continue to grow for up to six months and should be sited in part shade, thereupon encouraging them to remain in leaf as long as possible. Some growers prefer to bed seedlings out rather than maintain them in pots. Also, some advocate frost-free conditions through to their first flowering.

Putting to one side tissue culture and leaf or petiole cuttings, these the preserve of the specialist, offset corms are the other readiest means of increase. These 'daughter' progeny, produced from several sites on the parent organ, the shoulders included, can be removed by simply dislocating them, again in autumn (ideally, but with a deft touch this can be done when the plants are in growth). Potted up, they should be left undisturbed for a year or two before replanting in a neutral, rather gritty, high humus or soilless compost. Dilute feeds of a liquid potash fertiliser when in growth are beneficial. ●

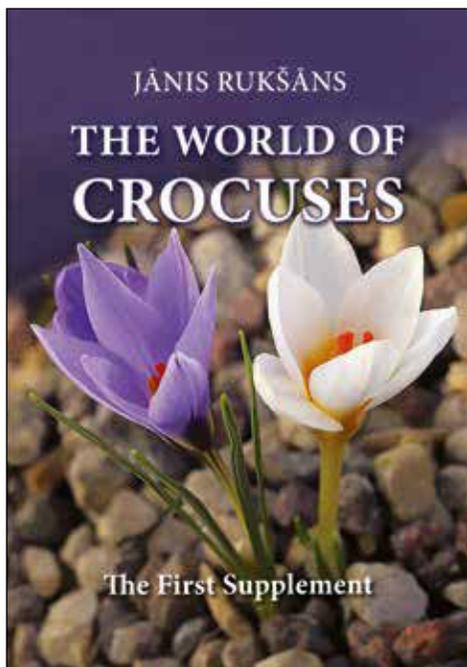
Book reviews

Tony Goode reviews the supplement to an authoritative work on crocus; **Chris Lilley** assesses two new guides aimed at beginner growers

The World Of Crocuses – *The First Supplement* by Janis Ruksans

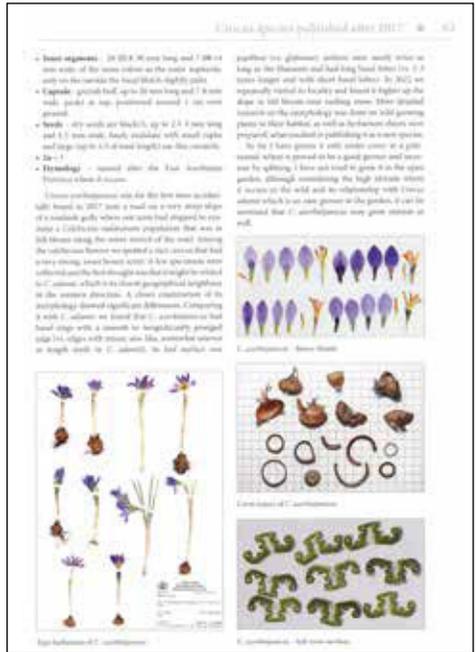
144pp, 2023, Latvian Academy of Sciences, 400 colour photographs, illustrations and maps. €40 (from which €5 will be donated to support Ukraine) when purchased from the author at janis.bulb@hawk.lv (each copy signed by the author). Also available for £45 from summerfieldbooks.com or from €52 via koeltz.com

Janis Ruksans always expected that there would be publications to revise and update his seminal work *The World of Crocuses*, published in 2017. After six years this first supplement matches the main volume in quality of production and content. Comprehensively illustrated throughout, largely with the author's own photographs, these books represent the distilled wisdom of an extraordinary plantsman. More than 50 years ago, Brian Mathew's *The Crocus* was the 'crocus Bible'; today we have a work of similar status as the go-to reference book on this genus. Comprehensive, detailed description of every species, sometimes lengthy discussion of the variation and similarities to related species, photographs of flowers, corm tunics and other salient features abound.



Maps showing the wild distribution are supplied throughout and sometimes these are used to illustrate the separation of different species or putative species. All of this is common to the main volume and the supplement.

The book is divided into three parts. The first part covers general information, morphology, taxonomy and cultivation. This is new text to



supplement the information in the main volume. Additional thoughts include discussion of the effect of soil temperature, acidity and moisture retention on certain species, thoughts on the impact of climate change and on the prevention of fungicidal infections to name a few. In terms of taxonomy, Janis notes his own use only of morphological features rather than genetic analysis, which is used by some other researchers. Some of the problems of having these differing approaches are discussed, such as the conflict of interest between withholding location data – as some researchers do – and future scientific research.

