

# International Rock Gardener

ISSN 2053-7557



Number 139 The Scottish Rock Garden Club July 2021





This month IRG presents two articles on peonies – the first on Czech bred herbaceous peonies from Pavel Sekerka and the second on tree peonies by Joe Harvey in Canada. Next there are two articles on a fabled European gesneriad, *Jankaea heldreichii*, written by a Czech, Vlastimil Pilous and Harry Jans, of the Netherlands. IRG 139 finishes with a short review on *Sternbergia*, again by Vlastimil Pilous.

Cover image: *Jankaea heldreichii*, photo by Vlastimil Pilous.

This month's authors:



**RNDr. Pavel Sekerka**, is the Director, Průhonice Botanic Garden where the aim is to gather gene – pool collections; preserve them and present original botanical species as well as their variability to the public, and to show the progress of breeding since Middle Age to the latest trends in breeding. The collections are thoroughly systematic and chronologically organized. Dr. Sekerka is president of the Union of Botanical Gardens of the Czech Republic and committed to their protection and to ex-situ plant conservation.

**M. J. (Joe) Harvey**, is an **Emeritus Professor** at Dalhousie University in Halifax, Nova Scotia where his wife Linda was the University Librarian. Born and educated in England, Joe retired to Victoria, British Columbia where this botanist/geneticist is still active in plant breeding and in promoting many plant species including hellebores, Galanthus, hardy orchids, peonies and more!



After studying at the Faculty of Science of Charles University (geography - biology), **Dr. Vlastimil Pilous** worked for 27 years for the Krkonoše Mountains National Park Administration (KNRAP). Vlastimil Pilous credits his lifelong interest to his parents, fuelled by his father, (an eminent Czech bryologist who as an old school teacher had an extensive view across natural sciences), “who took me on his trips mainly to Slovakia from the fourth grade, where I got to know the diverse components of nature.” Many people have plants grown from seed from his seed list.

**Harry Jans** is probably the most respected of alpine plant enthusiasts in the Netherlands, known for his success in growing alpine plants, his popularity inspeaking and writing about them, as well as leading successful tours to see plants in habitat in mountain areas worldwide. All this while maintaining a remarkable private family garden with his wife, Hannie and working for the Dutch Ministry of Infrastructure and Environment. Harry, a founder member of the Dutch RGS (“Nederlandse Rotsplanten Vereniging” (N.R.V.) who has served as President for the NRV, has been honoured by other plant organisations, such as the Lyttel Award from the AGS.



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## --- Plant Breeding ---



Hybrid peonies in 2020 at the [Institute of Botany of the Czech Academy of Sciences](#).

### CZECH BREEDING OF PEONIES - Text and photos: Pavel Sekerka

The first Czech named variety was the tree peony *Paeonia x suffruticosa* 'Líba', which is also grown under the name 'Madame Horák'. From 1939 to 1942 Fr. Tvarůžek, the castle gardener in Dřevohostice, sowed peony seeds and nursery plants were grown on by his son-in-law A. Horák, in nearby Bystřice pod Hostýnem.

From the seedlings a plant with a semi-double, pink flower with a touch of orange and with distinctive yellow stamens was selected. This is still grown today in Bystřice. However, it is not listed in the official register of varieties of the Peony Society, nor at Carsten Burkhardt's [Web Project Paeonia](#), which nevertheless contains a most extensive overview of varieties.

Recently, thanks to the help of Průhonice Botanical Institute of the Czech Academy of Sciences, the National Plant Conservation and Use Programme has succeeded in registering 18 varieties bred in the Czech Republic and in the Botanical Garden of Prague.



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According to archived reports, there were 600 plants of herbaceous paeonies in Průhonice Park at the turn of the 19<sup>th</sup> and 20<sup>th</sup> Centuries. In 1927, the Catalogue of Průhonice Federal Gardens offered a total of 42 varieties of herbaceous peonies, of which most varieties were derived from *Paeonia lactiflora*.

In 1936 there were already 61 varieties of *P. lactiflora*, 3 varieties of *P. officinalis* and two botanical species in the catalogue. Before the war, the company imported an extensive assortment of herbaceous peonies from Bohemia (Žehušice) and from abroad (B. Ruys Dedemsvaart – Holland, Barbier et Cie –Orleans, Kelway and son - GB.). The main list has thus grown to more than 250 varieties. Because peonies are relatively unpretentious, the assortment partially survived the war and formed the basis of an assessment trial.

In 1956-75, the Institute of ornamental horticulture became involved. The plants came mainly from “woody” (tree) peony mothers, part of the plants came perhaps also from plantings in Průhonice Park, some varieties had been purchased for evaluation. The institute cautiously estimated a total of 170 varieties.

In 1968-69, Dr Jaroslav Hofman founded a collection of peonies at the Czech Technical botanical garden at the Institute of Botany of the CAS. It was based on both plants of a neighbouring institute, purchases from domestic nurseries growing peonies at the time and were also donated plants (School farm AF VŠZ Lednice – Olomučany, nurseries in Žehušice, Vejtasa horticulture in Jaroměřice) and also purchases from abroad. (Gilbert H. Wild and son, USA; Gräfin von Zeppelin, Germany; Stauden Feldweber, Austria; Staudengärtnerei Klose, Germany).



*Paeonia* ‘Gedenken’ - a parent for many of the best Czech peonies.

A review of 1982 showed the collection had 217 varieties and 10 wild Taxa. The group featured a cross-section of contemporary assortment, including modern interspecies hybrids of that time and were a good basis for experimental crossing. Ing. Uljana Blažková, took over Dr. Hofman's collection, in the 1980s and 1990s. In the 1970s



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seeds obtained to improve the strains were mainly hybrid peony and varieties of *P. lactiflora* with a Japanese flower shape. Some seedlings obtained were of very high quality. Selection for the first stage represented around 50 plants, in the second stage (2011) 31 seedlings were selected which were further multiplied and evaluated.



*P.* 'Czech Poppy'

The most interesting varieties belong to the "poppy series". These plants have as their origin the 'Gedenken' variety. The seeds came from an early hybrid variety Helen von Stein Zeppelin had selected and named (1990) in memory of Mrs M. Fischer (Illinois, USA), from. Its sister, the American variety is 'Marie Fischer' ('Moonrise' X unknown, 1973, breeder Hubert A. Fischer).



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Some characters of this series of hybrid peony were inherited by descendant varieties of 'Gedenken' sown in Průhonice: 'Czech Poppy' and 'Silesian Poppy' (CH05, light pink). 'French Poppy' were by their foliage, random seedlings, now registered by Uljana Blažková and Pavel Sekerka with the [American Peony Society](http://www.americanpeony.com).



*P.* 'Silesian Poppy'



*P.* 'French Poppy' - above and below

All three are, with *P.* 'Noble Carmen' and *P.* 'Chlupáček', more upright growing peonies with leaves commemorating their Caucasian ancestors. They usually have only one large flower, slightly cup-shaped with tough leaves. The flower lasts, compared to other single peonies, for quite a long time.

'French Poppy' has a bright red colour recalling hybrids of *P. peregrina*; 'Czech Poppy' and 'Silesian Poppy' are pink and lighter. When blooming, 'Silesian Poppy' changes colour to a yellowish hue during flowering.







*Paeonia lactiflora* 'Noble Carmen' (CH18)





*Paeonia lactiflora* 'Noble Carmen' (CH18)

'Noble Carmen' (CH18) is a sturdy plant with large single to semi-double dark red flowers with a smaller yellow centre.



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Seedlings corresponding to classical varieties also came from experimental sowings of *P. lactiflora*. They were named after the Czech Empresses, wives of Charles IV:

'Blanka z Valois' – double, dark red, (seen right)

'Anna Svidnická' – single light pink,

'Anna Falcká' – single, pink, 'Alžběta Pomořanská' – red, Japanese. Of the other interesting seedlings we can name varieties 'Andromeda', a large, Japanese seedling with yellow petaloids and 'Moonlight Sonata', lower, early, semi-double, white, with crown petals mixed with stamens.



*P. lactiflora* 'Anna Svidnická'





*P. lactiflora* 'Anna Falcká'



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*P. lactiflora* 'Alžběta Pomořanská'



*P.* 'Andromeda'



*P.* 'Moonlight Sonata'





*P.* 'Chlupáček' - showing the pubescent foliage.





*P. 'Chlupáček'* - frosty foliage and bud.



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In the experimental sowing there were a large number of plants called *Paeonia mascula*.

This was an obvious taxonomic error. *P. arietina*, though unrelated to *P. mascula*, was long considered to be its subspecies. Because it belongs to the group of *P. officinalis*, it easily crosses with it and in gardens, a hybrid between *P. officinalis* is commonly grown under the names *P. mascula* and *P. arietina*. These plants were also sown in [Průhonice](#). Plants are very variable in the shape of the leaves and they have one usually dark pink flower on the stem.

One seedling had thick hairy leaves. That is a character that had not been seen before in peonies. Budding plants, especially under dew, are strikingly grey. Because this one had that colouring and nice, big flowers, it was decided to register it as *P.* 'Chlupáček' ("Fluffy").

[Ed.: 'Chlupáček' translates as "Fluffy": Note that Klehm's [P. 'Fluffy'](#) is a different plant]

A collection of peonies was founded around 1997 in the botanical garden on the edge of Troja, by Praha. Plants served especially for the creation of open Peony meadows in the northern area and also as accessories in the Japanese Garden. Although a substantial part of plantings represent tree peonies, this article is dedicated only to herbaceous peonies.

The basis of the collection varieties from Průhonice and nurseries in Litomyšl, and a large part of them was gradually obtained by purchasing from the world's leading horticultural nurseries (Callie's Beaux Jardin, USA; Caprice Farm Nursery, USA; Kelways Ltd., England; Klehm Nursery (became Klehm's Song Sparrow), USA; Pivoines Rivière, France).



*P.* 'Early Caucasian'

Even before the creation of the peony meadow, the garden obtained peony seed from the exchange between botanical gardens (Index Seminum) ordered by chief gardener Petr Kosina in the early 1990s and later by Pavel Sekerka. Of course, peonies like to cross and so the resulting plants were not usually the requested species, but various hybrids. Probably the most interesting was the very early flowering seedling from the route of *P. mlokosewitschii*, which it combines yellow and pink colour and has strikingly purple-marked young leaves. It is taller and blooms before the wild *P. mlokosewitschii*. I named the plant 'Early Caucasian'. Unfortunately, the plant grew with another seedling, with similar properties, but a yellow flower.



