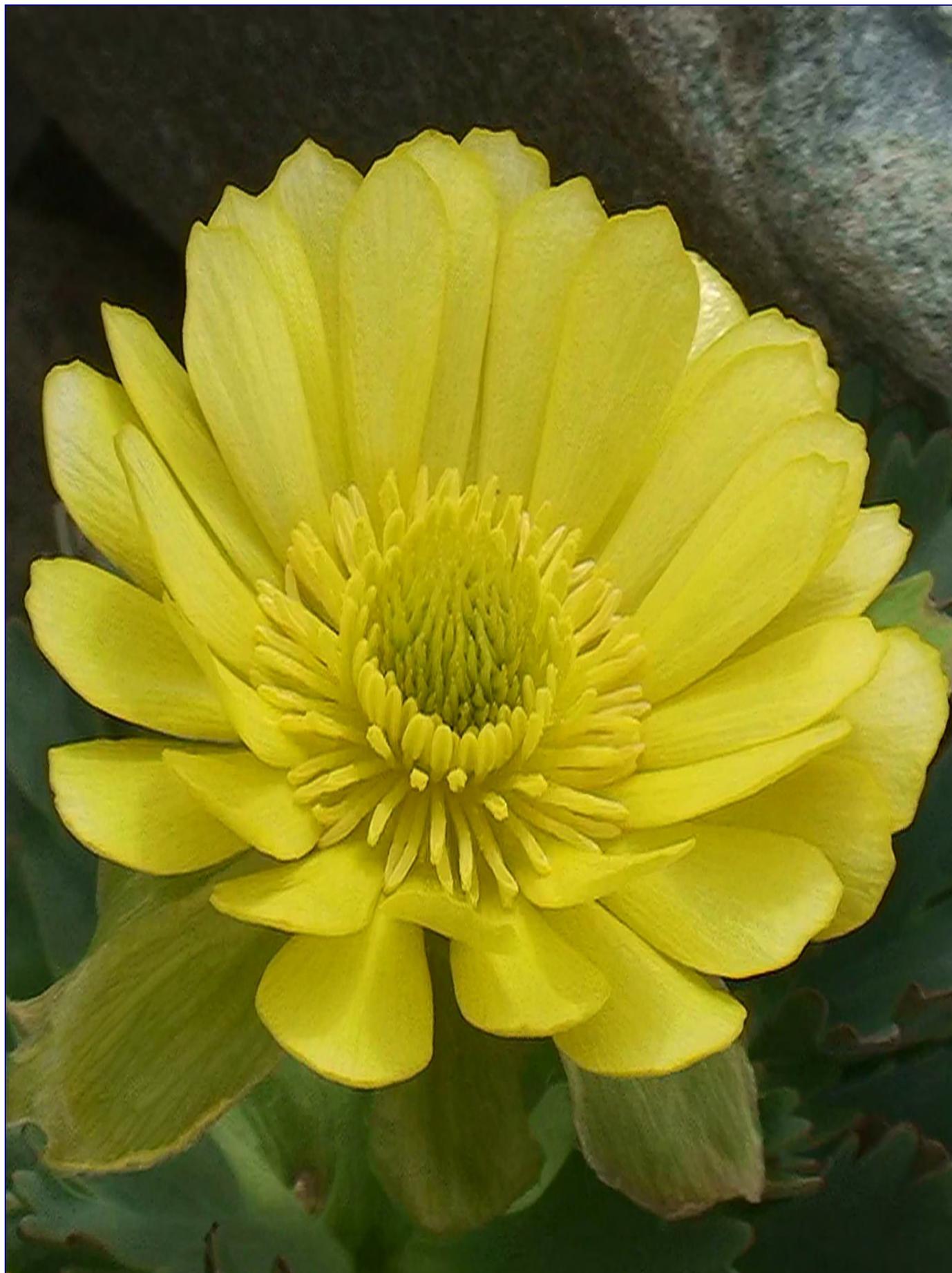


International Rock Gardener



---International Rock Gardener---

June 2011



IRG opens this month with a piece from New Zealand, from Steve Newall. Steve will be known to many from his previous work collecting NZ native plant seed though he is now kept busy growing all sorts of crops, from *Sedum acre* to *Meconopsis* for the seed company Jelitto. Happily he still takes to the hills whenever possible with his chums Dave Toole and Doug Logan and many audiences around the world have been delighted with his idiosyncratic tales of the New Zealand flora and of his plant explorations elsewhere. We have been pleased to welcome him on speaking tours in Scotland, where he shocks the sensible inhabitants with his preference for wearing shorts and flip-flops whatever the weather!

Cover picture: *Ranunculus acraeus* by Steve Newall.

