

International Rock Gardener

ISSN 2053-7557



Number 117

The Scottish Rock Garden Club

September 2019



It is a pleasure this month to publish the description of a viola named for one of the greatly missed personalities of plant-hunting. This article, as the viola, is from South America, described by John Watson who fondly remembers his travels with Martyn Cheese in “days gone by”. It is exciting for us to publish such articles with open access to bring such knowledge to a wide audience and, we hope, a fitting memorial to John’s lost friend. Kind thanks to all who take the time and trouble to contact the IRG team to give us your reaction to the magazine’s contents. These, and submissions of articles, are always welcome – by email, please, to the [Editor](#). We look forward to hearing from you.

Back to this issue – where Zdeněk Zvolánek introduces some plants from the Estonian garden of the charming gardener and traveller, Svetlana Polonskaja, and she herself comments on some of her favourite plants in her rock garden. To finish this month we have an adapted report from Zdeněk Zvolánek about the Beauty Slope during a hot summer – though more recently, he and his partner Zdena Kosourová have been experiencing the cooler weather at the famous National Trust for Scotland’s [Inverewe Gardens](#) on the West Coast of Scotland as they took part in the Scottish Rock Garden Festival there. But more of that some other time.....

Cover photo: *Viola cheeseana* F.& W.12685, photo John M. Watson.



ZZZ - Zdeněk and Zdena at work on the new crevice garden at Inverewe.

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---Plant Description---

Lest we forget. A new identity and status for a *Viola* of section *Andinium* W. Becker; named for an old and treasured friend and companion.

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Published in International Rock Gardener (IRG) 117 September 2019, pages 3 – 56.

A productive double act



Without the key participation of Martyn Cheese [fig.1] in my plant hunting career, this account could never have been written. Whether fate would even have taken me to explore the Andes either is an open question. Our best-known new species and introduction, *Erythranthe naiandina* (aka *Mimulus* 'Andean Nymph') [fig.2] (Watson & Bohlen 2000) would inevitably have been left on the shelf in the wild for others to stumble across.

fig.1: Martyn Cheese, dedicatee of the *viola*'s new name, 33 years after he spotted it. At home in Lee Downs, North Devon. (16 Aug 2005. ARF)

Martyn's family name initial 'C' is inscribed into the history of botany and horticulture as A.C.& W. (1966), C.M.& W. (1967), and B.C.& W followed by C.& W. (1971/72). Between them they represent our three and only major explorations - of Turkey and the Chilean Andes - as partners in crime, totalling some twenty months and with an accumulated 4700 collections. Those consist of herbarium specimens and material for our subscribers. But despite my best intentions, neither

his first or surname have so far been employed for a plant's commemorative specific epithet, as has that of our late companion in 1966, Sydney Albury - *Fritillaria alburyana* (Watson & Rix 1970, Rix 1971), and mine, kindly, by Peter Davis as -*Thlaspi watsonii* - since changed to *Arabis watsonii* (Davis et al. 1988, Meyer 2006, Özüdoğru & Firat 2016).

fig.2: F.& W.12614 *Erythranthe naiandina*, a 1972 discovery of Cheese and Watson, published as a new species by the latter in 2000. (17 Dec 2013. JMW)



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My belated rectification of that omission appears here in the form of a viola of the Andean kind (section **Andinium**), the focal point during 1971 and 1972 of our numerous sorties in Chile. As is now quite well known, they have since also become Anita's and my principle line of botanical investigation. Appropriately too, the viola was first spotted by Martyn himself in the Maule Region [fig.3] beside the homonymous Lake Maule towards the end of our stay [figs.4, 58]. We found just one small, insubstantial-looking plant then, almost overwhelmed by its solitary, impressively sizable flower, and took it for an annual, apparently not even a rosulate [fig.5]. Time would tell that we were wrong on both those scores, although we were neither the first, nor by a long chalk the most exalted (us? - exalted???) to be fooled as to the systematic affiliation of species in its small taxonomic group (Gay 1845, Reiche 1893, 1896).



fig.3: Position in South America of Maule Region, Chile, sole recorded general location of *Viola cheeseana*.

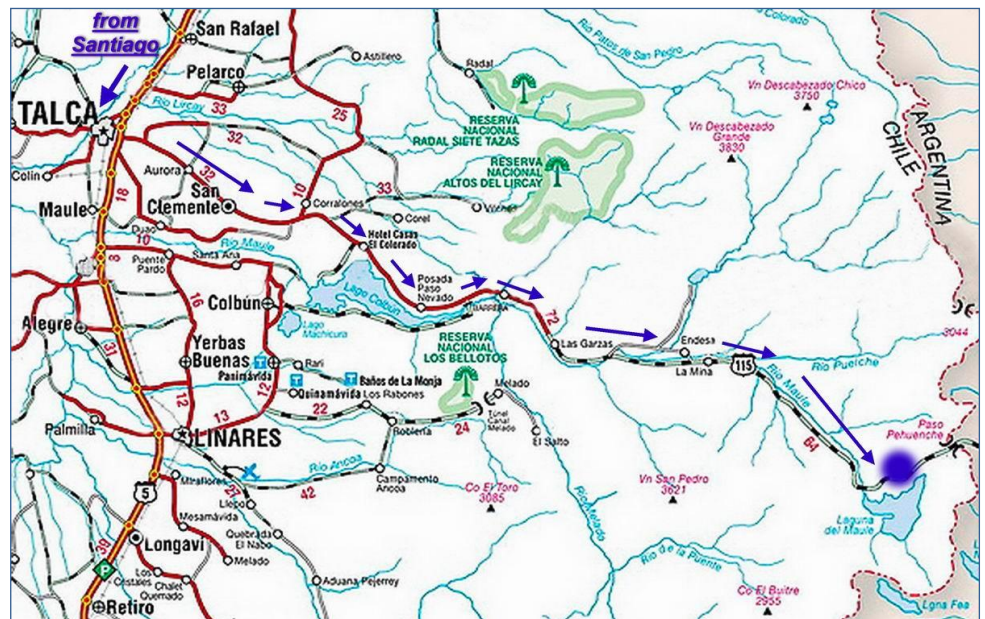


fig.4: The route to the Laguna del Maule with the site of *Viola cheeseana* marked as a violet circle.



fig.5: A viola like this was Martyn's first glimpse of 'his' species in passing - a lone, diminutive specimen, only in any way notable for the size of its flower. (11 Jan 2014. JMW)

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When Anita and I discovered in later years the main beefier and obviously perennial population a very short distance away, it was first identified as *Viola glacialis* Poep. & Endl. (1838), named for a plant which had been found in the next region to the south in Chile, Bío Bío. Belatedly following the informed publication by Becker (1922), this has since been recognised as a synonym of earlier *Viola truncata* Meyen (1834), which was described from a collection in the next region to the north, O'Higgins. However, careful examination of the Maule plants revealed the presence of critical underleaf glands, distinguishing it in our judgement as a different but closely related taxon. More recently still, it came to our attention that it had been obscurely and briefly - but legitimately - named as *V. truncata* var. *glandulifera* W. Becker (1922). Despite not being new to science as such, elevation to species rank, as decided on herein, allows an author to provide a distinct epithet. In any case the name *Viola glandulifera* has already been published previously for a quite different species (Wallich 1824).

So it is my untold pleasure to provide the new name of *Viola cheeseana* for this delightful little species. With a twinkle in his eye, Martyn once confided in me his hope that there would never be a new species bearing his name as 'cheese' (i.e. with the academic Latin pronunciation 'cheesy'), as much for the poor plant's sake as for his! This is duly respected here, of course. Its publication in a mountain flower journal aimed at the general interested public as well as botanists has broader relevance still - in that the location is visited from time to time by both ecotours and individual plantsman-travellers.

Sadly, and due largely to my dilatoriness, dear old Martyn has not survived in this cruel world long enough to benefit personally from this minor gesture of appreciation for his outstanding contribution to my joint achievements with him and others over the years. His obituary may be found in Watson (2010). His life-partner, our great friend Margaret, a companion and botanical artist during our Turkish explorations of 1964 and 1966, is still with us however, and will surely rejoice in this posthumous commemoration. Indirectly, she represents an absolutely indispensable aspect of the present account. For in one of those limitless numbers of fragile, slender threads of coincidence which perpetually govern our lives, it was Margaret who introduced me to Martyn.

Harking back to the present

Our most fruitful return to the viola's site was in 2013 and 2014, when we found it in top form, with more flowering specimens than ever before. It is to that visit we owe most of our herbarium reference specimens and photos of it. This is another fundamental and basic reason for presenting it here in the International Rock Gardener, for it was our own Scottish Rock Garden Club and the Alpine Garden Society which between them so magnanimously co-funded that intensive and productive series of explorations for violas as three field trips of four, six and eight days respectively.

We start off and set the scene with a ramble along the Andean uplands leading to the location of the viola, which we've revisited several times since, including in 2014 as mentioned; a short trip in January of the year this is written (2019) being the most recent. Happily too, the viola, as well as a wide range of the other flora and many scenic views, have been recorded on digital cameras from 2005 onwards, a factor which eliminates the task of having to dig out and tediously scan more than a relevant pair of my original slides! Basically, this chronicle includes illustrations and descriptions of a selection of the more memorable flora we saw in 1972. But I've also included a few noteworthy species from subsequent visits, which had evaded us forty-seven years ago. To integrate and bring to life that first unforgettable occasion with Martyn himself, it occurred to me to quote extensively (in italics*) from notes I wrote on the spot in Chile, as well as letters home shortly after to family and plant-loving friends. With very little modification they also formed the contents of the extended coverage of our Beckett, Cheese and Watson 1971/72 project I wrote a year or so later for the Alpine Garden Society Bulletin (Watson 1974-1977). These immediate reminiscences of our experiences

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during 17th and 18th of January 1972, being fresh first-impression descriptions of landscape features in addition to the plants in flower there which impressed us most, add up to a significant part of the narrative contents which follow below. It would, I freely admit, be impossible for me to improve on them now. As in the AGS series, I have, though, seen fit to edit and expand from the on-the-spot shorthand of my original wording where necessary, including adding details to bring it up-to-date. In particular, our botanical knowledge was decidedly limited then, so some identifications have been corrected or added where wrong or unknown at the time. Those also include some additional taxonomic name changes made since. Continuity texts, and descriptions of plants seen later, have been slotted in where necessary.

*To differentiate Latin epithets, which are also in italics as is customary, they're marked in bold black print in the quotes. But to avoid further confusion and for consistency, I've harmonised this by putting all epithets throughout the text, including the Bibliography, in bold italics.

A formal taxonomic presentation of the new name follows this background narrative.

A glorious cascading landmark

The local point of departure for our destination is Talca, capital of the mid-southern Maule Region in Chile. From there, and taking meanderings and changes of direction of the road into account, our destination lies some 150 km, or nearly 100 miles, to the southeast, and some 2200 m higher up. In 1972 most of that route consisted of a narrow but negotiable dirt road, tiring to drive. Nowadays the surface has been widened and asphalted to accord with its status as one of the principle secondary passes between Chile and Argentina. Under no circumstances is the journey a hardship, since it follows the varied and scenic valley of the River Maule [figs.6, 7], and interesting plants appear at frequent intervals, even in the lower stretches. But we're not stopping for those now. Our initial halt arrives after we've covered two thirds of the total distance, and is defined by notable geology.



fig.6: The Maule River in the foothills. We follow the valley up to its homonymous source lake at Andean elevations. (9 Jan 2014. ARF)

"Marking the lowest limit of alpine growth is a most dramatic hanging valley, buttressed by sheer basaltic columns. Over these plummets the Río Maule as a thin, straight white plume, often shot through with a rainbow and deceptively fragile to the eye, yet smashing with crude force onto the boulder pile beside the inky pool which marks the cradle of its passage down through the precordillera [fig.8]. When a strong wind blows up the valley it can lift a plume of spray high into the air above the upper river course [fig.9]." This plunge-waterfall is known alternatively as the Salto del Maule or Salto de San Pedro. *"Approaching the feature from below, we drove along progressively more elevated rocky and narrow ledges carved out of the valley cliffside precipice and passing through some short though claustrophobic tunnels."*



fig.7: Higher up the Maule valley with the main cordillera we are heading for now visible in the distance. (31 Dec 2005. ARF)

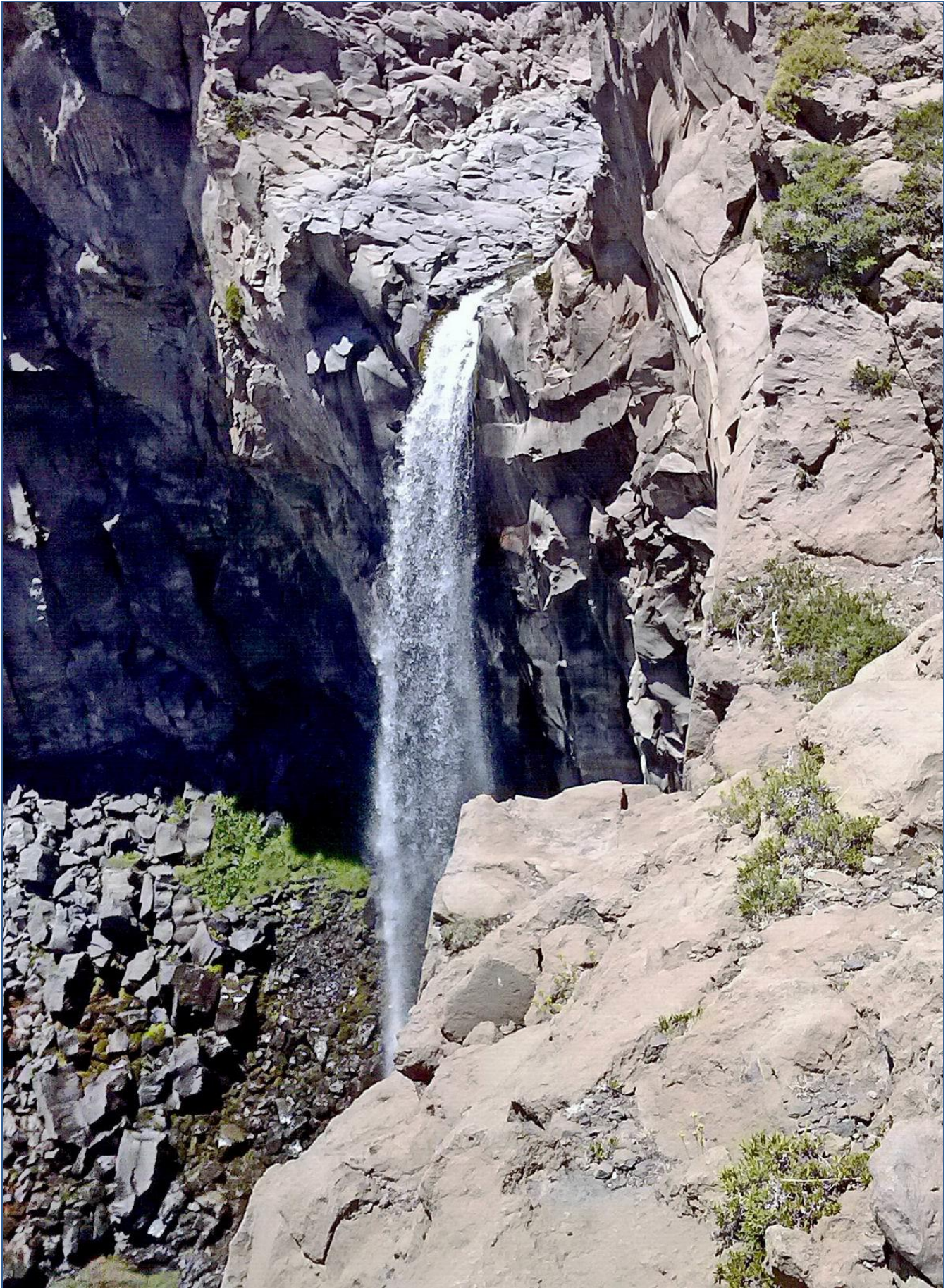


fig.8: The Salto del Maule, a classic plunge waterfall, but with scarcely any basal punchbowl pool. (19 Dec 2013. Helga Petterson)



fig.9: When the wind blows strongly up the valley, it blasts the spray of the Maule waterfall high in the air as in this impressive plume - seen from the upper level. (7 Jan 2019. JMW)

