Xerophilia

the passion for cacti and other succulents

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Xerophilia
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summary

Founders: **Eduart Zimer • Dag Panco • Valentin Posea**

Editor: **Eduart Zimer**

EN edition • **Eduart Zimer**
RO edition • **Valentin Posea**
SP edition & Field researches • **Pedro Nájera Quezada**
PR & Graphic • **Dag Panco**
Cartography • **Miguel Angel González Botello**

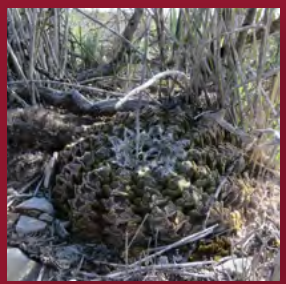
Nordic representative • **Erik Holm**
Supporter • **Mihai Crisbășanu**
Editorial team's e-Mail: **xerophilia@xerophilia.ro**.

Graphic layout based on Andrea Cattabriga's pattern.

Front cover

P. fischeri, at Villa Puente Picún Leufú, Neuquén, 14 of November 2015

Photo by **Carolina González.**



Back cover

Ariocarpus fissuratus

Photo by **Aldo Delladdio.**

Xerophilia
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editorial 15

It's been, once again, a very busy end of year for us. Not only working at the current stuff, but we have also prepared a large number of special issues – from interesting first descriptions in *Echinocereus* and *Turbinicarpus*, to the Romanian version of "Growing cacti in a temperate continental climate" by Dag Panco. This was a real joy for us, especially after seeing a larger number of Romanian readers who (re) discovered us. We still have to finalize the English version promised originally by end of November, then pushed to December... however, it looks like we have to publish it in late January or early February next year. The translation process was often discontinued and it was really hard to come back after an interruption. I have to take the blame for this, but I can promise it will be done!

We already have a certain number of articles prepared for the March 2016 issue (**Xerophilia** 16)... which should be a special event for us: closing off four years of work on our journal. We started in April 2012... we simply started, with no clear idea how to produce a journal, with no set of articles to be published, but having big plans and being packed with indescribable enthusiasm. Now, looking back, it seems a quite irresponsible task. The crowd assembled in Pitești at "Sarbatoarea Lalelelor" was not of great help in the months to come. More, there was only in very few a marginal wish to establish a virtual society. In 2013 few people met again in Pitești, however, no one ever asked what's with the new society. And no one ever asked us since.

Why am I writing this? Because we took it as it came, and did our job the best we could. For several reasons **Xerophilia** has changed a lot in the meantime. We extended our team and became de facto an international publication. We changed our layout and evolved bit by bit, with every issue we have published. And because, by the time you read these lines, we already started our work to bear out the four years out on the net.

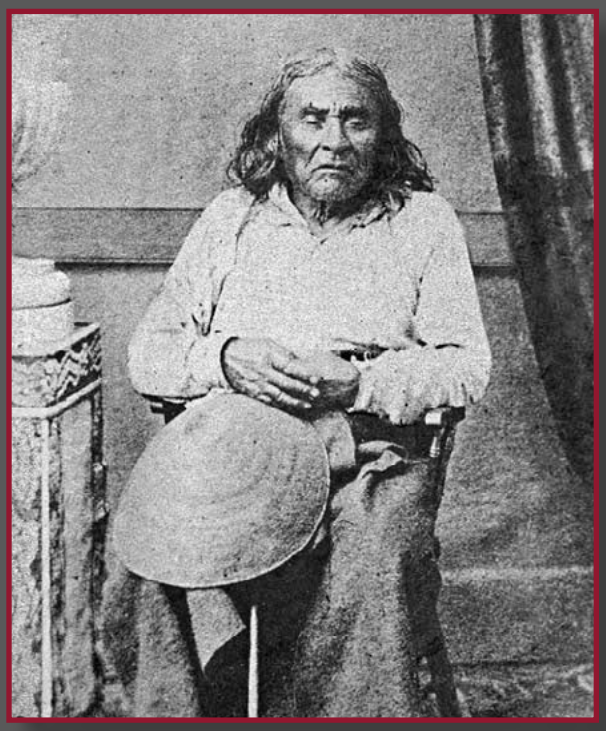
As always towards the end of the editorial - we want to thank, once again, to our loyal readers from all over the world and to all this year's collaborators! Now, looking forward for 2016, **Xerophilia** team wishes you at the end of 2015: Happy Holidays, and spend them safely with your loved ones!

Happy New Year, everyone! Feliz Año Nuevo! Guten Rutsch ins Neue Jahr! Bonne et heureuse nouvelle année à tous! Felice Anno Nuovo! Godt Nytår, alle! Gelukkige verjaardag!

... Și la anul și LA MULȚI ANI !!

Eduart

summary ↑



Chief Si'ahl, also known as **Chief Seattle**, was highly respected leader of the Duwamish, one of the Native North American tribes. He remained famous in the history of the United States for his diplomatic attitude of peace towards ever-increasing pressure of European colonization. Today in the city that bears his name, Seattle, in recognition of its moral and spiritual value several statuary monuments were erected.

Xerophilia 15's Favorite Quote

Take nothing but memories, leave nothing but footprints!

Chief Seattle

From Santa Cruz to Puerto Suarez eastward

a trip to the Bolivian lowlands until the Brazilian border

Travelogue

Volker Schädlich - volker@gymnos.de - www.gymnos.de

summary →

After a tire had burst literally in February 2015 while driving on the Ruta 5, we could find a "spare tire" in Talar in El Carmen after a long search. The whole thing turned out to be a bit more complicated, since no suitable tire was to be found. Always amazing is the improvisational skills of these people. After 1.5 hours we had a spare wheel again.

Photo by Christian Hefti

summary ↑

1 2

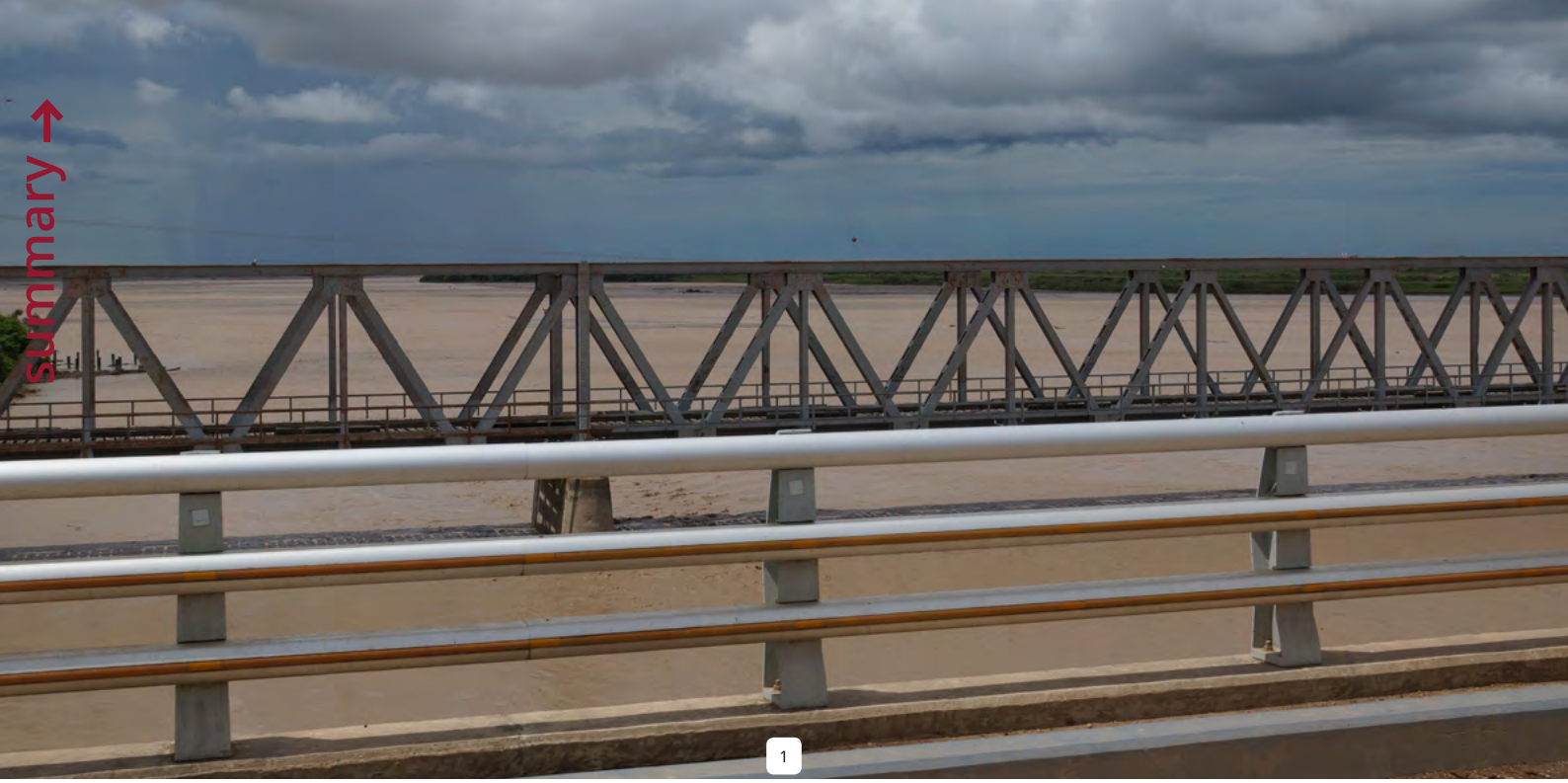
Several times, the largest city in Bolivia was the starting point for me in the search for cacti in the eastern lowlands of the country. Since the completion of Ruta 4 from Santa Cruz to Puerto Suarez you can admire the 648 km long distance comfortably in a one day deal. However, the construction of the road has caused lots of changes. It was often a huge issue to buy gasoline ten years ago, this is now a thing of the past. Even in 2003, we needed two days for the 277 km distance from Santa Cruz to San José de Chiquitos. That this fact has not only disadvantages when you are searching for cacti, I would like to explain in my following report.

During our 2015 trip we were the first time east of Santa Cruz near the Río Grande - or Rio Guapay – browsing after plants. I had seen, based on images from Google Earth, that there can be cacti in this area. At first we find in the plane, wet terrain on a pasture with small elevations *Echinopsis rhodotricha, Cleistocactus baumannii, Stetsonia coryne, Cereus* spec. and *Opuntia* spec.

Not far from the river, in the dense Chaco forest I found later on lower vegetated places, cacti of the genus *Gymnocalycium*

Gymnocalycium spec. – the far northwestern discovery in the Bolivian lowlands.
1 - Course of Ruta 4 from Santa Cruz to Puerto Suarez. Map by Mario Wick. 2 - Dense Chaco forest with *Stetsonia coryne* near the Rio Grande.

summary ↑



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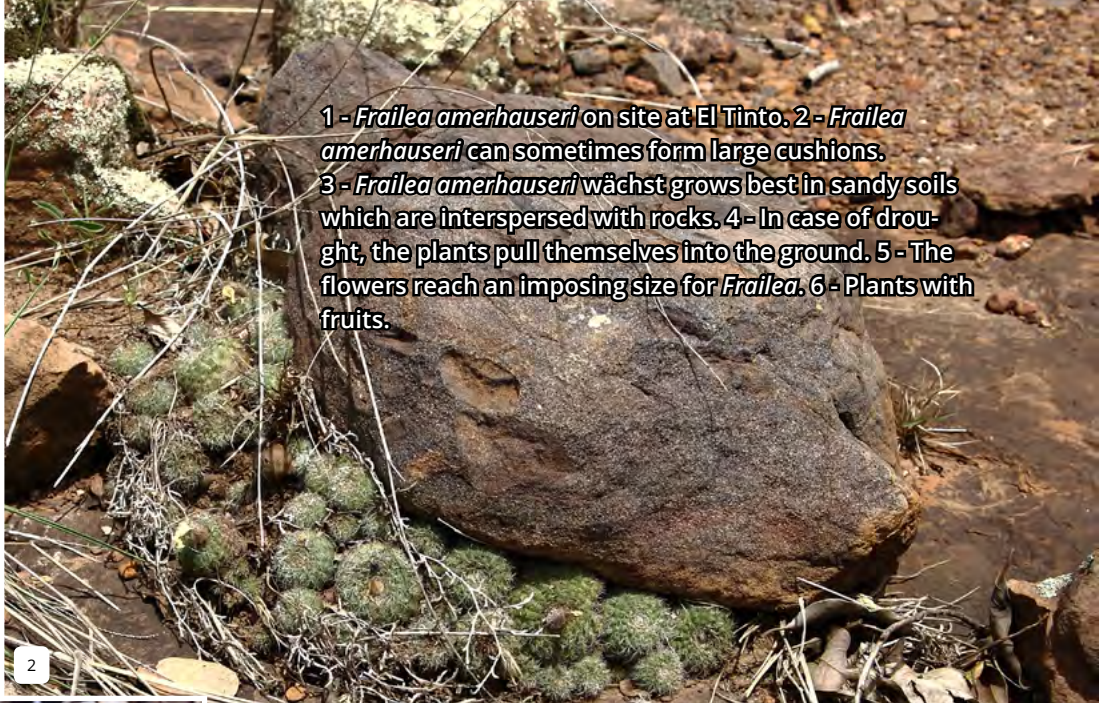
1 - New bridge over the Rio Grande.
2 - Railway bridge over the Rio Grande; a few years ago the only way to get to the other shore.