---Gardens in the Mountains---

A visit to Awakino Ski Field text and photos by Steve Newall, New Zealand

Over the years I have visited most ski fields in New Zealand but never with snow on the ground. I figure that if I were supposed to be in the mountains during the winter my feet would be longer and require regular waxing. So, for me, ski fields are for easy access plant hunting and a great place to take my 16 year old daughter Fiona. [Awakino Ski-field](#) was to be the starting point for our first day of a tour of alpine buttercup sites and with our fingers crossed that the early December time frame was right we left Balclutha for a leisurely drive to Oamaru.

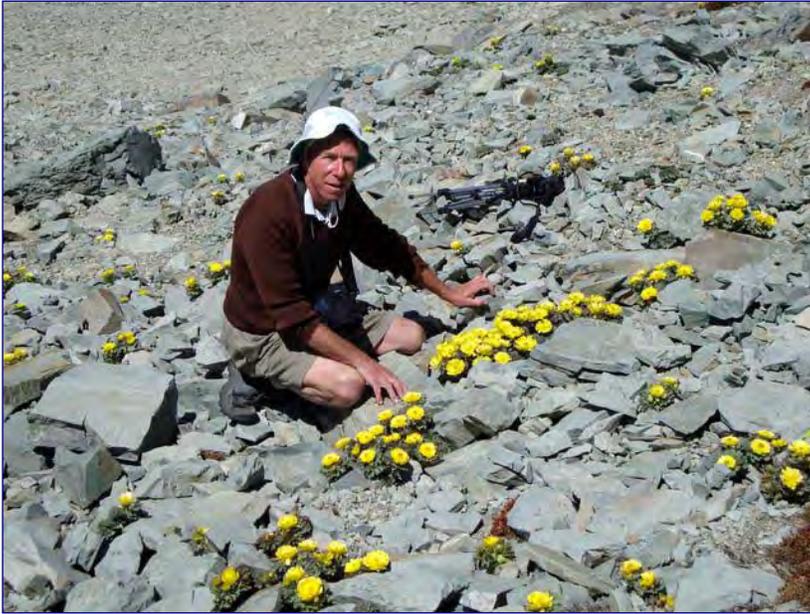


View from St. Mary's Range - looking west.

There is a locked gate on the ski-field road and it was very appropriate that we had to pick up the key from Hugh Wood. Originally from Nairn in Scotland, Hugh is a keen botanist and regular mountain goat. He was the first to notice an unusual buttercup high above the ski field in March 1986. He returned later that year to see it in flower and quite a sight it was. Opinion was that it was a variety of *Ranunculus haastii* separate from the plants in Canterbury and in the Eyre Mountains. It now has the official title of *Ranunculus acraeus*. One unique feature is the large number of flowers per plant and if

---International Rock Gardener---

the timing is right you can easily use up the rest of your memory stick. It has also been noted by Hugh that the Awakino population has decreased in size since he first saw it. (ED: there are various reports on this [wonderful buttercup](#) in the SRGC Forum)



Left: Hugh Wood with *Ranunculus acraeus*

Photo Doug Logan, Canterbury, NZ.

(ED: There are many threads about NZ Field Tips in both the SRGC Forum [Travel Section](#) and in the [archived 'Old Forum'](#).)

Over the obligatory and enjoyable cup of tea Hugh reminded me of my first visit to the area 20 years ago when I returned home with my camera case but not the expensive Canon camera that belonged inside. I failed to notice this for a day or two and when I realised the mistake I had a fair idea which rock I had left it on. Hugh kindly went back a week later and retrieved the camera which was no worse

for wear: a testament to the drier mountains of the east coast.

From Oamaru it is a 60km drive to the town of Kurow which lies at the foot of the [St.Mary's Range](#). A turnoff here leads into the mountains and soon we were driving beside the Awakino River. After a visit to the local farmer to let him know we were crossing his property we drove as far as the locked gate where we set up camp. We could have stayed at the lodge but I wanted Fiona to experience the great outdoors and with a good weather forecast for the next day nothing should have been a problem. Unfortunately I must have forgotten to check the night forecast and the two heavy downpours overnight taught my daughter a valuable lesson. Never trust your father !!

Left: The Goal - *R. acraeus*



The morning saw a slightly wet and bedraggled family pack their wet gear in the car and sit in the car going nowhere for 10 minutes while they warmed up then it was across the ford and up the four wheel drive track to the ski field in thick fog. This fog is a common occurrence in [North Otago](#) and Canterbury and is a sign of settled weather. Under a high pressure system clouds roll in off the sea and with a gentle north easterly wind behind it the fertile plains are blanketed in grey. However, those lucky enough to be on a ski field road in the area soon drive out of it at the 1400m mark into sunny skies and little wind. A very large patch of *Aciphylla scott-thomsonii* flowering by the stream was our first sight once we had escaped the fog and drove into clearer skies at the ski-field huts.