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fig.10: Daughter Sarah during one of her every-so-often visits to us in Chile photographing F.& W.13143 ***Ourisia microphylla*** on its cliff habitat. (7 Jan 2019. JMW)

One of the most unmissable treasures here clings like a dionysia to those beetling igneous walls by the roadside. Here's my eulogy it inspired:

*"We were face to face with a tiny shrublet mellowing the fracture lines on frowning vertical rock faces part-exposed to the sun. Out of flower it would have mystified completely with its cushiony clubmoss effect of a small, open ***Cassiope lycopodioides***, delicate and brittle, the overlapping, scale-like opposite leaves hugging the stem in reptilian fashion. But seeing the comely little primula-like flowers smothering this worthy contender for any alpine plant beauty competition, we recognised it as ***Ourisia microphylla*** [figs.10, 11], despite it looking quite unlike any other of that genus known to horticulture, for we'd researched it at the Kew herbarium before we left as part of our preparation for the exploration ahead. Its blossoms are produced in twos and threes at the tips, the colour a delicate but definite pink with a small white 'eye' extending back into the short corolla tube.*



fig.11: F.& W.11617 ***Ourisia microphylla*** on the roadside cliff wall beside the Salto del Maule. (1 Feb 2008. JMW)

*The plant is nurtured in crannies by an appropriate diet of windblown volcanic dust and decaying humus of the bryophytes that share its highly specialised niche. We'd also encountered it earlier below the Antuco Volcano further south when with our great Chilean friend, the Santiago botanist Prof. Carlos Muñoz. That was the first time he or we had seen it, and he was as impressed and delighted with it as we were. No self-respecting plant explorer should be tempted to journey to Mars as long as there remain species of the calibre of this one to encounter in situ, let alone to discover." As noted above, we knew a lot about this remarkable little species, so weren't taken by surprise to find it here splattered like coloured snowballs on an exposed, sheer vertical rock wall, yet bearing a genus name normally associated with moist, waterside places. However, only our own previous experience three months earlier in Chile had forewarned us that another of the same 'damp' reputation, ***Calceolaria***, could similarly adapt. That earlier encounter had been with ***C. pinifolia*** on a sun scorched rock ledge in Chile's semi-desert northern*

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high Andes. Here, 1200 km further down the subcontinent, we found **C. pallida** [fig.12] - with its bunches of typical bloated yellow pouches - keeping the ourisia company by adorning a slanting, bare, natural V-shaped indentation up on the cliff face and looking as happy there as a pig in a mudbath. Only the dense, woody base indicated it had what it takes to flourish where a gardener might hesitate to plant anything but sedums and semps!

fig.12: No more unlikely habitat for a calceolaria surely exists than this pure rock channel for F.& W.12639 **Calceolaria pallida** at Maule. (19 Dec 2013. JMW)

*"At one moment perched vertiginously twixt earth and sky on that cliff ledge, at a stroke we suddenly passed between a jumble of boulders onto the flat openness of the upper mountain valley and its ashfields of bleached, tufted bunchgrass [fig.13], the latter to be eagerly sought after by anyone requiring free al fresco acupuncture! These expanses have repaid our attention where the close-set tussocks give sanctuary to a rather long-stemmed, smallish-flowered hippeastrum (**Zephyranthes montana** [figs.13, 14], syn.*

Rhodophiala. J.W.), this being somewhat redeemed by its clear to butter-yellow perianths."

STOP PRESS. Resulting from years of co-operative study of the American Hippeastreae by all their experts working cooperatively together, and now headed by our Chilean friend and colleague Nicolas García, there has been another recent dramatic revision (or upheaval if you prefer!) of the group. This has resulted in numerous changes at generic level and several new species epithets (García et al. 2019). All the latest molecular analysis techniques have been employed in the study, and apart from a very few loose ends still in need of tying up, there's no doubt that the present nomenclature is now completely stable (at last!). All whose focus of investigation is the Hippeastreae are in agreement with the conclusions. Consequently, a significant number of name changes have taken place, affecting inter alia any of these amaryllids familiar to botanists, plantsmen and others who travel alone or in tours to this part of the world. **Zephyranthes montana** just mentioned above is such a case. We feel there is, or certainly will be, a need for the new identities of these species to be made generally available, so have listed the changes in an appendix following this main article.



fig.13 left: The needle- or bunchgrass upper Maule flats between the waterfall and the lake - with F.& W. 12643 **Zephyranthes montana**. (19 Dec 2013. JMW)

fig.14 right: F.& W.12643 **Zephyranthes montana** of the Amaryllidaceae, better known by its former genus of *Rhodophiala*, is restricted to these latitudes. (19 Dec 2013. JMW)



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But the shining star of the show here and there among the daunting sweeps of needle-grass is erect ***Calandrinia graminifolia*** [fig.15], its white, flaring ballet skirts swaying gently in the light breeze. As the specific epithet suggests, without those stand-out flowers its foliage would be almost impossible to differentiate from the hostile bunchgrass it inhabits. I.e. perfect protection from grazing! Añon Suarez encountered Argentinian material, thought it was new, and gave it the equally appropriate synonym of ***C. acutisepala***. In the same context she misidentified another distinct taxon as ***C. graminifolia*** (Añon Suarez 1984). Unlike the otherwise completely glabrous members of its genus, the foliage of the true species has a barely perceptible covering of minute glandular indumentum. Further photos of it may be found in IRG105 (Flores & Watson 2018) – where it was erroneously labelled ***Calandrinia graminea***.



fig.15: Like a dainty rose among its thorns, the silky, virginal flowers of F.& W.12644 ***Calandrinia graminifolia*** nestle down in the spiteful needle-grass tufts. (19 Dec 2013. JMW)

To wind up the bunchgrass flora, I wrote home in 1972:

"We also came up with a very superior species indeed of waxy yellow or orange ***Chloraea*** ground orchid." In our botanical salad days we were only capable of identifying it to genus level as well as recognising it as the same species we'd photographed in flower months earlier in the high Andes above Santiago. Given that upper elevation, its full binomial of ***Chloraea alpina*** [fig.16], which we now know, is informative. Nevertheless, it's very widespread and common, ranging from central Chile to southern Patagonia, so in fact also occurs as low down as the coast. It hybridizes freely with ***C. magellanica*** where they meet (Sheader et al. 2013, p.294-295), and I have even been involved in co-authoring the resulting nothospecies as ***Chloraea* × *flavovirens*** (Rojas & Watson 2015).

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fig.16: One of the commonest, most widespread and colourful Chilean orchids is F.& W.13163 ***Chloraea alpina***, here at Maule. It's also a parent of wild hybrids. (7 Jan 2019. JMW)

fig.17: We seem to post photos of fine lone ***Schizanthus hookeri*** specimens in every other IRG article! But never finer or in a lovelier setting than this one at Maule. (31 Dec 2005. ARF)



The short-lived perennial ***Schizanthus hookeri*** [fig.17] is a common feature of lower Andean levels in central and central-southern Chile. However many times we encounter it though, it's always difficult to resist stopping to photograph one of its outstanding specimens. Colonies of it decorate valleyside slopes along the mid-Maule valley, but the solitary one depicted here grew beside the road on the upper flats above the waterfall.



fig.18: Panorama of the bunchgrass flats with the bare clearing of the ***Viola congesta*** habitat in foreground. Seven plants are lightly arrowed. (19 Dec 2013. JMW)

Viola territory beckons

In grey, barish, ashy clearings between the grasses, punctuated by a few boulders [fig.18], Martyn and I experienced our first sighting of another of the fourteen rosulate kinds notched up during our six-month stay.



fig.19: F.& W.12642 **Viola congesta**, a matchless classic of the rosulate group. (19 Dec 2013. JMW)

"Viola congesta [figs.18, 19] is one of the glories of its race. Surprisingly, it occurs near the very lowest level of true alpine vegetation. Of all plant forms, the rosette is arguably the most formal and stylised. The more compressed, the more evident becomes the pure, geometrical symmetry. And of all the amazing rosettes we've encountered, it's this viola more than any others that might be taken for an artifact rather than a species arrived at as a result of vast spans of selective evolution. The precisely overlapped leaves look to have been cut from fawn felt trimmed by pinking scissors to an even margin of lobes. At the base of each cut between the lobes glistens a tiny gland of red gum. This was a masterstroke of ingenuity on the part of the embroideress, who'd evidently employed ruby-tinted, glass-topped pins to create such an effect. Only the traditional appearance of the flowers themselves related to anything in

the violet or pansy line we normally expect to find in the wild."

Continuing across the flats, we paralleled the direction of the downrushing icy blue, spume-topped upper course of the river, which passes through a ravine guarded by several most dramatic, softly weathered fairy rock towers and fortresses in shades of pale pinky grey and chalky white [fig.20]. They reminded us a bit of those we'd seen a few years earlier at Göreme in Turkey. At that point the surrounding land becomes elevated, and the river cuts through it along a short, steepish-sided valley, with the road running above, along its flank. Where the ground slopes down quite abruptly to the ash flats we've just passed through, a damp, grassy patch above head-height holds a real goodie. We'd no inkling of its presence there in 1972, by ironical co-incidence the very year it happened to have been described as new for science! This, the rare **Phycella maulensis** [fig.21] (syn. **Famatina maulensis**) as just recombined by Nicolas and myself (García et al. 2019), is one of a variety of South American amaryllids with red, tubular, hummingbird-adapted perianths, but is shorter and neater than most others. It only grows in permanently saturated spots beside running water, or in moist seeps. We've also seen it just twice elsewhere - both as unrecorded locations in Argentina; it's still listed as an endemic of Chile's Maule Region in literary references. At the upper end of the valley nothing more than one or two civil engineering administrative buildings existed in 1972. But that spot has now been expanded by customs and agricultural service controls following the road's adoption as a major route to and from Argentina via the pass over the watershed about another 20 km further on.

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When Martyn and I explored Chile, there were absolutely no restrictions on collecting plant material anywhere in the country - except from national parks of course, whether for science or horticulture. Now the story is quite different - bureaucracy, conservation and agricultural concerns rule, and we and other serious botanists have had trouble returning with important herbarium material from Maule in that 20km stretch between the customs and Argentina. In particular, our friend and colleague who monographed *Ourisia*, Heidi Meudt (2006), discovered rare *O. serpyllifolia* [fig.22] growing in the shade of vertical rocks a mere stone's throw beyond the buildings of the complex, but had great difficulty in eventually persuading the officials of its importance for botany and getting them to allow her to bring a specimen back through. Fortunately, no restrictions whatever are placed on photography, so when she told us about it - hey presto, here it is! As its habitat and appearance suggest, it's another of the three species in the *O. microphylla* group, the third being spectacular red *O. polyantha*, now well known in alpine gardening circles, thanks to the skill of the Sheaders.



fig.20: The Fairy Castles which guard the course of the Maule River between the lake and the falls. Please don't let hydroelectrics ruin this landscape. (7 Jan 2019. JMW)

After a very short distance more, and 30 km further on from the waterfall, the valley suddenly opens up into a majestic vista dominated by the source of the river, and also the location of our special viola.

"The scene is a lake of rich, sonorous blue [figs.23, 24], formerly the most southern nesting ground of the lovely pink Chilean flamingo. The recently purchased two volume book by our amateur ornithological expert friend, Mr. Johnson (Johnson & Goodall 1965[-1967]. J.W.), a British expatriate here, records the following: 'Of particular interest was the colony of some 60 breeding pairs located by Dr. Behn in 1943 (subsequently wantonly destroyed by workmen building a dam) on a small island in Lake Maule.' The natural reservoir, as it's become since construction of the dam, is cupped in by anaemic hilly ridges of a superficially desert-like sandy bareness. The suggestion of a mirage is

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inescapable, for there's no usual gradation from lush, marshy vegetation at the water's edge, the shore being a series of stratified water-level lines etched on bleak rock or sand. Only above the uppermost of these can thin dustings of scabby-edged greenness be discerned on flatter gradients around the protruding greyish, knurled rock surfaces. Scalloped lines of shrunken snow cornices clinging here and there below the highest crests just beyond the lake betray the fact the we're over 2000 m and not far from the Andean watershed. This, the Laguna del Maule, marks the heart, but by no means the limit, of an extensive alpine zone."

The road and ourselves follow the curves of the northern shore [fig.24].

"Once Martyn and I started to look around today, our 'desert' proved to be nothing more than a deception of distance. At close quarters a remarkably wide variety of flora occupies much of the ground, if sparsely.

"Twenty-five miles to the north stands Dezcapazdo Grande, the Great Headless volcano, a majestic table-capped pyramid. As a result of this having 'blown its top', clouds of pumice and denser, sandy-coloured grains, shards and nuggets rained down to blanket thickly the existing rockscapes." To update that more accurately, the whole of the Maule Lake sector, including somewhat beyond the immediate lake surroundings, is an extensive volcanic field with a total of about 130 vents (Wikipedia 2019). Dezcapazado Grande represents just a part of the complex, so is obviously by no means the sole origin of the landscape. I've left my original description in though because it gives a vivid word picture of the scenery!



fig.21: A portrait of the rare amaryllid, F.& W.11887 ***Phycella maulensis***, taken in Argentina where we found it at a new location in the upper Agrio valley. (27 Nov 2009. ARF)

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fig.22: Our other charismatic chasmophytic (rock wall-dwelling) ourisia, the very rare F.& W.11101 ***Ourisia serpyllifolia***, a sighting owed to ourisia expert Heidi Meudt's sharp eyes. (31 Dec 2005. ARF)



fig.23: The first view looking SE of the 11 kilometre long Maule Lake at 2165 m, whose northern side is the location of the three populations of Martyn's viola. (7 Jan 2019. JMW)

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fig.24: A panorama across the width of the lake near its eastern end, looking N to S from the main and possibly type site of the viola described herein. (11 Jan 2014. JMW)



fig.25: Not Martyn's viola yet, although very close to it along the lake. Instead, F.& W.13146 *Viola cotyledon* - the choice, compact Maule form with bordered leaves. (7 Jan 2019. JMW)



fig 26: One of the flower colour variants of the silver-edged Maule form of F.& W.7694 **Viola cotyledon**, taken as a colour slide in 1993. (JMW)

fig.27: F.& W.10771, a more usual southern form of **Viola cotyledon** from the Lonquimay Pass, Chile, for comparison. (27 Nov 2003. ARF)

How green is my valley

A gently rounded and elongated promontory juts into the lake. Anita and I have given it a fanciful name, 'The Dolphin', due to its similar shape and appearance in the water. Much is quite well vegetated, and it was here we came upon our second rosulate at Maule.

*"Flowering of common **Viola cotyledon** [figs.25-27] was almost past when we were there yesterday, which scarcely counts against it, for the uniform glory of the Maule form consists of fine silvery margins to the leaves [fig.26]. No closer parallel could be drawn than between this particular violet's rosettes and those of an encrusted saxifrage."*



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"Our attention was next drawn to a particular habitat some way further round the lake. Despite extremely sharp drainage overall, a number of small water courses flow down the surrounding slope, mainly across surface rock. Fed by snowmelt, slopping and splattering as they purl towards the lake, their overflow gets sucked out and spread as on thirsty blotting paper by the surrounding volcanic sand."