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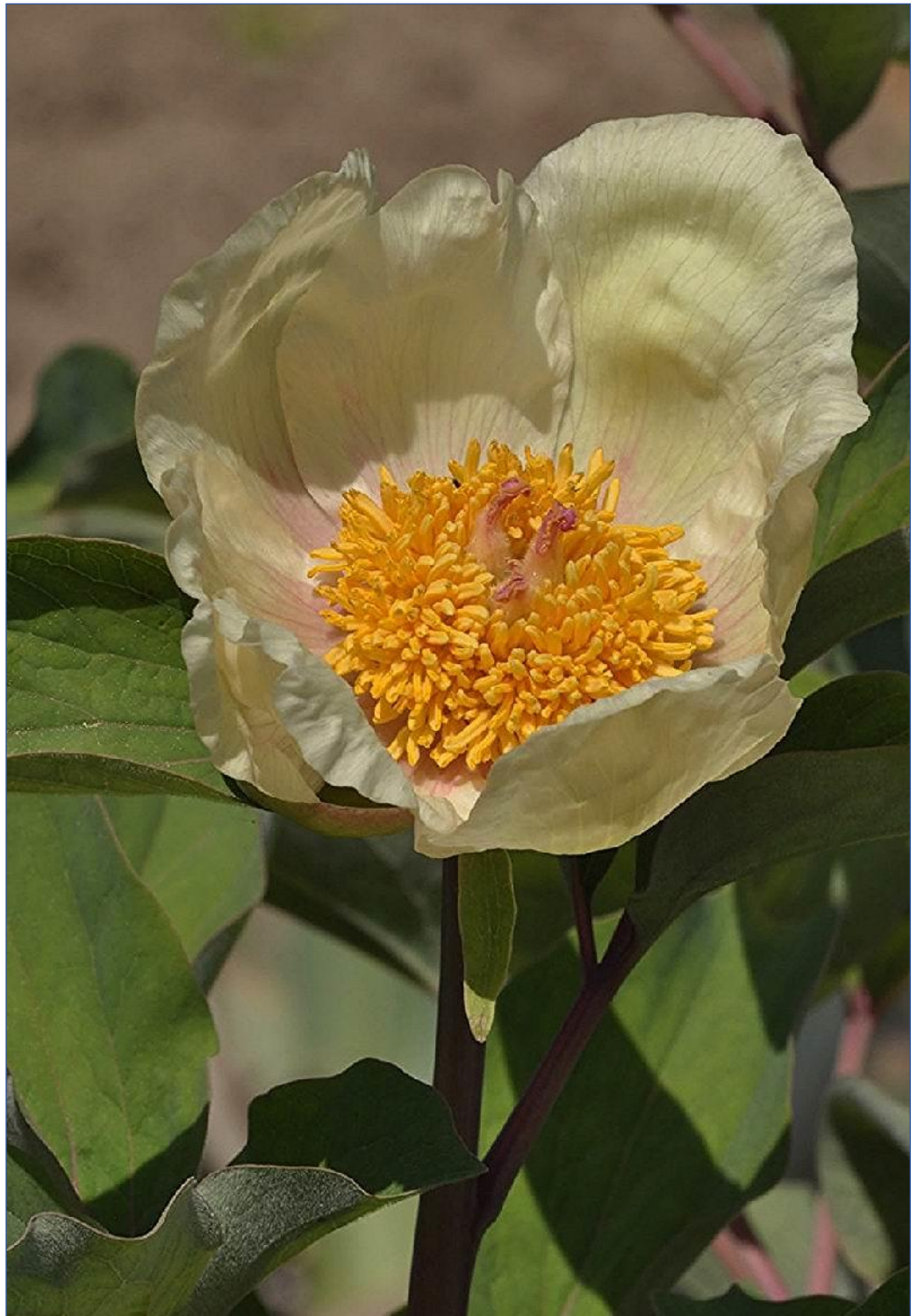
And so the first gardeners who received plants from us actually got a mixture of these two seedlings.

*P.* 'Yellow Caucasian'

Gradually, however, we managed to separate the plants from each other, the second seedling was named 'Yellow Caucasian'.

The second interesting seedling was a semi-double variety from *Paeonia anomala*. Unfortunately, it is not stable in the flower and its fullness is governed by the strength of the plant. At first, we named it 'Anomala Semiplena' but because the name is contrary to the code of nomenclature, she became 'Forest Sprite'.

Plants, most likely *P. lactiflora* varieties, were obtained from Kelway.



There were a large number of seedlings on site, some had interesting dark colouring as they sprouted. The darkest coloured seedling, which held on to a deep purple colouration of the stem until the time of flowering, was named 'Trojan Black'. It has a single purple flowers. A similar, dark foliaged plant from Průhonice, which has semi-filled to fully double flowers, was named 'Salamander'.



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*P.* 'Trojan Black'



*P.* 'Salamander'



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In the year when I was moving from the Troja Garden to Průhonice, I continued to cross *P. tenuifolia* and *P. obovata*. Two seedlings have already sprouted from the crossing in Průhonice. The first was smaller with elegant fine foliage, luminescent flowers with a lighter base. At the time when the first was blooming, Martin Hajman was visiting us and said "wow, that's Erotikon..." and so it has been named, after the famous Czech film of 1929. The second variety, which has a longer flower stalk and a less pronounced shape, was named after another Czech film – as 'Ecstasy'.

[Ed.: N.B. there are two older cultivars with this name: from Canada in 1926 and the USA in 1936.]



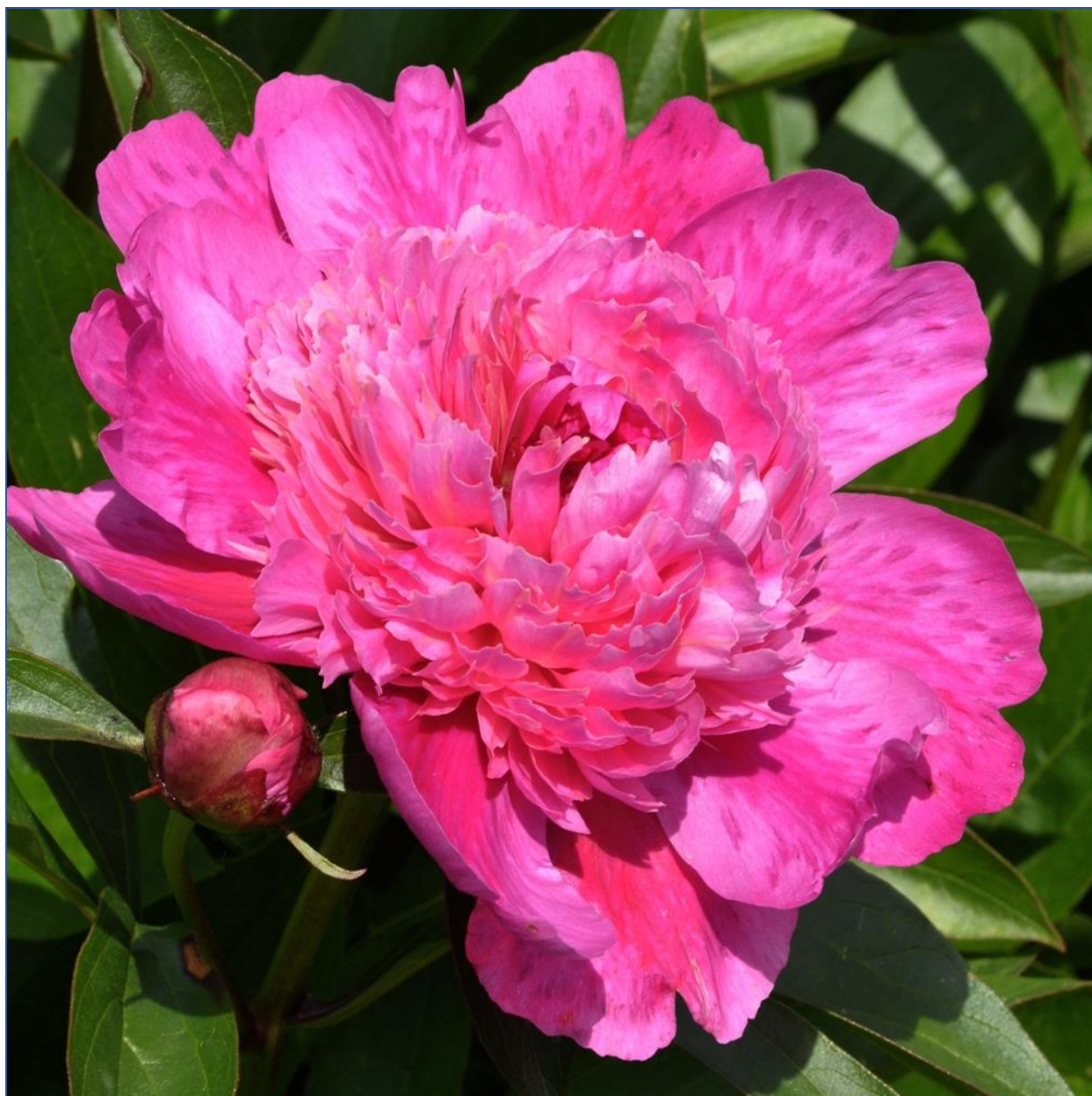
*P.* 'Erotikon' - parentage: *P. obovata* x *P. tenuifolia*.



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In Průhonice I continued with another experimental crossing, plants formed from it are now under evaluation. These are mainly seedlings *P. anomala* x *P. tenuifolia*, characterized by single flowers and fine foliage. By crossing *P. mascula russoi* x *P. 'Early Caucasian'* I obtained early blooming varieties with single flowers coloured from yellow to dark pink and compact growth. Unfortunately, they suffer from botrytis. Now we have the second generation of this crossing and are trying to find seedlings more resistant to botrytis. Naturally, we carry on with crossings of dark-foliaged *P. lactiflora*.

All named varieties can be seen at the display of Czech peony breeding in Průhonice botanical garden in Chotobuz and, of course, in mixed plantings in the Botanical Garden Prague, but also in Hradec Králové and Tromsø, Norway.