The author reflects too on differences in the current evolving taxonomy such as where two, three, four or even six species grow within a few hundred metres of each other. This is seen as fine if they are distinct but ‘co-existence of two very closely related species, within

a small population, distanced by only minor details honestly, is pretty improbable.’ There follows an involved discussion of some of the tensions between different approaches to taxonomic review, including some doubts about the splitting of similar species, noting inherent variability over populations as well as over time within populations. It is a complex area, difficult to navigate for all but the experts. The following extract sums this up as well as any: ‘The high number of new species and their often rather close relationships with an almost endless spectrum of morphological variations means that their separation won’t be an easy exercise.’ In the eyes of some, an understatement!

Revisions and additions

Part two involves corrections and additional information covering 29 taxa from the original publication. These

geography, variants that perhaps, in the past, would have been lumped into a broader definition of a species. Of particular interest to UK growers will be *Crocus cobbii*, named for Ray Cobb, who passed away recently at the age of 100. A long-time UK crocus guru and National Plant Collection holder, he was also a research chemist who was part of the team instrumental in the development of ibuprofen. This new taxa, very close to *Crocus salzmannii*, was not published by Ruksans, who notes that differences are subtle and overlapping.

For each species there is a full description, details of its geographical range including a map and in almost all cases a selection of photographs, these mainly of cultivated plants in the author's collection. There is also a discussion of variability and of related species.

In summary, this beautifully produced book, comprehensively illustrated and very clearly laid out, will be a 'must have' for crocus enthusiasts worldwide. It is primarily a supplement to the earlier volume and as such its main usefulness lies when set alongside its predecessor. That said, its quality as a reference book and readability will draw attention from a wider audience. In the introduction, Janis notes that the original print run of *The World of Crocuses*, 2,000 in number, is almost sold out.

If you are a crocus enthusiast and do not already have a copy, it is time to bid for one of those that still remain available and add this supplement for completeness. Well, complete for now at least, as the understanding of this genus continues to evolve.

Tony Goode

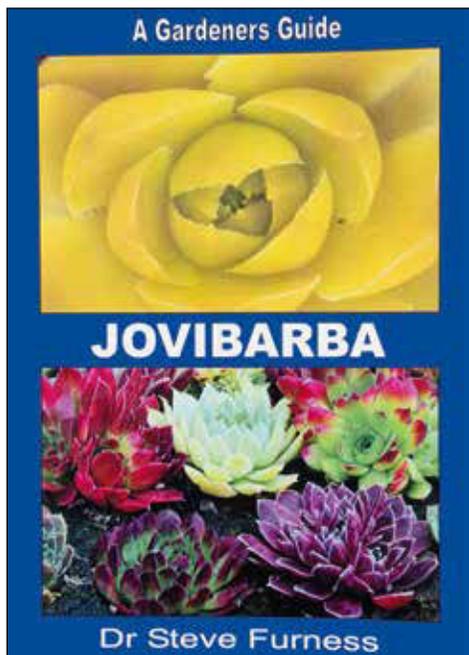
Jovibarba – A Gardeners Guide *Sempervivum* – A Gardeners Guide by Dr Steve Furness

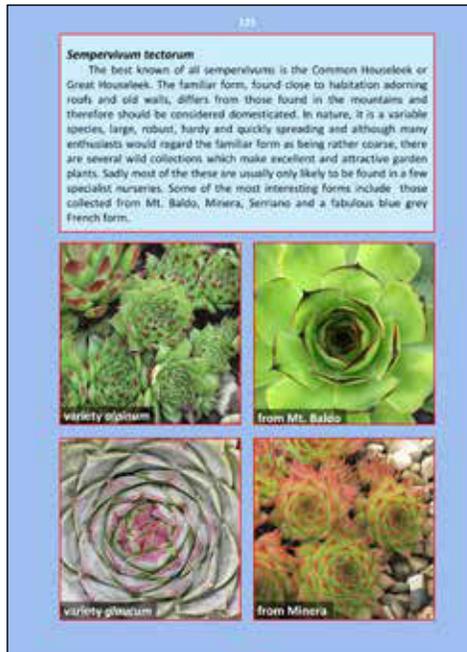
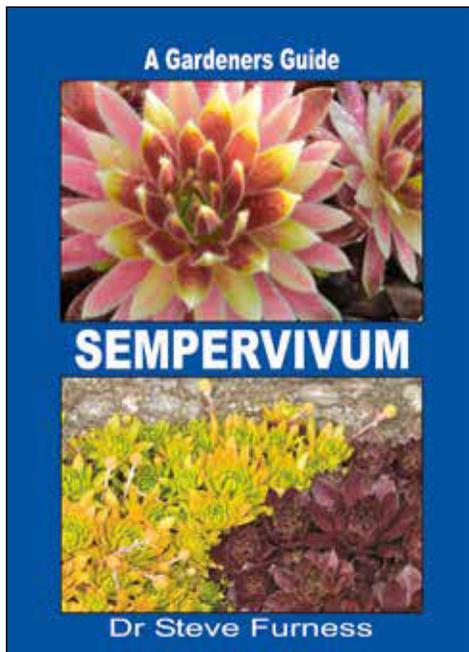
Jovibarba: 106pp; 2023, Dr Steve Furness. Fully illustrated with colour photographs. RRP £14 (£12.60 for AGS members)

