

# International Rock Gardener

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IRG 103 begins with a tour of the flowers found in Sardinia in the later part of April this year by the orchid hunting photographers, Gerrit and Iep Eijkelenboom. They encountered good weather and were able to picture a fine range of plants in bloom. Sardinia is a large Italian island that is popular to visit and has a large range of tourist accommodation so we hope readers may be encouraged to make their own visit. Italian islands are somewhat simpler to access than Chile so perhaps not many readers will be able to see the Chilean flora for themselves. The second part of this issue of IRG features the background article by John and Anita Watson from Chile on the interesting area which shaped

*Alstroemeria piperata* – as was indicated in the [June 2018 IRG issue 102](#) where the species was described.

Cover photo: *Tristerix aphyllus*, one of the scarlet mistletoes in Chile, photo John M. Watson.



*Anemone palmata* on Sardinia

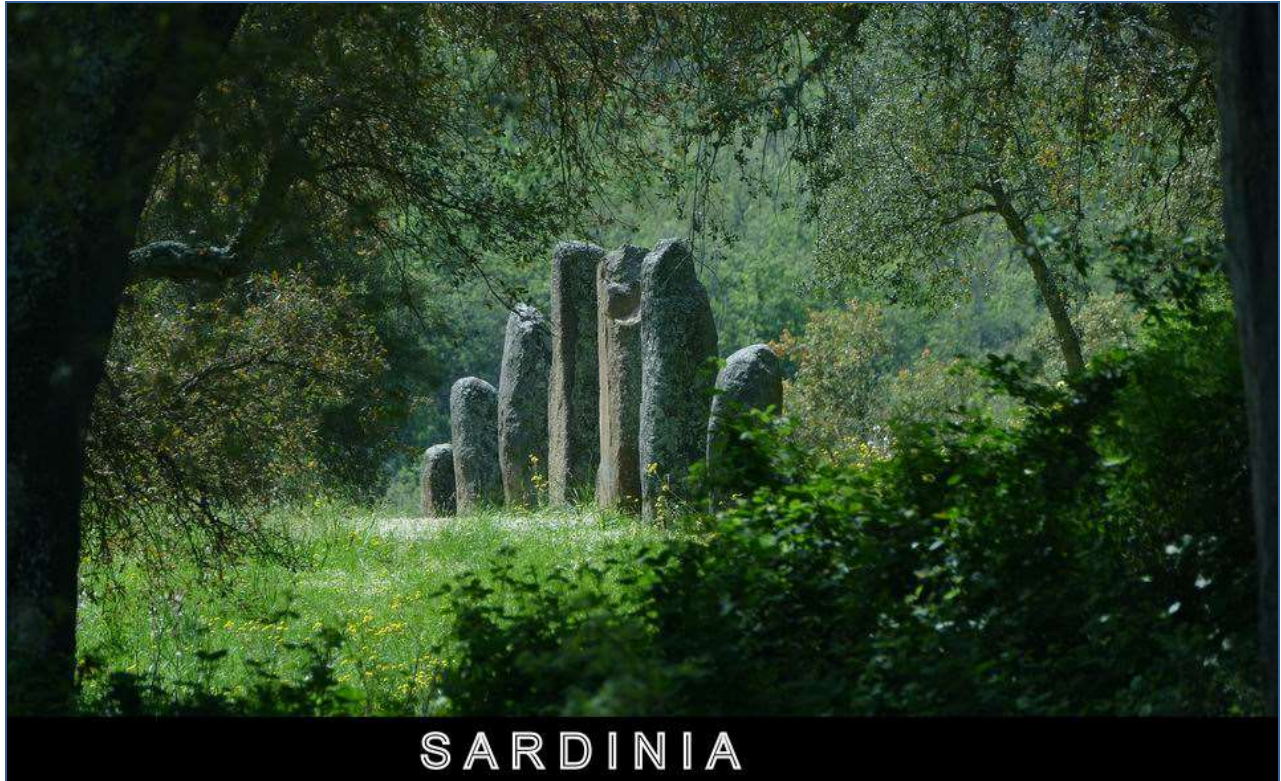
## **Orchids and other species of Sardinia: Gerrit and Iep Eijkelenboom**

From the 14th of April to the 26th, my wife and I visited the island of Sardinia, primarily searching for orchids to photograph. We had chosen the right period. Most orchids were in flower at that time. The weather was fine, with temperatures up to 26 degrees. Very sunny and not too much wind. Ideal circumstances to make pictures.

There are 4 well-known areas with “findspots” – likely locations to find plants. The region around Sassari in the north-west is one of these - but we did not visit there. We started our journey in Domusnovas, a small town at sea-level in the south-west. The climate there is somewhat warmer than elsewhere. After 6 days we moved to the centre of the island, to the Laconi-district: a region with hills and mountains up to 1500m, the Gennargentu. The orchids grow on the foothills at about 800m.

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From here we have made a day-trip to the Dorgali mountains in the east, another orchid-rich area. The impression given of the Sardinian interior is an empty and undulating countryside, with hardly any settlements, farmhouses or villages. Numerous flocks of sheep are to be seen on the hillslopes. A 4-track highway brings you from the airport of Olbia in the north to Domusnovas in the south, 200 easy kilometres. Travelling in Sardinia is a real pleasure.



### SARDINIA

Sardinian menhirs: Large prehistorical standing stones, perhaps for religious purposes.

I have chosen to classify the orchids in groups, like Pierre Delforge did in his books: groups with more or less comparable characteristics.

- From the *Ophrys tenthredinifera* group. ***Ophrys bombyliflora***, below, the well-known bumblebee orchid. It is an extremely small orchid, but very cute. Easy to overlook. No further introduction is needed.



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***Ophrys neglecta***: (means forgotten, neglected, easy to overlook) was a

subspecies of *Ophrys tenthredinifera* years ago, but now it is a taxon on its own. The most important characteristic to keep in mind, is its size. Very small and thickset, many flowers together at the top of the plant. Another feature: the shoulders are raised. The third distinguishing mark: there is a very prominent tuft of reddish hairs above the appendage.



***Ophrys aprilia***: (from the month of April) Endemic to Sardinia and Corsica. The flowers are large, with a long lip and a broad band of hairs around it, somewhat brownish with a tuft of hairs above the appendage. But the most important thing to keep in mind is the red basal field. (= the rounded area between stigmatic cavity and speculum)

***Ophrys normanii***: (after T. Norman, English botanist, who collected the plant) An endemic species to the south-west of Sardinia, which we have also found in the centre of the island. It is a very big flower, often elongated trapezoid. One of the most beautiful orchids, in my eyes. The sepals are rounded, important to keep in mind when you are on Sardinia, because of the resemblance with *Ophrys chestermanii*. The latter has smaller, even pointed, lanceolate sepals. *Ophrys normanii* appears to us in different colours, rather confusing. Mostly you will see almost dark colours, but also with yellow on the lip, so you may think it is an *Ophrys tenthredinifera*. Another important feature is the complete marginal band with long hairs, often honey-coloured, but also greenish-yellow, depending of the colour of the lip margin.

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These four images:  
***Ophrys normanii***

- From the *Ophrys bornmuelleri* group: ***Ophrys chestermanii***. (after D. Chesterman, English botanist) This Sardinian endemic has a large and always dark coloured velvety lip, trapezoid or quadrangular. The sepals are narrowly triangular-lanceolate. There is a complete band of dense hairs, crimson-brown. On the shoulders you see two small conical or rounded swellings, **yellowish on the inner face**. The speculum is reduced, in the form of a thickened **H**, surrounding the dark basal field like a necklace. *Ophrys chestermanii* and *Ophrys normanii* are sometimes difficult to distinguish, especially when they have a dark lip, so the key is: *O. chestermanii*: pointed sepals, innersides of the swellings are yellow. *O. normanii*: the sepals are rounded and the swellings are dark, inside and outside.

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All on this page:  
***Ophrys chestermanii***

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***Ophrys annae***: (after Anne Devillers, daughter of the author of the description) This orchid is an endemic species to Sardinia and Corsica. The dark-brown velvety lip is quadrangular-rounded to trapezoid, with small swellings, divergent. There is a band with pale-reddish hairs around the lip. The bluish-grey speculum, is broadly edged greenish-yellow, surrounding the basal field like a necklace, covering the swellings, extended by lateral branches, and a complete distal ocellus (= an "eye" beneath the middle of the lip) This is the only specimen we have found.