*Paeonia lactiflora* 'Cassiopaea' (CH16)



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## --- More on Peonies---

From herbaceous peonies we move now to the woody types, the tree peonies as they are known. These are also popular garden plants, lending height and movement to the garden with their attractive foliage. Joe Harvey is a retired botanist and geneticist from England, where he gained his botany degrees, but living now for many years in Canada. He is Abkhazi Garden's resident botanist and Professor Emeritus of the University of Victoria in British Columbia, and one of the peonies he discusses here is one he bred to raise money for that garden. "Joe's Jottings" are wide-ranging notes on numerous peony species and their discoverers. Many of the images used in this article are from the SRGC Forum, kindly contributed by Members there.



*Paeonia rockii* in the Perthshire garden of Margaret and Anton Edwards.

### **Joseph Rock and his Peonies – Joe Harvey**

#### **The Dubious Start**

Josef Franz Karl Rock (1884 – 1962) was born in Austria but anglicised his name to Joseph Francis Charles Rock when he became a US citizen. He is an example of a childhood failure becoming famous. Rock had a hard childhood in Vienna, in addition he didn't fit in at 'gymnasium' (the rigid



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academic high school system) and ran away at age 17 to wander around the world. He never got an academic degree, never married.

He survived on odd jobs, eventually landing on Hawaii where he worked for the community college (now the University of Hawaii) collecting plants and preparing specimens for the herbarium (now named the Joseph Rock Herbarium) and incidentally learning six languages including Chinese.

## **Leprosy**

At that time the Hawaiian Islands were rife with leprosy ('Molokai: land of the living dead'). Who better to send on a collecting trip to search for improved strains of [\*Hydnocarpus wightii\*](#) than Joe Rock? The fruit of this tree is the source of chaulmoogra oil, the only cure for leprosy until the sulphones were synthesised in the 1930s. This first expedition to China was funded by USDA and was very successful, getting him publicity and contracts for further trips from groups such as National Geographic and the Smithsonian Institution.

## **The Choni Monastery, Gansu Province**

Harvard University funded Rock's most famous expedition through the director of the Arnold Arboretum and Herbarium, Charles Sprague Sargent (third cousin of the painter J.S. Sargent). He was tasked to go to an underexplored region of northern Gansu on the border with Tibet, a particularly remote and lawless area with warlords, banditry, and fierce Buddhist-Muslim fighting. He



was instructed to search for useful plants, horticultural and medicinal, to collect bird skins and take note of the folklore and medicinal practices of the people. Now, Rock had already established a home in NW Yunnan where he lived for many years among the Naxi people with the Yalong range of mountains (charmingly translated 'Jade Dragon Snow Mountain') as the background, but northern Gansu was difficult of access and he decided to make the monastery at Choni his centre. This had long been a place where students went to study Tibetan Buddhism because of its accommodation and excellent facilities including its monk-teachers, a library and a printing press.

*Paeonia rockii* grown from [Archibald](#) seed,  
JJA 4.581.500 - photo Steve Garvie.



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The Prince of Choni and Joseph Rock ([NGS](#))



## Rock's Peony

Setting off for Choni in December 1924, when he arrived the particular peony associated with him was already being cultivated in gardens around the monastery complex, presumably for medicinal use. He was told that the monks had collected it in the mountains and where he indeed also found it.

Seeds and pressed specimens were sent to the [Arnold Arboretum](#) where it was named in his honour *Paeonia rockii*. I note that Rock technically only 'distributed' the species, it had been 'discovered' by the Chinese thousands of years before and the peony, mudan, the national flower of China, is used medicinally. The Arnold distributed the seeds widely and when flowers were produced the species became a sensation, everyone wanted one.

Rock's peony has very large single white flowers, each petal having a large deep purple/black blotch at the base. Indeed the first seeds distributed did have white-with-a-blotch petals and this has become the public model but later wild collections have shown that the petals may have pale or even deeper pink pigmentation, nevertheless they are still Rock's peonies.



Deep pink *P. rockii* from [Phedar](#) seed, photo Thorkild Godsk.



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## The Problem

Following the original seed collection, the 20<sup>th</sup> century continued on its disastrous course: there was the stock market crash of 1929, the Depression, World War 2 and the Cold War. As a result there were no more fresh wild collected seeds reach the West until the end of the Cold War. The Chinese did not permit seed collectors into the interior until after 1989. Only a few botanic gardens were able to obtain seed through seed exchanges. In gardens in the West demand continued with high prices demanded but some plants were of dubious quality and quite unlike the originals.

The problem with tree peonies is that propagation is difficult: cuttings are difficult or impossible to root, plants are hard to divide, grafting is difficult and seed production is often low with seeds requiring two years to germinate and several more to flower. In particular seed-raised plants tend to have rather dilute, paler blotches at the base of their petals and some of them have pink or purple petals, even though the seeds came from white-petalled plants of *P. rockii*. The explanation was not obvious until fresh Chinese seed became available.



A pale *P. rockii*, from Archibald seed.

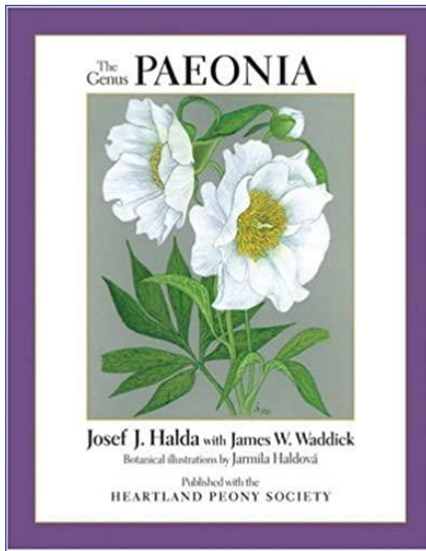
## Josef Halda

In around 1991, a friend showed me a catalogue from a Czech seed collector offering mainly alpines but including peonies which had been collected largely by himself. This was the well-known Dr. Josef J. Halda who did in fact collect in Gansu. My friend thought the prices for *P. rockii* were ridiculously



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high - \$1 per seed. I thought differently because if I could get one seed to germinate I would have saved \$99 on a \$100 plant. So I ordered 24 and this sent my gardening life on a different track. After the usual two years to allow for the double stratification that the seeds require, I got about 15 plus plants and within 5 years of sowing one flowered. I was ecstatic, it was beautiful and I looked forward to getting more seeds from it so I pollinated it with its own pollen. Disaster, not a single seed resulted but, being a geneticist, I thought, maybe this is a case of self-incompatibility. The next year two plants flowered, I cross-pollinated them and got a large crop of seeds - QED.



[The Genus Peony](#) by J.J. Halda and J.W. Waddick.

## **Self-incompatibility**

I apologise for this rather lumpy term but it was actually invented by gardeners and came out of the fact that the royals and nobility (think Louis XIV) of Europe did not eat apples (peasant food), but had to have the finest pears. The traditional pear trees will not set fruit alone but have to have another cultivar nearby for insects to transfer pollen between them. (Modern cv. 'Aurora' is self-compatible). This explains the 'degeneration' of *P. rockii* stocks

over the latter half of the 20C. With expensive plants one usually purchases only a single specimen. This automatically means that any seed it produces is the product of pollen from another tree peony which is likely to be from a nearby specimen of one of the cultivated hybrids. Yes, the seed may be from a *P. rockii*, but the pollen parent is something else. Hence you have a hybrid. From a biological point of view this is a system to prevent inbreeding.

## **One Species or Two?**

The seldom mentioned secret is that Rock's peony comprises two distinct species distinguished by their morphology and, I gather, by their geography. I present the case for recognising two species.

## **Availability of Reliable Material**

Part of the problem has been the lack of authentic specimens for comparison purposes. As explained in Part 1, the nature of the breeding system – self-incompatibility – has confused the horticultural situation by automatically generating random hybrid seedlings in garden settings unless the flowers are hand-pollinated in a controlled manner with pollen from another seedling of the same species. Unfortunately seedlings from open pollinated flowers have been distributed under the name '*P. rockii*', either from ignorance or crass commercialism. Because of this it has been my aim to distribute only hand-pollinated seed over the past many years.



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## The Basal Blotch

A conspicuous black-purple blotch (flare) at the base of each petal is the most immediate visual characteristic of both species. Only when vegetative features are taken into account is the distinction clear. The two differ in their growth characteristics and appearance in the garden and horticulturalists should be aware of these differences.

## The Names Given to the Species

The scientific nomenclature of the tree peonies is a rat's nest of confusion (see Carston Burkhardt's [Web Project Peonies](#)). So, I have simplified life by continuing to use the names under which I received the initial seeds which, it turns out, may be the ones which are eventually adopted. For confirmation I turned to the on-line Flora of China, which hints that I may be using the names in the reverse sense. But this would be completely unimportant since my aim is to point out that there are two distinct entities.

From the wide choice of names I am using *Paeonia rockii* and *Paeonia linyanshanii* ('of Linyan Mountain'). The name *linyanshanii* has not been officially adopted at the species level but is validly published as *P. rockii* subspecies *linyanshanii*. I favour the upgrade to full species and so use it here.

## Leaf Differences

A brief perusal of the literature will show that among the tree peonies as a whole, leaf characteristics are used to separate the species, so there is nothing unusual in doing this for the two 'Rocks'. Flower characteristics are of lesser importance in classification, which of course is the exact opposite of the horticultural situation.

Both species have large highly divided compound leaves differing in the average number of leaflets and the presence of lobes/teeth. (Average of three large leaves)

*P. rockii* .....34 leaflets, about 120 teeth/lobes

*P. linyanshanii* 26 leaflets, about 0 – 2 teeth/lobes

In a garden setting it is easier to examine the terminal leaflet of a leaf: *P. rockii* has mostly broad, 3-lobed terminal leaflets: *P. linyanshanii* has ovate-lanceolate terminal leaflets, rarely lobed.

## Perules

As the oldest science, botany had accumulated a farrago of obscure and arcane words, among which 'perule' is one of the least used, indeed I know of no other use for it.

A perule is a bud scale protecting the exposed overwintering bud. The distinction is that they do not simply drop off as the stem elongates in spring but persist, may even expand and become photosynthetic.

*P. rockii* – perules mostly not expanding, turning brown, rarely one may grow to 1cm.

*P. linyanshanii* – perules expanding up to 3cm long by 1.5cm wide, turning pale green.