Sempervivum: 212pp, 023, Dr Steve Furness. Fully illustrated with colour photographs. RRP £18 (£16.20 for AGS members)

Available from AGS Shop (tel 01386 554790) or alpinegardensociety.net/shop

I've been aware for some time that Steve Furness, owner of The Alpine Plant Centre in Derbyshire, wished to write and publish books about these plants. It is pleasing he has done so, particularly in view of all what is now available via





information technology. His unsurpassed knowledge, enthusiasm plus his ability to tell gardeners about these plants is clearly set out in these books, accompanied by his meticulous photography.

Entitled 'A Gardeners Guide', the author has skilfully used non-botanical text to tell the reader how to successfully grow these plants. In particular he stresses the point of 'collecting only those you like as and when you see them, without bothering about correct nomenclatures.'

I especially liked the information on pests, diseases and weeds, where the text on each subject, for example vine weevil, is accompanied by relevant photographs, creating a visual guide to quickly identify pests and diseases.

Photographs in the chapters dividing species from cultivars allow enthusiasts to select and seek those that appeal, with a useful guide from the author on

how he has ensured their pictorial accuracy.

Chapters on *Sempervivum* cultivars and *Jovibarba heuffelii* clearly show the vast range of leaf textures and colours found in these plants, skilfully placed together for contrast, with four or six shown on each page.

Both books are interesting equally to those growing species or cultivars, guiding anyone to successfully select and grow – whether already experienced or a novice.

I can say as an already experienced grower of sempervivums in particular, these are the first useful reference books I've seen on these members of *Crassulaceae*.

Published in glossy A5 format, these books are of convenient reference size for any bookshelf, or for a large pocket when out searching for these appealing plants.

Chris Lilley

Highlights of AGS early spring shows

Our show reporters reflect on prizewinning plants and ones that caught their attention at the first alpine shows of the year

PHOTOS: JONEVANS (UNLESS OTHERWISE STATED)



FARRER MEDAL WINNERS

SOUTH WALES SHOW *Scilla mischtschenkoana*
(Bob and Rannveig Wallis)

PERSHORE SHOW *Gymnospermium altaicum*
(Vic and Janet Aspland)

EARLY SPRING SHOW *Dionysia tapetodes* (John Dixon)

LOUGHBOROUGH SPRING SHOW *Saxifraga* 'Allendale Ghost'
(Mark Childerhouse)

KENDAL SHOW *Dionysia tapetodes* (John Dixon)



SOUTH WALES SHOW

As with most early shows, *Galanthus* formed a major part of the flora on display and one of note from the Novice section, shown by Mike Acton, was *Galanthus elwesii* 'By Gate', a lovely Imperial group clone, with large flowers on long pedicels with a broad marking at the apex of the inner segment. This was just one of the plants that helped Mike win the Caerleon Cup for the most first prize points in the section.

David Carver has been showing for a relatively short time but he is already proving that he will be stiff competition in the not-too-distant future. He dominated the Intermediate section with a number of top-quality miniature *Narcissi*, the pick of the bunch being

N. 'Trumpet Voluntary', an Anne Wright selection, originally sown as *N. eugeniae*, which has proven to be a sterile hybrid. This helped him win the Gwent Trophy (most points, Intermediate section).

The Crocus award went to a plant in a 13cm pot, which was selected from a number of large contenders, such was its quality. *Crocus pestalozzae* in its violet-blue colour form was shown to perfection, every bud was open and in tip-top condition, by a local exhibitor, George Elder. Best grown under cold glass in a frame or alpine house and kept quite dry during summer months. It makes a good quantity of seed, which should flower in its third year.

The Mary Bing award, for the best



Galanthus elwesii 'By Gate'
(Mike Acton)





Narcissus 'Trumpet Voluntary',
(David Carver)

plant in a pot not exceeding 19cm, was hotly contested, with six potentially worthy winners. Paul and Gill Ranson's delightful *Dionysia* 'Zdenek Zvolanek', MK9801/14 was the unanimous choice of the judging panel. An F1 hybrid from *D. afghanica* out of the stables of Michael Kammerlander, this exhibit was just one of an overwhelming number of red stickers, which contributed to the couple being awarded the Isca Prize for the Open section aggregate.

