

# International Rock Gardener

ISSN 2053-7557



Number 156 The Scottish Rock Garden Club December 2022



And so, another year draws to a close! At this time of so many different festivals around the world from November to January, the IRG Team sends all our readers the very best wishes of the season. I hope we are united in one mind in hoping that the coming year will be one of peace, health and happiness for all. Not to mention good seed germination – though that is probably included in the happiness section!

This 156<sup>th</sup> issue of the International Rock Gardener is brought to you by the kindness of the writers, photographers and volunteer editing team and is again published free to all on the Scottish Rock Garden Club site, SRGC.net. We owe all our contributors a great debt of gratitude and remind readers that it is only by these generous submissions that we are able to bring you the IRG each month. If you enjoy reading the IRG – why not put pen to paper – or more likely fingers to the keyboard – and join their number?

Email your proposals to Margaret Young, [editor@internationalrockgardener.net](mailto:editor@internationalrockgardener.net).

Cover image: *Alstroemeria ligtu* subsp. *incarnata* F. & W. 11091. Photographed on 30 December 2005 by Ana Rosa Flores.

In IRG this month we have articles from John and Anita Watson, reporting on their long history with the flora of Chile, and plant portraits singing the praises of various plants much loved by alpine growers, from Cyril Lafong, in Scotland, Pavel Holík and from Zdeněk Zvolánek in Czechia – all originally published in Skalničky, the bulletin of Klub skalničkářů Praha. The plants featured are *Campanula tommasiniana*, *Daphne* ‘Colinton Crown’, and some Juno irises. The final piece this month is a report from the [freshwater ecologist](#) Dr Tristan Hatton-Ellis from Wales, on the

propagation of Hardy Orchids from seed using the ‘Cardboard Method’.



.....from  
all the IRG Team!

# ---International Rock Gardener---

## --- South American Report ---

### What We Have We Hold

John M. Watson & Ana R. Flores, Casilla 161, Los Andes, Valparaiso Region, Chile.

[john.anita.watson@gmail.com](mailto:john.anita.watson@gmail.com)

Published International Rock Gardener (IRG) December 2022.

### **Curicó, que rico! (Curicó, what riches!)**

The Vergara Pass at 2500 m, which crosses over into Argentina, was among the final destinations explored by John (the C.& W. collecting period) during his six month first Andean plant hunting trip in Chile. It's situated in Curicó Province at the northern limit of the south-central situated Maule Region [figs.1, 2]. That first visit took place from the 10th to 12th of February 1972, with a day-long return on the 14th of March, the latter being our very last sortie in the country that time. These two occasions are described in detail and with immediacy in two AGS 1976 Bulletins<sup>1</sup>. With informed hindsight though, most of the 'greenhorn' identifications in them are embarrassing, to say the least!

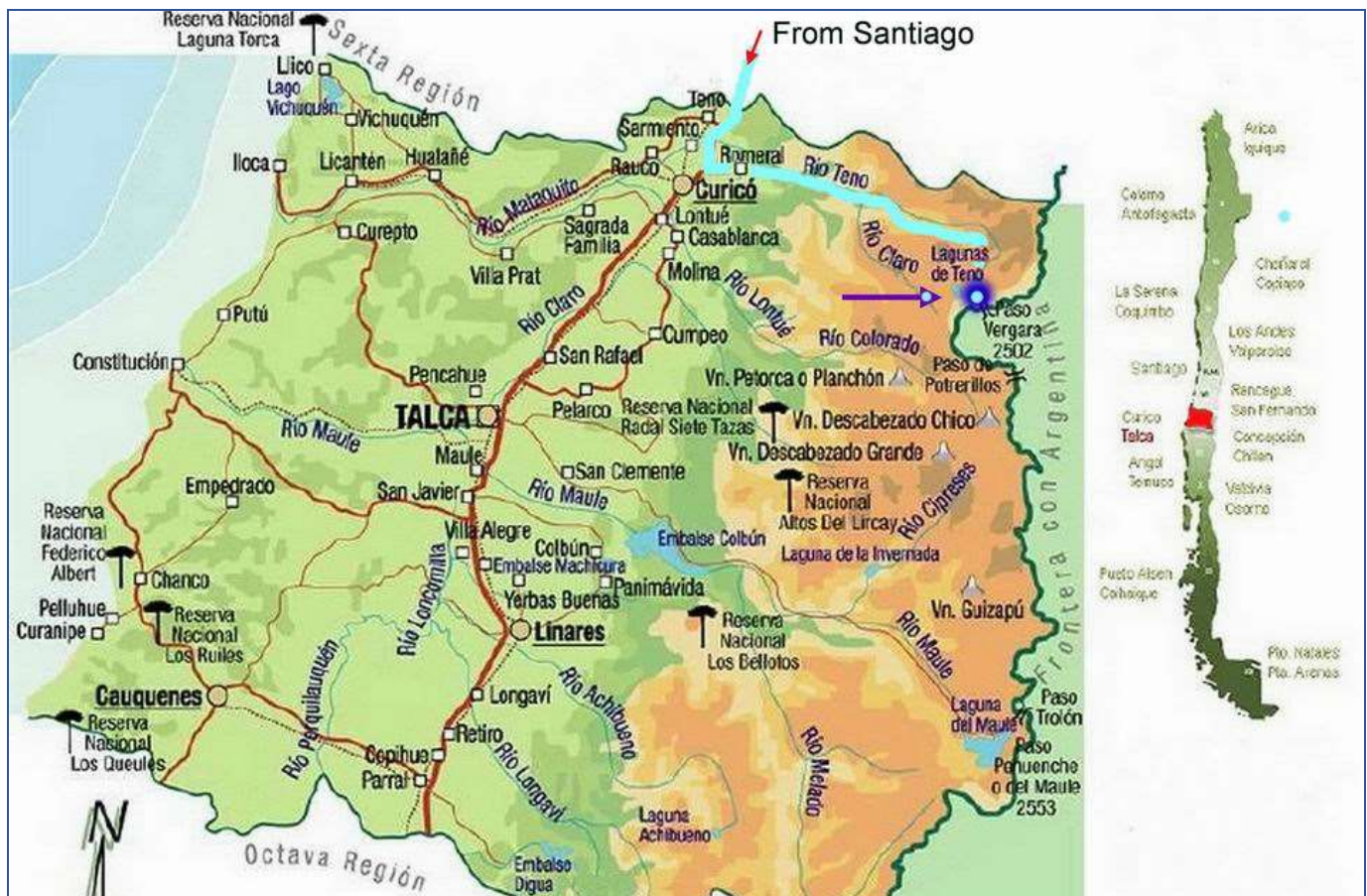


fig.1: The Region of Maule blocked red on the small map of Chile, and our route to the Teno lakes when coming down from Santiago as the light blue line.