Dried remains of the perules remain on the stem indefinitely and can be seen marking the annual



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resumption of growth. It is remarkable when one is growing plants that the perules are highly evident but are neglected by the authors writing about them in the scientific literature. The reason for this lies in the nature of herbarium specimens which are the basis for making scientific descriptions, writing floras and identification keys.

When preparing specimens of plants for study, they are dried between blotters. In the case of tree peonies frequently only leaves and flowers are included. On specimens with the stem included its thickness prevents the perules from contacting the blotters, they shrivel to insignificance – whence their omission from scientific accounts.

## **Recognition of Species and DNA Analysis**

Molecular studies is proving extremely useful in studying puzzling groups of species, allowing for estimates of the degree of separation within groups. Obviously in the case of the *P. rockii*-*linyanshanii* pair we have closely related but distinct species. Within the tree peony group it is still not settled how many species there are, even though many are now rare in their natural habitats. While molecular studies can produce degrees of separation it cannot state that two plants belong to separate species, only a taxonomist can do that. The concept 'species' is man-made and impossible to define for all situations, with one exception, which I used to tell my students. This is the Absolute Definition of species: A species is any group of organisms so designated by a competent taxonomist. In our current case *rockii* and *linyanshanii* differ in a sufficiently large number of characteristics that they clearly belong to separate species. The Absolute Definition is a botanical joke with a large pinch of reality.

## **Horticultural Comments**

### **Rhizomes**

In the mid-1990's I donated three small seedlings grown from wild collected seed to the Abkhazi Garden. Their fate is instructive. They were planted in a row along a path about 3ft apart. One was overgrown by a perennial and died, another grew too large for the site and was moved, the other remained in its original place.

By 2020 the one that was moved had reached about 2ft wide by 4ft tall. The unmoved one was much larger at about 10ft wide and 6ft tall (and quite spectacular when flowering). The two sites are not identical but I have had similar results in my own garden.

When grown from seeds the seedlings develop a single tap root which continues to burrow down when they are planted out. The benefit of this is that after a few years the roots are sufficiently deep down that they become 'bomb-proof', rendering the plant resistant to damage or drought and very long lived.

Severing the tap root on a mature plant causes severe damage which may take ten or more years to repair. This makes the choice of the initial site more important than realised in normal gardening



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where plants are commonly moved around as they grow. It takes nerves of steel to choose a site 10ft in diameter for a seedling a foot tall.

### Stems

Old tree peony plants become leggy which is how they compete in nature but may be regarded as unsightly in a garden. My experience of cutting down stems is exactly the opposite of that with rhizomes. Do not hesitate to cut a leggy plant down to the ground, regrowth is rapid and the shape is improved, although a couple of years bloom may be lost

Which is better: *rockii* or *linyanshanii*?

When the two are grown side by side *linyanshanii* shows greater stem growth and has larger flowers. This is commonly interpreted as being 'better'. In truth both make superb shows.

### Conservation

Tree peonies in their natural habitats in China are in danger of extinction. Other species exist which I feel would be valuable in horticulture either in their own right or incorporated into modern hybrids. I do not condone collecting more wild plants but those in cultivation are not being offered even in specialised nurseries. I sometimes wonder whether the simple knowledge that they may be self-incompatible and thus require hand pollination between separate seedlings could revolutionise their availability in the same way that I have made *P. rockii* widely available, at least in Victoria.



Joe Harvey with *P. 'Abkhazia Princess'*



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## 'Abkhazi Princess', a new vigorous tree peony hybrid grex

### The Parents

When flowers of *Paeonia rockii* are hand pollinated with pollen from *P. linyanshanii*, an abundant crop of seeds results. The two parents jointly form Rock's peonies currently recognised as subspecies: *P. rockii* subsp. *rockii* and *P. rockii* subsp. *linyanshanii*, but as previously mentioned I am encouraging their elevation to full species status as *P. rockii* and *P. linyanshanii* on the basis of strong differences in leaflet shape, perules and flowers.

### The Abkhazi Garden

[The Abkhazi Garden](#) in Victoria, British Columbia is owned by The Land Conservancy, a charitable organisation, and maintained by volunteers. The garden has a historic back-story that must be the envy of most public gardens (Katherine Gordon, *A Curious Life*). It was created from a rocky outcrop by Prince and Princess Abkhazi – he from the country of Georgia, she born in Shanghai, China of English parents.

Prince Nicholas and Princess Peggy Abkhazi - photo Phillipa Proudfoot.

A volunteer, Carol Dancer, suggested calling the hybrid '**Abkhazi Princess**', which is appropriate since the tree peony – mudan – is the national flower of China and Peggy Abkhazi was born there. Plants of the hybrid are sold at the garden.

### Registering the name 'Abkhazi Princess'

I was urged to register the name 'Abkhazi Princess' through the registrar of the Canadian Peony Society although I pointed out a problem not appreciated by most gardeners. Nevertheless I sent in an application and, as expected, received a courteous reply informing me that the plants we produced did not qualify as a cultivar since, each being a separate seedling, they constituted a 'grex' not a cultivar.

### Cultivar versus Grex

Cultivar is the contraction of 'cultivated variety', further abbreviated 'cv', and is used for variants of plants produced in a garden, as opposed to something found in nature which is a 'variety', abbreviated 'var', or even 'v'.

All plants with a particular cultivar name must be genetically identical (a clone) and hence are propagated asexually by means of cuttings, grafts, divisions or tissue culture.





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Grex (Latin: flock, band), a group of seedlings with the same parents but differing somewhat in their genetics as would be expected among sisters or brothers. Thus 'Abkhazi Princess' is a grex.

## Limiting Variation among 'Abkhazi Princess'

I attempt to limit the amount of genetic variability among 'Abkhazi Princess' seedlings by using the same parental plants each year. The seed parent is a large *P. rockii* by the lower lawn at the Abkhazi Garden and the pollen parent was a plant of *P. linyanshanii* until that died at which time it was replaced by a sister seedling.

I chose white-petalled parents (with black flare) because this is what the public has come to expect of Rock's peony. This may be misleading because among my wild collected Halda seedlings are several pink forms, each one a pure *rockii*, which is defined largely on non-floral characteristics.

Despite using the same parents, every now and then a seedling of 'Abkhazi Princess' crops up with a pale pink ground colour. That is what a grex can do, these plants are still 'Abkhazi Princess'.

The unfortunate thing about the 'grex' designation is that any cross anyone wishes to make between any specimens of *rockii* and *linyanshanii*, will bear the name 'Abkhazi Princess'. We cannot control what other people do although at the moment we are probably the only group currently producing such crosses.

## Peony Propagation Problems

Gardeners must be wondering why we don't just grow our 'Abkhazi Princess' plants from cuttings? After all, with seeds there is the fuss of controlling the pollination, a couple of years for their unusual germination plus at least three years to size up – a minimum of six years! Unfortunately, tree peonies have their own set of problems.

Division of the rootstock is extremely slow and damages the rhizome.

Grafting is skilled work with the bulk of the commercial grafted plants coming from Japan.

Tissue Culture is technically beyond our capabilities.

Cuttings may possibly work. I tested rooting a cutting of a different hybrid under the intense light of one of my "Joe's Cutting Cookers" (a home-made heated area for cuttings) and roots formed.

However, in winter the dormant bud looked soft and there was no true rhizome. I suspect the timing when the cutting is taken is critical. I shall try to refine the technique, but peonies are notoriously difficult from cuttings.

## Hybrid Vigour

Hybrid vigour (heterosis) is the tendency for hybrids to grow more vigorously than their parents. This is exploited commercially and the US corn crop is dependent on the phenomenon as are most vegetables. (The opposite phenomenon occasionally occurs; I have tiny seedlings of *Helleborus niger* x *vesicarius* sitting without showing any signs of flowering).

There are no plants of 'Abkhazi Princess' of substantial age but annual stem extension is greater

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than the seed parent which is maybe 25 years old and 6 feet tall. I confidently predict that the hybrid grown under similar lush conditions could reach 12 feet in a similar time.

A cautionary tale is that I planted an early seedling in a planter left as a gap in a paved patio. The vigour surprised me and with a maple overgrowing the site I dug it up damaging the rhizome as I did. Despite a better site the plant is half the size it was and has been sulking for several years. Be warned, expect a much larger plant than a normal commercial tree peony and choose its 'forever' site on the initial planting.

### Hardiness

I was initially under the illusion that tree peonies are delicate plants requiring the mild climate of Victoria, British Columbia (about US Hardiness Zone 8). I was amused that one of the volunteers sent a plant to Thunder Bay, Ontario – a waste of time and money, I thought. It flowered! There are now plants growing in Calgary, Alberta; Winnipeg, Manitoba; Ottawa, Ontario and near the St. Lawrence, Quebec. These are Zone 3 or 4 sites. Some winter protection may be provided, but they grow. This no Princess and the Pea.



*Paeonia* 'Abkhazi Princess' a cross of *P.rockii* x *P.linyanshanii* - photo Joe Harvey.



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## Joe Harvey's Jottings: The Tibetan Tree Peony - *Paeonia ludlowii*

Hate is not an emotion that I normally, or ever, express but my dislike of the yellow Tibetan tree peony comes pretty close to it and yes, I know that there are many YTP lovers out there. Indeed, if it were the only tree peony in existence it would be wonderful, but there are so many better ones that I despair when I see it.

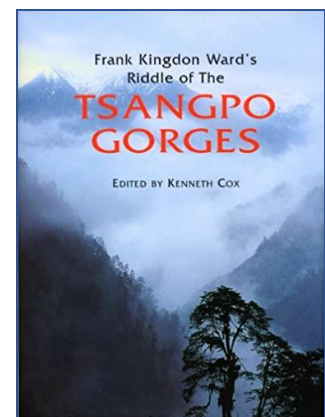
I should make it clear that I am discussing the vigorous, tall-growing yellow tree peony, there are other yellow tree peonies but the Tibetan one is confined in nature to a relatively small area from where it was introduced to the West in 1937. But first, who was Ludlow?

**Frank Ludlow** (1885 – 1972) born in Chelsea, took botany from Marshal Ward, father of Frank Kingdon-Ward, then taught English and Biology at Sind College, Karachi and in World War 1 was a Lieutenant in the Deccan Infantry. He retired from education in 1927, settled in Srinagar, and proceeded to travel extensively in the Himalayas. In 1929 he met Major George Sherriff, originally from Scotland.

