

International Rock Gardener



---International Rock Gardener---

June 2012



The popularity of the Turkish flora is amply demonstrated by the continuing desire of people to make trips to see the country and its natural beauty. Recently Margaret and David Thorne (well known to members of the SRGC as stalwarts of the Borders Group and to those who have travelled with the Thornes on the trips they have led for various plant tours) organised a trip to Eastern Turkey, which was led by botanical experts Professor Adil Güner, his daughter Başak and son-in-law, Chris Gardner. Various Forumists stated their enthusiasm for the area and [David Millward](#) has delighted us with his photographs showing the diversity of plants that were seen on the [SRGC trip in May 2012](#). ZZ brings us the bad news about our chances of growing some of these gems but happily, Christoph Ruby from Germany is much more upbeat about the alpine crevice garden in Hof.

Cover picture: *Arnebia densiflora* from the steppe, near Erzincan, Anatolia by David Millward.

--- Mountains in the Gardens ---

Germany's approach to Crevice Gardening at the Hof Botanic Garden by Christoph Ruby

Since 1991, when I came to the community owned [Botanic Garden Hof](#) (~220km from Prague) and laid my heart on its ground, and even before, there had been many attempts made to grow alpines successfully. We had tried - for example - the "ordinary" scree bedding, raised beds and several substrates, which were artificial or sometimes naturally found beside quarries. Only pure sand-beds, such as Peter Korn from Sweden promulgates, haven't been attempted. 20 years ago we lived in a dead end, close to the border of the former German Democratic Republic and close to Czechoslovakia. Now we live in the middle of Europe – just on the way from the Netherlands or the UK to Prague or from Sweden to the Alps!

Inspired by articles of the SRGC and AGS journals, in 2007 I decided to establish an attractive Crevice Cosmos at Hof Botanic Garden. I just had to find the right stones to establish such a "vehicle", which would transport all my long-held fantasies of growing plants from high elevations in the open.



Third year planting; side wall aspect

---International Rock Gardener---

The stones came from nearby: only 50km away from us there is a quarry with very hard mussel limestone (Muschelkalk) in combination with a very attractive ochre colour, which gives a good background, for instance for blue-flowering plants – of course for others, too.

There are others, who live far from here, who also would like to use this stone: in 2009, two years after our crevice construction, I arranged carriage of 125 tonnes of “our” stones to the northernmost part of Denmark, to Frederikshavn. There a [crevice landscape](#) has been established by the Czech master Zdeněk Zvolánek, “the stonerider”.

I suppose that nearly everybody meanwhile is familiar with the idea of [crevice gardening and its construction techniques](#): I will lay more stress on the substrate beyond the stones and within the crevices.

First of all attention has also to be paid to the underlying ground and its permanent weeds like *Equisetum arvense*, *Convolvulus arvensis* and *Vicia sepium*: these individuals with their known persistence are able to keep gardeners busy for years (ordinary *Equisetum* has been successfully starved to death by removing its shoots every week during the vegetative season within the “negligible” period of five years!).



North-east slope under construction; body (underground) rather ‘mineralic’; crevice filling with a sand/pebble mixture.

Then the construction may begin:

In contrast to the layers of Frederikshavn, we fixed the first rows (layers preferably run from east to west!) at the edges to one third height with concrete - we also did this about every three to four metres at the outermost stones to be sure that no natural forces like the weight of the stone itself or people will give any reason to damage the carefully fixed rocks. The edging should be done in interrupted steps: fixed stones will take the neighbours’ and the filling materials’ weight after two days hardening of the concrete. One has to leave some distance to the next framing elements, then those will be fixed (always taking care that the lines of the stones are parallel regarding the opposite side, to which it will be joined!). Then the essential part of modelling the crevice’s body

---International Rock Gardener---

can take place: Mixing the substrate, which contains sufficient nutrients, but which is inorganic enough not to decompose over time. The latter will cause immense trouble throughout the whole construction when stones sink down and sections have to be lifted again. We used a weed-free soil from under a lawn mixed with an artificial mixture of pebbles and sand (pebbles in 2-8mm, sand 0-2mm in the ratio of 2:3) in proportions of 2:1 or 1:1. This mixture will be used for both higher and lower areas of the construction. Onto this a 20cm layer of sand mentioned above will provide easier and cleaner handling of the vertically placed slabs. As many know: adaptation to nature often depends on different ecological niches - for alpines especially, these are slopes falling to the north, east or northeast. Building up row by row the next step is to fill the crevices, which shouldn't be wider than 5cm (optimal: 2.5cm). They can be filled during construction to give support to the vertical slabs. This means also the point of no return: the filling has to match strictly to the average climate conditions at your distinct location. This urges us (we live in an area with rain of about 742mm average per year) to use only this mentioned mixture of pebbles and sand so



