

THE ROCK GARDEN 153



July 2024

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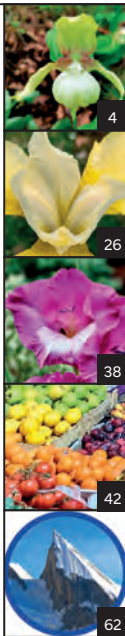
The Rock Garden

The Journal of the
Scottish Rock Garden Club
July 2024

Number 153

Front Cover: A hellebore collage from Ashwood and Germany (Photo: Julia Boldt)

Back Cover: *Campanula formanekiana* (Photo: Zdeněk Zvolánek)

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Please help the Club - Vacant Positions:

- An indexer to prepare the biennial index of the journals is needed to replace Glassford Sprunt, who did the job valiantly for many years.
- We need a publicity manager to promote the club to the wider world for our charitable aim of raising interest in alpinists and rock plants.
- Please contact secretary@srgc.net for more details of these positions. Your help is both vital and welcomed.

Discussion Weekend

Your council is now considering preparations for and details of the club's **next Discussion Weekend in October 2025**.

Scottish Autumn Show & David Boyd Day

Saturday 28 September 2024, 10:00 to 15:30

At Howden Park Centre, Livingston, West Lothian EH54 6BW

The competitive autumn show in Livingston will be complemented by a series of talks and workshops. The whole event is an outreach to promote appreciation of rock garden and related plants to gardeners not familiar with our usual events.

The event is supported via the David Boyd bequest. David left the Club funds for this purpose, and would have been happy to see so many gardening clubs and organisations involved.

Our headline speaker is Margaret Thorne, well-known field botanist, plant-hunter, and authority on the flora of Greece and the Himalayas, especially the genus *Meconopsis*. She is followed by a series of 15 minute talks from a range of interesting speakers. We will offer a workshop on creating a beautiful miniature alpine garden in an old fish-box - something that can fit into the smallest garden or even a balcony!

Border: *Gypsophila aretioides* 'Caucasica' at the Kendal Show

David Boyd Day

Talks and Demonstrations

10:00 - 10:40 Greece - a Plant Lover's Paradise: Margaret Thorne.

11:00 - 11:15 The Status & Distribution of Scotland's Native Alpines:
Matt Harding, Scotland Officer, Botanical Society of Britain and Ireland.

12:00 - 12:40 Workshop: How to turn a fishbox into a convincingly planted alpine trough: Carole & Ian Bainbridge, past SRGC presidents.

13:00 - 13:15 Family Event: The Weird and Wacky World of Plants:
Professor Herbie Flowers, Cerritulus University

13:30 - 13:45 Fifty Shades of Blue? The Genus *Meconopsis*: Margaret Thorne.

14:00 - 14:15 Scotland's Heritage Apples: Colin Wren, Gardens and Designed Landscapes Manager, National Trust for Scotland.

14:30 - 14:45 Creating a Community Garden in Murieston: Janey Craigan. Chair of Murieston Community Garden in Livingston.

15:00 - 15:15 The Caley: Pam Whittle, past president of the Royal Caledonian Horticultural Society.

Show Schedule

Full details are on our website srgc.net under 'Shows & Events' but please note that, as well as our usual SRGC show classes there will be classes to encourage the general public to exhibit.

08:00 - 09:15 Show hall open for staging of plants.

09:30 - 11:00 Show closed for Judging.

11:00 (Approx) Show open to the public

15:15 Presentation of prizes, show closes

Nurseries and Stalls

Plants and bulbs may be purchased from 10:00 onwards. Large orders may be pre-ordered. The nurseries attending will be: **Ardfearn, Hartside, MacPlants, Pottertons and Wyndford Plants.**

Members Plant Stall Please bring spare plants and seedlings for sale to help pay for the cost of running this event, on a 50-50 basis if you wish.

Information Stands and Exhibits

Other organisations will be attending and manning stands to provide information to everyone including our visitors: **Botanical Society of Britain and Ireland, Royal Caledonian Horticultural Society, Scottish Gardeners Forum, Murieston Community Garden,** and the **National Trust for Scotland** will have an Apple Identification table along with other information.



Cyripediums of the Far East

Konstantin Cherezov*

Each of us comes to gardening and the study of wild flora in different ways: parents, friends, profession, or happy accident ... and that's how it was with me. My love for alpine species was born on my first mountain hikes. It came later for other plants – loves that came with experience, and among them the terrestrial orchids. In the past twenty years of travelling the Asian part of Eurasia, groups of botanists and I have explored many regions.

Orchids are common to the whole Siberian floristic macro-region but the most interesting treasures are concentrated in the East. Here, in the Far East and especially its southern part, are as many as 63 to 66 species, an atypical abundance for temperate latitudes. The Far East displays significant floral and vegetative diversity, and unique plant communities. Extraordinary habitats are associated with a specific complex of landscapes and climatic features that provide opportunity for many orchid species. I shall dwell on travels



Cyripedium macranthon forma *x albo-striatum*



*Communicated by Ole Jonny Larsen



A typical Primorye landscape

of the last five years and recall species I encountered on forested mountain slopes and in the subalpine zone. Since 2018, I have often found representatives of the genus *Cypripedium* in various places, but the most complete study came in 2023 in a two-week trip through the fascinating mountainous regions of Primorsky Territory (*Primorsky Krai*). This region is known informally as Primorye, from the Russian “by the sea”.

The regional flora is distinguished by an abundance of relict species, preserved from the Tertiary period because later Pleistocene glaciation was practically absent, other than in a few highest mountain areas. Broad-leaved and coniferous-deciduous forests, widespread in the Tertiary in Siberia and the Far East, died out over vast areas during the Pleistocene cooling but survived here and in the adjacent territories of China and North Korea. The largest and best-preserved nemoral (*wooded, especially broad-leaved*) forests are in the Ussuri River basin in the Primorsky and Khabarovsk territories. An important feature distinguishing the Ussuri taiga from widespread broad-leaved and mixed Manchurian forests to the South is the abundance of boreal, primarily Okhotsk and Okhotsk-Kamchatka, species.

Primorye climate is moderately monsoonal. The annual precipitation is high (800-1000 mm), mainly in spring and summer. Average daily January temperatures are -8°C, -15° and -22°C in the southeast, central and northern regions respectively. In the south and east, the Sikhote-Alin mountain range consists of steep mid-mountain ridges, and above 900 m are bare rocks. In general, the range is asymmetric: slopes are flatter in the west than in the east. It is useful for travelers to remember that these mountains are earthquake-prone.

The eastern slopes of Sikhote-Alin are quite soft and snowy, influenced by frequent incursions of cyclones from the Sea of Japan; on the western slopes it is sharper continental with little snow. Snow in the southern parts lasts for about five months from December to April and is deepest in March. During the winter, uneven precipitation, heavy and



Cypripedium macranthos var. *macranthos*. Eastern Sayan Mountains in Buryatia, and two of its Sayan Mountain Eastern Siberian habitats





Cypripedium macranthon var. *atropurpureum* and its the habitats in the tundra and coastal areas of the Kuril Islands

intense snowstorms, and deep thaws characterize eastern coastal slopes. Summers are warm and humid, sometimes foggy. In summer, southerly winds from the Pacific Ocean predominate. Autumn is usually warm, dry, and clear. In winter, northerly winds bring cold but clear weather from continental regions. Summer is also the time for typhoons; these tropical cyclones visit every year, sometimes causing enormous damage to infrastructure and agriculture.



Cypripedium macranthos var. *album* in the south of Primorsky Krai

Cypripedium macranthos

So, it was here in the monsoon region that, with other interesting plants, we finally acquainted ourselves with many *cypripediums*. Our first was *Cypripedium macranthos*, living in light broad-leaved and mixed forb forests and their edges, in bushy thickets, and in forest and mountain meadows. *Cypripedium macranthos* is associated with the closest and most widespread of the related Asian species, *Cypripedium tibeticum*, by a geographically extensive zone of introgressive hybridization that passes through the territory of central China. Here in Primorye its favorite places were lightly forested mountain slopes, usually on lava substrates dominated by oak (*Quercus mongolica*). *C. macranthos* var. *macranthos* is a typical representative of the species, always with a single-flowered inflorescence of lilac-pink or lilac-crimson. The tepals and lip often have darker veins, paler and mottled towards the base. The typical form is the most common, although found a little less often in the Far East than in western and eastern Siberia.

The second variation is *C. macranthos* var. *atropurpureum*. We found several forms matching the description, the most memorable from the Kuril Islands. In coastal tundra and on mixed-grass sea terraces, they shone like bright lanterns, larger and much darker than the standard variation. Their dark lilac-purple or purple-violet inflorescence is always single-flowered, tepals and lips sometimes paler towards the base. The tuberculate border to the opening of the flower lip may be light pink or pure white. Such a light border of the pharynx of the lip is often expressed in the type variety *C. macranthos*, but in var. *atropurpureum* it offers more contrast, giving a special decorative effect. In morphology, flower colour and general habit, this variety is close to dark-flowered forms of *C. tibeticum*, common in the forests of the central and southwestern Chinese highlands. Plants from mountain tundra of Kamchatka and the Kuril Islands have the darkest purple perianth colour, and the greatest similarity with *C. tibeticum*.



We met a third form (*C. macranthum* var. *album*) on entering the first oak forest on a hill slope. The inflorescence has one or two pure white flowers. This rare variety, discovered in Manchuria by V L Komarov (1901), occurs sporadically but in some areas, such as here in the south of Primorye, it is more frequent. Rare and mostly solitary white-flowered forms in Siberia might be explained by albinism; but in the south of the Far East these plants show all signs of an independent taxon.

Some botanists classify *C. macranthum* var. *album* to *C. x ventricosum*, as a variant of the hybridogenic complex *C. calceolus* x *C. macranthum*. However, numerous crossing experiments confirm that pure white in hybrids *C. calceolus* x *C. macranthum* is very unlikely. Additionally, the ovary of *C. macranthum* var. *album* never bears the pronounced dense glandular pubescence that characterizes hybrids of *C. calceolus* and *C. macranthum*. Most often, its ovary is bare or with sparse scattered simple hairs. Superficial similarity to *C. x ventricosum* results from the frequent presence of two flowers on the shoot and, on average, narrower side petals.

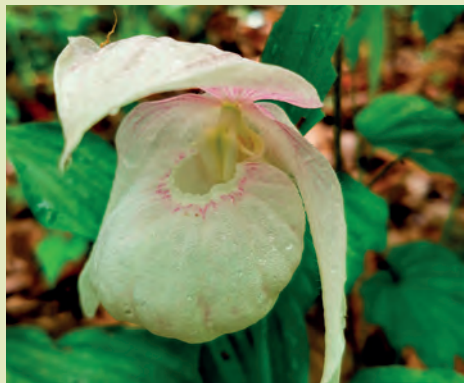
Having encountered an abundance of white-flowered forms, we were fascinated by wide colour variations of *C. x ventricosum* here in southern Primorye. One of the supposed reasons is precisely the predominance here of *C. macranthum* var. *album*. In some locations, the white form almost completely replaces *C. macranthum* var. *macranthum*.

Another pleasant find on our first day was *C. macranthum* var. *flavum*. Its inflorescence has one to two pale yellow or greenish-yellow flowers; often the tepals are brownish or pinkish at the base or at the apex. We knew this as a rare taxon, easily absorbed into the type variety by introgressive hybridization. In its most pronounced form, it is found



Cypripedium macranthon var. *flavum* in the south of Primorsky Krai

Cypripedium macranthon forma *x alboroseum*



only in southern Primorye and Rebun Island in the Sea of Japan northwest of Hokkaido, where its island isolation helps its conservation.