## ---International Rock Gardener---

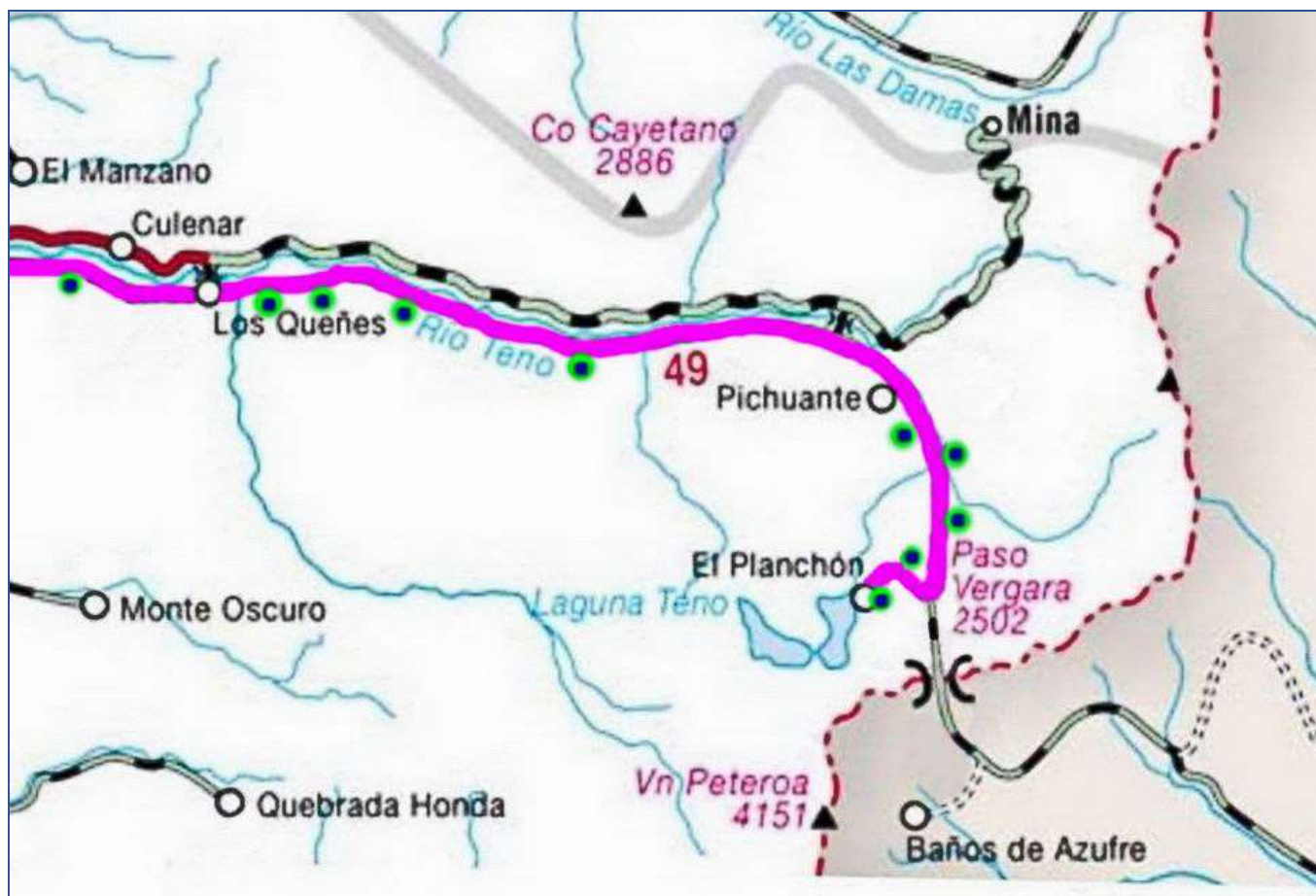


fig. 2: The sector covered for plants in this account. Sites where photographs were taken are indicated by green circles with dark blue centres.

To reach the pass from our present home at Los Andes, north of Santiago, we motor down what is known internationally, but not in Chile, as the Panamerican Highway to just short of the provincial capital, Curicó. There the road crosses the Teno River, and we take the minor route to the west which follows the river's course to upper Andean levels. Little could we have guessed as we turned off the main drag for that initial probe in 1972 the historical importance the location would come to signify for us, for the world of taxonomic botany, and for numerous widespread horticultural interests.

Such is the biodiverse richness of the area that we've visited it on three occasions subsequently, in 2005, 2006 and 2013. December offers the greatest rewards, but floration undoubtedly starts earlier, and we even found enough to justify that visit in the middle of March. The only regret is that our great friend and partner Martyn Cheese - sadly now departed to the Great Plant Hunting Paradise in the sky - was never again able to accompany us. This account is a compilation of those later years with nostalgic reminiscences of the earliest. It covers one of the two important legs of our explorations in the sector, when, during all visits except 2013, we diverted off on a local upper mountain branch track just short of the actual pass itself.

# ---International Rock Gardener---

## The river of dreams

The first of those returns was on 30th December 2005 in the company of David and Celia Haselgrove during a long trip with them down to the southern volcanoes. Next, we two followed up on the first of March 2006, collecting seed of earlier observations and adding further new plants to our list. Finally, the pass itself, but not the branch track, became an integral goal of our 2013-14 major Andean viola exploration programme, which was heavily financed by the SRGC and AGS. That was on the 17th of December, our earliest ever drive up the Teno River valley. Again, we were a foursome, but this time with the plantsman Michail Belov, a Russian émigré resident in Chile, and our enthusiastic 'lay' Chilean neighbour, Helga Petterson, who's learned almost everything she knows about plants from us! That the flowering was already in full swing at such an earlyish date, yet we still found much in bloom on our previous visit at the beginning of March, hints at the extensive season of this bounteous neck of the Andes and its potential for ecotourism.

Four-wheel drive is the most flexible option for mountain plant hunting, and we've used it on every journey via three different vehicles. In 1971/72 we hired a white SWB Land Rover for the duration, which was nicknamed (usually affectionately!) 'The Ox', OX being derived from its registration plate. The first all-terrain vehicle we two owned, as used in 2005/06, was short-wheel-based again, a Suzuki Samurai, and also white [fig.3]. The latest and most recent beast of burden to transport us in 2013, which still carts us around, is another Suzuki jeep [fig. 22], inherited from Anita's father in late 2006. This time it's long-wheel-based and maroon coloured for a change.



fig.3: John in the driving seat of our Suzuki Samurai preparing to store our small press, converted to plants from originally keeping dress-ties smart! (1 Mar 2006. ARF)

## ---International Rock Gardener---

Nothing much happens until halfway along the drive up the river valley, just past the small community of Los Queñes [fig.2]. When we say, 'nothing much', we shouldn't exclude mention of one superb show (and vehicle) stopper a little beforehand. *Chloraea virescens* [fig.4], a species of the largest orchid genus in Chile, may not catch the attention with colour, but is none the less spectacular for that. What personality it displays with its Deputy Dawg ear sepals and vast, frayed-edged white apron of a lip elegantly decorated by parallel, knife-edged and interrupted snowy ridges topped by striking green lines which break up like choppy waves towards the apex. It resembles nothing more than some surrealist painting of a glacier. It's been known under various aliases such as *Chloraea piquichen* and *Chloraea virescens*, but the latest authoritative catalogue of the flora of Chile<sup>2</sup>, as followed here, confirms its accepted identity.

fig.4: F.& W. 11086  
*Chloraea virescens*  
gaping at passers-by  
such as us. (30 Dec  
2005. ARF)



## ---International Rock Gardener---

Although way down below the pass, Los Queñes is effectively a glorified border post due to a control there for the continuation onwards and upwards into Argentina, regardless of whether one is crossing or not. The place would be a mere name for us but for a bizarre incident in 2006. We had been stopped to explain to the duty officer where we were going, our reason for being there, and if necessary to surrender our passports. For some reason, as we waited we were engaged in conversation by a young off-duty policeman in civilian clothes. How the topic cropped up goodness knows, but he asked us whether we supported a Chilean soccer team, which we do, and we told him its name. It not only happened to be doing rather well nationally and regionally then, but he also turned out to be a fanatical fan (if that isn't too tautological) of our deadly rival club. Imagine the Chilean equivalent of Celtic and Rangers - the 'Old Firm', or the two Manchesters, or Barcelona and Real Madrid. He immediately launched into a tirade of insults against ours, and we couldn't refrain from retaliating in kind. Somehow the fracas ended in an uneasy truce, but we did realise when it cooled down how easily he could have made life difficult for us by a word in the ear of his colleague on duty!

However, beyond Los Queñes no further obstacles have ever awaited other than a fairly recent small Ministry of Agriculture (SAG) checkpoint. When we went through it once, it was manned by a couple of pleasant young ladies who were more fascinated by our work than worried about any risk to crop production our collections might pose.



fig.5: F.& W. 12613 *Chaetanthera chilensis*, showing the flowering tips of this little prostrate shrublet. (17 Dec 2013. JMW)

And so the flora business begins in earnest at around 600 m. First off for us by the wayside immediately after the police formalities has been the small, silvery leaved composite *Chaetanthera chilensis* [fig.5]. It stands out for its perennial, herbaceous life-form in a genus otherwise consisting largely of tiny annuals or some of the choicest, most renowned high Andean cushion and rosulate species such as *C. renifolia*, *C. spathulata* and *C. villosa*. But *C. chilensis* is not completely overshadowed for all that.



fig.6: John admiring *Erythranthe naiandina* (here as F.& W. 11087), the new pink mimulus he and Martyn Cheese discovered at this exact spot in 1972. (30 Dec 2005. ARF)

### Meet our adorable water nymph

One of our all-time major triumphs as plant collectors (referred to in the second paragraph above) is owed to peckishness. On 10 February 1972, a mere 2 km towards the mountains after Los Queñes, Martyn Cheese and John stopped at an attractive natural lay-by in scenic surroundings beside the wide, flat, stony valley of the Teno River. Time had passed since our last bite to eat and we were hungry. So, while Martyn prepared thickly sliced sandwiches of cheese (what else?), onion and cucumber, John poked around a little further back into the side of the valley, where a small tributary stream flowed out [fig.9]. Eureka! Perched on rock ledges around and under a small waterfall was a pink mimulus we'd never seen before [figs.6, 9, 10]. The rest is history, as they say.