"On one of these damp spots right up by the roadside, a splash of colourful mimulus, yellow or scarlet, but with an occasional bland light orange intermediate, blazes out its presence. This, **Mimulus cupreus** [figs.28-30], produced a shock of recognition for us, as though it had somehow just been bedded out, as at Chelsea." Apparently, that early identification of the two colours as forms of the same species is the first ever written record, perhaps the only one even, that **M. cupreus** can also be pure yellow [fig.30]. At Maule it has been mistakenly identified by others as **M. luteus** [fig.31]. These are now known as **Erythranthe cuprea** (Veitch) G.L. Nesom and **E. lutea** (L.) G.L. Nesom.



fig.28: A colourful glory and botanically interesting feature at upper Maule. The mixed population of typical red and rare yellow F.& W.13144-13145 **Erythranthe cuprea**. (7 Jan 2019. JMW)

"Those threads of water tumble down the open hillside, sometimes tracing their courses with narrow swathes of lush, short vegetation, mainly tender, vividly verdant grasses, many forming lawn strips, and the more startling for being the only Graminae (now Poaceae. J.W.) in view. A film of clear water flows down the slippery, orange-brown, mineral-stained strata of one particular favourite [fig.32], cascading over a memorable small waterfall [fig.33] at a focal point of an interesting flora, which includes the tiny cosmopolitan annual gentian **Gentiana prostrata** [fig.34] with four-square icy blue flowers like the points of a compass, scarcely visible down among the grasses. What an almost unbelievable contrast with **G. sino-ornata** and other Himalayans of that sumptuous ilk! Keeping it company are patches of one of the most endearing dwarf Ericaceae we've ever seen. From this part of South America it's probably a *pernettya* (it was at the time, but has since changed genus, and is now **Gaultheria caespitosa** [fig.35]. J.W.).

A few individuals of a squat, stemless yellow composite (since identified as **Hypochaeris acaulis** [fig.36]. J.W. - again illustrated in IRG 105), looking like a pleasing dwarf dandelion, its heads clustered at the heart of a prostrate rosette with deeply divided leaves, seek slightly more open and less saturated situations a little bit further away from the rill. Proximity to water, the amount of saturation available, density of ground cover and drainage governs the position of each species."

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fig.29: The roadside 'mimulus' colony with admirers - L to R - Anita, daughter Sarah, and Anita's friend Marta, who lives at the base of these mountains. (7 Jan 2019. JMW)



fig.30 left: A close-up view of F.& W.12636, the yellow form of *Erythranthe cuprea* from the Maule 'mimulus' population of two colour forms. It is NOT *E. lutea*! (19 Dec 2013. JMW)
fig.31 right: Comparative *Erythranthe lutea* with its erect stems. Here the flowers have the large lip blotch as well as the distinctive throat spotting. (13 Dec 2013. Marijn van den Brinck)

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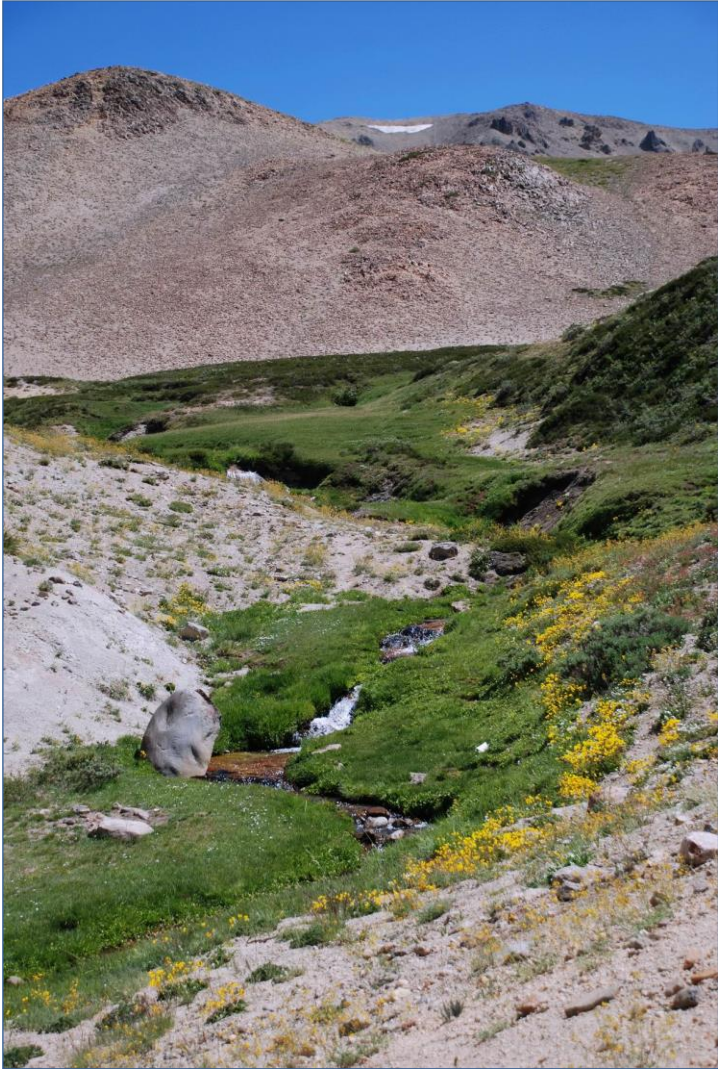


fig.32: The delightful green ribbon lakeside valley, with F.& W.12675 *Calceolaria filicaulis* on the right. (11 Jan 2014. JMW)



fig.33: Who wouldn't want the green valley waterfall in their garden! (11 Jan 2014. JMW)

fig.34: You need to look hard to notice tiny annual F.& W. 12678 *Gentiana prostrata* in the damp and short grassy habitat immediately beside the stream. (11 Jan 2014. JMW)



fig.35: F.& W.13155 *Gaultheria caespitosa*, a little pearl among the Ericaceae, grows in the damp grass by the stream, including the splash zone of the waterfall. (7 Jan 2019. JMW)

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fig.36: We find completely stemless F.& W.12688 *Hypochaeris acaulis* to be a little charmer. But maybe it's a bit too like the dreaded dandelion for all tastes! (11 Jan 2014. JMW)



fig.37: F.& W.12683 *Ochetophila nana* (formerly included in the genus *Discaria*), a delightful close-carpeting shrublet. (11 Jan 2014. JMW)

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To provide an adequate description and photo of every different plant we've seen over time growing by that stream is beyond our intended brief here. Not to mention a plethora of relatively unfamiliar Andean genera as well, an example each of willowherb, butterwort and spurge are components easily recognisable by anyone. One or two more do need inserting intermittently below though - to provide sufficient indication of the remarkably rich biodiversity in so confined an area.

Ochetophila nana [fig.37], unknown to the world of alpine gardening except for its inclusion in *Flowers of the Patagonian Mountains* (Sheader et al. 2013), forms absolutely prostrate woody mats with small, unobtrusive leaves. These almost disappear under its galaxy of tiny four-point white stars (cf. the little gentian in fig.34), their centres picked out by four or five equally white anthers against the shadowy background of the corolla tube interior. Its delightfully unique personality suggests it would make a fine introduction. If a commercial puff is permissible at this juncture, we recommend our friend and colleague Michail Belov as a possible supplier of its seeds by post. He may be contacted via his website Chileflora, and can communicate in a variety of languages, including English. The species belongs in the Rhamnaceae, and was until recently included in the genus ***Discaria***, as it's still listed by Michail. Due to the over-generous floral richness along this watercourse and our shortage of time, we didn't run across that particular little gem the first time around.

fig.38: The lower end of our 'green valley' with a persistent snow bridge, following a winter of exceptionally heavy snow. (7 Jan 2019. JMW)



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fig.39: And here we are en famille photographing plants beside the snow bridge, giving an idea of its size. L to R - Anita, daughter Sarah and me. (7 Jan 2019. Marta Molina)



Quite near the water in the high saturation area, but requiring an even more open, levelish clearing with next to no competition [figs.38, 39], a plant we hadn't met before thrilled us to the core.

Fig.40: On all counts, the lewisia-lookalike F.& W.12690 ***Calandrinia colchaguensis*** is an absolute winner. (11 Jan 2014. JMW)

"Satin cool, pure pale pink and gracefully open-cupped, the

*generously-sized flowers of **Calandrinia colchaguensis** [fig.40] with their seven or eight blunt-ended, overlapping petals are the natural central point for colouring in its portrait. They're borne close*

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to, yet clear of, the heart of the plant. A hint of green at the centre is topped by a pale yellow stigmatic 'asterisk' and ringed by cinnamon anthers. Large buds issue from a prominent calyx of two clasping dark sepals. Its unique character is enhanced by the strongly contrasted glister of bronzy blackish green, succulent leaves. Martyn, who's had little involvement with plants in cultivation, and who therefore approaches each discovery with something of an innocent eye, believes this to be the fairest of all the plants we saw in the Andes."

fig.41:
F.& W.12675
**Calceolaria
filicaulis** here and
C. pallida,
depicted in fig.12,
may look nearly
alike, but their
habitats couldn't be
more different.
(11 Jan 2014.
JMW)

Erect, herbaceous
**Calceolaria
filicaulis**, [fig.41],
which at least
belongs in a well-
known South
American genus,
revels in the spot,
this time a bog
standard habitat for
the genus (pun
intended). Where
the grasses thin
out just above the
water, its bloated
pouches hang like
strings of party
balloons for sale,
forming great
splashes of pure
yellow, visible from
afar [fig.32].



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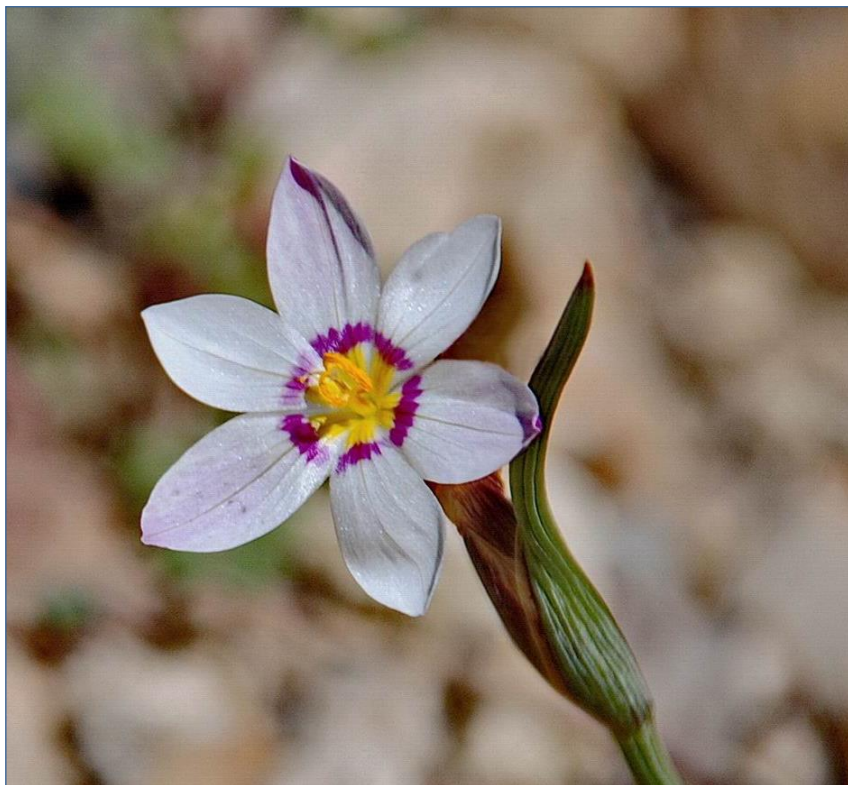


fig.42: The Maule form of F.& W.12674 ***Olsynium philippii*** is the only member of its iridaceous genus we've seen with this distinctive reddish-violet zone. (11 Jan 2014. JMW)

Enough subterranean moisture even percolates up to the higher, much less vegetated reaches on the slope immediately alongside, and here Martyn and I found an interesting irid, as described again from my original.

"The ***Sisyrinchium*** (now included in the genus ***Olsynium***, and identified as ***O. philippii***. [fig.42]. J.W.) here possesses the sparse, rushy growth and bunched flowers from a spathe-swelling near the top of the peduncle we see so often in this part of the world. Salver-shaped flower form is its main distinguishing feature; the effect of three or four open at once on the

same plant being like a cluster of cherry or crab blossoms. At their centre these pale perianths are marked by no mere eye, but a distinctive zone of crimson, quite unique among any we know."

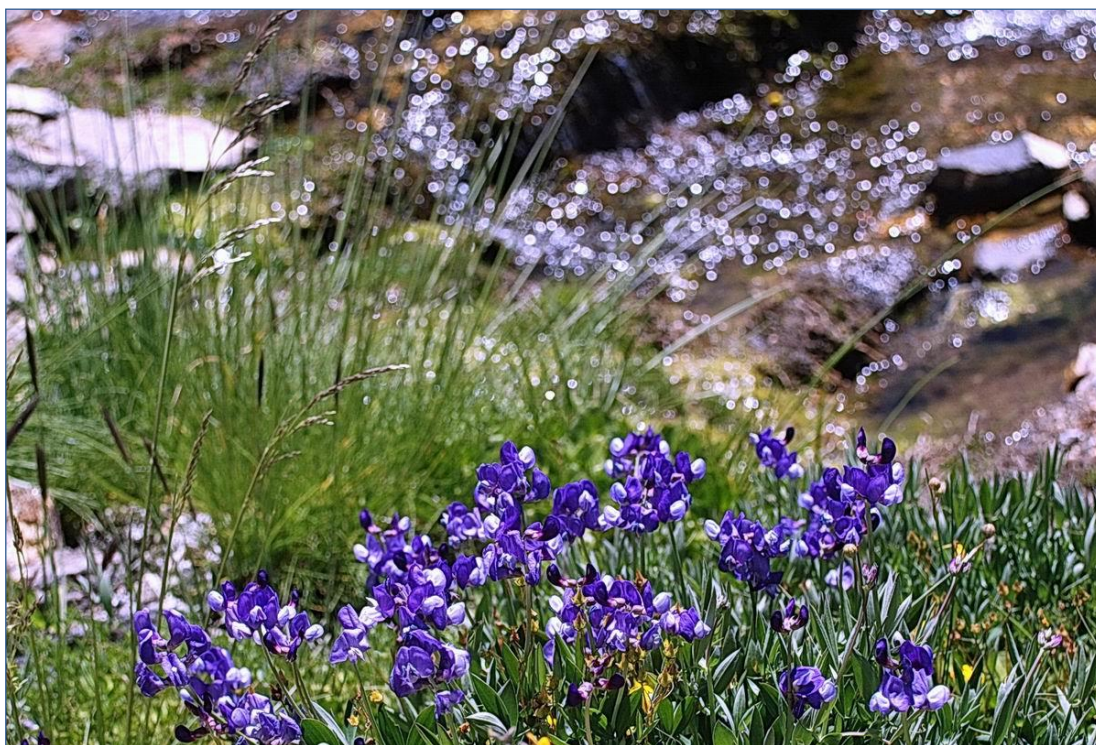


fig.43:
F.& W.12671
Lathyrus multiceps,
a welcome touch of
mood indigo beside
the green valley
stream.
(11 Jan 2014. JMW)



Another in lush grass by the waterside there to slip through the net of our attention in 1972, despite growing right beside and below the road, was the short, neat, upright sweet pea, ***Lathyrus multiceps*** [fig.43], which has no need to resort to the familiar climbing habit of its genus in this mountain habitat. Consequently, its showy, contrasting, rich violet-blue standards and pale keels are all presented at the same compact height, making it a mouth-watering proposition for the front of any herbaceous or mixed border.

Lady of the lake



fig.44: The serene-looking pumice plateau above the green valley at Maule, which the main population of Martyn's viola inhabits. (11 Jan 2014. JMW)

And now, finally, the principal actress of this drama enters the scene under a new botanical stage-name.