All varieties of *C. macrantho* hybridize freely to more or less fertile hybrids capable of backcrossing. Such hybrids often link parental forms in mixed populations with continuous variability. Some decorative flowers with a characteristic perianth colour stand out: for instance, forms with uniformly coloured pale pink flowers and with pale pink or white perianth whose leaf veins are contrastingly purple. These hybrids are apparently formed by hybridization of *C. macrantho* var. *album* x *C. macrantho* var. *macrantho*, and *C. macrantho* var. *album* x *C. macrantho* var. *atropurpureum*. It is proposed to call them *C. macrantho* forma x *alboroseum* and *C. macrantho* forma x *albostriatum*, respectively.

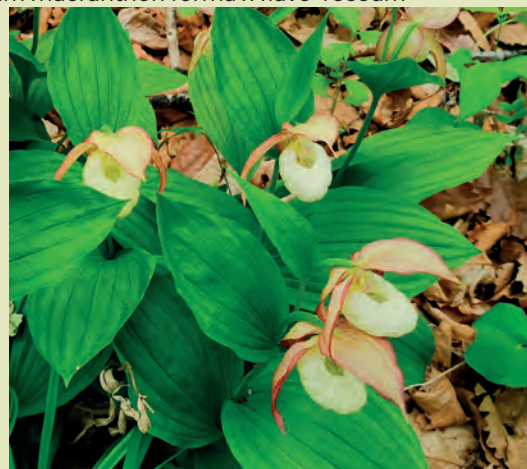
Pale yellow tepals of rare hybrids of *C. macrantho* var. *macrantho* x *C. macrantho* var. *flavum* usually have pinkish-brownish mottling or a pinkish-brown tint, condensing towards the apex. In flower colour, they have some similarity with the evasive light-flowered forms of *C. x ventricosum*. We call these ornamental plants *C. macrantho* forma x *flavo-roseum*.



Cypripedium macrantho f. x *albostriatum*



Cypripedium macrantho forma x *flavo-roseum*





Cypripedium macranthos forma x *flavo-roseum*

Cypripedium calceolus

On the second day we went to forests where *Cypripedium calceolus* predominates. In the north of its range, it occurs almost exclusively in areas of limestone outcrops on Calcium-rich soils. To the south, it often settles on neutral and even slightly acidic – but quite fertile – soils and peat bogs. Almost everywhere it occurs, plants with unusually small flowers are occasionally found. Their flower lips may be only about 14 mm long and 10 mm wide, the remaining tepals not above 20 mm long. Apart from flower size, they do not differ from typical *C. calceolus*, and they result from anomalous plant development rather than taxonomic differentiation. At the same time, the small-flowered nature of *C. calceolus* in the south of Eastern Siberia, and especially in Transbaikalia where small-flowered forms are somewhat more common, may come from insufficiently pronounced influence of introgression on the part of *C. shanxiense*.



Above: *Cypripedium calceolus* found in its habitat of pine forest in the Sayan Mountains ...



... and in Sikhote-Alin oak forest

In the herbarium (especially in the bud stage with insufficient drying), small-flowered *C. calceolus* may be mistaken for invading forms of *C. x microsaccos* and *C. shanxiense*, whose distribution in Russia seems limited almost exclusively to southern regions of the Far East and the extreme southeast of the Chita region. In the south of Primorye it the most common species, ranging over the entire southern part of Sikhote-Alin. On our hike we noted rich diversity and variability of *C. calceolus*. On one slope we even found four clearly different variations. But these humid forest days were the most difficult;



In the forests of the Far East, unusual specimens of *Cypripedium calceolus* are found more often than anywhere else



rain followed us throughout and our shoes practically never dried out; at least it wasn't cold. We, like mountain sheep, climbed one mountain slope after another, then descended interminably. Sometimes the angles of ascent and descent were so steep that we had to hold on to the trees to avoid falling down.

Cypripedium shanxiense

We rarely – very rarely – came across individual *Cypripedium shanxiense*. This always caused great joy, and we rushed to photograph the plants and their niches. The inflorescence is single, double or occasionally triple flowered. The tepals (except for the lip) are greenish-brown, brown, or purple-brown; median sepal directed roughly forward horizontally, broadly lanceolate or narrowly ovate, straight, pointed at the apex; lateral petals directed downwards and to the sides, narrowly lanceolate. The lip is greenish-brown, yellowish-brown or brown, small, obovate or almost spherical.

Unusual specimens of *Cypripedium calceolus* grow more in the shady broad-leaved and mixed forb forests of the Far East and their edges than anywhere else. The range here is not large: southeast of Chita and southwestern parts of the Amur regions, south and east of Khabarovsk Territory, Primorye and southern Sakhalin. Elsewhere, this *cypripedium* is distributed in northeastern and central China, North Korea and Japan (Hokkaido).

Botanists have noted that the small inconspicuous flowers of *C. shanxiense* cannot attract many pollinating insects. However, after the flower opens, the filaments gradually bend, pressing the anthers in the late flowering phase to the sides of the stigma. The viscous amorphous pollen mass then flows onto the receiving surface, making compensatory self-pollination. Fruit set within populations of this species is often higher than others of the genus, which have more attractive flowers, but in which self-pollination is not typical. However, despite producing many seeds, *C. shanxiense* remains rare. It is naturally scarce, easily missed

Wet slopes of mixed forests and forbs and growth sites in Southern Primorye





and almost unrepresented in herbaria. The self-pollination partially prevents complete absorption by the more common *C. calceolus*. Both species easily hybridize to completely fertile hybrids capable of backcrossing. Some with variable *C. calceolus* traits are found, for example, in the Far East even more often than “pure” *C. shanxiense*. We had the opportunity to verify this further south, while still hoping that the weather would improve.

Lake Khanka

Our next destination was around Lake Khanka, about 90 km long on the border of Primorye and Chinese Heilongjiang. We expected to find many hybrid variations here but I also recollect that, so far south, we were constantly haunted by knowing that these very wild and rarely visited places are home to the Amur tiger and the Far Eastern leopard; meeting them was definitely not part of our plans. And if leopard attack seemed unlikely, the opposite is true for Amur tigers. They are most common in the foothills of the Sikhote-Alin in the Lazovsky district, where every sixth wild one lives in a relatively small area. This is one of the few territories where numbers are systematically growing, to a current total more than 750. This is the only subspecies of tiger with five centimetres of belly fat, protecting it from freezing winds and extremely low temperatures in winter. Our fears were confirmed by the tiger rangers we met. Tigers are protected very well here, but nothing protects people from tigers. Therefore, we hiked the mountain ranges at our own peril, having only signalling devices (false flares) at hand.

Cypripedium x ventricosum

Eventually, we reached the village of Monakino, 20 km from the Chinese border. We had to climb the slope and walk another three km to find our first *Cypripedium x ventricosum*. Botanists such Johann Georg Gmelin (1709–1755) had noted numerous characteristic interspecific hybrids in mixed populations of *C. calceolus* and *C. macranthon* in regions of Siberia and the Far East. Later (1800), based on this work, they were ranked as species as *Cypripedium ventricosum*. The inflorescence is single or double flowered. The tepals except for the lip are mostly brownish-burgundy or brownish-pink, often with darker longitudinal veins. The lip is obovate or oblong-elliptical, almost always shorter than the lateral petals, most often brownish-burgundy or brownish-pink with lighter brownish-pink, dirty yellowish or yellow spots merging towards the base, rarely entirely white or yellowish, the opening of the lip along the edge with a tuberculate, lightly coloured (usually yellowish) border.

Artificial crosses are morphologically indistinguishable from natural *C. calceolus* x *C. macranthon* hybrids. These plants are, as a rule, quite fertile, capable of reproduction, and often grow in Nature in large groups.



Variants of *Cypripedium x ventricosum*, Southern Primorye, 2023







Variants of *Cypripedium x ventricosum*, Southern Primorye, 2023

This gave every reason for many botanists to accept them as an independent species. Without any doubt, hybrids of *C. calceolus* and *C. macranthon* tend to separate towards an independent hybridogenic species – *C. x ventricosum*, which in Russia is distributed mainly in the south of Siberia and the Far East. Like *C. macranthon*, the western border of its range runs along the western foothills of the Urals.





Normal specimens of fertile *Cypripedium x ventricosum* are capable of backcrossing and the parents in mixed populations are often connected by a continuous series of transitional forms. This can be seen very clearly in the numerous photographs that we took. The shape and colour of the tepals in many evasive natural hybrids can be very diverse, resulting in unusually coloured and purely decorative forms. This happens especially when the hybridizing of *Cypripedium calceolus* involves the rarer *C. macranthon* var. *album* and *C. macranthon* var. *flavum*. As a result, plants form whose

lightly coloured flower (usually with an almost entirely white or yellowish lip) contrasts with the more or less dark brown-burgundy perianth leaves. We call such clearly expressed evasive hybrids *Cypripedium x ventricosum* forma *bicolor*. These rare forms are not widely distributed in Nature, because of their reduced fertility, and when artificially pollinated many of them do not form seeds.



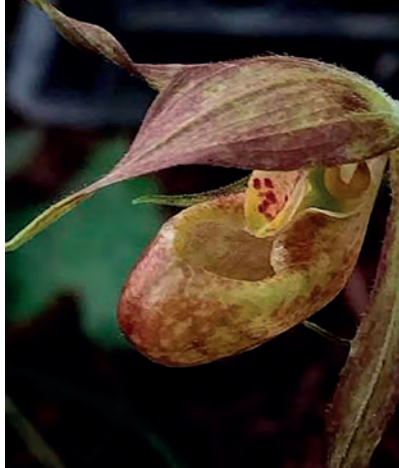
Other Hybrids

Traveling onwards close to the Chinese border, we saw few *Cypripedium shanxiense*. But there were many derived hybrids. Another group is *Cypripedium x microsaccos* (*C. calceolus* x *C. shanxiense*). Morphologically, these are intermediate between the parents. They have small, rather inconspicuous flowers with a yellow, yellowish-brown or brownish lip and greenish-brown or dark brown remaining tepals. The ovary and axis of the inflorescence have dense glandular pubescence. Here and in most of the Far East, this is more common than its



Some of the variants of *Cypripedium x microsaccos* encountered during our travels







Some of the many colour variations of *Cypripedium x catherinae*

parent *C. shanxiense*, representing the first stage of successive absorption of this rare taxon by the more common and active *C. calceolus*. Within Russia, *C. x microsaccos* seems likely on the ecologically and climatically similar territory of Sakhalin, although not yet recorded there.

Another group was *Cypripedium x catherinae* (*C. macranthon* x *C. shanxiense*). We came across about a dozen candidates. They have vegetative characteristics intermediate between the parents and are characterized by pronounced glandular pubescence of the ovary and inflorescence axis. The lip is small and often has shades of the colour of *C. macranthon*. In the south of Russian Primorye, this hybrid is extremely rare, because its parent *C. shanxiense* is rare. Elsewhere, in mixed populations of the parents, these hybrids form with little difficulty and have relatively high fertility. The plants are easily recognized by their flowers, with a discrete but unusually elegant colour. This is of undoubted interest for decorative floriculture.



Otherwise, the rain continued, at least half a day every day. This abundance of summer moisture assures development of thick vegetation and we often had to wade through chest-deep grass. We walked under tall maples and oaks, enveloped by moist air. Drying our shoes remained very difficult. Despite this, the stones underfoot did not seem slippery, as almost all were porous of igneous origin. Here and there we crossed vast burnt areas, reminiscent of the great fires of the past. Unfortunately, the Ussuri taiga has changed greatly over the past century and new fires happen every year. But it was here, often on steep slopes, that cypripediums found their place ... far from civilization and human eyes.

We leave our tale at this point, and will continue our discovery of these beautiful and susceptible species in *The Rock Garden* 154 in January 2025. The journey will leave Primorye and take in the wilderness of Kamchatka, where the landscape and ecology are shaped by volcanism, earthquakes, tsunamis and a harsh climate, but where some of these wonderful species nevertheless persist.

What Makes a Siberian Iris?