Asyneuma filipes photos by Christoph Ruby

as not to get the plants and their root necks soaked by water during the year. Czech conditions (e.g. around Prague with its rather continental climate) force the use of substrates, which are able to retain more water throughout the drier summer seasons. Some special plants in special niches with special requirements get, of course, some water retentive elements within the sand (peat, steamed loam or humus), and we do this in a minimalistic way around all plants. This enables us to support our "Babies" with some essential nutrients (microorganisms depend on some organic dashes to fulfil their destiny of splitting off nutrition from the soil).

These will be provided from the stones themselves to a certain extent. In addition - predominantly in the phase of establishing the youngsters when they don't have long roots to reach the body of the crevice - an extra support of nutrition is essential. We give this in form of organic food, as pellets or as hoof and horn meal. The latter supplies young (and older) plants with nitrogen predominantly for the start of growing, the former contains several nutrients (N-P-K as 7-3-6), and works pretty well with us and is especially helpful on the edges, which slope down steeply, or on other vertical aspects, where feeding is very difficult. The pellets (sometimes halved) are dropped down into the substrate and will give nutrition when there is enough water and temperature.

Sandy soils are, in addition, mostly free from any pests! They let our plants grow quite slowly, but healthy and compact. Settings of the soil, lifting of the plants is much easier to do, too. I do not recommend filling the pebbled sand level to the upper edge of the crevices, but slightly above them like a small rampart. This helps to drain off the water faster and – if the plant crowns are also moved a little bit higher, their sensitive necks will be covered by surrounding aerating, sharp sand.

---International Rock Gardener---

Campanula rupicola - a rewarding treasure from Greece

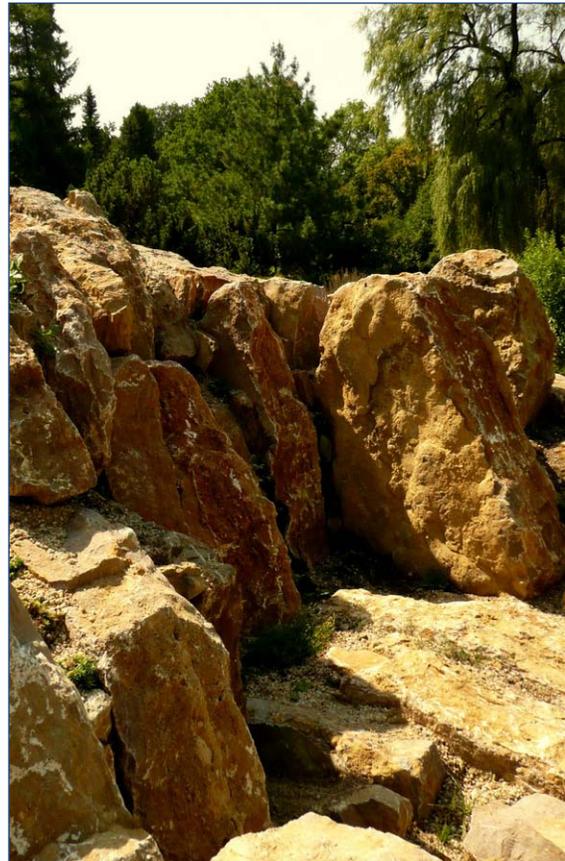


The results are clearly visible. At the start some of our visitors didn't grasp our ideas for what should happen with this big clump of rocks and damned it: 75 tons have been placed in order into one large and one small section; one can walk through both. This makes this artificial, but naturalistic building more lively. After planting mostly young plants (seedlings and well-rooted cuttings) it took two to three years to get the plants well settled down and growing on. We are especially happy about the fact that some rare Phloxes (including *Phlox nana*), partially from the Rocky Mountains (those get a cover of glass laid on stones to protect them from winter wetness), don't suffer planted amidst limestone. There seems to be a good tolerance against soil reaction with many plants supposed to grow within acid surroundings.