"So bountiful and time-consuming have these waterside slopes proved to be that there was next to nothing left of daylight after we'd packed up there today, ready to camp for the night. We did, however, follow the track for a bit eastwards towards the Paso del Guanaco (now the Paso Pehuenches. J.W.) for one reluctant farewell search. We hadn't even passed the far side of the bare pumice flats immediately subtending our green valley when Martyn spotted just above us a lone annual violet with narrow, crenate, slightly glaucous pale green leaves and one particularly large, warm violet-coloured flower [fig.5]. It corresponds to nothing in our notes. Just that solitary, fragile little specimen as far as we could make out, sitting quite alone on its desolate, powdery loose scree ... What can it be? Does the Prof. know, or shall we have to wait until we get back to England to try to find out? Might it even be new to science? ... We dare not hope ..."

Martyn and I spent so much of our short available time absorbing the rich flora of the grassy streamsidings that we scarcely scrambled up towards that almost bare, totally different, plateau-like ground immediately above on both sides [fig.44]. Ironically, as will be explained, on the pumice flank connecting the stream valley with the higher level to the west, we were attracted by a large drift of erect, branching, leafless flower stems of **Adesmia viscida** [figs.45, 46], smothered in its dense flights of yellow pea-flowers. That species of the second largest genus in Chile after **Senecio** is accompanied at the same spot by the better-known, quite different and extremely variable prostrate, mat-forming **Adesmia parvifolia**, here as its particularly appealing white form [fig.47].



fig.45: F.& W.12689 *Adesmia viscida* creates a hazy mass of yellow in the sloping transition zone between the stream and the upper pumice field. (11 Jan 2014. JMW)

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fig. 46: We're looking down at the stream from the top of the F.& W.12689 *Adesmia viscida* colony. The first violas were seen just behind us. (11 Jan 2014. JMW)

fig.47: This, F.& W.12684, the white form of the variable *Adesmia parvifolia*, as prostrate as *A. viscida* is erect, grows both by the stream and above on the pumice. (11 Jan 2014. JMW)

One outstanding species does in fact inhabit the very ecological niche we missed out on in 1972, the pumice plateau, although fortunately we actually did find it then elsewhere nearby along the lakeside.

"Supreme *Oxalis adenophylla* [fig.48] is quite frequent above the lake, growing in colonies of well-scattered individuals, as is commonplace for it on the more recent high elevation volcanic deposits at Maule and elsewhere. Each bold, silken peal of colour advertises its presence most strikingly. Here, as a rule they're more strongly tinted than any we have in cultivation, clear to strong and cool, slightly blue-toned pink except for white throats, copying in bud the tight spiral folds of a chic parasol."





fig.48: It's a toss-up as to whether F.& W.13148 *Oxalis adenophylla* at Maule here is even finer than those further north at the Vergara Pass. A draw for top prize! (7 Jan 2019. JMW)



fig.49: A flourishing colony of the F.& W.12685 viola destined herein to commemorate Martyn Cheese. (11 Jan 2014. JMW)

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Having longer periods to explore during subsequent visits to this upper Maule sector, we've broken free from the seductive charms of the little green ribbon to move on and up to its immediate surround. On an unpromising, barren-looking surface of pumice grains and larger fragments, plants of our viola began to appear almost immediately here and there, reaching their peak of scattered density at the fairly level top. They add up to the big main population of the viola covered in this account [fig.49]. Their chosen habitat begins no more than a metre or so away from where - on that first visit in 1972 - we were bent over examining the ground oh so minutely for anything and everything different! And the irony of **Adesmia viscosa** mentioned above fits in here. For the very first violas begin at exactly the higher point where its colony thins and peters out. Martyn and I were no more than a step or so from reaching them!

One more pleasant surprise awaited Anita as she photographed in the viola patch during our latest 2019 visit. It was a choice species Martyn and I originally encountered at the roadside above the waterfall in 1972, as described in the following slightly modified version of my notes, first written hastily in dim light as we camped up there on the night of the 17th of January.

"Next we noticed a little plant which would melt the heart of any alpine plant aficionado. We can only cross fingers there will be time to return and collect its seeds. Forget all about traditional images of sisyrinchiums for this one. From a genus notable for the somewhat stereotypical form of its smaller members we were offered earlier today a most distinctive little charmer. Large blossoms of a delicious creamy pale butter-yellow, bell-shaped, with ample, pointed tepals flaring open at the rim, thrust upright in small, bunched clusters between embracing bracts and leaf fans to open in the hot sunshine. The whole plant is dwarf and stemless, only elevated slightly above ground level. Its leaves, which scarcely overtop the flowers, are stubby broadswords as opposed to the slender foils and épées of other and taller sisyrinchiums we've seen so far here in Chile. And yet, as befits the male dancer of any well-matched pair, they exhibit just the proper degree of elegant strength to support and show off their yellow-skirted partners to best advantage." After my on-the-spot record had been modified and published in the AGS Bulletin (Watson 1974-77), a feedback appeared three issues later (Mathew 1976). Brian noted:

*"The ... photograph by J.M. Watson of **Sisyrinchium** sp. ... in fact illustrates one of the species of a related genus, **Chamelum frigidum** (Poeppig) Ravenna. John Watson was not in error calling it a **Sisyrinchium** ... for the synonyms of this species are **Sisyrinchium frigidum** and **S. andinum** as well as **Solenomelus andinus** for good measure ..."*

"It is a pity these fascinating little irids are so little known as they are attractive and would almost certainly be hardy in Britain coming from so far south and at moderately high altitudes."

Sadly, Martyn and I had to leave for home before the seed at Maule was ripe. As a result of a subsequent major revision (Goldblatt et al. 1990), the poor plant found itself with a partially new identity and yet another synonym to bear! It is now correctly **Olsynium frigidum** [fig. 50]. This little 2019 colony on that pumice plateau above the 'green valley' happens to be the second encounter with the species we've provided in recent pages of the IRG, the first being Watson & Flores (2018) from neighbouring Argentina.



fig.50: On the viola pumice flats in splendid isolation and inviting our unqualified admiration, F.& W. 13160 **Olsynium frigidum**. (7 Jan 2019. ARF)

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fig.51: F.& W.10626 *Olsynium bodenbenderi*. Paso El Choique, S. Mendoza Province, Argentina. (23 Dec 2002. ARF)

fig.52 below: F.& W. sin num. *Sisyrinchium laetum*. Cerro Waylie, Neuquén Province, Argentina. (24 Dec 2002. ARF)

As a relevant diversion, in the same note - followed by a personal communication, Brian pointed me in the direction of another related and irresistible little irid from nearby in Argentina, which led to Stephen Pern and myself looking for it there in 1987. Brian knew it then as *Chamelum rubellum*, although it too has since been transferred to the genus *Olsynium* and also been endowed with the considerably less gracious but priority specific epithet of *O. bodenbenderi* [fig.51]! The story doesn't even end there either. Stephen and I also collected a very comely dwarf 'true' *Sisyrinchium* at the same location, which we first thought and hoped might be new to science. I subsequently discovered Ravenna had recently published it as subspecies *laetum* of familiar *S. macrocarpum*. But in fact it's nothing like that taller plant at all, so Anita and I have since formally raised it to full species level as *S. laetum* [fig.52]. All three of these irids are once again illustrated by different photos in (Flores & Watson 2018) and the *Sisyrinchium* also in (Flores & Watson 2019). So that's how one good thing can lead to another ... and another.



fig.53: There wasn't a pot of gold at this rainbow over the far eastern end of the Maule Lake, but its hidden left-hand curve happened to finish at the third colony of Martyn's viola. (7 Jan 2019. JMW)



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Part of our planned coverage of the upper Maule sector in 2013 and 2014 continued on past the lake right up to the Pehuenches Pass. On returning from our work there among its rich flora, and as we reached the far eastern end of the lake [fig.53], we noticed in passing a small but colourful colony of *Montiopsis* (formerly *Calandrinia*) *gayana* by the roadside and stopped to take photos [figs.54, 55]. That was a valuable piece of happenstance, as there also chanced to be a very small number of Martyn's viola growing there, albeit out of flower. It was the second location we discovered ourselves.

fig.54: The easternmost the three viola locations with the magenta flowers of the *Montiopsis* that drew our attention to it and caused us to stop. (11 Jan 2014. JMW)



fig.55: F.& W.12698 *Montiopsis gayana*. Its sister *M. umbellata*, formerly *Calandrinia umbellata*, has long been established in cultivation. (11 Jan 2014. JMW)

Why not come and see for yourself?

For anyone with a passion for wildflowers who plans to visit this lower end of the planet where Anita and I live permanently, we unreservedly recommend including the Maule valley in your itinerary. It's one of our all-time favourite localities in the temperate Andes, if not **the** favourite. But be sure to leave enough time to take in the rich biodiversity between the long drives from Talca to the border with Argentina and back. In truth, even two days is barely enough during the high season.

The flutter by effect

The presence of the violas also indirectly added further to our pleasure and satisfaction during the 2014 excursion by attracting a small, pretty beastie of considerable importance to us. A fact fairly well known to many in the world of natural history is the exclusive diet of violet foliage for caterpillars of

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most fritillary butterflies in the Northern Hemisphere, which classifies these insects technically as monophagous - or violiphagous for even greater precision. But for us the situation goes much deeper. Both the butterflies and the violas evolved at roughly the same time tens of millions of years ago down here in what is now the tip of South America, and a mutualism soon developed. This involved the caterpillars devouring enough of the plant to sustain them, but without threatening the latter's existence and reproductive effectiveness. Adult butterflies emerged synchronously with anthesis of the plants, laying their eggs, but also pollinating the flowers at the same time, thereby enhancing the survival of their one and only food supply. As in many such precariously exclusive relationships, it's not unlikely either that violet leaves may be unpalatable to most other potential small herbivores, to the greater advantage of the fritillaries.

The innate success of violas, including their ability to adapt readily to an array of habitats, soon saw them expanding northwards, crossing the equator, and eventually dispersing outwards to every continent, including to remote islands such as Hawaii and the Canaries. Remarkably, the fritillaries have managed to accompany them doggedly to all but a very few of the remotest localities. Of course, both have evolved into a wide range of distinct species over time. Unfortunately for the violets though, in the Northern Hemisphere the butterflies emerge much later than the flowering period, so the deal has become one-sided there, with the plants losing out and having to rely on other pollinators. On the other hand, where we Watsons now live, and where it all began, the original mutualist set-up still exists, the active protagonists being six fritillaries of the genus *Yramea* which occur between Peru and the tip of Patagonia. Any old viola will do them (they feed on *V. odorata* and *V. sororia* in our Chilean garden!) - even pansies at a pinch, but the sheer widespread predominance of the native rosulate types leads these to become the most usual passive hosts. As a further 'symbiosis' between ourselves and these butterflies, one of the new violas we shall be publishing at any moment carries the intended epithet of *V. yrameae* (Sheader et al. 2013). When we first came across it in Patagonia, a female of the butterfly genus was both pollinating and depositing eggs on the very plant we were photographing.

fig.56: It isn't a plane. It isn't a bird. It isn't Superman. Yours truly has spotted a butterfly! (11 Jan 2014. ARF)



fig.57: And it's the damned elusive fritillary, *Yramea modesta*, captured on camera at long last. (11 Jan 2014. JMW)

Three species of that butterfly genus are found where our field studies of Andean violas take place (Peña & Ugarte 1997), and we've had no difficulty in capturing two of them on camera for our records.

The third, *Y. modesta* [fig.57], is seldom seen and elusive though, and inhabits higher elevations where we've spent less time. Worse still, when not flying high and fast over longer distances [fig.56], this restless little devil keeps close to the ground, settles, flicks its wings constantly, and is off almost immediately, as you're just bringing it into focus. But here it was in fairly constant attendance near the only immediate violas, and after a lot of patience and frustration it was finally immortalized to our satisfaction on digital chip.

Nowadays, whenever we see these fritillary butterflies in the wild we're very conscious that a population of one or other of these various Andean violas is not far away, a most useful clue. But there were none on the wing to alert Martyn and myself then - even had we known about the relationship.

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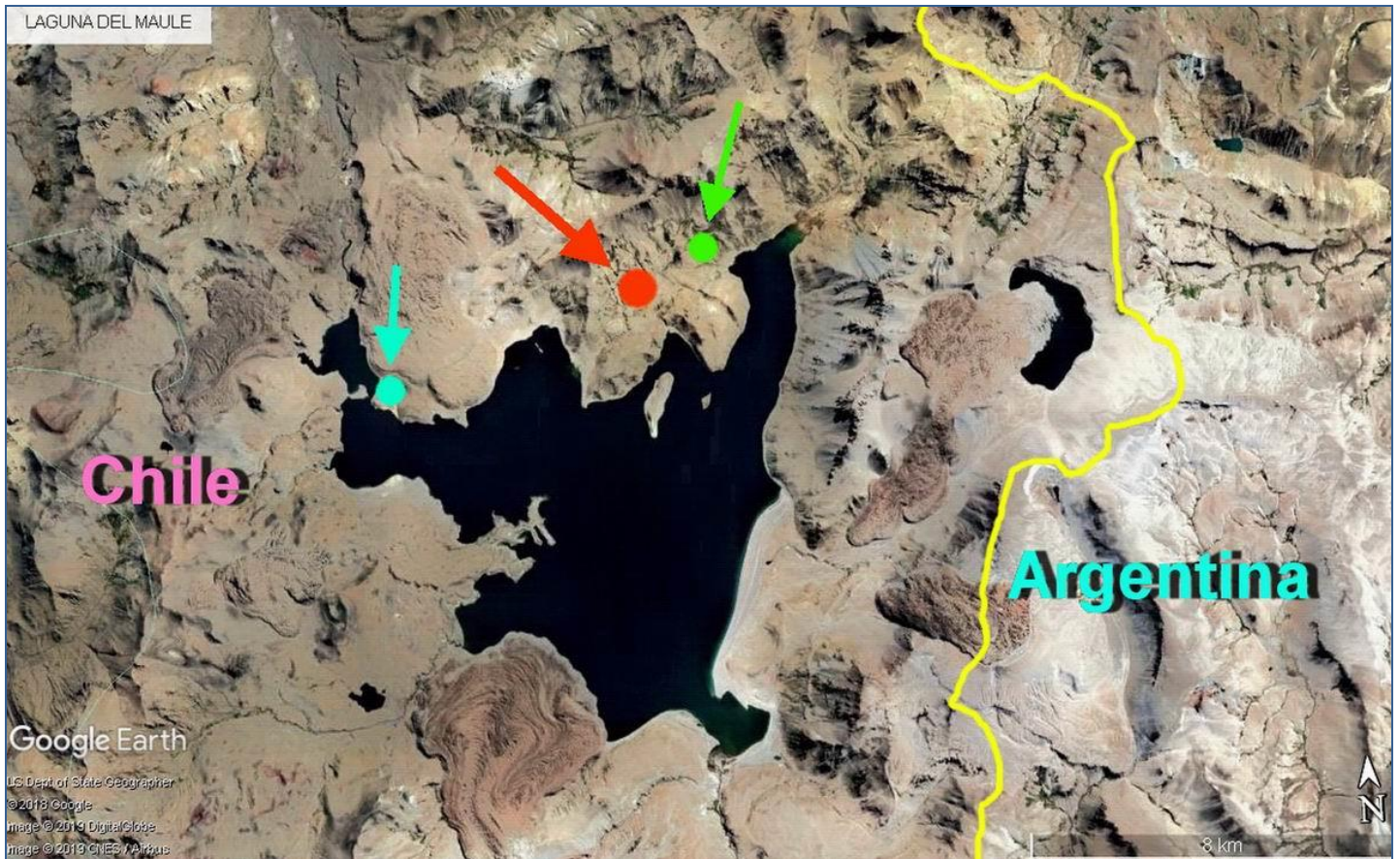


fig.58: Laguna del Maule with the 3 *Viola cheeseana* sites arrowed. Red - the main population. Light blue - Arve's small colony. Green - the other small colony. (Courtesy Google Earth)

Now beginneth the formalities

Among other aspects, *Viola cheeseana*, as it is newly named herein, is notable for its exceptionally large flowers in the context of its botanical alliance (section *Andinium*), which is matched by very few others of the section's 140-odd known taxa. However, this is also a common feature of the other four unfamiliar species it's related to very closely, plus a fifth yet to be published. With the exception of the latter (in any case of likely wild hybrid origin) they don't conform to the general appearance of perennial rosulates either, this being the reason why Martyn and I assumed it on first sight to be an annual, as noted above. The foliage can be seen from the accompanying illustrations to be narrow, loose and somewhat irregularly arranged. Except for the shape of its leaf-blades the whole plant has more the appearance of a Northern Hemisphere violet than anything else.