Leaving the car there we embarked on a

---International Rock Gardener---

round trip heading north east onto the tops (a 500m gain in altitude) south along the tops and back down via an old 4WD track.

The most common thing to be seen on the [Awakino ski-field](#) are rocks, rocks and more rocks. Near watercourses there will some greenery like *Phyllachne colensoi* and *Ourisia glandulosa* but it isn't long before any sign of moisture was left behind and it became exciting if we glimpsed a plant.



Celmisia angustifolia in habitat

We did see a lovely *Celmisia angustifolia* and it was not far from there that we first saw yellow flowers on the scree ahead of us. Although I was getting excited by this I hesitate to say I *raced* up there. I tend to think of it more as a fast waddle.



Ranunculus acraeus above the fog

---International Rock Gardener---



The *Ranunculus acraeus* were beautiful and we spent a pleasant hour taking pictures (or drawing them) and having our lunch. The buttercups are in typical NZ loose scree habitat, 1850m above sea level and on the shadier slopes. The flower petals are very popular with the local grasshopper population and occasionally red deer and even hares will eat all the flowers.



Fiona drawing Ranunculus acraeus

After lunch we completed the rest of the climb up onto the tops. Here the land was very flat and at 1900m not far from the limit of vegetation in New Zealand. If I had tried very hard I may have counted

---International Rock Gardener---

15 -20 separate species here. The plants are sparse but there is a lot of room and there were thousands of *Chionohebe thomsonii* flowering and hundreds of *Aciphylla dobsonii* doing the same.



Chionohebe thomsonii



Aciphylla dobsonii plant

Despite the number of *A.dobsonii* flowering they only represented 20% of the population, the rest remained without flowers. The poor things were also doing battle with gutsy grasshoppers and the weevils that are synonymous with dwarf aciphylla.

---International Rock Gardener---



Aciphylla dobsonii -flower head with grasshopper and showing grasshopper damage

Leaving this flat area behind we headed south east along the ridge at a moderate waddle until we dropped down to a saddle with the old 4WD track. It was here, aided by gravity, that I reached my fastest speed for the day – waddle factor 3. Despite the unusual speed I saw a large incongruous patch of white off to my right and went to investigate. It was an enormous patch of *Celmisia ramulosa* in flower surrounded by acres of barren rock. Hugh Wood later told me this area is known as the island.

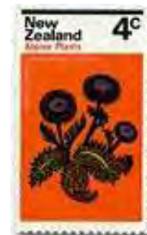


Celmisia ramulosa

Fiona was waving at me she had found something interesting by the saddle. There were scattered plants of *Leptinella atrata* flowering nicely in the gravel.

(ED: The NZ species were all formerly in *Cotula*, but some plants in the *Leptinella* section of the genus *Cotula* were [given their own listing](#) by David G. Lloyd in 1972.

Right: NZ postage stamp from 1972 but still named as *Cotula atrata*





Leptinella atrata



One of the many spiders

From here it was an easy walk down the track to the ski huts but as you know nothing is easy. This section of the track must be where all the spiders in the area gather. Like a Club Web resort. As soon as we headed off down the track the track started scuttling off in front of us, a sight I have never seen before and I have been in the hills quite a bit. So what do a pair of arachnophobes do in a situation like that? Well, apparently you send the older, fatter one first and then stay close together. Needless to say we made it back OK and yes I did get a picture of one of the spiders. After a cup of tea at the car we headed back down the mountain and then north to our next destination. S.N.

Leptinella atrata

Ian and Margaret Young

Leptinella atrata, previously known as *Cotula atrata*, is one of the many fascinating plants from the family Compositae found in New Zealand. It has a wide distribution in South Island, from Marlborough to north Otago. It may be one of those plants that you either love or hate but we find it irresistible. From its creeping stems rise purple branches with pinatifid leaves, glaucous above and purple below. The solitary flower, which appears at the ends of these branches, is a boss of almost black florets up to 2 cm across which, when it matures, is dotted by stamens carrying bright golden yellow pollen (Fig.48, p.164).

L. atrata ssp. *luteola* is identical in all parts except it has a creamy-yellow flower. *L. dendyi* is very similar to this subspecies but can be easily distinguished because the bracts below the head extend to hold the flower as if in a cup.