Pamela Ferns*

All Siberian iris are beardless iris but not all beardless iris are Siberians. That being the case, what then is a Siberian iris? In simple terms, Siberian iris, which have creeping rhizomes and linear leaves, are distinguished from all other iris species by their hollow flower stems. This means that there are only nine of the three hundred or more known iris species that fall into series *sibiricae*. These nine are *Iris bulleyana*, *I. chrysographes*, *I. clarkei*, *I. delavayi*, *I. forrestii*, *I. sanguinea*, *I. sibirica*, *I. typhifolia*, and *I. wilsonii*. Historically *I. dykesii* has been listed within the group but its existence as a separate species remains speculative.

These nine species are separated into two subseries: those with twenty-eight chromosomes (subseries *sibiricae*) and those with forty (subseries *chrysographes*). The native range of these species covers a large area from Europe to Asia.

Subseries *sibiricae*

This subseries includes three species: *I. sanguinea*, *I. sibirica* (from which the group gets its name) and *I. typhifolia*. The species have fairly large flowers that can sometimes measure up to 15 cm across and the flower stems can range in height from 60 to 120 cm. There are of course exceptions, with some cultivars reaching 150 cm while some only attain a modest 20 cm.

*Holder of two National Collections, of *Iris* series *Sibiricae* and *Iris* (Siberian) with the RHS AGM



Iris sibirica



Iris typhifolia
Iris sanguinea



Iris sibirica is highly variable, with differences in flower colour and signal pattern. This has led to many variations being named as cultivars. However, the majority of registered *Iris sibirica* cultivars are in fact species crosses between *I. sibirica* and *I. sanguinea*.

Previously, the Royal Horticultural Society listed these plant names as, for example, *Iris sibirica* 'Silver Edge'. They are now more accurately written as *Iris* 'Silver Edge' (Sib). At the time of my writing this (2024) there have been over eighteen hundred cultivars registered with the American Iris Society. The RHS lists over two hundred, with twenty-one holding the RHS Award of Garden Merit.

Iris 'Ruffled Velvet'





Iris 'Strawberry Fair'

The third species within the subseries *sibiricae* group, *Iris typhifolia*, was not known in the West until the 1980s so there are fewer cultivars that have this species within their heritage. It does however lend its early flowering tendencies to its offspring, nicely lengthening the Siberian iris flowering period by up to two weeks.

Flower Form

Traditionally, flowers of series *sibiricae* have thin, floaty standards and falls that flutter in the wind. Through hybridisation new forms have appeared, including flowers with thick horizontal falls and some with a velveteen appearance. Hybridiser Ho Shidara developed several new flower forms during the 1980s, including one with six falls and no standards and one with multiple, clustered petals. Waved or crimped fall edges have also become popular over the years.

Iris 'Rikugi Sakura'



Colour

As many people are aware, the genus name *Iris* is believed to have derived from the ancient Greek messenger Iris who delivered messages to earth via a rainbow. It is believed that this refers to the fact that irises are thought to come in every colour of the spectrum. A common misconception is that Siberian iris only come in shades of blue. While it is a common colour within the group, there is however a large range of colours from white to yellow, to lavender, deep purples and even browns! There is one colour that has thus far eluded hybridisers across the whole *Iris* genus, and that is red. Iris flowers have almost no natural red pigment. Although they are getting close with cultivars such as 'Miss Apple'.



Iris 'Banish Misfortune'

Iris 'Lavendelwein'



Iris 'Salamander Crossing'





Iris 'Miss Apple' (Sib)

Subseries *chrysographes*

The remaining six species are often referred to as Sino-Siberians (Sino meaning 'relating to China'). This term covers all species and hybrids in the subseries *chrysographes* and was coined by the hybridisers Lorena Reid and Jean Witt. However, the term 'subseries *chrysographes*' is preferred by Plant Heritage.

They range in height from 45 cm to 150 cm with small flowers reaching up to 6 cm across. With the flowers of these species being small in comparison to those of series *sibiricae* and being less showy, they have not been as popular over the years. They are none the less beautiful and worthwhile garden plants in their own right. *I. chrysographes*, for example, is known as the 'black iris'. The true species and its varying forms and cultivars come in many shades of the deepest violet and darkest purple, to pure black, with petals which look and feel as though made of velvet. The word 'chrysography' means 'writing executed in gold letters'; this refers to the gold markings that appear on the flower falls. *I. delavayi* can reach the dizzying heights of 150 cm, making it a perfect plant for the back of a border.

Two of the species in this group (*I. forrestii* and *I. wilsonii*) are pale yellow with the faintest brown-purple markings on the falls. *I. bulleyana* and *I. clarkei* have the most intricate and pleasing signal patterns.

These species hybridise readily with one another, with some crosses being registered as cultivars (for example *I. 'Ellenbank Damselfly'* which is a cross between *I. forrestii* and *I. delavayi*). This can lead to difficulties in distinguishing between variations of species and crosses. Due to this confusion, the RHS writes (Sino-Sib) after a cultivar's name when the parentage is not clear.

Iris chrysographes





Iris chrysographes 'Rubra'
Iris bulleyana



Iris clarkei

If you do grow more than one of these species and are not intending to create your own crosses it is recommended that you remove the spent seed heads. Naturally occurring crosses can easily out-compete the true species if left to their own devices.



Iris delavayi

Cultivation

The twenty-eight-chromosome iris enjoy half to full sun, can cope with most soil situations and can stand short periods of flooding or drought once established. They are extremely cold hardy. The forty-chromosome iris thrive in half to full sun and can cope with most soil situations (except extremely alkaline sites). However, they dislike extremes in temperatures, high or low.



Iris 'Ellenbank Damselfly'

Propagation

These species come true from seed but, in a mixed planting, bee-crossed hybrids may occur. To ensure you are in fact propagating the parent plant, this must be done through division. Named cultivars can only be propagated through division as they do not come true from seed.

Seed can be harvested when the seed pods turn brown. They can be sown in the autumn to allow cold winter temperatures to inactivate the seeds' natural inhibitor. The seeds should germinate the following spring.

The dense rhizomes of Siberian iris can be divided using either a fork or a spade, after flowering finishes in July and before autumn. This allows the plants to produce new roots before winter. The divisions should contain multiple fans and should not be left to dry out. The leaves should be cut back to avoid loss of moisture and to prevent wind rock. The splits can be either potted up or planted straight out into a prepared bed.



Iris forrestii



Propagation: the division of *Iris clarkei*

Facing: 🍁 *Iris* 'Butter and Sugar' (Sib)



Seed pods of *Iris bulleyana*



Gladiolus for the Rock Garden?

Grahame Ware

In my quest for smaller *Gladiolus* of the *x nanus* persuasion, more closely approximating wild species and smaller in all characters, I have trialled many types. According to the *Gladiolus* taxonomists, Manning and Goldblatt, the dwarf gladioli *nanus* hybrids (*G. x nanus*), are interspecifics derived from *G. tristis*, *G. carneus*, *G. primulinus*, and *G. cardinalis* (1998). I am interested in those that will make the grade and develop a lasting presence in my garden. The “grade”? ... to start with, they have to be more demure than their big brothers and sisters and fit in with my alpine, bulbs, dwarf conifers and dryland perennials. Yes, there is a lot of latitude in my garden but it is not unlimited ...

I've found these smaller gladioli come on at a time in my garden where other bulbs have gone dormant and thus I am able to use that space with containers. In one case, I shoe-horned them in about September for the following season. In my Mediterranean climate on Gabriola island on the west coast of British Columbia, they are thoroughly hardy. Still, it doesn't hurt to plant them at least 10 cm deep just to be sure that they overwinter. We regularly get down to -15°C for brief spells as we did this past January (2023).

One of the cultivars that deserves attention and that is widely available is 'Halley'. It has a lot going for it because it is very slender and feminine, getting to about 70 cm, aided no doubt by etiolation here in my somewhat wooded garden. Its flowers are ethereal. 'Halley' was registered by the Dutch KAVB (Royal General Bulb Growers Association) in 1986 on behalf of the hybridizer, J. van Winsen. I hand-pollinated it this year and many gorgeous seed pods came out that yielded viable seed. I now have a handful of seedlings on the go.

The biggest thrill so far has been 'Atom'. I grew it from seed from the Scottish Rock Garden Club seed exchange from 2021 and managed just one plant. But what a plant! It is a rich vermilion (great colour in diminishing light) with



Gladiolus 'Atom', bright and small flowered, bred about 80 years ago



Gladiolus 'Halley', notable for the sensuous pink bleeds on the outer petals

a light beige to golden edge around each petal. The usual commercial purveyors say that it is scarlet red with a silver edge but this is inaccurate. When the flowers fade in the summer sun the picotee line fades too and looks whitish silver. It is slender like 'Halley', reaching about 60 cm. I was curious about the origins of 'Atom' and dug in to research them. It was introduced and registered in 1946 by Humphrey Hedgecock, a public forester living in the bucolic town of Poughkeepsie, New York. He was an amateur pollen dabber who bred a great one. The original descriptions also indicate a gold edge rather than a silver one. This means that it is coming true from seed, which is a terrific outcome.

Before it was officially named, 'Atom' wowed everyone in some important post-WW2 flower shows in the northeastern United States. Thus, stocks of 'Atom' were built up by several nurseries including Champlain View Gardens. In their 1948 catalogue they say, "A new, very beautiful small flowered scarlet variety with a gold edge around all petals. Not only a big show winner but it received a silver medal

from the New York Florists Club as a commercial gladiolus. The florists in New York have used it in corsages, table decorations and other ways and find it a very useful variety." Another nursery catalogue from James Milo's Birchville Gardens in 1948 states, "An outstanding variety for connoisseurs, breeders, commercial growers and home gardens. A gorgeous variety that unlike most small flowering varieties has a well balanced and 'stretchy' flowerhead. In regards to growing habits, Atom has reached perfection in its class. The most talked of gladiolus of the past 3 years as its record in flower shows prove. It received an Award of Merit at both seedling and annual shows at the New York Horticultural Society in 1945 and '46. It also achieved an Award of Merit at Connecticut in 1945." Another specialist, Mapleton Gardens, says in its 1953 offering, "In our estimation, the daintiest of all the little glads." All catalogues emphasize that it is very early (VE) or early (E).

The North American Gladiolus Council Registry indicates the parents of 'Atom' are cultivars named 'Kewpie' (pod parent) and 'Golden Brown' (pollen parent). Unfortunately, there is no matching record or registration of a 'Kewpie'. However, I found it listed as a new introduction by C W Brown in 1932. He was a gladiolus specialist and nurseryman from Ashland, Massachusetts. Bingo! His catalogue description of 'Kewpie' perfectly matches the parent of 'Atom' and, indeed, when chasing down 'Kewpie' in other catalogues in the online Biodiversity Heritage Library, this proved to be so. 'Kewpie' stamped its offspring; and there is another to keep your heritage glad eye open for – 'Gilt Edge' (1942 by Kuhn, 'Kewpie' (pod) x 'Tid Bit' (pollen). Brown sold seed of 'Kewpie' in his 1937 catalogue and this may have been the source of Hedgecock's great plant. Brown also bred a plant introduced in 1927 as 'Robinette'; it perfectly matches the description of a cultivar now making the rounds in Britain as 'Robinetta'. Today, Hermans is a good source of dwarf or minglads (<https://minigladiolus.com/en/assortiment-knollen/>).

I hand-pollinated 'Halley', selfed it as well as crossing its pollen with 'Atom', and 'Atom' pollen with 'Halley'. I'm happy to report this fall (2023), I was able to send viable seed of 'Halley' to our beloved SRGC Seed Exchange.

In addition, I'm waiting on one I've tagged as 'Pink Elf'. It flowers in late summer and reaches about half the height of 'Atom' and 'Halley'. I lost the identifying tag in a recent move from my previous garden but it came from a wild collection by the late Cameron McMaster (*brevicaulis*? ... identifying *Gladiolus* species is onerous to say the least). It has lasted for a few seasons now in the ground and survived some tough winters. The flowers are about 11 cm and a warm pink. Its stature, beauty and time of arrival will certainly appeal greatly to rock gardeners.