On our return in March we collected seed. This was widely distributed, and soon plants could be seen in the alpine house at Kew and bought from supermarket shelves. Nobody apart from botanists is



## ---International Rock Gardener---

very happy with collectors' reference numbers for an unidentified plant (in this case C.& W. 5094 *Mimulus* sp.), so the informal horticultural sobriquet of *Mimulus* 'Andean Nymph' was given to it provisionally, as being appropriate for its watery, bucolic native habitat. As far as we were concerned back in those days, taxonomy was only an occasional necessary tool for attempting to identify - to the low limit of our self-taught knowledge - important plants we'd collected. Therefore, our 1976 account contains no more than a description of its appearance: "... a rather unusual *Mimulus* sp., whose flowers sported the unlikely colour combination of strong pink and an ivory-yellow throat heavily spotted with pink." As time wore on, and our taxonomical knowledge and interest increased, we became more and more convinced it was new to science. However, we were discouraged by a number of career botanists who told us it was simply the pink variant of *M. luteus*, var. *variegata*, which had been published long since. But meanwhile, we happened to have seen the latter nearby elsewhere at its type site, and were convinced the two were different. Nevertheless, this frustrating situation dragged on until the year 2000, by which time we had no doubts at all it was undescribed hitherto, took matters into our hands, and published it as *Mimulus naiandinus*<sup>3</sup> (*naiandinus* being the Latin equivalent of 'Andean Nymph'). A recent radical molecular analysis overhaul has separated out most of former *Mimulus* into a number of other genera, so our species is now correctly *Erythranthe naiandina*<sup>4</sup> (at least feminine, as befits a nymph!). In fact, it's a miracle she waited for so long in the wild for us to make her famous, having been found in a number of well-separated localities in Chile since, including in three other regions.

Thus, in one fell swoop we discovered our first new species from the Andes to be described, also the first we ourselves ever described, and one which has turned out to be the best ever by far of any plants we've introduced. It's gained the RHS Award of Garden Merit and also the A.M. On the darker side, influential botanical catalogues and other literature still synonymize it under *Erythranthe lutea* var. *variegata*. Don't take any notice of them, they're talking out of the back of their heads, as the aforementioned catalogue<sup>2</sup> confirms. Botanists who actually specialise in the group agree with us without question. Teno, the name of the river the species was found beside, translates from Spanish as 'hold'. So we shall hold on to our *E. naiandina* name, come who may!

It's been our pleasure to show the Nymph at her type site to David and Celia Haselgrove in 2005 [fig.6], and to Michail and Helga in 2013 [figs.9, 10], when we also spotted a gorgeous six-spotted hawkmoth caterpillar in a livery that no flower could outdo [figs.7, 8]. These more leisurely occasions have revealed that the species is quite locally widespread along the stream sides.



fig.7: Fortunately, this handsome hawkmoth caterpillar, seen on a later visit, feeds on *Solanum*, not our pink 'mutisia'. (17 Dec 2013. JMW)



fig.8: Here's the equally impressive imago photographed elsewhere. It's *Manduca sexta-cestri*, the six-spot hawkmoth. (20 Oct 2008. JMW)



fig.9: On that later trip we visited the *Erythranthe* again. And here is the Andean Nymph in her element. (17 Dec 2013. JMW)

## ---International Rock Gardener---



fig.10: F.& W. 12614 *Erythranthe naiandina*. Looking around at leisure gave us a chance to notice variations, such as this attractive dark form. (17 Dec 2013. JMW)



fig.11: Not a celebration our discovery of the new pink erythranthe (or mimulus) at this exact location, but an indication of it as a beauty spot. (30 Dec 2005. ARF)

## ---International Rock Gardener---

Since our original visit and collection an impressive multi-columnar ornamental structure has been erected on the exact spot of that fateful picnic [fig.11]. We'd like to believe it commemorates Cheese, Watson and their discovery, but no. It was constructed by a cement company as a touristic viewpoint marker and displays local activities in bas relief at the base of each column. It's there to popularise the fine views and, as the blurb puts it, "... the surroundings full of interesting vegetation." Well, now, there's a thing.

### On and up

But much excitement and beauty lies ahead. Our first 1972 visit to the top of the pass was no walkover though. The weather was bitterly cold and miserable, and poor Martyn began to feel ill. So we dropped back down for a good few kilometres until driving off into a little open natural field by the road to camp for the night, and by morning he'd recovered. No doubt his recuperation was greatly aided by discovery in that field of a very exciting dwarf alstroemeria, subtly coloured yellowish to reddish brown, often with greenish tinges, and heavily stippled brown over all its equal tepals. It reminded us at first glimpse of some little fritillarias we'd seen so recently in Turkey. We thought it must be new until Prof. Muñoz told us it had already been described as *A. xanthina*. Some years later we learned its legitimate priority name is in fact *A. versicolor* [fig.12]. In 2005 Anita noticed and photographed it much lower down, shortly past the 'mimulus' site. Its height can be very variable, up



to 40 cm or more in some of its more northern forms.

fig.12: F.& W. 11088  
*Alstroemeria versicolor*, very unlike most people's idea of its genus.  
(30 Dec 2005. ARF)

## ---International Rock Gardener---



fig.13: F.& W. 11089 *Pachylaena atriplicifolia*. The species can be maroon, pale to dark pink, gold, yellow or white. All plants at Teno were this colour. (30 Dec 2005. JMW)

Again in 2005, and not much further along, we came upon another familiar old friend, *Pachylaena atriplicifolia* [fig.13], a stemless but shamelessly exhibitionist composite which when in flower defies you to ignore it. Spinach-leaved it may have been for its original author, David, of the two Edinburgh botanical Don brothers<sup>5</sup>, but we're reminded far more by its fat, leafy buds of another and much more closely related edible, the globe artichoke. It's widespread in the temperate Andes, and comes in an assortment of colours, as we found on our first 1972 encounter with it in the Santiago mountains. But many populations are also monochromatic, such as this one, which is the only shiny, pale straw yellow we know.

The shrublet *Viviania marifolia* [fig.14] is another ubiquitous species of Argentina and Chile, where it occurs from low down in the hills near the coast to moderate Andean levels. Now placed in a family of its own, Vivianaceae, it was formerly included in the Geraniaceae. It's also notable for its variability, but this time of lanky scrawniness to compact tight neatness, the latter condition especially at higher elevations. It accompanied us up along the Río Teno valley here and there. Its generously produced

## ---International Rock Gardener---

aubrieta- or stock-like flowers are 'everlasting', so lack that lively bloom of freshness found in plants where each corolla is relatively evanescent.



fig.14: F.& W. 12236  
*Viviania marifolia*  
smothering itself in  
long-lasting flowers.  
Photographed in the  
Elquí Valley of  
Coquimbo Region to  
the north.

(27 Nov 2010. JMW)



fig.15: F.& W. 12614  
*Calandrinia affinis*, at  
its finest, as here, is  
one of the loveliest of  
Andean alpines. (17  
Dec 2013. JMW)

## ---International Rock Gardener---

An example of the latter is *Calandrinia affinis* [fig.15], and we're by now at upper mountainous elevations of the Cordillera de Curicó. We've probably encountered this, one of our all-time favourite Andeans, as much as any other during our field trips over the years. In the upper, fresh green snowmelt flushes, which stand out like superimposed Technicolor against the sere central mountain scapes [fig.16], its profuse white blobs resemble at a distance freshly fallen giant snowflakes. We won't dwell here on the depressing theme of its failure in cultivation. Who needs it?



fig.16: A typical Andean snowmelt flush with *Psychrophila (Caltha) sagittata* and *Calandrinia affinis* both en masse. Note the odd few dandelions! (17 Dec 2013. JMW)





fig.17: F.& W. 11090 *Viola subandina*. This common little sub- to low Andean annual was christened by us as our first baby of the genus. (30 Dec 2005. ARF)

**Bear right (or south, if you prefer)**

By now we've reached the various source streams of the Teno River, and here we turn away from the main route to the pass and follow a slightly lower track, which leads up to the homonymous two connected Lagunas de Teno at 2550 m [fig.2].