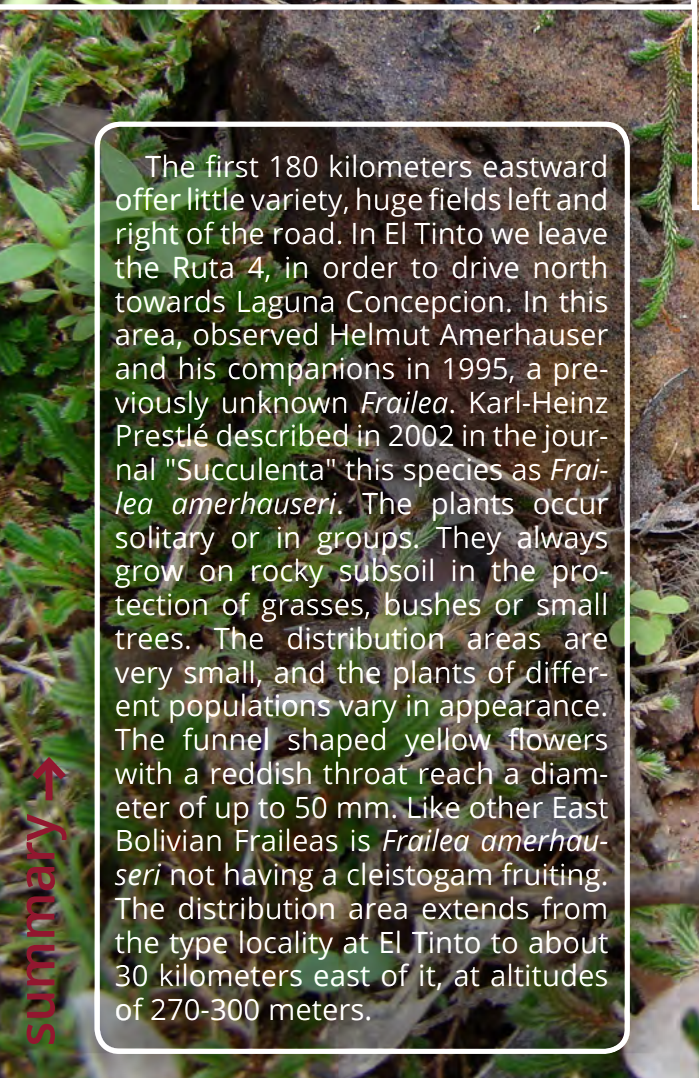
We departed from this area and cross the Rio Grande. Here, the river bed is several kilometers wide. Nowadays, you can cross the river only in a few minutes. Before the completion of the new bridge you could reach to the other side, only by crossing over the railway bridge. Since this was crossed over by trains only incidentally and in one direction, you needed a lot of patience.

Photo by Christian Heffi

summary ↑



1 - *Frailea amerhauseri* on site at El Tinto. 2 - *Frailea amerhauseri* can sometimes form large cushions. 3 - *Frailea amerhauseri* wächst grows best in sandy soils which are interspersed with rocks. 4 - In case of drought, the plants pull themselves into the ground. 5 - The flowers reach an imposing size for *Frailea*. 6 - Plants with fruits.



The first 180 kilometers eastward offer little variety, huge fields left and right of the road. In El Tinto we leave the Ruta 4, in order to drive north towards Laguna Concepcion. In this area, observed Helmut Amerhauser and his companions in 1995, a previously unknown *Frailea*. Karl-Heinz Prestlé described in 2002 in the journal "Succulenta" this species as *Frailea amerhauseri*. The plants occur solitary or in groups. They always grow on rocky subsoil in the protection of grasses, bushes or small trees. The distribution areas are very small, and the plants of different populations vary in appearance. The funnel shaped yellow flowers with a reddish throat reach a diameter of up to 50 mm. Like other East Bolivian Fraileas is *Frailea amerhauseri* not having a cleistogam fruiting. The distribution area extends from the type locality at El Tinto to about 30 kilometers east of it, at altitudes of 270-300 meters.

summary ↑

summary ↑

summary ↑

1 - The plants grow usually protected from the sun in the shade of other plants. 2 - *G. anisitsii* subsp. *holdii* VoS 34 in habitat near El Tinto. 3 - *Gymnocalycium* spec. east of El Tinto. 4 - Individual plants can be up to 10 cm in diameter.

On a small hill east of El Tinto, Amerhauser also found a plant of the genus *Gymnocalycium*. He describes it in the journal "Gymnocalycium" as *G. anisitsii* subsp. *holdii*. In 2003 I visited together with Amerhauser the area in order to locate a few more specimens. After a long search we find the species as bright spots on a lush hill with stony ground. The plants grow in humus enriched soil. Particularly striking are the relatively long, thin, very flexible spines. In later trips, I was unable to locate again this plant. The hills are now covered in dense vegetation which made a re-discovery so far impossible. In my opinion, these plants are not very closely related to *G. anisitsii*. There are significant differences in the flower structure and appearance of the seedlings. Further east we found in 2011 plants that probably belong to the closer relationship of *G. megatae*.

summary ↑

1 - The same road section in 2015, the nature gets the land back. 2 - In 2011, the old Ruta 4 was still easily passable. 3 - Habitat of *Gymnocalycium chiquitanum* in the lowlands. 4 - *G. chiquitanum*, pink flowering plant.

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We leave the area around El Tinto and continue on the old Ruta 4, as long as that is still possible, I can not estimate this. In 2015 it went allright, although in some places the track was almost overgrown. The new road runs about eight kilometers to the south, parallel to the railway line Santa Cruz de la Sierra - Suárez Arana.

Here, on less covered land with rocky substrate we found also *Gymnocalycium chiquitanum*. The first description was made in Cactus (Paris) in 1963 by Cárdenas. The information on the explorers are contradictory and the finding is generally attributed to Father Hammerschmid. In fact, the species was found by Father Elmar Klingler, a missionary with the Ayoreo Indians in Santa Teresita, on the Serrania de Chiquitos. However, he later handed over the plants to his superior Father Hammerschmid. The Tyrolean Franciscan Father Justinian Lorenzo Hammerschmid also worked as a professor of natural sciences at the secondary school of San Ignacio de Velasco, Bolivia. Friendly relations connected him with Dr. Martin Cárdenas, a professor of botany at the University of Cochabamba. Cárdenas animated his friend to collect cacti. Of the collected plants sent Father Hammerschmid specimens to Cárdenas and to the cactus nursery Uhlig in Germany.

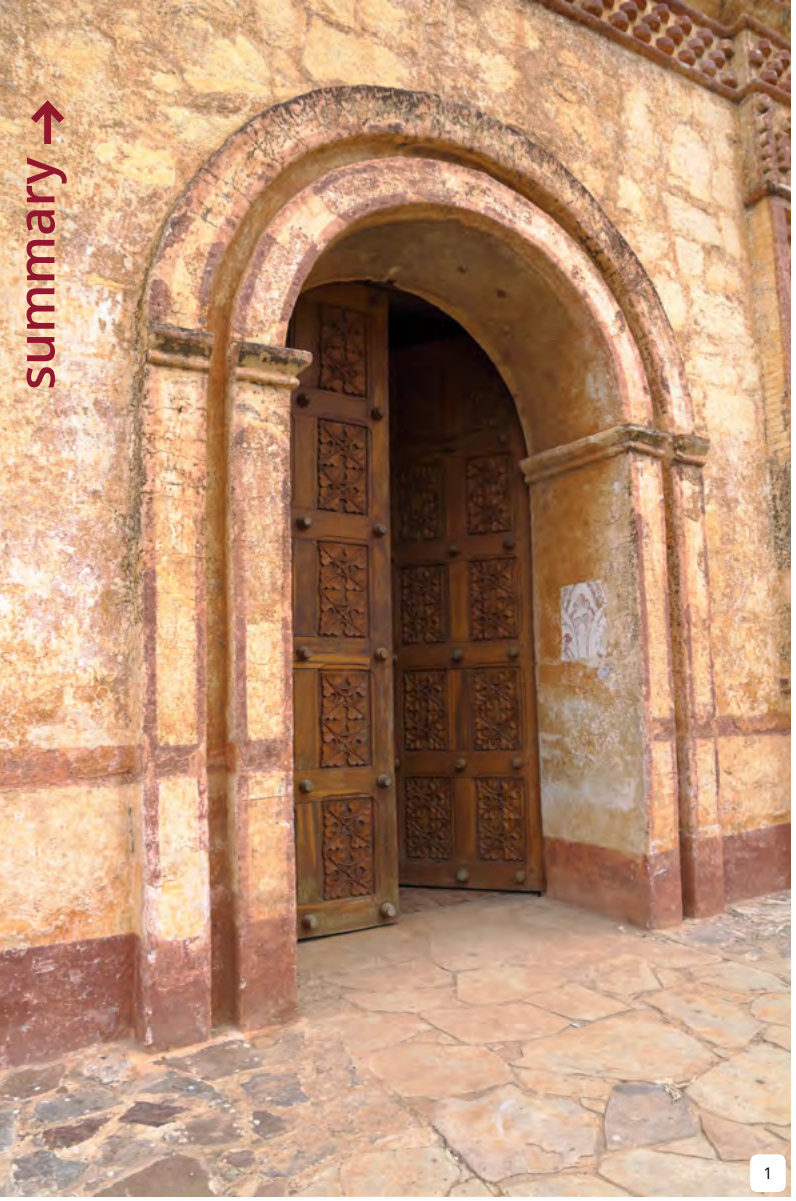
Quick detected Cárdenas and Backeberg that in this case there was a new species. All collected plants come from the same location, of the Serrania de Chiquitos, about 30 kilometers south of San José. Backeberg's description as *G. hammerschmidii* is nomenclaturally invalid (Art. 8.2), since he had failed to lodge a herbarium specimen in a recognized herbarium, and since the description was published later in time than that for *G. chiquitanum*. In 2009 Hans Till described the plant as *G. chiquitanum* var. *hammerschmidii*. In my opinion, there are no relevant differences between the specimens to the south of San José and the populations north-west of San José.

1 - The blue fruits are typical for the strong budding species. 2 - The spines lenght is variable. 3 - The cushions reach a size of up to 1 m in diameter. 4 - In *Gymnocalycium chiquitanum* the flower colour varies from white to pale pink.

The plants grow here on large rock slabs in cracks filled up with humus and come down in clear terrain, often being protected by small shrubs, grasses, ferns or *Bromeliaceae*. The species often forms large cushions. In this area there are localities where *F. amerhauseri*, *G. chiquitanum* and *Echinopsis hammerschmidt*i are growing together. *E. hammerschmidii* is widespread in the lowlands.

Between Quimome and San José de Chiquitos you can meet other cacti of the genus *Gymnocalycium*.

The plants can be found in the dense Chaco shrub. There are only small insular populations, as it often happens in the lowlands. My old site VoS 37 disappeared, it had to give way to the new road. In 2008, we could find these plants again at the under construction Ruta 4. Upon any subsequent travel to this area, unfortunately, not any more.



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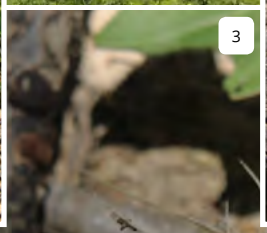
1 - This entry was built in 1748. 2 - This is the only church built of stone in the Chiquitania.
3 - Jesuit Order Church in San José de Chiquitos.

After about 280 kilometers we reach San José de Chiquitos. In the about 12,000 inhabitants town we find, proclaimed by UNESCO as a World Heritage Site, the Jesuit Mission of Chiquitos. In 2003 I was lucky enough to stay at the former Austrian Father Huber for a week in the Jesuit mission. He was very helpful to us in buying of fuel and the repair of our Jeep.