**George Sherriff** (1892 – 1967) from Scotland, was of a like mind with Ludlow in terms of exploring the Himalayas. The two became great pals and made a series of expeditions between 1933 – 1938 collecting specimens for museums and seeds for sponsoring gardens.



Frank Ludlow, George Sherriff, an unidentified Tibetan, 'Eliot' and Betty Sherriff. (photo [RBGE](#))



**Tibet** held a fascination for Europeans at the time, it was largely closed to Europeans with an administration extremely suspicious of foreigners. In addition, the terrain was difficult to traverse because of roaring rivers and steep valleys.

There is little doubt that they were interested in Tibet because of the publication in 1926 of the account of the Frank Kingdon-Ward and the Earl of Cawdor 1924 expedition, under the title *The Riddle of the Tsangpo Gorges*. This is still one of the best travel books ever written and was re-issued, [updated, by Kenneth Cox](#), 2001.

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**The Tibetan Peony** was found growing in and around villages, especially in the hedgerows surrounding fields. Its association with people implies some degree of cultivation and peony roots of various species are used medicinally.

In cultivation the Tibetan peony is a vigorous plant that in the mild climate of Victoria, British Columbia can grow 10 feet tall with yellow flowers up to 4 inches diameter. When grown in the open under stress conditions the flowers can be well displayed, but my quarrel is with plants grown under soft conditions of shade, with ample nutrition and moisture. Under these conditions the luxurious spring foliage develops a yellowish-green colour which envelops and hides the not so dissimilar yellow flowers in the interior of the plant. The display lacks oomph.

The technical distinguishing features of the Tibetan peony include the yellow flowers bearing only one or two carpels and containing the largest seeds of any peony. The flowers are self-fertile, seeds are abundantly produced and readily germinate. I complain that this leads to an excess of specimens in gardens, taking up space that could better be used for other peonies.

One good thing about *P. ludlowii* is that it has contributed yellow genes to some of the hybrid tree peonies. The Lemoines and Saunders used its pollen producing such famous old cultivars such as 'Alice Harding', and 'Chromatella'; later hybrids such as the semi-double 'Age of Gold' have less over-weighted flowers.

Frank Ludlow donated his collections to the Natural History Museum, London. He was especially fond of birds and contributed over 7000 specimens. Two birds, a hedgehog and *Paeonia ludlowii* are

named for him.



*Paeonia "lutea"* - photo Trond Hoy.

### **The Perfect Yellow Wild Tree Peony – Potanin and Delavays' Discoveries**

**Yellow** is such an eye-catching colour in peonies that there is always a demand for them. My first tree peony was a mail-order 'Age of Gold' back in 1970's Halifax; that one is a hybrid deriving its yellow from the Tibetan yellow peony, *P. ludlowii*, dealt with previously. Here we consider the other half of the Delavayanae – the small-flowered wild tree peonies.



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**Jean Marie Delavay (1835-95)** was born in Les Gets, Haute Savoie, France, entered the priesthood and became a missionary to China initially based in Guandong province where he started collecting pressed specimens of the amazing plants he found in his travels.

While in Guangzhou (Canton) he met another keen plant collector, the Brit Henry Fletcher Hance who was departing for England and said, since he was visiting the British

Museum (now the Natural History Museum, London), he would be honoured to deliver Delavay's specimens also (where they may still be examined).

A few years later Father Delavay, on leave in Paris, met the older and already famous Father David Armand who chided him for giving such interesting material to the English (!), and introduced him to his friend Adrien.



**Adrien R. Franchet** was Director of the Natural History Museum, Paris who, in subsequent years, was to receive an incredible 200,000 plus specimens from Delavay by now based in NW Yunnan, and from which he would describe over 1500 new species – surely this should be a Guinness World Record?

A small, very dark red *P. delavayi* flower bud - photo Margaret Young.



***Paeonia delavayi*** was the name that Franchet gave in 1886 to a small tree peony to honour the collector. Most

gardeners know this plant but “it don't get no respect” because it usually has small deep red flowers which visually get lost against the background and hence is usually ignored.

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**Grigorij Nikolajevic Potanin (1835-1920)** was born near Omsk, Siberia and believed passionately that Siberia should become an independent republic. Unfortunately the Czar disagreed and Grigor got five years hard labour but typically, wrote a history of Siberia during 'free time' in his cell.



Potanin was one of those passionate, over-active people who just kept on doing things: he was a co-founder of the first Siberian university (Tomsk), travelled widely through the central Asian republics, often with his wife (unusual at the time), studied the steppe languages, made ethnographic collections, collected plants, animals and minerals eventually getting into northern Yunnan. His plants were sent to Leningrad where Komarov did not get round to naming a small peony *Paeonia potaninii* in his honour until 1921, the year after Potanin died.

*Paeonia potaninii* colour form – David Millward.

**Potanin's Peony** is similar to Delavay's but generally makes a better garden plant since in addition to red shades there are orange, yellow and white flowered forms. I got seeds of *P. potaninii* through NARGS, two germinated and I gave



one to my friend Carol. Both plants flowered with attractive coppery-orange flowers borne in 3-flowered cymes which extends the flowering season since the flowers open in succession. Both plants are well-behaved upright specimens without the annoying habit of spreading by underground stolons shown by some collections and make excellent garden plants. Unfortunately, neither plant produced any seeds in the first year of flowering but, suspecting self-incompatibility, the next year I got a flower from Carol's plant to use to pollinate my specimen and seed was produced in abundance –QED. By contrast the usual deep red flowered form of Delavay's peony is self-compatible, hence seed is abundant, and plants are consequently common in gardens.



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*Paeonia potaninii* ex ACE 1047  
– photo Gail Harland.

**Yellow Potaninii.** The most desirable garden form of Potanin's peony is the yellow-flowered upright one. Finally a nursery supplied a yellow one but it was short and had an extensive underground creeping network – not right – I despaired. Then a quirk of genetics happened: one of the

seedlings from the orange form flowered yellow – happiness! – but it is self-incompatible so cannot produce seeds by itself – despair! There is a workaround, it just takes a few years.

**The Conclusion.** Now that the group has been studied for well over 100 years some conclusions about the Delavayanae have been reached and that is that in the group as a whole there are only two biological species.

1. *P. ludlowii*, the Tibetan Yellow tree peony. Genetically this is an oddity in its restricted genetic variability, restricted distribution and association with field edges and gardens. It may owe its survival and/or origin to humans (compare corn).
2. *P. delavayi*, Delavay's peony. A complete contrast to *P. ludlowii* in that it has a wide distribution in the wild, a vast range of genetic forms resulting in plants with or without stolons, tall or short stems, self-fertile or outcrossing, with almost black, red, orange, yellow or white flowers with or without red flares on the petals.

What happened to Potanin's peony? Once it was realised that there was only a single variable species the Rule of Priority meant that the oldest name (1886) took precedence leaving *P. potaninii* (1921) as a junior synonym, but Potanin is still my favourite revolutionary and my orange and yellow peonies I call *P. delavayi* Potanin group.

The other question is where does that leave *P. lutea*? That name has been applied to both biological species and its use is so mixed up that biologists call it a nomen confusum – just forget it.



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## --- Cultivation ---

### *Jancaea* or *Jankaea* – and how I grow it: Vlastimil Pilous (text and photos).

Writing about plants from the Gesneriaceae family (especially the European ones) is actually like carrying wood into the forest. There is perhaps no rock gardener who does not know them and has not cultivated at least some of them. They are characterized by a triple motto: they have beautiful and abundant flowers, decorative rosettes of leaves and perhaps with the exception of *Jankaea* (*Jancaea heldreichii*), they are also easy to grow. Which other alpines have that? But despite her notorious reputation, it is still possible to come up with some news here.



Among European Gesneriaceae, *Jankaea/Jancaea* is the one that is most shrouded in various myths, so it is no wonder that it is sometimes referred to as the "queen of alpines". So, what's the real story? *Jancaea heldreichii* is a monotypical genus, which means that it has only one representative; and it has its own complex taxonomic story. It is named after the Hungarian botanist and curator of the botanical department of the National Museum in Budapest, Viktor Janka von Bulcs. Due to their geographical proximity in the times of Austria-Hungary, Hungarians very often botanized in the then quite wild Balkans, where botanists in Western

countries did not flock, and therefore the newly found plants were often named after each other. However, from the etymological point of view, Janka's name sounds Slavic to the Czech ear, which was quite common in Hungary, because there are many such words and names, although often distorted in many ways (no wonder; Hungary is tucked between Slavic Slovakia, Croatia and Serbia). Therefore, I would not be surprised if there was such an outspoken Slav among his ancestors, who brought his name there; after all, even the most celebrated fighter for Hungarian independence, Lajos Kossuth, was a Slovak by descent from his grandmother. That's why we knew the plant for a long time under the name *Jankaea*. Only recently it turned out that in the first description the author did Janka a disservice and out of ignorance "faux-latinised" his name incorrectly to Janca, and thus called the plant *Jancaea*. According to binding nomenclatural rules, it is thus valid, even though



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Janka did not write like that at all and would probably turn in his grave. It is an example of how even well-meaning rules can lead to meaningless ends. However, it is not easy even in Czech, where we meet three names: jankovka, plstnatka, or the simplest jankea.

The name of the “felted” plant, (plstnatka – referring to Olympic grandmothers supposedly lining their egg baskets protectively with the furry, silvery leaves of the plant) was proposed by Jaroslav Nauman - Horný, the most important of the pioneers of mountaineering in our country and the author of a well-known booklet - Rocks and Rock Gardens - the Czech "bible" of alpinists. Probably out of respect for him, the internet motto of this plant prefers this name. I have nothing against Mr. Horny, and given her beautiful leaves, I admit that it's quite apt - but what's the point: I've been mountaineering since my student years, and I've never heard anyone use it in all those six decades. Everyone will say without exception: jankea, and therefore it seems more logical for me to stay with that, or use the modified name jankovka for better declension. My private opinion is meaningless, but for my money, I like these names more.

