THE ROCK GARDEN 140

January 2018

Postal Subscriptions from 1st October, 2017

Postal subscriptions are payable annually by October and provide membership of the SRGC until 30th September of the following year.

Subscription Rates	**UK**	**Overseas**
Single annual	£20	£25
Junior (under 18 on 1st Oct)	£3	£8
Family (Two adults and up to two children under 18 on 1st October)	£23	£28

Three year subscriptions are available at three times the above annual rates. Renewals for three year subscriptions may only be made at the end of the three year period.

All subscription payments to the club must be made in GB Pounds Sterling.

Cheques should be made payable to 'The Scottish Rock Garden Club' and must be drawn on a UK bank.

Subscription payments may be made through the post by Visa or Mastercard providing the following information is sent:
The long number on the card
The name of the cardholder as shown on the card
The card expiry date
The cv2 3 digit number (from back of the card)
The cardholder's signature.

Visa, Mastercard and Paypal subscription payments may also be made via the secure order form on the Club's website at **www.srgc.net**

No card details whatsoever are retained by the Club after the transaction, whether sent by post or through the web site.

Applications for postal membership and subscription payments should be sent to:

Subscription Secretary
10 Quarry Avenue
Acklington
Morpeth
Northumberland NE65 9BZ
United Kingdom
Telephone: 07986 849364
Email: subsec@srgc.org.uk

Electronic subscriptions

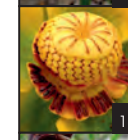
Electronic subscriptions are available at £11 per year to individuals, valid from the date of payment. Payment may only be made via the web site using Paypal. No printed material is sent for such memberships. All journals and documents are made available for download from **www.srgc.net** as pdf files. Any seed exchange charges will be payable at the time of ordering via the web site.
Further information about this form of membership is available only at **www.srgc.net** (and not from the Subscription Secretary).

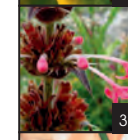
The Rock Garden

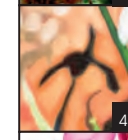
The Journal of the
Scottish Rock Garden Club
January 2018

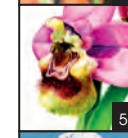
Number 140

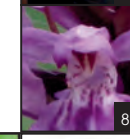
Cover: *Chloraea magellanica* (Rafa Díez Domínguez)











Printed by Wyke Printers, Hull.
www.wyke-printers.co.uk ISSN 0265-5500 www.srgc.net

THE ROCK GARDEN
is published twice yearly by the Scottish Rock Garden Club
on 31st January and 31st July

Anton Edwards
Duguid's Wark
Manse Road
Caputh
Perthshire
PH1 4JH
01738 710774
editor@srgc.org.uk

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

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

Journals usually arrive in February and August. Please contact the Subscriptions Secretary in case of non-arrival (see inside front cover).

Enquiries about advertising should be made to:
David Nicholson
7 Carter Road
Ivybridge
Devon
PL21 0RX
01752 896307
davidnicholson1943@gmail.com

David Nicholson is retiring as Advertising Manager. If you are interested in taking up this modest but important role for the club, please contact David directly.

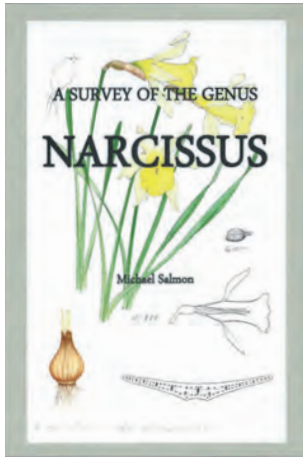
Use this QR Code for our site www.srgc.net

Please use the link to Amazon at the bottom of our web pages so as to earn commission money for the SRGC at no cost to yourself.

Permission to reproduce photographs or articles may be sought from the editor or the author. Photographs are usually by authors unless otherwise stated. Those marked are supported by the Danner bequest.

Contact may also be made through the club website: www.srgc.net

A Survey of the Genus Narcissus
Michael Salmon
AGS Publications
Somerton Printery, Somerton, TA11 6SB
United Kingdom; about £45
ISBN: 978-1-5272-0587-1



After the 27 years since John Blanchard's *Narcissus*, this new work from Michael Salmon consolidates fifty years study of daffodils both in the wild and in cultivation – where Michael introduced many collections when he ran Monocot Nursery. This is a large hard-bound volume of quality paper just over A4 size. Each of the taxa is allocated at least two pages, with descriptions and maps accompanied by a full-page colour plate. The text details the taxonomic treatment, synonyms, chromosome counts, detailed botanical descriptions, with flowering times, observations on habitat as well as collection numbers, many of which are still in cultivation. The botanical descriptions are excellent, with descriptive detail for each of the taxa, invaluable for interested gardeners and botanists alike. The maps do not show complete distributions of the taxa (and naturally occurring hybrids), but relate to sites that the author has visited and to reliable herbarium records. Nevertheless, they usefully illustrate their general range. Those familiar with the classic sites will deduce some of the locations.

The plates, prepared by the author himself, represent a huge task and are excellent. The character of the plants is captured with colour paintings of the whole plants, as well as line drawings and additional paintings of a range of other features.

The author, who is a self-confessed 'splitter' rather than a 'lumper', acknowledges that not all readers will agree with the taxonomic treatments. He deals with the reasoning for changes in his introduction to each section, although I would have preferred a more thorough explanation in the species accounts. Examples of reassigned taxa include:

- *N. cantabricus* var. *laciniatus* is elevated to subspecific level
- *N. cuatrecasasii* is included as a subspecies of *N. calcicola*
- *N. cuatrecasasii* var. *segimonensis* is subsumed in *N. rupicola,* as a subspecies
- *N. gaditanus* is regarded as a subspecies of *N. assoanus*.

This is neither a gardening book nor a field guide but, regardless of differences in opinion, is an important new work that I recommend to anyone with a special interest in the genus Narcissus as well as to amateur and professional botanists.

Matthew Topsfield

Discussion Weekend, 12th to 14th October 2018
At the Atholl Palace, Pitlochry, Perthshire

The 2018 Discussion weekend returns, after a gap of a decade, to Pitlochry. The venue is once more the 4-star Atholl Palace Hotel. The hotel has a good range of facilities including an indoor pool and spa and is an easy ten minutes walk from the centre of Pitlochry. If booking for double occupancy, please indicate your preference for a double bed or twin beds. If you are sharing with someone not included in the booking please state their name, otherwise we will try to find you a room-mate. The number of single rooms is limited but we can also provide information about other accommodation in the town with single rooms. Dogs are not allowed in the hotel. All rooms have lift access but if you specifically require easy access, let us know. In addition, please give us details of any dietary or other special requirements. If you need extra nights, we will book these for you, for your payment on departure. The booking form and remittance must reach Julia Corden no later than 11th August 2018. Please note that no refunds can be given after 14th August 2018.

The booking form is included with the January 2018 issue of *Dryas*, and should be returned to the Registration Secretary, Julia Corden, 2 Lettoch Place, Pitlochry, Perthshire PH16 5BB (please address any queries to Julia.corden@icloud.com)

Resident Cost

Friday dinner – Sunday afternoon tea – double room: £237 per person
Friday dinner – Sunday afternoon tea – single room: £237
Saturday morning – Sunday afternoon tea – double room: £168 per person

Non–resident Cost

Friday evening including dinner: £30
Saturday – morning coffee, lunch, afternoon tea: £30
Saturday – morning coffee, lunch, afternoon tea, dinner: £70
Sunday – morning coffee, lunch, afternoon tea: £30

Extra Nights

Double occupancy room – dinner, bed and breakfast: £159
Single room – dinner bed and breakfast: £80

Programme

Friday 12th October 2018

Evening

- The Bulb Group Lecture - *Corsican Spring revisited: in the footsteps of Jim Archibald* by Matthew Topsfield
- Small Bulb Exchange

Saturday 13th October

Morning

- Workshops and optional tours. Cluny or *Explorers* Gardens, or Distillery

Afternoon

- The Harold Esslemont Lecture - *Highlights from KwaZulu-Natal to Namaqualand* by Gerben Tjeerdsma
- *Chaos in the rock garden: putting theory into practice* by David Sellars
- *A journey to an unspoiled and untouched area in Arunachal Pradesh, a plantsman's dream* by Larz Danielsson

Evening

- Gala Dinner, Show Awards and Plant Auction

Sunday 14th October

Morning

- The William Buchanan Lecture - *Growing alpines in Swedish gardens* by Gerben Tjeerdsma
- *Alpine Jewels of the North Cascades and Olympic Mountains* by David Sellars

Afternoon

- *Smaller plants and choice alpines from my perspective* by Larz Danielsson
- *Cluny Gardens* by John Mattingley

An Introduction to Wild Primulas

Graham Gunn

When my horticultural career first led me to Kevock Garden Plants, their alpine, bog and woodland plants were almost all completely new to me. Over the years I have learned a lot about the plants that we sell and show – and I have also heard of many mystical and far-off lands where they grow. I quickly got the bug of wanting to travel and see them in the wild. When I applied for grants, I needed to define my objectives. They were all intended to increase my knowledge within the field of horticulture and to help with future expeditions. Most of all I wanted to further my knowledge of plants by exploring different habitats and studying a wide range, including lots of species that were new to me, and possibly finding some plants that haven't been seen in the wild for a long time. This is very important as some florally rich but vulnerable areas are beginning to be heavily developed and this knowledge is slowly being lost. As I had never been on an expedition before it was good to work as part of a team and to share knowledge between ourselves, especially considering that we had a wide range of horticultural backgrounds and interests.

Primulas

Throughout my brief but remarkably productive time in China, I was overwhelmed by the quality and the range of plants that we saw. In my report to the SRGC Exploration Fund, rather than give a breakdown of every plant and every action of those three weeks, I focused on the three

Primula bullata var. *bracteata*

genera of plants that meant the most to me: Meconopsis, Primula and Corydalis. But Peter Edge has chosen to write about Meconopsis and we have not yet identified many of the Corydalis that we saw, so here I write only about primulas. Overall, we came across nearly sixty different species and varieties and it was very interesting to see how each of them occupied a very small area on a mountainside. In a few cases there was only a handful of plants and, although a couple of them recurred throughout, we saw most of them only once in a small and specific environment. Within this genus, I am very selective in this article, limiting myself to three sections: those that were of most interest to me and had - and continue to have - the biggest impact on my horticultural career.

Bullatae Section

I feel a very close connection to this section of the genus Primula as several members were recently rediscovered and renamed by David & Stella Rankin, along with Jens Nielsen and Pam Eveleigh, following a previous expedition in 2014. We have exhibited several members of the section at shows and have had great comments from the public about them, so it was very humbling to see some growing in the wild. On this trip, we saw *Primula bullata* var. *bracteata*, *P. bullata* var. *bullata*, *P. bullata* var. *forrestii* and *P. coelata*. It was eye-opening to see the conditions in which these specific primulas grow and to realise how many of them are so limited in their distribution.

The first we saw was *P. bullata* var. *bracteata*, growing in limestone cliffs under pine trees at Nanhejian near Lijiang. This was a unique environment to me as I have never seen pine trees growing on limestone. It was even more remarkable to see how these plants had an adapted stem of nearly twenty cm, which let them grow away from the limestone. It was unclear whether this was a result of age or of the environment in which they grew. David showed us the main characteristics of this variety, which are the shortness of the flower stem - barely longer than the leaves, the shape of the leaves - narrowing into the stem, and the complete lack of farina.

Then, just a short distance away, we found a second variety of the same species, *P. bullata* var. *bullata*. This was also growing under pine trees on limestone in a similar environment to *P. bullata* var. *bracteata*, but not on the steepest rock faces. This had the distinguishing characteristics of much taller flower stems, twice as long as the leaves, and masses of farina on the whole inflorescence.

The next day we travelled onwards over the Ma'er Shan range and on the way we saw a limestone hillside. We started to walk up and were immediately met by huge clumps of *Incarvillea lutea*. Having only seen the smaller species beforehand, these plants - a metre or more tall - were very striking. Suddenly we saw huge plants of *Primula bullata* var. *forrestii* with some having twenty flowering stems, bearing up to sixty flowers on a single stem. A single plant could have a thousand or more flowers. The plants were all very robust, and the whole population had these characteristics. We saw more of var. *forrestii* later in Gang He Ba, near Lijiang, and here they were consistently smaller. As a group, we discussed

Primula coelata

section that we didn't find were *Primula henrici* and *P. rockii*. This last is definitely on the list for the next expedition, as very few people have ever found it!

Candelabra Section

This section includes some of the most common species in cultivation in Britain and is where we sell the largest number of plants. They also have a huge influence in our show displays. We saw many species and I describe only a few here. The first we saw was *Primula poissonii* at Ma'er Shan but we went on to see it several more times, always in wet places. Later, near the

Facing: A robust form of *Primula bullata* var. *forrestii*

that perhaps the robust population should be treated as another variety of the species. The last primula that we saw in this section was *Primula coelata* and this was probably the hardest to locate. It was lucky that David & Stella knew roughly where to find it from previous expeditions and word of mouth.

As we approached Lugu we stopped and walked back along the old road and saw *Primula bulleyana,* two still-unidentified primulas and - eventually - *P. coelata*. This was after much scrambling up the hillside and trying to spot its leaves in the tiny crevices that it inhabited on the limestone rock face. It was only when we were back on the path and looked carefully up at the rock that we could see it in a few protected places. The largest plant was over fifty cm in width. The only species in this

Primula poissonii

Neither *Primula wilsonii* nor *P. poissonii*: something new?

village of Twowu we found plants that fit neither the description of *P. wilsonii* nor of *P. poissonii*, so they may be something new.

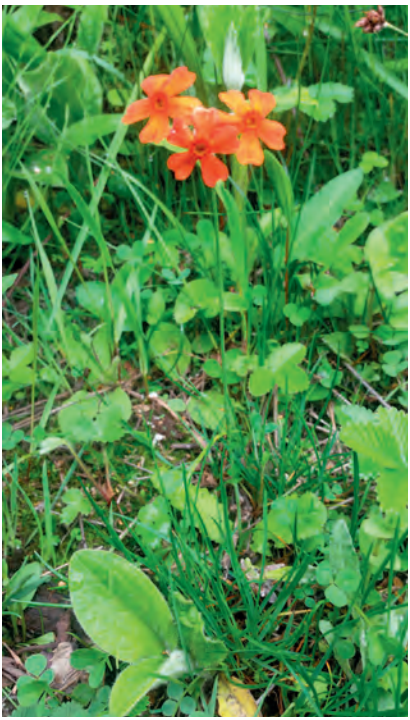
Whilst at the Lijiang Field station we met Xiao Wu, who proved to be an astonishing person with amazing knowledge of the local flora. He also showed us meadows of *Primula beesiana* growing with *P. vialii*, which was yet to flower. We also saw here one plant of the white form, *Primula beesiana* var. *leucantha*.

Primula cockburniana is another member of this section that I am familiar with as it is always very popular in our show displays because of its brilliant orange colour. It is much smaller than all the other commonly cultivated species, although there are a few rarely seen really tiny ones. We saw it on a few occasions but the most impressive was by the roadside on returning to the hotel after a day on Zhe Duo. It grew in a meadow by the side of the road in a fenced-off area with a stream, so the ground was quite damp. We also saw some beautiful swathes of *Primula bulleyana*, but much more limited than the larger numbers Stella & David had seen on previous trips. This made the importance of our trip even more striking and the sighting of these plants very significant. *Primula bulleyana* is closely related to *P. beesiana*,

Meadows of *Primula beesiana* growing with *P. vialii*

which has often been regarded as a sub-species of *P. bulleyana*, but when in Kunming we met Xiao Wu, who told us of his recent research (Ma, Xie et al. Annals of Botany 113: 763–775, 2014), which confirms that they are distinct species.

