

The background of the cover is a close-up photograph of plants. On the left and bottom right, there are several bright green, five-lobed leaves, possibly from a Japanese maple, covered in small, clear water droplets. The rest of the image is filled with a dense layer of vibrant red, finely dissected leaves, also likely from a Japanese maple, creating a rich, textured background.

International Rock Gardener

ISSN 2053-7557

---International Rock Gardener---

October 2017



John and Anita Watson, those intrepid explorers and investigators of the South American flora, have been kind enough to share with the IRG a series of photos of a recent trip they made in search of yes; you've guessed it, a rare Viola. The story of the Violas is for another time and place but as you will see from the photos, with captions from John, there is much we can glean from the photos both of the flora of the Chilean desert and the flavour of the expedition. John also gives us an overview of the area.

Zdeněk Zvolánek this month contributes his thoughts on “pin-cushion” plants, as Scabious and its near relatives are often known.

Cover photo: *Tropaeolum speciosum* over *Acer palmatum atropurpureum dissectum*, photo J. Ian Young.



John Watson and Anita Flores Watson contemplating the start of a botanical survey at Huasco in the Atacama desert some years ago.

THE CHILEAN FLOWERING DESERT by John Watson. Photos by John Watson and Anita Flores Watson.

After the ancient, then single and only, land mass of Gondwana broke up and the present continents which composed it had drifted apart tectonically, as is now known, the global climate was extremely mild. The area we now call South America was largely flat, but with a few hard, ancient mountain

---International Rock Gardener---

blocks on the Atlantic side. There were no polar ice caps, and the entire continent was effectively covered by tropical and subtropical forest, coast to coast. Three large environmental changes dramatically altered that and led to the present geological and vegetational formations we know so well. In the first place, tectonic stresses led to the gradual uplift near the Pacific coast of the young Andean range, which would become the longest continuous stretch of mountains on the planet. In the second place, around thirty million years ago there was a significant drop in world temperatures, which led to the formation of the ice caps. Finally, and related to that, the sea flow running up the Pacific coast towards the equator, and known to us as the Humboldt Current, became notably cold. Indeed, if it hadn't, the entire Chilean mediterranean and Atacama desert coasts would have warm sea like the Riviera, and be developed for mass tourism such that there would be virtually no wilderness left. In all probability too there would be sufficient rainfall for much of the interior to be converted to agriculture, in which case the very spectacle of any flowering desert or its equivalent would be in question.

But to continue with reality rather than speculation..... Apart from the regular flux of ice ages and the pulse of sporadic El Niño (Southern Oscillation) seasonal climatic events every handful of years, the overall climate and Pacific sea temperature have remained relatively stable. What has continued relentlessly since is Andean uplift. When coupled with adjacent cold seas, this has progressively reduced rainfall from the west, resulting initially in the mediterraneanization of the western Chilean exposures to the north of Patagonia. Subsequently, as the rising walls of the Andes increased to the present height of the Altiplano plateau, precipitation became so reduced that desertification of the farther north gradually increased to its current approximately 1150 km length as far as the border with Peru (and beyond). Part of this area became the driest zone on earth - the inland Atacama Desert. The former lush forest vegetation has completely disappeared except for one fascinating small relict, cool, moist land island in the nearer north mediterranean sector of Coquimbo Region called Fray Jorge, which is usually covered by sea fog. It contains a remnant of the otherwise southern temperate Valdivian forest and is a protected sector.



Tropaeolum austropurpureum, Coquimbo Region, Chile.

Two moderating factors have contributed to a much more bio diverse range of organic life near the desert coast, albeit evolved and adapted specially to survive and even thrive. In fact the near northern Chilean Pacific littoral is recognised and listed as one of the world's biodiversity hot spots. So let's begin with that pair of beneficial elements. The first is the condensation of regular saturated, cold Pacific sea fogs (camanchacas) to some distance inland in places. These have the double advantage of providing moisture and reducing the dehydrating and desiccating power of the sun. The other and much more dramatic life-giver is the aforementioned El Niño phenomenon. This occurs on average about every four to five years, although a gap of as many as sixteen has been recorded in the 1940s and 50s. The normally warm western Pacific alternates by convection with the cold South American waters. Consequent evaporating of these incoming seas off the Chilean coast, coupled with rising air and inshore winds there, give rise to rainfalls on the parched land that the Humboldt Current denies. And some rainfalls! Catastrophic desert flooding, including lethal landslips in

---International Rock Gardener---

populated areas as well as mud torrents and slides, bring destruction, homelessness and death to townships and small communities alike, as well as much needed water. In exceptionally strong El Niño years such as the present, the effect carries deeper into the Andes, bringing heavy snowfalls, including to areas in the foothills where it has not been recorded previously. This also triggers a dramatic increase in flowering of the mid to high mountain floras, although these are not actually included among the 'flowering desert effect'.

Traubia modesta (Amaryllidaceae)
Coquimbo Region, Chile.