Seed of all these plants is sometimes available from the S.R.G.C. seed exchange and regularly appears in the N.Z.A.G.S. list. It germinates readily if treated in the standard way; we prick it out into 7cm pots when the plants are about 2 cm across, using a compost of 2 parts grit, 1 part peat and 1 part loam, plus some slow release fertiliser. The plants grow on well and if repotted again as soon as the roots fill the pot they should produce a flower in the first season. As these plants grow in the drier regions of New Zealand they do not appreciate being too wet but should not dry out either. Our plants in pots grow unprotected in a sand plunge for most of the year, only getting covered during the worst of the winter wet. With their delicate fern-like leaves and black button flowers they make delightful subjects for a trough, raised bed or any site in the garden given good light, a rich humus soil and a good layer of gravel to run along.

In 'The Rock Garden', the SRGC journal for January 1993, this little plant portrait of *Leptinella atrata* appeared.

Below: *Leptinella atrata* and *L. dendyi*, photos Doug Logan



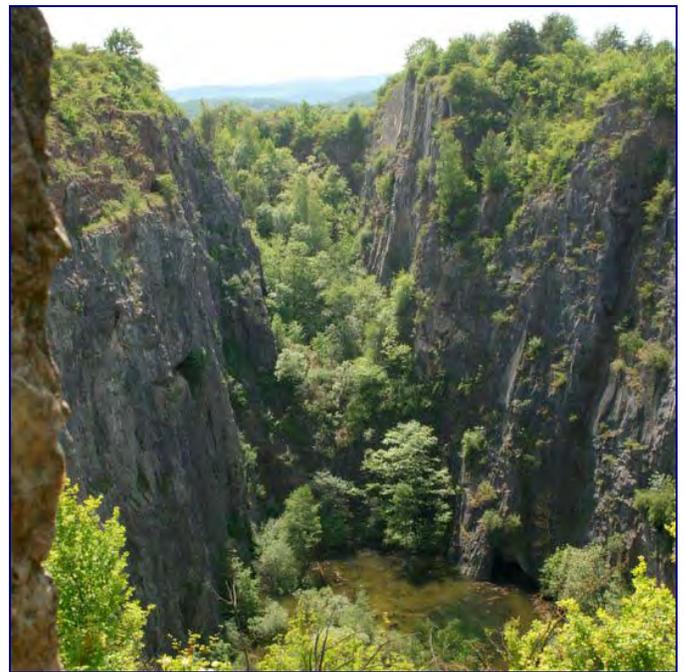
---International Rock Gardener--- ---Gardens in the Mountains---

Dictamnus albus by Zdeněk Zvolánek



A few days ago my brother Luděk took me on a special pilgrimage in the Czech Karst. Our plan was to see larger groups of *Dictamnus albus*, the Burning Bush, in flower. This species likes all the limestone substrates in small openings of our oak and hornbeam woodland but you must know the precise locality in the State Nature Reserve to see it in its full glory. The best locality was situated on a southwest stony ridge, where the colours were in shades between pink white to pale pink. No dark pink flowers were seen. We had no plan to look for some unusual colour forms, because I had some 14 days earlier broken three ribs. We saw in a very remote place in the forest a collapsed limestone outcrop with perfect slabs suitable to put together a crevice garden. Stones were ancient (well weathered) and not too 'fat'.

Left: collapsed limestone outcrop



This part of Czech Karst has a few romantic areas resembling some limestone canyons in Nevada. They are actually exhausted quarries with water at their bottoms.



Left: Somebody erected here a stony column as a Memorial to Political Prisoners of the communist regime of the 1950 s.

Right: Czech symbol of the two tailed lion (see page 12)



---International Rock Gardener---

The Beauty Slope is a good home for warm loving species such as the *Dictamnus*. There is no need for watering and maintenance for 30 or more years, but we must consider their need for a solitary position in the rock garden, because the plants are up to two feet high. Useful information is that garden plant in heavier mineral soils (no humus) form better plants than in nature.



In May a 15 year old "bush" of *Dictamnus albus* 'Albiflorus' looks very spectacular and flowers for a long time. It is able to survive our seasonal Siberian winters and Cretan summers without damage. Only the gardener ZZ was once damaged when (by chance) his sweaty naked chest touched the lemon smelling seedpods.



ED: The plant, in the family Rutaceae, gets it nickname the 'Burning Bush' because of the volatile aromatic oils it produces which can be ignited and will burn with a bright blue flame, without damaging the bush.



Handling the plant may cause skin irritation or allergic reaction in some people. The plant is not used much medicinally nowadays, though it was in the past, having been widely grown by the Romans.

The seedpods exhibit an [interesting dispersal mechanism](#).

These pictures of the pods and seed of *Dictamnus albus* are by Mark McDonough, Massachusetts, USA.