***Neotinea lactea***: (lactea = milky, the colour of the flower, the milky orchid) easy to distinguish from *Neotinea tridentata* by the green veins in the hood. On the picture you see a remarkable green coloured specimen.

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***Neotinea maculata***, grows together with ***Cyclamen repandum***. This cyclamen is the spring flowering species. Every place where there is some shade is occupied by this cyclamen, in uncountable quantities.

Below:  
***Allium triquetrum*** is a bulbous species of course and, like cyclamen, present on Sardinia in large numbers.





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*Allium roseum*, which we found only once. Perhaps an early flowering one.



The rare and endangered *Allium parviflorum* grew on a few places between orchids. It is on the red list of the IUCN. A small plant with linear threadlike leaves and white flowers, cup shaped in bud, formed with a red stripe on it.

*Romulea ligustica* below: Occurs in Italy in Liguria (Genoa), Sardinia and also Corsica. A species with a short white stamen and a short white pistil. Sepals and petals are pointed at the end.



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***Romulea requienii*** is endemic to Sardinia and Corsica. It is a species with a fabulous colour, dark purple. The stamens are short and yellow, the pistil is also short and yellow. The sepals and petals are rounded at the top.



This, below, is a remarkable picture. I have sent it to Wim Boens in Belgium for determination and he noticed the particular detail of the middle flower. He suggests it is the natural hybrid between the two parents, on the left (*Romulea ligustica*) and on the right, (*Romulea requienii*). The name is ***Romulea (x) limbarae***. The characteristics are: A long white pistil and long white stamens. The shape of sepals and petals are somewhere between the two parents. Some botanists consider it as a species on its own and other as a hybrid. It is subject to further investigation. Many thanks to Wim for his contribution. [Ed. Perhaps of interest to reader: [Fitosociologia vol. 48 \(2\) suppl. 1: 13-20, 2011](#)]



Left to right – *Romulea ligustica*, *R. x limbarae* and *R. requienii*

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An almost stemless species is the endemic (Sardinia and Corsica) ***Ornithogalum corsicum***, with pure white flowers and hardly visible green veins.



Another bulbous plant is ***Narcissus tazetta***: Thousands of flowering plants growing in a vast meadow was a wonderful spectacle.



***Leucojum aestivum*** grows from a bulb with narrow leaves in damp meadows and along streams. The flowers are like snowdrops, white with a green spot. We all know this species as a fine garden plant.

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A pleasant surprise was the presence of ***Pancratium illyricum***. It is native to Corsica and Sardinia. It is a nice bulbous perennial with very long leaves. The flowers, clustered in umbels of about 12, are white, very fragrant.



- From the *Ophrys incubacea* group: ***Ophrys incubacea***, right (means: with a small size). This well-known orchid occurs in many parts of Europe. It is a rather small flower, directed forwards, with a blackish velvety lip and two large pointed swellings. The speculum has a large **H**. The most remarkable feature is the submarginal band of long, brown or blackish-purple hairs.



- From the *Ophrys argolica* group: ***Ophrys morisii***, below. (after G. Moris, an Italian botanist) The *Ophrys argolica* group with its characteristic marking on the second half of the lip. This *ophrys* is endemic to Corsica and Sardinia. An abundant species. Often there is a thick and bluish **X**, but also a horseshoe and many times an oculus. The marking is to be found mostly on the second half of the lip.



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Many orchids have been reclassified in the last couple of years. Particularly those from the genus *Orchis*. *Orchis morio* became *Anacamptis morio* and now it is *Herorchis morio*. *Orchis papilionacea* became *Anacamptis papilionacea* and is called now *Vermeuliana papilionacea*. Is this the last change? Let us hope so - but I doubt it. Whatever the case may be, I will use the new names.



***Herorchis longicornu***: (means: cornu= horn: length of the spur) This is a member of the *Herorchis morio* family. Important to know, because of the major feature, the green veins in the sepals. This is one of the most widespread orchids on Sardinia and Sicily. The species occurs in the most stunning colours From deep purple to pure white forms (Hypochromic). Please notice the fine red form (right).



***Vermeulenia papilionacea***: (after P.Vermeulen, Dutch botanist) On Sardinia the variety ***vexillifera*** occurs and is the dominant variant. They are large plants, with a red hood and strong lines on the labellum, no dots.



The other species is the variety ***rubra***. A red hood and a pale labellum without visible stripes.



We also found a remarkable variety of the 'rubra', with an orange colour: ***Vermeulenia v. rubra, forma intensa***.

I am not a fan of showing hybrids. But on the island of Sardinia remarkable hybrids occur, in many places in substantial quantities. Many reports of other orchid searchers confirm this. So, they form a stabilized population and I think it is only a matter of time until this hybrid is described. Two different hybrids occur: ***Vermeulenia papilionacea v. vexillifera x Herorchis longicornu***, below left. The strong markings on the lip comes from the vexillifera, the closed helmet from longicornu.



***Vermeulenia v. rubra x Herorchis longicornu:***  
The unspotted lip comes from rubra, the closed helmet from longicornu.

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Fortunately there are still orchids with the name **Orchis**. On Sardinia we can find.....

- From the *Orchis mascula* group: **Orchis brancifortii**. This orchid occurs in the Dorgali region in the east. This district is an orchid-rich region. Visitors, who come to Sardinia for the orchids should certainly visit it. We did so, if just for one day.



**Orchis brancifortii** is endemic to northern Sicily and eastern Sardinia. It is not easy to find this one because it is often hidden in and under bushes. The two dark-red spots on the lip are clearly visible, other dots are hidden in the spur entrance.



**Orchis provincialis**. (named from Provence, France.)

This widespread species occurs from Spain to Greece. Many red spots on the centre of the lip are the most important characteristic.



**Orchis ichnusae**  
(= the ancient name of Sardinia)

right and below left, is endemic to Sardinia. We have found it in large numbers in the very south and the mountainous centre of the island. It is a lovely orchid, every time you see it in the field, you must study it, because of its attractive colour and the elegant shape. It is easy to recognise, because there is no resemblance with other orchids on the island.



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- From the *Ophrys lunulata* group:

***Ophrys panattensis***. On a day-trip to the Dorgali mountains in the east, we were lucky to find this extremely rare species. It was growing individually on a mossy bank, amid a damp and evergreen oak forest. The sepals and petals are concolorous; pink. The lip is obovate, with distinct basal swellings. There is a complete band of dense hairs, then a broad yellowish hairless outer margin.



- From the *Ophrys tetraloniae* group: ***Ophrys conradiae***, above. (after M. Conrad, a Corsican botanist) A late flowering species. From mid April to mid May. It is a scolopax-like species, with a small lip. Sepals and petals are green. the sides of the lip are turned down. The speculum is near quadrangular, edged whitish, with a reduced central oculus (not on the picture).



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***Dactylorhiza insularis***: (insularis = island) This species can be found in open woodland in acidic soil. On the base of the lip there are one or two small red spots.

In the same habitat ***Cephalanthera longifolia*** can be found.(right)



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***Cephalanthera longifolia***, a pure white species, grows in many parts of Europe. The white lip is yellow at the end. This orchid is an elegant one and its appearance is impressive.



In the same habitat, in the mountains of the Gennargentu, we perceived between the trees a glittering of pink, It seemed to be a paeony. Just one individual, hit by the sun: ***Paeonia mascula***.

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*Ophrys speculum* also occurs on Sardinia.



*Orchis anthropophora* is not easily confused with other species.

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This is ***Morisia monanthos*** in the wild. Many of us know this plant as an excellent alpine garden plant. But few of us have seen it in its natural habitat. It is native to Sardinia and Corsica. During our search for orchids, we suddenly noticed it. What a surprise! I now know it needs to grow in a very wet location. The plants we saw were growing in swampy grassland. A plant that can be propagated by root cuttings.



This bright yellow daisy-like flower is not a daisy, but ***Anemone palmata***.

The anemone features during the spring-time explosion of wildflowers on Sardinia, just like ***Papaver rhoeas***, together with the ruins of the old Roman town of **Nora**.



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The ruins of the old Roman town of **Nora**, with its mosaics. After many days of searching for flowers, it is good to do something completely different. Sardinia is renowned for its Nuraghes. In the Bronze Age, about 3000 years ago, numerous towers were built on Sardinia. There is no consensus about their function. The most well-known Nuraghe is **Sa Nuraxi** (below).



The remains of the **Temple of Antas**, an ancient Carthaginian-Roman temple in the south-west, are impressive. The area was colonised for the mineral deposits in 500BC by the Carthaginians, and then rebuilt by the Romans in 200 AD.