Gladiolus is a great genus with species and hybrids either natural or contrived, that all need more trialling and garden use. With my alpine sensibilities, I am looking for the shorter and hardier types, so species collected at altitude always draw my interest. I'm sure there are many members who have experience of the vast spectrum of species in this distinguished group of the Iridaceae. However, many South-African explorers and seed collectors have hung up their hiking boots



Gladiolus 'Pink Elf' just 40 cm tall, 10 cm flowers in late summer

or been the victims of social unrest, so getting seed of the types that interest me is not as easy as it once was. But, then again, what is easy anymore?

Gladioli are not difficult to raise from seed and I highly recommend that alpine gardeners work them into their designs and plans. And, oh yes, please hand-pollinate them, collect seed and get them into our great Scottish Rock Garden Club exchange.

Flora of Kyrgyzstan*

Connor Smith

(*Photos: Geir Moen & Andrew Holman)



Kyrgyzstan is rich in many ways. The country is home to many mountains, microclimates and species habitats. It has gorgeous views backlit by snow-capped mountains, deep valleys with fast-flowing water, and eagles in the sky. The local people were very welcoming, I had gotten a local hat, a fashionable woollen hand-made (above), which everyone was wearing. Cars began tooting their horn with the universal thumbs up of approval. I sipped vodka with locals along the road and explained I was visiting the country to look at plants – to which they gave the look that non-plant people around the world do of ‘okay...’

Ixiolirion tataricum in habitat



I had purchased the excellent book *The Tian Shan and its Flowers* by the legendary Vojtěch Holubec and the talented David Horák at the International Czech Conference a week before. Speed reading for the names, growing conditions and timing for species is always key. I am indebted to the authors for such a book that allows even poorly prepared individuals such as myself to get closer to the flora, which was otherwise out of reach for non-Russian speakers.

Our group was led by Geir Moen of Norway. He had visited the country several times and had located the iconic plants and prime spots. Ulrika Johanson had told me of the trip, which had caught the attention of the excellent and adorable botanist Marcela Ferreyra and well as nine other nature, plant and bird lovers.



Ixiolirion tataricum (HelenaH - Own work, CC BY-SA 3.0, <https://commons.wikimedia.org/w/index.php?curid=11061369>)



Phlomoides speciosa

To the Plants

Our first visit was to Ala-Archa national park. Just before entering it, we enjoyed a short spot on a grassy hillside with a small valley. Spots of purple flowers among the grass were *Ixiolirion tataricum*, an adaptable species that grows more abundantly in grassland but may be found on dry slopes. *Phlomoides speciosa*, formerly called *Eremostachys*, is a similar story; it forms a large yellow inflorescence that begins to flower while sessile and rises to around fifty cm. It is a species that must be easy to please

Eremurus cristatus

Paeonia intermedia





Scutellaria przewalskii

and you wonder why it is not in more gardens. *Paeonia intermedia* (*Paeonia anomala*) was in flower, as the season was around two weeks later than normal. It was restricted to in-between shrubbery because of the intense grazing throughout the country, and indeed much of the world. *Eremurus cristatus* is a long slender species of this iconic steppe genus; it has chocolate-coloured flowers and deep orange stamens. Here and in most places we have been was *Scutellaria przewalskii*. A fine plant, growing best and most outstandingly on screes in the baking sun. However, its widespread nature will make it amenable to a range of climates and gardens if care is taken with the collecting and provenance of the seeds.

As we reached the national park we were surrounded by *Picea schrenkiana*, a fine conical tree that was often set against mountains and blue sky. In the woodland we found multiple *Primula algida* and *P. kaufmanniana*. White-flowering *Clematis alpina* ssp. *sibirica* scrambled in low hanging braches at eye level and *Gagea popovii* was in flower close by. The higher forbs were *Ligularia heterophylla* and *Trollius altaicus*, both growing in richer spots. *Betula tianschanica* is a fine birch with flaking bark; it is often multi-stemmed. *Codonopsis clematidea* was also present but only as a rosette; however, smelling the leaves is more than enough.

We walked out from the woodland to more of a scree that was home to the gem, *Chorispora bungeana*. We only saw a single flowering



Above: *Primula algida*

Below: *Primula kaufmanniana*





Clematis sibirica ssp. *siberica*

plant between some small, disturbed round rocks. I had grown and flowered this species at Utrecht Botanic Garden but it never made seeds after flowering and was short-lived. Towards the speedily flowing river were newly emerging leaves of *Dracocephalum imberbe*. In the river

Parrya nudicaulis (perhaps)





The market in Karakol

sand I found a single plant of *Waldheimia tridactylites*, a small mat-forming species that has small Asteraceae flowers on fingernail-size rosettes. A short walk reached the meadows, lush and green after heavy rain; it had been a colder and wetter spring than normal. *Pulsatilla campanella*, *Anemonastrum protractum* (*Anemone narcissiflora* var. *protracta*) were found abundant, with *Polemonium caucasicum* in wetter areas. In rocky outcrops *Saxifraga siberica* occurred on the cooler, north-facing sides along with some small *Tulipa australis*.

Waldheimia tridactylites





Moving East

Travelling east towards Karakol we made a few stops for lunch and much-needed loo breaks. Along the road you may see dramatic scenery at every turn, picturesque mountains and valleys. The diversity of species caused by changes in aspect, rainfall and soil was always evident. At one stop we had a dry cliff face on one side with some notable species. *Astragalus sieversianus* is large and upright, covered in yellow pea-shaped flowers and white hairs. A noble specimen of *Crataegus korolkowii* stood on an outcrop: a broad-shaped tree which must surely be a candidate for trees of the future, given its drought resistance. *Atraphaxis pyrifolia* formed small shrubs that clung to the sides of the steep faces; it was covered in pale yellow immature seed pods. On the other side, natural runoff and man-made systems had directed water from the surroundings to a depression in the landscape, creating a marsh. *Dactylorhiza* was abundant – as was the chorus of

Anemonastrum protractum





Caragana jubata

frogs singing. I managed to find a couple of the beautifully named species *Veronica beccabunga*.

We pushed on to a montane woodland specifically to see *Hepatica falconeri*, which has long been sought. It is intriguing, not nearly as attractive as its relatives but with interesting taxonomy as the in-between species linking *Hepatica* and *Anemone*. Depending on your taxonomical preference, you may view *Hepatica* as a distinct genus or merge it into *Anemone*. I would class it as locally abundant as it was covering north-facing slopes in cracks, popping out from rocks, and even wedging in crevices. Plants could also be discovered in more south-facing slopes where they grew shorter and more compact than in the shade. Leaves were variable, some pure green and others showing more variegation of white. Leaf shape varied slightly, some being more dissected.

Thermiopsis alpina





Acantholimon alaticum

A few plants that were going to seed had formed a fishing-rod like flowering stem on which the achenes (seeds) were curved inwards. I believe this is an adaptation used to throw the ripe seeds back into the shade or cracks between the stones; in this way they can stay cool and moist. This is a fairly well known adaptation and an excellent timelapse on *Cymbalaria* can be found in David Attenborough's documentary *The Green Planet*.

In the village of Jeti-Oguz we saw *Caragana jubata*, a shrub with long spines that has tight leaflets with white pea-shaped flowers. A similar spiny plant was the one specimen of *Schmaulhausenia nidulans* that I could find. It forms a remarkable heart, filled with fine grey hairs. More abundantly, *Onosma irritans* was dotted around on the slopes as small yellow spots. Another notable member of the Boraginaceae family is *Rindera oblongifolia*, which has more reddish flowers on a

Onosma irritans







typical scorpioid cyme. As we walked lower it was drier and the plants were more adapted to drought. On red sandy slopes were masses of what I believe to be *Acantholimon alatavicum*, accompanied by *Orostachys spinosa*, while *Artemisa* species spread along the landscape. Another dominant species here was *Peganum harmala*. It belongs to a small family with around twenty species distributed across the warm parts of Northern Africa, Asia, Australia and the Eastern United States. Along the grassy verges by the road were *Thermopsis alpina*, smaller than the other species I know of this leguminous genus. The most intriguing plant of the day was *Iris lactea*. There is an odd dwarf form that may have developed over time on account of grazing and that stays compact to only five or ten cm high.

We had been slowly building onto our elevations and had now reached the first test of the trip: going to 2700 metres. Our drive there started with a small botanising stop mid-way up. *Iris ruthenica* flowered in the grass. There was variation in the flowers as well as two *alba* forms. I have grown this species easily, but it does not flower prolifically. Having now seen it in Nature I feel it needs to be grown in wetter conditions. A nearby *Malus sieversii* is a very important apple, believed to be the parent of many of the apples we eat today. It is a noble tree with large white flowers (larger than other specimens I have seen). On a grassy verge we could see familiar genera of *Anemone*, *Veratrum* and *Prunus*. Among the normal things was *Stelleropsis tianschanica*, a member of the *Daphne* family, a fine plant that I have never seen in cultivation. The



Iris lactea, light form
Facing: *Iris lactea*
Iris lactea, dwarf form





Iris ruthenica



White form

similar *Stellera chamaejasme* is a close relative that is challenging to cultivate; the best I have seen was in the garden of *Saxifraga* guru Karel Lang. A couple of *Dactylorhiza incarnata* grew among the wetter spots by a stream, a purple-leaved form more exciting than the normal.

We continued on a dirt track mining road. At its end we started our walk up the mountain, with fresh air and frequent rain showers. The trees gradually became smaller and more gnarled. *Juniperus* was helpful to cling to at around 2500 m when walking and provided safe haven from grazing for some species such as *Rhodiola kirilowii* (syn. *linearifolia*) and species of *Rheum*. *Tulipa heterophylla*, the smallest tulip, was in flower at merely half a finger long. We found *Viola altaica* in yellow and purple flowering forms among masses of *Primula algida*. *Allium semenovii* was an eye-catching yellow, the plants growing wet and sometimes in sphagnum. By the snow melt was the famous *Crocus alatavicus* with delicately marked black freckles on the outside of the white tepals. Unfortunately, in rainy and snowy weather they were mostly closed and some were damaged by the elements. Such is life in an unforgiving environment.

After our excursion we went directly to a local lady who had *Fritillaria walujewii* on her property. Sadly, the weather had pushed the flower over. It is an elusive uncommon species that grows on the edge of grassy cliffs. While we searched for some other specimens (we found none) I wandered to the other side,



Tulipa heterophylla
◀ Full size, and enlarged ▶





Allium semenowii

Habitat of *Crocus alatavicus*, *Allium semenowii* and *Tulipa heterophylla*

finding *Lagochilus seravschanicus*. This attractive, dry-adapted genus grows predominantly in the 'stans'; I am yet to see any of its species that I dislike. Additionally, there were *Goniolimon speciosum* and some small flowering *Rosularia* species.

Dry and Baking Hot

We arrived in Kaji-Say where we were to stay for two nights before our final day in Kyrgyzstan. We drove along bumpy dirt roads to our accommodation. As with any car journey, I cannot sleep so I spend much of my time looking out of the window. I could see various dry-adapted species growing in a sandy low-nutrient soil with a background of snow-capped mountains. I became particularly animated on spotting a species long on my wish list. Once checked in we walked back towards a sign surrounded by the odd chocolate-coloured pillars of *Cynomorium songaricum*, from a bizarre group of species holoparasitic on members of the



Crocus alatavicus



Convolvulus tragacanthoides

Amaranthaceae, Tamaricaceae and Nitrariaceae. Interestingly it has recently been placed in Saxifragales close to Crassulaceae. We later found a larger population near a man-made water supply. It seemed fairly bad, incidentally attracting flies and other such pollinators to the flowers. These species are sadly under threat because the plants are taken from Nature as an aphrodisiac, widely used in Chinese medicine under the name *Suo Yang*.

Acantholimon, *Ephedra* and *Convolvulus tradacanthoides* were widespread. The soil was eroded in spots, exposing the roots of some species, helping us age them. We found an intriguing genus called *Anabis*, from three to ten cm high; its coral-like shoots emerged from a swollen stem. On flatter ground, members of the Zygophyllaceae were instantly recognisable by growth habit: *Zygophyllum rosowii* was an attractive prostrate species with glaucous leaves; *Astragalus borodini* was low to the ground with a tuft of pinkish flowers among grey leaves.