The sighting of *Primula aurantiaca* a few days later highlighted the value of travelling in a group. Our day began in Lugu and the plan was to drive to Mianning, about 400 km on small mountain roads with very tight bends on which the Chinese didn't seem to slow down! Half way through the journey, as we drifted in and out of sleep, someone suddenly shouted "TING!" This Chinese word we learnt very early on to mean "STOP". David had spotted the beautiful orange flowers of *Primula aurantiaca* growing in the damp roadside soil where a small stream descended.



Primula cockburniana with its unusual deep orange flowers

Crystallophlomis Section

My third choice was this section of Primula as it is very important at our nursery. Many plants are within this section, in such high demand that we need a waiting list. Many are difficult to grow, but they generate a lot of interest at shows, because of their beautiful colours and flower structures. We saw a large number and some of them remain unidentified.

Primula bulleyana

Facing: *Primula aurantica*

To add to the confusion they may hybridize easily, causing naming problems. I want only to write about the three that I enjoyed the most and that I felt to be the most unique.

The extremely dark colour of the flower of *Primula melanantha* made it very hard to spot, so it was good to know what we were looking for in advance. We saw it just below the summit at Zheduo pass on a very misty day. Again, we only saw a very small handful of plants and this species is only known to exist here and one other location. In this heavily grazed and isolated area, the margins were gradually being broken down, so it may be yet another plant in a very perilous situation.

We saw several *Primula szechuanica* at one of our most diverse locations for primulas, at Hong Shan, where at one stop we saw six different species within a few metres. This is a very interesting species, with its distinctive and strongly reflexed petals. Plants are sometimes sold in the UK under this name but they seem to be *Primula handeliana*, which is in the same sub-section and of a similar colour, but with much less reflexed petals. I had never seen this plant before in cultivation or in pictures so was very humbled to spot it near a water-cleaning unit by a river.

Primula melanantha
Overleaf: *Primula szechuanica*

Previous: *Primula boreio-calliantha* Facing: *Corydalis pseudobarbisepala*

The area had recently been cleared and gravelled and it was just growing amongst the gravel. The flowers are unique and it stood out immediately as a member of the Crystallophlomis section.

We have tried several times to grow *P. boreio-calliantha* at the nursery but never to any avail. It is one of the tallest primulas we saw. It occurs in very mossy areas under trees and tends to be very fussy about where it seeds and grows, limiting itself to very small areas. This was another species found on Hong Shan, but in very limited numbers. David & Stella recalled how they had looked through trees to see masses of the plants in flower but the site was now reduced to small groups of maybe twenty plants.

Corydalis

I really can't end my account article without mentioning *Corydalis pseudobarbisepala*. Its unique colour against the rocky mountainside at Ba Lang Shan as we came over the ledge was something I will never forget. It is definitely a plant that more people in the world should know about. A single plant in our display at Chelsea this year attracted a lot of attention but now I know what a mass of them looks like. There is a challenge for me for the future…

Overview

I began this expedition both uncertain and apprehensive about how it would turn out. I had never done anything like this before and had no idea what to expect. I can safely say that I was completely overwhelmed by the experience and the impact that the whole expedition has had on me will stay with me for the rest of my life. It is hard to comprehend fully the amount of plants and, even looking back for this report, I am so thankful for all the plants we saw and the wonderful environments in which they grew. Selecting a few of them for this report was hard, and you would be astounded at the plants I have left out. It was also very interesting to see other cultures and how other people live, cook and eat. The food was amazing and the sharing around one large table made for lots of good memories. We were of such interest to local people in the small villages that it made you feel they had probably seen very few westerners before.

I am grateful to the SRGC for support on these travels. I have been introduced to a great range of contacts in China and I feel that it won't be long before my next expedition there to find more of the other delights that this wonderful country has to offer.

This is the second article in the series introduced by Stella & David Rankin in their piece *People, Plants and Places* in *The Rock Garden* Issue 139. Eventually, there will be a total of five articles from: Chris Parsons, Peter Edge, Ed Shaw (issue 139), Graham, and Ngaire Burston. Readers who would like to see a map of the areas visited should look at the map previously presented in issue 139, page 13.

Alaskan Adventure

Bob Mitchell

Alaska was Russian territory when visited by Captain James Cook in 1778 and by Archibald Menzies in 1787. Cook sailed up the coast of present-day British Columbia on his third and fateful voyage and collected otter pelts to trade with China. Cook Inlet is named for him. Nine years later Archibald Menzies visited with Captain James Colnett on a commercial voyage in 1797 to 1798, again trading pelts. On this visit he collected herbarium specimens in the Alaskan Panhandle area. *Menziesia ferruginea* was among them and was named by James Edward Smith in the *Linnean Journal* in 1790, the year that Menzies was elected a Fellow of the Linnean Society. Both Smith and Menzies had trained under John Hope at Edinburgh. Smith was the founder of the Linnean Society in 1789 and its first president.

Menziesia ferruginea has a wide geographical range and we have seen it in the Olympic Peninsula in Washington State, the length of British Columbia including Vancouver Island, and in the native woodland area of Alaska Botanical Garden on the edge of Anchorage. Here the dominant temperate forest trees are *Picea glauca*, *Betula neoalaskana*, *Populus balsamifera*, and willow scrub, as in the flat alluvial plain on which Anchorage is built. The Alaskan state flower, *Myosotis alpestris* ssp. *asiatica* was conspicuous in the herb layer. This Forget-me-not also grows in alpine meadows and on the tundra. In passing, it seems that *Myosotis alpestris* is the county flower of Westmorland.

Alaska became the 49th state in 1959 but up till 1867 it was part of Russia, until William Henry Seward, the US Secretary of State, signed an agreement to buy the land for $7.2 million, the equivalent of 2 cents

Bob Mitchell

an acre. The land and sea were rich in natural resources, and at that time otter pelts were the main source of trade. More recently, there was a gold rush to Fairbanks in the 1900s, and $200 million worth of copper was produced from the plant at Kennicott from 1911 to 1938. Oil, salmon and tourism are now the major industries.

Anchorage, although not the capital of Alaska, is the main governmental and commercial hub. It has a sub-Arctic climate with relatively mild summers and not too cold winters in comparison to the interior. The average snowfall at the airport is 1800 mm and the annual average rainfall is 400 mm. Compare this with Thompson Pass – which recorded the extreme snowfall of 24.75 metres during the 1952-53 winter and 1.58 metres in a 24-hour period in 1955. Our tour started from Anchorage, north to Fairbanks, then southeast to Valdez. We then took the ferry to Whittier before driving back to Anchorage. This gave us an opportunity to stop and visit a variety of habitats with their special plants.

Within Alaska, the vegetation changes from temperate rainforest in the southeast Panhandle where the winters are relatively mild and wet; through deciduous and mixed forest in the centre south; to taiga and to tundra, with its birches, permafrost and bitterly cold winters with temperatures down to -40°C or less in the interior. Thus, the flora is exciting and diverse. The highest mountain in North America is Mount McKinley at 6194 m in the Denali National Park, a renowned and accessible area of mixed habitats but principally of tundra.

Here, the park tourist travel is restricted to park coaches only, rightly so, to preserve the environment but frustrating for us, with limited access to wander.

We travelled north to Talkeetna where *Populus balsamifera* was very prominent with its fluffy seeds hanging from the trees. Quaking Aspen (*Populus tremuloides*) and White Spruce (*Picea glauca*) were also dominant. There were *Betula neoalaskana* and *B. kenaica* on the banks of the Susitna River with crisp and clear views of Mount McKinley to the North. The herb layer was particularly rich with the Ostrich Fern, *Matteuccia struthiopteris,* spreading in the deep glacial silt while *Epilobium latifolium* and *Rosa acicularis* provided pink splashes of colour nearby. But it was in the shadier areas where large colonies of the deep pink form of *Pyrola asarifolia* dominated with *Cornus canadensis*. There was added

interest from *Moneses uniflora*, *Trientalis europaea* ssp. *arctica* and *Streptopus amplexicaulis* with their white flowers. *Polemonium acutiflorum* grew to 38 cm with sky-blue flowers. The wayside flowers comprised the blue *Geranium erianthum* and *Veratrum viride*, sadly not in flower, which we were to see frequently on our travels, as well as the clustered white-flowered Alaskan Spiraea, *Spiraea beauverdiana*. Florally similar at a distance was

Rhododendron subarcticum▲ with its narrow leaves, sometimes infected with a rust fungus. This species is sometimes called *Rhododendron tomentosum* ssp. *subarcticum*. Five contrasting areas stood out for us: Denali National Park tundra●, Black Rapids, Kennicott, Thomson Pass and Turnabout Pass.

The tundra in the centre of Denali National Park, where Dall sheep, wolves and brown bear were spotted from the coach, is open country and quite stony in places. There were few tall plants where we stopped, although *Potentilla fruticosa*☆ grows on the fringe. This species is circumpolar and various forms are found in the Himalayas. The showiest plant here is yellow-orange *Arnica frigida*❁, which dotted the tundra.

There was also *Senecio lugans* with black-tipped floral bracts and slender ray petals. *Pedicularis capitata* is dwarf to thirteen cm and the few but large and hooded flowers are normally yellow but here were in its pink phase. Whorled Lousewort, *Pedicularis verticillata*, is twice as tall and has dense, clustered, lavender-pink flowers, with pinnate leaves on the whorls. Dwarf willows covered the ground as did the yellow-flowered *Dryas drummondii*. Interspersed were *Minuartia arctica*, *Draba nivalis* and white-tipped

lavender flowers of *Astragalus alpinus*●. The bulbous and highly poisonous *Zigadenus elegans*❁ grew here while various grasses and sedges provided winter stores for the Arctic Ground Squirrel☆.

Showy and rosette-forming *Crepis nana*☆ grew in scree-like situations. The oval leaves are blue-green with a hint of red and the dainty

orange-yellow flowers fade to red. Here too the pink-flowered and equally prostrate *Claytonia scammaniana* was in full flower. *Aster alpinus* ssp. *vierhapperi* grows also in the dry areas and in the tundra and is only thirteen cm tall but has pale blue flowers over three cm wide. Eight-centimetre tall pink spikes of *Bistorta plumosa* occurred here and there.

The entirely excellent University of Alaska Museum in Fairbanks is well worth a visit for the historical story as well as for natural history. On our journey south we passed several lakes on whose banks the Blue Flag, *Iris setosa*, was in full flower.

The lakes contained numbers of Yellow Pond Lily, *Nuphar polysepalum*. In this moist habitat the Northern Green Bog Orchid, *Platanthera hyperborea*, and *Sanguisorba menziesii* with its exerted stamens flourished in the shelter of *Alnus sinuata*.

The Lodge at Black Rapids proved to be an excellent stop. In the old bunkhouse by the road the gold-diggers rested on their travels north in the 1900s during the Fairbanks gold rush. The hotel was adjacent to conifer forest and the resident dog joined us on walks through gnarled, lichen-covered Black Spruce, *Pinus mariana*, which grows well in the poorly drained soils.

Here was a thick layer of branch detritus and cones through which mosses, including sphagnum, covered the ground, but into this rich humus-rich soil *Vaccinium uliginosum* and *V. vitis-idaea* dominated the shrub layer along with the dwarf *Betula glandulosa*. We saw this combination regularly on the muskeg and taiga – flat plains with permafrost, where the Black Pine grows and is often seen as a drunken tree, leaning because of frost lift in the spring thaw.

But here the presence of *Shepherdia canadensis* indicated that the drainage was better, supporting a rich flora of moisture-loving plants. The ubiquitous *Rhododendron subarcticum* with its white heads of flower was everywhere as a straggly dwarf shrub. *Linnaea borealis* ssp. *americana* in a fine pink form created good colonies and *Arctostaphylos uva-ursi*, *Lycopodium annotinum* and *L. clavatum* made us feel quite at home. Dotted about were *Pedicularis labradoricum* with few yellow flowers tinged with red in comparison to the deep-pink very clustered spikes of *P. kanei*. Growing among the dwarf shrubs we spotted a single plant of *Mertensia paniculata*, which has pink buds opening into tubular blue flowers on 38 cm stems. This would

be a good addition to the front of a border. Then, *Pyrola chlorantha* with 25 cm tall majestic spikes of white flowers certainly caused us to stop and admire. The oil pipeline runs more or less parallel to the road south from Fairbanks and has been buried close by; we were encouraged to see the recovery of the vegetation, which included *Botrychium lunaria* and *Parnassia palustris*.

At Kennicott we had a major stop beside the old copper refinery. We came by bush plane from Chitina into a mixed woodland at the outfall of Kennicott and Root Glaciers, with Mounts Wrangell (4317m) and Blackburn (4996 m) dominating the skyline. Here we were on the fringe of the Wrangell-St Elias National Park, which is six times larger than Yellowstone and is North America's largest.

Here we found a good collection of trees with both White and Black Pines (their hybrid is recorded from nearby), *Betula neoalaskana* again but also with *B. papyrifera* ssp. *commutata*. Growing near the stream were *Populus balsamifera* and *Alnus fruticosa*, which is a small

tree. Bushy *Salix glauca* was a constant companion. *Juniperus horizontalis*, *J. communis* ssp. *depressa* and *Shepherdia canadensis* preferred the better drained soils. *Rhododendron groenlandicum* with its broader leaves was well established. Among the herbaceous plants, *Aquilegia formosa*, *Aconitum delphinifolium*, *Solidago multiradiata*, *Polemonium acutiflorum* and *Mertensia paniculata* in its white form occurred in open areas. We once more spotted *Senecio lugens*, *Lupinus arcticus*, both together with *Dryas drummondii*, *Moneses uniflora* and *Linnaea borealis* ssp. *americana*.

Pyrola grandiflora was growing in the semi-shade of dwarf shrubs and *Pyrola asarifolia* had established itself in the humus and moss-covered roof of one of the out-buildings, while we saw *Pyrola secunda* for the first time. All three grow in forested areas. The dwarf bulb *Tofieldia pusilla* was quite hard to find with its tiny white flowers. Elsewhere,

Saxifraga tricuspidata● formed mats with evergreen leaves terminating in three sharp points hence the name. The petals are white with innumerable lavender-coloured spots.

We were at Thompson Pass (816 m) on mid-summer's day, on the Richardson Highway close to Valdez. There were large patches of snow still lying and we had just stopped at the snout of the retreating Worthington Glacier where *Alnus sinuata* was in catkin and *Veratrum viride* was, alas, still in leaf. As mentioned above this is an area of extreme weather. There was a dampness in the air, a wind was blowing and it was 7°C! Hardly encouraging to rootle about and the first impression was of a heather moorland❁. But this was Alpine tundra and closer inspection proved to be very much more exciting.