Unlike humans though, nature has adapted to this reoccurring pattern over millions of years, is prepared for it, and takes advantage as genetic instinct triggers each organism into appropriate positive action. The four basic long-resting strategies involved for vegetation between El Niños are seed banks, particularly for annuals; geophytic dormancy (bulbs and tubers, etc.); succulence (cacti, etc.); and aestivation, so-called summer dormancy (woody plants as a leafless but living framework). They can be astonishingly effective. Rain reached an area for the first time in human memory and bulbs nobody knew were there burst into flower! It is supposed that some seed banks could remain effective for hundreds of years. All plants react with feverish haste once the rains come. There hardly seems time to blink between germination - or production of new growth and leaves, flowering and seeding. It would be



easy to miss altogether were there not a succession over several months by different species. Even so, it's almost unbelievable how soon all the landscapes turn back to dry, colourless monochromes, so the memory of almost endless sheets and patches of bright colours would seem like a chimera were it not for the records captured on camera. The most breath-taking panoramas are painted by the seed bankers. In any year there may in fact be heavy, very localized storms which produce restricted 'mini' flowering desert effects, but the real thing is truly widespread and utterly spectacular. Across some flat plains which usually look sand-pale and sterile there can be a sheet of just one single clear colour for as far as the eye can see in every direction. But more frequently a salmagundi of bulbs, cacti, annuals and shrubs in a variety of colours occurs, like a vast wild garden. Great rarities which haven't been seen for decades are sometimes recorded by those who know where to look for them, or may otherwise be found by lucky chance. The occasional discovery of new species is also not unknown.

The reliably regular year in, year out sea fogs also play an important double role. Usually the rains come early, and are soon over with a return to arid conditions when plants are in full growth. So the supplementary humidity of the fogs helps to keep the vegetation thriving, like a regular mist spray in the greenhouse. Also, in seasons lacking much or any rainfall, the moisture and sky cover of the fogs

---International Rock Gardener---

not only sustains persistent plants which don't indulge in dormancy, but may stimulate them to flower, even if nothing like as prolifically as during an El Niño. As with dormancy, plants have also evolved by natural selection ingenious ways to capture fog moisture. Cacti produce long, upwards-angled spines so the condensation runs back onto the plant's green body. Some of the violas we study have similarly developed a dense border of deflected hairs along the edge of their leaves. As water condenses on the surface and flows to the sides, it is directed and spread out onto the root area below by these drooping fringes. Many plants are densely hairy, and this serves the double duty of capturing fog droplets and acting as a sunscreen.

Here, familiar or otherwise, and in alphabetical order, are some of the major and most showy components of the flowering desert as genera and families: *Adesmia*, which are annual, herbaceous or shrubby species in the pea family with profuse small, yellow flowers; 10 species of *Alstroemeria* in the desert proper, and a further 8 in the included southern mediterranean fringe; *Argylia* of the Bignoniaceae; many different cacti of all shapes, sizes and genera; *Cristaria* of the Malvaceae; *Leucocoryne*, a colourful genus endemic to Chile, related to the onions and consisting of 16 to 50 species (depending on whom you're willing to believe); *Loasa*, stinging vines with stylish flowers shaped like yellow or white lampshades; species of the family Montiaceae, formerly included in the Portulacaceae - being one of the main massed shows of the desert when painting vast landscapes soft magenta; *Myostemma*, bulbous amaryllids commonly known as 'hippeastrums'; blue or white flaring trumpet-like flowered *Nolana* of the Solanaceae; *Oxalis*, including surprisingly shrubby ones; *Puya*, statuesque bromeliads, an outstanding feature in the more southerly of these flowering landscapes; *Schizanthus*, also solanaceous; bushy *Senecio* sp.; *Solanum* themselves, as shrubs; climbing *Tropaeolum*; and *Zephyra*, another delightful bulb with soft blue, occasionally white, flowers. Anyone who has the appropriate personal computer facility can screen up images of these via the Internet.

It almost goes without saying that when there's an explosion of vegetation and floration, so there's a matching proliferation of pollinators, together with leaf, root, flower and fruit gourmandizers - and the predators of both ... and their predators ... and their predators ... and so on up the food chain. We've diverted off-road to where southern painted lady butterflies - very similar to their Northern Hemisphere sisters - have literally risen up in clouds so dense as we passed that they almost blotted out vision through the windscreen. Even driving carefully at walking pace it was hard to believe you weren't crushing some. At a petrol station we found a clipped evergreen bordering hedge festooned with numbers of two large species of hawkmoth, probably recently hatched. Oil and other beetles scurry around busily like commuters in the rush hour, while large metallic-blue or -orange spider hunting wasps move stealthily, head down, like hounds on the scent, in search of their prey. Patterned lizards of one species or another lie patiently on sunny rocks in unmoving ambush, waiting for some unwary passing arthropod. Interestingly, Chile has the only hot desert in the world without venomous snakes. There are a few scorpions which one seldom ever comes across, and that's it.



“Wanted, dead or alive”- a warning for the danger of the vinchuca.