4000 metres

Today was the day. There was some panic owing to the weather we had recently had. The rain a few days earlier would have been snow in the mountains, damaging any flowers like *Fritillaria*. The local area had become quite profitable with a gold mine, meaning there was a road all the way to the top. On the other hand there would be trucks hurtling down the mountain road every fifteen minutes. We first drove to the top, closing our

Cynomorium songaricum





Astragalus borodini

hearts to the wonderful things we could see during our ascent. Time is of the essence, so it is best to see the highest plants first and then work your way down. This, paradoxically, is most difficult because you constantly dread that you will miss things.

On reaching the upper levels we were relieved to see that the snow was not too bad and had melted over the previous couple of warm days. I had promised myself to take it easy and not run around searching as it was



Callianthemum alataevicum



Oxygraphis glacialis



Habitat of *Trollius*, *Callianthemum* and *Oxygraphis*

my first time being so high. Perhaps I was too focused on this. I forgot to put on my sunscreen – practically a death sentence for a Scotsman. Regardless, close to the snow were various blotches of white among the grass. On getting closer we saw it was a mass flowering of *Callianthemum alatavicum*, an attractive species which I have failed to keep happy in pots but have established in the garden. It seems to be a snow melt plant that doesn't get dry until dormancy, so I am certain it dried out too much in my pots.



Trollius lilacinus

Chrysosplenium nudicaule was slowly emerging from the ground with its simultaneous flowers and leaves. Tightly tucked into rocks were the dense, compact leaves of *Dryadanthe tetrandra*. The unmistakable flowers of *Oxygraphis glacialis* were clear; this sessile buttercup with young bulb-like leaves was quite a sight. The most iconic plant here was



Paraquilegia caespitosa

Trollius lilacinus (*Flora of China: Hegemone lilacina*). It is hard to describe such a beauty, an almost translucent glacier-white flower with light streaks of blue. Sometimes it appears almost purple when the flowers are just opening. For a few minutes I watched a fly pollinating. It danced in a circle, pushing its proboscis into the nectaries to get the nectar. The nectaries look like a flute with a small deposit at the end where the nectar sits. The biggest surprise for me was the smell: like jasmine, few Ranunculaceae have a smell to my knowledge (*Aquilegia fragrans* being a notable example).





A welcoming land

It grew in wet conditions, in depressions near snow melt, and the soil underfoot squelched as you tried to avoid the hundreds of plants. Perhaps this has been the mistake in cultivation, with many collections coming from around 4000 m whereas the species can grow as low as 2000 m in other parts of its distribution.

Ending – literally – on this high point of a wonderful expedition, I can only add my gratitude for the support given to me by the Exploration Fund of the SRGC.



The Mountain Flora of the Karakoram

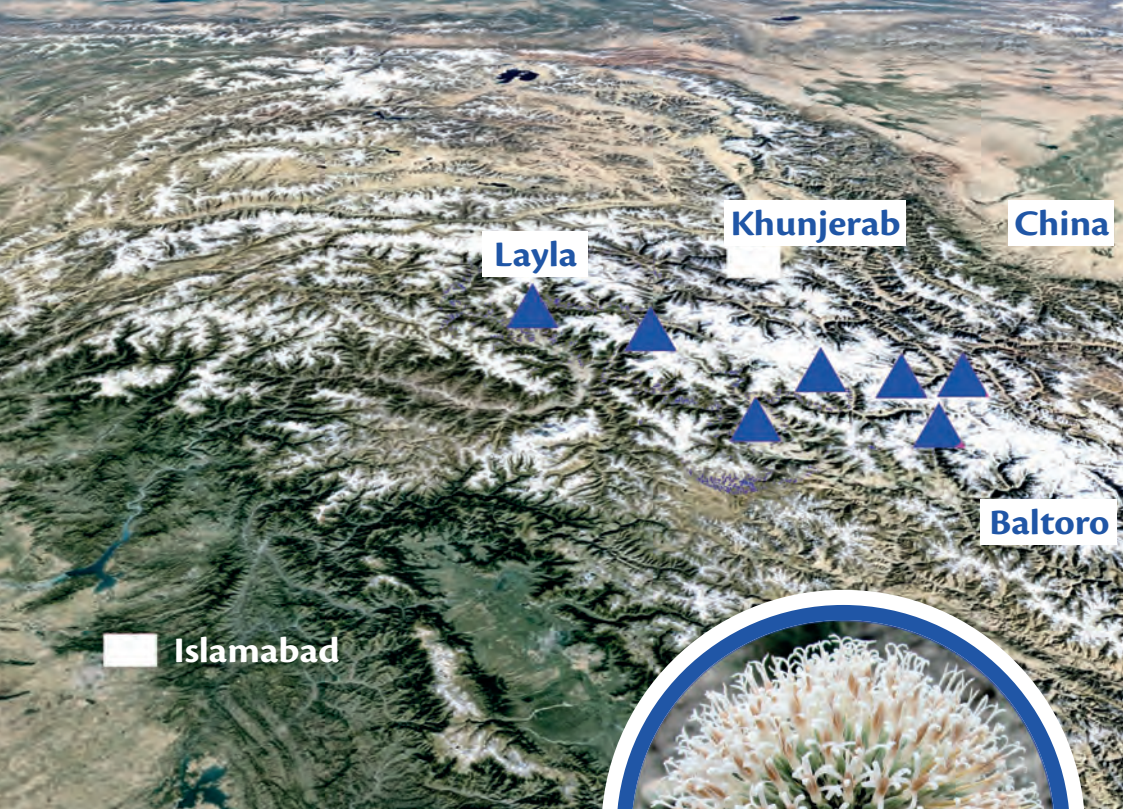
Marijn van den Brink



ne of the roughest mountain areas on Earth is the Karakoram, west of the Himalayas. Seven of eighteen existing eight-thousanders (metres high) sit in this relatively small area that forms a natural border between Pakistan and China. The K2, Broad Peak and the remote Gasherbrums are all within a distance of less than thirty kilometres.

All these mighty mountain giants have glaciers that feed the huge Baltoro glacier, itself no less than 64 km long. However, it is not so easy to reach this area. In the past, the Silk Road used to connect with the valley that led to the glacier. In 1966, construction of a road from Pakistan to China started, partly following the route of the old Silk Road. This new road, the Karakoram Highway KKH, also called the ninth wonder of the world, has been worked on for twenty years and has killed about a thousand people. It now connects the capital, Islamabad, via the Khunjerab Pass (4934 m) with Kashgar in China's Xinjiang province. This engineering feat is the first and only border crossing between the two countries and has greatly improved accessibility of the area.

Above: Layla Peak and the perils of suspension bridges



The road may now be used to get to Gilgit, whence the Baltoro glacier area can be reached via a side valley. The Shigar River flows through the valley, fed from the Baltoro Glacier and flowing into the Indus. From Gilgit, with a jeep – if all goes well, the last village of Askole (3000 m) can be reached in two days. “If all goes well” means: if there are no landslides and all suspension bridges are still hanging. From Askole there are no more passable roads and you must continue on foot. Our target is the base camps of K2 and Broad Peak. This distance takes about fourteen days to walk. In order not to have to walk back the same way, it might be possible – in good conditions – to enter another valley via a 50° steep and 5900 m alpine pass, the Gondogoro La. From here the village of Hushe (3080 m) can be reached in two to three days, whence it is possible to travel back to the KKH by jeep. The isolation of the area probably explains why the Karakoram has hardly been visited by botanists in the past. This makes it possible to find plants that are not described in the *Flora of Pakistan*.

Above: The patterns of Karakoram from space, and of *Echinops cornigerus*



Peganum harmala

Biotopes

The ride over the KKH passes through a rugged mountain area. Seen from a distance, nothing seems to grow. The vast majority of the Karakoram has a desert-like appearance with huge amounts of granite stones of all sizes and only sparsely vegetated green places. If you search harder, you find interesting flora. As you get higher, it becomes even more interesting. The area where plants were found is between three and five thousand metres. Most of the flora described in this article occurs in granitic rock in the vicinity of the Baltoro glacier, over which our path often led. Sometimes the glacier squeezes through steep granite rocks. The large amount of granite stones on the glacier and the huge morainic ridges that lie along it create suitable growing places in the crevices and between the rocks.

Solanum virginianum



Jurinea cf. pilostemonoides



Flora along the KKH

The first plants that stand out are the naturally abundant cannabis bushes (*Cannabis sativa*), just coming into bloom. Ball thistles (*Echinops cornigerus*) grow in the dry rocks, with lilac-white flowers interspersed with pollen from *Jurinea* cf. *pilostemonoides*. When we get near Chilaz, the Nanga Parbat (8126 m) comes into view and we stop to photograph this eight-thousander. However, I am more interested in a roadside plant with foliage like a prickly thistle and flowers like a nightshade: it is *Solanum virginianum*. In this sparse desert-like vegetation is a *Capparis* species, a caper plant with long runners that are currently equipped with burst seed pods displaying bright red seeds. Altitude matters – later on in higher positions we find still-flowering specimens. Another common plant is *Peganum harmala*, also already in seed. This plant is now picked by the local population to burn in their homes with the aim of purifying the houses of insects. The most striking appearance in this desert landscape are the *Calotropis procera* ssp. *hamiltonii* shrubs. This member of the Asclepiadaceae has 12 cm long lanceolate grey-green leaves. The 2 cm large waxy flowers are

Calotropis procera ssp. *hamiltonii*

white with a purple coloured spot at the petal ends. The seeds of this plant are very hairy and are therefore collected by the local population for filling pillows.





Parnassia laxmannii and habitat

Approach to the Baltoro Glacier

On leaving Askole for our trek we are already at 3000 m. As an acclimatization target we choose a high pasture area at 4000 m. On the way up, several streams meet us. This moist habitat contains *Parnassia laxmannii*, which clearly differs from the European parnassia owing to the longer and folded petals. Primroses also grow here, although they have already finished blooming. Along the rocks and in shady and sheltered places stands the light-purple flowering *Geranium himalayense*. In the short grass in sunny places we find *Astragalus zanskarensis* that flowers yellow. Another beautiful plant from this habitat is the stemless *Inula rhizocephala* var. *rhizocephala*, which has hairy rosette leaves. A plant that prefers drier and rocky places is *Anaphalis nepalensis* var. *nepalensis*, with striking light-grey hairy leaves. *Bistorta affinis*

Geranium himalayense and habitat





Astragalus zanskarensis

(syn. *Polygonum affine*) is from a family that has many representatives in the Himalayas and occurs *en masse* in some places here. As we continue through the valley of the Biaho Lungma River towards the glacier, we pass through an arid area with subtropical vegetation. The most striking plants here are two of the many species of *Ephedra*, both of which bear red berries. Up to one metre high, *Ephedra pachyclada* is the larger, whereas *Ephedra regeliana* is lower at around ten cm, with especial tendency to grow here *en masse*, covering the stony ground with a low red carpet. Above this carpet protrude the flower spikes of *Orostachys thrysiflora*, up to 30 cm long. This member of the Crassulaceae has white flowers and white filaments with striking red-brown anthers. The most beautiful specimens may be found in places where the plants lack competition.