Only about three kilometers south of San José, rises the Serrania de San José, a some 90 kilometer long ridge. Here is the type location of *G. chiquitanum*. The species grows here at an altitude of 550 meters.

summary →

1 - *Gymnocalycium damsii* subsp. *evae* var. *torulosum* VoS 932 near San José de Chiquitos. 2 - Habitat of the plants. 3 - The plants can reach at the site a diameter of up to 10 cm. 4 - Flowers are always white.



In the immediate vicinity of San José you will find plants that were described in 1963 by Backeberg as *G. damsii* var. *torulosum*, which is an invalid name. In 2004, Till and Amerhauser described these plants as *G.damsii* subsp. *evae* var. *torulosum*. In this variety, the chin like rough bumps are typical. The plants are relatively large, up to ten centimeters in diameter. The flower colour is white.

summary →

en ro or

80 km east of San José de Chiquitos, located just off the highway, there is the small town of El Chochís. The beautifully colored rocks directly at the site are part of the Serrania de Chochís. It is a breathtaking landscape that always forces you to stop. In 2003 I was travelling with Helmut Amerhauser in this area. We were looking out for *G. damsii* and exploring the dense forest while we discovered a previously unknown *Frailea*.

Torre de David, a bizarre rock monolith, a red stone which stands imposingly in the countryside.
1 - Ruta 4 at El Chochís. 2 - The beautiful coloured cliffs always excite.

summary ↑

1 - The very rare *Frailea atrobella* at the discovery site VoS 322. 2 - There is no similarity to other Fraileas from the lowlands of Bolivia.

In 2011, this beautiful *Frailea* was described by Lothar Diers, Wolfgang Krahn and Roberto Vasquez as *F. atrobella*. Comparing it with the other *Frailea* species from the Bolivian lowlands, you can determine no resemblance in it's appearance. This is also true for the *Frailea* from northeastern Brazil and northern Paraguay.

Although I have visited the location for five times during the period 2003-2005, I was able to find the plants only twice. The "dark beauty" (*F. atrobella*) is extremely rare and very hard to spot in the dark, dense forest.

summary ↑

summary ↑

1 - *G. damsi*i subsp. *evae* var. *boosii* VoS 41. 2 - The length of the spines may vary considerably.

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With a bit of luck, you can encounter *G. damsii* subsp. *evae* var. *boosii* in this area. This variety was described due to the broom-like at times and to six centimeters long spines. The flower colour is always pink to carmine. Plants with normal spine length are much more common at the site.

summary ↑

F. chiquitana with black spines.

summary ↑

The plants grow always solitary, mostly on flat rock slabs

The fruits dry out at maturity.

To the west of the small town, at the foothills of the Serrania Roboré Santiago, you can admire the first populations of *F. chiquitana*. The species was found by Prof. Martin. Cárdenas in 1949, in the mountains of Santiago. In 1963 Curt Backeberg described *Frailea pullispina*, which occurs from the same site.

According to the current knowledge it can be assumed that there is a renewed description of *Frailea chiquitana*. This species often grows on flat rock slabs, in gaps and fissures filled with humus, or in sandy loam soils and which are intermixed with stones. There are also sites where the species is exposed to the direct sunlight.

1 2

1 - Visited by a pollinator. 2 - *F. chiquitana* at the site near Roboré.

1 - Very old plant, always solitary growing.
2 - The pure yellow flowers often obscure the plant's body.

summary ↩

summary ↑

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1 & 2 - *Echinopsis hammerschmidii* forms often large cushions. The flower colour is white.

summary ↑

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Usually *F. chiquitana* grows in the protection of other shade generating plants, often associated with *Cleistocactus samaipatanus, Echinopsis hammerschmidii, Cereus hankeanus* und *Cereus kroenleinii*.

1 - *Cereus kroenleinii*. 2 - *Cereus hankeanus*. 3 - Commonly found in the eastern Bolivian lowlands - *Cleistocactus samaipatanus*.

In the vicinity of Roboré, in relatively dense forest areas, grows *G. damsii* subsp. *evae* var. *centrispinum*. For small plants on the stamens there is a prominent stylus, which is a unique feature, which was observed only in this variety. For all other *G. damsii* taxa the stylus is including the scar of the dominating stamens. The flower colour is white, while in culture the colour of the epidermis is copper to dark green.

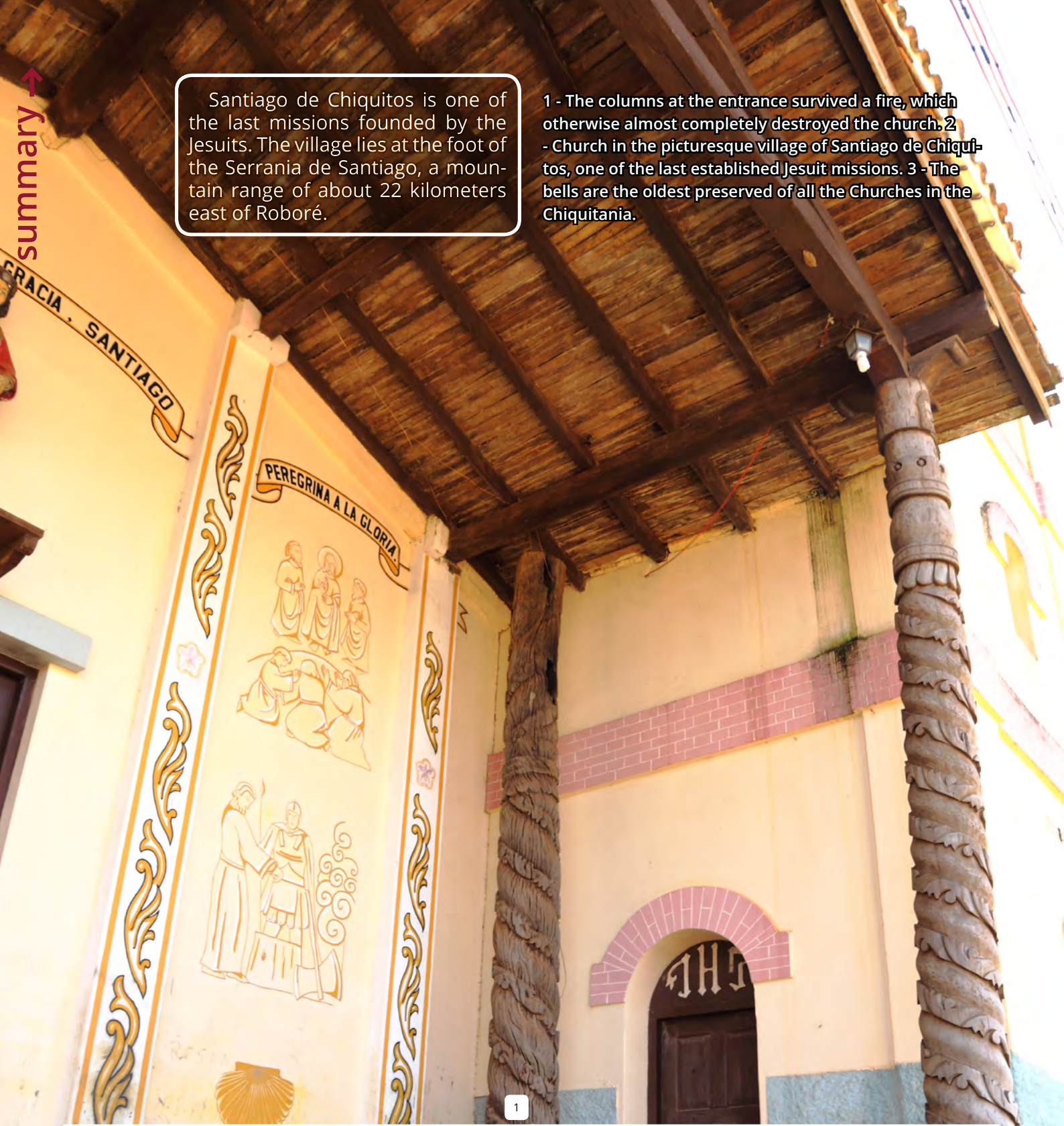
summary ↓

***G. damsii* subsp. *evae* var. *centrispinum* grows in the immediate vicinity of Roboré.**

summary ↑

Santiago de Chiquitos is one of the last missions founded by the Jesuits. The village lies at the foot of the Serrania de Santiago, a mountain range of about 22 kilometers east of Roboré.

1 - The columns at the entrance survived a fire, which otherwise almost completely destroyed the church. 2 - Church in the picturesque village of Santiago de Chiquitos, one of the last established Jesuit missions. 3 - The bells are the oldest preserved of all the Churches in the Chiquitania.



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From here you get to the Regional Reserve Valle Tucavaca, which keeps under protection the endangered and ecologically unique Chiquitano dry forest.

From the mountain range Serrania de Santiago it offers a beautiful view of the valley "Valle Tucavaca".

summary ↑

Here you will find plants which have been described as *G. anisitsii* subsp. *holdii* var. *tucavocense*. The epidermis of this budding plant is dark green and shiny. The flower colour is usually pale pink.

1 - The plants often form shoots out. 2 - In the tropical dry forests you can find *G. anisitsii* subsp. *holdii* var. *tucavocense*.

summary

South of the Naranjes train station, in 2003, on the route of the at that time in construction gas pipeline from Bolivia to Brazil, we could see *Gymnocalycium damsii* subsp. *evae* var. *rotundulum*. This variety has thin carmine-pink flowers.

Gymnocalycium damsii subsp. *evae* var. *rotundulum* has beautiful flowers carmine-pink, and in culture a permanent flowering from spring to late autumn.

summary ↑

summary ↑

Even a not yet described species of the genus *Frailea* could be found here. Unfortunately, these sites are no longer accessible.

Frailea spec. stays in closer relationship to *F. angelicana*.

summary ↑

summary

515 km west of Santa Cruz is the small town of Santa Ana. In the nearby area you can find, with a little bit of luck and some perseverance, *G. anisitsii* var. *pseudo-malacocarpus* track. The cacti are growing here in dense forests. The sandy-loamy soils are interspersed with stones and small rocks. The annual precipitation is at 1100 millimeters, but July and August are considered dry months with less than 35 millimeters of precipitation.

In Santa Ana you will encounter *G. anisitsii* var. *pseudo-malacocarpus*

summary

The species grows in dense thickets of the forest, in humus rich soils.

The actual type location of *G. pseudo-malacocarpus* sensu Backeberg is Lourdes. As the species was published without specifying a herbarium specimen and is therefore a nomen invalidum. The same thing is true for *G. griso-pallidum*. Once again, unfortunately, it is no longer possible to access the actual type locations. The only connection to this area was cut in the course of the construction of the gas pipeline. After the plant discoverer Father Klingler, only Alfred Lau in 1970 just could visiting these sites and collect plants. So far I could only detect with my companions some locations that correspond to the old collections made. They are like all locations of cacti in the lowlands, very small and often isolated, very far apart from each other. All these plants are very closely related to *G. megatae*. Seedlings differ obviously from *G. anisitsii*. Both flower and seeds of the plants prove a close relationship with *G. megatae*.

summary ↑

summary

Shortly before the border town of Puerto Suárez, we leave the Ruta 4 for a few kilometers to go south. In the border area with Brazil in San Cyrilo, on the edge of the Pantanal, can be found growing in a fairly rugged terrain *Discocactus boliviensis*.

1 - The plants often grow amidst *Dyckia insignis*. 2 - *D. boliviensis* grows on limestone cliffs. 3 - *Discocactus boliviensis* on location in San Cyrilo.

summary

1 - *Discocactus ferricola;* the species usually grows exposed without accompanying protective vegetation, exposed to the sunlight.
2 - At the site of *Discocactus ferricola.*

Further south, the mountain Mutún stores the world's largest iron ore deposits near the surface. Here grows *Discocactus ferricola*.

1 - *D. ferricola* grows on iron and manganese ore rocks, hence the name *ferricola* (growing on iron). 2 - The cephalium is fitted with dark, to 5 cm long bristles. 3 - Location in Mutun.

summary ↑

Traveling was a few years ago quite difficult on the Ruta 4, yet it is today pure luxury. For field-goers like me, again a piece of adventures has gone lost. The cacti search became more difficult since the new road takes out quite a bit of the countryside, you pass by places many times. A detection of new locations of cacti is thus not just become easier. These images probably belong to a tour of the past. In 2008, the old Ruta 4 was completely under water near Santa Ana, and further travel was impossible.

1 - No more traffic is possible, in 2008 Ruta 4 was completely under water near Santa Ana. 2 - With the new construction of the connection these images are probably belonging to the past. 3 - The author confronted with the flooded Ruta 4 in 2008.