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It is astonishing that after so many years some Roman structures are still in operation, like this **Roman bridge**, The local population makes use of it to cross the river with their trucks.



Now we come to the difficult, demanding and ever expanding number of species of the *Ophrys lutea/fusca* complex. Many controversial members of this group occur on Sardinia. I have tried to make this clear for the reader and visitors to this island.

- From the *Ophrys lutea* group.



Fortunately, most of the species which are to be found have been arranged under the name *Ophrys lepida*, above (means charming). The common characteristic is that the brown centre of the lip extends to the side-lobes and the tip, where it fades from brown into orange and finally into yellow. The species with a clear demarcation of the brown centre of the lip, which colour does not extend towards the side-lobes and the tip, is *Ophrys phryganae* (below) in my opinion and not *Ophrys corsica* or *Ophrys sicula*. But, I must admit, there are many intermediate forms, which make it problematic to distinguish them properly. The pictures of *Ophrys lepida* and *Ophrys phryganae* were taken in the same area, the vast meadows on the Col d'Ortuabis on 20 and 21 of April 2018.



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- From the *Ophrys funerea* group: ***Ophrys funerea***. (from funeral indeed, maybe because of the gloomy colours) This plant, endemic to Corsica and Sardinia, has an elongated lip, not very convex longitudinally. The lateral lobes are mostly strongly curved down and under. The speculum is elongated, shiny with two pale crescents. The tip of the lip is short.



This picture shows us an extraordinary phenomenon. A bee has landed on the lip of ***Ophrys funerea***. It has been lured by pheromones from the flower and after approaching the orchid, by optical deception. He thinks it is a willing female. The photo shows clearly, what we call pseudo-copulation.

***Ophrys zonata*** resembles *Ophrys funerea*, but the lip is more convex longitudinally and transversally. The tip of the lip is also short, but curved down. This endemic orchid is a little bit larger and its flowering season is somewhat later.

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Right: *Ophrys zonata*

Below: *Ophrys ortuabis*



*Ophrys ortuabis* is an early flowering species. Known and named for its *locus classicus*, the Col d'Ortuabis near Laconi in the centre of the island, it is a rare plant. Despite its early flowering time, we did find some plants. Sometimes not in good shape, due to the hot and dry weather. The lip is horizontal and flat. The side lobes are spreading. The speculum mostly not so bluish as on the picture, The edges of the lip are yellow, mostly broader yellow than on the photo.

- From the *Ophrys iricolor* group:

*Ophrys eleonora*, Named after Eleonora of Arborea, a national hero of Sardinia. She lived in the 14th century). It is a tall flower. The many colours of the lip reminds us of *Ophrys iricolor*, the rainbow-orchid. This orchid is easy to determine because the underside of the lip is purple to orange, below.





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***Serapias parviflora*** The lip is small and is turned back to the stem.



Right: ***Serapias lingua***



***Serapias lingua*** This orchid often lives in large groups. The lip is long, often yellowish, salmon-pink or reddish.

Below:

**Iep and Gerrit** – photo by Massimo Bertocci, the owner and host of the B&B I Menhir, San Mauro, who was kindly showing us the monuments in the vicinity.

Books:

Pierre Delforge: Orchids of Europe, North Africa and The Middle East. 2006

Pierre Delforge: Orchidées d'Europe, d'Afrique du Nord et du Proche-Orient. 2016.

Website: [Orchids of Britain and Europe](http://www.orchids.org.uk).

Website: [Orchids of Europe and the Mediterranean](http://www.srgc.net)

All other pictures by the author.



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## ---Meanwhile, in Chile---

### THE RICHLY DIVERSE SUBANDEAN FLORA OF THE CHACABUCO PASS AREA IN CENTRAL CHILE, INCLUDING ITS LOCAL RARITIES : John M. Watson and Ana (Anita) R. Flores

#### PREFACE

Our new species *Alstroemeria piperata* was published in the [June 2018 issue of the IRG](#). We describe the wider context of its location in this follow-up, which encompasses the significant biodiversity of the pass across the Cordón de Chacabuco, and also the sector to the west containing a unique patch ecosystem. This latter is the exclusive habitat of *A. piperata*. It was only discovered and first explored botanically in late 2013, since when its extreme importance for the precarious rarity of certain of its flora, and the vital need for their protection by some form of conservation has become undeniably apparent.

#### JUST UP THE ROAD

But for the convenient road tunnel cut under the former Cuesta Chacabuco pass we should be soaking up much more of the flora described here each time we drive to Santiago and back from our Chilean home. As it is, nowadays the old winding, scenic higher route is only used by a small trickle of vehicles on business whose drivers want to avoid the main highway toll, as well as high-day and holiday folks wayside picnicking. Those such as us with an interest in the natural history up there make planned visits for that purpose.



fig.1 The geographical setting in central Chile. Pale blue circle our home. Red circle, the Chacabuco Pass.

To set the scene, we are surrounded on all four sides by mountains, with our homestead set in the open rural countryside of a small centre of population, Calle Larga ('Long Street'), at one side of the

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extensive mid-Aconcagua river valley. It lies just to the southwest of Los Andes [fig. 1]. Los Andes is significant for being the pivotal centre in Chile of the main pass directly to our east along the upper river valley into Argentina at Portillo where, incidentally, an attractive high Andean flora may easily be accessed. The valley and road continue down alongside the transversal high spur to the north to the Pacific coast, cutting through the coastal range to our west. Other than those main outlets a third, the low pass featured in this account, crosses the other transversal spur which encloses us to the south.

The crown of the pass (1300 m) is 530 m above us and a mere 13 km (eight miles) further to the SSW as the condor flies (sorry - no crows in Chile!) [figs. 2, 3] In fact the earliest springtime floral interest actually begins much nearer to us, at around half that distance, where the steady drive up the pass begins [figs. 4-8].



fig.2 A **map** of the pass sector. Its high-point lies ca. 1.75 km to the SW of the regional border, just within the Santiago zone and slightly beyond lower LH corner.

fig.3 **The Chacabuco Pass** as seen from our garden. It lies to the south and we have to cross it on our way to and from 'The Big Smoke', Santiago. 12 May 2013. (JMW)



God, briefly and Mammon permanently, make their presence felt where the flowers grow. Without doubt the elimination of the vast majority of road traffic greatly benefits the flora and fauna of the original and only former pass and its surrounds. Even so, once a year a religious pilgrimage on foot takes place from Santiago to the sanctuary of a local saint at the northern base of the pass. It crosses over via the old historic Chacabuco thoroughfare. Thousands of young people participate in the trek, which takes place in October, at the height of the flowering season. Although the organizers have recently - and at last - taken responsibility for clearing up the eyesore of discarded 'holy' rubbish, it isn't difficult to imagine the temporary damage of trampling and picking involved. Also on our side of the pass is a recently constructed high-rise casino. However, apart from being a bit of a blot on the otherwise scenic landscape, it and its addicts keep themselves very much to themselves.

Before construction during 1972 of the tunnel over 2 km long through which the modern Ruta 57 runs, the old pass formed an integral part of the major direct connection between Argentina and Santiago via Los Andes. Consequently, its immediate environs became reasonably familiar to botanical science (e.g. Leybold F. (1863) On Tecophilaeaceae. A new natural order of

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monocotyledonous plants. *J. Bot.*, 1, 9–10). As we shall see though, nothing was known until the present of the remarkable flora just a short distance to the west beyond the road.



Left above: fig.4 In good years early spring awakens for us with swathes of *Leucocoryne odorata* and *Oxalis laxa* seen from the road as we drive up the pass. 1 Oct 2015. (JMW)

Right above: fig.5 A dense carpet of *Oxalis laxa* following a rainy (El Niño) winter. 7 September 2014. (JMW)



Left: fig.6 T'is a pity the showy *Oxalis laxa* is an annual. Even so, it might have a place in cultivation. If so, well worth a try from seed. 20 Sept 2014. (JMW)

Above right: fig.7 An early panorama of *Leucocoryne ixioides* and *Oxalis laxa* by the main road on the drive up the pass from our home. 1 Oct 2015. (JMW)

Right: fig.8 *Leucocoryne ixioides*, the first species we see in flower on the pass, and the nearest to us. 1 October 2015. (JMW)



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## EARLY PROMISE

"April 22nd. —The country remained the same, and was extremely uninteresting. The complete similarity of the productions throughout Patagonia is one of its most striking characters. The level plains of arid shingles support the same stunted and dwarf plants ..." wrote Darwin in 'Voyage of the Beagle'.