Vlastimil Pilous' jankea wall



All European Gesneriaceae, and therefore also jankea, are developmentally old plants and represent Tertiary relicts. They survived the unfavourable ice age in southern Europe, which was probably significantly helped by the proximity of the warmer Mediterranean Sea and the rugged relief conditions of the mountains, which created more promising microclimatic enclaves in which these plants survived. At the same time, however, they are also European endemics, mostly with relatively limited areas and the smallest is the jankea, as it grows only on Mount Olympus, which is the highest



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Greek mountain range - not just a mountain as is sometimes translated, especially in mythological sources. Olympus is almost entirely built of limestone, so there are abundant deep canyons to gorge valleys with numerous steps and waterfalls. This is exactly what Jankea is looking for. The whole mountain range is characterized by steep slopes, and therefore, despite the southern position, there are relatively often avalanches in the ravines.



Jankea is rather a subtle plant compared to other species of this family, especially *Ramonda* (they can create "cakes" with a diameter of over 20 cm under favourable conditions in nature, but also in the rock garden), where the diameter of one decimetre is a big exception for *Jancaea*. In nature we can see a direct relationship with the degree of shading. The largest rosettes are in the deepest shade, as this allows them to capture more light for the necessary photosynthesis, while in full light they are the smallest and most felted (silvery), but still have the most flowers. Even so, as a whole, jankovka are significantly more modest in the number of flowers in one plant (or rosette) than in the case of *Ramonda*. In these, old rosettes can produce dozens of flowers on a large number of stems, while in jankovka there are mostly only 2-4 stems with a few flowers.



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It is also little known that the company of Karel Stivín - by the way, a rare and good man - was one of the few in the world that had jankovka on offer. In the catalogue from 1946, in addition to a number of other rarities, he offered it for CZK 30. For comparison: at the same time, it offered all three species of *Ramonda* for 5-10 CZK, while this price of *Ramonda* in the offer was exceeded by only a very small number of plants, mostly woody plants. The vast majority of items there ranged from 2-5 CZK. I think it was offered abroad only once by one company, the renowned German Sünderman from Bodensee. Due to their kinship, jankovka form hybrids with *Ramonda*, which originate from at least two different Czech alpine growers, and therefore probably originated from different species of *Ramonda*. I don't know their exact pedigree, but in any case, they still relatively rarely circulated among our alpine artists. However, their attractiveness does not surpass their parents in any way, nor, in my experience, are they characterized by better vitality, so you do not have to feel very sorry if you do not have them. But that is, of course, my subjective opinion, which I do not impose on anyone.



Rare rose clone of the famous *Jancaea heldreichii*, grown by Vlastimil Pilous.

Of all the European genera of this family, the cultivation of *Jancaea* is the most difficult, and as far as I know, not enough rock gardeners are very successful with it. The basic condition for its cultivation is a shady position and calcareous substrate. It is also commonly said that they require

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perpendicular, or at least very steep, walls so that water can drain rapidly, or rather drain from its felt leaves. This is probably not absolutely necessary, but at least useful. Some growers try to mature it by growing it in pots in a cold greenhouse. This is, of course, an advantage, because they can be moved arbitrarily and their watering outside the foliage can be well controlled. I chose another path, by imitating natural conditions as accurately as possible. I built two shaded travertine (aerated) walls especially for them, and it worked. In nature, it grows both in humus on rock terraces and directly in rock joints. That's why I filled the joints in one of the walls with old, already very clay beech humus, and in the other I replaced the rock joint with crumbled soft travertine. It grows well in both, but if I remodel some parts of the walls, I prefer today to mix the two substrates together.

In these conditions, it makes side rosettes without any problems and creates whole tufts after a certain time. That's why I divide them from time to time (with an interval of several years) and get new plants. Associated with this is one interesting thing or, more precisely, a difference from most other plants. Separately larger rosettes grow on very well and in almost full numbers, while small ones regularly have a higher mortality rate. I haven't figured out the reason yet.

Growing jankovka from seeds is a big problem - starting with the fact that the seeds are, as with all Gesneriaceae, very small, it can be said powdery, so the handling itself is difficult. It is not easy to get them either - I can say for myself that they only occasionally make usable seeds in culture, but more often, even if they create seedpods, they are infertile. I do not know that anyone would successfully grow it from our seeds (if so, I would welcome them to write about it). However, at one time a foreign alpine grower was successful in this direction - I suspect that it was a Dutchman who even published it. (Ed.: This was Harry Jans – who elaborates on his seed raising technique in this IRG.) In the conditions of the walls in which I grow them, I even sow myself here and there on my own (unlike *Ramonda*, which are sown quite abundantly in the same conditions of tufa walls), but it is strange that these are never in the substrates in the joints, but always only in the solid tufa. However, such individuals have the disadvantage that they are not able to be transplanted, as they would necessarily tear the leaf rosette from the entire root system ingrown into the rock cavities, and on the other hand they need water very often because the absorbency of the solid tufa is limited.

Propagation by leaf cuttings is commonly reported in the family Gesneriaceae. I didn't try the others, because they multiply on their own like salad leaves, but with jankovka I do, but rather just for fun, because I don't need it for putting on side rosettes. I must say that I do this completely unsuccessfully. Perhaps it is due to its strongly felted leaves, but also to the fact that I do not have the right "green fingers". But since I have not heard that anyone else who is much better than me in this direction is celebrating success in this method, it will probably not be a successful method in general.



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There is, after all, an overall problem of the walls that I built for jankovka. As long as we had a "normal" climate, it was fine. However, the extremely dry last years with hot summers proved to be a disadvantage for them, because they also dry out easily and relatively quickly, and their regular watering must be carefully monitored. Drying is not fatal for them, as all European Gesneriaceae are known for being dry-adapted, and they can overcome a fairly long period of heat in a shrunken and curled state of the leaves, but it is not nice to look at and it is also possible that it also weakens their ability to bloom. At the time when I built walls in height years ago, there was no climate change or clue, but today I would definitely choose the method that Linzmajer invented and build a rock garden sunk below ground level in the form of a "mini-canyon".



White form of *Jancaea heldreichii*, grown by Vlastimil Pilous.

But there is also an unforeseen problem with jankovka. From time to time (fortunately only exceptionally) without any obvious cause and during the full growing season, even 2-4 plants die side by side at once. And not some poor examples, but those which had prospered and flourished the previous year. From the fact that they are always next to each other, it is clear that it is a disease (perhaps a fungal one?), But even my well-known phytopathologist friend, to whom I brought these affected plants for examination, did not find anything in them. So I'm glad about that!

V. P.

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## --- Cultivation ---

### Growing *Jancaea heldreichii* successfully from seeds: Harry Jans, The Netherlands (text and photos)



This plant is at the top of most enthusiasts' want list and is always described as extremely difficult in the literature. In this article I will try to convince you that its cultivation and propagation is no more difficult than that of *Ramonda myconi*, but it is better outside than in an alpine house.

Harry Jans' vertical tufa wall.

#### General

Very little has been written about the cultivation and propagation and on most occasions the same mistakes are made over and over again, because all too often details have simply been copied from earlier literature. Any book will tell you that you should water jancaeas carefully and should avoid wetting the leaves, as this could even result in the plant's death. Nothing could be further from the truth. In fact, we will see that

quite the opposite is true. My first *Jancaea* plant was given to me by my late Czech friend Zdeněk Štásek in 1989 and this plant was the start of my *Jancaea* colony in my garden and the possibility to distribute it also to other plant friends.

After more than 30 years of personal experience with this plant it has become obvious to me that the use of tufa is the key to growing and flowering jancaeas successfully. In dry periods the water in the tufa evaporates, creating a moist microclimate around the plant, which is exactly what it needs to grow well. Another fairy tale is the advice to avoid overhead watering. Never, I repeat never, have I lost a single *Jancaea* planted out in tufa as a result of watering overhead, which I do throughout the year! Especially on hot summer days I spray the plants until they are completely soaked. Only in freezing weather or when they are in flower do I treat them a bit more carefully. I have to mention that all my jancaeas are growing in a vertical tufa wall.



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Tufa walls in Harry Jan's garden, 2021- at *Physoplexis* flowering time.

Water getting into open flowers sometimes causes damage, so that seed development is impaired. After the flowers have dropped off and the fruit starts to grow, it is good practice to give the whole plant a good spray.



During the growing season, particularly from May to August, it is recommended to spray the plants with a liquid foliar feed every six weeks. You will find that the plants will start to look healthier, flower more abundantly and that the seed pods will grow larger.

*Jancaea* plants clumping on the tufa wall.



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The best time to plant out *Jancaea* is in April and May. It is best not to use mature plants but better two-year-old seedlings. The soil I use to fill the 2,5-3 cm holes in the tufa is a crumbly mixture of fibrous-loam, peat, crushed tufa, coarse sand and, most important of all, finely chopped sphagnum moss. This last ingredient ensures an airy mix and retains enough moisture for the roots. I also add some mini-osmocote ( slow release fertiliser) as an extra feed for the first few months.

Planting out in tufa rock should be done with a lot of patience and care. That is why I now grow the seedlings in so-called multitrays to keep the rootball quite small and to keep damage to the root system during planting to a minimum.

After planting into tufa rock, it is advisable to insert a bit of sphagnum moss all around the rosette. Not only does the moss indicate when the plant should be watered, the plant will also send out roots into this material; any roots are often formed directly at the bottom of the stem. This is one of the reasons why dead leaves at the bottom of the rosette should not be removed immediately; new roots could have formed right through them. The old leaves thus not only form a source of nutrients, they also provide a hold for the new roots to cling to.

After putting the young plants into their final position, it is essential to water them sufficiently during the first few weeks, and if necessary, cover them with some shading material to prevent them from drying out.

Through some winters, extremely cold with night temperatures as low as minus 15°C for a few weeks on end, all the plants outdoors never suffered any visible damage. I never protect my plants with a pane of glass or with fleece and so rain, snow and hail can do their worst. I should add again, that all plants are planted in a vertical position, so there is no danger of any water collecting in the rosettes.

### Propagation

There are three ways to propagate *Jancaea*, as is the case with most Gesneriaceae. These are: dividing large multi-rosetted plants, this is done in the spring, around April, by carefully pulling off the



smaller side rosettes from the main rosette; taking leaf cuttings; or from seed.

I was never successful myself with leaf cuttings, because it is a very slow process as the leaf often rots away after a few months, well before a small plant has been formed.