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summary ↑

Some plants of my collection

Collection Pictorials

Lacy Szanto

Lobivia pendlandii.

The cactus substrate is, in my case, not a fixed combination, prepared by very precise rules. I gather all the necessary compounds and when I mix tem, every time by hand, I add from each more or less, depending on colour or how I appreciate them in that moment.

The inspiration of the moment is important.

summary ↑

summary

1 2

1 - *L. pendlandii*. 2 - *L. aurea*.

The components consist of various mica schists, dacite, or from various rocks and other substrates that are found in the Paltinis area. I also have received other components from Gicu Maiuru - granite, sands from Podari etc

summary

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1 & 2 - *Mammillaria herrerae.*

summary ↩

summary

I also use broken brick, zeolite, and volcanic tuff. I also add some 5-10% organic components - i.e. forest earth from leaves of the beech, lime and oak. I gather this soil from my country side, in Buia Sibiu. I do not use limestone, but I have only one plant on 80% limestone substrate, a *Mammillaria plumosa.*

1 - *Mammillaria fraileana*. 2 & 3 - *M. deherdtiana*. 4 - *M. boolii*.

summary

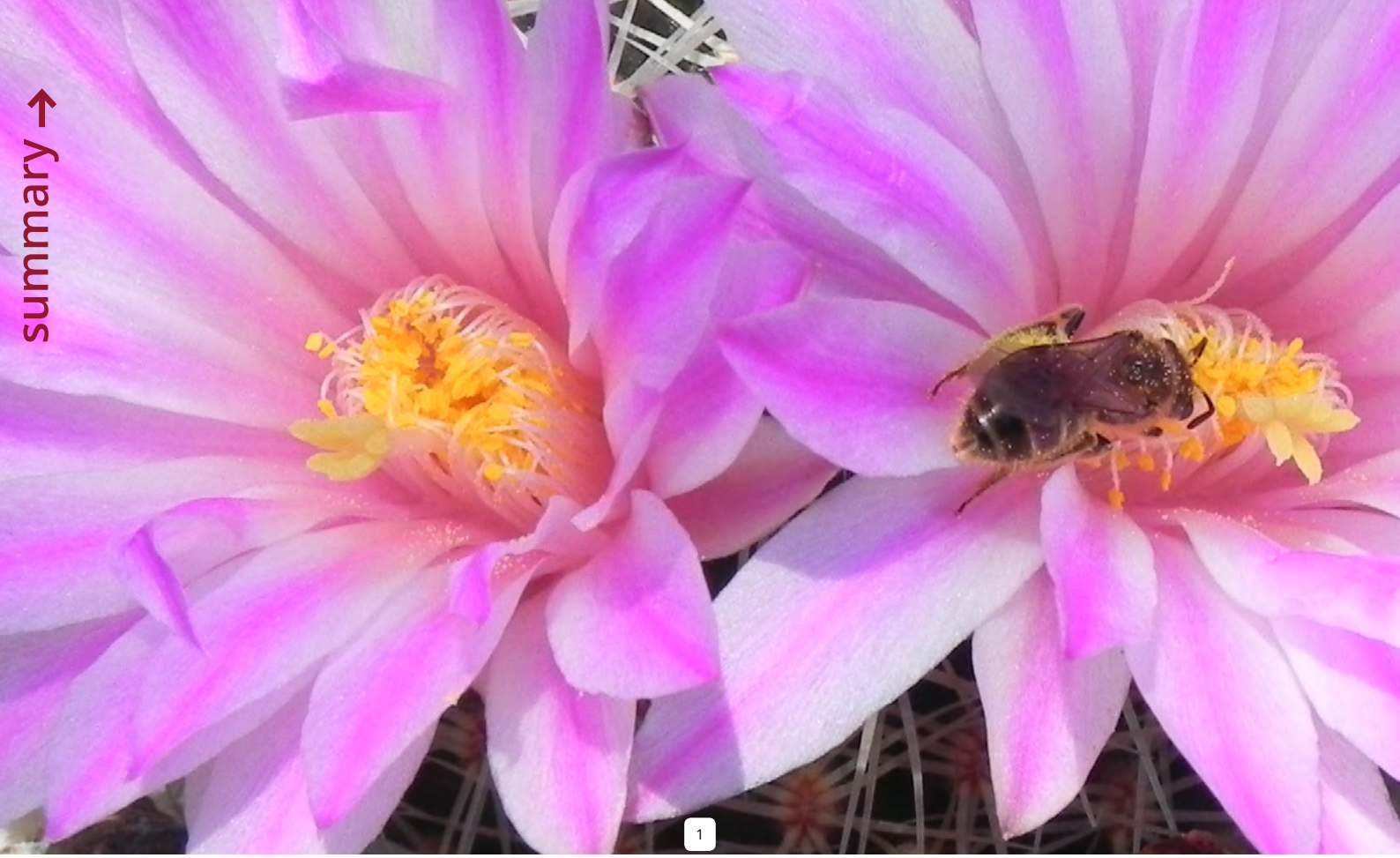
1 & 2 - *Mammillaria guelzoviana.*

summary →

Mammillaria lenta.

In my case watering is a problem. Why? Like I said, I keep the plants at my country house, while I live in the city of Sibiu. I go and see the plants and care for them once a week, or sometimes every 2-3 weeks. In summer my program seems to be accepted by the plants because it is very hot and I should not water them at all ... just a little sprinkle late in the night.

summary →



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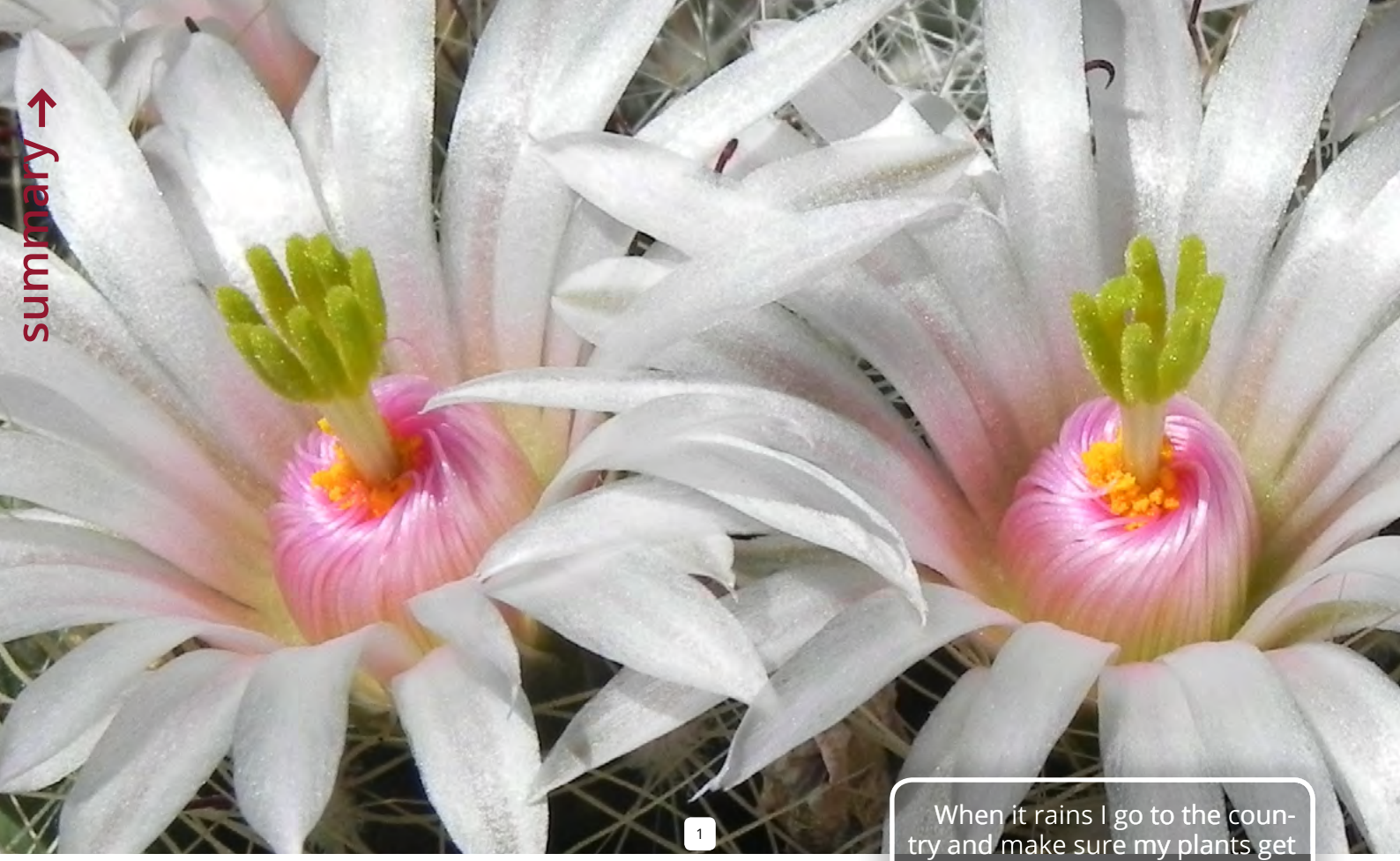
1 & 2 - *Mammillaria napina.*

summary ↑

summary ↑



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1 & 2 - *Mammillaria zephyranthoides.*

When it rains I go to the country and make sure my plants get a deep watering, this happen maybe two or three times during the summer. I water only with rainwater. The idea is that I don't have very accurate data about watering cacti. Nothing is planned, measured, etc. Everything happens spontaneously and my cacti just seem to like it!

summary ↑

The Holy Week in Mexico

part 2

Travelogue

Aldo Delladdio

Epithelantha pachyrhiza ssp.*elongata*

Unlike Italy, where only the Easter Monday is holiday, most Mexicans are allowed to take the entire Holy Week off, so I took the opportunity to spend it with my Mexican friends, going up and down the hills, looking for cacti. Having been on field trips together several times now, we didn't even bother to prepare a plan; we just agreed that we would meet on Saturday morning as early as possible.

Unfortunately one of them wasn't given the permission to take the entire week off at the last minute, so I asked the remaining friend to join me in San Miguel de Allende, so I could sleep a little longer and recover from the trans-atlantic flight and agreed with the other one that he would join us one of the following days..

summary ↑

summary ↑

April 1 – From Saltillo to Maderas del Carmen, Coahuila (569 km)

We couldn't quite make it to be at the Terminal de Autobuses at 5 o'clock in the morning, but luckily the bus arriving from Querétaro was late, so we were there when our friend arrived at 8 o'clock.

We made some provisions, withdrew some money at the ATM inside the supermarket and then left Saltillo heading north. We passed Ramos Arizpe and took the Highway 40 to Monterrey, but soon we had to exit it and try to take a small road leading to Cantera de Higueras, or so it seemed on the map. After a couple of back and forth, we finally found a small road going in the direction we wanted, but, after a couple hundred meters, we found it closed by a gate. We left the car near the gate, jumped over it, and continued on foot along the road, until we arrived under the rather steep hill we intended to climb. About mid-way to the hilltop, we started to see interesting plants, like *Epithelantha pachyrhiza* ssp. *elongata* and *Thelocactus rinconensis* fma *phymatothelos*. A bit higher, *Thelocactus macdowellii* started to appear, and finally the object of our search: *Mammillaria plumosa*, growing in rock crevices. Sometimes the two species where sharing the same crack. We went to the very top of that hill, just to enjoy the view. But we didn't spend much time there, since a long drive was awaiting us. While we were enjoying the view, we had noticed a pickup truck parked right where we started our ascent, and immediately figured out that somebody was precisely waiting for us. The guy asked what we were doing there, and we replied that we were there to photograph the place and its flora. He politely told us that we should have asked permis-

1 - *Mammillaria plumosa*. 2 - Habitat of *Mammillaria plumosa*. 3 - *Thelocactus macdowelli* and *Mammillaria plumosa*.

summary ↑

summary ↑

sion, since there was a mine further down the road, and three had been thefts in the past. We said that we didn't know whom to ask, but we would ask in the future. He gave us a lift outside and then we continued our journey. It wasn't long since we made a brief stop at Mesón del Norte, along the Highway 57, to look for *Epithelantha greggii* ssp. *polycephala*. The plant was growing in rock cracks, along with *Neollodia conoidea, Astrophytum capricorne* and *Echinocactus horizonthalonius*. After this stop we drove all the way north for 576 km, past Monclova, up to Nueva Rosita, where we left the 57 and took the Highway 93 to Melchor Muzquiz.

1 - Habitat of *Epithelantha greggii* ssp. *polycephala*.
2- *Epithelantha greggii* ssp. *polycephala*.