The most dangerous pest is the vinchuca bug, which vectors Chagas Disease via its bloodsucking habit. Anita once woke up in our tent with one crawling over her lips (ironically, the insect is called the kissing bug), and several more showed up in the torchlight. We spent the rest of that night sleeping on the seats of the jeep with the doors firmly closed! The only published guides to identify any of these creatures cover lizards, birds and butterflies. Unlike Britain (or Europe), there are no field guides to identify moths, wasps, flies, spiders or beetles, etc. A few of the more spectacular can be traced through general books on natural history or Google Images, and that's it.

---International Rock Gardener---

Chile isn't alone in possessing a spectacular flowering desert, of course, as is common knowledge. But it's probably the least known following the more familiar ones of Southern Africa, the far southwest of North America, and parts of Australia. Our Chilean flora is taxonomically distinct from these, having most in common with its North American equivalent, but then only a few, although both are notable for their cacti. All these desert dwelling plants have much more in common through the parallel ways they've evolved to survive this forbidding and demanding environment, or even to take advantage of it. J. W.



Photos from the Chilean Desert trips 2017

Right: Map - CODES - Blue line = main route. Red circles = overnight stays. Pink lines = daily sorties. Pink numbers = day of travel.

Below left, Anita and Helga Petterson (left), our neighbour, who made up our regular team of three during the six-day trip.

Below right: Anita with Juan Alegria, a teacher and plant enthusiast from Vallenar, our guide and companion during days three and five.



---International Rock Gardener---



Anita discussing the second new viola with Juan and his girlfriend at the actual location.

Claire and Philippe Dandois are Belgian nationals settled in Copiapó – two more amateur plant freaks who were our guides and companions on days two and four.



Claire and Philippe's new house and recently established garden, set in the Atacama desert on the outskirts of Copiapó.

---International Rock Gardener---



DAY 1 Our lunch stop on the journey north, a prime seafront fish restaurant at Quebrada Honda north of La Serena, known to us from past visits.



Wish you were here: Afternoon al fresco at the restaurant. John digging in to a favourite gourmet dish - crab pie. (Photo Anita Flores Watson)

A view of the jetty at the same Quebrada Honda, seen from the restaurant.



---International Rock Gardener---



Sea fog tumbling over the coastal range into the sunny interior north of La Serena.



Paso Porotitos, north of La Serena. *Liolaemus kuhlmani*, (Kuhlman's tree iguana or the smooth-throated lizard.) Noticed by Helga and Anita, it posed obligingly and unconcerned for its portrait.

---International Rock Gardener---



Left above: *Eriogyne subgibbosa*, one of the fuchsia-coloured winter-flowering coastal cacti which provide nectar for the migrant hummingbirds.

Right above: The shrubby *Balbisia pedunculata* (a synonym of *Tridax procumbens*) is one of the glories of the springtime northern mediterranean sector.



Left above: A special favourite of ours is this daintily-flowered shrublet, *Calliandra chilensis*. As may be seen, it's related to the mimosas and acacias.

Right above: Another of several bulbous leucocorynes we saw en route, this one the showy *Leucocoryne coquimbensis*.

---International Rock Gardener---

DAY 2 Low Andes northeast of Copiapó. One of several massed displays by similar bulbous white *Leucocoryne* species.



Low Andes northeast of Copiapó. A portrait from among the mass of *Leucocoryne narcissoides*, living up to its name 'narcissus-like'!

---International Rock Gardener---



Above left: Low Andes northeast of Copiapó. The incomparable *Alstroemeria violacea*, which is widespread along the western Pacific sector of the Atacama Desert. Above right: A most refined and elegant caper species, exclusive to Chile, *Capparis chilensis*.



Above left: Low Andes northeast of Copiapó. *Heliotropium linearifolium* quite at home 'on the rocks'. The fresh rust colour is live, not dead, flowers. Above right: A close-up of the inflorescence of *Heliotropium linearifolium* showing its unusual natural coloration.

---International Rock Gardener---



Annual *Cruckshanksia pumila* delighted us several times on our trip with its gold double-flower-like heads.



Found from the upper Andes to the Pacific coast, the equally spectacular *Cruckshanksia hymenodon*. (Photo Anita Flores Watson)

---International Rock Gardener---



Low Andes northeast of Copiapó. The habitat of our most northerly *Viola* at the most northern point we reached on the trip.

Above right: With care, Anita cleverly removed just petals to reveal the diagnostic spade-shaped style crest of this new violet. (Photo Anita Flores Watson)



And here is the unknown violet in all its glory, discovered by Philippe and Claire, who led us straight to it.

---International Rock Gardener---



Above left: Low Andes northeast of Copiapó. The pretty *Malesherbia humilis* var. *parviflora*, a bit unostentatious among Andean violas and yellow cruckshanksias.

Above right: Not, as you might imagine, some weird spider-like beastie, but the detached fruit of the following *Alstroemeria graminea*!



Again northeast of Copiapó. Little *Alstroemeria graminea*, a desert endemic, and one of few annual flowering bulbous plants. (Photo Anita Flores Watson)

---International Rock Gardener---

DAY 3

Returning from Copiapó to Vallenar.
The flowering desert at its spectacular
best under a typical mist blanket. A
wall-to-wall sea of white nolanas.



Left: The annual ***Nolana baccata***, the 'sea-forming' species in the photo above. Various nolanas, usually in some shade of blue, are a mainstay of the flowering desert.