The blue flowers of *Lupinus arcticus* attracted our early attention and at thirty cm they stood out as the tallest plant here. We had seen it regularly on our travels in

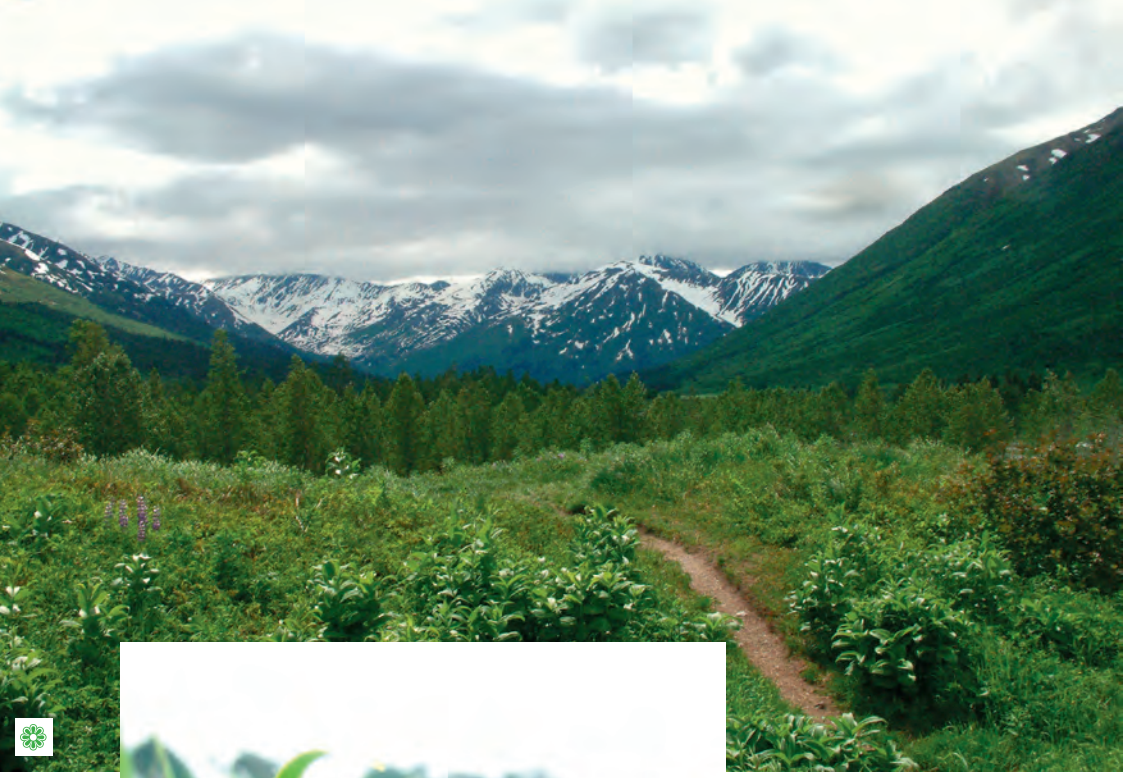
the tundra. One point that struck us was the similarity of species here and on the Scottish hills. The circumpolar plants are well documented by Eric Hulten in his masterly *Amphi-Atlantic Plants*. Prostrate *Silene acaulis* and *Loiseleuria procumbens*, large areas of *Vaccinium uliginosum*, *Diapensia lapponica* ssp. *obovata*, were all in full flower with *Betula nana*, here also as a dwarf shrub. But then there were sheets of *Cassiope tetragona* with its four-angled stems and matts of the erect flowering stems of white *Harrimanella stelleriana* mixed through with Reindeer Moss, *Cladonia rangiferina*. A species that grows in the southern half of

Alaska and in the Aleutian archipelago, yellow-flowered *Phyllodoce aleutica*, was well represented. Large, blue-flowered Alaska Violet, *Viola langsdorffii*, produced large showy patches while yellow single flowers of *Anemone richardsonii* were much more delicate and almost translucent in the damp air. *Anemone parviflora* has a more substantial flower which is white with blue on the reverse. A plant of the tundra and Arctic slopes is

Gentiana glauca with its stiff ten cm erect stems of three to four glaucous blue flowers; we also saw it growing on the *Dunali Park tundra*. The fine and stately flowers of *Dodecatheon frigidum* stood well proud of the others, giving some height, whereas, in contrast, *Rubus arcticus* snuggled well down in the vegetation, as did the pink-petalled and orange-yellow-

eyed flowers of *Primula cuneifolia*. The leaves of this species are fleshy with stubby teeth at the leaf top.

Willows are among the first plants to colonize disturbed soils and 25 species are recorded in south central Alaska. Here, many dwarf willows grew in the gravel areas, including *Salix polaris* and *Salix reticulata*, which is very showy with male catkins that are five cm long. What intrigued us were two stamens on the one filament.



Turnabout Pass (301 m) is a meadow habitat with lush growth in which *Fritillaria camtschatcensis* was the star plant. This was the purple-chocolate coloured form; it ranges as far south as California.

We have seen the pale yellow-brown form on Quadra Island, in British Columbia where Vancouver and Menzies held talks

with the Spanish Captain Juan Francisco Bodega y Quadra in 1792 to try to settle land claims after the Nootka Convention of 1790. Both captains were surveying the coastline of the Pacific coast with the aim of settling the area.

White-flowered *Valeriana sitchensis*, *Geranium erianthum*❁ and the upright bright pink flowers of *Hedysarum mackenzii* on its 45 cm stems brightened up the meadow. *Sambucus racemosa* was in flower but there were still no flowers on the large clumps of *Veratrum viride*. Delicate *Platanthera dilatata*● grew in the moister areas with showy 40 cm upright spikes of white flowers.

All in all, we had a very good introduction to the rich Alaskan vegetation.

Further Reading

Useful information when planning an Alaskan adventure may be found in all the following sources:

Morris Communications (2010) *The Milepost Alaska Travel Planner*

Dominique Collett (2010) *Willows of South Central Alaska*, Kenai Watershed Forum

Eric Hulten (1958) *Amphi-Atlantic Plants*, Almquist and Wiksell,

Verna Pratt (2009) *Wildflowers along the Alaskan Highway*, Alaskakrafts

Leslie Viereck & Elbert Little(2007) *Alaska Trees and Shrubs,* Snowy Owl Books

Helen White (1974) *Alaska-Yukon Wild Flower Guide*, Alaska Northwest Publishing Company

The Valley of Flowers

Heather Kelly

The 'Valley of Flowers' is a name to conjure with for any botanist and I have wanted to visit since I read Frank Smythe's eponymous book some 30 years ago. Who wouldn't be captivated by his description of camping amidst lush meadows full of anemones, delphiniums, forget-me-nots, corydalis, wild roses and rhododendrons? Not surprisingly, I leapt at the opportunity to do a reconnaissance visit last summer with a view to leading a group there in June 2018 for the independent travel company, Indus Experiences (page 117).

Smythe was an English mountaineer who stumbled across the Bhyundar Valley, near the headwaters of the Ganges in Uttarakhand, when descending from the pass above in inclement monsoon weather in 1931. He was so taken by the area that he jumped at the opportunity to return in 1937 – not just as a mountaineer this time but also to collect seeds and plant material, which was later identified by botanists at Edinburgh's Royal Botanic Garden. The fame of the Valley of Flowers today stems largely from Smythe's book. It became a National Park in 1982 and, along with the adjacent Nanda Devi National Park, was designated a UNESCO World Heritage Site in 1988. The whole area forms part of the transition zone between the Zanskar mountains to the north and the Greater Himalaya to the south and is renowned for both its beauty and its outstanding biodiversity, partly a result of the wide range of habitats it provides. It hosts many endemic alpine plants as well as endangered birds and animals such as Snow Leopards, Musk Deer and Himalayan Black Bears (which might be the source of local 'Yeti' legends).

The Ganges at Rishikesh

Impatiens sulcata

The old village at Pulna

Nowadays you may travel much of the way to the Bhyundar Valley by car rather than on foot, as Smythe did, but you have to walk the final sixteen km or so into the national park. Our journey started in the city of Rishikesh, where the sacred River Ganges is wide and deep. From here we travelled up the Ganges into the Shivalik Hills, the foothills of the Garwhal Himalayas. Beyond the first of a series of confluences, Devprayag, we followed the River Alaknanda, one of the two main tributaries of the Ganges. Our car took us as far as Govindghat, where the Bhyundar valley branches off the Alaknanda, and we were grateful to be able to travel the first and steepest three km or so of the Bhyundar valley by jeep to the village of Pulna. The remains of the old village lay below us in what is now the river bed; night time flash floods in 2013 washed away many houses, causing the loss of some fifty thousand lives throughout Uttarakhand. In 2017, a few of the old houses were still inhabited, looking very vulnerable and half-submerged in river gravel.

Colquhounia coccinea

From Pulna it was Shanks's Pony for us. Many of the friendly Sikhs on pilgrimage to Hemkund Sahib, who shared the path with us to Ghangaria, rode real ponies although we met one elderly man making his way up on foot to do a shift as a temple guardian. There were plenty of Indian visitors around but we were unusual enough to be worth videoing on his phone! From Pulna it is eleven km up the narrow valley to Ghangaria, where we stayed overnight. Camping is not allowed in the Valley of Flowers itself – part of an attempt to limit damage to the site. At an altitude of just over 2000 m, the vegetation is lush and tropical to start with: flowering shrubs such as *Desmodium multiflorum* and *Colquhounia coccinea*, vicious-looking Himalayan Nettles (*Girardinia diversifolia*), abundant *Cannabis sativa* plants and climbers such as Himalayan Bitter Gourd (*Herpetospermum pedunculosum*) fill the gaps between areas of deciduous woodland.

As we climbed further up the Pushpawati River more forbs appeared, many of them variants of plants familiar in the United Kingdom: Himalayan Yellow Sage, *Salvia nubicola*, Himalayan Teasel, *Dipsacus inermis* and Purple Bellflower, *Campanula pallida*.

Herpetospermum pedunculosum
Salvia nubicola

Campanula pallida
Anaphalis species

Above Bhyundar, conifers replace the broad-leaved trees and the path climbs steadily. By the time we reached Ghangaria at just over 3000 m, there were more alpine flowers – saxifrages, everlasting flowers (*Anaphalis* species), inulas and geraniums, as well as lots of Yellow Balsam.

We expected to be staying in a tented camp at Ghangaria but we had been moved to a hotel because of recent rain. However, the Shri Nanda Lokpal Palace did not quite live up to its name so we'll be in the tented camp next year, enjoying morning sunshine and glorious views down the Bhyundar valley. The best thing about our hotel was the enticing view it offered of our route to the Valley of Flowers itself, a hanging valley carved by a long-gone glacier and one of the first U-shaped valleys seen on this trip, where most other landscape has been carved by fast-flowing rivers, prone to flooding. To get there from Ghangaria involves a steep five km climb across the terminal moraine – a large landslip has added a couple of kilometres to the route in recent years. The sun was shining as we set off and I was soon in trouble for wanting to stop and look at the wonderful diversity of flowers on the slopes immediately above Ghangaria, before we got to the National Park. There were more beautiful bellflowers (*Cyananthus microphyllus*), stunning red *Potentilla atrosanguinea* not unlike that in my garden at home and plenty of asters and inulas. As so often, the purple and yellow flowers go well together.

Geranium wallichianum

Cyananthus microphyllus
Potentialla atrosanguinea

Inula orientalis and *Aster himalaicus*, near Ghangaria

Swertia ciliata

Permits are required to enter the park itself and we were counted in and counted out at the entrance. If not back by five pm the park rangers would come up to look for us. The real risk of being caught out overnight in inclement weather is rather greater than the theoretical one of bears and snow leopards!

After crossing the Pushpawati River, the path climbs steeply through mixed woodland – Silver Fir, pines and Himalayan Birch with an understorey of *Impatiens*, *Corydalis*, *Senecio* and *Ligularia* species. There was more variety in the vegetation as we moved onto more open ground but, when we reached a sign which marks the formal start of the Valley of Flowers at Baman Dhaur, we were initially disappointed to be greeted by a sea of giant Himalayan Balsam (*Impatiens sulcata*) and the same white Himalayan Knotweed, *Persicaria wallichii*, as we had seen elsewhere. Both clearly have the same

Allium wallichii

Aconitum ferox

invasive tendencies here as they do at home. As soon as we left the path, though, we found more diversity. There was plenty to see and amongst my favourites were beautiful, dainty, gentian-relative *Swertia ciliata* and a tiny umbellifer *Bupleurum longicaule*. That said, the bold colours of *Aconitum ferox* and *Allium wallichii* were much more striking.

The valley's fabled biodiversity is the product of its heterogeneous landscape and the range of altitudes it covers. Although many early flowers such as primulas and orchids were finished by the time of our reconnaissance visit in late August, I still found more than eighty species without going more than a kilometre or two into the valley. The retreating glacier has strewn boulders across the valley floor and these prove a rich microhabitat; honeysuckles and other shrubs grow in

Bupleurum longicaule

Cyananthus lobatus

Rhodiola wallichiana

the shelter of the rocks and *Rhodiola*, *Cyananthus lobatus* and *Polygonum vacciniifolium* find footholds on upper surfaces.

However, not everything in this natural garden is rosy, as the swathes of balsam and knotweed indicate. When Frank Smythe first came across the Valley of Flowers in 1931, shepherds from Pulna were using it as summer pasture for sheep and goats. When the area was declared a National Park, to conserve a representative area of high alpine meadows, all grazing was stopped. This was our guide's third visit to the valley since 2008 and he told us that there was much more balsam and knotweed growing than on his previous visits – the names alone strike fear into the hearts of many UK conservationists. Vinod has not always visited at the same time of year but his impression was confirmed by a park ranger that we spoke to.

Polygonum vacciniifolium

Five hundred and twenty species of vascular plant were recorded in the area in the period between 1993 and 2005 but it is not clear how well the flora is currently monitored. In many UK nature reserves, livestock is used to maintain diversity by keeping rapidly growing species in check, whereas there is great resistance to this in the National Park for fear of uncontrolled over-grazing. It is not a simple story of villains and precious plants, however. The knotweed, which proliferates on eroded slopes and disturbed ground, as do many so-called weeds, helps to stabilize the ground. Where it has been cut back by the authorities, balsam has proliferated in its place. Higher up on the gentle slopes of the valley sides, other plants stand a greater chance.

The walk back down to Ghangaria was much quicker and easier than the climb up, although there were still plenty of new plants to see: pretty *Viola biflora*, amongst others. We were delighted to spot a Mouse Hare or Pika

Above:
Halenia elliptica

Left:
Mazus surculosus

Parnassia nubicola

(*Ochotona roylei*) hiding at the edge of the path but it was too shy to wait around for photos. On the way down a steep section of the path we met an elderly man being carried up the hill on the back of a wiry porter, in the type of pannier normally reserved for small children. We were entertained to realise that the 'very old man' in the pannier was younger than at least one of our party! A third night in Ghangaria gave us the option of another day in the Valley of Flowers but we chose a more local day, exploring the vicinity of the village instead. This time, where the path splits above Ghangaria, we set off up the Laxman Ganga towards Hemkund Sahib. Soon, however, we abandoned the path in favour of scrambling up the bank of the stream, where there were plenty more plants to see, including the tiny Spurred Gentian, *Halenia elliptica*, *Mazus surculosus*, *Pedicularis* and more *Cyananthus and Anaphalis*. *Primula* leaves testified to what we missed earlier in the year. We then explored a riverside meadow we'd noticed the previous day. This turned out to be even more diverse, despite the two horses grazing when we arrived. Food for thought in terms of management, though our brief visit hardly counts as a scientific study!

Inula grandiflora, *Erigeron multiradiatus*, *Cyananthus, Morina longifolia*, *Anaphalis* and geraniums jostled for space with banks of wild thyme, studded with more *Halenia elliptica* and *Parnassia nubicola*, a relative of our own beautiful Grass of Parnassus.

The walk back down the valley the next morning to Pulna and then Govindghat was much easier than the climb up, with fewer Sikh pilgrims too, as it was not a weekend. We crossed the Pushpawati river and made it as far as Bhyundar village for a tea break. Even after some rain this was a lovely walk, the main excitement of the morning being a long and slender snake slithering across our path. He was more frightened of us than we of him and disappeared quickly into a gap between stones. We picked up a jeep at Pulna for the final three kilometres and were soon back at Govindghat, ready for the drive back down the Alaknanda to the different world of the lovely Ganga Kinare hotel at Rishikesh.

Facing: *Morina longifolia*

In Awe of Nature

Lynsey Ewan*

During the *Perthshire Open Studios* event in 2016, I had the good fortune to meet your editor and his wife, who took an interest in my paintings, and in particular those of foxgloves and snowdrops. They encouraged me to write about my artwork for *The Rock Garden*, so here we are! Having never written an article like this before, especially to an audience that knows far more about the subject matter than I, it is only after some considerable contemplation that I begin. Perhaps the best approach is to share my thoughts and experiences around collecting the imagery to paint from, and the processes involved in creating a visual representation of a floral subject.