At Muzquiz we stopped to make provisions.

We bought two plastic tanks and filled them with petrol, since we knew we would go a long way without any petrol stations, and also bought a polystyrene box and filled it with beer cans, since we knew that we wouldn't find any bars either. Then we continued north until we arrived to the unpaved road going to Maderas del Carmen, where we got a flat tyre the year before and couldn't continue. We drove until we found a spot where we could camp for the night, at about 22 o'clock.

summary ↑

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April 2 – From Maderas del Carmen to Rancho San Ildefonso, Coahuila (266 km)

A good thing about camping is that you wake up early and are up and running in very little time, except that this was the first time that my friends where trying to fold the so-called 2-seconds tent I bought for them in Italy. I can tell you that the two seconds only apply to unfolding, although the timing improved on subsequent attempts. We left the Rancho gate in front of which we had parked at 7 o'clock and continued north for about 50 km, until the road looked as it has been flushed away, so we had to continue on foot. While walking, we found *Ancistrocactus uncinatus* ssp. *wrightii,* but also a pale yellow *Ancistrocactus*, maybe an *Ancistrocactus brevihamatus* ssp. *pallidus*, or just an albino form of the former. After some km, we arrived to a low hill and started the search.

1 - Early morning in front of a Rancho gate. *2 - Ancistrocactus uncinatus* ssp. *wrightii. 3 - Ancistrocactus brevihamatus* ssp. *pallidus.*

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1 & 2 - *Mammillaria luethyi* .

We split very soon, and soon lost sight of each other. After wandering around for about one hour, and almost ignoring the *Ariocarpus fissuratus* I found here and there, I was the lucky one to stumble on *Mammillaria luethyi,* not particularly difficult to spot, since it was in flower, but it still required some luck to find this micro-habitat of no more than 10 m² in the vastness of the surroundings. At this point I shouted to the others, but nobody would hear me, so I sat under the shade of a large bush and waited. Finally my friends appeared one at a time, and were able to take their share of photographs.

summary ↑

We then walked back to our car, tired, but happy. Along the road we saw flowering *Epithelantha micromeris* and *Echinocactus horizonthalonius*. Back in the car, we decided to return to civilization from another route, crossing the Sierra del Carmen, and then south to Ocampo.

We stopped when it was dark, unfolded the tent in 2 seconds, drank a few beers and went to sleep.

1

1 - Sierra del Carmen . 2 - *Epithelantha micromeris*. 3 - *Echinocactus horizonthalonius*.

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summary

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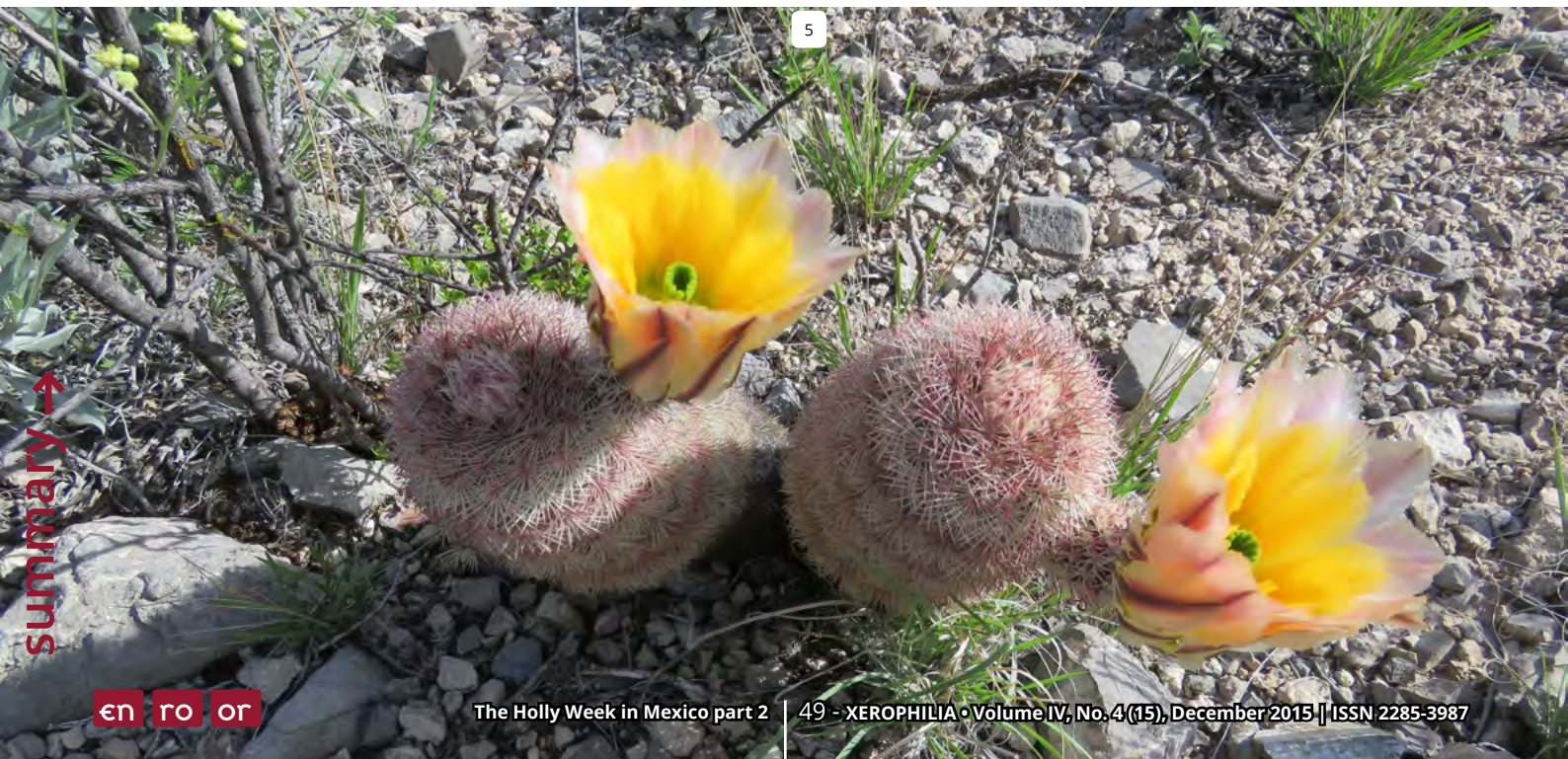
April 3 – From Rancho San Ildefonso to Saltillo, Coahuila (572 km)

My friend folded the tent much more quickly this time, so we started our daily journey at about 7 o'clock.

The unpaved road didn't allow for fast driving and it was rather boring, since the mountains were too far from the road, but whenever we were passing close enough to an interesting hill, we would stop.

One hill in particular proved quite interesting, more at its foot than at the top actually. In fact, at the hill's base, we found *Coryphantha poselgeriana*, *Echinocereus dasyacanthus* in flower, many rather large *Ariocarpus fissuratus*, *Mammillaria lasiacantha*, plus a lot of flowering *Neolloydia conoidea* that we almost ignored.

1 - Habitat of *Mammillaria lasiacantha* with flowering *Neolloydia conoidea*. 2 - *Mammillaria lasiacantha*. 3 - *Ariocarpus fissuratus*. 4 - *Coryphantha poselgeriana*. 5 - *Echinocereus dasyacanthus*.



summary ↑

Ancistrocactus pinkavanus.

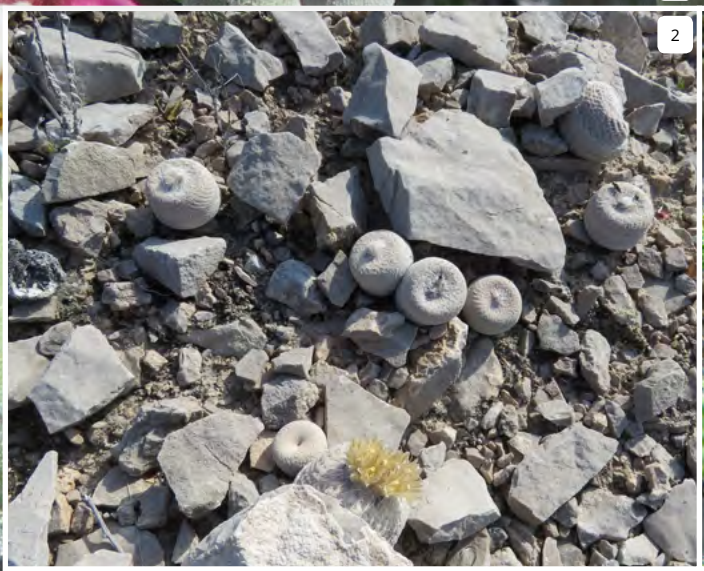
Our initial plan was to check the lagoons northwest of Ocampo, but since it would take us a considerable amount of time, we opted to continue to Cuatro Ciénegas instead. That proved to be a very good decision, since just when we arrived to town, we realized that the transmission oil circuit had broken again and we had lost all the oil.

We bought new oil and provisionally fixed the circuit again. At this point we decided that we would finish the day in Saltillo, but first we went to check *Ancistrocactus pinkavanus*, that we found luckily in flower.

Since it was too early to go to Saltillo, we visited a nearby hill, where we knew we would find interesting plants, having visited it several times in the past. This time I ignored the *Ariocarpus fissuratus, Lophophora williamsii,* etc., etc... and took pictures of just *Euphorbia antisiphilitica, Echinomastus hispidus* and *Epithelantha bokei,* since they were in flower.

We then set off for Saltillo, where we arrived at 23 o'clock, still in time for a proper dinner.

1 - Euphorbia antisiphilitica. 2 - Epithelantha bokei. 3 - Echinomastus hispidus.



summary ↑

April 4 – From Saltillo to Matehuala, San Luis Potosí (735 km)

The distance between Saltillo and Matehuala is just 250 km actually, but we did a rather long detour. We left the hotel at 8 o'clock and went eastward, crossed Monterrey, always an adventure, and when we were near China, left the Highway 40 and turned north to Los Herreras and then west. The place we were searching was very flat and wet, the vegetation rather thick, like low woodland. We soon split, but tried to stay in voice contact at least, so if someone would find something he would be able to shout to the others and be heard. The first plant I saw was a large, flat, *Echinocactus texensis*, not particularly interesting.

Much more interesting was the *Echinocereus* (*Wilcoxia*) *poselgeri* we were looking for something thin, finger-like. The couple of *Gopherus berlandieri* I spotted under a bush, kept us busy for a while.

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1 - *Echinocereus* (*Wilcoxia*) *poselgeri*.
2 - *Gopherus berlandieri*.

summary ↑

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We resumed our search, and after a while one of my friends spotted the first *Digitostigma caput-medusae*, hiding in the middle of a bush. We kept searching for another half an hour, and found more than a dozen plants. When we decided we had enough we returned to our car and ate a quick lunch.

4

1 - Habitat of *Digitostigma caput-medusae*.
2-4 - *Digitostigma caput-medusae*.

summary ↑

Our next stop was west of Ciudad Cerralvo, near a mine. A gate was closing the entrance, but we asked the person guarding the place, and he let us enter. We were able to drive very close to the base of a rocky hill, covered by rather luxuriant vegetation and mosses, where, amongst the stones and moss, we found *Turbinicarpus sauerii* ssp. *gonzalezii*. We spent about half an hour on this place and left at about 19 o'clock. We then drove non-stop for 400 km and arrived to Matehuala at 23:30 o'clock, still on time to find a restaurant open.

1 - Habitat of *Turbinicarpus saueri* ssp. *gonzalezii*.
2 - *Turbinicarpus saueri* ssp. *gonzalezii*.

summary ↑

summary ↑

1 - Habitat of *Turbinicarpus valdezianus*. 2 - *T. valdezianus*.
3 - Habitat of *Ariocarpus retusus*. 4 - *A. retusus*.

April 5 – From Matehuala to San Miguel de Allende (675 km)

We left Matehuala at 8 o'clock. This was our last day of holiday, so we decided to do something easy. We went north and then west to Vanegas and then north again.

Rather than exploring the plain we had visited several times in the past, we directed ourselves to some hills that looked interesting. In fact, here we found *Ariocarpus retusus* and *Turbinicarpus valdezianus*.

summary ↑

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1 - Habitat of *Lophophora alberto-vojtechii* and *Ariocarpus kotschoueyanus*. 2 - *L. alberto-vojtechii*. 3 - *A. kotschoueyanus*. 4 - *Mammillaria coahuilensis*.