Three Certificates of Merit were awarded on the day; these go to plants or exhibits which are deemed to be of outstanding merit, not just at the show at which it is awarded, but must have reached a certain standard which covers the entire showing season. The first went to a venerable plant of *Cyclamen parviflorum*, shown by an expert in the field, Ian Robertson. No stranger to the show bench but still in first-class condition and presentation,

this is a species requiring fairly specific treatment to attain a degree of success.

The second went to an *Aylostera heliosa*, a member of the *Cactaceae*, shown by Anne Vale. Once known as *Rebutia heliosa*, this is a plant of unquestionable suitability for the AGS show-bench.

The third formed part of the winning AGS medal class (Class 35) – this was *Muscari inconstictum* in its Cypriot form; this typically has shorter, rounder flowers, and the pan was a mass of tiny, two-tone 'grapes' shown by Bob and Rannveig Wallis. Their six-pan also included another snowdrop that caught the eye: *G. nivalis* 'Lovesgrove', a beautiful, squat poculiform with crystalline white petals, selected by Rannveig from a host of plants from her sister's property of the said name.

They were also awarded the Farrer Medal for an attractive plant of *Scilla mischtschenkoana*, winner of a



G. nivalis 'Lovesgrove'
(Bob and Rannveig Wallis)

Certificate of Merit last year, now bumped-up to the premier award. This easily acquired and cultivated species comes from Northern Iran and the South Caucasus, and can be found in many collections under the synonym *S. tubergeniana* - the name that it goes by in the trade.

The visual welcome one received on entering the hall was due in part to an incredible collection of photographs displayed by Jon Evans (shown on p226). The displayed photos were a collection spanning around 15 years and composed of close to 300 individually mounted pieces. The exhibit was entitled 'Alpines in close-up'; this received a Large Gold Award.

With a healthy number of non-members through the door, an increase in exhibitor numbers, including novices, it seems the show-scene is quite healthy in South Wales... hywl fawr.

Ray Drew



Dionysia 'Zdenek Zvolanek'
(Paul and Gill Ranson)

PERSHORE SHOW

Iris winogradowii
(Don Peace)

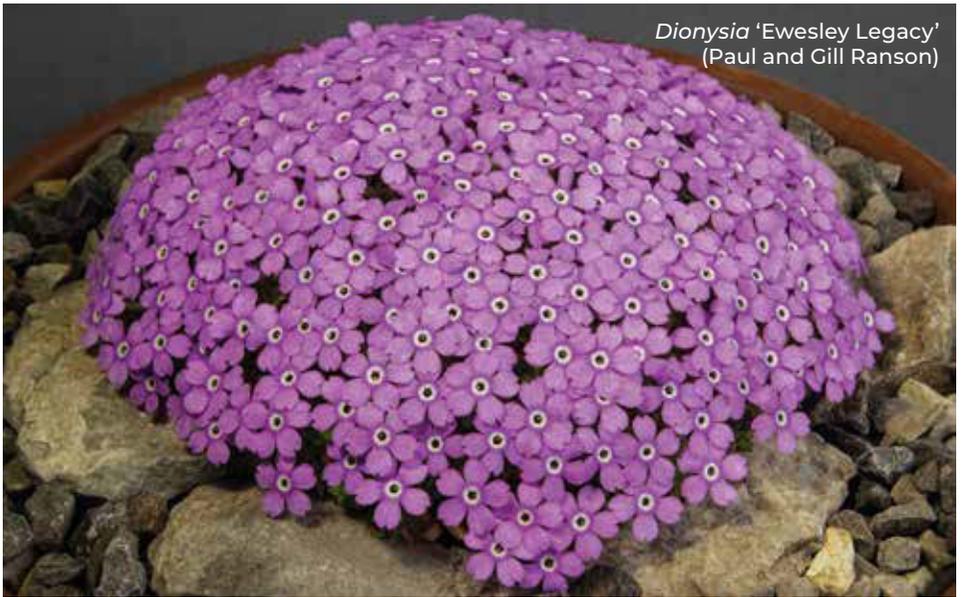


Iris kolpakowskiana
(Bob and Rannveig Wallis)



The show hall was a blaze of colour with splendid *Dionysia*, *Cyclamen*, *Narcissi* and other dwarf bulbs featuring prominently. It is unusual for a plant in a 19cm pot to win the Farrer Medal for the best plant in the show, but Vic and Janet Aspland achieved this with perhaps the best and most mature specimen of *Gymnospermium altaicum* seen at our shows. This member of the *Beberidaceae* family originates from central Asia. The winning plant carried a profusion of flowers of the brightest yellow, all slightly overhanging the pot. It is a hardy species but requires excellent drainage and is most often given the protection of an alpine house.