For the most part, I work intuitively, allowing Nature to guide my decisions, and being open to whatever imagery makes itself known to me. Taking time out of the studio to collect photographs of plants on a sunny day is both an adventure and an indulgence. I get completely engrossed in the colours and the play of light on the plants I find, often in the tiniest nooks and crannies of a garden or woodland area. I contort myself, with camera in hand, to reach some unusual composition that has caught my eye. It is a treasure hunt, and not until I view the photographs on a larger screen do I find the real beauty or bounty. It seems hidden in the detail.

Digital photographs make it much faster and less wasteful. No need for prints, and I only require one or two, as opposed to whole films. Being efficient in my use of materials, and considering the environmental impact of my practices, are issues that I take very seriously. And, being able to review the images immediately, I am more selective and retake photographs until my heart's content, or as the camera battery allows.

As with all the imagery that I paint, each artwork comes with a story that is rarely told. For the most part, my paintings make their way to galleries or new homes, and there is no interaction between artist and buyer. Given the nature and interests of the SRGC audience here, I was asked to specifically discuss the snowdrops paintings, so I'll tell their story, at least from my perspective.

Having spent several years studying and working in Dundee, I was more than keen to retreat into the rural life in which I grew up. Finally, I had within walking distance access to many woodland areas where I could wander and photograph in all seasons. The snowdrops I found were growing next to an old and crumbling brick wall, and they seemed to be up and flowering long before any other snowdrop patches. I suppose they had established themselves in quite a nice little spot, in full sun for most of the day, and just within the entranceway of the woods, where they were well sheltered. Every year, they greeted me as I made my way into the woods, and I would be grateful to see them, as so many people are, as winter moves into spring.

*** More of Lynsey's art work is shown at https://www.lynseyewan.co.uk**

Having photographed this small patch of snowdrops so many times, and always appreciating what they represented, I decided to capture their image again on a particularly sunny day. The sharp contrasts made by the winter sunlight added to the brilliance of the petals, as well as illuminating the brick wall, and the palette of colours produced was stunning to me. There is a subtlety of colour to all my work that may easily be overlooked in the bold imagery. I believe it is this subtlety that brings the image together, with the care and attention to the subject matter. What Nature provides is very dear to me.

Creating such imagery of course allows a constant reminder of a single instant, the beauty and the stillness of an unchanging scene. It is this 'freezing' of Nature where I feel that I can offer some humble honouring of its brilliance, and express my own personal awe at its resilience, as it works through the ever-moving, cyclical transformations.

The Art of Nature

(Rafa Díez Domínguez)

Our journal occasionally contains images and visions of art that capture an artist's subjective depictions of the beauties of Nature rather than the accurate but sometimes over-exact perceptions of the camera. In this issue we have a view of snowdrops and foxgloves from Lynsey Ewan; readers may also issue recall previous articles by Anne Chambers (Issue 119) and Anne Gilchrist (Issue 134). In the SRGC Forum (www.srgc.net), Ian Young has described how he merges artistic insight with the practicalities of garden and trough planting or, when painting, with the constraints posed by his materials. All these artists have explained some of their methods and approaches to capturing and interpreting the essence of the plants they see.

Above (left to right): Iberian orchids,
Ophrys tenthredinifera, *Limodorum abortivum*, *O. sphegodes* and *O. lutea*

Narcissus x *montielanus*

Narcissus tortifolius

Another of our artistic members whose thoughts and images have often appeared on the club's online forum is Rafa Díez Domínguez, who works with drawings and watercolour. Few words are needed to describe Rafa's artistry, illustrated here by a suite of remarkable images that portray some of the flora of Spain, where he lives, and of Chile; on the other hand, the restrictive A5 size of our pages can scarcely do credit to his work. His work is fastidious, as illustrated by the unfinished plate of *Ophrys speculum*. Before any water-colouring, he may make a very light drawing with a hard pencil, either 2H or 3H, because the use of HB or B pencils risks dirtying the paper before the next step of applying the paint. He favours liquid water colours because they offer less pigment charge and more anilines, with a lighter result than using tube or pan colours.

Narcissus gaditanus


2010

Iris meda
Facing: *Gavilea glandulifera*
Narcissus jonquilla ssp. *jonquilla*

Epipactis palustris

Bipinula fimbriata

Chloraea virescens

Iris stolonifera

Ophrys insectifera with visiting *Argogorytes mystaceus*

Iris auranitica

Rafa's paintings complement his academic accounts of plants, which have appeared, for example, in *Flora Montiberica*. He draws inspiration from an impressively large list of international artists (http://ilustracionaves.blogspot.co.uk/2016/11/blog-post.html) and is motivated by the urge to demonstrate the beauty and importance of plants and animals, and of the need for their conservation. The images shown here give only a hint of his artistic output, which includes, for example, a large and equally colourful range of bird paintings.

Narcissus assoanus ssp. *baeticus*
Facing: *Ophrys tenthredinifera*
Hippolais polyglotta sitting appropriately in *Rosa* 'Canary Bird' (in progress)

In progress

What's in a Name? The Introduction of *Muehlbergella oweriniana* to Cultivation and the Recognition of Monotypic Genera

Bill Eddie

Pavel Křivka's article (*The Rock Garden* 139) on *Edraianthus owerinianus* Rupr. (= *Muehlbergella oweriniana* (Rupr.) Feer), highlighting the problems of mis-identification and the application of wrong names in cultivated plants, was both timely and welcome. His account of the difficulties of collecting in war-torn and politically sensitive countries reminded me of my own abortive attempts in the mid-1990s to see and photograph this plant in Dagestan during the first Chechen war. He is also correct to point out that photographs and offers of seeds, purportedly to be of this species, have been circulating in European horticultural literature for many years but in fact, usually refer to *Edraianthus pumilio* (Port. ex Schult.) A. DC., to which it bears a superficial resemblance. Confusion with *E. pumilio* by alpine gardening enthusiasts only deepened the mystery surrounding this plant. However, the source of confusion may go back to the 19th century, since Ruprecht (1867), in the protologue for *Hedranthus* (= *Edraianthus owerinianus*) described it as *"Affinis H. serpyllifolio et Pumilioni…"*

Franz Josef Ruprecht (1814-1870), a correspondent of Charles Darwin, was professor of botany at the University of St. Petersburg. The specific epithet *owerinianus*, coined by him, honoured the original collector, Alexander Pavlović Owerin, a Russian military topographer, florist, and botanical collector. Owerin collected plants from the mountains of Dagestan (1860-61) and other places in the Caucasus. Owerin's collections and the type for *E. owerinianus* Rupr. became part of the Trautvetter Herbarium and are now housed in the Komarov Botanical Institute in St. Petersburg.

In 1890, the Swiss botanist, Heinrich Feer, transferred *E. owerinianus* to the monotypic genus *Muehlbergella* Feer, which he named in honour of a Swiss geologist, Friedrich Christoph Mühlberg (1840–1915), professor at the Aargau Cantonal School, whose classes were attended by Albert Einstein. Feer provided a detailed description of the unique characteristics of the species, which differ from *Edraianthus*. These include: the presence of a small appendage in the sinuses of the calyx lobes; a capsule that opens laterally; and the extremely short staminal filaments. A A Fedorov, in *Flora* of the *U.S.S.R.* (1957), maintained it in *Edraianthus* on account of its supposed resemblance *E. pumilio* and felt that it could be included as a separate section of that genus.

In 1987, Alfred Alekseevich Kolakovsky (1906-1997) placed it in a monotypic tribe, the Muehlbergelleae. Kolakovsky was a Russian botanist who published extensively on the flora of the Caucasus, particularly

Abkhazia, and who had a special interest in the Campanulaceae. He researched extensively on the structure of the capsule, which he held to be of great importance for evolutionary studies. He discovered that certain hygroscopic tissue within the maturing capsule, which he called the *axicorn*, was primarily responsible for the rupture of the capsule wall, thus facilitating dehiscence of the seeds. Kolakovsky's publications are mostly in Russian and, unfortunately, his ideas and discoveries have been slow to filter through to the West. In her synoptic revision of Caucasian bellflowers, Marina Oganesian (1995) recognised *Muehlbergella* as a distinct monotypic genus, a decision also accepted by Thomas Lammers (2007) in his monumental *World Checklist and Bibliography of Campanulaceae*.

Muehlbergella oweriniana was long thought to be a geographically disjunct species of *Edraianthus*, isolated some 2000 km east of the range of the genus, but close comparison with *E. pumilio* shows that they are morphologically quite different and only superficially close. The axicorn of *Edraianthus* facilitates rupture of the robust capsule at the apex, above the calyx lobes, whereas the papery capsule of *Muehlbergella* is described by Kolakovsky (1987) as "*Capsula axicornus destituta*" and opens laterally by three longitudinal tears, starting from the top. This is quite unique with the Campanulaceae, which is probably why Kolakovsky created a monotypic tribe to accommodate it.

After anthesis (the flowering period), the flowers of *Muehlbergella* are long persistent, whereas in *Edraianthus* they wither relatively quickly and are usually shed or disintegrate before the capsule matures, leaving a neat and almost circular ovary top exposed (as below). With respect to the calyx lobes, in *Edraianthus* they are persistent, whereas in *Muehlbergella* a rather unique situation occurs in which the whole calyx rim, together with the lobes, is shed (Kolakovsky says "*Calycis limbus caducus*"). However, some of Kolakovsky's descriptions may be questionable and need to be verified. For example, he described the capsule as "*sinibus*

Edraianthus tenuifolius at the Royal Botanic Garden Edinburgh, June 2011

Muehlbergella oweriniana
Left: solitary flower at shoot apex showing persistent corolla, calyx lobes and small appendage in the sinus between the lobes
Right: rupture of the capsule by vertical tears starting from the top; from Feer's original drawing (1890)

exappendiculatis", while his (1995) drawing of the capsule shows the calyx lobes still attached. Perhaps, the whole calyx rim simply falls off during late maturation of the capsule.

Muehlbergella oweriniana is the most extreme cushion plant in the Campanulaceae and, at least until recently, was something of an enigma. Few western botanists had seen it alive and no photographs of it existed. The first photograph that I saw of it was in the book by Shetekauri & Jacoby (2009), and I was immediately struck by the compactness and size of its leafy cushion, which is radically different from all species of *Edraianthus*. It was included in a molecular study by Saša Stefanović *et al*. (2008), who found it to be distant from *Edraianthus*, but part of a well-supported lineage comprising *Campanula sibirica*, *C. rapunculoides*, *C. tridentata*, and *C. saxifraga*. Lammers (2007) thought that it might be related to *Sachokiella* Kolak. (= *Campanula macrochlamys* Boiss. & A. Huet) or *Theodorovia* Kolak. (= *Campanula karakuschensis* Grossh.). It is likely that *Muehlbergella* originated autochthonously as a narrow palaeoendemic of Dagestan, as evolution was simultaneously playing out across all the high mountain systems from the European Alps to the eastern Caucasus and beyond. The best informed guess at the moment is that we should seek its origin among the Tertiary ancestors of alpine campanulas such as the "*C. tridentata*" group, which are moraine and fellfield specialists of the high Caucasus, and which were separated by Kolakovsky (1984) as the genus *Hemisphaera* (= Campanula subg. *Scapiflorae* (Boiss.) Ogan.)

I sympathize with Pavel Křivka's views regarding molecular analyses, but the situation is not so extreme as he suggests, and I strongly disagree that "*the historical evolution of plant diversity (phylogeny) constitutes redundant and largely uninteresting information…*". Phylogenetic trees and especially cladograms based on the branching patterns of nucleotide sequences are useful means of data exploration and can provide insight into the evolutionary process, but should always be interpreted with great care. They are not simply templates for general purpose Linnaean classifications, which require diagnostic morphological and often ecological or biological characters as well, and where levels (or grades) of organisation, including so-called primitive characters are taken into account, not just derived characters. As organisms evolve, they are, in a sense, carrying their past with them, which can

be recognised in their morphology and incorporated into the hierarchy of names in the Linnaean classification. The correct naming of taxa is paramount for botanists and gardeners, and there is considerable consensus among botanists about the application of names, especially when different data sets are congruent. I'm sure that such information is of interest to many botanists and gardeners, who would welcome more in-depth discourse on their favourite plants.

Currently, there is a distaste for monotypic genera as a result of the widespread adoption of cladistics as the method of choice for phylogenetic reconstruction. The most intractable difficulty for *cladistic* classification of the Campanulaceae is the paraphyly (separate grouping) of several large genera, particularly *Campanula*. The transfer of several so-called satellite genera such as *Azorina*, *Edraianthus* and *Symphyandra* into an amorphous polymorphic concept of *Campanula* in an attempt to eliminate paraphyly tells us almost nothing about evolutionary relationships, and obscures both the phylogenetic understanding of taxa as well as their grades of morphological and ecological uniqueness. Paraphyly may be a problem for cladistics, but it is really a methodological red herring for Linnaean classification. Of course, it may be desirable to use phylogenetic data to improve a Linnaean classification, but the latter is a scheme designed to reflect classes of organisms and not evolutionary branching patterns.

Muehlbergella oweriniana is morphologically unique in the Campanuloideae and it is fitting to give it proper recognition in a monotypic genus. Hopefully, protection of the few wild populations in Dagestan will be enhanced and the species brought into more general cultivation. It should prove to be a popular plant among rock-garden enthusiasts on account of the beautiful symmetry of its floral cushions alone.

I am grateful to Tatyana Shulkina (Field Museum, Chicago) and Andrey Sytin (Komarov Botanical Institute, St Petersburg) for information about Alexander Pavlović Owerin.

References

Feer, H (1890) *Muehlbergella. Bot. Jahrb. Syst.* 12: 615

Fedorov, A A (1957) *Edraianthus* [as *Edrajanthus*] *owerinianus* Rupr. p 317, in B K Shishkin (ed.) *Flora* of the *U.S.S.R.* vol. XXIV. Jerusalem: Israel Program for Scientific Translations 1972

Křivka, P (2017) *Edraianthus owerinianus* 'Ruprecht,' a New Introduction for Rock Gardening *The Rock Garden* 139: 72-76

Kolakovsky, A A (1984) *Hemisphaera* – a new high-mountain Caucasian genus of Campanulaceae family. pp. 157-172 in *Okhrana prirodny Gruzii* Tbilissi: Metsniereba (in Russian)

Kolakovsky, A A (1987) System of the Campanulaceae Family from the Old World. *Bot. Žurn*. 72(12) 1572-1579 (in Russian)

Kolakovsky A A (1995) *Semejstvo kolokolcikovykh (Campanulaceae family)*. – Moscow. (In Russian)

Lammers, T C (2007) *World Checklist and Bibliography of Campanulaceae Kew*: Royal Botanic Gardens.

Oganesian, M E (1995) Synopsis of Caucasian Campanulaceae Candollea 50: 275-308

Ruprecht, F J (1867) [1866] *Revisio Campanularum Caucasi Bull. Acad. Imp. Sci. Saint-Pétersbourg* 11: 203 (protologue)

Shetekauri, S & M Jacoby (2009) *Mountain Flowers and Trees of Caucasia* Private publication ISBN: 978-99940-984-1-5 Available from www.nhbs.com or www.koeltz.com

Stefanović, S, D Lakušić, M Kuzmina, S Mededović, K Tan, & V Stevanović (2008) Molecular phylogeny of *Edraianthus* (Grassy Bells; Campanulaceae) based on non-coding plastid DNA sequences Taxon, 57 (2): pp. 452-475

John M Watson - a Tribute

Arve Elvebakk

John Watson was born on May 9th 1936 in Kent, fifteen kilometres outside London. John grew up with a suburban mountain garden. After being impressed by granite outcrops during their honeymoon, his parents constructed a rock garden at home. It was expensive, and maybe forty tons of limestone rocks were brought in by the nursery that built it. John recounted this and other recollections almost 80 years later over a *Pisco Sour* or two at his present home one thousand times further away from London. My intention was to transfer my impressions and notes into an 80th birthday tribute. However, it will now be closer to his 82nd before it appears. My account also includes some pictures from John's wife Anita.