We suspect these species may be of recent evolutionary origin, and are adapting for existence in more competitive ecosystems, for which their particular life-form would be better suited.

To forestall the question as to the purpose of the defining underleaf glands, the simple answer is that nobody knows, so speculation is on the cards. They're obligatory or optional for 31 of the section, and an important taxonomic feature both for grouping and for defining individual species. One possible purpose might be the production of a texture or flavour to repel potential herbivores. That seems to be denied by our observation of several with chunks bitten out of the leaves, presumably by caterpillars of the aforementioned fritillary butterfly. If, for example, they happen to be extra-floral nectaries to draw in ants to protect them, why have we never seen any of those insects on this particular quite large population?

The mystery continues ...

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fig.59: F.& W.12685 *Viola cheeseana* with the pale form of *Adesmia parvifolia* again in foreground. (11 Jan 2014. JMW)



fig.60: Not too often does *Viola cheeseana* (here F.& W. 12685) present a photo opportunity of this outstanding quality. (11 Jan 2014. JMW)

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fig.61: But here's another one of *Viola cheeseana* in all its glory, F.& W.7700, photographed on film in 1993. The unbeatable prizewinner! (JMW)



fig.62: F.& W.13158 *Viola cheeseana*. A recent photo taken at the main location; the angle allowing the veining on the reverse of the petals to be appreciated. (7 Jan 2019. ARF)



fig.63: The leaf undersurface of *Viola cheeseana*, showing the defining glands. (University of Talca, Chile)

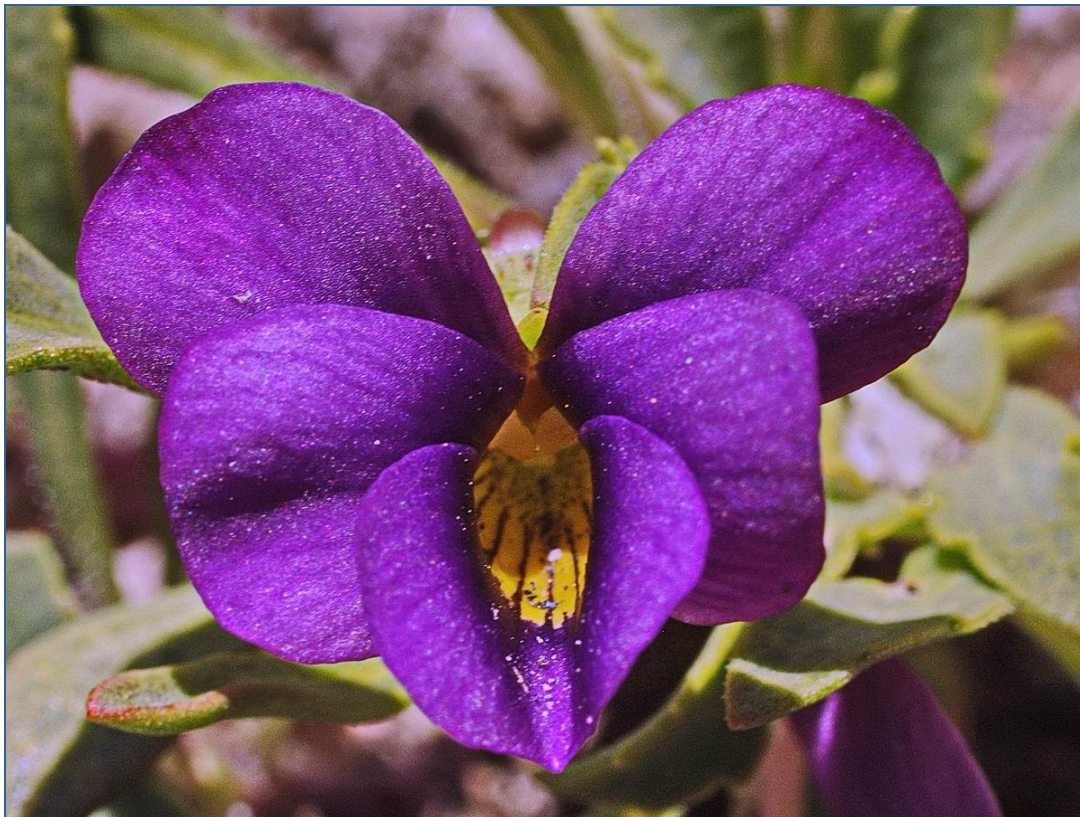


fig.64: F.& W.11620 *Viola cheeseana*. The flower in all its close-up glory. (1 Feb 2008. JMW)



fig.65: Part of the F.& W.12585 main population with five healthy seedlings arrowed. (11 Jan 2014. JMW)

Taxonomy

Viola cheeseana J.M. Watson, nom. et stat. nov. [figs.5, 49, 59-65].

Basionym: *Viola truncata* Meyen var. *glandulifera* W. Becker, Repert. Spec. Nov. Regni Veg. 18(1): 186. 1922.

Type (lectotype designated here): CHILE. Maule Region, Talca Province, (as Cordillera de Linares), Laguna del Maule, 2200 m, January 1897, leg. C. Reiche s.n. = G00354877 (holotype B [destroyed]; isotype/lectotype G). (See also the following note.)

Note: The origin and collection data of the type material is unclear. Becker (1922) cites it additionally as 'Bridges 1173 identified as *Viola vulcanica* (sic) Gill.'. However, the G isotype/lectotype fieldnote data gives 'R. Cumming' as the collector, also under the number 1173, this presumably being the Englishman Hugh Cumming. He had settled profitably in Valparaiso, later developing an interest in the local flora, and between 1830 and 1831, "... explored the western (Pacific. J.W.) coasts from Chiloe to Nicaragua, with occasional excursions inland" (Coats 1969). It is possible he may have collected this specimen on one such excursion. There are no records of Thomas Bridges, another English plant hunter who spent time in Chile, having explored in the Maule region during his only visit to the south of the country in 1832. Nor do we know whether he met Cumming then, which is not unlikely.

If it was in fact collected earlier by Cumming or Bridges, could Karl (aka Carlos) Reiche have found this specimen and used it for his own studies? All evidence contradicts that conclusion. Reiche (1893)

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published an exhaustive monograph of the Violaceae in Chile as known at the time. It included *V. truncata* among several synonyms of his concept of his *V. "vulcanica"* (sic) (= *V. volcanica* Gillies ex Hook. & Arn.). All material he examined was cited in full detail, and this certainly included every specimen available to him that had been collected in Chile. There is no record of any plant under the number 1173. Furthermore, the same applies for the almost identical entry of the genus *Viola* in his Flora de Chile three years later (Reiche 1896). However, Reiche travelled frequently, collecting his own specimens. Therefore it is perfectly reasonable to consider that this gathering from the Maule Lake is indeed his, that being by far the most likely explanation. But where does Bridges and/or Cuming 1173 fit in in that case?

A final alternative exists: that the B and G specimens were different gatherings of the same taxon by different collectors at different times. This fails to explain how both have been recorded under the same number, 1173.

It is probable that this situation will never be resolved.

Description:

Life form perennial, rosulate, evergreen hemicryptophyte. *Rootstock* axial, ca 6-15 cm long × ca. 2-4 mm dia. at junction with caudex, ligneous, commonly branching, at times directly from caudex down, or simple for upper 4 cm, or entirely simple, branches to 3, all with extensive secondary slender-branched, fibrous feeder roots at tip. *Caudex* ca. 2-6 cm, simple to few-branched, enveloped in vestiges of dead vegetation; when present, branches 0.3-2 cm. *Plant* usually with solitary or few rosettes, these rarely multiple. *Rosette* ca. 2-4(-6) cm dia., loose, spreading to suberect; foliage arranged spirally, separated, herbaceous, fleshy, slightly glaucous green. *Leaves* ca. 1-2.8 cm when mature; *stipules* 3-3.5 mm, basal, free, or adnate to petiole for up to 1.5 mm, narrowly triangular, margin minutely fimbriate-denticulate, acute, hyaline; *pseudopetioles* ca. 5-15 mm × 0.5-0.75 mm, thinly carnose, margins short-ciliate; *lamina* 5-14 × 1.5-4 mm, narrowly elliptic to oblanceolate to linear-oblanceolate, cuneate to pseudopetiole; face slightly elevated alveolate-reticulate, veins pale; undersurface long- and short-glandular on either side of main vein; margin usually distantly and bluntly 3-suberrate on either side in apical section of lamina, but frequently entire and 1-2-serrate on same plant, shortly-ciliate in basal section, becoming glabrescent to glabrous towards acute to rarely subacute apex. *Anthesis* successive. *Flowers* ca. 1.5 cm high × 1.4-1.6 cm wide, axial, solitary, forming ring around circumference of each individual rosette. *Peduncle* ca. 0.5-2 cm, somewhat shorter than surrounding leaves; *bracteoles* basal, adnate to peduncle for 2.5-4 mm basally, free above for 3.5-4.5 mm, lanceolate, acute, short-glandular, margins entire, broadly hyaline; *Calyx* 5 mm; *sepals* entire, acute, with short scale-like spur-extension to rear, long-glandular, borders hyaline; *superior sepal* 3.5 × 1.2 mm, linear-triangular; *lateral sepals* 4.2-4.5 × 1 mm, linear; *inferior sepals* 4-4.2 × 1.2 mm, narrowly triangular. *Corolla* petal faces rich, deep purple-violet, faintly darker veined; reverse of petals paler, with black-violet branching veins, long and dense along centre, becoming shorter and finer at margin; inferior petal with pronounced pale yellow tongue-shaped throat marking, this with ca. 9 longitudinal blackish violet basal vein lines. *superior petals* 11.5-12.5 × 6.5-7 mm, broadly obovate, apex obtusely rounded; *lateral petals* 13-13.5 × 7-7.5 mm, obovate, tapering to base, apex obtusely rounded; base of face with large, cylindrical, projecting, pale yellow tumour, apex rounded; *inferior petal* 12.5-13 × 11.7-12 mm, obcordate, conduplicate, apex very shallowly emarginate with small mucro in sinus; *spur* 1-1.5 × 1 mm, stout, cylindrical, apex bluntly rounded. *Androecium* and *gynoecium* partially concealed within throat; *superior anthers* 1.5 × 1-1.2 mm; *inferior pair* 1.4 × 1-1.2 mm with 1.2 mm filiform, tapering, slightly curved nectar spurs; *connectives* dull deep brown, those of superior anthers 1mm; those of inferior pair 1.5 mm; *ovary* 2 × 1 mm; *style* 2 mm, geniculate, clavate; *stigma* as upcurved appendage at front of style head; *style crest* apical, consisting of 3 retrorse, free but subcontiguous, bluntly rounded lobes, apex papillose. *Fruit* 6-7 mm, orbicular, tri-valved capsule; *seeds* ca. 2 mm, orbicular-lacrimiform, pale brown.

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Note 1: Due to the considerable digital editing required to smooth the scanned colour slide image of fig.61, the pale reticulate veining on the faces of the leaves has been largely obliterated. It is nevertheless evident on the original photo.

Note 2: In the light of present knowledge, deciding how to rank *Viola* taxa of section *Andinium* which are very closely related morphologically is not a straightforward task: any outcome might reasonably be considered controversial. In the context of another genus where those infraspecific ranks actually are in general use, we differ strongly with a colleague as to what constitutes a subspecies, and what a variety. The result of this is that one taxon published by our colleague as a variety and later ranked by ourselves as a subspecies, is recognized as variety by some major national and international lists, and subspecies by others. What a highly unsatisfactory situation! Obviously, there will always be areas of disagreement in systematics; concerning synonymy, for example. But in our view the overridingly important factor is that the full panorama should be as consistent as possible, even if a certain degree of summary judgement is required to achieve this. We are not alone. As long ago as 1987, no less an authority than David Moore, who published the floras of the Falklands and Tierra del Fuego, told me he considered the rank of variety confusing and unnecessary, and that he only recognised subspecies himself. This being so, we currently reject all ranks below that of species for section *Andinium*. We consider that any attempt to accept or assign such infraspecific ranks would result in disagreement and nomenclatural chaos, such as is seen in the numerous different systematic approaches 'suffered' by the Cactaceae, for example. This has also to a degree affected section *Andinium* itself in the past. By contrast, another Andean genus, *Nototriche*, which similarly presents very closely related taxa, is also maintained at species level only by its authorities, thereby simplifying the situation and thus avoiding judgemental conflicts (e.g Hill 1909, Krapovickas 1953).

Note 3: The style crest configuration of the several *V. cheeseana* specimens examined, consisting of three separate apical lobes, although present in some northern annual species such as *Viola marcelorosasii* J.M. Watson & A.R. Flores (where the side lobes are actually lateral) [fig.67], is very distinct. It is only otherwise known in possibly two other perennial species of the section, neither of them closely related. The nearest equivalent is the shallowly to deeply cleft trilobed crest with an entire base, as present in about 18 perennial species [fig.68]. It therefore represents a unique character to further reinforce the new status of the taxon. For comparison, the illustration by Pöppig (1838) of his *Viola glacialis* Poepp. & Endl. (= *V. truncata*) shows the lobes divided to midway only. This is matched by three descriptions definitely pertaining to *V. truncata* by two authors in the literature (Reiche 1893, 1896, Becker 1925), the only others published. Further careful direct examination of more crests of that species is therefore needed to confirm this situation definitively.

Historically, 11 section *Andinium* species have between them been assigned 1 subspecies, 19 varieties and 1 form. As accepted by the present authors (Watson & Flores ined.), the subspecies has since been raised to full species, 2 of the varieties are also now recognised as species, as they were originally published, and the remaining 18 are considered to be synonyms. Those numerical totals, which exclude Becker's *Viola truncata* var. *glandulifera* (= *V. cheeseana*), are intended as a general context for recognition of that taxon as distinct, and the decision to raise it to full species rank. Our minimal requirements for that step are a difference of one undoubted discontinuous character and clear geographical disjunction from its closest relative or relatives when those are closely similar. *V. cheeseana* not only fulfils that criterion, but as things stand possesses two such discontinuous characters. By way of comparison with existing taxa, identical-looking *Viola pusilla* Poepp. and *Viola polypoda* Turcz. are only separated morphologically by different style crests, as also are *Viola domeykoana* Gay and *Viola vallenarensis* W. Becker. While true that the style crest is considered a more important and stable organ than foliar glands, *Viola xanthopotamica* J.M. Watson & A.R. Flores is separated from *Viola roigii* Rossow on foliar morphology alone. So too are *Viola farkasiana* J.M. Watson & A.R. Flores from *Viola congesta* Gillies ex. Hook. & Arn., *Viola*

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petraea W. Becker from *Viola cotyledon* Ging., and also *Viola angustifolia* Phil from *Viola bustillosia* Gay in this very *V. truncata* group. Yet in every case the species of each comparative pair are undeniably distinct.