Bob and Rannveig Wallis won the Open section aggregate with a wonderful array of plants – no fewer than 29 formed part of first prize-winning entries! They won awards for



Dionysia 'Ewesley Legacy'
(Paul and Gill Ranson)

both large and small six-pan entries as well as a Certificate of Merit for a lovely pot of eight *Iris kolpakowskiana*, a rare, tricky and beautiful member of the Reticulate group from Central Asia. One pot in their small six-pan entry caught the eye of your reporter: seven cream flowers of a hybrid between *Narcissus asturiensis* and *N. alpestris*.

The award of six Certificates of Merit demonstrated the quality of the show. Don Peace won two with plants in his first-prize-winning large three-pan exhibit. An outstanding *Hepatica japonica* f. *magna* had purple stamens contrasting with the pure white petals. He secured his third Certificate with a glowing pot of *Iris winogradowii*, a pale yellow-flowered species from the Caucasus with dark spots on the falls.

The wonderful *Dionysia* of Paul and Gill Ranson and of John Dixon are always a delight at our spring shows. Paul and Gill secured a Certificate of Merit with an immaculate *Dionysia*

'Ewesley Legacy', its pink flowers with white centres contrasting with a limestone topdressing.

No early spring show is complete without a formidable display of Ian Robertson's *Cyclamen* and he won the sixth Certificate of Merit with a huge *C. coum* whose dark flowers contrasted with silvered leaves below. Close by on the show bench stood Ian's large three-pan entry with = and a *C. persicum* f. *puniceum*, a rarely seen form of this later flowering species from Lebanon.

It was refreshing to see a renaissance in the Artistic Section. Eight exhibitors entered 31 pictures of quality and great variety. Rannveig Wallis won the Open Section Aggregate and Stephen Shelley the Intermediate Aggregate. His drawing of a range of *Fritillaria* flowers was particularly striking. An elegantly composed painting of *F. meleagris* won the Florence Baker best painting award for Caroline Jackson-Houlston (see pl57).
David Charlton

Cymnospermium altaicum
(Vic and Janet Aspland)



Lesley Travis



Lesley Travis

EARLY SPRING SHOW



Large six-pan exhibit
(Ian Robertson)

A tremendous six-pan exhibit shown by Ian Robertson was the first that caught the eye as one entered the door. It comprised an unidentifiable hybrid *Fritillaria*, the lovely, probable hybrid *Narcissus alpestris* 'Nadder Moon', and four huge *Cyclamen*. Two of which, *C. coum* and the pale-flowered *C. pseudibericum* var. *roseum* received Certificates of Merit. The *C. coum* had numerous quite small dark flowers which were well complemented by the small, pewter-centred, leaves. This huge plant was grown from seed sown in November 2006 so it is only a teenager! Ian specialises in these wonderful cyclamen and I did manage to get a few tips out of him. He grows most of them in frost-free conditions,

and in pots that many of us would consider too large but then he can leave them for several years before disturbing them again. The crucial thing is to avoid overwatering; excellent drainage is of the essence.

The 19cm pan AGS Medal class was a closely fought two-way contest. Bob and Rannveig Wallis were the winners with Ian Robertson just trailing. Both of their six-pan exhibits contained some terrific plants. Few exhibitors have managed to tame *Crocus pelistericus* over the years, but Ian has a striking white form. It is a native of northern Greece and North Macedonia where it grows high in the mountains in acid soil thriving in the cold snowmelt water. What we all grew up calling *Chionodoxa* ►



Scilla lochiae
(Bob and Rannveig Wallis)



Crocus pelistericus
(Ian Robertson)

is now part of *Scilla* and two of the ex-*Chionodoxa* were on display. The pick of the bunch for me was *Scilla lochiae* (shown by both Ian Robertson and Bob and Rannveig Wallis), a native of Cyprus where like most of its relatives it favours copious irrigation by cold snowmelt water when it is in flower. It is a wonderful deep blue and slow enough in increasing to keep it fairly scarce in cultivation. The second was *Scilla sardensis*. This is one of the three ex-*Chionodoxa* from western Turkey and has probably been introduced many times in the past and grown under various names.

There were a few hardy orchids on display and it is worth commenting on Steve Clements' *Pterostylis curta* x *coccinea*. The exhibited plant had been grown in a mixture of composted bark, moss and sand and is grown frost-free in winter. A dryish summer in a shady place is all that is required.

Diane Clement produced her lovely, spicily scented *Ypsilandra thibetica* once again and while a contender for its third Farrer Medal, it was pipped at the post but received a well-deserved Certificate of Merit.

Yet again *Dionysia* growers excelled. Certificates of Merit were awarded to Nigel Fuller for his perfect pale yellow 10in dome of *D.* 'Monica' and to Paul and Gill Ranson for their *D. zagrica*. The latter has proven particularly tricky to build up into large cushions and the 5in cushion was a tribute to the skill of these growers. It seems to only make small plants in the wild too.