Right: For contrast - perennial, shrubby ***Nolana rostrata***, one of the finest of the blue-flowered species.



Left: An attractive conjunction of two northern coastal shrubs, yellow ***Oxalis gigantea*** and ***Nolana rostrata***.

Right: A very different schizanthus from ***Schizanthus alpestris***, the butterfly-like ***S. candidus*** grew in a profusion we'd never before remotely experienced. (Photo Anita Flores Watson)



---International Rock Gardener---



A heavenly patch of bulbous *Zephyra elegans* in the seaside dunes between Huasco and Carrizal Bajo, with a close up of a delightful and typical soft blue form of *Zephyra elegans*.



Above left: Coast-dwelling *Sisyrinchium graminifolium* is unmistakable for the ring of brown blotches at the base of its tepals. (Photo Anita Flores Watson)

Above right: Another seaside, a fascinatingly different member of the cabbage family, *Schizopetalon maritimum*, recalling the British ragged robin. (Photo Anita Flores Watson)

---International Rock Gardener---



Left above: At the coast between Huasco and Carrizal Bajo. Strikingly showy spikes of *Caesalpinia angulata*, a shrubby relative of the pea and bean family.

Above right: *Pompilocalus caupolican*, an impressive, large, metallic spider-hunting wasp with orange antennae.



We do like to be beside the seaside!
John and Anita on a previous trip to the area, taking a break from the rigours of an Atacama survey.

---International Rock Gardener---

DAY 4

This day was an overall disappointment. Despite consultations like this, right, we missed out on our viola, and a faulty digital chip cost me my photos of most other flora.



Left: Torrential storms which brought the flowering desert also laid mud in low-lying areas. A buried cactus surfaces dramatically like a volcanic eruption.



DAY 5 had more fun.

Playtime at picnic lunch break. Happy Helga swings on a tyre, then Happy Helga has a great fall!



Right: Foothills east of Vallenar. Cacti are found from the coast to the high Andes. Mound-forming ***Cumulopuntia sphaerica*** at an intermediate elevation.



Far Right: ***Cistanthe longiscapa***. This magenta species is another mainstay of the desert flora, painting the ground as far as the eye can see. (Photo Anita Flores Watson)



---International Rock Gardener---



Foothills east of Vallenar. Thanks to the downpours - a magic carpet of magenta (*Cistanthe*) and yellow (*Cruckshanksia*).



Foothills east of Vallenar. Countless *Cistanthe longiscapa* staining the landscape. Like most of the ephemeral desert flora it is an annual.

---International Rock Gardener---



Tropaeolum tricolor is almost invariably red with yellow petals. Juan showed us these rare yellows he had found in the foothills east of Vallenar.



Above: Juan's *Tropaeolum tricolor* colony was very variable, including intermediate colour forms like this.

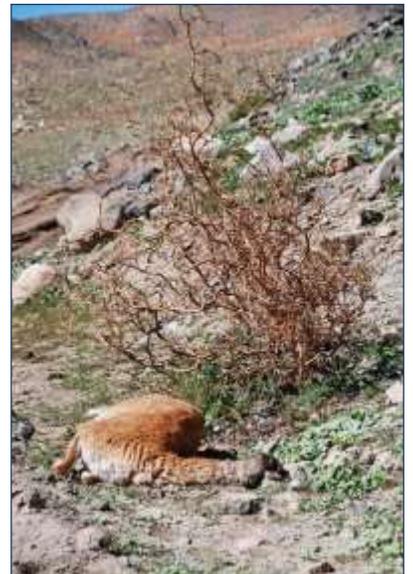


Pasithea caerulea is one of the very few bright blue Chilean flowers. It was also seen on the first day.

---International Rock Gardener---



Foothills east of Vallenar. A subtle contrast of lilac *Cristaria dissecta* (Malvaceae) and white *Cordia decandra* bushes (Boraginaceae).



Right: Approaching our viola destination we came upon this dead Guanaco (*Lama guanicoe*) by the roadside. No sign of injury either. Below: Unlike the previous day's frustrating viola-less search, we were taken straight to this new species here by Juan.



Low Andes east of Vallenar. After a short, sharp search we came upon scattered colonies. The more we looked the better they got. (Photo Anita Flores Watson)



A fine mature individual of the new 'Juan' viola, which we only knew previously from others' photos and specimens.

---International Rock Gardener---



Liolaemus lorentzmuelleri (Lorenz's tree iguana) was a very nervous, skedaddling customer to photograph. Much patience was needed to capture a photo.



DAY 6

Left: Bulbous *Leucocoryne purpurea* on the last day's journey home, which covered the same route as the first day.



Above: One of an appealing clump of subtle *Schizanthus alpestris* on the Pachonales pass. (Photo Anita Flores Watson)

---International Rock Gardener---



On our diversion towards Huasco we stopped at the spot where we had previously located this rare, tiny bulbous *Conanthera urceolata*.

Below: *Alstroemeria magnifica*, the species in the next panorama.



Below: This was as far as we got along the diversion road; an exuberant, colourful tangle of cactus, purple alstroemerias, balbisias and a yellow daisy shrub.