Inula rhizocephala var. *rhizocephaloides*



Anaphalis nepalensis var. *intermedia*





Bistorta affinis

Ephedra pachyclada





Ephedra regeliana

Orostachys thyrsoiflora





Acantholimon lycopodioides



Large clumps of *Acantholimon lycopodioides* are scattered over the stony and sandy valley floor. This species has a pale white inflorescence which makes it look as if the plant has already finished flowering. The flower itself has five reddish-brown stripes starting from its base and ending in a point, making it look like a star. The petals are pleated. Another remarkable plant



Bukiniczia cabulica

from this poor and dry habitat is a biennial from the Plumbaginaceae with beautifully drawn leathery leaves, *Bukiniczia cabulica*, the only species in the monotypic genus *Bukiniczia*. This monocarp flowers like a plume, with stems about 15 cm high carrying pinkish white flowers. Scattered in the terrain are low shrubs very similar to our own (*Hippophae rhamnoides*) sea buckthorn. It is *H. rhamnoides* ssp. *turkestanica*, whose shrubs bear berries that turn from yellow-green to orange. Along the river bank are shrubs of *Myricaria elegans* from the Tamaricaceae. The branches and flower stems are red but the flowers are white and, for this reason, when viewed from a distance the shrubs appear pink-flowered. A shrub bearing its red berries is *Ribes orientale* It is noteworthy that all shrubs occurring at these altitudes are relatively low and have enormous gnarled stumps, prompting passing locals to use these woody plants as fuel for cooking.



Hippophae rhamnoides ssp. *turkestanica*
Ribes orientale





Myricaria elegans

Along and on the Baltoro glacier up to 4200 metres

We have been walking for four days and reach the tongue of the Baltoro glacier at 3450 m. We continue on the slopes where the glacier lay long ago. Most of the mountain slopes are bare. However, here are *Rosa webbiana*. I had seen them before during the migration, but here their 3 metre bushes are in full bloom, bearing many dark pink roses – a beautiful picture with the snowy mountain peaks in the background. The rose develops red pear-shaped hips, as I had seen lower down. The bladder bush (*Colutea nepalensis*) grows on the dry sandy slopes. It has slightly hairy leaves and bright yellow flowers, and still bears the previous season's bladders. The only tree species here and there are some old specimens of *Juniperus indica* var. *rushforthiana* (former *J. wallichiana*) that have formed as bonsai. Of the lower species, creamy white *Comarum salesovianum*, formerly *Potentilla salesovii*, stands out the most with white-veined potentilla leaves. It seems to me a wonderful plant for the garden, which, it seems, does not settle for much. Under the same conditions, the rough-leaved *Arnebia euchroma* grows here, with



Rosa webbiana
Colutea nepalensis





Juniperus indica
var. *rushforthiana*

small and almost black flowers. Turning to edelweiss, only one species occurs in Europe whereas various species occur in the Karakorum, of which *Leontopodium himalayana* is the most common. A plant that often occurs together with it, as it



Comarum salesovianum

Arnebia euchroma





Leontopodium cf. himalayanum
Allium przewalskianum





Perovskia abrotanoides

does here, is *Myosotis alpestris*. This “forget me not” is also found in the Alps. On these dry sandy slopes we again encounter bolsters of *Acantholimon lycopodioides*, along with *Allium przewalskianum*, a 15 cm onion variety with dark pink flowers. However, it has no bulb, but fleshy roots resembling leeks. Another onion with round one cm bulbs is the 40 cm *Allium oreoprasum* with white tepals and dark purple midveins. We are now in the vicinity of the Paiju camp at 3450 m. Around us are many shrubby *Clematis ladakhiana*. This richly flowering clematis has hairy yellow flowers with red-brown spots. There are wild-looking plants with the beautiful blue flowers of *Perovskia abrotanoides*, belonging to the Lamiaceae. The route changes and we

Clematis ladakhiana





Oxynia digyna
Epilobium latifolium



Dasiphora dryadanthoides (former *Potentilla fruticosa* var. *pumila*)

now mostly walk on the sand- and rubble-covered glacier. In some places we see the pioneer plants *Oxyria digyna*, a sorrel with seed coats that change from white to red, and *Chamerion latifolia*, (formerly *Epilobium latifolium*) a low variety of the familiar fireweed. In more relaxing places we see *Astragalus zanskarensis* and yellow-flowering *Dasiphora dryadanthoides* (former *Potentilla fruticosa* var. *pumila*). This latter forms compact mats of red stems on which hairy folded small leaves grow. The flower buds of this mini-potentilla also have a red colour. Higher up the glacier are beautiful light grey mats of *Waldheimia nivea* (syn. *Allardia nivea*). This species from the Asteraceae flowers very richly with lilac almost stemless flowers. The plant mats follow the stone contours, making the stones seem to lie loose on the mats. In the rocks above camp Khoburtse at 3930 metres I find an unknown

Waldheimia nivea





Under the Trango Towers: *Rheum soiceforme*



The Baltoro Glacier

Kabschia saxifrage in seed. It turns out to be *Saxifraga baltistanica*, described by Adrian Young in 2022 and wonderfully grown by Ger van den Beuken (*The Rock Garden* 152, p22).

On leaving the camp again we enter the glacier moraines. Another interesting plant grows in these earth walls with their granite chunks, pushed up by the glacier. It is the rhubarb *Rheum spiciforme*. Numerous sprouts up to 60 cm come from the large leaf rosette in high red-coloured seed columns, giving a striking photogenic appearance. *Waldheimia tridactylites* grows much closer to the ground, with dark green rosette-forming leaves in which the flower bud develops. The flower colour is slightly darker than *W. nivea* and the flower dimensions are a little larger. We are now in the vicinity of the Urdokas camp at an altitude of 4050 m.

Waldheimia tridactylites

Chrysanthemum pyrethroides





Rhodiola tibetica

Its skyline is dominated by the Trango Towers and the Kathedrale, notorious mountain sports mountains. We pitch the tent on a broad rock ledge looking over the glacier below. Here grows *Rhodiola tibetica*, a predominantly red-flowering species, but I also find yellow-flowering specimens. Further up the mountain wall, meadow-like pieces can be observed: a reason to investigate. The vegetation here is clearly richer than previously and thus you may find other species such as the blue flowering larkspur *Delphinium cashmerianum* and the daisy *Chrysanthemum pyrethroides*, (syn. *Richteria pyrethroides*). *Rhodiola tibetica* is also found here in large numbers and in shady places under the rocks is *Geranium himalayense*. Between the rocks are pads of a recently bloomed *Androsace* with hairy rosettes. I continue to look for a flowering specimen in higher or darker positions and after some

Pleurospermum brunonis

Androsace baltistanica





Saxifraga stenophylla growing below Layla Peak



research I find a plant with some flowers in it. It turns out to be *Androsace baltistanica*, a geographically logical name, because we are here in Baltistan, the northeasternmost part of Pakistan. Another beautiful rock plant that grows here in the crevices of white granite rocks is *Saxifraga stenophylla*. This yellow flowering saxifrage has hairy light green rosettes that show red spots on the outside. From the rosettes, the plant also develops many bright red stolons that beautify it. Back at the tent I find a strongly aromatic *Thymus linearis* enjoying a sunny position as it hangs over a rock ledge.



Thymus linearis

No Flora for a Week

In the following days we are back on the glacier and we go to Concordia (4650 m). No plants grow in this unique place where in good weather you have a view of the highest mountains of the Karakorum. It must be the most beautiful mountain viewpoint in the world. We visit the base camps of Broad Peak (5000 m) and K2 (5135 m). In the good weather, several expeditions are now active on the mountain. We return to Concordia and go over the Vigne glacier towards Gondogoro La. After seven days we successfully climb the Gondogoro La (5900 m) and descend over the Gondogoro glacier in a north-south oriented valley up to 4680 m to Camp Huespan. The slopes near the camp turn green.

Plantless Concordia (4650 metres)





The Vigne glacier table

Flora in sight? In the Valley of Huespan (4680 m – Hushue 3050 m)

Close to Huespan we find the first vegetation. Among the restless stones we find *Cremanthodium ellisii*. This composite has broad green leaves and up to 30 cm long flower stems from which the vertically placed 7 cm yellow flowers hang; a most striking appearance. A yellow-flowering *Rhodiola heterodonta* also grows here, with exterior petals turning red on the outside. The bright green succulent-like leaves are finely sawn and the plants form clumps up to 20 cm high. The further we descend, the greener it gets. Near the camp you can find grasslands with interesting plants such as the Gentianaceae *Lomatogonium carinthiacum*, an annual strongly resembling *Swertia* with light-blue flowers. The plant flowers profusely and grows to a height of 10 cm. *Delphinium cashmerianum* can also be found here, but in much larger numbers. Between the grass there are also Alpine asters, which I dare not name, hence “*Aster spec.*” The semi-parasite *Pedicularis cheilanthisfolia* has beautiful light pink flowers springing from strongly white hairs, and reddish brown rimmed light green bracts. In some places it forms the main vegetation and it is difficult to determine on which plant it parasitizes. In addition to the common edelweiss, *Leontopodium himalayanum*, another *Leontopodium* species grows here, whose outer petals are white-haired and



Cremanthodium ellisii

Lamatagonium carithiacum
Rhodiola cf. *heterodonta*





Delphinium cashmerianum



very broad. I have not come across it in the literature available to me. In places with less competition from grasses, *Saxifraga stenophylla* grows, a plant we previously only encountered in rock crevices. It is striking that it does not develop clones under these conditions. A new species is *Saxifraga jacquemontiana*; however, I only find two plants. This saxifrage has fine hairy rosettes from which the stemless bright yellow flowers appear. After pollination, the fruiting body swells and turns orange-red; at this stage, the flower appears bicoloured. As we ascend, the vegetation decreases and we encounter *Waldheimia nivea* and *Waldheimia tridactylites* between the stones. A plant that occurs in the scree here is *Thylacospermum caespitosum*, a member of a genus related to *Arenaria*. This species finds its distribution between 4800 and

Pedicularis cheilanthis



Thylacospermum caespitosum and Layla Peak (6200 metres)

5700 metres as a real high mountain dweller, forming hard cushions that can grow very large. Depending on the height, the leaves are 2 to 5 mm long and pointed. The bloom of solitary white flowers 2.5 mm in diameter is not very spectacular; but what is spectacular – are the forms in which the plant can develop. On descending, I notice many butterflies foraging on the lower slopes. The most common is the high mountain apollo, *Parnassius hunza*, which has a predilection for the waldheimias. Moving on, we have a view of a fantastically beautiful mountain, the Layla Peak. This impressive snow-capped rocky pinnacle of 6200 m is the ideal backdrop for mountain flora. Growing conditions are again different, with even more stones, between which grows the high mountain scree flower *Pleurospermum brunonis*. It has sturdy 20 cm high stems with about 14 branches that lead onto the white flowering screens. The umbels do not touch and after flowering they turn brownish grey. Another frequent plant here is the yellow-flowering *Ajania tibetica* (former *Tanacetum tibeticum*), which often surrounds



Parnassius hunza at the waldheimias



Ajania tibetica below Layla Peak



Saussurea bracteata



the stones. Between sedges and rhodiolas, *Saussurea bracteata* grows up to 40 cm high. The boat-shaped papery pale pink outer leaves that wrap around the purple flower heads are a striking adaptation to the harsh conditions between 3600 and 5600 m. When we have descended to about 3500 m we reach a rocky outcrop. At its foot is the shrubby *Aconogonon tortuosum* in full bloom; this plant, belonging to the Polygonaceae, blooms at the end of the twigs with groups of cream-coloured flowers. Nearby, bunches of pink flowers hang down from the rocks; these are the flowers of *Hylotelephium ewersii* (syn. *Sedum ewersii*). The species has a clear preference for rock crevices and flowers particularly profusely. Its stems have grey-blue thick leaves and are edged in red. In vertical rock crevices we find *Pseudomertensia moltkioides*;

Aconogonon tortuosum



Hylotelephium ewersii



this small-leaved plant belongs to the Boraginaceae and has oval-shaped leaves. The bright blue tubular flowers have a white or yellow eye and spring in groups from an 8 cm long leafless stem. The plant seems to grow on the dead remains of previous seasons. We also find here the green-pink rosettes of *Rosularia alpestris* (former *Sempervivella acuminata*) that bear white-pink star-shaped flowers with pink stems. High in the rocks are still bushes of *Rosa webbiana*. On the shaded side of the rocks we find a faded *Corydalis* species with red-edged green-blue leaves. As we descend the valley of the Shyok River downstream, vegetation increases. Plants of *Juniperus indica*, *Myricaria elegans*, *Rosa webbiana* and *Ephedra pachyclada* dominate

Pseudomertensia moltkioides



Codonopsis clematidea

beautiful drawing on the inside. Around the style is a pentagonal purple spot, fringed by a yellow border from which the five stamens spring. Concentric with this are the five connected light blue petals. The leaves show three more circles that differ in size and colour. A gem, *Gentiana kurroo*, occurs here as a field weed. This lovely gentian has a basal narrow-leaved rosette throwing branched stems up to 30 cm long, on which the inner blue-purple calyces grow. The sepals on the outside are white and blue-purple rimmed. But at last we now reach the medieval-looking village of Hushue at an altitude of 3050 metres.