We then drove to the familiar plain, which we found flooded in October 2014, with the *Ariocarpus kotschoubeyanus* still willing to flower completely underwater. This time the plain was bone dry, and it took us very little time to our trained eyes to find *Ariocarpus kotschoubeyanus*, *Lophophora alberto-vojtechii* and *Mammillaria coahuilensis*.

summary ↑

summary

At Entronque Huizache we made our last stop. One of my friends really wanted to see a coryphantha whose habitat seems to be restricted to Huizache. After parking the car as close as possible, we started to climb a nearby hill. We soon found *Neolloyidia matehualensis*, whose glaucous colour makes it look a bit better than the green *N. conoidea*. Then we found a flowering, naked *Astrophytum myriostigma*, quite common here, but there were normally spekled individuals too. We also found *Mammillaria candida* in flower, and *Turbinicarpus klinkerianus*.

1 - *Neolloydia matehualensis*. 2 - *Astrophytum myriostigma 'nudum'*. 3 - *A. myriostigma* nudum normal & 'nudum' form. 4 - *Mammillaria candida*.

summary

summary ↑

1 - *Coryphantha pulleiniana*. 2 - *Turbinicarpus klinkerianus*.

summary ↑

Finally, we found *Coryphantha pulleiniana*, a rather ugly *Coryphantha* in my opinion, but it only grows here.

After this last success, we drove southwards without making any stops. I dropped my friends at their home, and made the last stretch to San Miguel the Allende, where I arrived at midnight.

Mammillaria paulii Linzen

on rocks... and grass

Field Notes

Pedro Nájera Quezada

Mammillaria paulii.

Mammillaria paulii Linzen, one of the least studied species and recently described, can be found in one of the most cacti diverse region, Guadalcazar SLP; growing on alpine meadows and between submontane shrub vegetation;

summary →

summary

1 & 2 - *Mammillaria paulii.*

The specie presents a scattered distribution along the Trinidad mountain range on open or semi open vegetation, and located on full sun exposure or completely under a shrub canopy.

Many individuals grow on the cracks and holes of karstic limestone and eroded basalt.

summary

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1 & 2 - *Mammillaria paulii.*

The soil classification corresponds to vertisol (*) and leptosols (**) in all the distribution area, composed of both igneous and sedimentary origins.

I have been able to observe some of these plants for about 3 years and I haven't noticed any growing rate nor decaying individuals and neither recent seedlings.

The specie seems to depend on good rainfall seasons to bloom and is frost tolerant.

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1-5 - *Mammillaria paulii.*

(*) **Vertisols =>** a clayey soil with little organic matter which occurs in regions having distinct wet and dry seasons.

(**) **Leptosol =>** is a very shallow soil over hard rock or highly calcareous material or a deeper soil that is extremely gravelly and/or stony.

summary ↑

Myrmecodia beccarii Hook.f.

a pictorial appraisal including epiphytic companion species

part 2
Port Douglas, Palm Cove, Trinity Beach, Cairns Botanic Gardens & Cairns Mangrove Boardwalk

Field Report

Derrick Rowe

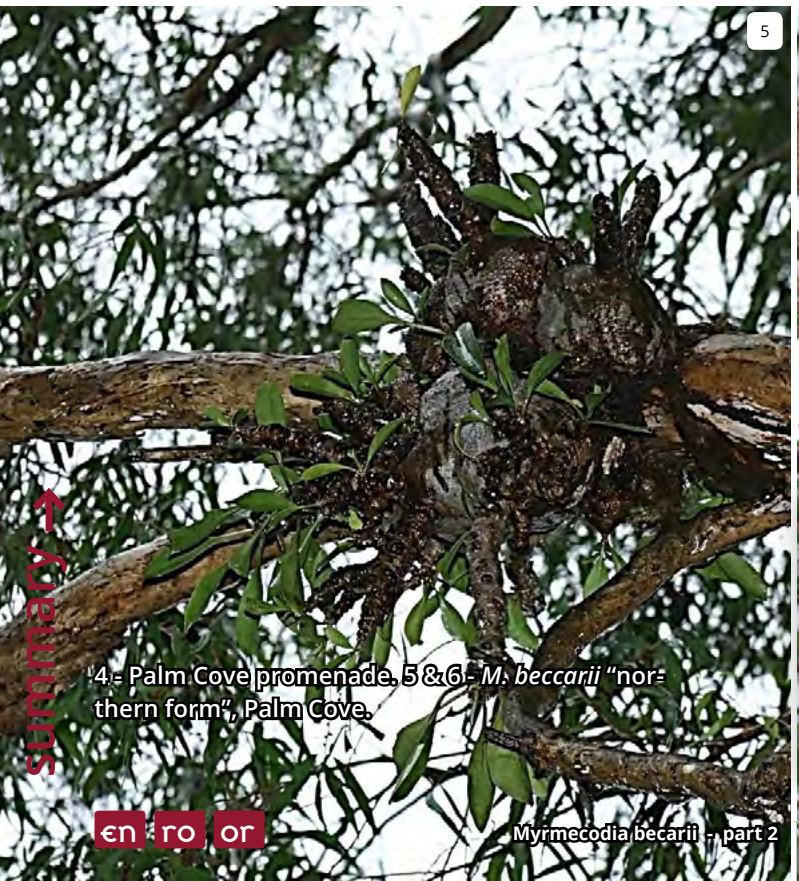
summary

Port Douglas is a very popular holiday resort 70 kilometres north of Cairns. Many of its enormous Paperbark *Melaleuca* spp. have been retained among its very smart buildings and these trees conserve populations of *Myrmecodia beccarii* "northern form". Most are very safe from humans being high in the canopy. A several kilometres long lovely white sand beach is just across the road to the left.

Elegant residential buildings in Port Douglas.

summary ↑

1 - Elegant residential buildings in Port Douglas.
2 - *Myrmecodia beccarii* "northern form", Port Douglas.. 3 - *M. beccarii* "northern form", Port Douglas. Note the whitish fruit.



Palm Cove

Palm Cove is an isolated beach resort located 27 kilometres north of Cairns and is named after the palm trees that line its popular beach. Populations of *Myrmecodia beccarii* "northern from" survive high in many of these large Paperbark Melaleuca trees.

summary ↑

4 - Palm Cove promenade. 5 & 6 - *M. beccarii* "northern form", Palm Cove.

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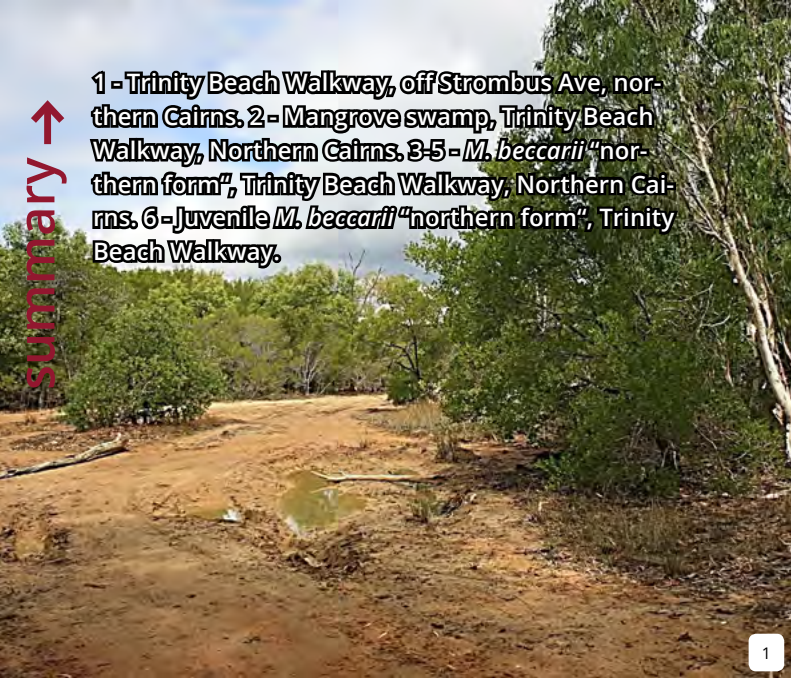
1 - Trinity Beach Walkway, off Strombus Ave, northern Cairns. 2 - Mangrove swamp, Trinity Beach Walkway, Northern Cairns. 3-5 - *M. beccarii* "northern form", Trinity Beach Walkway, Northern Cairns. 6 - Juvenile *M. beccarii* "northern form", Trinity Beach Walkway.



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Trinity Beach

This is another favoured Cairns beach, located south of Palm Cove and fast approaching its prominence as new restaurants and holiday apartments are constantly being built. *Myrmecodia beccarii* "northern from" is well spread here in large Paperbark *Melaleuca* trees..

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1 - *M. beccarii* "northern form", Trinity Beach Walkway.. 2 - *Dendrobium tattonianum*, a rare North Queensland orchid, Trinity Beach Walkway. 3 - Laughing Kookaburra *Dacelo novaeguineae* Trinity Beach Walkway.

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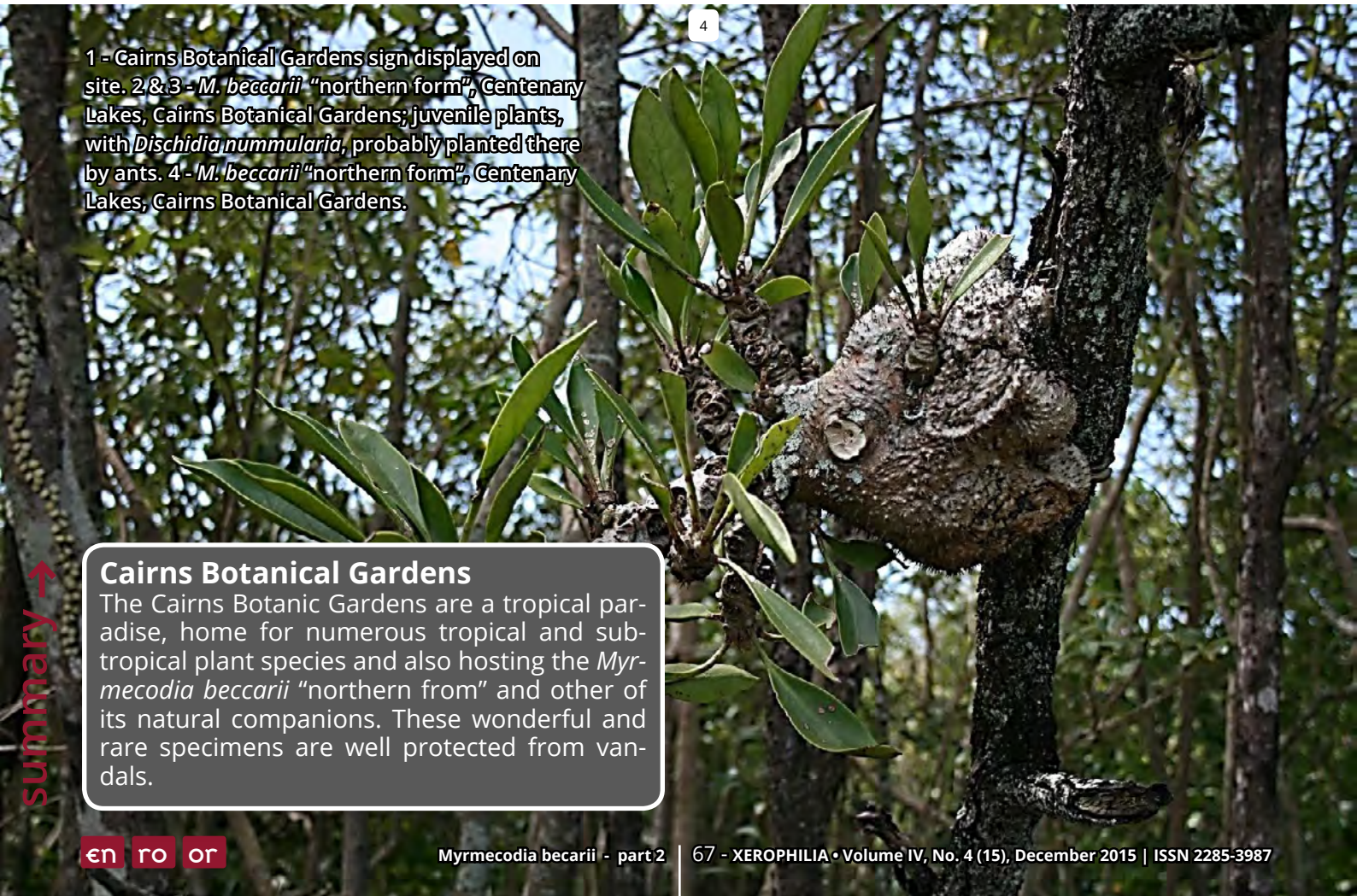

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1 - Cairns Botanical Gardens sign displayed on site. 2 & 3 - *M. beccarii* "northern form", Centenary Lakes, Cairns Botanical Gardens; juvenile plants, with *Dischidia nummularia*, probably planted there by ants. 4 - *M. beccarii* "northern form", Centenary Lakes, Cairns Botanical Gardens.