---International Rock Gardener---

DAY 6. HOMEWARD BOUND: Anita and Helga sampling some goats' cheese they bought at the start of our return journey. (Note the inflatable cow under the parasol!!)



This photo is from DAY 5 and shows the price of that cheese! A mob of ravenous **goats** converting a sector of the flowering countryside into the cheese Anita and Helga relish!

Below: Happily, along our diversion road homewards towards Huasco we saw a plentiful number of living Guanacos.



Above left: In the far northern Coquimbo Region. Our third and last lizard, *Liolaemus atacamensis* (Atacama tree iguana) was highly suspicious, requiring stealth to approach.

---International Rock Gardener---



Cuesta Pajonales, Coquimbo-Atacama border. We stopped at an old haunt, and these local *Cyanoliseus patagonus* were a magical surprise.



Our *Cyanoliseus* parrots in flight. Common names are trichahue and burrowing parrot. They flock socially in large numbers and nest in cliffs.



THE DAY AFTER. HOME SWEET HOME.

Much of the latter return journey was tense and fraught, as we discovered oil and water leaking from the engine.

A WEEK LATER.

Why bother when we have a 'flowering desert' right on our doorstep? Field mustard, an introduced weed, invading a neighbour's peach orchard.



SIXTEEN DAYS ON.

Pilots of 13 light planes which landed among the flowers were threatened with legal action & crucified by the media. As this image shows, no damage is evident, so I wrote in disgust to the authorities about the absurd over-reaction. (Photos via El Mercurio).



---International Rock Gardener---



And it's goodbye from John ... At least for the time being. (Photo Anita Flores Watson)



THE SCOTTISH ROCK GARDEN CLUB www.srgc.net

For people who love plants



Enjoy:

Interaction with international participants in our forum at www.srgc.net

*Read the weekly **Bulb Log** and monthly e-magazine '**International Rock Gardener**' online*

*Access the excellent, twice yearly journal, '**The Rock Garden**'*

*Our annual seed exchange of over 4000 entries, Shows - conferences - **student grants** -
Local Groups and much more...*

Why not join us? Subscription options for posted or electronic journal for Members.

Visit our world renowned web site to join or learn more: www.srgc.net

There is still time to join the SRGC this year in time to be able to take part in our super annual Seed Exchange, where thousands of different plant seeds, donated by our members worldwide, are available to all members. The Seed Exchange opens in late November and runs to mid-January the following year. You will be able to find details on the SRGC Website – [here](#). Our Seed Exchange, as with all other aspects of SRGC, is run by volunteers from our international membership.

Why not join up – and join in?

---International Rock Gardener---

---In the Garden---

Ed.: ZZ is a man of often idiosyncratic and rather poetic language – so perhaps a little explanation of his title is useful.....

Pterocephalus : From the Greek πτερον, pteron, a wing, and κεφαλη, kephale, a head, in reference to the receptacle (the thickened part of the pedicel) of the flowers having long, soft hairs.

DWARF SHRUBLETS WITH MORE FEATHERS AT THEIR WINDY HEADS

By Zdeněk Zvolánek, most pictures by Kirsten Andersen, Panayoti Kelaidis and the author.



ZZ and PK at the [Czech Conference 2017](#).

My humble intention is to bring more light to shine upon sun loving rock garden perennial subshrubs from the family Dipsacaceae, which are not yet well known. My best friend [Panayoti Kelaidis](#), leading expert from Botanical Garden in Denver Colorado, introduced them for xeriscape gardening in his article called “[Pterribly good scabious...the petite Pterocephalus](#)”(January 2013 - Adapted from a short piece originally published in Saximontana, newsletter of the Rocky Mountain Chapter of the North American Rock Garden Society) but I feel that just one voice is not enough to call and ring bells for these all promising plants. We will sing a duet anthem of the genus ***Pterocephalus***. Four species are indeed petite (small and dainty enough) and the three tall shrubby species with long wooden legs from volcanic mountains of the island of Gran

Canaria we might be better to leave to decorate their local ashfields.

Close-up of *Lomelosia pulsatilloides*.

Yes, they are botanically close to the genus *Scabiosa* which offers us some quite tall herbaceous perennials. There is one beautiful plant among scabiosas with leaves like *Pulsatilla* and it was taken out of them with new name ***Lomelosia pulsatilloides*** ((Boiss.) Greuter & Burdet, published *Willdenowia* 15: 75 1985) (syn: *Scabiosa pulsatilloides*). This rare plant loves dolomitic limestones in the area of Granada in Spain just south of Sierra Nevada Mts.



---International Rock Gardener---



View of habitat of *Lomelosia pulsatilloides*.



Pterocepalus perennis subsp. *perennis*

---International Rock Gardener---

Panayoti and I have Greek ancestors so the first species to be introduced has to be *Pterocephalus perennis* subsp. *perennis* from Southern Greece, namely the Peloponnese Peninsula. One synonym is *Pterocephalus parnassii* but Panayoti looked for it on Mt. Parnassus (North of Delphi) without success.



Pterocephalus perennis (*parnassii*) in Denver.