Annual *Viola subandina* [fig.17], a common species, was one of the first of the rosulates to be described; as *V. pusilla* by William Hooker and his sidekick Arnott in 1833<sup>6</sup>. Unknown to them, and unfortunately for them (but not for us), that very same name had been applied four years previously to an even earlier little annual rosulate from Chile. Hard luck indeed. This situation was brought to our attention in the 1990s, thereby enabling John to give it its present new name of *subandina*<sup>7</sup>, our first authorship of any Andean viola's Latin epithet.

## ---International Rock Gardener---

The scenery at this height nearing the Teno lakes is majestic [fig.34], and almost defied words when embellished by a host of pink umbels [fig.18]. To bring us down to botanical earth, these happened to be *Alstroemeria ligtu* subsp. *incarnata*<sup>8</sup> [fig.19]. 2005 was the first time we had met up with this recently described upper Andean subspecies of the familiar florists' alstro.



fig.18: F. & W. 11091 *Alstroemeria ligtu* subsp. *incarnata*. It is difficult to envisage a more tempting invitation to visit the Andes than this. (30 Dec 2005. ARF)



fig.19: F.& W. 11091 *Alstroemeria ligtu* subsp. *incarnata*. Our friend and colleague 'Traudl' Bayer published it in her 1986 doctorate thesis of the genus. (30 Dec 2005. ARF)

## ---International Rock Gardener---

Next to catch our attention was a most unusual clear yellow form of the commonly orange or deep yellow widespread Andean and Patagonian ground orchid, *Chloraea alpina* [figs.20, 21]. Such distinct colour variants are usually only seen in its hybrid populations.

fig.20: F.& W.11095 *Chloraea alpina*. A striking pineapple-yellow form we have never seen before of this widespread species. (30 Dec 2005. ARF)



fig.21: F.& W. 11095 *Chloraea alpina*. The interrupted lip ridges or lamellae, common to most species of the genus, may be seen clearly. (30 Dec 2005. ARF)



fig.22: Anita watches as our guide for that trip, Michail Belov, checks something on our present jeep. (17 Dec 2013. JMW)

## ---International Rock Gardener---



fig. 23: F.& W 11093 *Viola congesta* is a little beauty which has been raised and flowered to perfection by Paul Cumbleton in the Wisley alpine house. (30 Dec 2005. ARF)



fig.24: F. W. 12642 *Viola congesta* close-up to show the wonderful foliage. (ARF)

It was no surprise a little further along still to add tightly rosulate *Viola congesta* [fig.23] to our 2005 sightings. We meet up with it at various points on the pass every time we're there. Its equally spaced onlay of small but very evident shiny pale brown or reddish circular glands in the sinus of each pair of crenate lobes along the margin might be taken for blobs of amber [fig.24]. Their decorative appeal for us is clear, but their natural purpose less so. It may be that they act as some

## ---International Rock Gardener---

sort of deterrent against insect herbivores, either by texture, or by giving a potential egg-laying adult the impression that they are already being dined upon and so not worth her depositing her future brood there. That they might be extra-floral nectaries evolved to attract protective ants would be an attractive possibility had we ever seen a single ant on any of the species' plants, as does happen occasionally with other, but non-glandular, rosulate violas.

Another Andean *Alstroemeria* had flowers very similarly coloured and marked to those of *A. ligtu* subsp. *incarnata*, but was only a fraction of its height and also familiar to us from elsewhere. This was *A. exerens* [fig.25]. In the past it's been confused with the even commoner *A. pallida* [fig.26], which is also of the same stature. The infallible way to tell them apart is the yellow staining on the two inner-upper tepals. For *A. pallida* it forms a clearly demarcated band towards the top of the tepals, whereas it stains those of *A. exerens* down to the base.

fig.25: F.& W. 11240 *Alstroemeria exerens*. As can be seen, this and *A. pallida* are similar, but have different yellow markings on the inner tepals. (1 Mar 2006. ARF)



fig. 26: F.& W. 12455 *Alstroemeria pallida* for comparison. Photographed at Lagunillas in the Cordillera de Santiago. (22 Feb 2011. JMW)

## ---International Rock Gardener---



With 238 species recorded in the new catalogue<sup>2</sup>, *Senecio* is the largest of all the 1143 genera of vascular plants in Chile (also from the new catalogue<sup>2</sup>, plus a little updating). As may be imagined, along with the look-alike tendency of not a few, and the lack of any illustrated, let alone easily available, guides to the genus as a whole in the country, this can make identification of many of them (if not the common introduced groundsel!) more than a bit of a problem. Fortunately though, the small Andean species are among the best known, so there was little difficulty in tagging the mat-forming one up there as *S. pachyphyllos* [figs.27, 28], never dwarfer and neater.

fig.27: F.& W. 11245 *Senecio pachyphyllos*. It hardly seems likely this is a relative of groundsel and ragwort. (1 Mar 2006. ARF)



fig. 28: F.& W. 11245 *Senecio pachyphyllos*. Wee little yellow shaving brushes! (1 Mar 2006. ARF)

*Schizanthus grahamii* [figs.29,30] isn't only a covetably showy herbaceous plant - regardless of its relatively short quasi-perennial life; it's also the fount of another deep-rooted if covert conflict involving one of our published plants. A distinctly different plant from another geographical sector, but which has a lot in common with *S. grahamii*, was first published as a variety of it, *coccineus*, and has either been accepted as such or synonymised with the species sensu stricto. We're thoroughly familiar with both plants in the wild, as well as having studied

## ---International Rock Gardener---

the literature of the genus meticulously, so were in no doubt the differences demanded it be raised to the rank of species as *S. coccineus*<sup>9</sup>, which we did. Since then that taxonomic revision has been very



far from accepted universally, although we trust that will change now it's listed in the new catalogue<sup>2</sup>.

fig. 29: F.& W. 12616  
*Schizanthus grahamii*  
looking ready to be transplanted straight into the herbaceous border.  
(17 Dec 2013. JMW)

fig.30: F.& W. 12616  
*Schizanthus grahamii*. Don't stick your tongue out, it's rude, even with your head upside-down!  
(17 Dec 2013. JMW)





## ---International Rock Gardener---

By good fortune there just happens to be a photo of *S. coccineus* in the December 2017 Alpine Gardener<sup>10</sup>. It was taken in the wild by the Sheaders and shows clearly the indisputable distinctiveness of this bushy species with its differently-shaped, somewhat smaller flowers.

Should we be sorry to point out the following? Well, the truth can, and at times should, hurt. If that change of rank had been made by some high and mighty qualified academic of long-standing experience, worshipped by the botanical community at large, then it would be accepted without a blink unless challenged by another of similar stature. Indeed, we can almost go so far as to say that opposing it by lesser mortals would likely be regarded as blasphemy. Is that how science is supposed to work, then? No, but alas it can do all too readily. And this isn't intended as sour grapes or self-pity. We're perfectly prepared to admit and accept our own errors. For us what's correct according to best available evidence is correct, and that must take priority, no matter what the source. Only published superior evidence supported by convincing argument, not personal whim or prejudice, can change it. Nor is anyone infallible, no matter whom. A playing field level for all players should be the first requisite of effective formal natural history, as for all science.



fig.31: F.& W. 11238 *Tropaeolum myriophyllum* snaking across the ground to delight aficionados of the Andean flora. (1 Mar 2006. ARF)

### **What did you say your name was?**

Martyn and John considered the surrounds of the Teno lakes [figs.34, 37] a bit of a let-down for their pains, with nothing apparently new so late in the season. At least they did collect seed of a *Tropaeolum* species though, which was nevertheless over-familiar both for themselves in the wild and for Northern Hemisphere horticulture, i.e. *T. polyphyllum*. Or so they thought. A few of those seeds were donated to Kew, where it germinated and flowered in the alpine house, proving to be the much rarer and hitherto uncultivated *T. myriophyllum* [figs.31, 32]. Now, beware. In South American botany Names, They Are A-changin' - all the time. At Kew it was mistakenly identified and accepted by us and everyone else then as the different *T. leptophyllum*, an

## ---International Rock Gardener---

error which was detected and sorted out as recently as 2013 by friend and colleague Mélica Muñoz<sup>11</sup>, daughter of our earlier friend and mentor in 1971/72, Prof. Carlos Muñoz. In 2006 the yellow cascades of *Tropaeolum* inflorescences were well contrasted by nearby *Calceolaria arachnoidea* [fig. 33] with its felted silvery foliage and unusual dark violet inflated pouches, floating like children's balloons on their long stalks.



fig.32: F.& W. 11238 *Tropaeolum myriophyllum*. A closer look at part of the glorious inflorescence.  
(1 Mar 2006. ARF)