---International Rock Gardener---



This was received as *Edraianthus pumilio*, but looks more like *E. dinaricus* (longer stems) - planted in groups to suggest a natural effect.



Above left: *Campanula calaminthifolia* crawling beautifully around vertical rocks.

Above right: *Ramonda* spp. niche in the first year loaded with the rare white form.

Of course: *Ramonda* may not be missed - masses are covering the vertical cliff sections... even two unusual violets thrive happily: *Viola cazortensis* and *Viola delphinantha*.

---International Rock Gardener---

Some slabs provide a protection against rain to a certain extent, which helps us to keep some fine *Asperulas*, too.



Asperula arcadiensis in a shaded and partly rain protected crevice

Many *Androsaces* now can be called inhabitants of Hof. Generally it is cool enough to suit them. Rarely temperatures rise towards the 30°C. Formerly called “Bavarian Siberia”, climatically our area is still privileged, if one discounts some sporadic late frosts. Step by step there’s also space and time for some experiments. Some crevices are filled with plants which one would not place there at first glance: *Corydalis pachycentra*. But: reading the literature it also grows between limestone rocks. We made an attempt with the acid lover *Euryops acraeus* (with sufficient hardiness). The result was that it showed no sign of coloured leaves at all – it stayed healthy until the worst spell of the bad winter in 2010/2011!

Now the Crevice section is the main attraction within the [Botanical Garden Hof](#)....Floreat! C.R.

ED.: Now some flowers mentioned by Christoph Ruby from the Hof Garden which are also doing well in the gardens of other contributors.



Left: *Androsace cylindrica* x *hirtella*

Far left: *Androsace villosa* var *congesta* - in the garden of Rudi Weiss, Waiblingen, Germany.

---International Rock Gardener---



Androsace cylindrica x *hirtella* –
and *Androsace globifera*, in the garden of [Franz Hadacek](#), Vienna, Austria



---International Rock Gardener---



Androsace villosa in the garden of Anne and Joe Spiegel in New York State, USA.



Left:
Asperula suberosa grown to great effect by Mike Ireland, close to the North Sea in Lincolnshire, in Eastern England.



Above:
Euryops acraeus in the garden of [Nurseryman](#) Rob Potterton who also lives in Lincolnshire. Rob and his family live in Caistor.

---International Rock Gardener---



Viola cazorlensis –
and *Viola delphinantha* - it is not only cushion plants that Rudi Weiss has success in growing!



For more on these charming violets, see the [March 2010](#) edition of IRG.

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---International Rock Gardener---



Corydalis pachycentra pictured (above left) in his garden in May 2011 by plantsman and nurseryman [Bjørnar Olsen](#) who lives in Southern Norway. Bjørnar found this plant [in nature in June 2011](#) near Zhongdian/Shangri-La town, which lies at about 3200m. *Corydalis pachycentra* grew in turf with dwarf rhododendron everywhere it had enough moisture (above right and below).



---International Rock Gardener---

---PEPiPEDIA---

Eastern Anatolian Troublemakers by Zdeněk Zvolánek Photographs: Mojmír Pavelka



There is a big country still unspoiled by civilization westwards of the great cone of **Mt. Ararat**. For political reasons it may be better for this portion of Turkey to use the name Eastern Anatolia and not Kurdistan. The article is not about unsettled groups of people in that area, but about a group of unusually pretty plants which are not satisfied with common rock gardening practices. The bones of the article are photographs from Moravian explorer Mojmír Pavelka, who visited this area at the right time (earlier than would usually be expected to be successful) in summer 2010.

Quite a lot of these difficult montane rock garden plants are growing in special bedrocks (some of them look like the alkaline flats in Nevada) and all of them have minimum rainfall during summer time with the comfort of very cool nights. After sunset above altitudes of 1800m all the explorers are taking sweaters and coats (some of them improve the cool situation with rum) and plants are slowly getting moisture from the air water condensation in the local good clayish soil.