D. tapetodes, on the other hand, can make immense cushions in the wild and John Dixon's plant emulated this. Its huge, foot-wide (and very heavy) example was judged the best plant in the show and awarded the Farrer Medal.

Bob Wallis

LOUGHBOROUGH SPRING SHOW

On entering the show, my eye was first taken with Class 12 – Bob and Rannveig Wallis had exhibited *Anemone heidriechii*. I am familiar with this genus, but not that particular species.

These same exhibitors had entered Class 75 with a three-pan exhibit, but I liked what looked to be a small form of *Fritillaria bucharica*, only to be advised that it was *Fritillaria baisunensis*.

They also received the Charnwood Forest Trophy and the Narcissus Salver for their *Narcissus asturiensis* var. *lagoi* RDD702305. To my mind, however, the plant that I would most like to have taken home was their *Tulipia regelii*. It had taken them, two of our top growers, 11 years to persuade this difficult plant to flower. I am reliably informed that they grow this plant in their usual compost mix of two parts loam with the

addition of perlite or vermiculite and grit; good in the alpine house; great care must be taken with watering.

Another interesting *Fritillaria* was exhibited by Don Peace. He exhibited *Fritillaria* ‘Lentune Eyecatcher’, a hybrid of *Fritillaria aurea* x *F. pinardii*. He also was awarded the Webster Trophy for best plant native to Europe with his superb *Callianthemum anemonoides*.

Bob Worsley showed a superb *Gagea fibrosa*, grown from Scottish seed in a mixture of John Innes, leafmould and vermiculite; this is a plant your reporter is growing but has yet to produce a specimen as robust as the one on show.

Two exhibits from different people in the Intermediate Section that took my interest were Heather Barraclough’s *Primula allionii* ‘Evelyn Burrow’ and ►



Callianthemum anemonoides
(Don Peace)

Gagea fibrosa
(Bob Worsley)



Saxifraga 'Allendale Ghost'
(Mark Childerhouse)





Trillium nivale
(Eric Jarrett)

David Carver from Yelverton, with his exhibit of *Fritillaria wendelboi*. He also collected a Certificate of Merit for *Narcissus* 'Giselle'.

Further Certificates of Merit were issued to: Peter Hood for *Corydalis sewerzowii*; Chris Bowyer for his *Maihueniopsis subterranea* subsp. *pulcherrima*; and John Dixon for his *Dionysia tapetodes* JRD 95/1/1 and *Primula* 'Lepus'. The Richard Regan Trophy was awarded to Paul and Gill Ranson for *Dionysia zschummelii* T4Z166Go2; Eric Jarrett received a Certificate of Merit for his *Dionysia bryoides*, and the American Trophy for the best plant native to the Americas with *Trillium nivale*, which also receive the Royal Bank of Scotland Award for best pan of bulbous plant.

Finally, the Farrer Medal was awarded to Mark Childerhouse from Brigg for his very large pan of *Saxifraga* 'Allendale Ghost', which was completely covered in pure white flowers.

Eric Jarrett



Tulipa regellii (Bob and Rannveig Wallis)

KENDAL SHOW

Often, the 'best plant in show' (here, under SRGC rules, the Forrest Medal) reveals itself after the most cursory of inspections. It is the sign of a quality show when several candidates raise their heads. Here, each of the recipients of a Certificate of Merit (*Corydalis sewerzowii*, Peter Hood; *Saxifraga* 'Coolock Kate', Frank and Barbara Hoyle; or *Narcissus* 'Giselle', Anne Wright), or especially the winner of the Clarkson Trophy for best *Ranunculaceae* (a stunning dark blue *Hepatica japonica*, Chris Lilley) would have been adjudged deserved recipients of the premier award. Instead the judges chose John Dixon's magnificent *Dionysia tapetodes*, of noble proportions and seamless, unbroken flower.

This peerless species was also

involved in the parentage of the winner of the Duncan Lowe award for the best 'small' pot, *Dionysia* 'Inka Gold' (Mark Childerhouse), a Michael Kammerlander cross which also involved *D. odora*. This compact hybrid flowers a penetrating golden yellow. On the subject of *Dionysia*, it was a great pleasure to welcome again the Afghan *D. freitagii* (Geoff Rollinson). The 'strawberries and cream' flowers, resting on the cushion have been seen infrequently at shows in recent years, and I am told only a handful of growers still hold stock of this wonderful species which is unlikely to be reintroduced.