The relevance of this to rugged, mediterranean central Chile may not seem immediately apparent. However, from a privileged later perspective any interested rock gardening specialist is aware of that as one of the young Darwin's very few blind spots. He should have realised by comparison that 'lifeless' midwinter English woodland hardly announces it will be smothered in wall-to-wall bluebells before long. How different would have been his account had he visited Patagonia on November 22nd instead! Thus a visitor making a short midsummer stay in Chile would hardly credit the change to come in the sere brown, burnt-up hill slopes with their skeletal aestivating acacias beside the **Chacabuco Pass**. This is the prolonged other face of a landscape transformed by a short springtime burst of verdant green annual grasses and flowery carpets of annuals and bulbs [fig. 4]. These gladden our hearts, for we know them as the overture of the glorious concert to come.

The panorama is dominated from early September to the beginning of October by the prolific yellow of ***Oxalis laxa*** [figs. 5, 6], and the scented white stars produced in clustered umbels by ***Leucocoryne ixioides*** [figs. 7, 8]. These reach their zenith beside the present main road just before the main floral show begins on the old route after the turn-off to the right by the casino, a square, glass high-rise which looks as though it's been plonked there from the centre of some city! In fact the upper pass is occasionally even covered then by short-lived snows [fig. 9].



fig.9 The crown of the **Chacabuco Pass** after a snowy night during the equivalent month to Feb in the Northern Hemisphere. 15 Aug 2009. (ARF)



fig.10 When any snow and other serious winter weather is past, the little annual rosulate ***Viola pusilla*** is the first to brighten the pass-top.16 Sep 2004. (ARF)

#### ALL THE WAY TO THE TOP

One of the very first welcome heralds of spring on the very crown happens to belong to our main speciality, the Andean/Pacific violas. ***Viola pusilla*** Poepp. [fig.10] is a common and highly variable little annual found here and there below the main Andes from one end of mediterranean Chile to the other. Here it begins as early as September, when still at risk of a light covering of temporary snow [fig. 9].

But we're jumping the gun in place if not in time. We should begin at the base of the pass in October and the tail end of September [fig. 11] with two familiar *Tropaeolum* jewels. One, ***T. tricolor*** [figs. 12, 13], has for long delighted the horticultural world, while ***T. azureum*** [figs. 11, 14, 15, 16] is of more recent introduction, but firmly established by now. We've never encountered more than the one vigorous specimen of the former at this location, as illustrated here, but the violet-blue species crops

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up in places all over the pass area. As well as providing seed for us to distribute once upon a time, its attraction for butterflies has resulted in the best of our many shots of the ubiquitous southern painted lady [fig. 16], the more abundant of Chile's only two vanessids.



Above left: fig.11 Up the pass with visiting Argentinian botanists. Friend Roberto Kiesling snapping *Tropaeolum azureum* (arrowed). Neighbour Helga in foreground. 21 Oct 2015.

Above, centre: fig.12 *Tropaeolum tricolor* is as common as *T. azureum*, but not on the pass. This one at the base of the old pass is the only one seen there. 21 Oct 2015. (JMW)

Above right: fig.13 *Tropaeolum tricolor*, another hummingbird pollinated species, and the most successful of its section, ranges from Antofagasta to Los Lagos - 2000+ km! 23 Oct 2010. (JMW)



fig.14  
*Tropaeolum  
azureum* (F&W  
11700) is seen  
on hills and in  
the hedgerows  
all around us, to  
our unbounded  
delight. 15 Oct  
2008. (JMW)

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Above left: fig.15 We can never get enough of *Tropaeolum azureum*! It's particularly abundant on the higher sections of the pass. 27 Oct 2015. (JMW)

Above right: fig.16 Our common southern painted lady, *Vanessa carye*, on *Tropaeolum azureum*. These butterflies swarm in favourable years. 27 Oct 2015. (JMW)

Right: fig.17 *Stachys* is widespread in Chile with 11 endemics, 1 native, all similar. The less common *Stachys philippiana* here is confined to the central regions. 21 Oct 2015. (JMW)

On our way up to the summit of the pass we encounter a number of herbs and annuals, some more noteworthy than others. The latter include *Fumaria parviflora*, a minor introduced weed, while *Stachys philippiana* is a worthy endemic representative of the perennials. Here, both are growing together [fig. 17].

Towards the very highest point, one of the showiest and most desirable from a horticultural point of view has its largest population of the three known to us at different localities on the pass. As can be appreciated, *Placea arzae* [fig. 18] is very closely related to *Myostemma* (aka *Rhodophiala* and before that *Hippeastrum*), but differs morphologically from these by its dark, well-developed little daffodil-like 'trumpet' and quite different perianth markings. Its misfortune is to be





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in flower at the very time the religious pilgrimage passes through, and to grow where many participants camp or stop to take a bite to eat. No need to comment further except to say the only possibility to get a photo of it there is before that event! We've tried on a couple of occasions to establish it in our nearby garden, providing apparently similar soil conditions, lighting and watering: but it has proved a temperamental blighter, which flowered for us grudgingly and then gradually petered out. Perhaps the finest growers in our plant societies might have better luck.



fig.18 What bulb-growing enthusiast wouldn't want to lay their hands on spectacular *Placea arzae*!  
22 Oct 2015. (JMW)

Now we reach the very top with its panoramic view down and along towards Santiago, the main tunnel road below and the snow-clad high Andes stretching away to the south [fig. 19]. Late October to mid-November is the time to catch it at its flowery best. One particularly notable and reliable yearly feature beside the recently paved narrow road is a raised field of countless *Olsynium scirpoideum*, the most important of three such pink sisyrinchium-related representatives in Chile [figs. 20, 21]. But

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it's far from alone. Among a few more of the less profuse, we might single out discreet little *Dioscorea humifusa* var. *gracilis* [fig. 22] which, together with sand-loving *D. fastigiata* of the Atacama littoral, qualifies as by far the dwarfest and neatest of its tuberous, monocot genus. We've established the quite short-stemmed *Alstroemeria pulchra* subsp. *pulchra* [fig. 23] in our garden, and it even seeds around close to the founding clump. The RHS Plant Finder (book or [online](#)) indicates that one or two nurseries in the UK offer it for sale. Up on the Chacabuco Pass a string of small colonies, both pink- and white-flowered, decorates the roadsides.



Above left: fig.19 A view from the crown of **Chacabuco Pass**, looking south towards Santiago. Snow-clad Andes can be seen in the distance. Sep 1997. (JMW)

Above right: fig.20 A springtime field full of iridescent *Olsynium scirpoideum* at the top of the pass in a heavy El Niño rainfall season. 21 Oct 2015. (JMW)



Above left: fig.21 A well-filled individual inflorescence of *Olsynium scirpoideum* photographed nearby at another time and place. 28 Sep 2014. (JMW)

Above centre: fig.22 *Dioscorea humifusa* var. *gracilis* at the crest of the pass. A dwarf, non-climbing variety, possibly worthy of marginal cultivation. 22 Oct 2015. (JMW)

Above right: fig.23 *Alstroemeria pulchra* subsp. *pulchra*. Here the pink form as mixed with albinos along the upper section of the pass. 23 Oct 2015. (JMW)

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fig.24 A handsome **unidentified caterpillar**. They were seen in some quantity at the top of the pass feasting on buds and flowers of ***Alstroemeria pulchra***. 15 Nov 2015. (JMW)

Chomping away at some of the alstroemeria buds and flowers one prolific flowering year of the El Niño (ENSO) climate phenomenon was a plague of handsome **caterpillars** [fig. 24]. There would have been no hope of taking any of those alstros to a flower show after they had finished their meal! Our recourse for identifying most Chilean insects and the like not represented in the two guides on our shelves (butterflies and a survey of insects in general) is Google Images on the Internet. Unlike in Britain, Europe and North America, there are no other books for the interested general naturalist which cover these small beasties. However, some professional entomologists and keen amateurs do post up photos and idents, especially of more conspicuous arthropods. But in the case of these caterpillars we drew a complete blank.



fig.25 The Chilean mockingbird, ***Mimus thenca***, which serenaded us sweetly while we worked - and probably ate some of those caterpillars too. 9 Nov 2010. (JMW)



There is much interesting wildlife there, and a **Chilean mocking bird, *Mimus thenca*** [fig. 25], whistled musically while we worked. Doubtless it had those tasty-looking caterpillars on its menu, provided they are edible. A mass of starved-looking annual ***Leucheria tenuis*** grew in the most arid and unpromising fan of rock gravel by the pass-top roadside [fig. 26], and close by lurked ***Liolaemus lemniscatus*** [fig. 27], one of Chile's many lizards, which inhabit every dry niche from deepest Patagonia to the high Altiplano at the border with Peru and Bolivia. Even more so than for most of its kind, infinite patience was required to capture it on camera. Such was its nervous disposition that it never strayed more than a short sprint from its rock cover while we were there, and frequently shot back underneath it. Such caution is well justified, as

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birds of prey may frequently be seen soaring gracefully overhead, and small reptiles are a major element of their diet. On that tack, on three occasions we have been lucky enough to observe flocks of up to eight condors circling low above the ridges, doubtless indicating that one of the local herdsmen's goats or sheep had come to a sticky end. One even flew close and alongside the jeep, as though escorting us. Alas, no camera was at the ready.

