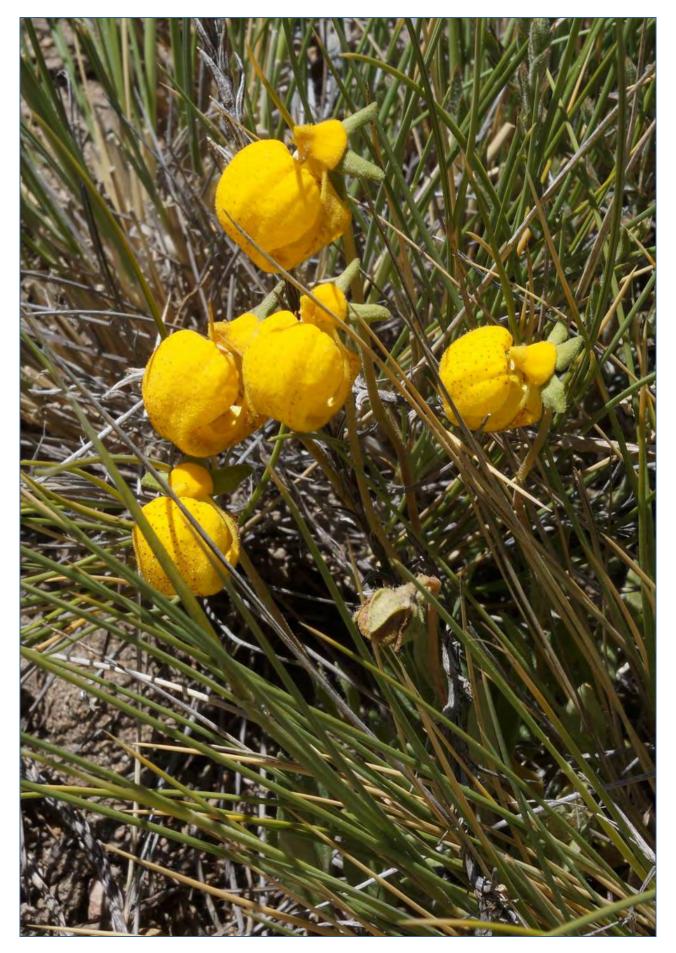
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South American plants, particularly the flora of <u>Chile</u>, the <u>Patagonia</u> region and Argentina, exercise a continuing fascination for many alpine gardeners. These are countries which are not inexpensive to visit and the plants from their high and windblown mountains and steppe, even those comparative few which have made their way into cultivation by a small fortunate group around the world, tend to be fiendishly tricky to grow in captivity. Perhaps therefore, we should apologise for "teasing" our readers with these plants? Or should we just relish the chance to at least share the photos of these southern gems from those who have made the journey to see them in habitat? We have two reports from the same trip, to show how each visitor sees things differently.

Cover picture: Calceolaria lanceolata by Trond Høy.

---Gardens in the Mountains---

Desirable plants from Patagonia by Gerrit Eijkelenboom



Patagonia, a land before the arrival of men. Empty, vast, no signs of the presence of human beings. The snow covered mountains without the scars of paths and roads, the ever blue skies, without the white stripes of aircraft. The air, only filled by the noise of the wind, a lonesome bird's cry. The steppe, dry, with monotone vegetation.

For us, travellers, an endless paved road from north to south, thousands of kilometres. No beginning and no end. An upcoming car at the horizon, where the road meets the sky. Does it come, or does it go?



Road to nowhere.

Horses sometimes and cows to the left and to the right. To whom do they belong? There are no farmhouses. And then, far away a glittering of a roof and then another. A village. The streets unpaved, poor houses, old cars, a service station, a single shop, and even some men, hiding from the heat, enjoying their siesta.

The capital of Patagonia, San Carlos de Bariloche, between a large lake and the impressive mountains with its airport, is the beginning of our tour. Organised by Ger van den Beuken and Alejandra, the 'botanica', on her first trip, with our group of ten. Three weeks of intense botanizing before us.

This article is not a comprehensive report of the flora, but mainly a photo impression. And sometimes I try to link the pictures to a possible cultivation. I always kept this in mind. "How to grow this in our gardens". Because: they are so desirable.