## ---International Rock Gardener---



fig.33: F.& W.11243 *Calceolaria arachnoidea*. If you thought all calceolarias except florists' potted hybrids were yellow, then think again! (1 Mar 2006. ARF)

fig.34: Towering Andean slopes with much persistent snow on the immediate approach to the Teno lakes. (1 Mar 2006. ARF)

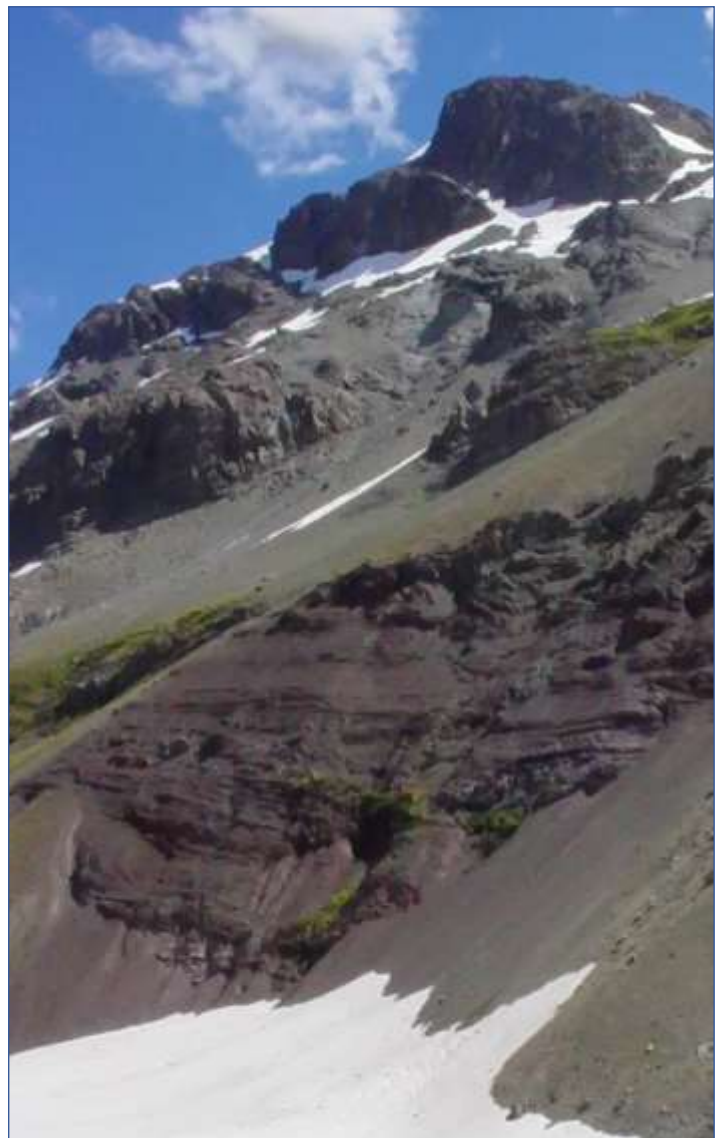




fig.35: F.& W. 11250 *Zephyranthes graciliflora*, an Andean amaryllid seen in flower over a long period up by the Teno lakes. (1 Mar 2006. ARF)



fig.36: F.& W. 11097 *Zephyranthes graciliflora*. Various South American amaryllids, some not closely related, have these hummingbird adapted tubular red flowers. (30 Dec 2005. ARF).JPG

We renewed acquaintance with what was described in the 1976 account as "... an interesting red *Hippeastrum* sp. ... its half-closed flowers angled down slightly from midway, suggesting a Roman, or perhaps for greater accuracy, Semitic nose." After a name change or two since, and with much improved knowledge of the Chilean flora on our part, we confidently identified it a year or so ago as *Phycella herbertiana*. Confidently? Well as much as can ever be when one is aiming at a constantly moving target - taxonomy! And to prove it, molecular analysis by our friend Nicolas García and his colleagues has just shown that it belongs in the equally attractively named and better-known genus *Zephyranthes*. What's more, their investigation revealed its correct and more attractive specific epithet, which is *Z. graciliflora* [figs.35, 36]. We announced the change in the May issue 125 of the IRG<sup>12</sup>.

## ---International Rock Gardener---

Eventually we reached the end of the track, with its glimpse of the first of the Lagunas de Teno and the perfectly situated Planchón volcano behind [figs.37, 42]. In 2006 we also received an unexpected surprise there in the form of *Viola cotyledon* flowering at the base of the stony slope to the left, just before the lake shore [figs.38, 40, 41]. Although not the northern limit of this most common of perennial rosulate violas, as it also occurs a bit south of Santiago, the Teno locality comes close. This species is extremely polymorphic, and can even be highly variable within any given colony. The population here, by contrast, was consistent in form and colour, and very distinctive at that, being much more compact and imbricate than average, and with notably darker flowers. A typical individual from a southern population at the heart of the species' distribution is shown for contrast [fig.39]. Another unusual factor was the lateness of flowering. *V. cotyledon* is at its height elsewhere between the end of November and early January, the latter date being a month and a half earlier than at Teno.

fig.37: End of the trail. A first view of one of the two Teno lakes, backed scenically by the snowclad Volcán Planchón. (1 Mar 2006. ARF)



fig.38: F.& W. 11251 *Viola cotyledon*. The compact, dark-flowered Teno form, which is very uniform. (1 Mar 2006. ARF)



fig.39: F.& W. 10613 *Viola cotyledon*. For comparison, a typical form from elsewhere in the species' range, photographed at Pino Hachado, Araucania Region further south. (20 Dec 2002. ARF)



fig.40: F.& W. 11251 *Viola cotyledon*. As can be seen, the species has large flowers for a rosulate viola, and its petals are bearded. (1 Mar 2006. ARF)

fig. 41: F.& W. 11251  
*Viola cotyledon*. A cut-away of a flower showing the style crest, an important diagnostic feature for Andean rosulate violas. (1 Mar 2006. ARF)



### Fooled yer

As we were about to leave on that opening March day in 2006, we glanced back for one last look at the lake and the volcano. The cloud formation [fig.42] we saw sent an involuntary shiver down our spines. Its resemblance to a plume of ejected steam above the cone reminded us that the twin volcano of Peteroa [map, fig.2], hidden just behind, is very active. In fact, its most recent eruption was in 1998, with a smaller, latest event in 2011. The Andes are still young and restless.

fig.42: A farewell view of a greater expanse of the lake and the Planchón volcano pretending to be in eruption with billowing white clouds. (1 Mar 2006. ARF)





# ---International Rock Gardener---

## Acknowledgements

We offer our gratitude to all those who've enhanced our pleasure by their company, and whose sharp eyes augmented the total of plants encountered in 1972, 2005 and 2013 - the late Martyn Cheese, David and Cecilia Haselgrove, Michail Belov and Helga Petterson.

## Bibliography

- <sup>1</sup>Watson, J.M. (1976) Andes, 1971 and 1972. Part 8; Bull. Alp. Gard. Soc. 44(1): 34-41.
- <sup>1</sup>Watson, J.M. (1976) Andes, 1971 and 1972. Part 9; Bull. Alp. Gard. Soc. 44(2): 98-108.
- <sup>2</sup>Rodríguez, R. & Marticorena, A. (eds.) (2019) Catálogo de las plantas vasculares de Chile.
- <sup>3</sup>Watson, J.M. & von Bohlen, C. (2000) *Mimulus naiandinus*. Bot. Mag. 17(4): 195-201, tab. 400.
- <sup>4</sup>Nesom, G.L. (2012) *Erythranthe naiandina*. A taxonomic conspectus of Phrymaceae: a narrowed circumscription for *Mimulus*, new and resurrected genera, and new names and combinations. Phytoneuron 2012-39: 45.
- <sup>5</sup>Hooker, W.J. & Arnott, J.E.W. (1835) *Pachylaena atriplicifolia*. Contributions towards a flora of South America and the islands of the Pacific. Companion Bot. Mag.1: 106.
- <sup>6</sup>Hooker, W.J. & Arnott, J.E.W. (1833) *Viola pusilla*. Contributions towards a flora of South America and the islands of the Pacific. Bot Misc. 3: 145.
- <sup>7</sup>Hoffmann, A., Kalin Arroyo, M., Liberona, F., Muñoz, M. & Watson, J.M. (1998) *Viola subandina*. Pl. altoandinas fl. silvestre Chile: 66 n° 2, 67 fig. 2.
- <sup>8</sup>Bayer, E. (1987) *Alstroemeria ligtu* subsp. *incarnata*. Gattung *Alstroemeria* in Chile: 156.
- <sup>9</sup>Hoffmann, A., Kalin Arroyo, M., Liberona, F., Muñoz, M. & Watson, J.M. (1998) *Schizanthus coccineus*. Pl. altoandinas fl. silvestre Chile: 140 n° 2, 67 fig. 2.
- <sup>10</sup>Shedder, M. & Shedder, A.-L. (2017) Glories of the Chilean Andes. Alp. Gard. 85(4): 416-417.
- <sup>11</sup>Muñoz-Schick, M. & Moreira-Muñoz, A. (2013) Consideraciones taxonómicas y de distribución geográfica de especies chilenas del género *Tropaeolum* L.: *T. reicheanum* Buchenau ex Reiche; *T. looseri* Sparre; *T. leptophyllum* G. Don y *T. myriophyllum* (Poepp. & Endl.) Sparre. Gayana Bot. 70(2): 345-357. <http://dx.doi.org/10.4067/S00717-66432013000200012>.
- <sup>12</sup>Watson, J. & Flores-Watson, A. (2020) Be sure to call it a type of botanical deed poll, not a dead pool. Recent changes of nomenclature for five Hippeastreae. Int. Rock Gard.125: 15-19. <http://www.srgc.org.uk/logs/logdir/2020May211590085317IRG125.pdf>.