John should be well known to the alpine gardening community. He has written numerous articles and has been a pioneer in presenting the wonderful flora of the southern Andes to the general audience of alpine gardeners; a couple of decades ago these plants were certainly not as well-known as today. John was an expedition leader. He wrote many entries in the *Encyclopedia of Alpines* and supplied lots of interesting seeds. Many, or even most, had not been previously tried in gardens. My first personal contact was in the late 1990s and related to this topic. Two Danes had written, in the Quarterly Bulletin of the AGS, what I felt to be very unjust criticism of cold-hardiness and other aspects of his offered seeds. I and B M Thon responded with a defence based on my own knowledge from southernmost Chile; I believe we wrote that we could grow *Calandrinia* species at almost 70° N in my home city of Tromsø. After that, John sent me a draft manuscript arguing that *Calandrinia caespitosa* - in contrast to treatments by all authorities - represented several species with different distributions. It took more than fifteen years until our slowly established cooperation ended up as a published article on four species in the *C. caespitosa* complex in the journal *Phytotaxa*. During this process we have met in Chile several times.

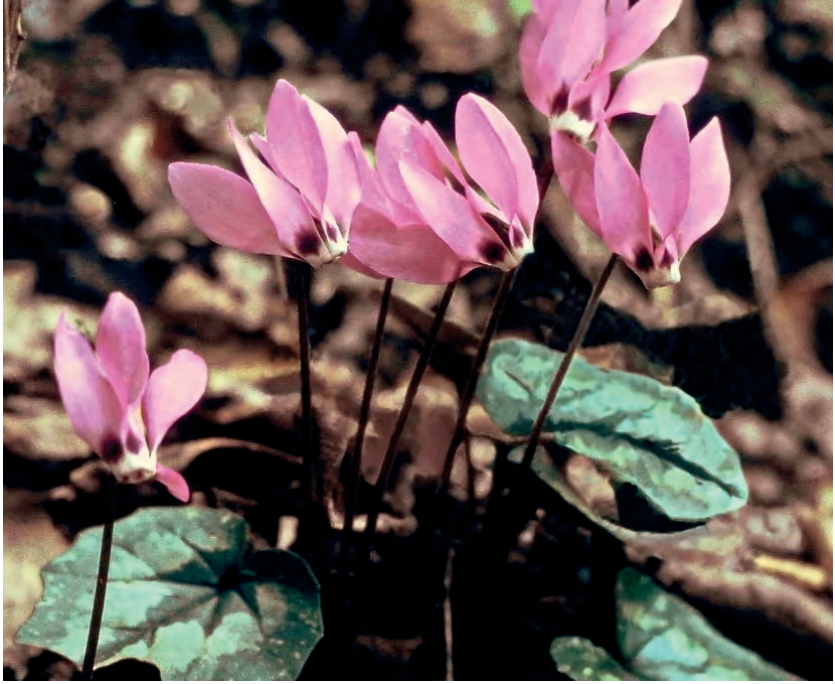
Above: *Calandrinia caespitosa* x *skottsbergii*, a new hybrid from B M Thon's Tromsø nursery Left: *Calandrinia caespitosa*
Below: A new form of *Viola escarapela*

Fritillaria alburyana cultivated in Tromsø (Photo: Sveinulf Hegstad)

John belongs to the generation with personal memories from the Second World War. He remembers the V1 flying bombs, first associated with a strong buzzing sound, then a short moment of total silence before an inferno of noise. Once, a shadow passed over their house and, while his mother pushed him below a table, an enormous nearby explosion bowed the window panes strongly inwards. However, his family survived

Viola escarapela in circular mode

Viola fluehmannii



A long and early trek with Albury & Cheese into woods at the foot of the Amanus Mountains in south Turkey culminated in the first-ever discovery of this pale *Cyclamen pseudibericum*

the war but towards its end he had the next of his several near-fatal experiences at a bathing pool somewhere in the neighbourhood when a boy pushed him in, and John could not yet swim. Luckily, the lad grabbed John by his hair and pulled him out. *'That's why I don't have much hair'*, was his characteristic comment when relating this tale.

Thlaspi watsonii

New *Alstroemeria traudliae* was named for John & Anita's friend and colleague Ehrentraud Bayer, an expert on the genus

When transferred to *Olsynium*, *Chamelum luteum* had been given the name *O. luteum*, which was already in use so John & Anita changed it to *O. chrysochromum*, but they still regret never having seen it. The photo is by their late friend, Carlos Celedón

As a young boy, John was stimulated by his parents to become very interested in birds and butterflies, but later also in flowers. Gentians and other choice alpines had flowered in his parents' rock garden but died out when it inevitably suffered from neglect during the War. In 1951

Left: Ravenna called this *Sisyrinchium macrocarpum* ssp. *laetum*. John & Anita raised it to full species – hence *S. laetum*. Right: This unpublished viola found by Carlos Celedón will be named *Viola reginae*

his father went to replace them and invited John along. This was at a local nursery, where he discovered the irresistible beauty of alpines and worked as a volunteer for the benefit of receiving some plants in return. John increasingly suffered from myopia and his glasses were changed regularly for stronger ones. His parents were worried and decided with him that he would be better to go for outdoor work after secondary school instead of continuing with a book-based education. Luckily, his sight soon stabilized; lens replacement operations in recent years finally eliminated these problems and even the previous need for contact lenses.

John's military service took him to Cyprus where he became fascinated by the local flora, especially the genus Ophrys. He dreamt of discovering a new species and thus he considered going to New Guinea to hunt for mountain orchids! However, an authority told him that this would be crazy, and that he did not need to go so far – '*Just think of Turkey; we do not even understand fully such a common garden genus as Chionodoxa*'. So it was he made his first short two month search for plants alone, down through Turkey as far as the Lebanon in 1962. Lacking enough money for a more ambitious second longer visit to the region, he put an advertisement in *The Times*, inviting paying company for a Turkish odyssey with time shared 50:50 between searching for plants and holiday-making. After a couple of candidates had been eliminated (one considered helping the Kurds to fight the Turks!) they ended up with four people. One was wealthy enough to buy a Volkswagen for the enterprise, and with this new vehicle they drove to several remoter parts of Turkey in 1964.

Left: *Ourisia microphylla* on cliffs. Centre: *Dianthus webbianus* on Mount Ida, 1966: one of their most successful introductions. Right: *Calandrinia ranunculina* self-seeding in the Tromsø Arctic-Alpine Botanic Garden



More Turkish expeditions followed, and John has many stories about various local encounters, as well as another near-fatal incident – a fall from a rock-face. Much material was brought home from these explorations, joined by Martyn Cheese. Among the new species were nice plants such as *Centaurea gracillima* and *Thlaspi watsonii*, which Peter Davis named for him, not to mention my personal favourite, the wonderful *Fritillaria alburyana*. John happily contributed to a paper describing this last in the AGS journal in 1970. However, the botanical co-author omitted a Latin diagnosis, which made the name illegitimate, and wrote a new paper alone the next year to validate it, without contacting John, to his disappointment. Nevertheless, John has written numerous popular articles about the five trips he led to Turkey many years ago.

In late 1971, John and Martyn went on their first collecting trip to Chile, a venue that lasted six months. Alpine garden enthusiasts today are frequent visitors to this region but forty-five years ago John and Martyn were pioneers; they gave many presentations on this exciting flora, including to audiences in the USA and Kew. Their trip was made during the Allende government, and I could feel the historic air when discussing this with him in Chile many years later. He had sensed a strong feeling of liberty and change, particularly among young people with modern strong left-wing western and revolutionary attitudes. However, idealism was not linked with the ability to govern well, nor with possession of power outside of the parliamentary sector. There were political and economic problems that caused social tensions and even serious food shortages. John and Martyn were already sure this state of affairs could not continue: either Allende or his followers would act like Castro and lose the democratic image, or something dramatic by the military would take

Left: a treasured Andean discovery awaits publication and will be named *Viola hippocratica* to honour an anonymous Chilean medical friend and benefactor of John & Anita. Right: close-up of an exceptionally heavily veined form

place. Today we know it was the latter that happened, leading to eighteen years under the rule of Pinochet.

During 1974-77 John published his and Martyn's first Andean findings for botany and horticulture in fifteen parts. Even then it was unfinished! One plant they found from the mountains near Santiago was an evidently undescribed *Calandrinia*, which John still intends to name and publish in memory of Martyn. It was a small rosette plant, withdrawing its capsules into the soil upon maturing, and a photograph was printed in the early 1970s. It was also illustrated in the much later 1998 Chilean mountain flora field guide, *Plantas Altoandinas*, with John as one of the five authors. He has since visited the locality at 2800 m twice. In 2006 it was so strenuous for him, and he was so afflicted with terrible cramp, that he hardly survived the descent from the peaks. I have also recently searched for a similarly described and unidentified plant published by Hershkowitz from a more easily accessible area near the Valle Nevado ski centre, but in vain. Thus, this undescribed species is still only known from the mountain peak site where it was discovered in 1972.

John married in Britain in 1970 and had two daughters. He was divorced by the time that he met Anita Flores, a Chilean botanist, in 1988, at a time when the dictatorship was relaxing and moving to democracy. This encounter started his new Chilean life. They married, and in 1997 settled permanently at Los Andes near the very high Andes, where the major road climb to Argentina gradually starts. Here they have a house and a wonderful large garden, with many walnut trees normally yielding 200 to 300 kg of walnuts, and where oranges for the morning juice may be collected directly from the trees. I add that John often complains how their numerous projects leave too little time for management of the garden.

John was the first of a group of six authors who described this new viola species as *Viola gelida*

Viola escarapela is the newname for the beautiful and previously illegitimately named *Viola pulchella*

John & Anita then initiated their seed business, during a period with annual returns to Britain, where they stayed with Martyn Cheese. This resulted in numerous F&W collections that brought many exciting new species into cultivation among enthusiasts all over the world. Their effort was supported by John's eight articles in the 1984 AGS issue entirely devoted to the Andean flora. His contributions continued with his numerous entries to the *Encyclopaedia of Alpines* and the wonderful *Plantas Altoandinas* flora guide in Spanish.

With increasingly restrictive international and national legislation, seed collection became ever more difficult and they finally terminated this activity around 2007, changing their profile into taxonomic botany and biodiversity, studies of various Argentinian national floras, and participation in still more horticultural and botanical literature. The latter includes the first volume of a published guide to the spectacular flowering phenomenon of the coastal Atacama. At present they are producing a heavily revised edition of *Flora Altoandina*, and they work harmoniously and happily on all their projects. John received the AGS Lyttel trophy, becoming a life holder, and the Chilean government recently honoured him for his services to the country's botany and his contributions to its ecotourism.

Alpine garden enthusiasts probably know John & Anita's seed selling activity better than their later taxonomic contributions. I therefore offer some words about the latter, based on a table that I urged John to write. First and foremost, they are world-experts on the wonderful Andean rosulate violas, being members of a world *Violaceae* study group.

Left: Nearing the Maule *Viola* locality. Right: *Alstroemeria parvula*, a species rediscovered after 130 years by John & Anita, with the assistance of a Swiss astronomer

From 1998 to 2015, they have published on the following nine species, which are native to Argentina or Chile. New species: *Viola exsul* (2003), *V. singularis* (2009), *V. rossowiana* (2013), *V. beckeriana* (2013), *V. gelida* (2015); a new natural hybrid, *V.* × *blaxlandiae* (2012); a new status as species, *V. lologensis* (2011); and new names, *Viola subandina* (1998) and *V. escarapela* (2003). John has told me that they have names ready for another six species, where the description processes were at rather advanced stages some time ago. And there are still more of them on waiting lists. One is a white-flowered and extremely local species of which they have only found about forty specimens on a mountain pass in Chile. They looked like a memory flower, because they only grew close to a site with a memorial to about forty Chilean soldiers who died tragically during a snow storm there in the 2000s.

An undescribed rosulate viola, restricted to the Maule Mountains of Chile

Their wonderful Chilean *Viola* checklist from 2013, in the form of a poster, includes 52 photographs of these amazing rosulates as well as a few other violets. In 2014 we were doing fieldwork at the same time among the Laguna del Maule mountains. John & Anita were on a *Viola* project and they searched for no less than four local endemic rosulate violas. I have shown a picture they sent me in 2014 of the most striking of them, with their beloved jeep approaching it as closely as possible, driven by our intrepid companion Michail Belov (of www.chileflora.com) as the intrepid driver. Another endemic *Viola* near by could only be reached by horses.

Tropaeolums and alstroemerias are other amazingly beautiful members of the Andean flora. John & Anita have described four new *Tropaeolum* subsections, the new species *T. austropurpureum*, the new subspecies *T. hookerianum* ssp. *pilosum*, and have amended the description of *T.* × *jilesii* from species to status as a natural hybrid. We have recently enjoyed a substantial article from John & Anita in this journal (*The Rock Garden 139*). In *Alstroemeria* they have described the new species *A. traudliae* and the subspecies *A. philippii* ssp. *adrianae*, as well as the change of rank of *A. werdermannii* ssp. *flavicans* from variety to subspecies.

In 2014 I was very excited when they also sent me a wonderful picture of *Alstroemeria piperata* (subm.), then newly discovered in the early austral spring of the previous year. At that time, a colony of alstroemerias, that had only been seen in the sterile stage before, suddenly flowered and revealed its uniqueness. This was at a low pass close to the major highway between Los Andes and Santiago, and not far from their home! I can hardly imagine a more beautiful flower than this compact species, with large yellow flowers and a tinge of pink. We very much look forward to seeing a published version of their manuscript.

Montiopsis gayana

Within the iris family, but now included in the *Amaryllidaceae*, John & Anita have published the new name *Olsynium chrysochromum* and made new combinations in *Olsynium* and *Sisyrinchium*, and also the newly resurrected genus of the traditional *Amaryllidaceae*, Myostemma, (formerly Rhodophiala). In *Mimulus* they have described the new species *M. naiandinus*, which John and Martyn found in Chile 44 years ago, now transferred to the genus *Erythranthe*, and they also recombined *E. minima* and *E. depressa* var. *ciminum*. Among other modifications, they changed the rank of the wonderful *Schizanthus coccineus* from variety to species. Botanists and gardeners alike do not easily change their concepts of species, and *S. coccineus* is not generally accepted as a species separate from *S. grahamii*. After presenting him one such statement, John sent me an indignant and convincing (and typically long!) explanation with pictures, defending their judgement of the taxon … and I believe he is correct.

We have now joined forces in a study of South American *Calandrinia* and related genera. *Calandrinia ranunculina* was described as new to science in the *Phytotaxa* paper from 2015. John first discovered it in Patagonia when leading an AGS tour in 1992. He returned to the site later for seeds and the name flourished as 'in prep.' on seed lists for twenty years before it was finally published. It is interesting that the species is adapted to Patagonian climates, the relatively small flowers closing shortly after flowering each day, associated with the bending of stamens towards the stigma for efficient self-pollination. This secures seed production success in a place where the strong winds make it difficult for insects to keep on the wing, but it does not make this

species as attractive in gardens as other calandrinias. Forthcoming joint papers will include some wonderful *Montiopsis* taxa, as well as a striking undescribed *Cistanthe* species that was found in an inaccessible lowland valley not far from Los Andes by their friend Carlos Celedón. Carlos, most regrettably, died in his forties in 2015 and, in his honour, the species will be named after him.