As a direct morphological background, we provisionally recognise 57 species* of section *Andinium* as belonging in unpublished infrasectional alliances where underleaf glands are present in one or more species. Again this excludes *V. cheeseana*, together here with the other four species of the *V. truncata* alliance. 25 of the 57 are always glandular, as with *V. cheeseana*, while 26 of those species invariably lack glands, as does *V. truncata*. The remaining 6 either display a mixture of leaves with and without glands on the same plants, or offer no discontinuity as regards presence or absence of glands within populations or across a continuous range (Watson & Flores ined.).

*NB. Due to the considerable number involved, we have not listed the 57 species by name here.

Another apparent minor difference between *V. cheeseana* and *V. truncata* is the uniformity of the former compared with the considerable polymorphism of the latter as noted from our records of plants identified by others as *V. truncata*. This includes leaf face venation - always somewhat raised vs. strongly raised to plane; Leaf margin - always ciliate vs. glabrous or ciliate; and corolla colour - always purple-violet vs. purple-violet to white, including bicolors. Pöppig's (1838) detailed drawing of his *V. glacialis* also shows the leaf margins with five divisions. Foliage of his isotype sheet we examined at Paris (P) had been badly predated, but the majority of unaffected blades are either entire or with three marginal divisions. Some on one plant had four.

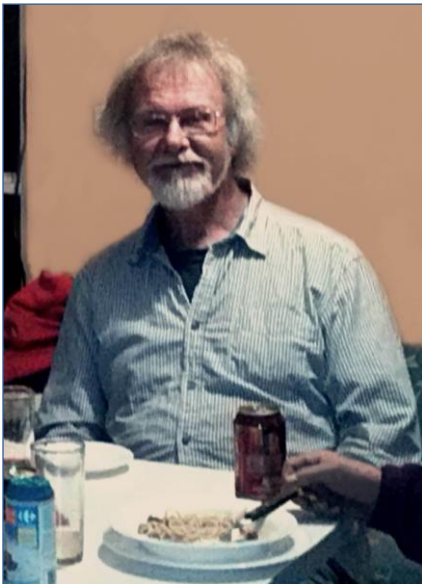


fig.66: Our dear friend and botanical partner, Arve Elvebakk, who discovered the third location of *Viola cheeseana* and provided a specimen for us. (9 Jan 2014. Helga Petterson)

Other material: CHILE. Maule Region, Laguna del Maule, about 1.3 km above N shore, 36°00'50"S 70°29'19"W, 2320-2340 m, 1 February 2008, leg. J. M. Watson & A.R. Flores, F.& W. 11620 (SGO, CONC, Herb. Watson & Flores). Ibid. 11 January 2014, F.& W. 12685 (SGO, CONC, Herb. Watson & Flores). Maule Region, Laguna del Maule, 250 m above N shore, 36°02'00"S 70°33'00", 2210 m, 10 January 2014, leg. *A. Elvebakk, F.& W. 11620 (Herb. Watson & Flores).

*fig.66 shows our friend and botanical colleague from Norway, Arve, discoverer of the westernmost population of *V. cheeseana* [fig.58].

Anita and I also jointly study species of *Calandrinia* [see figs.15, 40] and *Cistanthe* with him (Elvebakk et al. 2015).

Additional observation 1: A third location about 1.5 km further east from the first two cited above was also recorded along the road to Argentina at the end of the Laguna del Maule [fig.58]. No specimen was taken as the population was too small. Its elevation is estimated to be about 2350 m.

Additional observation 2: While at Mendoza examining collections of *Viola* from several Argentinian herbaria as part of our participation in publication of Violaceae for the Flora de San Juan (Rossow et al. 2003), we encountered a sheet collected in Neuquén Province between the Lagunas de Epulafquén and the border with Chile which we believe to be *V. cheeseana*. We only had time then to investigate thoroughly those collections relevant to our immediate brief though, and have never been in a position to follow up this probability, which is therefore an important future requirement. We can, however, assert with confidence that the plants in question had a combination of leaf outline, underleaf glands and large flowers as found uniquely in *V. cheeseana* to date.

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Additional observation 3: There are various photographs of *V. cheeseana* posted on the Internet (as *V. glacialis*), but we have no evidence they were taken anywhere but at the site of the main population.

fig.67: The triple free-lobed style crest of annual M.R. 7101 *Viola marcelorosasii*, similar to *V. cheeseana*, but the side lobes are lateral. (1 Apr 2011. Marcelo Rosas)

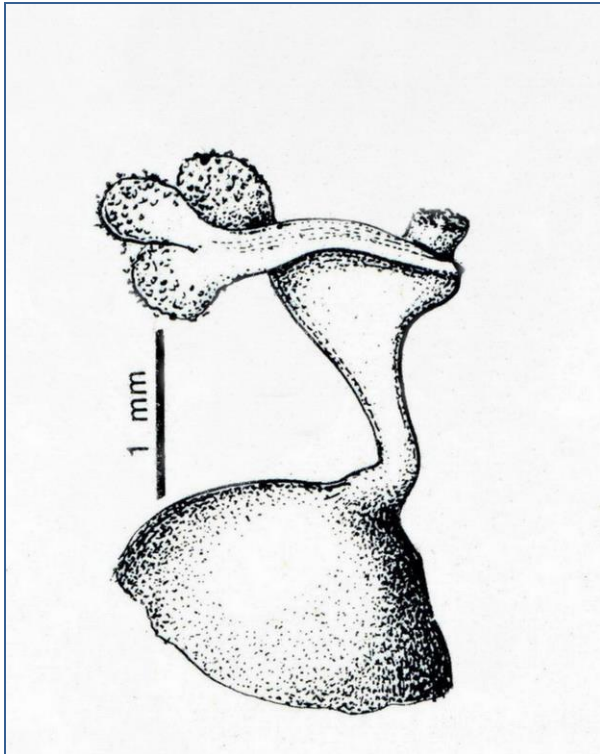


fig.68 left above: The typical flabellate trilobed style crest as found in both annual and perennial rosulate violas. (Courtesy of the late M.N.Correa, INTA, and the artist M.E. Rocca de Bruhn.)

Distribution: This member of the small group of taxa related to *V. truncata* is only known for certain as three close-set populations along 8 km of the northern side of the Laguna del Maule, Maule Region, Chile [fig.58]. As such it classifies as an endemic of the latter two political divisions. However, a specimen collected approximately 100 km to the south in adjacent Argentina appears to be the same species (pers. obs.). This remains to be confirmed (see above).

General habitats: Deep volcanic pumice deposits constitute the natural element which all three colonies of *Viola cheeseana* inhabit in Chile. The overall ecosystem as classified by Gajardo (1994) is 'Estepa Alto-Andina del Maule' (Upper Andean steppe of Maule). The main, central population is spread across an extensive, near-level raised stretch of small to very small fragments and loose sand with an open exposure. Vegetative cover is sparse, consisting of scattered dwarf Andean herbs, with the *Viola* described here as dominant. Other accompanying plants to have been observed are: *Adesmia parvifolia*, *Arenaria serpens*, *Olsynium frigidum*, *Oxalis adenophylla*, *Pozoa volcanica* and *Sanicula graveolens*. The group at the eastern end of the lake grows in a similar medium, but was only found within a compass of a few square metres in an almost bare clearing at the base of a long, shallow N-S slope. The general floral community of which it forms a very minor part is comprised predominantly of vigorous Andean herbs and subshrubs, these more or less spaced out between themselves. They include: *Montiopsis gayana*, *Pseudognaphalium viravira* and *Senecio maulinus*. *Acaena splendens*, *Adesmia viscida* and *Phacelia secunda* are

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present at both the above sites. We Watsons have not examined the actual immediate habitat of the westernmost small colony ourselves, but it is close by the lakeside, again on a shallow, undulating N-S slope, and consists of pure, fine sand. A variety of low, clump forming upper mountain shrublets and herbs, including dwarf grasses, are spread closely together across the dune-like terrain with occasional low outcrops. *V. cotyledon* Ging. is known to occur there in some quantity. Presumable *V. cheeseana* grows in more open clearings with little or no vigorous competition, as at the other two locations. [figs.23-25, 44, 46, 49, 54, 56, 72].



fig.69: An isotype of *Viola glacialis*, a synonym of *Viola truncata*, photographed at the Paris herbarium. (22 Aug 2005. ARF)

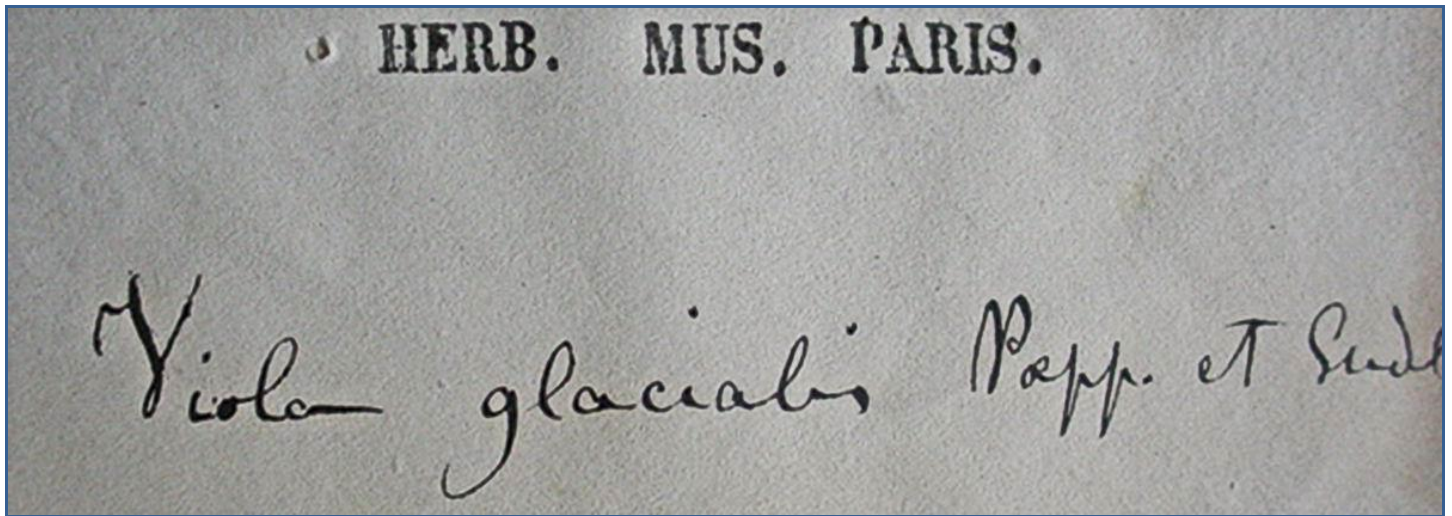


fig.70: The original identification label of the Paris (P) isotype of *Viola glacialis*, presumably in Pöppig's handwriting. (22 Aug 2005. ARF)



fig.71: A type specimen of Pöppig's *Viola glacialis* (= *V. truncata*). Note presence of all *Viola cheeseana* features except for underleaf glands and ciliate leaf margins. (22 Aug 2005. ARF)

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Phenology: *Viola cheeseana* has been noted in full flower at the beginning of January and in early February, so as observed is assumed to begin anthesis in December at least, and certainly continue well into February. Seed is known to be close to full ripeness and dispersal in the middle of January, and in accordance with other taxa of section *Andinium* is assumed to continue for approximately one month after the end of flowering.

Etymology: the specific epithet *cheeseana* honours my great friend and companion, the late Martyn Cheese (Watson 2010), a constant, reliable collecting associate in Turkey and Chile for a combined total of some twenty months. Along with myself and occasional other colleagues during that time, he was jointly instrumental in the discovery of a number of new taxa, and contributed importantly to botanical science through our numerous herbarium collections. During our time in Chile his abilities were greatly admired by Prof. Carlos Muñoz, then curator of the Santiago Natural History Museum herbarium. Inter alia Martyn drew my attention to the *Viola* named for him herein. We subsequently remained in close contact for the rest of his life, joined later as well by my wife, Anita. When she occasionally teased him, he would address me with mock-severity, "Control your woman, John", before bursting into chuckles. Without his loyal and indefatigable workrate, capacity for rapid learning, initiative, and all-round knowledgeability, I have no doubt my career then and subsequently would have been infinitely less productive. If only some form of regular financing had existed to enable the continuation of our plant exploration partnership. If only ...

Proposed conservation status: The species has a very confined distribution as known, with a total observed global population probably scarcely exceeding at most a very few hundred individuals in three close but separate colonies which cover an extension of 8 km. The two groups at the extremes contain very few plants, most being in the principal one between them. That and the easternmost small cluster are directly beside the important transit road linking Chile and Argentina via the Pehuenches Pass. The other smaller western colony is no more than 500 m below the road and easily accessible on foot. We only knew the largest population before the road was adopted, widened and surfaced, but it appears to have been completely unaffected, and furthermore contains many recently germinated seedlings [fig.65]. However, traffic is expected to intensify; the possibility of buildings or other constructions anywhere in the sector will always exist; and the Laguna del Maule, which the road passes closely, is a popular holiday and fishing destination. Our present assessment therefore is that *Viola cheeseana* should at least be classified as VU, vulnerable (IUCN 2012). The likely existence of a fourth population to the south in Argentina cannot yet be taken into account.

Setting the record straight

Before embarking on comparisons between *V. cheeseana* and the few others to which it is immediately related, the air needs clearing by an explanation of the fact that one of them, *Viola angustifolia* Phil. in *Linnaea* 28: 617 (1857), might appear to be an illegal homonym of earlier published *Viola angustifolia* Banks ex Ging. in *Prodr.* [A.P. de Candolle] 1: 307 (1824) ... but isn't.

V. angustifolia Banks ex Ging. has proved to be an awkward customer for us, one might even say a bit of a headache. There was nothing obvious at the time in standard reference sources of published names we consult to warn the unwary (as we were) that *Viola angustifolia* Banks ex Ging. had not been published validly, although IPNI (2019) has since rectified that for its entry of the taxon. In fact this article was submitted just before someone in the know kindly warned us in time, as we wrongly thought, because it had already been published online unknowingly with the wrong information (that version was soon withdrawn) at the very moment we sent the correction.

The only way to resolve the dilemma of priority between the two violas in question is to refer back to the protologue by Gingins (1824). There it can be seen that he himself noted it as a mere name written by Joseph Banks on one of his specimen sheets, which the latter never actually published.

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The fact that Gingins made this public is the reason for it being listed at all, although as an invalid 'nomen nudum' (bare name) it does not exist, technically speaking. Now Gingins could easily have legitimized it as ***Viola angustifolia*** Banks ex Ging. by publishing it as such there and then. But by then he had realised it was not a viola at all, but belonged elsewhere in the **Violaceae**, so instead he chose to honour Banks directly with a different specific epithet attached to the genus he considered it now belonged to: ***Pigea banksiana***. The name Banks had originally given it was merely cited as belonging to the same plant, i.e. a synonym.

The upshot of all this is that although ***Viola angustifolia*** Phil. was the second to be published with that epithet, it is the correct and legitimate name for the Chilean species herein which bears it.

Which is which?

Key to differentiate the *Viola truncata* alliance of section *Andinium*.

Comparative species: ***Viola acanthophylla*** Leyb. ex Reiche, ***V. angustifolia***, ***V. bustillosia***, ***V. cheeseana***, ***V. truncata*** [figs.70-71].