Gondorogo La

here. As we approach our final destination of Hushue and our return to civilization, we walk through fields that are irrigated by water ingeniously transported to the fields. Here we find the small-flowered chicory *Lactuca tatarica* flowering beautifully light blue on its richly branched stems. A slender and support-seeking *Codonopsis clematidea* grows along a wall. This bell has light-blue flowers with a



From Hushue we leave the valley with a 4x4 on a jeep path through a rugged landscape. We change cars again because of a landslide. After a long day trip we reach the larger town of Skardu at an altitude of 2268 metres. Here the Shigar River enters the Indus. The next day we exchange the 4x4 for a passenger van and drive to the Alam bridge where we can cross the Indus river. And so we reach the Karakoram Highway that takes us back to Islamabad.

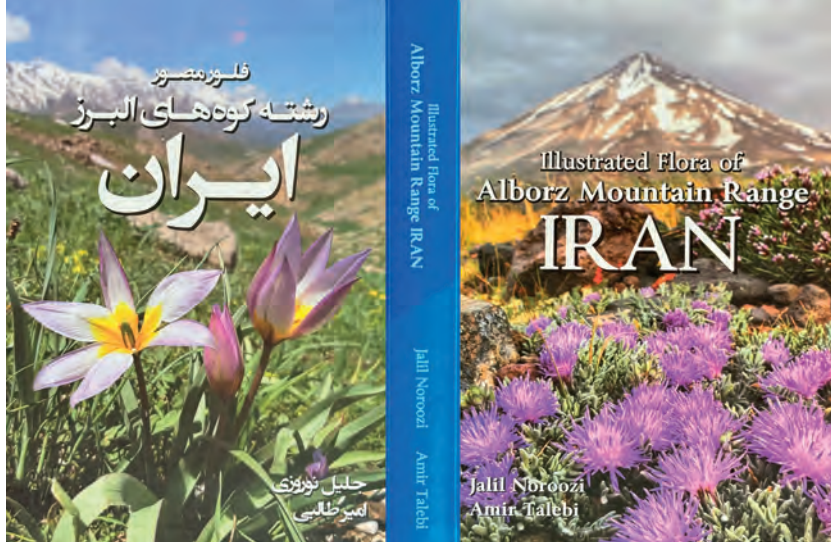
I thank Chris Chadwell for help with plant identification and naming.

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Gentiana kuroo



Illustrated Flora of Alborz Mountain Range Iran

Jalil Noroozi and Amir Talebi

ISBN 978-622-93670-0-1 (October 2023)

576 pages, 1584 Species, 2093 Photos, 1584 Distribution maps.

The Irano-Anatolian region includes highlands of the central and eastern Anatolian Plateau in Turkey as well as the Zagros, Alborz, and Kopet Dag mountain ranges in Iran. It is a biodiversity hotspot, harbouring an enormous number of plant species with a high proportion of endemics. Alborz (also known as Alburz, Elburz, and Elborz), one of the richest mountain ranges of this region with over 3600 vascular plant species, is 970 km long in northern Iran spanning along the southern coast of the Caspian Sea. There are 7073 named peaks; the highest being Damavand (5609 m), Asia's second most prominent peak after Mount Everest. *Asteraceae* is the most common plant family (over 500 species) and *Astragalus* (*Fabaceae* family) is by far the most common plant genus (170 species) of Alborz.

This book presents a total of 1584 vascular plant species of the Alborz mountain range in 647 genera and 117 families. Of those, 22 species are pteridophytes (ferns and their allies - horsetails, club mosses), 8 are gymnosperms (plant with seeds unprotected by an ovary or fruit, such as conifers, cycads and ginkgo), 242 are monocotyledons (embryo with single leaf), and 1312 are dicotyledons (embryo with two seed leaves). The order of the families is based on the latest APG classification (Angiosperm Phylogeny Group IV, 2016), but the genera and species are alphabetically arranged.

Flora Iranica (Rechinger 1963-2015) and *Flora of Iran* (Assadi et al. 1989-2018) are the main botanical and nomenclatural sources. The *Catalogue of Life* (<https://www.catalogueoflife.org/>), the most complete authoritative list of the world's species, was used for recent taxonomical changes in families, genera and species. The book runs to 576 pages and is fairly hefty. In the fifteen page introduction that includes photographs and diagrams, there is information on geography, flora, biogeography,

Description of species

Structure of descriptions, photos and maps of three species in each page



A

26.1.2

Fritillaria crassifolia Boiss. & A. Huet

Des.: Bulbous; 3-10 cm; leaves 2-10 × 0.6-2 cm; tepals yellow to greenish, marked and tessellated with brown, 13-28 mm Dist.: Turkey, Iraq, Iran Hab.: Montane to alpine grasslands and snowbeds (1800-3100 m) Fl.: April-May

Liliaceae
لاله وارگون قلازلی



A

26.1.3

Fritillaria gibbosa Boiss.

Des.: Bulbous; up to 30 cm; leaves 30-70 × 13-18 mm; tepals purple-pink, 19 mm Dist.: Transcaucasus, Iran to Pakistan Hab.: Montane grasslands (500-2500 m) Fl.: March-April

Liliaceae
لاله وارگون گوردر



B

26.1.4

Fritillaria kotschyana Herb.

Des.: Bulbous; 6-30 cm; leaves 7-10 cm; flowers 1-2; tepals brownish-green, 28-48 mm Dist.: Talish, Iran Hab.: Forests, shrublands, subalpine meadows (1000-3000 m) Fl.: March-April

Liliaceae
لاله وارگون منبیک



C



B



C

I,II,III (I: Family nr.; II: Genus nr. in family; III: Species nr. in genus)

Species name

Syn. (Synonym)

Des. (Description of Morphology)

Dist. (General Distribution)

Hab. (Habitat)

Fl. (Flowering Time)

Family name

Persian name



vegetation types, and a list of references covering nearly five pages. An index at the end, listing all the species included in the book, is very useful for quick reference. There is also a Persian index.

The bulk of the book is the wide array of plant species found in the Alborz mountain range, which the authors, renowned experts in their field with nearly twenty years of experience, have meticulously documented and illustrated. From the towering peaks to the lush valleys, each page of this book unveils the beauty and complexity of the plant life thriving in this unique ecosystem. For each plant, the family, genus and species name are given and the Persian name is also cited. Each species is classified as bulbous, tuberous, rhizomatous, perennial, biennial, annual, root parasite, shrub or tree, and the morphology is briefly described. There is also information on the distribution range in Iran, habitat (including altitudes) and flowering time. All this is presented in a standard format to include three species per page (as in my example shown here). The space devoted to the photograph is sometimes divided into two or three smaller photographs to show close-up details of flower or fruit. All photos have been taken in the wild at natural habitats, almost all by the authors.

Among the monocotyledons (80 pages), the families *Colchicaceae*, *Liliaceae*, *Orchidaceae*, *Iridaceae* and *Amaryllidaceae* will attract interest from alpine and rock garden enthusiasts, while *Poaceae* (grasses) are well represented (87 species). The vast majority of the book – 438 pages – focuses on the dicotyledons with *Asteraceae* being the main family (222 species) among many other well-known families. An exciting recent discovery included is *Paeonia wendelboi* (*Paeoniaceae*), a dwarf alpine paeony of great beauty. This is closely related to *P. daurica* ssp. *mlokosewitchii* but is much smaller with leathery bluish leaves and brighter yellow flowers. There are well-known plants but also many more unfamiliar or little-known species that will be a revelation to many readers.

Illustrated Flora of Alborz Mountain Range, Iran is very well laid out with excellent photographs and five or six lines of text for each species, making it an easy and enjoyable read. It is a remarkable achievement that will undoubtedly appeal to anyone with a love of plants, an interest in botany and ecology, or simply in the wonders of the natural world; it offers a captivating glimpse and invaluable insights into the rich biodiversity and remarkable flora of one of Iran's most iconic mountain ranges. It is a book to savour for anyone curious to know about the flora of one of Nature's treasure troves where beauty abounds.

As well as its visual appeal, the book also serves as a valuable scientific resource and is a useful addition to the botanical literature. Noroozi and Talebi have succeeded in creating a work that is informative, educational and inspiring, and it is sure to become a valued addition to the library of any individual passionate about the flora of Iran and beyond.

Cyril Lafong

*Editor's Note: Members interested in the purchase or loan of this substantial book, please contact the editor (editor@srgc.net) for details.

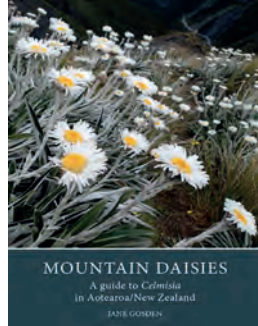
Mountain Daisies A guide to *Celmisia* in Aotearoa/ New Zealand

Jane Gosden

Manuka Press, Cromwell, New Zealand

ISBN 9 780958 329996 185 pp

NZ\$40, or pdf NZ\$15



The mountains of New Zealand fascinate alpine plant lovers. Natives are predominantly endemics, so to a first-time visitor everything seems new. But there are few genera, so after while it seems *nothing* is new! *Celmisia*s are beautiful and often striking, and you may expect them wherever you go in the mountains; a few more are found in woodland and coastal locations. But with about 60 species, plus nearly 20 subspecies and varieties, it has been very difficult for all but dedicated botanists to identify what they see. Until now.

Jane Gosden has provided a superb guide, the major part of which allows identification of plants in the way that most of us work – by looking at them. First there are brief but fascinating accounts including ecology, human use, threats, and aspects of flowering and fruiting. These are followed by a guide to features of habitats and plant structures, all important for identification. Cultivation is not included; that is not the purpose of this book.

Then we get to the core of the book: identification and description. Jane starts by breaking the 78 species, subspecies and varieties into more manageable groups. For each group there are from three to five descriptive terms that apply to it, and one photograph of each member. Most of the 17 groups have three or four members; three have five or six, and three have just one or two. So, looking at just six pages of the book, you can usually reduce the options for an unknown plant from nearly 80 to half a dozen or fewer. In many cases you will have a good idea of the individual taxon.

In the next 23 pages your ideas will be confirmed or challenged. For each member of each group there is a photograph, a bullet-point list of key characteristics, the page number of the full description, and a distribution map. You do need to know where you are on a New Zealand map, but here in one place is almost everything required to identify your plant. Then come the accounts of each species. There is a brief description, highlighting the main characteristics; then details of plant parts, written in normal English, not in technical botanicalesque; then a really useful “Looks like” paragraph, so that you can check other species with which it might be confused; and – perhaps most valuable of all – lots of excellent and relevant pictures. Finally, the difficult remaining issues are tackled: hybrids, unnamed species, and a few tricky cases where the botany is confusing. Fortunately, these are not normally major issues. I have seen fifteen different *Celmisia*s on a single mountain in one day, and only two hybrids amongst them. Hybrid swarms are rare.

This is authoritative, comprehensive, up to date, attractive, and informative. Any plant-lover who visits the mountains of New Zealand should have it.