# ---International Rock Gardener---

## --- Plant Portrait ---

### **Campanula tommasiniana    Text Cyril Lafong**

I got *Campanula tommasiniana* from Hythe Alpines in 1993 (now closed) and after growing it in a pot for a few years, decided to plant it in the garden in reasonably moist but well-drained soil in full sun, as it was getting too big. This cold-hardy species has grown very well outside, deserving its Royal Horticultural Society's Award of Garden Merit. It has now reached a stable size of 75 x 75 cm wide and 30 cm high when flowering in beginning of August.



*Campanula tommasiniana* in flower in Cyril's garden. Photo C.L.

The size is variable and there is a dwarf form in cultivation only 15 cm tall. The dark green leaves are narrow, lightly toothed and lance-shaped. The flowers are narrowly bell-shaped, violet and in my plant are 2 cm long. As it flowers in the height of summer, in hotter countries it is probably best grown in a semi shaded place.

Propagation is from cuttings taken in late spring to early summer. Seeds sown in autumn germinate in spring but are not readily available. The seedlings are very tiny, and must be protected from slugs, etc. I found one self-sown seedling near the parent plant last year.

## ---International Rock Gardener---

This attractive species known as the Croatian bellflower or Tommasini bell flower has a very limited distribution in the wild, where it is restricted to the rocky mountains of Croatia's Istrian Peninsula at 600-1,500m where it grows in calcareous rock crevices and cracks. It is named for Muzio Giuseppe Spirito de Tommasini from Trieste, a botanist who is renowned for his work on Dalmatian flora, after whom *Crocus tommasinianus* also takes its name. It is a clump forming herbaceous perennial and a member of the Campanulaceae family. This is an herbaceous perennial plant and after flowering the plant goes dormant and looks almost dead.



*Campanula tommasiniana* looking dead after flowering! Photo C.L.

It is a low maintenance hardy plant, only needing the previous year's grown to be removed in winter/early spring. However, a constant check is required as it is caviar to slugs and snails even out of flower. This is a very garden-worthy campanula that is not grown as often as it should.

The plant can be grown in a big pot long term as long as watering continues throughout the year, increasing in spring and summer and supplementary feeding is given during the growing season. [One such plant of the dwarfer form](#), 18 years old in a 36 cm clay pot was

## ---International Rock Gardener---

shown by Peter Farkasch at the Pershore show in England in July 2016 when it was awarded best-in-show and the Farrer Medal.



Young *Campanula tommasiniana* grown by Wim Boens in Belgium.

*Campanula  
tommasiniana*  
flowering in the  
garden of David  
Millward, near  
Edinburgh.



# ---International Rock Gardener---

## --- Plant Portrait ---

### **Daphne 'Colinton Crown'      Text: Cyril Lafong. Photos: Jon Evans**

*Daphne* 'Colinton Crown' is a deliberate hybrid I made in 2004 between *D. petraea* 'Cima Tombea' (seed parent) and *D. x eschmannii* 'Jacob Eschmann' which itself is a chance hybrid between *D. blagayana* and *D. cneorum* raised in the garden of Jacob Eschmann (Swiss) in 1958.

*D. x eschmannii* 'Jacob Eschmann' is a vigorous, lax, open centred plant that can produce extension growth of 30 cm or more every year. It is semi-evergreen and needs pruning regularly to maintain a tidy habit.



The dwarfing effect of *D. petraea* 'Cima Tombea' produces a more compact plant in *Daphne* 'Colinton Crown' but even so, eventually the plant can reach a metre across and 30 cm tall after 10 years and may need some judicious pruning to keep it in shape. The plant is evergreen and the flowers open white from pink buds and are scented. It is named Colinton after the street where I live.

## ---International Rock Gardener---

I grow the plants outside as they get too big for a pot but the cooler weather in Scotland is not ideal for plants to reach their full flowering potential. In mid and south England where summer temperatures are higher, they flower much better as can be seen from the photos of plants flowering in Robin White's garden in Hampshire, south of England. A plant was shown at the Exeter (south west England) show on 31<sup>st</sup> March 2012 by Robin when it was awarded the best in show and a Farrer Medal (3<sup>rd</sup> photo). It also received a Preliminary Commendation (PC) which is an award given to a new plant of promise. The plant shown was grafted on to *D. longilobata* and grown in a rich peat-based compost and was only two years old, which shows how robust and floriferous it can be under ideal conditions.



Propagation is straightforward. Cuttings taken in summer root in 4-6 weeks. Grafting on to stocks of *D. mezereum*, *D. tangutica* or *D. longilobata* (not bone hardy in colder countries) in the spring or summer is another option.



*Daphne* 'Colinton Crown'

# ---International Rock Gardener---

## --- Plant Portraits ---

### **JUNO Iris - Text and photos : Pavel Holík**

Pre-spring and early spring have a special atmosphere for rock gardeners. I'm sure you know it. Despite the continuing chill of a slowly fading winter, a little warm sunshine now and then gives the illusion of a full-blown spring. We growers run out into our gardens in the idea that spring is already here. But it isn't. Everything is still so undeveloped, the marshy rubble is still frozen in the shade and the stones are more brown than lush, spring green. And we rock gardeners are succumbing to pessimistic sentiments that all is lost, that the losses will be great, and that we'd be better to throw ourselves into collecting minerals or old coffee pots, which will remain motionless on their shelves, regardless of the weather or nature in general. And so I say to you, let the bulbs be praised.

All those snowdrops, crocuses, merendera or bulbous irises. All those beauties that push their bulbs up even through the frozen ground and pour into our our souls the hope that spring will, after all, come soon. Of them all, bulbous irises of the Scorpiris group, are my favourite, which I, a late-middle-aged rock gardener, still call Junos. And most of all, the two Turkish species, *Juno (Iris) galatica* and *Juno (Iris) stenophylla* subsp. *stenophylla*.



*Juno (Iris) galatica*



## ---International Rock Gardener---

Many years ago, I collected on my Turkish campaign on the rocky hillsides above Sivas, in the sandy weathered soil beneath the otherworldly-looking rock domes of Cappadocia or on the nameless, sparsely grassed hillocks along the roadsides plenty of seeds to grow a population of these bulbous late bloomers in my garden, on the south slope, to compete with our humble snowdrops and several species of crocus.

It is pretty stiff competition that they provide. The flowers are the first to come out, before the leaves, and they remind me of glass sculptures, like some artist with a creative passion playing on a rock.

On sunny days there is the bonus of a sweet and intense scent around them, reminiscent of violets.

It seems to me that the nobility and fragility of the flowers is so great that even the visiting bees do not enter into their blossoms as roughly as at other times, but they seem to alight with discretion to suck the sweet, fragrant nectar. If you have a warm hillside with permeable soil and dry, (arid dry) summers like I have in my garden, try to source these Junos. The seeds germinate continuously and the seedlings first bloom after about five or six years. If you're lucky. Well, it takes a while, I know, but from the pictures you can see it's definitely worth it.