I emphasize that I have been strongly impressed by John's competence in taxonomy, where he is self-taught without any formal education in the discipline. Extreme enthusiasm, knowledge of formal requirements, experience and a most thorough attitude to all aspects makes him a more qualified co-author in taxonomy projects than many of the formally well-educated botanists I have met.

John enjoys other aspects of life, like classical music, films, football and other sports. And Anita's delicious cooking! A few years ago there was a match in one of the European leagues between our local soccer team, Tromsø, and Tottenham. John watched it on a pirate web site during the night on the other side of the world, although that did not help with the result from my own point of view. His sense of humour is strongly developed, and is mirrored in his eloquent writings. He is very sensitive to injustice, whether in legal judgements, politics, people's treatment of each other, such as racism, or unethical behaviour in science, of which he has several examples.

As I write this, it is late autumn in Chile and hummingbirds return on their way to over-winter on the coast. They spend the summer in the mountains among the tropaeolums and alstroemerias, which they enjoy as much as do John & Anita, who started feeding them with a sugar solution in some bottle-like containers. This became very popular with these tiny metallic birds, many dozens of which adopt the garden as their winter refuge. They got used to the servings and even start to tap on the panes of the house when they become impatient.

John has had his share of health challenges. Until very recently he has almost been as physically active as ever, except for a slipped disc that caused some problems. His health is very much better now. I have experienced his joy and enthusiasm in botanical findings, particularly related to the taxonomic birth of 'new babies'. Such extreme pleasures are very healthy, probably producing dopamine and endodorphine - or whatever compounds - which in turn make him still more healthy, enduring and productive with long writing sessions deep into the small hours. Good taxonomy is needed as long as our civilization lasts, and we are looking forward to still more new species, particularly from those members of the crème-de-la-crème of mountain botany of the world, the rosulate violets, *Viola* section *Andinum*.

After more than 80 years, keep up the good work, John!

Facing: Home of *Calandrinia graminifolia*, which we are now restudying

A David Boyd Event – Discovering the Scottish Machair

Matthew Topsfield

A string of jewels extends along the west coast of the Outer Hebrides. It comes alive each summer with vivid colour and life. The Machair of the Uists is one of the country's great natural spectacles. Created through a combination of both natural and human influences, these diverse mosaics of habitats host a profusion of wildflowers that changes through the season, supporting many invertebrates and, in turn, internationally important numbers of birds.

The SRGC's next David Boyd Event will be in the Uists from 21 to 25 June 2018. It will give club members an opportunity to learn about and explore some of the best Machair sites, which should be at their peak flowering time and with their special wildlife. You can find more information in the *Dryas*, and full details are available by contacting mtopsfield@icloud.com, 07775 812036, or 12 Rhugashinish, Isle of South Uist, HS8 5PE.

Border:Flowering Machair at Liniclate, Benbecula. Others: Corn Marigold, *Glebionis segetum*; Yellow Rattle, *Rhinanthus* species; Hebridean Common Spotted Orchid, *Dactylorhiza fuchsii* ssp. *hebridensis* & Lesser Butterfly Orchid, *Platanthera bifolia*

Meconopsis torquata Prain in the Mountains near Lhasa, Tibet Autonomous Region

Margaret & David Thorne, La Duo, Lhag Chong, John-Arvid & Johannes Grytnes, Hilary & John Birks

In August 2009 we were fortunate to meet up in the Tibet Autonomous Region to explore the mountains near Lhasa. One of our aims was to discover whether *Meconopsis torquata* still grew in southern Tibet. This very rare and local endemic species of blue poppy was probably last seen by western botanists in 1943 and it was not clear whether the plant was extinct or if it persisted in some remote areas near Lhasa that no botanists had since visited. Some of us later visited the Cogarbo Valley east of Mount Everest, and east of the area in which we had trekked with the Alpine Garden Society in 2005 (*The Alpine Gardener* 75, 289-349).

Historical Records

Meconopsis torquata was described and listed by David Prain from a single specimen collected by Herbert Walton during the 1904 Frank Younghusband Expedition (*Bulletin of Miscellaneous Information*, Kew, 4, 129-177). Subsequent collectors failed to find the species until Frank Ludlow made six collections of plants and seed in 1942, followed by George Sherriff in 1943 after he had replaced Ludlow in charge of the British Mission in Lhasa. As with all Ludlow and Sherriff collections, these were carefully documented: each flowering plant had sky-blue flowers, yellow anthers, blue filaments, and fawn bristles or hairs on the petals and leaves. Plants grew in at least three different sites to the north and west of Lhasa, always in boulder scree at altitudes from 4400 to 4900 metres, and flowered in June and July. These findings cast doubt on the documentation of Walton's specimen, which flowering plant was said to have pale red petals and had been collected in September in the Kyi Chu valley, 24 km east of Lhasa at a stated elevation of 3500 metres – although land at this location is actually higher.

On 24 September 1942, Ludlow sent seed to William Wright Smith at the Royal Botanic Garden Edinburgh (RBGE) and pointed out the discrepancies in flower colour, flowering time and elevation between

Above: *Meconopsis torquata* near Nangtse Jakang (Photo: Pan Huapeng

his own and Walton's specimens: *'My Dear Professor, I am enclosing a small packet of seeds of the long lost Mec torquata. I hope you have success with it, but I fear it will be a difficult plant to raise. It is a beautiful plant – blue not red & flowers in June & July not September. It grows at 15000-16000' in boulder scree, & not at 11500'. I do not think Walton could possibly have seen the plant in flower himself & must have got his specimens & information from natives. It takes 2 or 3 years to reach the flowering stage, & then dies, & consequently is not perennial as Farrer suggests. I have abundant seed which I am sending home by air mail. I have good herbarium material showing every phase of growth from the seedling to the fruiting stage. There is no doubt about the correctness of my field identification. Hairs on the petals & the expanded disc on the ovary are alone sufficient to prove its identity……'*

Ludlow and Sherriff's collections were sent to Sir George Taylor for appropriate distribution, specimens going to the RBGE and British Museum herbaria, and seeds to numerous skilled growers. Notably, the petal colour of their flowering specimens in the RBGE herbarium has faded to a shade of red like that of Walton's. There is little doubt that the original flower colour of his specimen, as well as theirs, was blue and it is unfortunate that the species continues to be described as red-flowered (C Grey-Wilson, *Meconopsis for Gardeners - The Lure of the Blue Poppy*, 250-279) despite Ludlow and Sherriff's careful consideration of the species.

Meconopsis torquata in Cultivation in Scotland

Early in May 1951, delegates from the International Rock Garden Plant Conference visited the garden of Major & Mrs Knox-Finlay at Keillour Castle and admired plants of *Meconopsis torquata 'nearly a foot high and in perfect health'* (*Pedicularis* 85, 207-208). In 1953, David Murray-Lyon wrote in this journal that he thought himself the first person to flower *M. torquata* out of doors. This was in May, almost three years after he had sown seed given to him by George Sherriff in April 1950; he described the flowers as *'a pretty pale blue'* (*Journal of the Scottish Rock Garden Club* 13, 247-248). A footnote says that a plant attempted to flower at the beginning of July in the garden of Alan Walmsley, a Vice-President of the SRGC, but that it failed to open properly and set no seed. There was a similar failure that year in the cool house at the RBGE, whereas a letter to Frank Ludlow dated 16th May 1952 states 'We have a good deal of *Meconopsis torquata* and some of

Ron McBeath's 1959 photograph of *Meconopsis discigera*

it has come into flower'. At the SRGC Edinburgh show in May 1956, the Knox-Finlays staged a *M. torquata* plant in beautiful condition, '*just coming into flower for only the second or third time in Britain*' (*Journal of the Scottish Rock Garden Club* 19, 148-149). RBGE records show that the last *M. torquata* plant grown there died in 1954; however, a stand of plants photographed on 25th May 1959 and labelled *Meconopsis discigera* was probably *M. torquata*. The flower buds of *M. discigera* and *M. bhutanica* – as the blue flowered form has now been named – have longer pedicels than those of *M. torquata* and the leaf tips are conspicuously 3- or 5-lobed at flowering, whereas they are entire in *M. torquata*. Alan Elliott found that the accession most likely to have been this was recorded as dead on 23rd January 1961 (C Grey-Wilson, *Meconopsis for Gardeners - The Lure of the Blue Poppy*, 280-295). We know of no other records in cultivation or from the wild, although we would greatly welcome such news.

The 2009 Locality

We had with us in Lhasa George Taylor's paper *Meconopsis from the Vicinity of Lhasa* (Journal of the Royal Horticultural Society 1947, 309-312), with Sherriff's magnificent 1943 photograph of *M. torquata* at Nangtse. We also had photographs of the Ludlow and Sherriff specimens from the RBGE Herbarium with brief descriptions of the three collection areas: west of Lhasa beyond Trisum; north of Lhasa up a valley to the west of Sera Monastery; and at Nangtse, 32 km west of Lhasa.

George Sheriff's 1943 photograph of *Meconopsis torquata*
Below: Nangtse

Unfortunately, many place names have been changed since 1959 and we could find no map with Trisum, though we since discovered that Trisum Bridge is about eight miles south–west of Lhasa (F S Chapman, 1938, *Lhasa: The Holy City. Chatto & Windus*). Our Tibetan agent, Jampa, told us that the track to the west of Sera Monastery was too rough for vehicles. We would have to walk the thirteen or more km. We were not acclimatized to this so early in the trip, having only arrived in Lhasa the day before. Instead, we set off early on 5th August 2009 for Nangtse, whose approximate location La Duo had discovered from an elderly Tibetan friend. Having turned off the main road running north-west towards Damshung, we stopped at a small village to ask the way and were directed a short distance back to a cluster of small-holdings called Nangtse Jakhang. Here, Lhag Chong and La Duo showed Sherriff's picture of *M. torquata* to an elderly farmer who immediately recognized it and said that it grew high in the mountains behind the village. He told them that he and other local people used to collect it for a Tibetan medical establishment before it closed in the late 1950s. Although we were very keen to see the plant for ourselves, the senior farmer revealed that it used to take them more than six hours to reach it. Eventually, he agreed to go up into the hills on the following day with his son to look for it, for two days wages (140 yuan) and a bonus of 70 yuan if he returned with a plant. La Duo exchanged mobile phone numbers with the farmer, who promised to call to tell us if they had been successful. This he duly did.

Next day we returned to the farmer's small-holding and were invited into the courtyard garden, where we sat at a table in the shade of an umbrella and were served yak butter tea in china bowls. The farmer and his son brought out the bin liner that we had given him for carrying the plant. He had collected seven *M. torquata plants*, one of which had flowered and was in fruit and six that had not flowered. There was also a sample of the substrate in which the plant had been growing and a few *M. horridula* plants in a separate carrier bag; these plants were probably what have subsequently been described as *M. lhasaensis* (C Grey-Wilson, 2014, *The Genus Meconopsis – Blue poppies and their relatives*, Kew Publishing, 248-249).

On the one fruiting plant, under the very short style was the glabrous disc that characterizes the sub-genus Discogyne within *Meconopsis*. The plant still had petals, whose persistence is characteristic of this species alone, as are the bristles on their backs, within this sub-genus. We could tell neither the number nor colour of the petals. However, the farmer recognized the plant from Sherriff's picture in the Royal Horticultural Society article, in which they are blue, and he told us that the plant had flowered in June. It had taken the two of them much longer than anticipated to find *M. torquata*, as there was none at the first place and they had therefore carried on to another. So, we gave the farmer 250

Meconopsis torquata and leaves
Opposite page: fruit

yuan, thanked the whole family, took our leave, and photographed the plants outside on the roadside. As we drove back to Lhasa, we separated four of the *M. torquata* seedlings with the best root systems, wrapped them in damp tissues, put them in a plastic bag and gave them to La Duo to grow on in his garden in Lhasa; unfortunately, the seedlings did not grow. We said goodbye to La Duo and Lhag Chong at the hotel, where Margaret photographed the plants again and measured them.

The height of the plant in seed was 64 cm; the height from the top of the roots to the top of the leaves was 27 cm; from the base of

Meconopsis torquata and seeds
Opposite page: fruit

the flower stalk to the top of the seed pods was 52 cm. There were about twenty seed pods. The stem leaves started within the basal rosette and continued up the stem but were reduced to bracts between the flowers, almost to the top of the stem. The seeds were a little over 1 mm long, dark brown when mature, with a hooked shape and a coarse reticulum. Some were sown but none germinated, probably because they were immature.

Medicinal Use of *Meconopsis*

Two pharmaceutical factories, established in 1994 and 1998, first used *M. torquata* from the Lhasa area. Today, both collect from different areas and use *M. horridula* agg. rather than *M. torquata*, probably because *M. horridula* agg. is commoner and costs much less to obtain than *M. torquata*. According to Tibetan sources, whole plants of *M. torquata* were collected in July or August each year, the hairs were removed, and the plants were washed and dried. The plant was used to treat pneumonia, hepatitis, oedema and dropsy, whereas *M. horridula* agg. is used primarily to treat traumatic injuries. Law and Salick (Biodiversity and Conservation, 16, 1747-1759) list *M. torquata* as being used medicinally for muscular, skeletal and respiratory diseases, and for '*non-Western medicinal systems*'. The species is given a threat value of 3 (very threatened) by Tibetan doctors. Paul Egan (*The Rock Garden* 124, 46-61) says that *M. torquata* has even been prescribed to the Buddha to relieve indigestion. In the large literature on Himalayan and Tibetan medicinal plants, *M. aculeata*, *M. grandis*, *M. napaulensis*, and *M. paniculata* are all described in treating a range of disorders including lung, bile and liver diseases, and various fevers. The root of *M. napaulensis* is said to be used as a narcotic drug in Nepal whereas seeds of *M. grandis* are roasted and pickled by Sherpas and Tamangs there.

It is unclear whether *M. torquata* is cultivated anywhere commercially today for medicinal purposes. Recent work on DNA analyses of many *Meconopsis* species and related genera includes results for *M. torquata*. The source of this material is in one case an untraceable 2002 doctoral thesis at Sun Yat-Sen University, Guangzhou, whereas other material was '*donated from harvests made by the Tibetan Traditional Medicine Pharmaceutical Factory, Lhasa*'. This factory is one of the largest of the eighteen

companies in the Tibetan medicine industry, with outlets in thirty-two Chinese cities, research institutions in over twenty countries, and a pharmaceutical plant in Switzerland. However, it has only successfully cultivated *M. grandis*, *M. simplicifolia*, *M. betonicifolia*, *M. punicea*, *M. integrifolia*, and *M. paniculata*. It has not cultivated *M. torquata*. According to Lu and Lan (Journal of Natural Resources, 28, 1977-1987), *M. torquata* is the ninth most endangered Tibetan medicinal plant, along with *Cordyceps sinensis*, *Mirabilis himalaica*, *Gentiana urnula*, and *Paraquilegia anemonoides*. It is therefore possible that it may still be in company cultivation, but with only one known small population found in 2016 growing in the wild.

The 2016 Discoveries

Although we did not find *Meconopsis torquata* growing in the wild in 2009, we had discovered that it occurred in the mountains near Lhasa, at a place where George Sherriff photographed it in 1943. With our Tibetan authors as interpreters, we found that several groups of local people used to collect the plant for a Tibetan medical establishment and, subsequently, for two pharmaceutical factories. By 2009, the use of *M. torquata* had been discontinued about ten to fifteen years previously. The difficulty our farmer and his son had finding plants where they once used to collect them shows that the distribution and abundance of this species, which were always extremely limited, had probably declined. We left Tibet wondering whether *M. torquata* still occurred elsewhere in the Lhasa area.