Left: fig.26 A constellation of ***Leucheria tenuis***, compact and almost leafless in hard, rocky debris below a roadside outcrop. 23 Oct 2015. (JMW)



Above right: fig.27 This wary ***Liolaemus lemniscatus*** wasn't too sure about having its picture taken and soon skedaddled. 9 Nov 2010. (JMW)

Back to the plants in question for a last round-up at the top. Returning to those which prefer crowds of their own company, we have the magenta-flowered, annual ***Montiopsis trifida*** with its shimmering, silvery halo of silky hairs around the calyx when seen against the light [fig. 28].

Right: fig.28 ***Montiopsis trifida*** never looked more attractive than when seen at eye-level by the roadside, growing through dwarf annual grasses. 22 Oct 2015. (JMW)



Finally, just over the top on the south side is a fine, vigorous colony of ***Loasa prostrata*** [fig. 29], like nothing you've ever seen in the Northern Hemisphere. It gives the impression of one of those toys which are launched up into the air, then propellor back down slowly like a parachute. One of the

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latest to flower, it peaks in mid-November. Even further down on the southern, Santiago side, and much earlier, we discovered a meadow plateau high on a steep roadside bank, where a large population of rare *Leucocoryne alliacea*, with its anorexic white perianths, flourishes [not illustrated].



Left: fig.29 The exotic-looking *Loasa prostrate*, with its propellor of petals, may sting. It occupies one site high on the Santiago side, where it is plentiful. 10 Nov 2010. (JMW)

### GO WEST, YOUNG MAN

It was not until amateur naturalist **Carlos Celedón** from nearby Los Andes contacted us in 2013 about a viola he had discovered in the pass area, as described in [The Rock Garden N° 133](#), that we first took the dirt road branching off at right angles. Little could we have guessed then what excitements it held in store. At the time Carlos was not known to us; the introduction came through a mutual botanical contact. He subsequently became a great friend and invaluable independent explorer of the region, who discovered two new species and enabled us to add three or four more. None are much further away than 20 km from our home, if that. Tragically, while we were in England visiting our family in 2015, Carlos, only in his mid-40s, died suddenly of a heart attack; a great loss to botany and above all for those of us to whom he was near and dear.

A different floral interest begins in earnest as soon as the beginning of September, a mere few hundred metres after the junction from the pass road. It is located at the base of a short, sharp climbing drive which winds up a hillside of the shallow west-sloping valley cupped between the two parallel capping ridges of the Cordón de Chacabuco. That's when and where the long, scarlet tubes, co-evolved with hummingbirds, of our second fine amaryllidaceous bulb, *Phycella cyrtanthoides* [figs. 30, 31] cannot fail to catch the eye of any but the red colour-blind! The all-red form used to be known as *Hippeastrum igneum*, and the perianths with the pale base were regarded as a different species, *Hippeastrum bicolor*. In taxonomy the names they always are a-changin'!



Far left: fig.30 *Phycella cyrtanthoides*, our second, much rarer bulbous species here, has 19 former aliases, *Hippeastrum igneum* being perhaps the most familiar. 7 Sep 2014 (JMW)

Left: fig.31 This form of *Phycella cyrtanthoides*, pale towards the base, was previously recognised as a distinct species, *Hippeastrum bicolor*. Not now! 14 Sep 2014. (JMW)

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A bridge over a dry wash at the low point near where the road begins, which is actually paved for a very short distance, holds another ineradicable memory for us. Anita suffers from ophiophobia, an irrational fear of snakes. Of course, such phobias almost invariably lead to encounters with the object of dread! In mid-June 2002, the height of what passes for winter here; we were indoors in the warm, when Anita let out a strangled scream. "There's a snake in the house! It came out of the kitchen and slid along the hall behind the woodstove." Of course, I supposed the poor dear was suffering from some kind of hallucination. A snake? We'd never seen one in central Chile, let alone in the garden. To humour her I made a show of examining the small gap behind the stove, and the metal plate that it is mounted on, which is just proud of the floor. And yes, I saw the tip of a snake's tail, no less! Well it took us all hell to winkle it out unharmed. I grabbed it by the tail (Chilean snakes can't bite humans anyway), eased it gently out from under the plate, and popped it into an empty plastic dustbin. Cutting a long story short, we decided to release our *Philodryas* (syn. *Dromicus*) *chamissonis* [fig. 32] at the pass, where it would find plenty of large insects, spiders, small lizards and birds' eggs to eat. We chose a spot beside the bridge, so it could take cover and not itself become prey for a hungry **short-tailed eagle hawk** [fig. 33].



Left: fig.32 Exit stage right *Philodryas* (syn. *Dromicus*) *chamissonis*, liberated at Chacabuco after entering our house and scaring the wits out of Anita. 20 Jun 2002. (ARF)

Right: fig.33 The fiercely noble **short-tailed, black-chested eagle-hawk, Geranoaetus melanoleucus**, regularly seen soaring effortlessly at Chacabuco. 9 Nov 2010. (JMW)



Below: fig.34 The other *Loasa* in the vicinity, *Loasa placei*, with flowers of the more usual yellow colour. Don't touch - it's a proven painful stinger. 24 Oct 2015. (JMW)



After negotiating the snaking road (double pun intended), a 2 km stretch with a few more patches of springtime colour leads to Los Ranchillos, where the violas Carlos found grow. Another of those 'propellor' *Loasa* species, the much commoner and typically yellow annual *Loasa placei* [fig. 34] forms an open-structured wayside clump of stinging vegetation.

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fig.35 *Phacelia brachyantha*, scattered overall at the pass, shows clearly why it was transferred to Boraginaceae from Hydrophyllaceae. 21 Oct 2015. (JMW)

The purple cymes of *Phacelia brachyantha* [fig.35] decorate the landscape here and there throughout the pass area, either individually, or as large colonies, when suitably impressive. A large patch of showy, **dwarf yellow oxalis** caught our eye during early visits [fig. 36]. It seems to be competing on level terms so far with an invading horde of catastrophically introduced *Erodium cicutarium*. Just as *Tropaeolum azureum* had been the plant to attract our common **southern painted lady** [fig. 16], so one of the flower-packed stands of the almost white composite *Moscharia pinnatifida* drew the much rarer *Vanessa terpsichore*, known as Philippi's painted lady, for us [fig. 37].