Panayoti wrote "I find this the trickiest of the three kinds I grow: it's good to keep this in propagation. It seems to be especially intolerant of too much water. It has typical dusky, scabious flowers of a pale lilac pink. They are nicer than they sound. This blooms primarily in the spring, with only an occasional late summer flower. I wish I could find a perfect spot to grow this. I keep it four or five years, and then it tends to fade away—probably wanting to go back to Greece where the winters are a tad milder? It is worth the effort to tame it."

This subspecies grows happily for me in a north facing crevice with plenty of sunshine all day where the soil is slightly alkaline. I never water it. It soon formed flat polster 50 x 45cm, about 8cm tall and it's pale pink flowers 25mm in diameter are produced in lazy succession from late spring to middle of summer.

Pterocephalus perennis at the Beauty Slope.

Leaves are slightly felty, 10 x 7mm gray-green. It is asking for its edges to be trimmed soon (I wrongly thought that it is slower grower). The last few winters were relatively mild so I cannot judge the total hardiness of this Greek perennial.

Albania and Greek Macedonia have a slightly different subspecies,

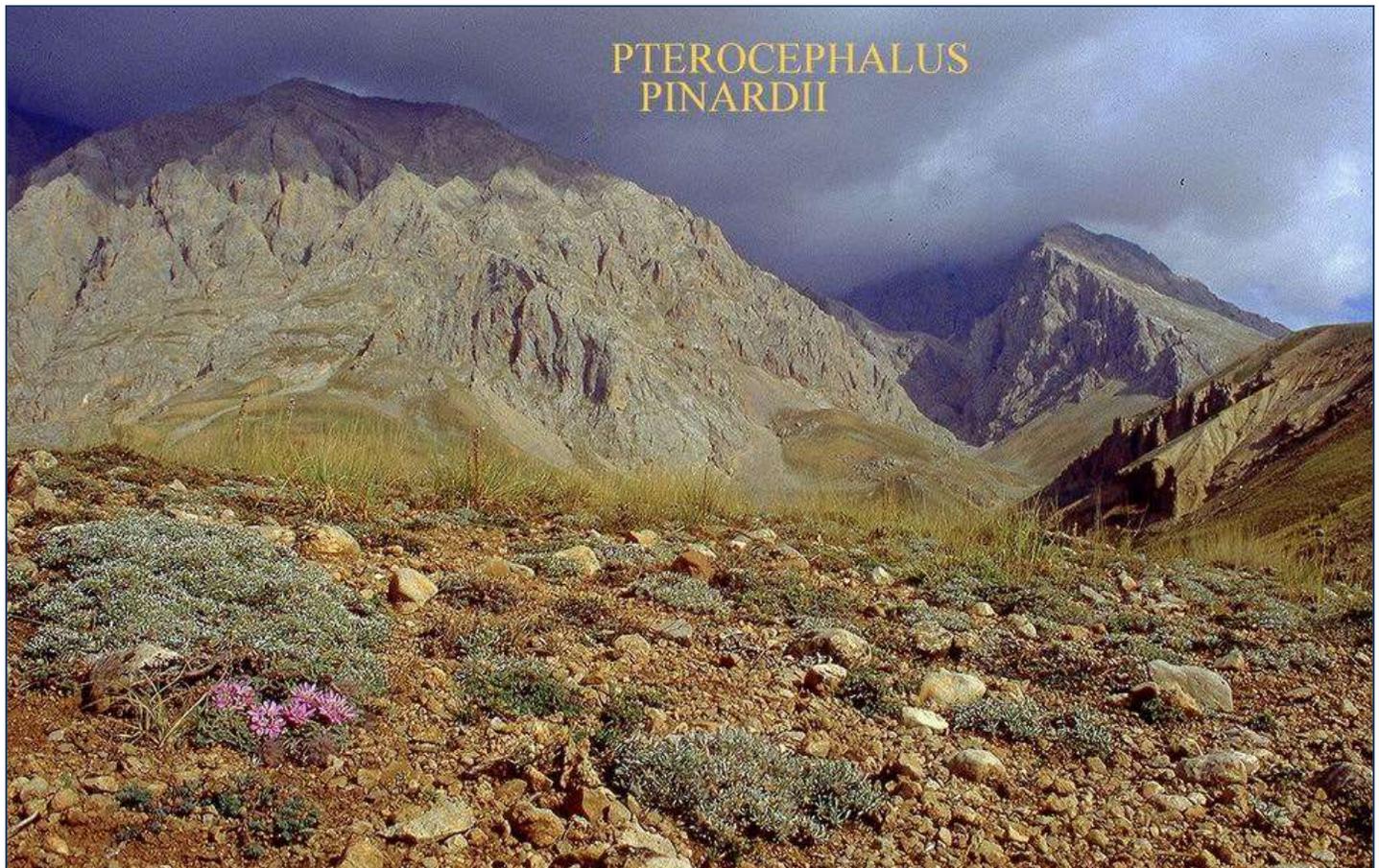
[*Pterocephalus perennis* subsp. *bellidifolius*](#). It is a

semishrub from limestone areas (800- 2100m), it forms cushions in some canyons in

crevices up to 20cm tall with small greener leaves, flowering there in July and August. Synonyms are *P. bellidifolius* and *P. epiroticus*.