Mostly we see the rosulate violas in an article from Patagonia. As a matter of fact, they are indeed impressive, but there are so many more plant to admire. For me *Ourisia* was the most desirable species to find. Half an hour before arriving in Caviahue, we had a stop at the roadside for botanising. All members of the group went to the right, but I crossed the road in order to explore the hills. What I saw was a vertical cliff. And what I know from the Dolomites: On vertical cliffs you'll find the most interesting things. And there it was: The most desirable of all, the *Androsace alpina* of the Andes, *Ourisia microphylla*. Dense cushions, vertical against a sandstone wall, in full bloom with pink flowers. Some of them vertical, some in crevices, some hanging down.

Like *Dionysias* in their habitat in Iran, they must get water from behind. Unforgettable. From this species, seeds are regularly offered by the Scottish (SRGC) Seed Exchange. Some years ago, I successfully grew them until the end of the spring, when suddenly all seedlings damped off after a period with high temperatures.



Ourisia microphylla

On the very same slope, in the direction of Caviahue, we found, a few days later, the colourful *Tropaeolum incisum*. The plant has remarkable leaves, Like climbers they twist around rocks on the steep slopes. And the inflorescence is remarkable too, especially the buds. Look at the picture below.

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It seems to be hardy in the UK, so if you can get seeds, try it. Anyhow, I intend to try it in my garden in the Netherlands.



Tropaeoleum incisum



from the genus of Ourisia, occur in Patagonia too. On a very stormy spot, hidden in crevices on the top of Volcán Batea Mauida where the wind cannot harm them, enjoying the sun and low temperatures, there was Ourisia fragrans (left), forming dense patches.Somewhat sticky, with

Other members

apparently "an exquisite aroma", (so said Marcela Ferreyra) which I could not smell, due to the wind.

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Right: Ourisia ruelloides

Walking through a Nothofagus wood we crossed a bridge and there, beneath, something reddish caught our eye. Large clusters at the end of short branches, above the foliage, red tubes of flowers. The name: Ourisia ruelloides (syn. poeppigii). Directly next to a waterfall. I got a plant some years ago. I gave it plenty of peat and humus and put it beside my brook in half shadow, with morning sun. The water was not always streaming, so maybe this was the cause it passed away. We have an excellent climate in our country, but not for high mountainous species. Such a pity.



When you step out of the cable car on the Cerro Catedral, at 2000m, the first plant you see is **<u>Oreopolus</u>** glacialis, forming dense cushions with fleshy leaves completely covered with yellow flowers, in stony surroundings, offering us a magnificent opportunity to make pictures with the impressive mountains on the background.

It is peculiar that this species also occurs on the steppe, in a sandy soil.

Apparently this is an adaptable species, which might possibly grow in our part of the world. Give it a try!



Oreopolus glacialis

In the same biotope, you will find <u>**Oxalis**</u> <u>erythrorhiza</u>, (syn. O. compacta, O. bryoides) another eyecatching species. Mat-forming with bright yellow flowers and very congested foliage. Kris de Raeymaeker grows it <u>in his garden</u>.



Oxalis erythrorhiza

On the same mountain, eventually we arrived at the site of <u>Ranunculus</u> <u>semiverticillatus</u>. This was our destination for the day on the Cerro Catedral. Not so very easy to find, because of his hidden place next to a snow field, all white. But the excitement was great. Not so many people come eye to eye with this amazing plant.

It is a typical snowmelt species, just like the well known <u>Ranunculus glacialis</u>. They are both dependent on the melting water, rich in oxygen, at temperatures just above zero degrees, streaming along their rhizomes. Here in Patagonia, the surface of the soil was dry. You could easily lie down, taking pictures, without getting wet. The water was just below. The soil, eroded volcanic sand, ash and bigger stones only provides minerals. The long rhizomes have to keep the plants on this 45 degrees scree, which is



always slowly moving down. They also provide water in dry periods and store food. After a short summer, the plants go dormant and during the long winter they are covered with snow.

Left: R. semiverticillatus, photo by Lesley Cox of her plant.

Would these plants do well in our gardens or geenhouses? The answer is NO. I did a little investigation and what I know is that Lesley Cox from New Zealand, was able to grow an individual in a trough for several years. The plant died unfortunately, without flowering, due to neglect during a period of illness. The Youngs in Scotland grew a small plant many years ago which had one tiny flower, then died.