The whole flatter area of the inter-ridge valley is dominated by an open savannah of *Vachellia caven*, a native acacia, with its short-lived fragrant and fluffy flower-balls [fig. 38]. The savannah includes Los Ranchillos, which has at its centre the two small farmsteads of the friendly and helpful Onel herdsmen family, and is very distinctive on two

accounts. The first is the twinned pair of pointed peaks perched to the west on top of the northern high ridge of the **Cordón de Chacabuco** [fig. 39]. The other is the nature of the terrain [figs. 39, 40] where the long-lost species rediscovered by Carlos, *Viola chamaedrys*, grows [figs. 40, 41].



fig.36 A fine, healthy colony of an attractive **oxalis**, apparently not intimidated by an invasion of *Erodium cicutarium*. 24 Oct 2015. (JMW)

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Above: fig.37 Our nearest to a red admiral down here - the rarish *Vanessa terpsichore*, Philippi's painted lady, gorging on *Moscharia pinnatifida*. 29 Oct 2015. (JMW)

Right: fig.38 The fragrant pom-pom flowers of *Vachellia caven*, Molina's acacia. [Caimanes, Coquimbo Region.] 27 September 2014. (JMW)

Below: fig.39 *Viola chamaedrys* site with its rather suggestive and distinctive landmark, a pair of tors, silhouetted against the distant Andes. 26 Aug 2013. (JMW)



Right: fig.40 *Viola chamaedrys* in characteristic bare patch terrain showing a typically fractured dry surface layer. Lower station. 27 Oct 2015. (JMW)





fig.41 A quite rare white *Viola chamaedrys* and mutualist fritillary, *Yramea cytheris*, exclusive to viola, which it pollinates and its larvae eat. 23 Sep 2013. (JMW)



fig.42 Our first view of remarkable, extensive carpets of primary sterile foliage of our new *Alstroemeria piperata* on barish patches. 1 Oct 2015. (JMW)

Both the viola genus and fritillary butterfly lineages began and evolved here, towards the tip of what is now South America. An interesting mutual arrangement developed between the two early on in their histories. Violas produce nectar which attracts the adult insect, here in the form of *Yramea cytheris*, to pollinate it [fig. 41], but the caterpillars of the butterfly now feed discriminately on viola foliage and nothing else. Thus both benefit from the symbiosis, which has spread across the world as the viola line dispersed, diversified, and spread up and across the Northern Hemisphere. However, due to the asynchronous timing of viola anthesis and butterfly emergence there, pollination became impossible and the relationship became completely one-sided!

How we encountered remarkable large carpets of *Alstroemeria* foliage [fig. 42] at Los Ranchillos is covered fully in the companion part to this general account in the previous June 2018 IRG. It proved to be *Alstroemeria piperata* [fig. 43], the first to be published (in the same IRG issue) of those five or six new species we owe to the indefatigable **Carlos Celedón**.

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fig.43 The pride and joy for us of the Los Ranchillos patch locations, our new *Alstroemeria piperata*. 19 Nov 2014. (JMW) Full details are published in [June's IRG](#).

In that paper we also described and explained the unique and highly localised exclusive **habitat** of the **viola**, the alstroemeria and a few others [figs. 39, 42]. Suffice it to repeat in outline here that it consists of several clusters of almost impenetrable red or dark-coloured iron clay, which resists permanent establishment of all vegetation except the very few species which have specifically adapted to it, and which grow nowhere else. There is no record of these land islands, or patches as they are known scientifically, anywhere other than within the radius of a very few kilometres at Los Ranchillos. The local pastoralists call them *tierra muerta* (dead land) due to their generally bare and apparently unproductive aspect. However, during seasons of exceptional rainfall and occasional snows, the clay may become sufficiently malleable and moist to allow temporary 'explosions' of vigorous annuals, such as the tightly

packed stand of *Phacelia brachyantha* and *Descurainia erodiifolia* in our photo [fig. 44]. There are two main patch centres, one lower down by the Onel farmsteads, which is the first we encountered - where Carlos found the violas, and another group higher up to the north.



fig.44 Vigorous colonies of *Phacelia brachyantha* and *Descurainia erodiifolia* appeared in part of a lower patch during a favourable rainy season. 27 Oct 2015. (JMW)

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Although the higher area contains a greater floral diversity, of the three or four previously undescribed species we have identified at these patches, all but one are found nowhere but on the lower set we first explored. Prime amongst them after the dwarf yellow alstroemeria is the very neat, large-flowered little **annual oxalis** we recorded early on, further back down the road [fig. 36]. Unbeknown to us then, when we later came upon the second population at Los Ranchillos, our investigations showed it to be new to science, and accordingly we have given it the intended epithet of ***Oxalis ranchillos*** [figs. 36, 45, 46]. A striking wasp-mimic, the fly ***Mitrodetus dentitarsus*** [fig. 47], found it as attractive as we did, but for its nectar rather than any aesthetic appeal. This same insect was observed in considerable quantities at the upper patch site visiting *Alstroemeria piperata*.



fig.45 The undescribed ***Oxalis ranchillos*** of the lower patch systems, one of three or four new species there. 20 Dec 2015. (JMW)



Above right: fig.46 A natty wasp fly, ***Mitrodetus dentitarsus***, only looking dangerous for the purposes of self-defence. It is feeding from our nearly-published ***Oxalis ranchillos***. 11 Dec 2015. (JMW)

Right: fig.47 ***Tropaeolum azureum*** surprisingly appeared as a small, prostrate colony at a lower patch site. Not its usual hearty self though, as is evident. 24 Oct 2015. (JMW)



The technical name for the **dominant vegetation** surrounding any land islands such as these patches is **the matrix** (easy to remember if you're a fan of the 1999 homonymous Keanu Reeves film!). At Los Ranchillos it is mainly, but not exclusively, acacia savannah [figs. 38, 39, 42]. A few of its more adventurous souls try their luck on the patches and even manage a tenuous foothold. But at best they look uncomfortable, and are more frequently moribund or even lifeless. Most surprising of them for us is ***Tropaeolum azureum*** [figs. 14-16, 47]. But far from being the vigorous scrambler or climber as we invariably find it elsewhere, on the bare patch soil it forms a small colony of a few tight little prostrate tangles, rather sparingly flowered [fig. 47], so not a patch (pun again intended) on its usual glorious self.

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The third rare and local undoubted novelty is an annual *Hypochoeris* [fig. 48], a short-lived member of that genus being a considerable rarity in itself for Chile. We plan to call it *Hypochoeris terra-mortuis*, the Latinized version of the local Spanish name for the patches, *tierra muerta*. Remarkably, all the undescribed plants are yellow; including what may even be the fourth, an unidentified annual *Adesmia* sp. [fig. 49].

In the high, hot midsummer of late December, early January, when the grasses are turned to almost colourless dry hay, one last flourish of anthesis occurs. Although it's another arrival from the Northern Hemisphere, *Ammi visnaga* [fig.50] is a more than welcome one, despite its tendency to dabble its feet into the edge of some patches. So late in the season it is almost the only provider of nectar for the many emerging adult insects, and they swarm over its white umbels; most noticeably the butterflies, such as the **unidentified South American 'blue'** we photographed [fig. 51]. Up to a dozen 'browns' of the species *Auca pales* [fig. 52] crowded together at the same time on just a single head!

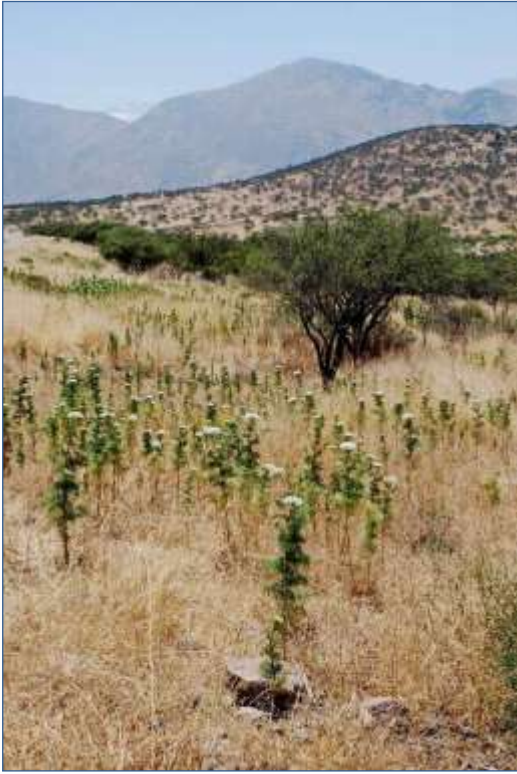
After the Los Ranchillos habitations the road continues on for a short distance up a slight rise and then drops down due west to join the Pan-American highway (Rte 5N) alongside a huge landfill. Garbage lorries carrying waste there are in fact among the main users of this dirt-surfaced short-cut, which is soon to be asphalted. We travelled the length of the road on various occasions to ascertain the limit of the patch system there. In fact it reaches no further than the top of the rise, where there is also a fine mixed population of *Tropaeolum looseri* [figs. 53, 54] and *T. azureum*, which sprawl up and over clumps of semi-skeletal shrubs. In fact the former species is special for us, as we first found it there much earlier, in September 1997, at the base of the Chacabuco Pass, a first record of the species for Valparaiso Region. Later, we found a third, well separated population as well.