Lhag Chong had found an unidentifiable blue-flowered *Meconopsis* on the Cha La to the north-east of Lhasa about 20 years previously, which he later recognized as *M. torquata* from Sherriff's photograph. We failed to find it there in 2005 and 2009 but the area is large and needs more thorough searching, there and elsewhere. Since our visit to Nangtse Jakhang in 2009, Lhag Chong has been carefully exploring the mountains around Lhasa in the hope of finding *M. torquata*. In the summer of 2016, he and his student Sheng-Ping Ming were delighted to find seven plants amongst south-facing rocks at over 5000 m elevation about five km from the western suburbs of Lhasa.

Following the publication of the Grey-Wilson's 2014 *Meconopsis* monograph, Minoru Tomiyama, a Japanese enthusiast, asked Margaret & David about the location of Nangtse Jakhang, which Pan Huapeng, his Chinese agent in Lhasa, had been unable to find. Pan Huapeng went to the place where the two local farmers had collected the plant for us in 2009 and he found and photographed it growing there on 2 August 2016. So, in summer 2016, *M. torquata* was found independently in two places. In 2017, Minoru Tomiyama went to the same place as Pan Huapeng in 2016 but, sadly, no *M. torquata* could be found. Locals said that nomadic yak-herders had been in the upper part of Nangtse Jakhang in 2016 and 2017, and had collected all the *M. torquata* for medicinal purposes

Conclusion

Meconopsis torquata is an elegant and distinctive plant that is endemic to the Lhasa area and, as far as is known, is very rare and endangered. We are delighted to report that it is still growing in this area in one locality. It is possible that it persists in small quantities elsewhere around Lhasa, perhaps in the same remote places where Walton, Ludlow, and Sheriff found it between 1904 and 1943 or, more likely, in new ones such as that found by Lhag Chong and Sheng-Ping Ming in 2016. Based on current knowledge, it is possibly one of the world's rarest alpine plants, with only seven plants known to be growing in the wild!

Acknowledgements

We have described many of the details, plants and birds of our 2009 expedition in our www.eecrg.uib.no/projects/AGS_BotanyExp/Tibet09/Tibet2009_Report.pdf. The expedition received money from the Network for University Co-operation Tibet-Norway, the Hendry Bequest Fund, the Scottish Rock Garden Club, and the University of Bergen. We are very grateful for this support.

We are also indebted to Jampa of *Tibet Wind Horse Adventures* (Lhasa) for logistical help in 2009, to Sheng-Ping Ming, Pan Huapeng and Ron McBeath for a choice of various photographs, and to Minoru Tomiyama for information about his and Pan Huapeng's searches in 2016 and 2017.

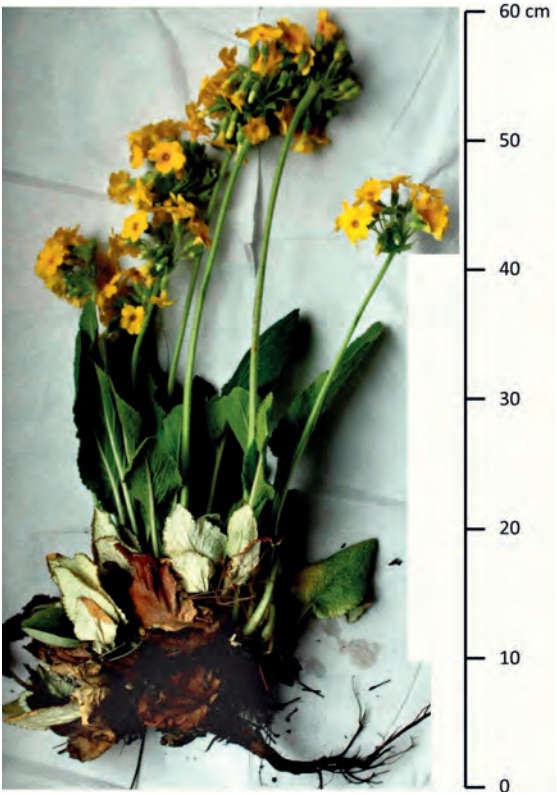
Meconopsis torquata at a site near Lhasa (Photo: Sheng Ping Ming)

A New Variety of *Primula bullata*

David & Stella Rankin

The rediscovery of *Primula bracteata* and *P. bullata* in 2012 and 2014, respectively, showed that they were closely related to *P. forrestii* (Rankin, 2015). Observation of the range of plants in the wild populations and of the variation in cultivation, aided by digital photography, has supported their reassignment as varieties of a single species. They are now *Primula bullata* var. *bracteata*, var. *bullata* and var. *forrestii* (Eveleigh, Nielsen and Rankin, 2014, 2015) – but the story doesn't end there.

In the paper reclassifying these and other members of the Bullatae section, it was noted that on the Ma'an range, above Heqing in NW Yunnan, China, there was a population of plants resembling *P. bullata* var. *forrestii*, but notably robust, that required further study. An expedition



Specimens of
Primula bullata var. *delavayi*

Farina on the outside of the flowers, and on the calyx and bracts, is one feature that distinguishes *Primula bullata* var. *delavayi* from *P. bullata* var. *forrestii*

in 2016 provided the opportunity to observe that population, and the next day to compare a population of typical var. *forrestii*. We looked for characteristics that were consistent within each population but differed significantly between the two.

Robustness was shown particularly by the height of the flowering scapes, up to 70cm (as against as maximum of 40 cm in *P. bullata* var. *forrestii*), each bearing up to 60 as against 25 flowers. With up to 30 or more scapes, plants were impressive and attractive. As they opened, all flowers were completely covered on the outside of the corolla by white farina, with a scattering also on the calyx and bracts, absent in var. *forrestii*; the leaf petioles and scapes were held closely to one another, rather than spreading as in var. *forrestii*; and there was a distinct floral scent, resembling that of a *Dianthus*, not as strong as in var. *bullata*, but absent in vars *bracteata* and *forrestii*. Leaves did not differ significantly in size from those of var. *forrestii*.

Together, these features characterised the entire population, which extends from 3100 m near the villages of Xiao Ma Chang and Ma Chang, past Hei Ni Shao and on towards the town of Heqing, for about 14 km along the road, 8 km in a straight line, down to 2600 m. *Primula bullata* var. *forrestii* occurs most closely about 8 km to the west, and vars *bullata* and *bracteata* are about 40 km to the south. It should be noted that a few robust specimens of *P. bullata* var. *forrestii* from other locations

Primula bullata var. *delavayi* under pine trees, with a rubbish dump behind

exist in herbaria, but such specimens do not have the other distinct characteristics that have been noted.

The evidence all points to these plants being a new variety of *Primula bullata*, most closely resembling var. *forrestii* but with some affinity to var. *bullata*. There is a specimen in the Paris herbarium, collected by Père Delavay near "hee gni chao" (modern Hei Ni Shao), which is clearly this variety. This specimen was labelled as *Primula* (*bullata*, crossed out) *bracteata*, but the Paris herbarium label adds "var. *macrophylla*", although this name, applied to this plant, was never published. It was later annotated as *P. forrestii*. This is chosen as the type specimen, and the new variety is accordingly named as *Primula bullata* var. *delavayi*. Specimens of Forrest 10048 in Edinburgh, Kew and Paris, labelled at some stage as *Primula rufa* and latterly as *P. forrestii*, came from the "Langkong-Hoching Pass" at 2700 to 3000 m, almost certainly the same location, and share the characteristics of the new variety, while Kingdon Ward 5017, from 9000 feet (2740 m), "10 miles SW of Ho-ching" (modern Heqing), is also consistent. We wondered whether this robust variety might be a tetraploid, but Hugh McAllister of Ness Botanic Gardens has kindly undertaken chromosome counts for all four varieties of *P. bullata* and for *P. henrici*, and in each case $2n = 24$. The formal description of the new variety is given below.

Its native habitat is on limestone-derived soils near pine trees, in an area with quite low rainfall and some high summer temperatures. As *P. bullata* var. *forrestii* can flourish outside in the United Kingdom, *P. bullata* var. *delavayi* has potential as a vigorous, attractive and long-flowering garden plant. It was awarded a Certificate of Preliminary Commendation (as *Primula bullata* var. *forrestii* robust form) by the Joint Rock Garden Committee when exhibited at *Gardening Scotland* in 2016. It should be noted that some plants that circulated as *Primula rufa* in the last few years were in fact this new variety.

Key to the varieties of *Primula bullata*					
		bullata	*bracteata*	*forrestii*	*delavayi*
Leaf shape	- cordate			•	•
	- truncate			O	O
	- attenuate	•	•		
Scape length	>>leaves	•		O	•
	>leaves	O	O	•	O
	<=leaves		•		
Flowers per scape	>40				•
	21 - 40	•	◦	O	•
	10 - 20	•	•	•	◦
	<10		O	◦	
Farina - dense on scape, calyx		•			
- on outside of corolla		•			•
- under winter leaves		•		•	•

• = usually
O = sometimes
◦= recorded but not normal

Primula bullata Franch. **var. *delavayi*** D. W. H. Rankin, var. *nova*. Type: China, Yunnan Province: Rochers calcairs et ombragés des hautes … près de Hee gni chao, au dessus de Hokin tcheou (Yunnan), *Delavay* s.n. (24/7/1883) (holotype, P04571593, isotypes, P04571592 and P04571597), *Forrest* 10048 (paratypes, E, K, P), Kingdon Ward 5017 (paratype, E).

P. forrestii Balf. f. *pro parte*, Notes Roy. Bot. Gard. Edinburgh 4: 228 (Apr 1908).

P. bullata Franch. var. *forrestii* (Balf. f.) Eveleigh, Nielsen and Rankin *pro parte*, Curtis's Botanical Magazine 32(2): 162 (2015); Curtis's Botanical Magazine 31(1): 367–368 (2014).

Variety aff. *Primula bullata* var. *forrestii* but more robust, with taller scapes, to 70 cm, 2× the foliage length, bearing more flowers, up to 60 per scape; petioles more closely clumped, more ascending than spreading; flowers on opening densely white farinose outside, bracts and calyx with scattered farina; flowers scented.

Habitat: limestone rocks and terra rossa, usually under or near *Pinus yunnanensis*.

Flowering time: late spring to early summer (June in the wild, May in cultivation). It is the last of the *Primula bullata* varieties to flower; var. *bracteata* is first, followed by (but overlapping) var. *bullata*, then var. *forrestii* and finally var. *delavayi*.

Distribution: abundant in a limited area near Ma Chang and Hei Ni Shao, between Heqing and Jinchuan, Dali County, Yunnan Province, China, 2600 - 3100 m. Populations being eroded by limestone quarrying, deforestation to give agricultural land, and rubbish dumping.

References

D Rankin, The search for a long-lost Primula, *The Rock Garden*, 34(1): 20 (2015)
P Eveleigh, J M Nielsen and D W H Rankin, Curtis's Botanical Magazine 31(1): 367 (2014); *Curtis's Botanical Magazine* 32(2): 162 (2015)

Newcastle, 7th October 2017

Rarely can twin show secretaries have enjoyed greater rewards for their efforts than Ponteland's two Alans. While Alan Newton repeated last year's triumph in carrying off the eponymous (Ponteland that is) bowl for winning the open section aggregate, Alan Furness produced a superb example of *Crocus banaticus* 'Snowdrift' (above) that took the Forrest medal, and was also awarded a first class certificate and cultural commendation at the accompanying meeting of the Joint Rock Garden Committee. The show was graced by a comprehensive, informative and well-illustrated gold medal display on *Woodland Plants* by Mala Janes, another local denizen.

Alan Furness also triumphed in foliage classes with a range of the New Zealand celmisias, a genus in which he specializes and with which he excels. Notable examples of *Celmisia spedenii*, *C. gracilenta*, *C. hieraciifolia* and a probable hybrid between *C. verbascifolia* and *C. semicordata* ssp. *aurigans* were displayed. Nevertheless, the millennium trophy for the best foliage plant went to another celmisia, a superb example of *C. philocremna*, shown by Ian & Maria Leslie. Perhaps the most prized of the New Zealand daisies, this 'lover of crevices' has become very rare in cultivation.

Celmisia philocremna

Celmisia gracilenta

Celmisia hieracilifolia

Newcastle has been well provisioned with trophies over the years. The Patricia Furness vase for the best plant in the smaller size classes went to a *Gentiana farreri* 'Silken Star Group' from Keith & Rachel Lever, a popular decision as Keith had not been in the best of health.

Gentiana farreri 'Silken Star Group'

Crocus mathewii 'Dream Dancer'

Nevertheless, the L W Browne memorial trophy for the best gentian went to a much larger example, the Leslies' *Gentiana* 'The Caley', which is a dazzling darkish blue when seen at its best. This year the AGS (Ulster Group) quaich (an appropriate award in this show, which is held under Scottish rules) for the best small bulb went to Ian Kidman for his *Crocus mathewii* 'Dream Dancer'. Ian showed another rarely seen named crocus, *C. hadriaticus* 'Purple Heart'.

Two further awards remember stellar former members of the local group. The Ewesley salver commemorates the road where Eric Watson lived, and is given to the best small cyclamen, here a very well flowered *C. mirabile* shown by Bob Worsley. A more recently designated trophy, for the best Amaryllidaceae, remembers the much-loved David Boyd. It was won by Don Peace's *Galanthus peshmenii*. It might be worth mentioning that your reporter recently enquired of well-qualified authorities as to how the (mostly) Turkish *G. peshmenii* differed

Crocus hadriaticus 'Purple Heart'

Cyclamen mirabile

from the (mostly) Greek *G. reginae-olgae*. The best offering suggested that there might be anatomical differences in the (leaf) palisade cells. Doubtless this accounts for the pale central stripe on the leaves of the Greek species, which is lacking in the Turkish. Supposed differences in the inner tepal mark are less convincing. More cogent perhaps was the good *Allium thunbergii* competing with the snowdrop. Yes, onions are Amaryllidaceae too now!

As always, Bob & Rannveig Wallis brought many attractive outstanding autumnal heavyweights and were rewarded with no less than three certificates of merit, for *Cyclamen hederifolium* ssp. *crassifolium*, *Empodium flexile*, and an outstanding pan of *Hyacinthoides lingulata* (recently promoted from *Scilla*) which competed for best in show.

One of the joys of autumn shows is to search beyond the cyclamens, gentians and crocuses for the quirky and unexpected. One such was Christine Boulby's fine *Clematis heracleifolia* 'Dwarf Pink' – originally sourced

Cyclamen mirabile

Newcastle Show

Clematis heracleifolia 'Pink Dwarf'


Galanthus peshmenii 'Don Peace'


Saxifraga fortunei 'Eiga'

Cyclamen hederifolium 'Ivy Ice Rose'
Right: *Empodium flexile*

from Aberconwy Nursery - which was also awarded a preliminary commendation by the RHS. Christine's *Saxifraga fortunei* 'Eiga' was similarly successful and much admired. It has very large toothed petals of a brilliant red.

John Richards
(Photos: *Peter Maguire*)

The following pages show a selection from the many fine show photographs:
Background:
Anisotome imbricata var. *imbricata*
Left:
Haemanthus albiflos
Saxifraga fortunei 'Fumiko'
Correa 'Coral Bells'
Melicytus alpinus
Gaultheria crassa 'John Saxton'
Right:
Hyacinthoides ciliolata
Gaultheria mucronata
Crocus niveus
Petrocosmea minor

Aberdeen 20th May 2017

The Aberdeen Show continued to enjoy the hospitality of the Duthie Park Winter Gardens. The Victorian Corridor is a most attractive and well-lit setting for the display. Open to all comers, it gave us an excellent chance to promote alpines to the general public. The number of entries remained encouraging and the standard of exhibits was high, providing displays that attracted much public interest. Plant sales were very successful, both of club-raised plants and from the two specialist nurseries, Kevock Garden Plants and Ardfearn Nursery. They offered a truly mouth-watering selection of plants.