But seeds are available and that is a shame. The seedhunters know this plant is ungrowable and heavily threatened. But nevertheless they go on harvesting seeds for commercial reasons. We all can help, by not buying seeds from such vulnerable plants.



Ranunculus semiverticillatus flowering in nature.



<u>Olsynium junceum</u>, right, is a lovely plant for the steppe. But I found it often in the alpine zone. Beautiful white and sometimes pink

flowers with reddish veins on long stems. It is a variable species.

It must be easy to grow this species, for instance in a trough. I have tried to get seeds for many years, but failed.

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Easy to recognize, but difficult to see, is <u>**Tristagma**</u> <u>**nivale**</u>, left. Dark and unusual colors and curly leaves. It grows from a bulb. Another snowmelt plant. Difficult to photograph. Always dancing in the wind at high elevation.



Riding through the steppe, suddenly there was excitment in the bus. "Ho", in Dutch, "Hola" in Spanish, "Stop" in English, "Ikea" in Swedish, "#\$%&" in Norwegian. Something heavily reddish next to the road had caught our eyes. It was <u>Anarthrophyllum strigulipetalum</u>. A spiny shrub up to 150cm high. Large balls in red and yellow. Every flower contains a big drop of a sticky liquid, apparently to attract pollinators like ants. It has a very sweet smell, but once you have touched it, you can hardly get rid of this stuff from your fingers.



Anarthrophyllum strigulipetalum

Amoung the most desirable plants for me to see in Argentina, were <u>Calandrinia</u> <u>affinis</u> and <u>Calandrinia</u> <u>caespitosa</u> <u>subsp.</u> <u>skottsbergii</u>. The first we found in the steppe and the second in the high alpine zone. *C. affinis*, with white showy rosettes and a yellow centre was an amazing find. It must be possible to grow it in our garden, especially in northern areas. But the availability of seeds is a problem. The plants we saw had a lot of seedpods, so.....who knows.



Calandrinia affinis www.srgc.net Calandrinia caespitosa subsp. skottsbergii

The discovery of the skottsbergii was a lucky moment. To see this almost mythical plant was a miracle. It was on the top of the Cerro Colohuicul mountain, where *Viola coronifera* also grows. You have to climb half a day on virtually inaccessible slopes. Don't think there are paths, you have to find your own way and there are no signs. You need a guide and we had one, our own Alejandra. But she did not know about the skottsbergii. That was a big surprise.



Calandrinia umbellata



Calandrinia umbellata pictured in his garden by Frankie Wulleman

The next specimen of the Portulacaceae family is Calandrinia umbellata. Although it is a common species, we just found it in time, on one of our last days, in the vast high mountaineous steppe (2000m) around the Volcán Tromen (4200m) It has a surprising small size, because I know it from the Flemish garden of Frankie Wulleman, who has grown it freely for many years, without covering it in winter, in his rock garden. A not understandable phenomenon in my eyes. The Calandrinia here in the wild is so cute, with its magenta flowers. My own efforts

to grow this species failed. The seedlings were gone after the winter, even in the greenhouse.

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Another Calandrinia, often seen, in various colours, is <u>Calandrinia colchaguensis</u>. We had many discussions in our group about the determination. The species has small linear-lanceolate, very dark shiny foliage in a rosette.

Left: *Calandrinia colchaguensis* A good garden plant is <u>**Oxalis adenophylla**</u>. However, what you see in Patagonia, is not what you

get in the UK or in the low countries. Look at the picture, what a beauty.



Oxalis adenophylla



This **Oxalis** squamata is available in the UK. We saw it growing in volcanic sand on the steppe in front of the Volcán Tromen. The elevation was 2000m. It seemed to be a dry, even arid habitat, but all plants were in really good condition. So water should be not too far away. The bright magenta flowers were very attractive. Growing them in a greenhouse should be possible.

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In the same habitat there was this little plant, remarkable for its round shaped, scalloped edged, grey-green leaves. The name is **Pozoa volcanica.**



The genus *Nassauvia* is very common in Patagonia. In the mountains as well as in the steppe. There are many species. I took two of them, the most interesting for me, a personal choice.