Seedpot with lid



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I prefer to grow them from seed: if you can lay your hands on *Jancaea* seed, you could have flowering-sized plants after 2-3 years. Small containers, made of clear plastic, with translucent lids are ideal for sowing all Gesneriaceae, including *Jancaea*. I use ordinary potting compost for sowing, after sieving out the coarser material and adding a bit of crumbled tufa and some coarse sand. This mix is put into the microwave oven for 10 minutes at maximum power. The mix will then be free of germs. Let it cool, add some distilled water and fill the container up to 1 cm from the lid, thus leaving some airspace. Then sow the seed, which is fine as dust and should never be sown too thickly. Sow two or even three pots rather than try to crowd too much seed into one container. Over-thick sowing will result in overcrowding, slowing down the seedlings' growth.

When all this has been done, I carefully spray the entire surface with a fungicide. Make certain that the soil is sufficiently moist. Then close the lid, and keep it closed for several weeks. *Jancaea* normally germinates within 6 weeks, without the need of exposure to winter cold. I dry the seeds that ripen at the end of July or early August and keep it in the refrigerator until January. The seedlings do not grow as fast as those of *Ramonda myconi*, but I wouldn't say they grow extremely slowly.



*Jancaea heldreichii*: left, at four months and right, ready to pick out at 5 months.

I personally administer a weak solution of foliar feed after about 3 months. The plants are by then large enough to resist competition from mosses, as these only start to grow after fertilizer has been given. No moss is formed before that time, because the soil has been sterilized by its treatment in the microwave oven. *Jancaea*s do not really hate moss, but there is a limit, of course. You should keep checking, however, so that you can take immediate action should you detect any fungal activity or when the moss is getting too thick.

The airspace of about 1 cm, created inside the plastic container, ensures a high humidity, which is vital for the small seedlings. As soon as the seedlings are large enough to be handled, they can be pricked out in a small plant propagator, using the same type of compost. It will not hurt the seedling to

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be planted a little deeper than before. I normally transplant them into a new propagator with fresh compost about three times a year. It benefits the root system and stimulates growth.

Twice transplanted seedlings, circa 8 months old.

During the entire time, growing from seedling stage to a 4 cm plant in diameter (they are then about 1,5-2 years old), the plants are kept in a lidded propagator, or a multitray with cover.

I then pot them up individually in plastic pots. I never use clay pots because they

dry out too quickly. The individual pots are again covered with a drinking glass (upside down so that humidity remains high. The glasses or tops are removed once the plants are well rooted and the plants are then put in a shady, sheltered position.



*Jancaea heldreichii* at 1.5 years old.

At this stage they can also be planted out in a tufa wall. The outer leaves may die off, but the centre of the plant will survive. You will find that the plant grows well the following season. Out of the 45 I have planted out in my garden throughout the years I have lost 1 or perhaps 2. I have applied the



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same method of sowing seeds of the other Gesneriaceae such as *Ramonda*, *Corallodiscus* and *Briggsia*, always with huge success.

The great advantage of seed raising over all other forms of propagation is the larger number of plants obtained and the greater variation in plant habit. I have, for example, been able to select two plants with larger flowers from my own seedlings.



During some years self-sown seedlings pop-up on my tufa wall when I was too late to collect the seeds. And also, one hybrid with *Ramonda myconi* (x *Jancaemonda*) is one of the spontaneous seedlings on my tufa wall as I have also *Ramonda myconi* growing in the same tufa wall.

I have to admit, that after 30-years the strength of my *Jancaea* plants is going down and some have died, so at the moment I am growing new ones from seed and will replant

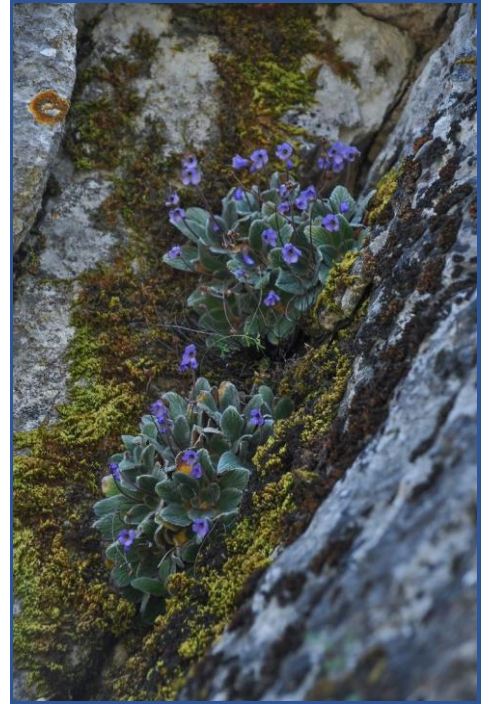
[my tufa wall](#) again to get a new healthy colony of plants again.



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I hope this article will change the reputation of *Jancaea* being a difficult plant to grow. It's relatively easy to grow from seed, so there is absolutely no need for so-called enthusiasts to collect it from the wild on Mount Olympus, which is illegal!

H.J.



*Jancaea heldreichii* on Olympus, Papa Rema Gorge, Greece 1120m





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Further photos of *Jancaea heldreichii* on Olympus, Papa Rema Gorge, Greece by Harry Hans.





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## --- Plant Portrait ---



*Sternbergia sicula*

### **There is no Sternbergia like Sternbergia: Vlastimil Pilous, Czechia (text and photos).**

As with *Jankaea* so it is with *Sternbergia*. It has the Czech name lužanka, but no one will use it anyway. It's just *Sternbergia*. Perhaps this is also because one of the most famous aristocratic families is so "well-established" in our countries, and moreover - who would not know of the flagship [Český Šternberk Castle](#)? For us, however, this genus has another charm - it is actually named after Kašpar Maria Sternberk - about which we can say with a bit of patriotic enthusiasm that it was despite his living in Germany and his writings in that language. - even though the nobility is always quite a problem with that nationality. In any case, in addition to several other languages, he could speak Czech. He was one of the most important naturalists of his time. Although he initially devoted himself to a church career, he left it definitively in the years 1804-1806 and focused on the natural sciences. Initially he lived in Paris and Bavaria, but his scientific career is mainly connected with the Czech Republic, as in the first half of the 19th century he spent most of his life at Březina Castle near Rokycany. He had a wide range of interests, but he devoted himself predominantly to botany (he



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wrote, for example, a Latin treatise on the genus *Saxifraga*), geology (which is why he already has a "position of great respect" for me, and he also has one special bonus, as he was the first to introduce the oldest deposit gold in the Krkonošské Mountains, which I researched a few years ago from a mining and paleontological point of view). But most importantly - he was one of the founders of our National Museum, to which he dedicated his extensive collections. The English, Germans or Russians as large nations can pick up the number of plants named after them, so to speak, by pitchforks, while we have a quality gathering of them - and *Sternbergia*, moreover in the form of a family name, is one of them.

Perhaps these facts are, in addition to high decorativeness, the reason why *Sternbergia* is one of the most popular bulbs among Czech growers, which is evidenced by the fact that they have been written about several times in our magazine, *Skalničky*. But still, not everything has been said about them yet, so I would also like to contribute a little to the mill, especially since I paid a lot of attention to this family due to the above-mentioned weakness. Botanical descriptions are useless - whoever wants *Sternbergia* has at least some species already in their garden and, as is well known, one photo will say more than ten descriptions.



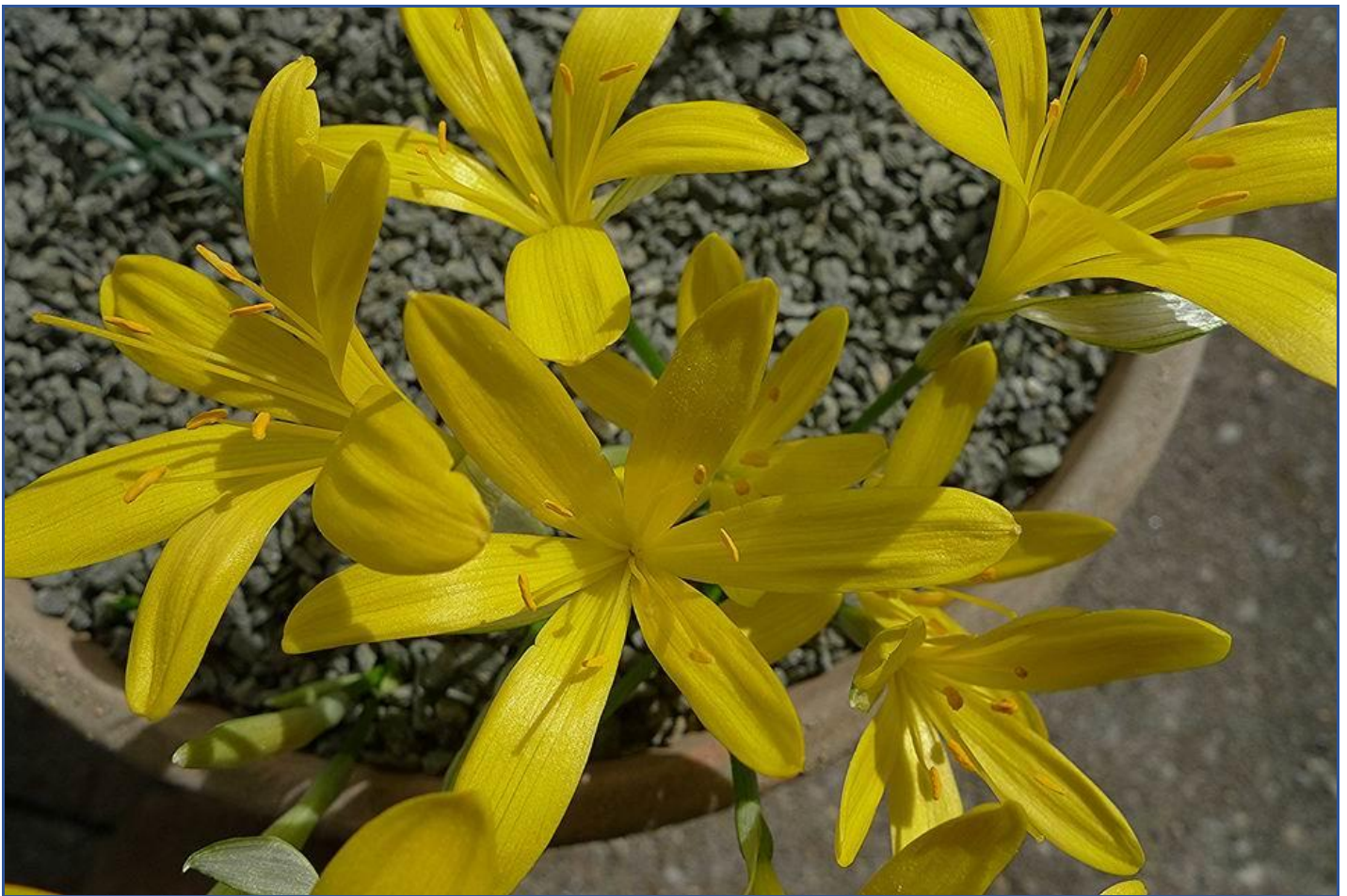
*Sternbergia candida* – one of the two spring blooming *Sternbergia* species.