Cairns Botanical Gardens

The Cairns Botanic Gardens are a tropical paradise, home for numerous tropical and subtropical plant species and also hosting the *Myrmecodia beccarii* "northern from" and other of its natural companions. These wonderful and rare specimens are well protected from vandals.

summary ↩

summary ↩

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1 - *M. beccarii* "northern form", Centenary Lakes, Cairns Botanical Gardens. 4 - *Dischidia nummularia* with what is probably a *Drynaria fern species*, Centenary Lakes, Cairns Botanical Gardens. 3 - An arboreal nest made by green ants *Oecophylla smaragdina* a weaver species.

summary ↑

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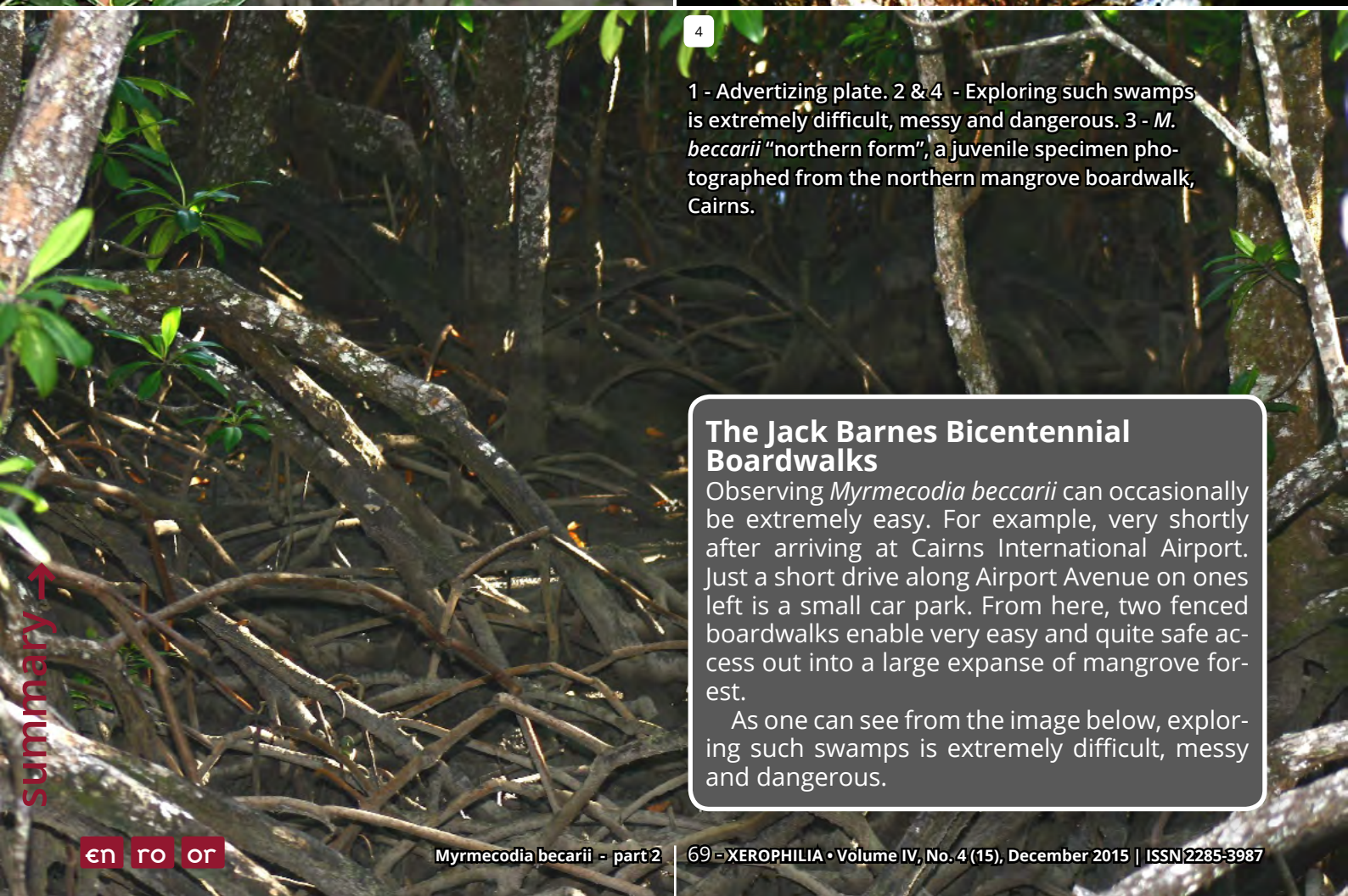

4

1 - Advertizing plate. 2 & 4 - Exploring such swamps is extremely difficult, messy and dangerous. 3 - *M. beccarii* "northern form", a juvenile specimen photographed from the northern mangrove boardwalk, Cairns.

The Jack Barnes Bicentennial Boardwalks

Observing *Myrmecodia beccarii* can occasionally be extremely easy. For example, very shortly after arriving at Cairns International Airport. Just a short drive along Airport Avenue on ones left is a small car park. From here, two fenced boardwalks enable very easy and quite safe access out into a large expanse of mangrove forest.

As one can see from the image below, exploring such swamps is extremely difficult, messy and dangerous.

summary →

summary

1 & 2 - *M. beccarii* "northern form", very exposed to sunlight on *Xylocarpus moluccensis*, the northern mangrove boardwalk, Cairns. 3 - The Golden orchid, *Dendrobium discolor*; flower colour varies from an attractive yellow to chocolate brown..

The Myrmecodias here are in exceptional condition and are frequently very close to viewers, permitting excellent photo opportunities. There is a selection of orchid species and a few other epiphytes. Add to this the marine fauna such as mudskippers and hermit crabs as well as occasional birds unique to this ecosystem. Furthermore, if one is quiet, one may possibly sight a small crocodile down below in saltwater Middle Creek off the northern walkway, which is the better of the two. A popular host tree is *Xylocarpus moluccensis* a deciduous (leafless) species through the shorter days of the dry season.

Winter is not a very useful word here in the tropics.

summary

Another epiphytic orchid.

A succulent-leaved mistletoe, Cairns mangrove walkway. Mistletoes are frequent companions of Australia's ant-plant species.

The joy of hunting and shooting *Pterocactus* D.R.Hunt in habitat

Habitat Pictorials

Carolina González

Pterocactus is a genus of cacti from the *Opuntioideae* family. Some species can be found in the northwest of Argentina, but in the Patagonia region is where most species occur. Its distinctive sign is its huge napiform roots. The aerial part is only a small portion of the plant, and consists of small segments. Usually it grows in sandy, very loose soil, in which they need to develop their large roots. Its name comes from the Greek Ptero = wings, and is given by the shape of their seeds.

They are very resistant to winter cold (cryovagues), which is not very wet, but usually receive a pair of heavy snows per year. As most opuntioides some of them have many glochids.

The author: enjoying shooting *Pterocactus* flowers, near Arroyo Carreri.

Photo by Maria Angélica Garayzabal.

summary

summary ↓

Pterocactus australis (F.A.C.Weber) Backeb., camouflate plants between roks, near Laguna Blanca, 14th of Mai 2014.
Detail above: This adult plants are very small.

Pterocactus australis

(F.A.C.Weber) Backeb.

Its name comes from its southern location. It can be found from the southernmost regions of Patagonia, as the province of Santa Cruz to the north of the province of Neuquen, and from the Andes to the Atlantic. This wide distribution makes *P. australis* is highly variable in appearance.

A singularity of *P. australis* is its scarce or nonexistent glochids. It has beautiful papery spines up to 3 cm, ranging from white, black, gray or gold.

The flowers are golden or pink. They open between late November and mid-December.

P. australis usually grow together with some species of *Austrocactus*.

summary ↑

P. australis, a long spine plant, near Laguna Blanca, 7th of November 2015.
Details above: 1 - *P. australis*, plants preparing for blooming, near Laguna Blanca, 7th of November 2015. 2 - *P. australis*, large colony, at Arroyo Carreri, 25 km to the west from Zapala, Neuquén, 28th of November 2014.

summary ↑

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Pterocactus araucanus **Castell.**
The original description of this species is referred to a village near the town of Gualjaina, Chubut, That consist of little brown/grizzled segments. Sometimes it presents small black or white pectinate spines; other specimens lack of thorns.

Its flowers are undoubtedly the most striking in the genus, bloom in brown or red colours, with yellow stamens and purple anthers and stigma. Specimens that grow near Zapala differ from the original description where the plants are presented with apical flowers. *P. araucanus* from Zapala flower from lateral segments growing with the exclusive function to flourish; another feature are the glochids that are present even in the apical areoles.

P. araucanus 'conoideus', showing it's conical form, at Laguna Blanca, 7th of November 2015.
Detail below: 1 - *P. araucanus*, flower showing it's magnificent purple anthers and stygma. 2 - *P. araucanus 'conoideus'*, an old specimen with buds, the day before flowering, at Zapala, Neuquén, 21st of November 2015.

summary ↑

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Pterocactus araucanus A.Cast., juvenile plants, near Laguna Blanca, 7th of November 2015.

P. araucanus, young but adult plant, near Laguna Blanca, 7th of November 2015.

P. araucanus 'conoideus', fruits in formation, at Parque Nacional Laguna Blanca, 14th of November 2015.
Details below: 1 - *P. araucanus*, an old flowering plant, at Zapala, Neuquén, November 2009. 2 - *P. araucanus* and *Plantago patagonica*, at Zapala, Neuquén, 21st of November 2015.

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P. araucanus 'conoideus', at Laguna Blanca, 7th of November 2015.

P. araucanus 'conoideus', flower bud and ofspring in formation, at Parque Nacional Laguna Blanca, 7th of November 2015.
Detail left: *P. araucanus*, oppening buds from a stem hyden by sand and gravels, at Zapala, Neuquén, 29th of November 2015. .
Detail below: The auther "catching" a *P. araucanus*.

summary ↑

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P. araucanus 'conoideus', a big fruit, at Laguna Blanca, 7th of November 2015.
Detail left: *P. araucanus*, flowering plant, at Zapala, Neuquén, 29th of November 2015.
Details below: 1 - *P. araucanus*, splendid flowering plant, at Zapala, Neuquén, 29th of November 2015.
2 - *P. araucanus*, at Zapala, Neuquén, 29th of November 2015.

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P. araucanus, flowering plant, at Zapala, Neuquén, 29th of November 2015.
Details below: 1 - *P. araucanus*, . 2 - *P. araucanus* *'conoideus'*, near Arroyo Carreri, 25 km to the west from Zapala, Neuquén, 28th of November 2014.

summary ↑

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Pterocactus fischeri

Britton & Rose.

With the segments somewhat larger than the two last species, from 2 cm in diameter to 10 cm in height. Spines always present: 12 or more radial, white or yellow papery central spine, sometimes black tipped, dull, straight or swirled, 3 to 4 cm long. Numerous glochids are also present. It has yellow, pink or fuchsia coloured apical flowers.

It is a highly variable species and the most frequent to find in this region.

P. fischeri, at Villa Puente Picún Leufú, Neuquén, 14th of November 2015.
Detail below: *P. fischeri*, at Zapala, Neuquén, 29th of November 2015.

summary ↑

summary

P. fischeri, yellow spine form, at Villa Puente Picún Leufú, Neuquén, 27th of November 2015.
Detail below: 1 & 2 - *P. fischeri*, another yellow spine form, at Villa Puente Picún Leufú, Neuquén, 27th of November 2015.
Detail right: *P. fischeri*, young flowering plant, at Villa Puente Picún Leufú, Neuquén, 14th of November 2015

P. fischeri, at Villa Puente Picún Leufú, Neuquén, 27th of November 2015.

summary

summary ↑

P. fischeri, at Zapala, Neuquén, 29th of November 2015.

P. fischeri, at Zapala, Neuquén, November 2009.

P. fischeri, at Zapala, Neuquén, 29th of November 2015.

P. fischeri, at Zapala, Neuquén, 29th of November 2015.

P. fischeri, at Zapala, Neuquén, 21st of November 2015.

summary ↑

P. fischeri, at Zapala, Neuquén, 29th of November 2015.

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P. fischeri, young plant with bud , at Villa Puente Picún Leufú, Neuquén, 14th of November 2015.
Detail below: *P. fischeri*, at Villa Puente Picún Leufú, Neuquén, 14th of November 2015.