---International Rock Gardener---



Pterocephalus pinardii on the Ala Dag steppe



Pterocephalus pinardii in cultivation in the Czech Karst.

For me is easy to write about the Turkish cousin of the Greek Pincushion Flower: ***Pterocephalus pinardii*** which I regularly reintroduced from seed collected in alkaline Anatolian steppes between 1986 and 2006. It was always pleasant to see a few late summer flowers at the windy flatland in the Ala Dag steppe, where the grey cushions of the shrublet are decorated with rosepink pincushion flowers about 3cm across. You never can see a red colored form in wild but once upon a time we admired one pure white variety growing in the limestone massif called Bolkar Dag; it is rare variant indeed. Its seeds are small papery bags hanging under tiny feathery-parachutes. Every fertile seed has a fat capsule and the ripe seeds are blown between hairy rugs of *Convolvulus assyricus* or silver plated buns of *Convolvulus compactus* and *Salvia caespitosa*. Collecting seeds is better controlled in my southern crevice garden because it is not so windy here; plants flower in sequence from May (when more flowers are born) to October, ripening slowly and irregularly. They sometimes self-seed around. My biggest plants are 30cm across and very flat flowers

---International Rock Gardener---

are up to 5cm above grey-green clumps. This species is fully hardy in our zone 4 and behaves in a very friendly manner.

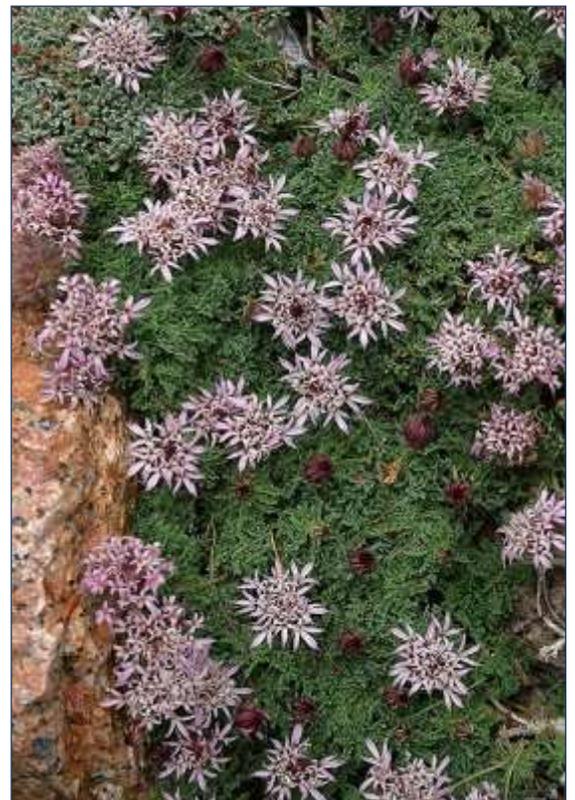


Pterocephalus pinardii

Pterocephalus depressus in Denver

By some dirty trick of my destiny I have never had the chance to try the [Moroccan endemic](#) ***Pterocephalus depressus*** at our Beauty Slope. So I must use for this article the juicy description of Panayoti Kelaidis: “The first ***P. depressus*** I saw was in the garden of Eric and Mabel Hilton, famous alpine growers who lived above the Severn near Bristol in the west of England. Eric’s expansive garden had hundreds of treasures, including a large mat of ***Pterocephalus depressus***, which I subsequently discovered came from Morocco. I never dreamed that there were that many hardy plants in Morocco (except for Atlas daisy—the exception that proves the rule). I had to have this plant. Eric came to visit me a year later, and brought a rooted cutting along as a present. That cutting has given rise to all the plants of this wonderful groundcover growing in America today, I am quite sure.

The foliage on this species is the deepest pinnatifid (deeply cut in English) and a brighter green than the other two species I grow. The flowers are an especially lovely dark,



---International Rock Gardener---

dusky rose color—very Victorian don't you think? It blooms and blooms and blooms, making a perfect picture all summer long when we desperately need color. My original plants put in my old house on Eudora in 1986 have spread over a meter in extent. The old stems have become veritably bonsai-like, woody and gnarly and very picturesque. This has taken over 20 years—a testament to the toughness of this plant. It should be in every Colorado rock garden. Since it is easily divided and roots with ease, there's no excuse for you not to have this gem!"

Yes, I am foolish that I have not yet looked for it in Central Europe but they are rare to be seen here. I saw only one small pad resting under a roof overhang in Bavaria in the rock garden of František Paznocht.

Habitat in the Sierra Cazorla Mts.

The rarest Pincushion Flower is the Spanish endemic species *Pterocephalus spathulatus*. Lovely small felted leaves and bright rose-pink flowers are able to crown every crevice in full sun. The problem is to obtain the plant in the first place! Panayoti fell in love with this miniature shrub at the top limestone ridges of Sierra Cazorla.

Here at an elevation 1700m this species shares cracks and fissures with *Convolvulus boissieri* and both making an elegant silvery mosaic just placing their maximally reduced buns in lazy groups.