1. Leaf blade pinnatifid, lobes rounded. (Chilean endemic - Santiago Region) ... ***Viola acanthophylla***
 - Leaf blade shallowly long-serrate to shallow-crenate, or entire ... 2.
2. Style crest flabellate, apex entire ... 3.
 - Style crest flabellate, apex trilobed, or as three separate lobes ... 4.
3. Leaf margin entire. Peduncle half as long again as leaves. (Chilean endemic - O'Higgins Region) ... ***Viola bustillosia***
 - Leaf margin shallowly long-serrate. Peduncle clearly shorter than leaves. (Chilean endemic - Santiago Region) ... ***Viola angustifolia***
4. Lamina undersurface eglandular. Pseudopetiole and basal half of lamina margin glabrous or shortly ciliate. (Chilean endemic - Santiago to Bío Bío regions) ... ***Viola truncata***
 - Lamina undersurface with glands. Pseudopetiole and basal half of lamina margin always shortly ciliate. (Chile - Maule Region and possibly adjacent Argentina in Neuquén Province) ... ***Viola cheeseana***

Note: This distinctive small, interrelated group has been scarcely studied, including by ourselves (the author and Anita Flores that is). Its relationships were totally confused and misunderstood historically (e.g. Gay 1845, Reiche 1893, 1896), and traces of that lingered on. Of the five recognised species, we have only seen ***V. cheeseana*** in the wild, but have photographs by others of the distinctive ***V. acanthophylla*** and a selection purporting to be ***V. truncata***, all apparently taken in the Santiago Andes. ***V. bustillosia*** and ***V. angustifolia*** are not currently known in the wild.

The original description by Philippi (1857) of ***V. angustifolia*** indicates that the plant is pubescent, and provides no details of its style crest. However, publications of ***Viola*** in Chile by Reiche (Reiche 1893, 1896), who examined the specimen sheet, leave no doubt that 'pubescent' refers to ciliate leaf margins and not to an overall covering of indumentum; and that the style crest is apical, flabellate and entire. In her exhaustive three volume work covering the flora of the surrounds of Santiago, Navas (1976) includes ***V. angustifolia***, but not ***V. truncata***. She undoubtedly also examined specimens, and describes the style crest as entire in agreement with Reiche. Her distribution of it cites the provinces of Santiago and Colchagua (where it was collected subsequently by Philippi's son Federico), and surprisingly she notes it as 'frequent'. On the other hand she does specifically name Philippi's type locality as its 'area of preference'. One set of photos labelled as ***V. truncata*** was taken in the same area ***V. angustifolia*** inhabits. Although it otherwise conforms with Philippi's species no less than with ***V. truncata***, unfortunately the critical style crest is not visible.

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Meyen's (1834) type publication of the latter is so deficient in morphological details that it is impossible to recognise effectively the plant it describes as *V. truncata*, which led to much persistent confusion by later authors (e.g. Gay 1845, Reiche 1893, 1896). This was compounded when, after Meyen died at age 36, his junior colleague by 12 years, Walpers (1843), who only lived to be a year older, published a second description. Unfortunately, some of the details in his work conflict both with the few original details of Meyen as well as the very careful observations of Becker (1922) - see below - and so cannot be regarded as authoritative. Worse still, the type and only original specimen at Berlin was destroyed by allied bombing in 1943 (Hiepko 1987, Haagemann & Zepernick 1993). However, the aforementioned distinguished leading *Viola* authority, Becker, examined it in the early 1920s, before it was obliterated, as well as a comparative specimen (*V. glacialis*) collected by Pöppig in the southern Chilean Bío Bío Region. Becker judged the latter to be synonymous with Meyen's plant (Becker 1922), which he indicated had been collected in the Cordillera of San Fernando in Chile's central O'Higgins Region, where *V. bustillosia* was also discovered. Becker specifically stated that in common with Pöppig's *V. glacialis*, Meyen's *V. truncata* lacked underleaf glands. We accept his conclusion unequivocally. By good fortune, the description by Pöppig and Endlicher (1838) is highly detailed and contains a fine botanical drawing by the former. These indicate slight differences between Pöppig's plant and the photos we have as *V. truncata* from central Chile, which also differ somewhat among themselves. In particular, the leaf margins of Pöppig's plant are glabrous. We have been able to confirm this by examining an isotype at Paris (P) [figs.69-71]. Of the plants we were able to assess that have been photographed as *V. truncata* at six locations, five have ciliate margins. The sixth plant is completely glabrous, and to add further to the confusion, was also encountered at the general location of *V. angustifolia*!

Clearly work needs to be done. So far we have only been able to examine relevant material at Paris (P), but hope when and if possible to at least visit the Santiago (SGO) and Concepcion (CONC) herbaria to examine whatever specimens of this alliance they have in their collections.



fig.72: Oops - She's put her foot in it! Anita on the viola plateau having dropped into a burrow dug by a tunnelling tuco tuco (a rodent in the family Ctenomyidae) ! (1 Feb 2008. JMW)

Acknowledgements

First and foremost we must express our indebtedness to both the AGS and the SRGC for so generously funding our relatively brief but intensive and productive 2013 and 2014 *Viola* fieldwork

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project, which included two major and important visits to the upper Maule sector. It's always an extra pleasure to share these explorations in such marvellous surroundings with others, often introducing them for the first time to the places and their plants. Various friends, colleagues and family have not only added to our enjoyment and satisfaction by their welcome company during our times at Maule, but have also made valuable contributions to our work in one way or other. They include Michail Belov, Arve Elvebakk, David and Celia Haselgrove, Marta Molina, Helga Petterson, daughter Sarah and the members of an AGS tour planned by myself. We're especially grateful to the staff of the Paris herbarium (P) for their assistance and permission to photograph important historical specimens in 2005, among them those which have advanced our studies of the taxa herein. Nor must I forget in that last respect the various photographers who have posted the images of *V. truncata* and *V. acanthophylla* we downloaded from the Internet, or who provided them to us directly. But easiest of all to take for granted, amounting to a crime beyond punishment, would be to overlook Anita's dedicated care and devotion wherever we are. Quite apart from her botanical input, not least providing accurate descriptions and measurements of minute features only possible with high magnification, it includes feeding this brute and safeguarding his health! That represents a huge bonus in leaving me with much time in hand and as fit as old age allows to publish taxonomic work such as this with (monotonous?) regularity.

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APPENDIX. RECENT SOUTH AMERICAN AMARYLLID NAME CHANGES

1) Most taxa known as ***Hippeastrum***, ***Rhodolirion*** and ***Traubia*** in recent times remain as those genera. Relatively familiar ***Hieronymella*** and some other regional genera of the family are not affected as they belong in other tribes.

2a) The genera recognised until now as ***Famatina*** (as was wrongly applied), ***Placea*** and ***Rhodophiala*** (in its correct and synonymous but ignored sense) are synonyms of a wider concept of ***Phycella***, which also retains species commonly recognised as such.



2b) Those with small daffodil-like trumpets known hitherto as ***Placea***, which are now ***Phycella***: ***PP. arzae***, ***amoena***, ***davidii***, ***germainii***, ***lutea*** and ***ornata***.

Others now included in ***Phycella***: ***PP. chilensis*** (syns. *Rhodophiala biflora*, *R. chilensis*, *R. pratensis*), ***fulgens*** (syn. *Rhodophiala fulgens*) and ***maulensis*** (syn. *Famatina maulensis*)*.

Phycella arzae. Chacabuco Pass, Valparaíso Region, Chile. (22 Oct 2015. JMW)

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3a) The following more or less familiar generic names are now all synonyms of **Zephyranthes** (which also includes all those from Central and North America we've always known as **Zephyranthes**): *Habranthus*, *Haylockia*, *Myostemma*, *Rhodophiala* (as has widely been incorrectly applied) and *Sprekelia* (pending).

Thus, the correct names of species known in cultivation, or encountered during tours to the region are:

3b) 46 species which were formerly *Habranthus* are now **Zephyranthes**. Most are unknown in cultivation and seldom encountered in the wild by flower tours. We have seen **ZZ. cuyana**, new name (syn. *Habranthus mendocinus*), **martinezii** and **pedunculosa**, new name (syn. *Habranthus tubispathus*).

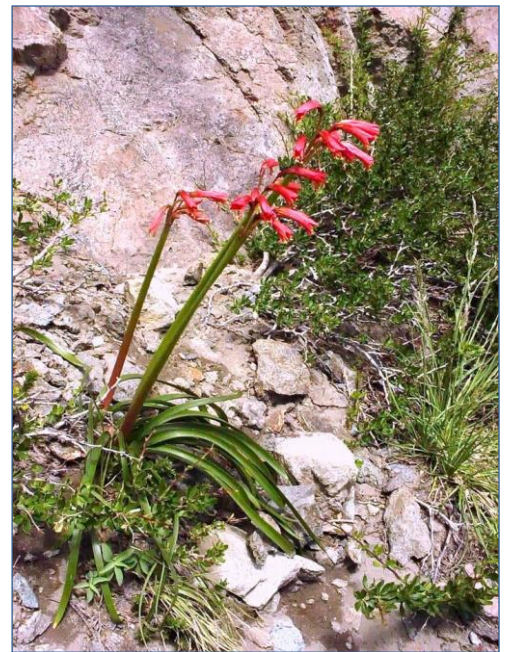
3c) **Zephyranthes** until now mainly known by such synonyms as *Rhodophiala* or *Myostemma*: **ZZ. advena**, **ananuca**, **araucana***, **bagnoldii**, **cuyana***, new name (previously *Rhodophiala mendocina**), **bifida**, **elwesii***, **laeta** (the red species from central Chile previously also as *Rhodophiala tiltiensis*), **maculata**, **moelleri**, **montana***, **philippiana**, new name (syn. *Rhodophiala* or *Phycella andina*), **phycelloides**, **splendens**.



Zephyranthes advena. Longotoma, Valparaiso Region, Chile. (26 Nov 2010. JMW)



Zephyranthes ananuca. Caldera, Atacama Region, Chile. Collected by Beckett, Cheese & Watson in 1971. (Painting by Andres Julián, courtesy of Adriana Hoffmann)



Above: *Zephyranthes capitata*. Lago Teno, Maule Region, Chile. (1 Mar 2006. ARF)



Zephyranthes elwesii. Cerro Colo Huincul, (25 Dec 2007. JMW)

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Left: *Zephyranthes bagnoldii*. Tongoy, Coquimbo Region, Chile. (19 Oct 2008. ARF)
Right: *Zephyranthes cuyana*. Tromén, Neuquén Province, Argentina. (27 Dec 2002. ARF)



Left: *Zephyranthes laeta*. Tiltil, Metropolitan Region of Santiago, Chile. (25 Dec 2004. ARF)
Right: *Zephyranthes phycelloides*. Lower Elqui valley, Coquimbo Region, Chile. (18 Oct 2008. ARF)



Zephyranthes martinezii. Salta Province, Argentina. (7 Jan 2007. ARF)

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Zephyranthes splendens. Las Placetas, Maule Region, Chile. (18 Dec 2013. JMW)

3d) There are also the following 'odd men out': **ZZ. capitata**, new name (syn. *Phycella herbertiana*) and **cisandina** (syn. *Famatina cisandina*).

4) Another change: **Eremolirion laetum**, new genus (syn. *Rhodophiala laeta*, the pink coastal species from far northern Chile).

5) At present a request to the International Committee of Nomenclature for conservation of the name *Zephyranthes* over the prior published *Sprekelia* will follow shortly, and if its outcome is successful, that well known garden plant *S. formosissima* will become a *Zephyranthes*. If not ... all the original *Zephyranthes*, plus those added by Garcia et al, about 100, may have to be changed to *Sprekelia*. Perish the thought!!!

Taxa noted thus * are included in Sheader et al's 'Flowers of the Patagonian Mountains'.



Eremolirion laetum. Taltal, Antofagasta Region, Chile. (25 Oct 2002. ARF)

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---In the Garden ---

A SMALL ESTONIAN CREVICE GARDEN

Text: Zdeněk Zvolánek

The Czech traveller Vojtěch Holubec looked some time ago into a layered rock garden at Tallinn, though he did not write anything about it in his travel book. I must redress this omission because it has the look of Czech design and Baltic quality stones. The maker of this rock garden Svetlana Polonskaja commented: "I learned for the first time about the Czech rock garden style in 2003. The idea was so pleasant that I built such a rock garden in 2005. In the following years I visited many Czech rock gardens and exhibitions where I found a lot of interesting plants for my garden's crevices. One of them is *Saxifraga x laeviformis* 'Zlatý Kůň' which is *Saxifraga marginata* crossed with *Saxifraga pseudolaevis*, bred by Karel Lang in around 2009. Stonebreakers (saxifrages) from the Porphyry section are usually kept under glass in alpine greenhouses, but I help them to be free in this crevice rock formation.

I am greatly helped by the cold weather around the Baltic Sea. I have a selection of saxifrages from the Porphyry section (also known as Kabschia). I grow many plants from seed; others are bought as small plants to be planted in their permanent place. The width of the crevices is only a few centimetres. I use a sandy-stony substrate with the addition of nutritious clayey soil. *S.* 'Zlatý Kůň', named after a rock limestone outcrop on the western edge of the Bohemian Karst, lives in my rock garden without protection and is a floriferous cultivar. I've shared some plant pictures on FaceBook, such as this other cultivar of Lang's, *Saxifraga* 'John Byam-Grounds'."



Svetlana's rock garden in Tallinn, Estonia.

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Saxifraga 'John Byam-Grounds'



Saxifraga 'Zlatý Kůň'

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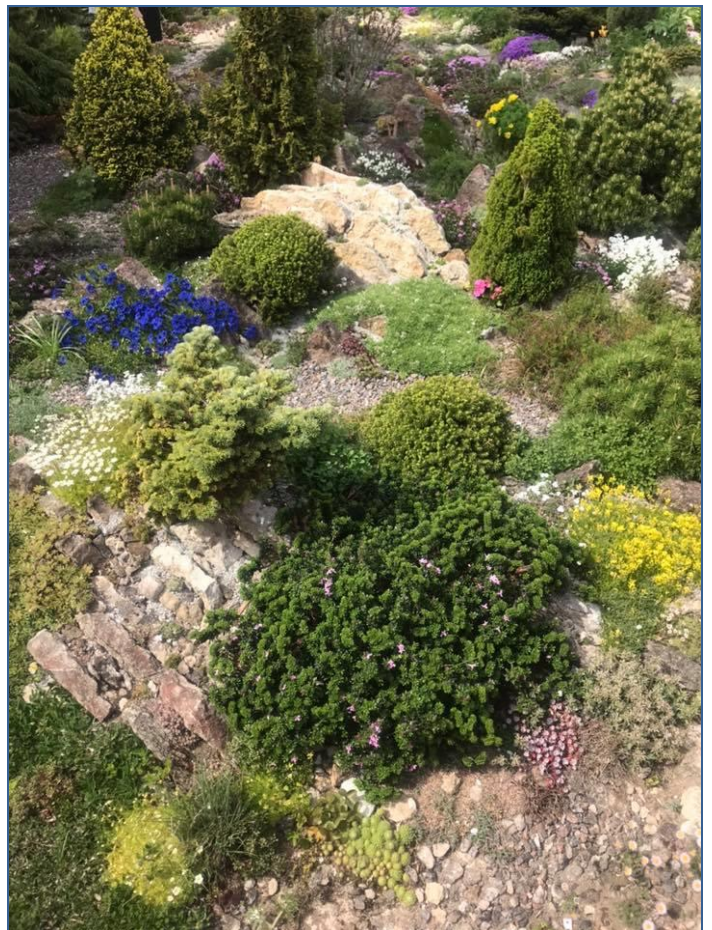
Photos of Svetlana's garden, including from some visitors there, Lea Nilson and Tiiu Sarv.....



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Now some photos of the garden by Tatiana Romanova – it is easy to see how these visitors have enjoyed Svetlana's garden!



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A curious reader will certainly have spotted in the first rock garden photo, some strategically placed small primroses. I asked the grower about their photos, so let's take a look at her small article about Primrose hybrids.