Lest the preceding words give a false impression, I must emphasise the impact that bulbous species had on this show. Blue scillas were much to the fore, notably the excellent *S. x allenii* 'Fra Angelico' (Don Peace) – such a well-behaved clone on the bench, which cannot be said for all its kin. Two exhibitors have raised many excellent new bulbous hybrids that have performed well at shows and which many other growers are anxious to trial! I have written before of Don's splendid hybrids and backcrosses involving *Fritillaria pinardii* and *F. aurea*. On this occasion I was particularly taken with *F.* 'Lentune Eyecatcher', well-named as the flowers have dazzling stripes of chocolate and mustard. Don also won with a superb pan of *Fritillaria carica* with 35 flowering stems.

Anne Wright's stable of pedigree dwarf *Narcissus* hybrids is of even longer standing. She presented an impressive array, including two *N. triandrus* x *N. cantabricus petunioides* crosses (AW4216 and 4236), raised in



Fritillaria 'Lentune Eyecatcher',
(Don Peace)

Dionysia tapetodes
(John Dixon)



DON PEACE

2014, which particularly took the eye. Many onlookers mentioned *N.* 'Sweet Petite', well named, a delightful bicolor of truly miniature proportions, resulting from a cross between *N. rupicola* and *N.* 'Second Fiddle' that appeared in two classes. This dates back to a cross made in 2008. *Narcissus* 'Coo' (*N. bulbocodium tenuifolius* x *N. cyclamineus*) was yet another of her noteworthy hybrids.

Two saxifrages particularly attracted my attention. *S. pulchra* has always proved very slow and tricky in cultivation, so it was a great treat to see a small plant just coming into flower (Mark Childerhouse). A very attractive white-flowered *Porophyllum* saxifrage was labeled '*S. georgii*' (Frank and Barbara Hoyle). It seems that this developed from a self-sown seedling found in a purchased pot of *S. georgii*. Somewhat resembling *S.* 'Coolock Gem', but with longer flower stems, this appeared to be a promising new clone which deserves a name.

John Richards

Scilla x allenii 'Fra Angelico'
(Don Peace)



DON PEACE

AGS Events 2023/24

BOOKING IS NOW OPEN FOR
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Tickets: see the June issue of AGS News

AGS Bulb Day (in conjunction with The Fritillaria Group)

Sunday, 1 October 2023, 10am–4pm

Pershore College, Avonbank, Pershore, Worcestershire, WR10 3JP
(two-minute walk from the AGS Headquarters)

The programme will include lectures by Laurence Hill, Paul Cumbleton and others to be confirmed. Buy plants from specialist nurseries and visit the AGS Garden and Headquarters.

Tickets: £32 AGS members; £40 non-members

AGS Snowdrop Day

Saturday 3 February 2024, 9.30am–4pm

at Pershore College, Avonbank, Pershore, Worcestershire, WR10 3JP
The programme will include lectures plus plant sales from specialist nurseries. Visit the AGS Garden and Headquarters, where a selection of books and merchandise will be for sale.

Tickets: £35 AGS members; £42 non-members

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The last word...

AGS member John Grimshaw, Director of the Yorkshire Arboretum, reflects on early encounters with alpines and the importance of preserving old plants



Each summer between 1978 and 1986, the Grimshaw summer holiday was based at a cottage in Inverness-shire, adjacent to the Aberchalder Alpine Gardens. I learnt to love alpines in this charming old garden, studying them alongside the wild plants of the Highlands and Islands, all so different to anything we knew at home in the Thames Valley.

A handful of Aberchalder plants still

grow in my parents' garden, but the only one I have here in North Yorkshire is *Hosta* 'Undulata', an old, variegated Japanese cultivar. I got it in 1983, the same year that I acquired a silver saxifrage from a nursery at Nairn Show.

One of our annual rituals was a visit to Nairn Show: as a family we would enjoy the livestock and be amused by the convincing patter of 'Mr Klin' selling the 'world's best' cleaning product – and I would scout for plants for sale. This little sax was sold as *Saxifraga paniculata* 'Correvoniana': it has tiny, very neat rosettes, spreading to make a flat mat. It is in full flower as I write in mid-May, with numerous short inflorescences, bearing pure white flowers: it's reliably good and came to no harm in last year's drought and heat. The name ought to link it to the great Swiss alpine nurseryman Henri Correvon (1855–1939), but according to Beryl Bland's AGS monograph *Silver Saxifrages* (2000) this clone is a usurper of an earlier 'Correvoniana' – she recommended that it be called *Saxifraga* 'Correvoniana' hort. ('of gardens'), a rather indistinct distinction.