---International Rock Gardener---

---Plant Portrait---

Dwarf Bearded Iris Group by PRAGUE PEPIEDIA

Every lazy and relaxed rock gardener loves the European dwarf bearded irises such as *Iris pumila*, *I. attica*, *I. suaveolens* and *I. humilis*, because they are so pretty and easy to grow in a sunny position with lean compost. The purpose of this short article is to show some variability of southern European *Iris reichenbachii*, which belongs to this 'small bearded' group.

We remember low to short plants, 5 – 30 cm tall, decorating soft limestone cliffs in Northern Pirin Mts. in Bulgaria. They were able to grow there as saxatile plants in shallow pockets with a northeastern exposure. But that was in 1975 and now this habitat is nearly empty. Two years ago we saw one large plant of a strong yellow hidden in gritty soil under old road towards [chalet Vichren](#). Joyce Carruthers was very excited with this find and we can enjoy her photograph, below.

This Balkan species goes into North Greece and can be seen in May-July in rocky or grassy habitats in elevation 100-2300m.

Iris reichenbachii has as a rootstock, a thick rhizome.

Grey-green, slightly curved leaves are very variable: 10-30 cm long and 5-15 cm wide. Stems are unbranched.

Flowers are borne singly or in pairs, yellow with darker veins, violet blue or purplish; beard is yellow or purplish. The spathes have a sharp keel and flower-tube is about 1.5-3cm.



The 'personal problem' of this plant is that it is decorative, easy to dig out, adaptable to longer transportation and easy to sell in the same way as the more valuable Onco irises which are also vulnerable to such predation.

Left: *Iris reichenbachii* ex Suva Planina

Eastern Bohemian explorer and writer Pavel Křivka stopped on his way to the Balkan Botanical Congress at [Suva Planina](#) (plateau) near town Niš in Serbia in 2006. Here were seen both small and larger plants with common yellow flowers. He was lucky and among his yellow seedlings appeared very nice albino. This pretty white form flowers for longer than its yellow sisters; for at least a whole week long in the first half of May.

---International Rock Gardener---

Iris reichenbachii white form



Iris reichenbachii ex Slavjanka



Pavel observed many localities in Southern Bulgaria and usually saw dwarf plants with smoky purplish-brown flowers ([Strandza Planina](#) etc.). In [Rodopi Mts](#) (near [Asenovgrad](#)), however, he too saw the large yellow forms similar to plants in Serbia.

The Moravian plantsman Oldřich Maixner showed us a lovely form in flower last month which originated from the Czech expedition to Slavjanka ([Ali Botush](#)) Mts. in Bulgaria.

---Mountains in the Gardens---

Report from the Prague Show in May 2011 by ZZ photos by Josef Rejzek and ZZ

Old Prague is a town built of solid stone, very medieval. Granny Prague is slim tall and gothic in her shape and Mother Prague shows its plump baroque qualities. Inhabitants of Prague the Czechs or Bohemians are the results of effective breeding (using Celtic and Slavonic tribes).