Nassauvia revoluta is a brave little plant, growing, where every other species would give up; under the most hostile conditions, on high elevations in stony soil. They pop up from the ground and look like aliens.

The other I would like to show is this beautiful blooming <u>Nassauvia</u> <u>Iagascae</u>, growing under the same conditions.



Image: With the second secon



I did not know there were so many species of the genus of Valeriana in Patagonia. All of them lovely ones. I show one, particular and odd, Valeriana moyanoi. We were astonished to find it on a mountain slope, in a stony habitat. It is a monocarpic species and it grows like our beloved Saxifraga longifolia. It forms a rosette and later on, a year or more, a thick ascending purple stem appears, with many tiny flowers.



On this extreme windy slope of Volcán Batea Mauida, I took this picture of a Senecio. As there are so many species of Senecio in Patagonia, I am not sure about the right name. But here is my guess: <u>Senecio</u> <u>poeppigii.</u>

The last genus in this article is <u>*Calceolaria*</u>. Very difficult to determinate. I don't want to speculate, so no species name, just a picture.

I think most of us have tried to grow *Calceolarias*. More or less successful. From the simple *C.biflora* to the difficult *C.uniflora*. Myself I always have to cope with aphids. Treating them with pesticide killed the pests and the plant. Biological pest control seems to be successful - with wasps. G.E.

Sources:

Marcela Ferreyra, Cecilia Ezcurra, Sonia Clayton: High Mountain Flowers of the Patagonian Andes. <u>Martin Sheader: Flowers of the Patagonian Mountains</u>. Photo Calandrinia umbellata: Frankie Wulleman All photos: <u>Gerrit Eijkelenboom</u>

Ed.: The IRG Team sends thanks to <u>Graham Rice</u> for his recent coverage of IRG in his <u>Transatlantic Plantsman blog.</u>



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Next we have a perspective on the same trip from a Norwegian member of the party, Trond Høy. --- More from the Gardens in the Mountains----

Hunting for rosulate violas in Argentina, by Trond Høy

I would like especially to thank Ger van den Beuken who arranged this tour and to Kok van Herk who has gone through all his pictures and put names to the unknown plants to the benefit of all of us. And of course, the rest of the bunch who made this tour unforgettable in many ways also deserve a big THANK YOU! I have not included all the names of the plants we found but selected a few ones to give you a taste. If some plants are wrongly named it is my fault.



View from Batea Mauida

Although, or maybe I should say because, I already had visited South America twice I did not hesitate a second when I read about the tour that Ger planned to Argentina in the winter 2013-14. Ger has arranged such tours several times before and I had seen many of his pictures on <u>the SRGC forum</u>. To my surprise and disappointment the trip was almost cancelled due to too few participants. However at the very last moment we decided to go with 10 people.

So, after a few months of uncertainty we left for Argentina on 22nd November to spend 3 weeks in the northern parts of Patagonia, in the province of Neuquén where the spring season had just started. I had already met up with Øystein, the other Norwegian, in Oslo, and the two of us headed firstly for Amsterdam where we met Sten arriving from Sweden, Ger with his wife Mariet, Kok, Wirt, Hank and Gerrit swarming in from different parts of the Netherlands before setting the course southwest. The last of the company, Claire from California, waited for us in Buenos Aires. It is a long flight to this part of the World either you start in US or Europe so we were all glad when we had come so far.

We had one night and the next day in Buenos Aires, and although there is much to be said about that place all I will say is that it is a very green city with lots of plants and trees.

In the evening we headed for the city of Bariloche with a local airplane. The plan was to stay in a place for a couple of days and go by bus to interesting areas in the vicinity to botanize before leaving for a new town to repeat the process. This turned out to be very productive in the sense that we covered a lot of habitats and found hundreds of different, and for most of us, unknown plants. Personally I would have loved to take longer walks in the mountainous terrain of the Andes at the border of Chile. Bariloche turned out to be a fine city beautifully located on the southern shore of Lago Nahuel Huapi. The town and surroundings looked almost to have been cut from a Swiss or Austrian holiday catalogue. We stayed in Bariloche for 3 days. On November 24 we went to **Cerro Catedral** where we used the cable car to get to a higher altitude. Although we set out from a few other ski resorts those ski lifts were closed for the season so we had to walk up the hills.