*Juno (Iris) stenophylla* subsp. *stenophylla*

## ---International Rock Gardener---

### **JON'S JUNO!     Text: Zdeněk Zvolánek**

Jon is the first name of the great [Alpine Garden Society](#) photographer Mr. Evans and Juno is a beautiful name for the subgenus Scorpiris. It was a cool pot culture photo Jon took recently at the AGS spring show at Loughborough that inspired me to introduce the awesome Turkish [Juno peshmeniana Guner et T.Hall.](#)



Jon Evans' delightful image of the Wallis' show plant.

# ---International Rock Gardener---



Isotype sheet of *Juno peshmeniana*. Kew, Plants of the World Online.

## ---International Rock Gardener---

For the love of the Czech audience I plucked from the tree of knowledge irresistible photos of the full-figured Iris, taken by the clever daughters of the Turkish botanist Adil Güner.



*Juno peshmeniana* with Başak Gardner, known for her association with [Viranatura Tours](#). She succeeded in finding this plant somewhere around 35 km from the eastern Anatolian town of Malatya on a crumbled (heavily eroded) metamorphosed ridge at an altitude of 1950 m. When I searched for this place on Google Earth, I couldn't find it exactly. The plant was exhibited under the misnomer *Iris peshmenii* by the current top English bulb specialists Bob and Rannveig Wallis, who keep this juno in a polytunnel in South Wales. The Czech juno maven, Stanislav Čepička will surely try it out one day on his sharp hot slate slope in Radotín.

I immediately liked the *Juno peshmeniana* (named after Hasan Peshmen, who died in a car crash in 1980 at the age of 41); it's fat and like a painted "impressionista" well saturated with oil (many junos are for me as rigidly bright as painted watercolours). This distinctively coloured species entered sporadic cultivation in the UK in 2005 (it arose after seed collection by the famed seedsman, the Scotsman Jim Archibald). At first it was grouped with the Syrian species *Juno nursariensis*, which has bluish flowers, but the rich cream and strong yellow flowers of the newly described species clearly frame its success. Mr Peshmen's Juno is still quite rare in culture. Malatya is a large Kurdish centre decorated with sweet apricots and wild

## ---International Rock Gardener---

mountains in which we can only wander on the map. The author gleaned more information from a few [internet images](#)! According to one photo, the location is high above a nice asphalt road (possibly Malatya - Elazik). There is no competition from grasses in the loose gravel, and only a few low dry-loving shrubs decorate the nice scenery with the Anatolian mountains in the background.



*Juno peshmeniana* in the Turkish hills, photo by [Işık Güner](#).

## ---International Rock Gardener---



*Iris peshmeniana* by Steve Garvie, in Scotland.

The recently described *Iris peshmeniana* (Güner 2012) only grows around Malatya-Şakşak Mountains in Turkey. Only grows about 10 cm tall with beautiful creamy yellow flowers.



This image is one Kit Strange shared on Facebook of the experimental hybrid of *J. peshmeniana* and *Juno nursariensis* made by Tony Hall. The existence of this hybrid at Kew Garden is also promising.

# ---International Rock Gardener---

## Growing Greener: Hardy Orchids from seed using the Cardboard Method -

Tristan Hatton-Ellis



*Anacamptis laxiflora*

Growing plants from seed is an incredibly rewarding and exciting business. Seed raised plants are generally disease free and can adapt to your garden conditions in a way that

## ---International Rock Gardener---

plants grown from cultivars generally cannot. Moreover, seed raised plants always have the possibility of variation, meaning that there is the possibility of beautiful new forms appearing. Finally, the large number of plants that can be raised from seed means that it is possible to experiment with different locations in the garden to find the best location for the plant - an important consideration for species with more exacting requirements. It's hardly surprising then, that seed exchanges are so popular among alpine gardeners, and why so many growers of all kinds of plants prefer to start with seeds.

However, there is one group for which the obstacles to raising from seed appear formidable: orchids. Whilst many of us may have had the odd *Dactylorhiza* seed itself in a neglected corner of the garden, or in an abandoned seed pot, deliberate cultivation of orchids from seed is much more difficult. The reason for this is straightforward: nearly all orchids (with a few exceptions such as *Bletilla*) have tiny seeds that lack the food reserves to make a new plant. Instead, most orchids depend on a symbiotic relationship with soil fungi to give them their start in life. On germination, orchid seeds produce tiny hair-like structures called rhizoids that make contact with fungal mycelia growing in the soil and draw energy from them. Without this link to the fungus, the orchid cannot grow and will eventually die. Seeds that successfully connect to a suitable fungus will form small tubers termed protocorms, and after a time, top growth.

The conventional solution to this problem is to use laboratory techniques. By growing orchids *in vitro* (i.e. on nutrient agar under sterile conditions), it is possible to circumvent the need for fungi, and instead rear orchids from seed in Petri dishes. A similar approach involves first inoculating the petri dishes with suitable fungal strains for orchid growth. Both methods, however, require microbiological skills and access to a wide range of equipment and consumables, ideally including a laminar flow cabinet. There is also a considerable risk of contamination by harmful bacteria and fungi. These requirements mean that in practice, growing orchids *in vitro* is not a method that is readily accessible to most gardeners.

Surprisingly, another method is available that requires no special equipment other than the contents of the average recycling box! Termed 'the cardboard method', it appears to have originated in Japan in the 1980s, when orchid growers there realised that orchids such as *Ponerorchis cucullata* could be grown symbiotically in a humid environment rich in natural fungi. The initial Japanese methods called for a range of different ingredients, some of them quite esoteric, but having experimented with and adapted the method, I believe that these are



## ---International Rock Gardener---

unnecessary. The approach described here is adapted and simplified from the original methods.



The “not so high tech” consumables for the cardboard method: shredded cardboard; large freezer bags, and empty supermarket mushroom boxes.

# ---International Rock Gardener---

In essence, growing orchids from cardboard requires the following:

- An open compost with high organic matter, but fairly low in nutrients. I find that a mix of 2 parts Melcourt multipurpose compost and 1 part horticultural perlite works well, but I have also had good results in a range of media including spent alpine compost.
- Shredded cardboard to act as a source of lignin. This material is an important food for the fungi that in turn feed the orchids. Brown, untreated cardboard such as the boxes used for parcels is suitable.
- A small amount of material to act as a source of fungal spores. I usually add a little garden soil and a few shredded dead leaves.
- Shallow plastic boxes, such as the trays that supermarkets supply meat, mushrooms or fruit in, pierced with a skewer to create drainage holes.
- Large freezer bags.

First, the potting media needs to be mixed and sterilised. This is important to kill off any soil pests such as fungus gnats and springtails which may consume the protocorms. Simply mix the compost, cardboard and garden soil & leaves together, bag it up and freeze it for 24 hours. Once defrosted, you are ready to sow.

Fill a box with the compost. If desired, it can be useful to sow more than one species in a single box, using strips of cardboard as dividers. If this approach is taken, it is better to try to sow species with similar requirements and germination times in the same box, so that subsequent cultivation is easier.

Orchid seed is tiny, so should be handled with care as it is easily crushed and / or sown too thickly. A good method is to cut out a small square of white paper about the size of a post-it note, onto which a small amount of seed can be tipped from the storage container. Then, seed can be evenly spread by gently tapping the paper over the container, moving it around so that the seed is evenly dispersed.

The optimum depth for sowing seed is still unclear. Many of my sowings have been on the surface, and this method has been very successful. Surface sowing also allows progress with protocorm growth to be more easily monitored.