Keeping these old plants going is important, not only for their personal memories, but for the continuity of horticultural history. I like that I have a *Hosta* once shipped from Japan by naturalist Phillip Franz von Siebold (1796–1866), and a saxifrage that isn't quite connected to Correvon – living antiquities that need to be preserved. ●



John's plant of
Saxifraga
'Correvoniana'

PHOTOS: JOHN GRIMSHAW

MEMBERS' SEED DISTRIBUTION 2023/2024

AGS SEED LIST No 72

IMPORTANT NOTICE FOR ALL SEED DONORS

Seed donors are requested to send in their seed using the form included with the June 2023 issue of *The Alpine Gardener*. The donor form is also available from the AGS website:

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All donations must be received by the allocated person (see list below) by 10th October 2023 to ensure entry in the seed list. Any notes or comments about seed with special interest, which helps to authenticate the botanical names, are welcome. If you send in a packet and you are unsure about the name (species, hybrid or cultivar), please give some indication of colour and/or size as the seed may otherwise be of little value to the exchange and we may feel it inappropriate to include it in the list. All small bulbs, corms, tubers are very acceptable. We do not acknowledge the receipt of seed donations. **New regulations state that all donations from outside the UK should be accompanied by a Phytosanitary Certificate. Overseas donors may wish to group together to share any cost involved.** Donations sent without Certificates are at the donor's risk. We are trying to find a better solution to this ongoing problem. Please refer to the AGS seed section of the website for up to date information and any recent changes: <https://www.alpinegardensociety.net/seed-exchange/>

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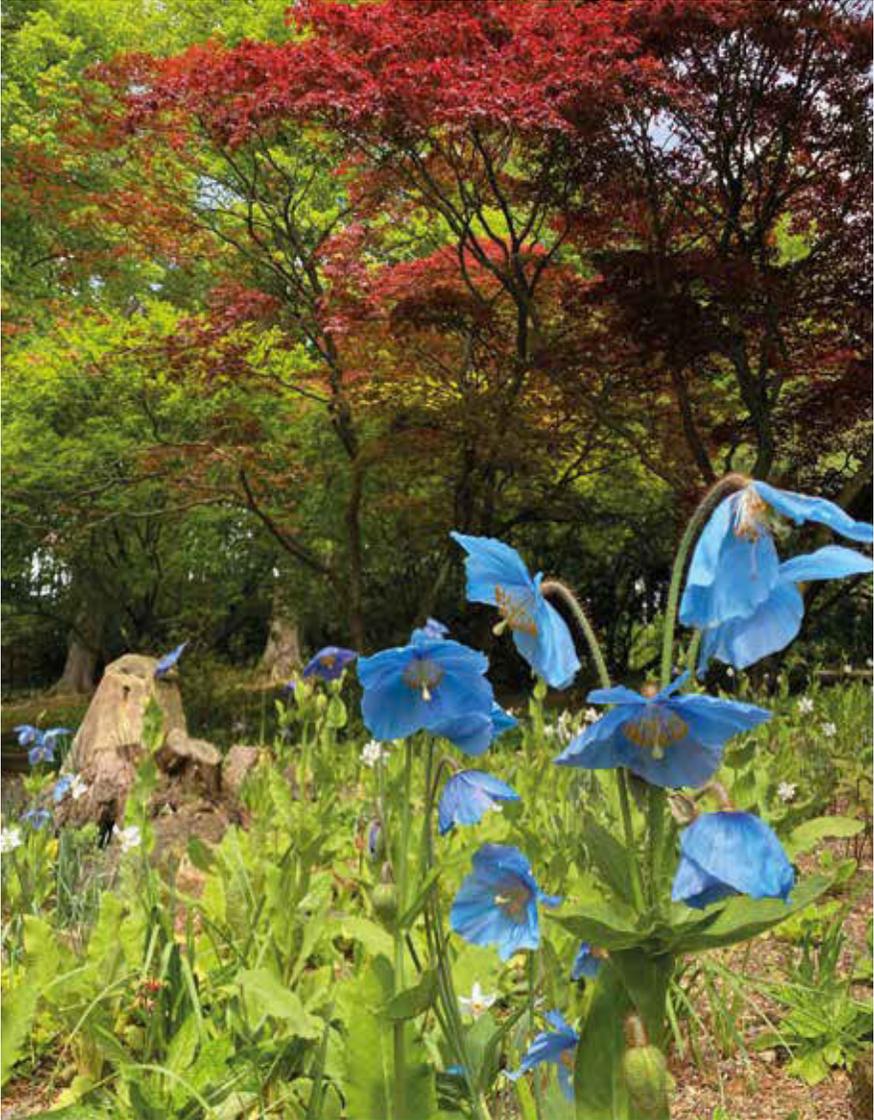
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NEWBY HALL REVISITED

Work to restore and replant the substantial, historic rock garden at Newby Hall in North Yorkshire has reached the halfway stage. Meconopsis cultivars are among the plants that are flourishing in their revitalised surroundings (see p142).