Above left: fig.48 Another of our Los Ranchillos novelties from the lower patches, the extremely rare annual *Hypochoeris terra-mortuis* (description in preparation). 24 Oct 2015. (JMW)

Above right: fig.49 If it proves unknown to science, this would be the fourth of our lower patch system rare novelties, an *Adesmia* sp. 27 Oct 2015. (JMW)

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Far left: fig.50 *Ammi visnaga*, a stately and not unattractive Northern Hemisphere native which has emigrated to Chile, and flourishes at Los Ranchillos. 29 Dec 2015. (JMW)

Left: fig.51 Most of the many **Chilean 'blue' butterflies** are known only from one or two collections. This, on *Ammi visnaga*, defies identification so far. 26 Jan 2016. (JMW)

Below left: fig.52 *Auca pales*, one of

three 'browns' at Los Ranchillos. Many were seen visiting *Ammi visnaga* at the higher patch site.

Below: fig.53 This is the showy *Tropaeolum looseri*, related to the well-known *T. polyphyllum*. As with *Calycera eyngioides*, it's a first record for Valparaiso Region. 17 Oct 2015. (JMW)



fig.54  
A pollinator's eye view of *Tropaeolum looseri* flowers. 17 October 2015. (JMW)



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fig.55 *The Astargo family*, friends and guides at Los Ranchillos. From left – Anita, '**Cotello**', his daughter and wife and **Carlos Celedón** 30 Nov 2015. (JMW)

fig.56 A 'friendly phasmid'(stick insect), ***Bacunculus phyllopus***, doing its highly effective stick-like 'thing' near the lower patch sites. 11 Dec 2015. (JMW)



Below left: fig.57 A view across towards the **main Andean range** from an upper patch clearing. Three inflorescences of *Alstroemeria piperata* are arrowed. 2 Jan 2016. (ARF)

Below: fig.58 A cactologists delight. ***Eriosyce curvispina*** in a bed of ***Ephedra chilensis*** - as they say in the cook books! 19 Nov 2014 (JMW)



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### KEEP RIGHT ON TO THE END OF THE TRAIL

Thanks to friend '**Cotello**', who is one of the two related Los Ranchillos herdsmen, and head of the **Astargo family** [fig. 55], we were allowed to drive on an aerial maintenance track via its usually padlocked entrance on his land, which led up to the higher patch systems. We stop for a chat at their house and farmyard whenever we visit or pass, and it was thanks to this we spotted the common Chilean stick insect, **Bacunculus phyllopus** [fig. 56], moving stealthily through the roadside dry grass on its six stilts.



fig.59 **Trichocline aurea**, seen just once in the upper patch area, comes close to giving *Gazania* a run for its money. 19 Nov 2014. (JMW)

Several different and notable plants appeared beside the track as we drove steadily in lower gears towards the **main upper patches** [fig.57]. Like lizards, the Cactaceae family inhabits every dry nook of Chile from end to end and from the coastal sands right up to the high northern Andean plateau. So it is no surprise to find the attractively dumpy **Eriosyce curvispina** [fig. 58] with its topknot of wine-coloured cups sprinkled inside with a snow shower of white anthers. This species may well be available commercially: but under what name? There are more enthusiasts - both amateur and academic - studying cacti than you could shake a stick at, and each has to make a choice from the many epithets on offer. The family must surely be in the running as the Guinness record holder for the highest number of synonyms!

We know several species of the perennial genus *Trichocline* of the Asteraceae from Patagonia and the desert north, all worthy of attention, but **Trichocline aurea** [fig.59], here within a stone's throw of our home, was new to us, and a considerable surprise for displaying a desirable enough quality to justify a trial in cultivation.

As we reached the first outlying bare patches on the flatter sections above, occasional scattered small groups of white **Calycera eryngioides** of the Calyceraceae added another name to our

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growing list, as well as frequently attracting a second and very common brown butterfly, *Cosmosatyrus chilensis* [fig. 60]. The plant is notable in that its compact compound domes of small white flowers sprout ever longer spines as they give way to the fruiting stage. It's not in Pato Novoa's 'Flora de la Región de Valparaiso' either, so an additional new record for there. *Cosmosatyrus* congregates in considerable numbers at the upper patches where *Alstroemeria piperata* grows [fig. 57], and qualifies as one of its major pollinators—if not **the** major pollinator.

The first time I saw 'bells of Ireland', *Molucella laevis* [fig. 61], was in 1966, in its native Turkey. I hadn't a clue what it was, and dear old Sydney Albury had to enlighten me. Although said to be an introduced nuisance weed of agriculture in Argentina, at Los Ranchillos this comely escape from horticulture merely part-fills a small patch which it shares with native *Heliotropium geissei* [figs. 62, 63]. The presence here of that rare Boraginaceae is highly significant. Although restricted totally to the lower and upper patches, it flourishes on the bare terrain as sizeable populations [fig. 63], leaving little doubt that this location is its main stronghold. *Senecio* is the most numerous genus in Chile, with about 230 species, and 55 of them registered for Valparaiso Region. Therefore it seems rather surprising that apart from wretched, ubiquitous *S. vulgaris*, we have only encountered one small stand of *Senecio adenotrichius* [fig. 64], and that at the upper site. On the other hand, the mere presence of an equivalent number of *Schizanthus alpestris* [fig. 65] individuals on an actual patch was totally unexpected for us, as we have never seen it in our neighbourhood before. The same could be said for delicious and elegant *Conanthera trimaculata* [fig. 66] with its peal of dainty rich violet bells, chevroned in white midway along each of the three inner tepals. Surely every fanatical bulb specialist would love to own it. The unexpectedness is twofold. Firstly, to find it growing 500 m above its supposedly upper limit, and also that it has adapted comfortably to life in the patches. Another infrequent plant up there more admired by ourselves than by our herdsman friends is bushy *Astragalus pissisi* [fig. 67]. It possesses that 'locoweed' capacity of several of its genus, including South American *A. pehuenches*, to send stock animals to an early grave at worse, which may be good news for the condors, but not for the owners. Its comparative rarity may well be due to the attempts of the Onel clan to eradicate it completely! The last plant from these main upper patches illustrated here is the yellow pea-flowered shrub *Adesmia microphylla* [fig. 68]. Even when severely browsed by stock animals it was undeniably winning and we should love to see an undamaged specimen.



From left above: figs 60 -11 Dec 2015; 61 -19 Nov 2014;  
62 -11 Dec 2015; 63 -17 Oct 2014. (JMW)



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Above left: fig. 64 ***Senecio adenotrichius*** only known from this and the Santiago regions. Not scarce overall, but rare here. [Above Cerillos, Valparaiso Region.] 26 Oct 2015. (JMW)

Above centre: fig. 65 Not uncommon, ***Schizanthus alpestris***, near the lower elevational limit of its range, was only seen as group of a few plants in an upper patch. 27 Oct 2015. (JMW)

Above right: fig. 66 ***Conanthera trimaculata***. This graceful cormous plant of the Tecophilaceae had a good 2014. Brian Mathew told us conantheras are 'growable'. 23 Nov 2014. (JMW)



Left: fig. 67 Upper patch site. ***Astragalus pissisi***, a 'stock-killer' hated and destroyed by local farmers, acts as host-plant for some blue butterflies. 27 Oct 2015. (JMW)



Above right: fig.68 A few cattle-browsed ***Adesmia microphylla*** were the first we'd ever seen. After *Senecio*, *Adesmia* is the second largest of Chile's 2000-odd genera. 27 Oct 2015. (JMW)

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Above left: fig.69 Singly or en masse, the statuesque cactus *Echinopsis chiloensis* is a landmark of hot, exposed slopes at mid-elevations in central Chile. 30 Nov 2014. (JMW)

Above right: fig.70 *Spheg latreillei*, a true wasp, paralyses and buries grasshoppers to feed its subterranean larvae. Unaggressive, but packs a stingerooony! 29 Dec 2015. (JMW)

After having thoroughly explored and catalogued the flora at the hub of the upper patch system, we continued up the aerial maintenance track to the higher, drier ground of the northern valley side ridge. By the end of November all traces of spring greenery had long gone, and the landscape was dominated by rocky outcrops, occasional trees aestivating without most of their leaves, and the tall columnar cactus, *Echinopsis chiloensis* [fig. 69]. Grasshoppers leapt and whirred across the oven-hot air among the desiccated annual vegetation as we disturbed them in passing. We were lucky enough to catch sight of one or two impressively large orangey brown pompilid wasps, *Spheg latreillei* [fig. 70]. Heads down like hounds on the scent, they quartered the ground hunting for those grasshoppers to sting but not kill, and bury alive to feed their hungry larvae in the ground. No wonder Darwin found it difficult to swallow the idea of a benevolent Creator when considering this particular situation!