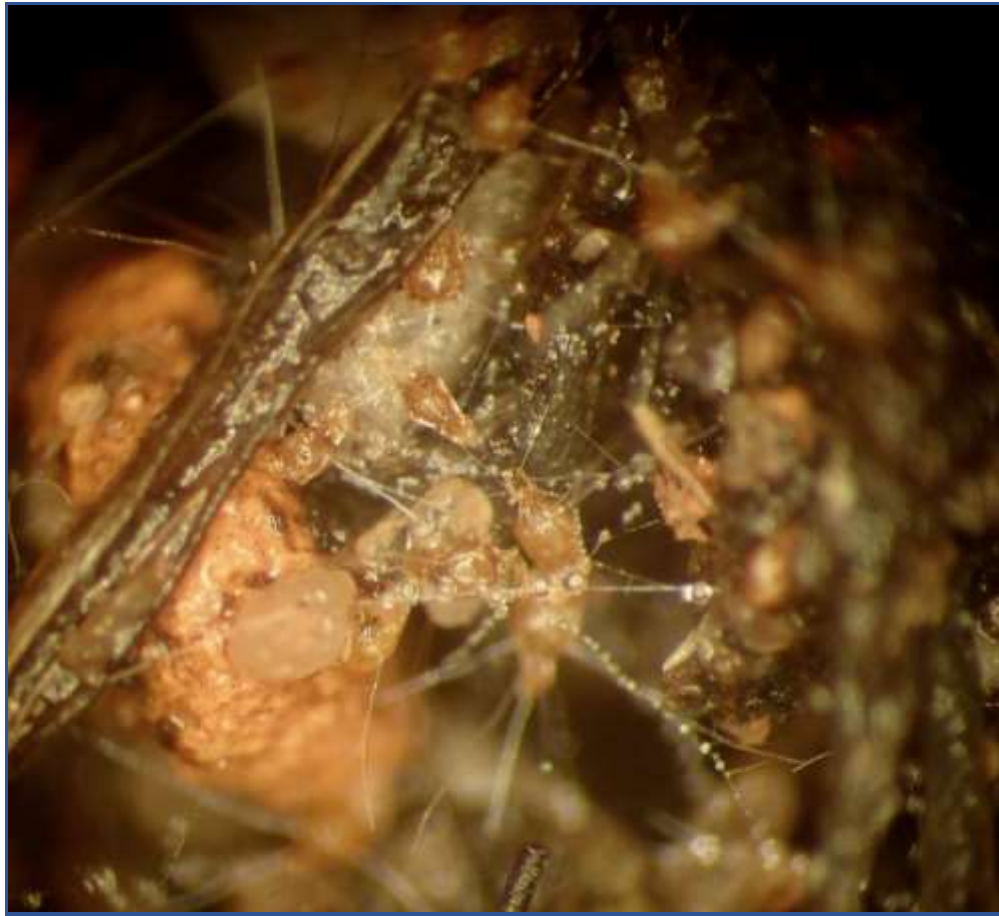
## ---International Rock Gardener---

However, occasionally a very large shoot will emerge from deeper in the container, presumably from a seed that has been washed down more deeply. This suggests that deeper sowing may be beneficial. Recently I have been experimenting with 'double-depth' sowing, where about 2/3 of the seed is sown, then covered with about 5mm of compost, then the remainder sown on the surface. It is too soon to know if this approach will be successful, but I am hoping that it will result in larger, more vigorous seedlings.



Strong fungal growth in a box approximately one week after sowing. Creating good conditions for fungal growth is key to the success of the method, as the fungi in turn enable the protocorms to grow.

## ---International Rock Gardener---



Germinating seed of *Anacamptis morio* one week after sowing, showing the first rhizoids making contact with the fungal mycelium.



Eight week old protocorms of *Serapias cordigera*.

# ---International Rock Gardener---



A good sized protocorm of a *Dactylorhiza* hybrid, approximately ten weeks after sowing.



A sprouting protocorm of *Neotinea tridentata*.

## ---International Rock Gardener---

Following sowing, each tray is labelled with details of the seed, its origin and sowing date. The latter is particularly relevant for this method as there may be no sign of growth for some time. Then, the surface of the compost is mist sprayed to encourage humid conditions, and the box is sealed in a freezer bag and kept in a dark place at around 18-22C until there is evidence of top growth. The freezer bag maintains the high humidity needed for fungal growth and also excludes fungus gnats, which would otherwise find these conditions very attractive.

It might be expected that germination might be slow and take many months, but this is not the case. Certainly, some genera are slow to germinate: *Platanthera*, *Orchis* and *Himantoglossum* for example usually show erratic germination and may take several months for protocorms to appear. *Cypripedium* requires a cold period to germinate, and I am experimenting with the use of the fridge to vernalise the seed. On the other hand, germination of other taxa can be rapid. The star in this regard is certainly *Anacamptis morio*, which can show evidence of germination in less than a week and produce small leaves in as little as eight weeks from sowing. Other *Anacamptis* species such as *A. laxiflora*, *A. longicornu* and *A. fragrans* are similarly rapid. *Serapias* and *Dactylorhiza* are also reliable and reasonably fast germinators, and seed allows access to a wider range of species including *D. purpurella*, *D. calcifigiens*, *D. romana* and even the mercurial *D. sambucina*. Other growers have reported good results with *Liparis* and *Epipactis*. Conceivably, it may also be possible to grow genera on cardboard that are very difficult in vitro, such as *Cephalanthera*. However, I have not tried this one. 'Green podding' - harvesting and sowing slightly under-ripe seed, a practice that is commonly used by growers in vitro, may well improve germination rates for slower and more difficult species.

The one genus that is less easy on cardboard compared to in vitro is *Ophrys*. This seems to need a slightly different fungus to other species, and results can therefore be hit and miss. Seed germinates readily, but the often fails to 'take' on the fungi that commonly grow in boxes. A solution seems to be to introduce a little soil from sand dunes or other areas where *Ophrys* grows naturally, but this is not always easy to come by.

After about a month, it is advisable to check boxes every week or so using a hand lens or ideally, a low power microscope. This allows progress to be tracked, and observing the growth of the fungal mycelium in the boxes and its interaction with the protocorms is fascinating in itself. A problem that can occur at this time is the fungus apparently turning on

## ---International Rock Gardener---

the protocorms and 'eating' them, manifested by some apparently well-developed protocorms turning brown and collapsing. *Dactylorhiza purpurella* and *Serapias* seem rather prone to this affliction, but it can happen to any species. Larger unaffected protocorms can then be carefully removed from the box and potted into fresh compost: at this stage it is probably better not to bag them but simply await leaf growth.

After about eight weeks, it is worth checking for leaf sprouts, especially for fast genera like *Anacamptis* and *Serapias*. Leaves can grow fairly rapidly, and the plants then need good diffuse light (bright sunshine is not advisable initially to prevent leaf scorch). Some growers keep their plants still in the bags at this stage, but I prefer to remove the bags and top dress with a little compost to prevent the protocorms desiccating. From this stage the young plants can be treated in more or less the same way as any seedlings: careful watering, protection from slugs and aphids, and appropriate light and temperature. One grower has had flowers from *Spiranthes bightensis* 'Chadds Ford' in as little as a year, though it is likely that 2-3 years will be needed for most species.



# ---International Rock Gardener---



Twelve week old seedlings of *Anacamptis laxiflora* (top) and *Ophrys helenae* (bottom).



*Orchis italica*.





*Serapias cordigera*

# ---International Rock Gardener---

Although there are relatively few sources of orchid seed, there are some suppliers. By far the best source is the [Hardy Orchid Society](#), which runs a seed bank scheme accessible to members. A few nurseries such as Growild, Plant World and Emorsgate Seeds also supply orchid seed from time to time, although I have not grown from all of these. A few sellers also exist on internet trading websites, though it is necessary to be careful on these sites as seed could be illegally collected or be seed of another species fraudulently sold as orchid seed. Of course, if you already grow orchids, it is worth pollinating them and saving some seed, though it is important to remove most of the pods as some species can exhaust themselves if allowed to produce too much seed.

As a means of making orchid cultivation accessible to any rock gardener, the cardboard method shows great promise. Using this approach, a wide variety of hardy orchids can be grown from seed and tried in different locations in the garden. Since many orchids are relatively small and therefore make excellent additions to the rockery, it is possible that massed plantings of these lovely plants could become a much more common feature in the garden. Growing from seed can also help to improve disease resistance, an important consideration for *Dactylorhiza* at present in view of the widespread impact of 'black death' caused by the pathogenic fungus *Cladosporidium orchidis*. Moreover, specialist nurseries could use this technique to produce relatively large numbers of plants at cheaper prices than in vitro imports. Finally, for conservation projects, cardboard could be used as an alternative to in vitro to produce large numbers of plants that are less likely to be affected by problems commonly seen in captive rearing, such as domestication selection.

In summary, cardboard offers a relatively low cost and rapid route in to growing a variety of hardy orchids from seed, using waste plastic and cardboard, and therefore with minimal cost to the environment. It is also a wonderful education into the little-known early stages of orchid growth. I can strongly recommend anybody with an interest in these plants gives it a try, especially if, like me, you do not have the expertise or resources to use in vitro methods.

## Acknowledgments

My thanks to all those on the Facebook Cardboard Orchids Sowing Group, especially Pieter Prins and Bo Christensen, for introducing me to this fascinating technique and providing useful feedback and advice.

# ---International Rock Gardener---

*Ophrys helenae*



*Dactylorhiza incarnata*

ED.: There are many other orchid threads on [the SRGC Forum](#)– including old ones from 2010 about growing orchid seed on cardboard.