The author is not trained in geology so be happy with this general information, that many special habitats are on whitish bedrock looking like gypsum. There are heavily eroded white slopes in a botanically rich area called Gök Pinar where the most remarkable plant is ***Arnebia densiflora***. This yellow flowering perennial from the Boraginaceae is 30-40cm tall in open soil and up to 20cm in limestone crevices in different mountains of E. Anatolia from 800m up to 2600m. The inflorescence (it makes dense flower heads) is spectacular and too many seedpods are often empty. I raised 4 seedlings, planted them unprotected in open soil and lost them during their

---International Rock Gardener---

third (very bad) winter without seeing a flower. A vertical crevice would be much better place for a trial.



Arnebia densiflora closeup by [Özgür Koçak](#).

ED.: Our thanks to Özgür Koçak (below), an SRGC Forumist from Turkey who works as a geological engineer and who has a great interest in butterflies such as this *Erynnis marloyi*, Inky Skipper (below right) who has supplied some photographs for this article.



We tried to establish a perfect shrubby dwarf *Salvia* aff. *caespitosa*, which is happy growing in the same alkaline area as the *Arnebia*. I do not know any lucky grower who has tamed this plant with silvery leaves and creamy flowers opening from yellow buds.



Salvia aff. *caespitosa*, Gürun, Turkey

Gypsum-like soil is probably essential for happiness of *Scutellaria orientalis* subsp. *pectinata* which is superb in its small greyish ornamental foliage and with unusual colour combinations of flowers. I know two colour varieties from the area of Gök Pinar springs (15 km south of Gürun): one dark and pale yellow, the second purple and yellow in a striking arrangement. Mojmir shows us dark red and pink combination seen closer to the town Darende. This subspecies forms small

---International Rock Gardener---

mats 30 cm in diameter and flowers are nearly sessile. One day it will be judged for the Farrer or Forrest Medal. ***Scutellaria orientalis* subsp. *pectinata*** in the wild - below left.



Linum mucronatum* subsp. *armenum (above right) has slightly better chances to become a beautiful weed in a few lucky gardens. The picture is from similar alkaline montane steppe near Darende. Plants are pioneering areas with no serious competition and surely enjoy local clean air. The height of long time blooming clumps (with woody base) is always under 15 cm and the flowers are of good size.



Another area near asphalt highway to Imranli is whitish like the chalk cliffs of Dover and full of interesting plants. I saw dry leaves of ***Iris (Juno) sari*** and ***Paracaryum racemosum*** (above) (15

---International Rock Gardener---



cm high in seed) in good amount. *Paracaryum* brings lovely blue effects to every rock garden and it goes dormant forever next year after producing to me valuable seed. It is by literature perennial but in practice, only for some celebrities! I have many seedlings this year and never ending hope for the plant's adaptation to my conditions.

Left: *Paracaryum racemosum*, close-up by Özgür Koçak



Close to the *Paracaryums* is a white rock outcrop about the size of two school buses. This is the only known locality for the rare dwarf *Aethionema eunomioides*. In this area there are about 50 small cushions with tiny thick and round leaves resembling the genus *Eunomia*.

It is a charming and distinct species, which germinated quickly and died in a collective/mass winter murder a few years ago.

Another inhabitant of this "White House" for oriental beauties is the red flowering and slowly spreading *Acantholimon venustum*, which is my favourite in the genus of giant cushions. Future will show us what will be behaviour of small, new introduced species,

Acantholimon saxifragiforme. Pavelka's picture from the high mountain range above the big town of Erzincan shows a compact clump with flowers of good size.



Mojmír Pavelka told me that he has found *Acantholimon saxifragiforme* for the first time in the Goreme, Cappadocia region (above right) where the countryside is very distinct from Erzincan!

---International Rock Gardener---

The last rock garden plant of my selection is the true alpine ***Alyssum lepidotum*** from the top of Palandoken Mts. (3000m), south of the town of Erzurum. The very dwarf size of this taxon does not match the description of the species; so do not take the name too seriously. This is a stunning plant when covered with large flowers. Miniature greyish leaves are densely packed together in the rocky soil, seeming to copy a rug. The tragedy is the regular death of seedlings and we do not know why.



On the contrary, ***Androsace villosa forma glabrata***, which is posing in a contrasting duo with the Alyssum in the photograph below, flowers in my garden and has behaved nicely for five long years.



I would prefer to write only optimistic articles about plants, singing in our primitive spiritual churches called 'alpinum', but sometime is wise to give to the readers the tough truth: that there will always be some plants that refuse to grow for us. Z.Z.