Primula allionii hybrids by Svetlana Polonskaja



I would like to tell about my cultivation experience with *Primula allionii* hybrids. *Primula allionii* is native to cliffs in southern France and northern Italy and is one of the best *Primula* species. In nature, where it lives between 700 and 1900 m, it can form large cushions. Its flowers are very large and beautiful - to 4 cm in diameter- in different colours – violet, pink, white. In Europe they are usually grown in a frame with protection against wetness in winter or in an alpine house. They require well-drained alkaline soil and dry conditions. There are many natural forms and cultivars and these have been selected both for forms for exhibition and steadier hybrids capable of growing in the open. In the UK remarkable hybrids were raised between *P. allionii* and *P. marginata* which are called *Primula x miniera*. One of them is 'Clarence Elliott' - a result of crossing *P. allionii* and *P. marginata* 'White Linda Pope' by Joe

Elliot in 1982. I have grown Allioni's primroses in my garden for 15 years. At first they lived in containers but, having learned about the hybrids able to grow outside, decided to test them in the conditions of my garden. Observations showed that *Primula allionii* hybrids feel perfectly at home both on the rock garden with narrow crevices and also in the stone troughs, without any shelter except snow. They grow there as in their homeland, surviving both frost penetration to their root system, and all the whims of our unstable winters.

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Primula x miniera inherited from Allioni's primrose the size and beauty of flowers, and winter hardiness and ability to live under the open sky from other, more robust parent - *P. marginata*. Cultivars and hybrids tested in the conditions of my garden, such as 'Clarence Elliott', 'Drake's Carmine', 'Jackie Richards', 'Tony' are unusually great! Also were tested *Primula allionii* x *P. hirsuta*, *Primula allionii* x *marginata* 'Stradbrook Lucy', *Primula x loiseleurii* 'Lismore Yellow' (*P. allionii* 'Alba' x *P. auricula*) and some others. Some of them even set seeds. It gives hope for further tests of these small, surprisingly hardy Alpine jewels. After the success of these remarkable hybrids I found greater confidence and hope to try other Alpine primroses absolutely unfamiliar to us.



Primula 'Drake's Crimson'

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Primula allionii x *P. hirsuta*



Primula 'Clarence Elliott'

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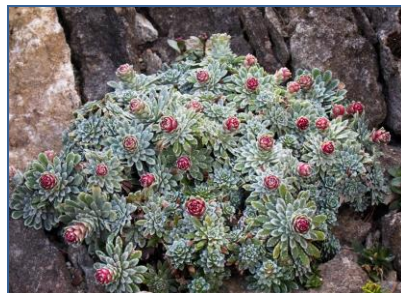


Primula 'Stradbrook Lucy'

A few more photos from Svetlana of her rock garden plants



From left, clockwise: *Pulsatilla patens* subsp. *flavescens*, *P. multifida*, Svetlana being thanked by garden visitors, *Saxifraga x doerfleri* 'Tycho Brahe' and *Colchicum speciosum* 'Atrorubens'



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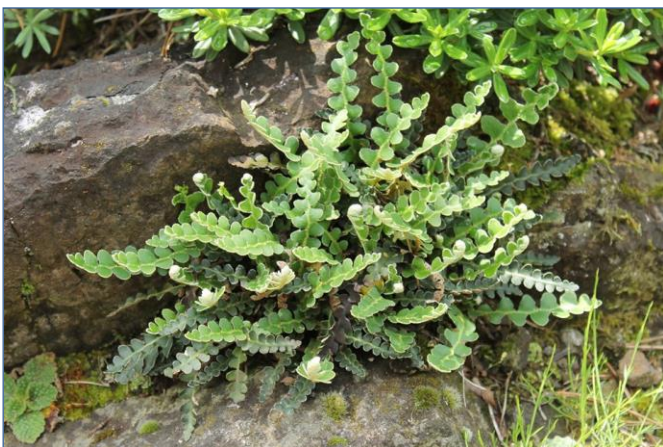
This report from the Beauty Slope is adapted from Zdeněk Zvolánek's editorial from the autumn issue of SKALNIČKY, the journal of the [Prague Rock Garden Club](#). The summer heat has been getting to ZZ!

---The Beauty Slope---



Home, sweet home but too hot now. ZZ and Zdena Z are sitting in a cave (old house).

Believe me when I say that when a computer is handled by a special ignoramus (a senior male with artistic lack of concentration), even after ten years of light training, he can accidentally erase half of the prepared Czech journal Skalničky by mistake and not find a copy (a replacement in the depths of the PC). It happened to me yesterday in sobriety (I forgot to back up the whole package of texts, including the nice Autumn Editorial). When it comes to emptying, something faithfully signals our consciousness, but the computer can't speak and leaves us calm. Likewise, although I am a godly man, the guardian angel did not pat a wing on the top of my head to stop the destruction.



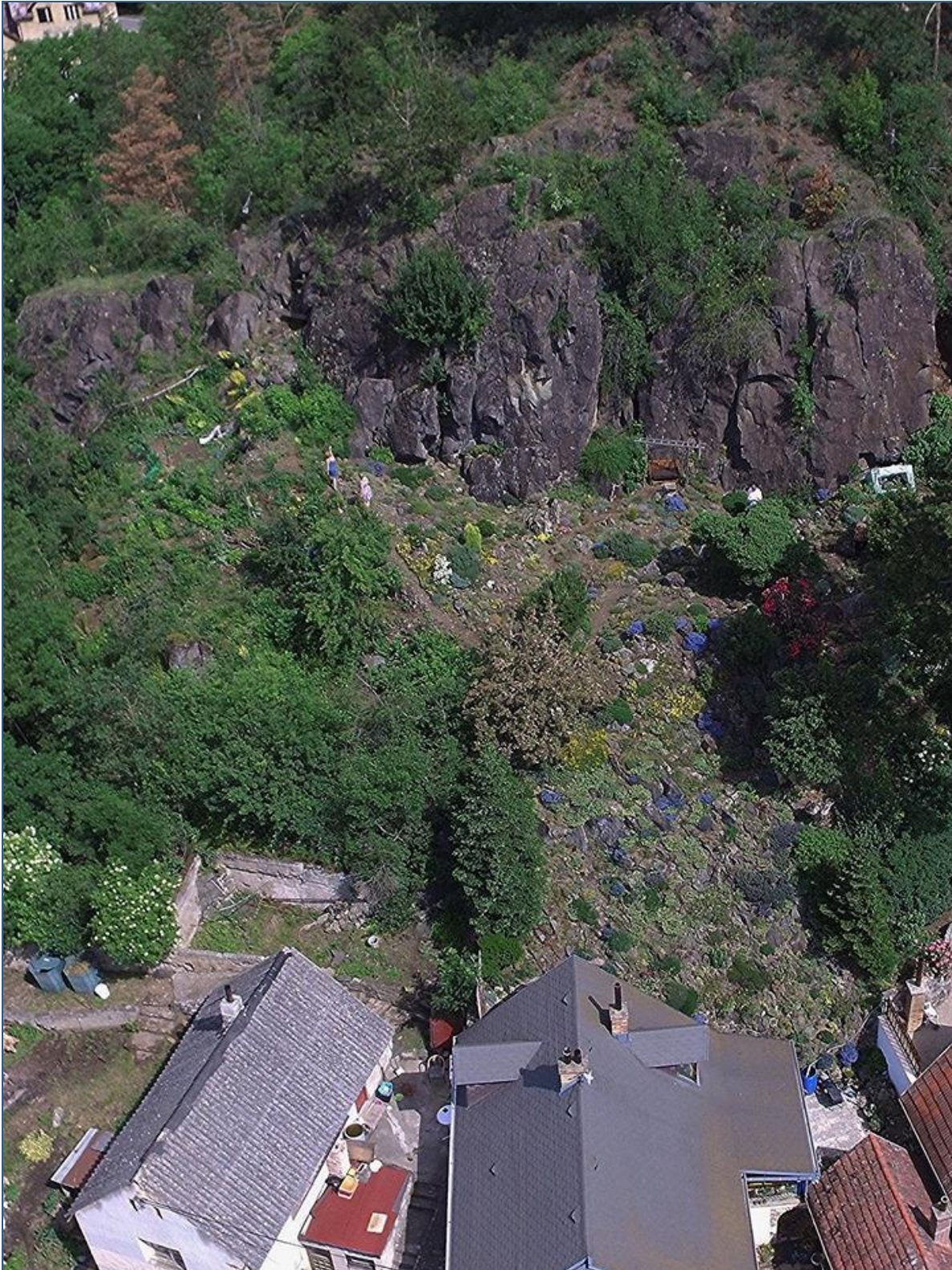
Yeah, it's shameful to express such whimsical idiocies under the influence of a whimsical summer that alternates the hot compresses applied to our excessively hot hillside with its dry sauna set to 37C.

Ceterach officinarum is a happy fern in our heat inferno.

Fortunately there are flowers that do not mind, on the contrary, they do well: this year the Turkish bindweeds were extremely well filled with flowers and the Spanish *Convolvulus boissieri* gave a lot of

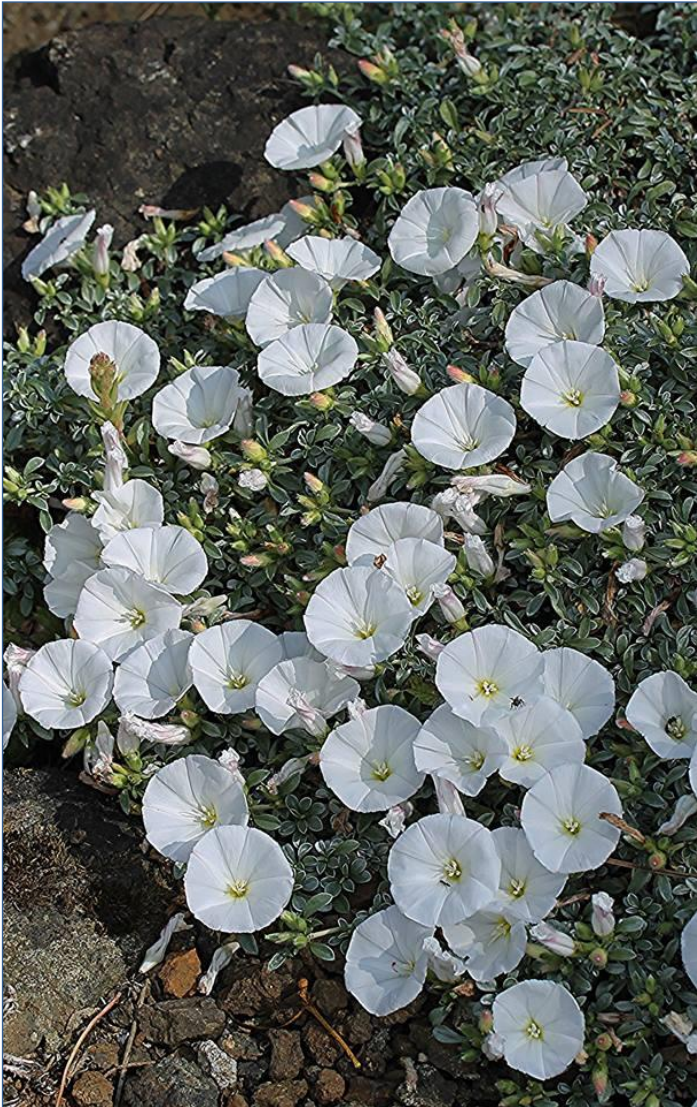
---International Rock Gardener---

seeds. The beautiful *Convolvulus phrygius* pillow from Salda Lake, Turkey, is now maturing its large seeds abundantly. I could name other rock garden plants, which this year shaded themselves with their own flowers like *Putoria calabrica* or *Pterocephalus pinardii*. A Great surprise in this North African weather are our spring germinated seedlings of *Oenothera lavandulifolia* or *Calylophus lavandulifolius* (kind gift of John Stireman from Utah) blooming nicely as an adult plant. I planted 7 of them in one plastic trough filled with tufa and they all have every day light a few sulphur-yellow flowers 5-6cm across.



Drone overview of the Beauty Slope: with blue *Moltkia petraea* and golden *Genista horrida*.

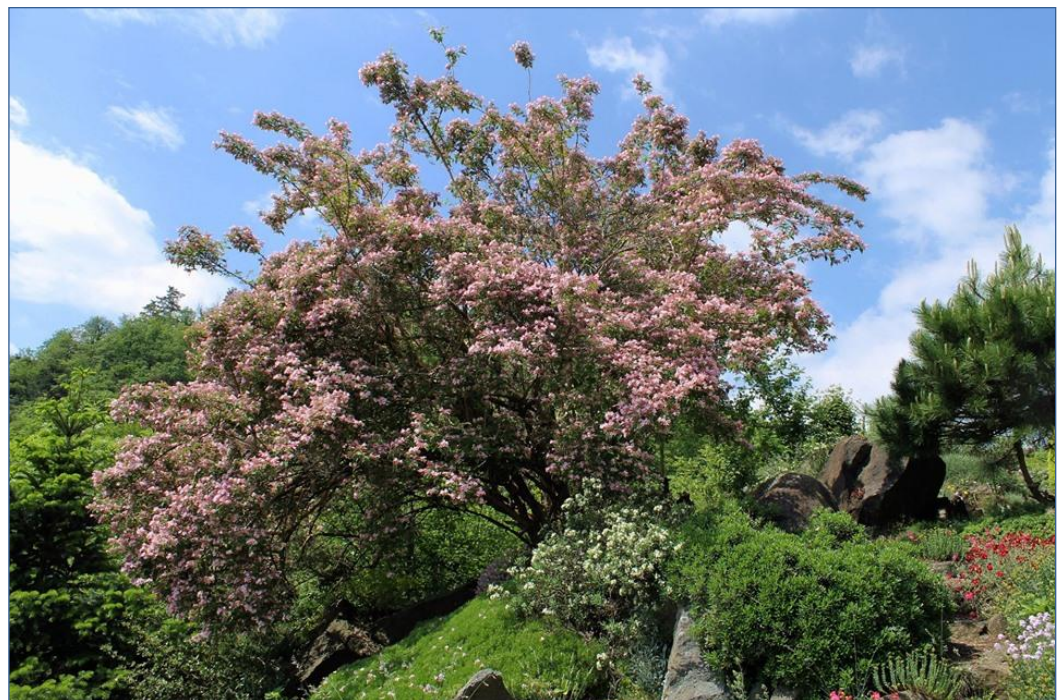
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Pteroccephalus pinardii and houseleeks (*Sempervivum*).

Convolvulus phrygius from Anatolia. This is also the form with the largest flowers or perhaps it is a natural hybrid with *C. compactus*.

Kolkwitzia amabilis is in a proportion only in a big rock garden.



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Another photo taken by drone: *Rosa* 'Dortmund' and blue *Moltkia petraea* in the large rock garden that is the Beauty Slope in Karlick.



Pelargonium endlicherianum 'Gothenburg Form'

This year we have a reduced frost-resistant "Geranium" *Pelargonium endlicherianum* 'Gothenburg Form', whose photo was taken by a Dutch owner. My plant is a young seedling of the dwarf Swedish cultivar, but it is 17cm tall in the tuff hole, the intense red flowers are missing and the leaves are 2cm wide. This still is not a bad score when the normal height of the species is 35 cm with leaves with a diameter of 6cm.

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Seed from John Stireman germinated marvellously and we can see seedlings in flower now. This picture from Nevada to shows *Calylophus lavandulifolius* in full charm.



Daphnes are reblooming and even heavily overheated houseleeks bloom in competition. Whoever in sizzling Bohemia thinks that he can pray for considerate weather for his delicate alpine plants is making a medieval religious mistake. Indulgences do not work! God has kindly given us a beautiful playground and a simple rule of play: the cause is the consequence, or according to the Bible, "what we sow is what we reap". By understanding losses, our own renewable strength and a little wisdom can grow. God does not participate in our winter and summer games for educational reasons.
Z.Z.

ZZ dreams of cooler weather !