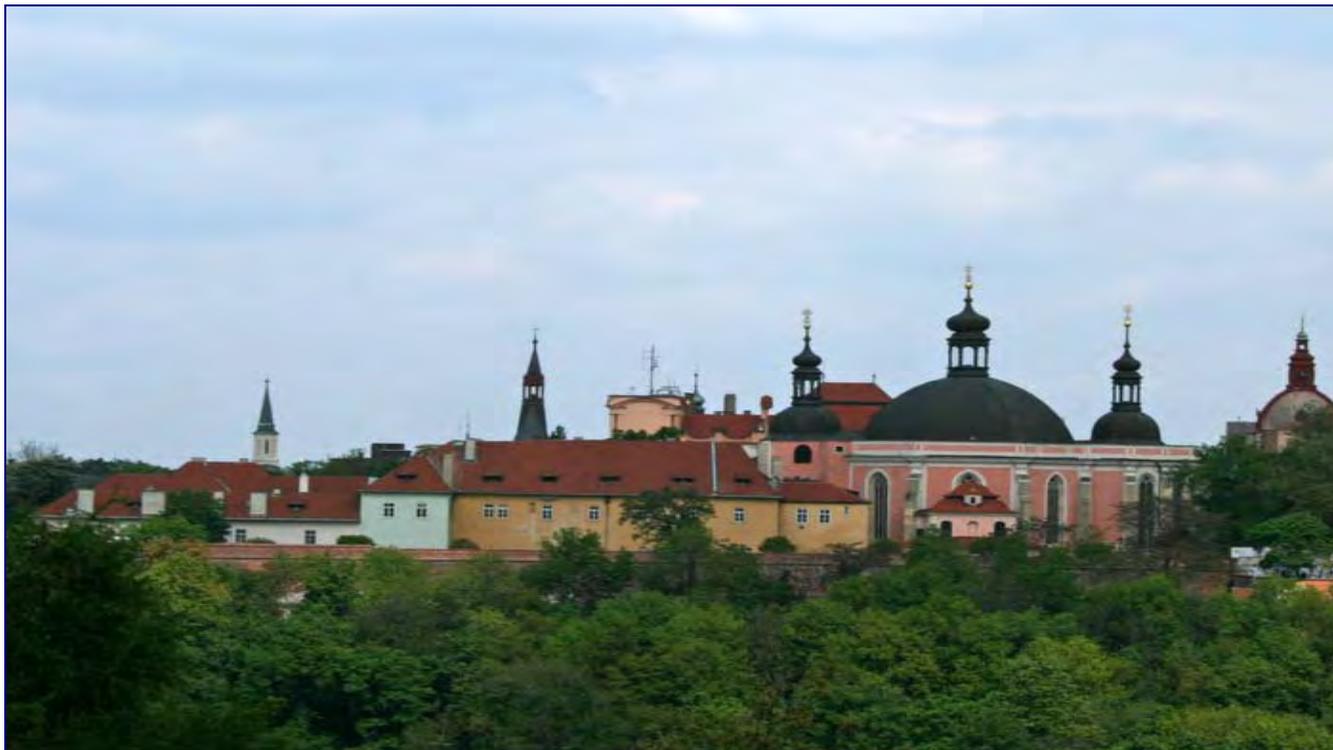
The Czech kingdom coat of arms has a Lion with a double tail, as a symbol of strength and brave character of Czechs in its distant past.

[Prague Rock Garden Club](#) has lost half of its membership during last 15 years and at present it has about 650 members from the Czech Republic and foreign countries.

ED: There are links to lots of different [Czech garden groups online](#) and to 'Skalnicky', [the Czech Journal](#). As well as their shows the Czechs also organise International Conferences, the next is due in 2013. There is also a German - Czech Meeting every year where, for instance, Steve Newall has been a speaker.



---International Rock Gardener---



Prague - church in Karlov.

For the working heart of the club we can consider 12 members of the Show Committee (the elite 'Realising Team'), which is under the leadership of Ota Vlasák (the well known constructor of rock gardens). The basic finance for the all club activities has (for 40 years) traditionally been raised from

open-air shows (presently 3 shows per year, altogether 6 weeks long). Membership alone can hardly cover the cost of the Quarterly Bulletin 'Skalničky'. The members who are working for a show (arranging, selling plants and guiding) are paid the minimum of a salary. In this very large scale of shows, it is impossible for the same group of activists working year after year to do services for the club for nothing. Of course, about a few dozen members help to clean the garden and arrange the show as volunteers. There is a question how long this tradition of large shows can be kept in the future: there are too many oldies among the above-mentioned activists.

The Show is held in the middle of town, between busy hospital and Sunday open church. Two parallel gardens are rented for every year. Water and maintenance for permanently planted shrubs and perennials cost a lot so some plants suffer in dry periods. The baroque church was badly repaired so part of the show area is now closed for the repair of falling ledges and bad roof. Fortunately the long baroque wall towards Emauzy monastery recently obtained general care (new plaster etc) and makes a really attractive background.



Church in Emauzy monastery

---International Rock Gardener---

In May 2011 the Show was prepared in three days for its three week run. The Show was divided among five arrangers: Jiří Strohalm (woodland area), Zdeněk Zvolánek (central granite outcrop), Ota Vlasák (troughs and two special outcrops), Vojtěch Holubec and David Stádník (the formal Meditation garden).



Vojtech Holubec's lilac azalea in the granite garden area

The woodland area under a huge oak tree is the place to show cypripediums arranged under moss cover, dwarf rhododendrons, trilliums, pleiones and so on. *Hepatica nobilis* is self-sown here in crevices between granite slabs, providing a good show of flowers in early spring and decorative patterns in the foliage later. Seen to great effect here was an extra-large lilac azalea, which Vojtěch Holubec had dug from his garden.



Rhododendron x 'Vltava' obtained an Award of Merit. This Azalea is one of older Czech breeding with small leaves on a compact bush showing a galaxy of shiny pink flowers (left). A central granite outcrop with two ponds (built 25 years

---International Rock Gardener---

ago by Holubec and Vlasák) is divided roughly into 'Europe' and 'North America' with a small area of 'Asia' in between.



Part of 'America'

An irregular granite top dressing is important. We use partly decayed kind of granite and hammer it into suitable grit.