Come February, come the spectacular hemiparasitic scarlet mistletoes to Los Ranchillos. They connect taxonomically to our British 'kissing' mistletoe of Christmas time by the order Santalales. But their family, the Loranthaceae, is different. There are four genera and seven species in Chile, all found on trees like their familiar northern cousin with one dramatic exception. *Tristerix aphyllus* [figs 71, 72 and cover image] lives inside the vascular system of tall, upright cacti. Its presence is therefore quite unexpected until the tubular flowers burst forth in dense, stemless clusters, like the bodies of mushrooms and other fungi from bare ground or dead wood. They are plentiful wherever their hosts occur, and one of the most outstanding natural spectacles of the Chilean mediterranean countryside.

Even when we went up high along the track in springtime, it was still far more arid than the fresh green grassy stretches below. So we hardly expected to see a mass of *Leucocoryne ixioides* in its full glory as we did [fig. 73]. Presumably the bulbs get very well ripened below the baking, rock-rubble strewn surface. Another to appreciate the heat and exposure up there was a compressed, xerophytic shrublet, *Menodora linoides* [fig. 74], with pretty starry yellow flowers like winter jasmine which appear later on, in November. The genus was quite unknown to us until we found this species. A

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small colony had spread along a slightly depressed dry wash. Although the genus is in fact very closely related to the jasmines, and both now belong in the Oleaceae, they are considered distinct enough to be given separate collective identities. We have also seen an absolute little beauty in the central Argentinian Andes, free-flowering ***Menodora decemfida***, which would make any alpine grower drool longingly. It will be featured in another account we plan to submit to the IRG before not too long.



Left and above: fig.71 The uninformed think these are cactus flowers. In fact ***Tristerix aphyllus*** parasitises ***Echinopsis chiloensis***. [El Guayacán, Valparaiso Region.] 18 Feb 2011. (JMW)

fig.72 ***Tristerix aphyllus*** is one of the scarlet mistletoes. Lacking leaves, it taps the cactus's vascular system. [El Guayacán, Valparaiso Region.] 18 Feb 2011. (JMW)

Left: fig.73 The adaptable ***Leucocoryne odorata*** seen on a high, stony barren here, flourishing en masse just as it does in grassy springtime meadows. 6 Oct 2014. (JMW)



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Left: fig.74 ***Menodora linoides***. Well worthy of the apt pun its genus name suggests - 'Men adore her' 30 November 2014. (JMW)



Above right: fig.75 ***Ligaria cuneifolia***, another spectacular scarlet southern mistletoe genus, on a moribund ***Vachellia caven***. [Near Rungue, Valparaiso Region.] 18 Feb 2011. (JMW)

Returning enthusiastically to those end-of-summer, February and March flowering mistletoes, we come to one of the more conventional species which attaches itself to trees. ***Ligularia cuneifolia*** [figs. 75, 78] looks like nothing more than small glowing fires on its host and is widespread over the entire Chacabuco area, since its main 'victim' is the dominant savannah acacia, ***Vachellia caven*** [e.g. figs. 38, 39, 42, 75]. Another interesting mutual symbiotic relationship is involved here. Other than the infrequent giant hummingbird, ***Patagona gigas***, with its drabber coloration and slower wingbeats, we have the common little green-backed firecrown, ***Sephanoides sephaniodes*** here in central Chile [figs. 76, 77]. With its constant need for energy-providing nectar fuel, this frenetically active aerobat follows the seasonal native flowering from the coast in winter to the Andes in winter, and back. Unless it finds suckers like us along the way, willing to provide it with sugar water all winter long, that is! All 'conventional' flowering has finished by the time it no longer finds flowers in the mountain to provide it with nectar. But for the benefit of both, the mistletoe has evolved a classical **scarlet, hummingbird-adapted flower**, tubular and full of sweetness [fig. 78], which flowers just when needed by the birds, and sustains them during their migration to the milder and still flowery Pacific coast.

Right: fig.76 'See my splendid crest.' A green-backed firecrown, ***Sephanoides sephaniodes***, one of many overwintering at our home, poses for his portrait. 24 May 2012. (JMW)



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Above: fig.77 Scarlet mistletoe flowering is timed to refuel firecrown hummingbirds on their seasonal migration flight to overwinter on the Pacific coast. 24 May 2012. (JMW)

Right: fig.78 Hummingbird-adapted flowers of *Ligularia cuneifolia*. Otherwise only a few butterflies can reach the nectar. [Nr. Rungue, Valparaiso Region.] 18 Feb 2011. (JMW)



Left: fig.79 Looking north towards Los Andes from a new locality. 'Cotello' (leading Anita) took us to a third annual viola in the area, *Viola subandina*. 6 Oct 2014. (JMW)

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Left: fig.80 *Viola subandina*, in 1998 the first rosulate species to be named by us. It was the third of its kindred here, and also a new location record. 6 Oct 2014. (JMW)

'Cotello' was now aware of our interest in the little violas, and knew what they looked like. He told us that during his wanderings with his stock, he had noticed a colony of them right at the top of the aerial track and just over the northern side, where there is a **view back through to Los Andes** and our home [fig. 79]. On one of our visits he accompanied us to it. It proved to be annual *Viola subandina* [fig. 80], another with personal connections as we provided it its new epithet in 1998 - our first venture into the taxonomy of these fascinating plants. *V. subandina* is not recorded officially for Valparaiso Region either, although we have registered it at two other locations here as well. We study three main botanical specialities—the alstroemerias and tropaeolums as well as these Andean violas, and by a curiously quirky coincidence there just happen to be three species of each at Los Ranchillos!

As a fitting finale to this ramble, during our most recent visit to that higher elevation point we stopped to admire and photograph the mighty **Mount Aconcagua** [fig. 81].

### TO CONSERVE OR NOT TO CONSERVE, THAT IS THE QUESTION

Just a brief word now about the quite evident need for some form of care for this remarkable and vulnerable habitat, which exists with its unique floral assemblage in such an extremely restricted area. We would like to hope that by bringing it to public attention, as we shall continue to do, something might be done, but precedent indicates this is extremely unlikely, unless by private persons. As a generalization, national parks and reserves in Chile depend as much or more on their public appeal and potential for attracting visitors than their biodiversity as such. In that respect accessibility and size tell, so its quite limited total terrain coverage militates against the patch system. There is no equivalent here to British Sites of Special Scientific Interest, which may be imposed legally on private property to protect even one rare organism, no matter what size its habitat, and where the landowner is held responsible for the safeguarding.

However, the only option in this case is to do the best and hope.

### IN MEMORIAM

The late Carlos Celedón was the absolute key to our encounter with the exciting and hitherto unknown patch system and its new species. Without him we should probably have continued to travel very occasionally along that minor road as a short cut to the Pan-American highway, but without ever stopping to investigate its flora. Our knowledge of Chacabuco would have remained at what we already knew of the relatively familiar pass itself.

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It is not hard, therefore, to imagine the traumatic impact when we received out of the blue an e-mail informing of his sudden and unexpected death while we were over in England staying at Hastings with our daughters during September 2015. There had seemed such an exciting and productive future ahead working with him too. After we returned to Chile, an informal open-air remembrance meeting was arranged in November by his family, together with his many friends and admirers, especially fellow lovers of natural history. He was a fine photographer, who frequently posted interesting shots on the Internet. Appropriately, the event was held at Los Ranchillos, the focal point of his achievements, and a small pyramidal cairn of rocks was erected there as a perpetual reminder.



fig.81 Seen from Los Ranchillos - **Mount Aconcagua**, loftiest Southern Hemisphere peak and focal point from high, clear ground where we live. 29 Dec 2015. (JMW)

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---Last words---

Erratum from IRG101 – May 2018

In **IRG 101**, figure 16 was incorrectly captioned as being “The Laguna de la Laja and Volcán Antuco, Bío Bío Region, Chile, the setting of the *Viola farkasiana* type site.” Actually, the image, right, is of **Volcán Villarica in the Araucania Region**.



John and Anita wrote: ‘We are grateful to Ricardo Martini for drawing our attention to this glitch in Volcán idents!’



**Volcán Antuco** – photo  
[@volcanantuco](https://www.instagram.com/volcanantuco)

Additional image re *Alstroemeria piperata* in IRG 102 - June 2018



This is an additional drawing of ***Alstroemeria piperata***, drawn by Gloria Rojas.

Thanks to John M. Watson, Anita Flores Watson and Gloria Rojas.