Cerro Catedral

The last week of November means spring here, and especially as we usually stayed at an altitude of about 1000m and moved to above 2500m during our trips. The Andes mountain range is not as high here as farther north where several peaks exceed 6000m. In "our" area they usually are 3000-4000m.

At Cerro Catedral we encountered our first rosulate viola, *Viola sacculus* with pristine white flowers. And although they were the aim of our trip this day I think most of us marvelled at the rich flora as we did on almost every spot we visited. I say rich even though at the driest and rockiest places the vegetation was sparse but we always found new (for us at least) species everywhere. It is also possible to hit previously undescribed and unnamed species here in these vast, little visited areas of Argentina.



The next day we mostly hunted for plants along the **road to Pilcaniyeu**. Moving from the green, forested region by the lake and into the local steppe in the rain shadow just a few km along the road we found another viola, properly named *V. volcanica* growing in volcanic ash. Near a crossroad we also found our first orchids too.



Viola volcanica, with seedlings alongside.



We found our third viola, Viola escondidaensis on this day.

On the 26th we went to the next town, San Martin de los Andes on the shore of Lago Lácar. The road went through Paso Cordoba, not very high but interesting. We found another population of *V. volcanica*. When we saw anything interesting from the bus windows we yelled to the bus driver and he had to find a place to stop. The locals certainly thought we were a bit "loco".



Left: Nothofagus pumilo

We had seen the forest, or patches of forest, already. There were a lot of pine plantations but the foreign pines were not interesting at all. We got more excited when we come closer to the Nothofagus forests. Here along the Andes you can find 3-4 species of that genus. Often they make up the treeline. We also saw patches of Austrocedrus chilensis and further north we entered the land of the monkey puzzle (Araucaria araucana).

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The day after we exercised a little, as we had to walk through an alien *Nothofagus* forest and climb a steep ski hill. The trees were very old and many big dead logs lay everywhere and a lot of seedlings and young trees struggled for light. The understorey consisted of different *Berberis* species and also *Ribes* and a several herbs. Along a creek we discovered a patch of bright red *Ourisia ruelloides*.





Entering the ski slope we suddenly found a lot of beautiful and variable **Viola dasyphylla** (left). A pile of snow lingered along the creek. Dense mats of *Caltha* covered the ground where the snow had just melted. We found both *C. sagittata* and *appendiculata*.

On the 28th some of us had our second "real" walk up the **ridge of Cerro Colohuincul**. Both along the road and everywhere else we discovered new species. The area was green and rich in plants. We found some new orchids and also a couple of beautiful *Rhodophiala*.



Ridge of Cerro Colohuincul



We had to work through a dense shrubbery of low growing bushes before we reached the floriferous ridge, which we followed for some hours. One of the bushes was the Chilean Firebush, *Embothrium coccineum*, which were "on fire". This species was very common on almost every slope we saw.





Here too, as everywhere we went, we found *Calceolaria*, a difficult genus with many species and many rather similar ones. *Oxalis* was also present in several forms about at every place we visited. Our goal was the bright yellow *Viola coronifera*, a gem at the sandy, stony ridge. Our next leg was a long one, to the "most beautiful place on earth with every kind of plant you can imagine" according to our guide Alejandra who happened to be from that town, namely Moquehue. Here we found real woods of ancient

Araucarias but only remnants of what had been before the logging destroyed most of it. We had several stops of course, and on a rocky outcropping we met our first cactus in flower, *Austrocactus gracilis* (below). Later we found several.



Also the spiny (almost all the shrubs were very spiny by the way) Maihuenia poeppigii was discovered at a stop where we also found *Mutisia spinosa* and Adesmia (a rather common genus with numerous species), Acaena, Calceolaria, Junellia etc. We had of course a walk in the mixed Araucaria – Nothofagus forest in Moguehue. We found what we looked for, the ghostly orchid relative Arachnitis uniflora. Not far from the town is the easily accessible "volcano" (which it probably is not) of Batea Mahuida - sandy, rocky, steep on two sides with a tarn at the foot, and in

between the rocks – a lot of flowers and among them another rosulate viola *V. cotyledon*. Till now we had found 4-5-6? And *Nassauvia*, *Senecio*



Above: Maihuenia poeppigii, right: Mutisia spinosa, above and below left. Below right: Batea Mahuida



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We spent a couple of days botanising in the area steadily tallying new plants, more *Junellia*, *Leucheria*, *Jabarosa*, *Azorella*, *Anarthrophyllum*, *Calandrinia*, *Loasa* and one more of the rosulates, *V. trochlearis*.