The connection of the large central outcrop with the two ponds is made by a 30 year old *Pinus mugo*, which is pinched down just before the show.

Left: Part of 'Europe'

There are only a few blooming bulbs in May.

One of them was the striking garlic called *Allium* 'Red Giant' (below left) placed in flat steppe in our miniature Asia.

Below right: *Campanula chamissonis*



---International Rock Gardener---

There were collections of troughs included in the Show; other photos can be seen in the SRGC Forum where there are various reports from the Czech Show, [including more from 2011](#).

Silene caroliniana 'Red Wherry' made a bright display in the American section (below, left).

One individual, striking plant was *Erigeron aureus* 'Canary Bird' (originating from wild seed grown by Jack Drake in Scotland many years ago) (below right).



Some plants (usually in good supply from nurserymen) dominate in the arrangement. *Gentiana clusii* x *G. acaulis*, a compact hybrid (from Milan Antropius, Příbram) were in striking groups in Europe.

Left: *G. acaulis* forms

Below: *Lewisia cotyledon* (selections by Josef Holzbecher from Lelekovice in Moravia) were the kings of the North American section.



---International Rock Gardener---



Patagonian Trough



Calceolaria cf. biflora



Oxalis 'lone Hecker'

[A double trough](#) (two ancient stony ones connected together) was the playground of Ota Vlasák. Having in his mind fresh memories from Patagonia, he collected red stones and arranged a Southern hemisphere landscape, where the leaders were Calceolarias.



True *Campanula tridentata* was point of interest in the black fylity (slate) outcrop.



The author of this report appreciated help from a venerable member of the Prague Club, Mr Josef Rejzek, who took fine pictures for IRG from the show. He had only a small automatic camera (suitable and preferable for ladies and alpine house despots says ZZ!) but the results are excellent. Below, *Delosperma congesta* and planted troughs.



---International Rock Gardener---

---Gardens in the Mountains---

Two Penstemons in June by Barrie Porteous, a Scot transplanted to Canada.



Those seeing *Penstemon acaulis* (above) for the first time have described them as dotting the landscape like bright blue frisbees. Certainly they are one of the most photogenic of the genus but are almost certainly not easy to grow. *P. acaulis* can be found east of the [Flaming Gorge](#) area in Utah, just over the border into Wyoming, growing in very dry soil which is baked in the sun and swept by the wind, conditions which are difficult to achieve elsewhere but which are no doubt required for success. Closely related to *P. acaulis* is *P. yampaensis* (below) to be found on dry hillsides, amongst sagebrush in Northwestern Colorado, not far from the [Yampa River](#).



---International Rock Gardener---

---Gardens in the Mountains---

Crevice Plants in the Wild and in the Garden by [John Page](#), Solihull, UK.

In a talk on [Crevice Plants](#) I showed an image of the stunning blue flowers with their yellow eyes of a lone tuft of *Eritrichium nanum* (below) on an otherwise bare, vertical cliff at an elevation high above



Saas Fee in the western Alps.

A seed had blown into a minute cleft between thin strata of the mudstone, had germinated and the plant had survived into maturity, preparing for the day when it would offer its own seeds to the wind. What were the factors that made that remarkable survival possible? Initially there had been sufficient moisture in the crack for germination to take place and the seed's own food supply to nourish it. Further sustenance, nearer dust than soil, derived from material blown into the crack

by the wind, plus remnants perhaps of previous occupants of the crevice.

The fissure had ensured a firm anchorage as the plant's roots fanned out to extract traces of nutrition from the film of moisture seeping past the rock surfaces. In effect, the plant was entirely dependent on rain and snowmelt, its roots etching away at the wet rocks to extract minerals, a virtually soilless hydroponic existence.



Left: Eritrichium nanum seeded into a natural crevice in the Dolomites photo Cliff Booker, Whitworth, UK.

All the chemical elements it needed for survival were there, the *macronutrients* oxygen, carbon, hydrogen, nitrogen, potassium, calcium, magnesium, phosphorus and sulphur, collectively constituting more than 99% of the dry tissue, and the *micronutrients*, chiefly chlorine, iron, boron, manganese, zinc, copper and molybdenum.

The latter group, the trace elements, despite their minuscule quantities, are critically important to the healthy growth of the plant.

The manganese is essential for photosynthesis and the prevention of chlorosis.

Deficient copper and zinc lead to leaf problems.

No boron and there is no growth of the pollen tubes (the minute threads bearing the male parent DNA that lead down the style from the stigma to the ovules), and ultimately no seeds.