Familiar names were much in evidence among the awards. Cyril Lafong won the George Forrest medal with his *Trillium grandiflorum* 'Flore Pleno' and also took the Esslemont quaich. Stan da Prato took the Simpson salver for the best rhododendron, and Ian Christie the Craig cup for the best primula. Dave Aitken's *Arisaema* won the Aberdeen quaich, and Erica Beaton took the Elizabeth bowl for best junior exhibit with her *Sempervivum arachnoideum*. The local committee was represented by Angela Townsley with her splendid cypripedium, and by Nick Boss and Mike Hopkins with their winning of certificates of merit.

As ever, the Aberdeen Rock Garden Club welcomed the opportunity to interest the public as well as the many specialists. In practical terms this means that, as part of the recent improvements to Duthie Park, the club has assisted in selecting and planting alpines in a very large restored rock garden that is now forming a major feature in the park outside. It is maturing, and we hope that it too will inspire a more general interest in rock gardening. We are very appreciative of the help of Alan Findlay and his staff at the Winter Gardens, and thank them all for their hospitality and for the work put into preparing the area to accommodate our show.

Above: Cyril Lafong's *Saxifraga pubescens* 'Snowcap' - Class 44 first prize
Facing: Top - *Cypripedium* 'Kentucky Maxi'
Middle - *Calochortus uniflorus*, *Iris cycloglossa*, *Ledum (Rhododendron) groenlandicum*, *Leontopodium pusillum*
Bottom - *Lewisia* 'Joyce Halley', L*ewisia columbiana,* Oxalis 'Dark Eye', *Rhododendron* 'Hisako'

Edraianthus pilosulus & *Saxifraga cespitosa* in prose at the Aberdeen show

A Holistic Approach to Cultivation
& Saxifraga Cespitosa

The main objective here is to grow a healthy plant. Priority has therefore been given to studying the plant's requirements, those that enable it to function well generally, remain healthy & in character. The traditional methods of cultivation required for show perfection, to suit an ordinary garden or greenhouse were not considered, neither was the plant's garden value.

Essential requirements:-

(i) Growth: starts about the end of April, thereafter, normal watering commences, do not allow plant to dry out. Exposure to UVL is very important, therefore pots are left outside - free-standing - until Autumn dormancy.

(ii) Summer: Mid June - mid Sept, plants can tolerate 80% loss moisture than in the spring, therefore do not over water.

(iii) Compost: acid, no less than 3pts grit & gravel to 1pt loam.

(iv) Winter dormancy, beginning of October plants need slight moisture at the roots, the plants remain outside, where ever it is coldest, but with overhead protection.

Misc. these plants are the result of nat. regen. from an original sowing in 1995.

The Aberdeen Rock Garden Club at Duthie Park

The rockery in Duthie Park was formed in 1922, at the same time as the bowling green and tennis courts, after the gardens and house of Arthurs Seat were incorporated into the park, all prior to the demolition of the house in 1935. During the 1920s the rockery became overgrown and obscured to the public over the years, with shrubs and self-seeded trees. Indeed, things came to the point that many visitors to the park did not even know that the rockery had once existed.

As part of the Duthie Park restoration project, which took place in 2012 and 2013, vegetation was cleared to expose both the rock layout and a previously hidden path. The rockery was also extended as part of the works to complement the adjacent new community garden area. Aberdeen Rock Garden Club has been involved with the development of the rockery by proposing plants for the rockery and their subsequent layout. The planting of the rockery was undertaken by club members and the Friends of Duthie Park. The funding for the project has been from the *Keep Scotland Beautiful* Community Grants Scheme and by the Friends through sponsorship from the Craig Group, donations and fundraising.

Lesley Glasser

The rockery at Duthie Park: before (inset) and after the recent renovations

Discussion Weekend, Peebles 13th-15th October 2017

The Discussion Weekend show again provided an exciting range of colour this year, although little of it was provided by cyclamen, which seemed to have had an early season. There were however some good foliage specimens to be seen, such as Mike Dale's *Cyclamen hederifolium* and Lionel Clarkson's *Cyclamen coum* 'Maurice Dryden'. Autumn shows are often also good for ferns as foliage plants, and I particularly liked Lionel's neat two-pan entry of *Polystichum setiferum* 'Herrenhausen' and *Cheilanthes tomentosa*.

As usual, it was the gentians that were the most spectacular, and Stan da Prato's class 26 entry that won the Peel trophy ranged from the light blue of the older hybrid *Gentiana* 'Strathmore' to the much darker *Gentiana* 'Blue Silk', which is a more recent raising from Aberconwy nurseries. Stan also had a fine example of *Gentiana* 'The Caley' on the bench, one of Ian McNaughton's recent very compact and floriferous hybrids.

Autumn bulbs are often another mainstay of the autumn shows and at Peebles it was colchicums that caught the eye rather than crocus, which were largely finished. A particularly fine example was Netta Amand's *Colchicum byzantinum* 'Innocence' in which the creamy-white petals were suffused with royal purple at the tips. This potful was later auctioned at the dinner on the Saturday evening and was the source of much interested bidding. A further bulb that caught the eye, partly because of its size, was a stunning group of *Nerine flexuosa* var. *alba*, exhibited

Facing: *Cyclamen graecum* *Cyclamen coum* 'Maurice Dryden'

Facing: *Gentiana 'Strathmore'* *Colchicum byzantinum* 'Innocence'

by Jane & Alan Thompson. The dozen pristine whiter flower heads were raised half a metre above the foliage to create a spectacular grouping.

Autumn shows often have some autumn foliage on display but the only example that I could see was Stan da Prato's *Cryptomeria japonica* 'Jindai Sugi'; however, it was his *Pinus mugo* 'Mops Midget' that was awarded the J L Mowat trophy for the best conifer. As is almost traditional at this show, Stan also won the Mary Bowe trophy for the most points in secti on one.

Some of the most spectacular colour was provided by various forms of *Saxifraga fortunei* in different classes. One of Stan's three pan entries was of this species and contained the delicately beautiful *S. fortunei* 'Moe',

Celmisia hectori

Persicaria capitata

which was covered with white flowers suffused with a hint of apple green. Elsewhere, Christine Boulby had a three-pan entry of *Saxifraga fortunei* 'Cheap Confection', 'Cherry Pie' and 'Eiga' that exhibited increasing depth of colour, 'Eiga' being particularly eye-catching. However, for me it was Maggie Duguid's *S. fortunei* 'Eiga' that was the slightly better plant with the shocking pink flowers being held in a compact head just above the foliage.

In class 3, the East Lothian trophy for three rock plants distinct was won by David & Stella Rankin who exhibited three primulas, from the diminutive *Primula mairei* through the slightly taller *P. capitata* (both Asiatic species with purple flowers) to the exuberant *P. simensis*, an African species from the Ethiopian Highlands with heavily mealy, almost white, leaves and yellow flowers. The Asiatic primulas were not what one would expect to find in flower this late in the year, and similar unseasonal flowering plants that David & Stella exhibited were a bright orange *Primula bulleyana* x *aurantiaca* hybrid and a similarly-coloured *Castilleja latifolia*. This latter plant was rather tall and ungainly on the show bench but, having seen it growing wild earlier in the year in coastal California, it would seem that this growth habit allows it to grow amongst taller, tougher shrubs to protect it from grazing.

Castilleja latifolia

Whilst there was no Forrest medal awarded this year – although there were some fine celmisias exhibited by Alan Furness which were perhaps discounted as only being foliage plants – in section two the East Lothian cup for the best plant was won by a lovely *Petrocosmea iodioides* aff. from Mala Janes. This softly hairy Gesneriad with purple flowers seems to have undergone several name changes over the years, so you may find that you are already growing it under a different name!

Peter Maguire

Join the

Scottish Rhododendron Society

Spring and Autumn garden tours and workshops
A Yearbook, plus two Reviews annually
Our own Seed List
Hosts to the annual Scottish National Rhododendron Show with plant sales
Free entry to Crarae and Arduaine Gardens
Optional membership of the American Rhododendron Society with quarterly Journal and access to Seed List
Membership starts at £15.00
Visit our website:
www.scottishrhodos.co.uk
Contact our secretary: Katrina Clow
Townend of Kirkwood
Stewarton, Ayreshire. KA3 3EW

Tel: 01604 83926 or 07914 316 119

However you like your iridaceae ...

The British Iris Society

www.britishirissociety.org.uk

Join via the website
or send a cheque for £14,
payable to *The British Iris Society*,
to Jill Christison,
Mill House,
Woodlands Lane,
Chichester PO15 5PA
jillchr@btinternet.com

British Cactus & Succulent Society

Website: http://www.bcss.org.uk

- Quarterly full colour Journal, CactusWorld, for all levels of interest, covering conservation, cultivation, propagation, plant hunting and habitats, botanical gardens, plant descriptions, book reviews, seed lists, news and views, and advertisements from suppliers worldwide.
- Optional subscription to Bradleya, a high quality annual publication, with articles of a more scientific nature.
- Online discussion Forum and publications including books.
- See our website for current subscription details. Cheques should be made payable to BCSS.
- Over 80 local branches.
- Further details also available from our Membership Secretary:
  Mr A Morris, 6 Castlemaine Drive,
  Hinckley, Leicester LE10 1RY, UK.
  Telephone: +44 (0) 1455 614410.
  Email: **membership@bcss.org.uk**

Witton Lane Seeds

Choice Fresh Seed

Bulbous, herbaceous, climbers and alpines.
Notably cyclamen, Lathyrus, Helleborus, Galanthus, Paeonia and Codonopsis.

A wide selection and many rare and unusual.

For catalogue please contact:

Witton Lane Seeds
16 Witton Lane, Little Plumstead
Norwich, Norfolk, NR13 5DL. UK
email : sally.ward246@btinternet.com

www.wittonlaneseeds.co.uk

brightwater
holidays

Discover it all on a Brightwater Holiday

For 25 years, we have provided expert-led garden and special interest tours to individuals, private clubs and societies everywhere. If you are looking for a trip that doesn't follow the crowds, step this way: from visiting popular places to private spaces, we can take you completely behind the scenes.

From island palms and Mediterranean olives to Japenese cherry blossoms and Hebridean archaeology, we really do it all. So, whether yours is a particular spot here on our shores or something further afield, get in touch or visit our website and together let's design your perfect holiday!

Tel: 01334 657155 | Email: info@brightwaterholidays.com
Web: brightwaterholidays.com

The Fritillaria Group of the Alpine Garden Society

www.fritillaria.org.uk

Benefits: include two newsletters each year and a seed exchange in August. There are also two meetings with speakers and plant sales.

Annual subscription: £8 Single; £10 Family; €10 Europe; £12 rest of World.

Cheques should be payable to The Fritillaria Group and sent to: Pat Craven, Treasurer, The Fritillaria Group, 24, Leven Road, Yarm, UK TS15 9JE or alternatively subscriptions can be paid at:

http://www.alpinegardensociety.net/sales/special-payment/

SAJA

Société des Amateurs de Jardins Alpins

For gardening lovers of alpines. Annual membership benefits include: Plantes de Montagne et de Rocaille, a colourful quarterly bulletin, the yearly seed exchange, the annual plants sale, conferences and botanical tours. Join us on line at http://sajafrance.fr

SAJA, B.P. 432 - 75233 Paris Cedex 05 (France)
Email address: contact@sajafrance.fr

The Saxifrage Society

www.saxifraga.org

For everyone interested in the cultivation and enjoyment of all sections of the genus *Saxifraga*

Subscription details at www.saxifraga.org/aboutus/paymentonline.htm

Contact: Mark Childerhouse, 12 Vicarage Lane, Grasby, Barnetby, N Lincs DN38 6AU or email (membership@saxifraga.org)

www.thescottishauriculaandprimulasociety.com

Do come and join this new society that hopes to stimulate and conserve the cultivation of Auriculas and Primulas.
Benefits for members: Yearbook; Exhibit free at any of the society shows. Membership starts at £8.00. Please visit website for details.
Contact our secretary Dr. Alison Goldie:
secretary@thescottishauriculaandprimulasociety.com

Cyclamen 2018

The Cyclamen Society is organising an event at the RHS Garden, Harlow Carr on

Saturday 15 and Sunday 16 September 2018.

Show, plant sales, displays, talks, demonstrations, expert advice.

SRGC members will be warmly welcomed.

Full details of the programme will be published later in the year.

Greenwings

Wildlife Holidays

Rhodes Orchid Odyssey

7 – 14 April 2018

Join a floristic adventure on the beautiful Greek island of Rhodes this spring – our 7th consecutive year!

Led by a first class team of expert naturalists:

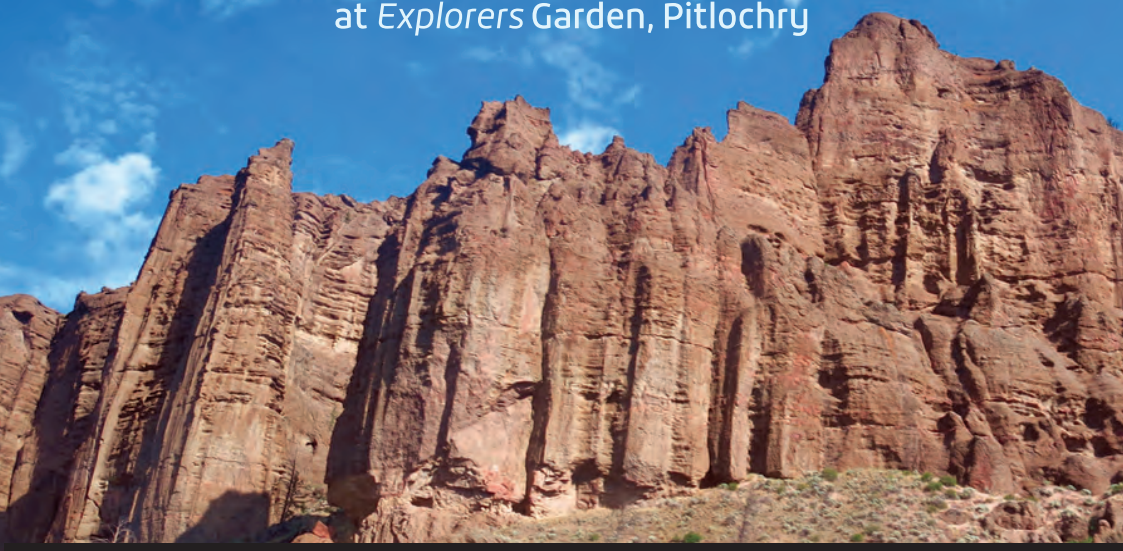
Yiannis Christofides – author of 'The Flora of Cyprus'
Jon Dunn – author of 'Orchid Summer'

A rich palette of orchids, plus a great selection from the 1,500 plants on the island – including endemic Peony, Cyclamen, Campanula, Fritillary & lots more!

01473 254658 ◆ www.greenwings.co.uk

The American Dream

A photographic exhibition by modern day plant hunter and *Explorers* Garden Manager, Julia Corden, at *Explorers* Garden, Pitlochry



EXPLORERS

THE SCOTTISH PLANT HUNTERS GARDEN

We have a selection of plants for sale

explorersgarden.com

PLANT HERITAGE NCCPG

RHS PARTNER GARDEN

Erythroniums
in Cultivation

A photographic exhibition
by Ian Young

Explorers Garden, Pitlochry
1 April - 28 October 2018
Sponsored by Scottish Rock Garden Club

EXPLORERS

THE SCOTTISH PLANT HUNTERS GARDEN

We have a selection of plants for sale
explorersgarden.com

PLANT HERITAGE NCCPG

RHS PARTNER GARDEN