The marvelous woody *Viola cazorlensis* also grows at limestone cliffs there. I had also bad luck with no seeds here in Sierra above the paradise of olive fields.

Below: *Viola cazorlensis*

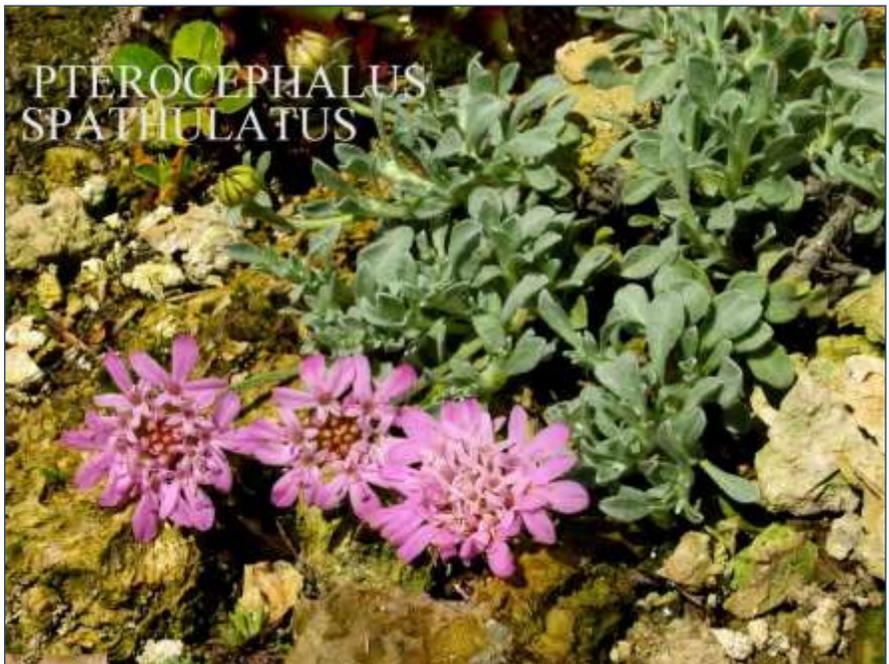


---International Rock Gardener---



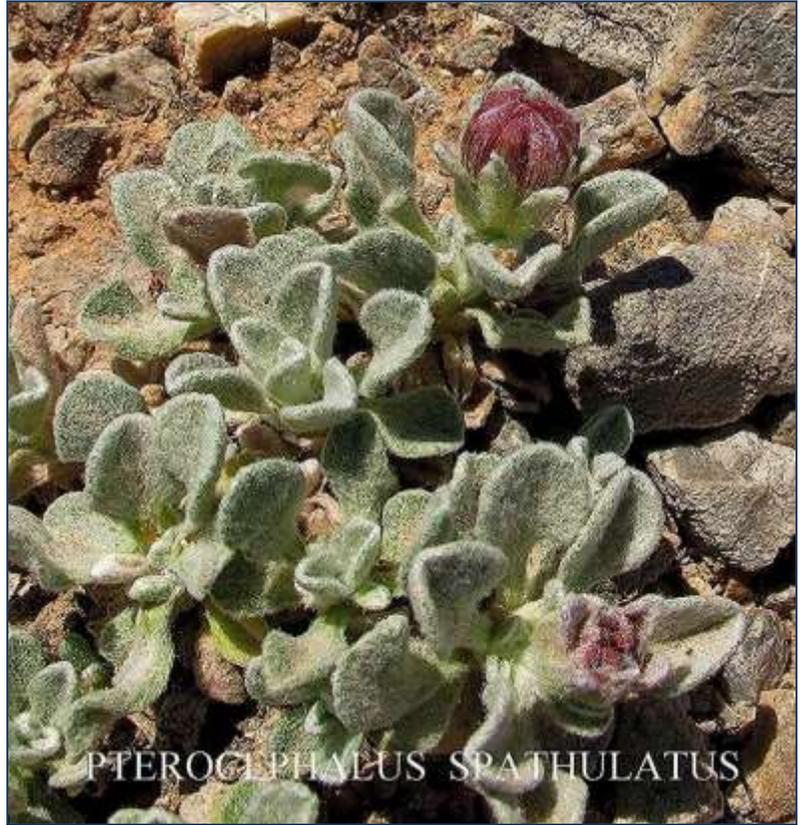
Convolvulus boissieri

I saw its small woolly body in the alpine house of Harry Jans in Holland in 1988 but there was no chance to get a piece. Two years ago German plantsman Michael Kammerlander gave me rooted cuttings which grow nicely up to 15 x 10cm flat pad showing freely flowers in the size of about 2cm. I am not sure if it is the same small form as seen in the Sierra Cazorla Mts. (it is much larger in cultivation). I promised Panayoti to collect seeds from this plant if they are viable. The seed heads look like a small fat brush and our summer rain is definitely not designed for them. Some seed would be nice for me too for establishing this beautiful creature in the Czech Karst.



Z.Z.

---International Rock Gardener---



Pteroccephalus spathulatus in cultivation and the wild.