---International Rock Gardener---



Potentilla nitida growing in a rock, again in [the Dolomites](#)
photo Cliff Booker

This is why when you look on the back of a box of Miracle-Gro plant food, for example, you will read:

Manganese (soluble in water)	0.05%
Copper (soluble in water)	0.03%
Zinc (soluble in water)	0.03%
Boron (soluble in water)	0.02%

Many alpinists, as we have all experienced, hate extreme fluctuations of temperature. The roots can be damaged by frost and sudden warmth, the leaves of cushions can be scorched by excessive sun. The insulation provided by crevices can alleviate the former. The latter is often overcome by the sites which crevice plants favour.

Dionysia species in Iran, for example, again and again are to be found in shade, under overhangs and facing north. I have found *Aubrieta deltoidea* in Crete, *Arabis purpurea* in Cyprus and *Campanula versicolor* in the Peloponnese invariably couched in shady gullies amongst the rocks. Most memorably, I have driven along winding tracks in north-east Turkey, reviewing a parade of *Campanula betulifolia* and tufts of *Campanula troegerae* wherever the cliffs faced north.

Right: *Potentilla nitida rubra*
photo Cliff Booker

Aspect is clearly important and you can see why this can happen. When the plant is in full foliage and flower, desiccation in these habitats is always a threat if the aspect allows the sun to bear down or the winds to batter throughout the day. It is by no means uncommon



to see dead rosettes of *Saxifraga longifolia* in the Pyrenees, for example, where the water in the crevices has dried up. Out in the daylight the foliage forms a low-profile cushion. The leaves are small and their margins tough, the flowers will be numerous and relatively large. Growth is slow as the plant gradually builds up its strength. All of its parts are highly evolved to cope with stress with harsh conditions at altitude. George Smith and Duncan Lowe in their monograph 'The Genus Androsace' reported that the ability of these crevice plants to photosynthesise is some three times greater than

---International Rock Gardener---

that of lowland plants, enabling the plant to produce carbohydrates and ultimately all the materials it needs more efficiently.



Left: *Campanula piperi* photo [Malcolm McGregor](#)

Returning to the type of rock, I was struck how frequently limestone figured in my notes on species that flourished in crevices (and since they have so much of it, this may well have influenced the Czechs in their enthusiasm for crevice gardens).

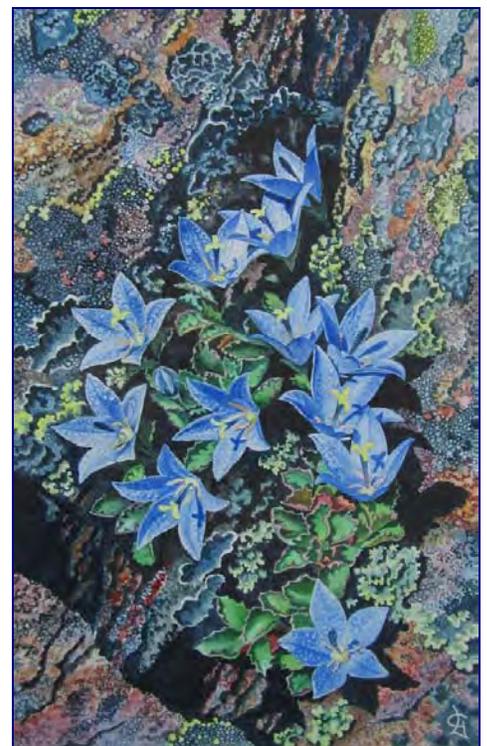
Conversely, I came across relatively few alpinists that grew in sandstone crevices. If my experience is significant, the reasons are worth thinking about. There are as many different sandstones as there are beaches and deserts, but they are nearly all mainly composed of quartz which hardly encourages plant growth. The micronutrients will still be present in the sand, but there may be questions about the process of their release. At the same time, they can be very porous, which is ideal if there is plenty of water around but lethal in hot conditions, when the rock functions like a wick sucking out much needed water from crevices. The significance of this is that where your soil is likely to dry out in hot, dry conditions you may have to increase the ratio of loam. When I was involved in the construction of

the Forest of Dean old red sandstone crevice garden at AGS headquarters at Pershore I was struck by the relatively low volume of grit in the soil. I would guess it amounted to no more than 20%. Even so, that crevice garden works very well. The crevices themselves face the heavens, intercepting every drop of oxygenating rain, and the high loam content ensures that water evaporating from below, moving up and condensing on the rock surfaces, is fully utilised. In areas of high rainfall, of course, the grit ratio would have to be higher.

J.P.



Left: *Campanula piperi* in the wild in USA photo [Malcolm McGregor](#).
Washington, USA, from a [watercolour](#) by the late [Lawrence Greenwood](#).



Right: *C. piperi* in the Olympic Mts,