David Rankin

Hexham 7 October 2023

A joint AGS/SRGC
show at Hexham
Auction Mart



The Patricia Furness Vase:
Crocus speciosus ssp. *xantholaimos*

Peter Maguire's photos show
some of the notable plants
that were on display



Saxifraga fortunei 'Eiga'



Crocus goulimyi 'Mani White'
 Facing: The Forrest Medal, *Pterostylis coccinea* 🍁
Saxifraga fortunei 'Rubrifolia'







Perth 20 April 2024

Perth Group has been holding its regular meetings at the North Inch Community Campus, North Muirton in Perth for many years and this year, for the first time, the campus became the venue for our show. A sudden change in the facilities offered at the original venue necessitated the second change of venue in three years, which in itself brings added challenges to staging the show. Credit goes to all our group members for rising to the challenge and pulling it off at short notice. Holding the show on a school campus where lots of other activities are happening was a new experience for us and we wondered how it would turn out. As it happens – it went wonderfully well, and with lots of families and children visiting we hope to introduce rock gardening to a whole new generation. The layout of the new venue meant that the show hall was separate from the plant sales and catering areas. This worked well, allowing us plenty of space to serve the expected and wonderful *Rock Garden Teas* with a delicious selection of home baking.

In place of an entry charge this year we trialled a raffle to raise funds. Thanks to many generous donations we were able to offer some really excellent prizes. Plant sales were brisk and the members' plant stall as well as the nurseries enjoyed a steady flow of customers throughout the day. Branklyn Garden staged a wonderful display of woodland plants and alpine, featuring their famous *Tea & Scones*. This was a first-time exhibit for the Branklyn team and they were rewarded with a well-deserved gold medal.

A strong scent of *Narcissus* coming from the show hall – much enjoyed by those who do not suffer from hay fever – drew visitors to the show hall, where was displayed a record number of exhibits.

Four rows of show benches were accommodated in the hall, with added benches around the sides. It was wonderful to see so many of our own Perth group members exhibiting for the first time. All their exhibits add real value to the show and hopefully give them a real taste for showing. It was especially satisfying to see so many of our own group members winning prizes — more on this later.

In Section I two spectacular plants jumped out and grabbed the attention of show visitors and judges alike. The first was, unsurprisingly, Cyril Lafong's Forrest medal-winning plant, *Cypripedium* 'Ursel', a cross between *C. fasciculatum* and *C. henryi*. This plant had at least forty flowers - more than last year when it also won the Forrest at Perth. Unbelievably perhaps, this is Cyril's 65th Forrest medal – a record achievement from this master plantsman. You could argue that every such win for Cyril is now a record-breaker and unlikely to be surpassed.

The second notable plant was the beautiful white *Rhododendron* 'Dora Amateis' from David Millward which, like last year, was the unsurpassed winner of the E H M Cox trophy. This plant was more than

Facing: *Cypripedium* 'Ursel'



Rhododendron 'Dora Amateis'

sixty cm in diameter and was covered with white blooms in perfect condition. It is difficult to understand how it could have made the journey and arrived in such a fantastically faultless state.

Trillium decumbens





Primula bracteata var. *bracteata*

Primula 'Spring Cheer'





Narcissus triandrus



Primula auricula 'Rumbling Bridge'



Sempervivum atlanticum

Cyril was also the winner of the Joyce Halley award with his *Primula* 'Spring Cheer' — his own hybrid, the Henry & Margaret Taylor award with *Trillium decumbens* and the R S Masterton award with *Primula bracteata* var. *bracteata*. He also picked up a certificate of merit for his *Pleione* x *Shantung* 'Ducat' and a certificate of botanical interest for his *Eritrichium nanum*. This latter award was introduced at SRGC shows in 2023 and this was the first time that it has been given at Perth. It is awarded for an exceptional plant displayed at a high standard of condition and cultivation. In the words of one of the judges, Cyril's exhibit consisted of a pan "with two fine plants of *Eritrichium nanum* - one of the plants daring to flower – perhaps the first time this has ever been achieved on a Scottish show bench."

What will we do without Stan da Prato's bringing his pantechnicon of plants to shows? Sadly, Stan has indicated he is cutting back on competitive showing but we were delighted to welcome him to the Perth benches. So this is a 'shout out' to all members – please get growing and ready to make plenty of entries for next year's show! Stan won the L C Middleton Challenge trophy for most first prize points in the show and was also the winner of the Alexander Caird trophy for the *Big Six Pan*.





Fritillaria crassifolia

The bulb trophy went to Richard Green for his sizeable pan of *Fritillaria pallidiflora*. It was also good to see a pan of *Narcissus triandrus* from Richard. This can be quite a tricky species to keep going for long.

Local prize-winners included, in Section I, Ian Christie and Richard Salvin. Ian was the winner of the Perth trophy, with 210 points. Richard's *Cyclamen persicum* from seed was the winner of that object of desire, the Major General Murray-Lyon trophy for the best plant from a member in the former Tayside Region.

Certificates of merit were awarded to Graham Catlow of Bo'ness for *Sempervivum atlanticum*, to Cyril as mentioned previously and to Alex Samokhin (see below).

In Section II, Trevor & Kathleen Wenham jointly won the Perth salver, having both gained the same number of points. Our convener, Nicola Macnee, won the John Duff memorial prize for the best plant in the section – *Primula auricula* 'Rumbling Bridge'. Alex Samokhin from Perth was awarded a certificate of merit for his *Pleione* 'Shantung' growing on a piece of *Paulownia tomentosa* bark; this was exhibited in Section IV - Not for Competition. The Special Prize, awarded to first time exhibitors, went to Jim Low for his wonderful pan of *Primula scotica*. The beautiful and delicate flower arrangements by Eilidh Fletcher and Lynda Crouch added some wonderful colour and interest - and both were first time exhibitors. No excuses for next year - you do not have to grow the flowers yourself to enter a flower arrangement!



Fosteriana Group: *Tulipa* 'Flames Mystery'

Primula laurentiana



Primula x *pubescens*





Phacelia sericea

Our thanks go to all who helped with the show in any way and who contributed to making it such a great success. We are already planning for next year, which marks the 75th anniversary of our Perth show. If anyone has any interesting photographs or information from the show over any previous years, please contact the show secretary, Alison Hogg, at alisonhogg257@gmail.com

Cathy Caudwell
Alison Hogg
Photos: Liz Cole

Edinburgh 6 April 2024



After what feels like a lifetime of endless rain recently, the sun decided to make an appearance at the SRGC show in Edinburgh. Nevertheless, we did get tremendous high winds in the afternoon, and they blew my cap across the car park! It was great to see a huge range of fabulously grown plants quickly filling up the show benches. As soon as all exhibits were in place, the doors closed for judging. Meanwhile, visitors took the opportunity to buy plants from the nurseries while waiting patiently for the judging to be completed and for the doors to open for the show. Entries of some genera were down this year, with an absence of rhododendrons, and only a small proportion of saxifrages and ericaceous plants. But there were many compensations.

In class 2 was a wonderful three pan collection of rock plants, different genera, which won the Henry Archibald bowl award. It was exhibited by David Millward and consisted of *Lewisiopsis tweedyi*, *Fritillaria meleagris*, and *Trillium hibernsonii*. David also exhibited in class 40 with his *Narcissus obesus* 'Lee Martin', winning the Henry Tod Carnethy quach for best bulb, corm or tuber, and also winning the Kilbryde cup for best plant not exceeding 17.5 cm.

Stella & David Rankin brought along *Primula kialensis*, *P. deflexa* and *Tristagma nivale* for class 3, winning the Elsie Harvey trophy (3 pans new, rare or difficult). *P. deflexa* is much like *P. muscarioides* but has much larger and paler flowers. It was nice to see *Tristagma nivale* on the show bench a year after RBGE had exhibited a pot in 2023; it was awarded the certificate of botanical interest. Stella & David also went

Above: *Hepatica nobilis* 'Stained Glass'



Crocus gramensis (white form)

home with the Reid rose bowl for most points in section 1. Over in class 7, Jane & Alan Thomson brought along *Primula forbesii*, for which they received the R E Cooper Bhutan drinking cup (best Asiatic primula).

It's not always about the flowers! An impressive pot of *Hepatica nobilis* 'Stained Glass' was entered by Carole & Ian Bainbridge, winning them the best foliage award: they were presented with the Ulster group quaich. As John Massey says in his new hepatica book (John Massey with Tomoo Mabuchi, 2022, *My World of Hepaticas*, available from Ashwood Nurseries), "*Simply the best marbled leaf cultivar I have ever seen*" ... and who would disagree with that?

Cyril Lafong exhibited a collection of amazingly grown (as always) plants. In class 15 he showed *Primula renifolia*, winning the K C Corsar Challenge trophy. In class 4 he entered *Crocus gramensis* (white form), named after the Grammos Mountains in the west of Greece. According to Janis Ruksans the name is yet to be published (<https://rarebulbs.lv/index.php/en/catalog/bulbs?start=200>). It is different, and has been distinguished by genetic analysis, from *C. cvijicii*. Cyril was awarded a certificate of merit for this plant and he also went home with the Forrest medal (best in show) for his impressive *Trillium rivale*. Chatting to him, he told me he had raised it from seed from the variety *Trillium rivale* 'Purple Heart'.

Coreen Connell entered in section 1, class 26, a beautifully grown *Ranunculus alpestris*, as a clump-forming plant not exceeding 5 to 10 cm in height. It is not native to Britain but is found in the mountains of Europe



Primula marginata 'Mojave'



Fritillaria michailovskyi



Galanthus 'Polar Bear'



Narcissus thalia

on damp grassland, where it often grows in stony habitats. Coreen was awarded the special prize for the best plant from a first-time exhibitor.

I have a soft spot for varieties of *Primula marginata*. It was nice to see a well-grown specimen of *P. marginata* 'Late Frost' exhibited by Chris Kelnar, who was awarded the Midlothian bowl for best plant in section 2. A form of *Primula allionii* called 'Betty Craig' was exhibited by Carole & Ian Bainbridge. Chatting to Ian, he said Alf Evans named this after Betty Craig, who kept the points and medal show records, well-known at the SRGC Edinburgh for her participation in shows.

As I am currently doing my traineeship at the Royal Botanical Gardens of Edinburgh, I helped exhibit a display at the show for people to enjoy. With many things flowering so early this year, we just about managed to get enough plants together for a decent-sized display. We included many forms of *Fritillaria* and an impressive pot of *Podophyllum delavayi*, which took centre stage amongst all of the lovely plants. We were awarded a Gold medal for our efforts.

Joshua Tranter

Photos: Liz Cole



Fritillaria hermonis 'Amana'

Border: *Saxifraga x concinna* 'Ben Loyal'

Kendal 16 March 2024

This joint AGS/SRGC show offered a warm welcome at the entrance, leading to an intriguing labyrinth of well-stocked rooms with nurseries, food, exhibitions & a beautifully populated show hall.



Dionysia tapetodes 'Kate' - John Dixon

Saxifraga 'Coolock Kate' - Frank & Barbara Hoyle

We are indebted to Don Peace, himself a prominent exhibitor, for his careful report photographs, which give a fine sense of the quality and variety of plants that were on display.



The show displayed multitudinous genera, species and forms, On these two pages are four examples of the many *definitive, difficult and demanding* (3-D) cushion plants that delighted visitors.



Primula 'Broadwell Milkmaid' - Ezio Visona
Saxifraga oppositifolia - Frank & Barbara Hoyle

Cushions modify the temperature of the underlying soil, and act as living mulch, keeping ground warmer in the winter and cooler in the summer, helping plants that could not endure extreme cold.





Hepatica americana - Frank & Barbara Hoyle



Fritillaria carica - Don Peace
Celmisia semi-cordata - Alan Furness





Cyclamen coum - Geoff Rollinson

Hepatica japonica 'Benikanzan' - Raymond Hurd





Scilla x allenii 'Fra Angelico' - Don Peace
Frank Hoyle and his *Primula allionii* 'Crusader'





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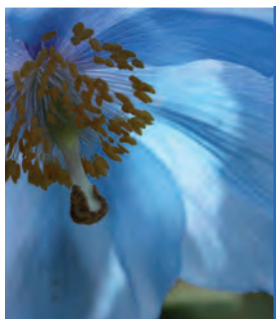
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