Above: *Junellia patagonica* Left: *Viola trochlearis*

December 3rd: On the road again continuing in a northerly direction via Pino Hachado to Caviahue. Some of the main roads were paved but more often we went on unpaved dusty bumpy ones so the speed wasn't much to boast of. There was much of interest along the road of course, and as often happens, some want to stop and some don't! (Can't get to the hotel too late!)



Volcán Copahue – photo by Gerrit Eijkelenboom

The next days we investigated in the area by the active Volcán Copahue, which sits at the Chilean border. The area around the hot spring Del Agrio was rich in plants. Here we found several violas (the rosulate species *V. copahuensis, cotyledon,* and <u>x blaxlandiae</u>; and the non-rosulate *V. maculata*), **Olsynium junceum**, **Valeriana philippiana** and a lot of old acquaintances.

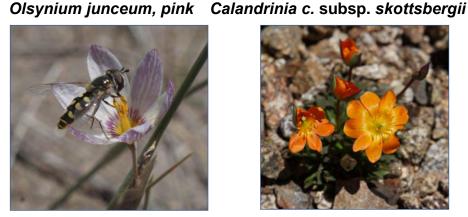
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We also went to Cajon Chico, a rocky landscape with a special flora. On this trip we found more Calceolaria, Calandrinia, Loasa, Glandularia, Mimulus, Ourisia and other species. On the 6th of December, time to go to Chos Malal via Salto del Agrio, an impressive waterfall. The stop at the waterfall brought new plants like Euphorbia collina, not only nice views. And as usual also the roadside provided new plants. Especially the orange *Mutisia retrorsa* on a windy, stony place above the river valley near Chos Malal was a popular find.



Adesmia parviflora Valeriana philippiana







Haplopappus prunelloides

We stayed in Chos Malal for 4 days and had excursions to different locations every day. Not all paid off but the visit to the Volcán Tromen - Waile area was a particularly interesting one. I think several of us would have loved to go to the summit (4114m) of Tromen, or at least a little way up, but we had no time for that. We found several species we hadn't seen before, Adesmia, Astragalus, Acaena, Fabiana, Junellia, Leucheria, Nassauvia and Azorella among others – and one rosulate viola out of flower, which made it difficult to put a name to it.







From far left:

Sisyrinchium laetum,

Tristagma patgonicum,

Vicia magellanica



Araucaria by night



Mulinum spinosum



Chlorea cylindrostachya



Nastanthus patagonicus



Calandrinia affinis



Colobanthus lycopodoides with assorted companions.



The trip to the beautiful Lago Epulauquen surrounded by *Nothofagus obliqua* forests also was very nice although we didn't find the rosulate viola we looked for. Instead we found a lot of *Viola rubromarginata*. *Gavilea, Euphrasia, Montiopsis, Schizanthus* and several others were added to our lists.

11th of December we had our last bus drive, from Chos Malal to the city of Neuquén. It was also our last chance to botanise but only along the road. We had time for only a few stops but as we now were in the steppes we found several new plants, which we had not seen before. Only a few were still in flower as it was much warmer and drier down here. The prettiest probably was *Junellia thymifolia*.

Junellia is in the family Verbenaceae – the species most resembling a Verbena is probably *Junellia succulentifolia.*



Junellia succulentifolia

We had been lucky with the weather for all three weeks. Just a couple of days were overcast and although some days were very windy our biggest problem was the strong, hard sunlight when we tried to picture the plants. The temperature increased from 10-20C during our first weeks to 20-35C in the last one, and in the steppe on the very last day it hit almost 40C.

At the Airport in Neuquén we said goodbye to our driver and guide before flying to Buenos Aires. Here we had one night and one day before we left Argentina. I think we all would wish for another tour in this beautiful part of the world. T.H.

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