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This genus has two great advantages. It is small in number, so there is (with two exceptions) a real possibility to get it for the most part (which will always please "collectors") and its individual types are also easily distinguishable from each other. This is not at all obvious for large families, more precisely it is impossible for a "non-specialist" (see, for example, crocuses, from which the publication "explosion" goes around and the ordinary collector can fall into complete despair).

Like some other "southern" bulbs, *Sternbergia* bloom in spring and autumn, but most species are in autumn, only *S. candida* and *fischeriana* are spring. Interestingly, in addition to the generally and long-known species, there are two species that have been found and described relatively recently: *Sternbergia candida* in 1979 and *S. greuteriana* in 1990.



*Sternbergia greuteriana*

The genus has a total of 9 species (*Sternbergia colchiciflora*, *lutea*, *sicula*, *greuteriana*, *fischeriana*, *candida*, *clusiana*, *pulchella* and *schubertii*). The most complicated situation is with the last mentioned species, which was described as early as 1840 and under this name it is also mentioned by the Flora of Turkey from 1984 as endemic and most similar to *S. sicula*. However, it is written about somewhat with embarrassment, even suggesting that it can only be a "mutant" from *S. sicula*.



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It was only in 2002 that two renowned German botanists definitively confirmed that this rather small species with a small area actually exists.

*S. pulchella* also has an interesting history: it was described as early as 1854, but then seemed to fall into oblivion and became known to the general public only after 1986, when it was "rediscovered" in Syria by Peter Boyce and published by Brian Mathew. It also belongs to smaller species, and is more similar to *S. colchiciflora* than other more robust species with larger flowers, but according to the species name "pulchella" (= beautiful, pretty) it probably does not lack beauty anyway. Both of these species are still very rare in culture (I think only some of the most important botanical gardens have them), so we are not so lucky to be able to get them. *S. pulchella* in particular would appear to be quite impregnable, and if you want to have it and at the same time you are tired of life, then you can go to the current "peaceful" Syria: but it is really difficult to get travel insurance.



*Sternbergia lutea*

If we start from the opposite end, i.e. with the most famous ones, it is most logical to start with the most frequently grown *S. lutea*, which also has one of the largest distribution areas. It grows throughout the Mediterranean and east, allegedly as far as Turkestan. Today it is one of the relatively commonly available species and probably everyone who wants to have it already has it in the garden.



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How could it not, when you can already see it in southern Bulgaria and the European part of Turkey in cemeteries, or even in villages, in front gardens or directly on roadsides, where it is of course artificially planted. In natural conditions, its localities can be characterized by the words: scattered but abundant, which means that you will not encounter it for miles, but if you do, it is usually a colony with thousands of individuals, because it is easily propagated by multiplying bulbs and probably seeds (they are sticky, and are spread by ants, but probably easily by birds on feathers and on small furry mammals). In addition to being relatively common, it is one of the most decorative members of the genus, as it has the largest flowers after *S. clusiana*. Where are the times when, as a student, I looked up with admiration at a grower from a neighbouring town, who at that time under deep communism, had perhaps the only one in the republic? And I tried in vain to get her from him. Today, Turkey alone exports over one million bulbs every year artificially propagated in the fields in the Dutch way - frankly, I have no idea where such a large number of bulbs will go and who is buying them. ( Ed.: *Sternbergia* are popular when sold in garden centres in the UK.)



Comparing *S. sicula*, left and *S. lutea*, right.

Very similar to the previous one is *S. sicula*, which is a kind of miniature of it, and therefore it is sometimes referred to as a subspecies. It is significantly lower, has smaller flowers and narrower leaves. But even so, it can be considered a decorative plant and the advantage in our rainy autumns



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is that it blooms about two weeks earlier. Like *S. lutea*, it can form colonies with thousands of individuals and sometimes near dwellings. But it grows over a much smaller area; it grows from southern Italy through southern Greece and Crete only to the westernmost, Aegean part of Turkey.

Also similar, but already significantly smaller, is *S. greuteriana*, which has an incomparably smaller distribution, as it grows only in Crete, the nearby island of Karpathos and two other small islands. It inhabits arid limestone, either bare or sparsely overgrown slopes with low shrubs (in the so-called macchia) and does not form large tufts.



*Sternbergia colchiciflora*

The last of the species growing in Europe is *S. colchiciflora*, which also has a large area from southern Spain to Iran and Israel. It is interesting for us that of all the species of the otherwise thermophilic genus, it extends the most to the north, so we can already meet its localities in nearby Hungary, and one of the northernmost is even in southern Slovakia. Before the division of the republic, it was actually our only domestic species. From Dalmatia, the variety *S. colchiciflora* var. *dalmatica*, which is generally smaller and has narrower petals. The name of this colchicum-like "*Sternbergia*" could evoke large flowers, but it is just the opposite: it has significantly the smallest of



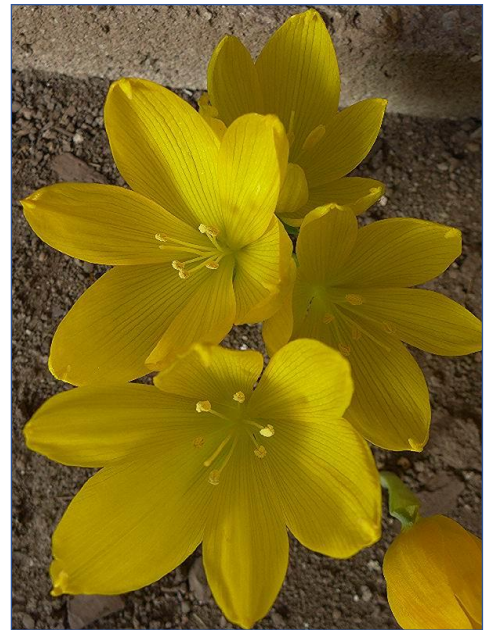
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the whole genus (on the other hand, many colchicums from the Orient also have small flowers - such *Colchicum / Merendera / atticum* are in this respect "black sheep" of the whole genus) and is the least attractive species of the whole genus". However, its advantage is that while all three of the above-mentioned autumn species bloom with developed leaves, which can slightly reduce the visual effect, this does not, because the flowers sprout from the bare ground, which does emphasize them a little.



*Sternbergia clusiana*

Other species are only Asian and there are three of them in culture. The most attractive is *Sternbergia clusiana*, which has the largest and most beautiful flowers of the whole genus (but also one of its synonyms is *S. grandiflora*). Together with *S. colchiciflora*, they are the only members of the genus that bloom without leaves and its upright, chalice-like flowers sprout directly from the ground. It also differs in that its large bulbs are solitary and the plant does not form clumps by division, as is common in previous species. In nature, it prefers calcareous and deeper soils, while other species will suffice even with very stony and shallow soils on the slopes. We can therefore find it in abandoned, uncultivated fields or in sparse orchards. Its range extends from Turkey to Iran, Iraq and Israel.





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The two Asian species are the only ones within the genus that bloom in spring. *S. fischeriana* has a much larger area, extending from southwestern Turkey to Kashmir, and extending into the Transcaucasus. Its flowers are among the earliest bulbs and blooms with fully developed leaves. Unlike the previous one, old plants form whole tufts.



*Sternbergia fischeriana* – western type.

In the case of *S. fischeriana*, however, I can also contribute with one finding, which so far none of the English sources mention. The plants from the southwestern edge of the area (we could say from the "Aegean" tip of Turkey) are quite different from those from the eastern part. Plants in western Turkey are much more robust, their flowers are more than twice as large and their leaves are more grey than those in the east, specifically Georgia and Azerbaijan, which are deep green. The differences are so conspicuous that it could be named a separate subspecies, but fortunately nature saved me the "descriptive" complex of some "splitters".



*Sternbergia fischeriana* – eastern type.



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Comparison of *Sternbergia fischeriana*: eastern type left, western type, right.



Comparison of *S. fischeriana*: western form with two flowers on stem, left with eastern, smaller form, right.

The last Asian species represented in the culture is *S. candida*. It differs not only in that it also blooms in spring, but mainly in that it is the only species of the genus that is white. It has the smallest area of all kinds, limited to virtually a single mountain range in southwestern Turkey. This is probably the reason why it was also found relatively late, in 1979. In nature, it belongs to the



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lime-loving species and the largest groups grow both on stony slopes and in muddy piles of stones taken from the fields. It is also one of the earliest bulbs. Its flowers are smaller than *S. lutea*, but due to their different colour they are also very attractive. What *S. fischeriana* has in common is that stronger bulbs can have two flowers on one stem.



*Sternbergia candida*

In culture, sternbergias are not demanding and grow in any soil. However, it should be seen that they are thermophilic plants and therefore require summer drought, preferably summer baking. As for frost resistance, I prefer not to take risks and grow them by the south wall, where I cover them for summer with a [makrolon] polycarbonate rainproof board and in winter together with a non-woven anti-frost fabric. Although our last winters have only significantly frosty days, the developed leaves of species that sprout in the fall would certainly not survive them. An alternative is to grow in a cold greenhouse, where it is also necessary to protect against frosts below -10 ° C.

V.P.



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*Sternbergia candida.*

Other sources:

Pasche E. & Kerndorff H. (2002):  
The genus *Sternbergia* WALDST.  
& KIT. (Asparagales,  
Amaryllidaceae) in comparison  
with special regard to the  
rediscovered *Sternbergia*  
*schubertii* SCHENK —  
[Stapfia 80: 395-416](#)



Also:

*Sternbergia* on the website of  
the Pacific Bulb Society: [click  
here.](#)

*Sternbergia lutea*