P. fischeri, at Villa Puente Picún Leufú, Neuquén, 14th of November 2015.
Detail left: *P. fischeri*, at Zapala, Neuquén, 29th of November 2015.
Detail left below: *P. fischeri*, near Arroyo Carreri, 25 km to the west from Zapala, Neuquén, 28th of November 2014.

summary ↑

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Pterocactus valentini
Speg.
Small body of 2 to 4 cm. Numerous white thin spines (25-30), so many that they entirely cover the epidermis. With brown-pink flowers, but it is very attractive even without them opened.
They don't have such a wide distribution, here in the province of Neuquen.

Pterocactus valentini Speg., at Villa Puente Picún Leufú, 27th of November 2015.
Above & detail: *P. valentini*, plant with a cristate stem, at Villa Puente Picún Leufú, Neuquén, 14th of November 2015.

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Pterocactus valentini Speg., at Villa Puente Picún Leufú, 27th of November 2015.
Detail above: 1 - *P. valentini*, colony growing on sand, at Villa Puente Picún Leufú, Neuquén, 14th of November 2015. 2 - *P. valentini*, a winter photo, near Paso de Indios, Neuquén, from 12nd of July 2014.

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50 Shades of Dry:

Tongariro National Park

Field Notes

Tongariro National Park (Google Map). The eastern and south-eastern sides of the mountains are the driest, while the Desert Road (SH1) stretches between 15 km south of Rangipo until Waiouru.

summary

My wife and I planned for several years to visit Tongariro, Ruapehu, and all the wonderful surroundings of the 78,618ha Tongariro National Park in the centre of New Zealand's North Island, but there was always something happening: if not an eruption closing the Crossing track, then an unexpected injury or some other preeminent personal priority taking over. Weather was also a concern. You don't want to cross Tongariro in the fog, or even worse, to be told early in the morning that the track is closed because of a horrific weather change up there. However, fact is that we got there in the best possible conditions: a calm, warm and sunny January 2015. Here are few brief notes on the dry (eastern sides) of Tongariro, Mt. Ngauruhoe, Ruapehu and the Desert Road.

The Taranaki Falls.
Above: The Taranaki Falls plateau with Mt. Ruapehu in the background.
Below: The rough plateau seen from above the falls.

The Taranaki Falls

More, we had one unexpected preamble... on the 5th of January, while we were driving back to Auckland from Wellington. We left Wellington quite early on a beautiful quiet summer morning. As we progressed unhindered through the non-existing traffic, we reached well before lunch time the Tongariro area and we decided to make few hours break at the Chateau, the top resort in the Whakapapa Village at the foothills of the snow covered Ruapehu summit.

After a quick bite, we decided to find a reasonable easy track instead of fooling around in the village. And we picked the three hours loop through the bush and land between Whakapapa and the park place where the Tongariro crossing begins.

You get there absolutely everything: from massive alpine landscapes in the distance, to white water and deep water pools and marginal swamps, an ever-changing terrain and extremely well preserved native sub-alpine vegetation, waterfalls and, not in the end, a real parade of rocks, cliffs and rocky walls of ever changing colours.

Certainly this plateau was quite often affected be the nearby volcanoes.

Every now and again something was happening and ashes were spread by the wind and washed by the rain. In some places you could see the layers of volcanic ashes and nor very far away dense mats of old standing low mountain herbs and vegetation.

But nevertheless, except in few corners closer to the village, there were no extended bush patches. It seemed this was an eternal land of new beginnings, adjusted every now and then by the volcanic events.


Pictorial view (bridge over a deep gully).


Time for a picture in this beautiful country.


Dense mats of alpine vegetation.


Sticherus cunninghamii (Umbrella Fern, Waekura).


Leathery leaves of a young *Brachyglottis bidwillii*.

Three hours is not enough time to take up everything you see... not even the vegetation, which I was browsing on and off, when I had a bit of time. Apart from the wonderful sub-montane creeping vegetation (more about this later on), high summer was not the best season to admire flowering plants. I was, however, very surprised to see the relatively common fern *Sticherus cunninghamii* (Umbrella Fern, Waekura), with its umbrella arranged fronds, as this fern is mostly frequent in coastal habitats and less elsewhere. *Hebe odora* (Mountain Koromiko) and *Pimelea buxifolia* (Rice Flower) were also flowering abundantly. Another shrub *Brachyglottis bidwillii* was forming leathery growth in few spots, with beautiful shape and leaves in young plants.


Hebe odora (Mountain Koromiko).


Wonderful flowers of *Pimelea buxifolia*.

From the small herbs *Wahlenbergia pygmaea* was present in most corners, nearby the track while a few times I could see *Thelymitra nervosa* (Spotted Sun Orchid).

In the late afternoon we were back at the car. One last cold drink in a small café, to cool us down, and then we were ready for the last four hour drive back to Auckland. As it was getting quite late we passed the Desert Road for our booked return here.

Tough as leather boots: *Celmisia spectabilis*. Below: 1 - *Wahlenbergia pygmaea*, a very resilient sun-dew flowering near the path. 2 - *Thelymitra nervosa* (Spotted Sun Orchid) is frequent in most Tongariro National Park areas..

summary

summary ↑


The Desert Road plus the random unwelcomed pine


A quiet grassy desert...


Wahlenbergia pygmaea.


Euphrasia cuneata.

The second trip

We spent in Tongariro three days, the 21st, 22nd and 23rd of January 2015. This second trip (the actual Tongariro crossing) was booked months ahead, as well as the room at the Chateau. Fingers crossed the weather is fine and no volcanic vent blows out again. On the 6th of August 2012, one day after we booked the trip, there was a first eruption of a new vent near Maari crater. We luckily had the time to immediately cancel our trip, so the next eruption in November and the closed crossing track didn't affect us. But our trip was delayed for two years.

We left Auckland on a beautiful clear mid-summer morning, at 5 am, stepping on the gas on an empty motor way, south bound. Shortly after 9:30 am we had already received our room at the Chateau and checked our booking for next day, for the crossing. It was not even 10 am when we went out in the Whakapapa village for a snack... only to discover that the couple of cafés were opening much later... 11 or 12... so we stayed a bit, drifting around a bit in the village, and had a decent lunch when the café was open. (Good food and much cheaper that at the Chateau).

The Desert Road

There was quite a drive we intended, a round trip of the entire complex, with a special highlight, of course, on the Desert Road. The closest petrol station was some 20 km away, at the National Park Backpackers exactly at the crossing of SH47 and SH4. We filled up and turned back north, on SH47 and later on east on SH46 passing the beautiful lake Rotoaira. At Rangipo we turned south on SH1... and after some other 20 km and a row of very sharp curves we finally reached the Desert Road.

We stopped in three places to enjoy the scenery and take short walks. To be honest I was a bit disappointed, after a rainy winter and a rainy spring and an even rainier December start, the desert wasn't too desolated. Not exactly how I imagined it. In many places the grass was still green, now in the dry high summer. However, the vastness land of native grasses and the apparent lack of invasive vegetation (well, I saw an isolated small pine) was more than enjoyable. We continued to drive south until we reached Waiouru, then turned west and north on SH4 until we reached again, this time coming from the south, National Park Backpackers.

It was already dark when we arrived at the Chateau. We confirmed at the reception and by phone next day's schedule and meeting point and bought the collecting bus tickets. We had a brief dinner, prepared our food for next day and went to sleep after having a glass of red wine.

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summary ↑

The Tongariro Crossing

Early start of the day on the 22nd, we wake up at 5:30 am and prepare for the way. It's calm but quite chilly outside and that asks for an extra hot cup of coffee. We packed the best we could, plenty of food and water, also the brief list of other necessities... including the weather proof clothing. We might have clear skies now, but weather changes in minutes up there. At 7 am the bus picks us up and leaves us only few km away, in the departure park place. As a curiosity, the crossing is one way... all people leave from the same place and arrive at the other end, except, of course, the people finding the crossing too hard. It is actually a good people management, you know how many have left, how many have returned to the start and how many have to be picked up at the other end. From place to place there are volcanic alarm systems, so if there's something happening you hear the sound and have the time to leave or to prepare. No one is left behind and, believe me, this is quite a job as on a good day up to 1,000 people might want to cross Tongariro.

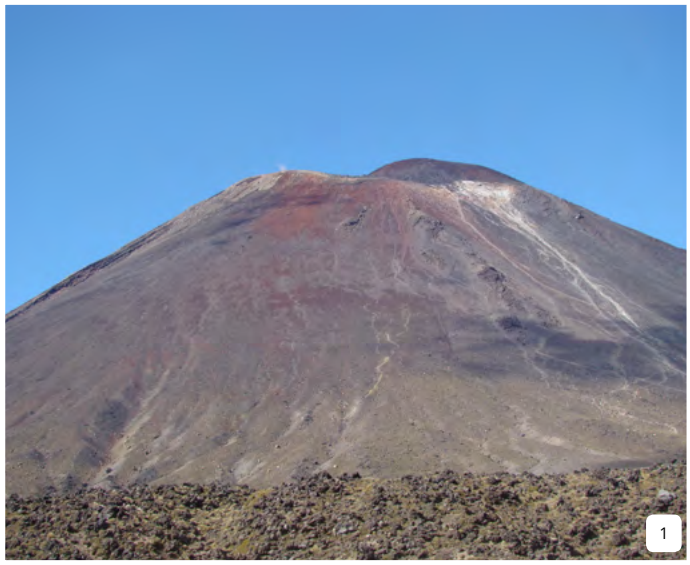
We start our trip from the western side, walking east, on a bumpy terrain, but only slightly ascending. We pass some marshes and wetlands which would have been interesting to browse (there are several carnivorous species here) but there's no time for this. At some stage the climb begins and after a good stage there is the warning: the point of no return – the last good moment to turn back if you can't deal with it.

Waiting for the bus at the Chateau.
Above: It all starts with an easy walk.

summary ↑

Kunzea ericoides var. *microflora*.
Above: 1- The famous Vegetable Sheep Vegetable sheep, *Raoulia rubra*. 2 - *Raoulia hookeri* var. *albosericea*.

The vegetation changes to very small bushes (*Kunzea ericoides* var. *microflora* in full flower), layers of alpine vegetation (noticeable the subsucculent vegetable sheep - *Raoulia rubra* and *Raoulia hookeri* var. *albosericea*) and small cushions of herbs. One hour of heavy climb and we reached the first massive plateau. Once here, you feel so small and tiny. The land, in all the forms and shapes a volcanic area can offer, looks bare and cold from the distance, however, there's still plenty of life from plants to insects and to lizards.



Anaphalioides bellidioides var. *microflora*.
Above: 1- Mt. Ngauruhoe, with a tiny spot of steam at the top. 2 - *Parahebe spathulata*.

Mt. Ngauruhoe

At some stage we passed Mt. Ngauruhoe, which is a high barren cone covered in ashes and mostly smallish volcanic rocks. It's a three hour trip return to the top, but we have no time to do it. Our crossing will take 8-9 hours; you can hardly fit the extra three hours climb, or you return through the final bush stage under moonlight.

Mt. Ngauruhoe brings the most serious accidents here. The soil is very unstable and a small mistake can get you into trouble. More, stones dislocated by the climbers above can badly hurt the people beneath. Hopefully I will be doing some day this climb, and then back to the marshes and starting point.

Once again, the plateau seems to be made of empty masses of stone, however, still many plants, herbs and grasses hidden more or less in cracks and pockets. These 20 minute of crossing the long and flat plateau were just what we needed to rest a bit before the next climb.

View of the first plateau.
Above: Mt. Ngauruhoe seen from halfway Devil's Staircase..

The Devil's Staircase

We are for three hours into the trip, when, well, we got the second toughest moment. It's already hot and windy, our backpacks are still heavy and we were reasonable tired before climbing the Devil's Staircase. A forty-five degrees climb on unstable rock and tephra, on a narrow discontinue path. In few places there are ropes and round metal pipes that can sustain you when you climb, and on the left side it goes down, quite steeply, for few hundred meters. It takes 20 to 30 minutes to climb up there, but once at the top you know the hardest part of the trip is over. Beautiful views of Mt. Ngauruhoe and the first big plateau in the back, and if you are not tired enough there are few plants to watch, hidden between the tephra blocks. Far away, on a slope across Mt. Ngauruhoe we could see a large grassy patch, well really large, maybe 100-150 metres long and wide. Unfortunately too far away to see even with the binoculars what exactly this was, but seeing all that fresh green was really uplifting. In the distance we could see volcanic steam rising from few fissures and got the sulphur smell several times over the next couple of hours.

summary

The Red Crater and the Emerald Lakes

Once up there we chose not to take a detour to Tongariro summit, as this would have put us back with an hour. There is just a longish flat way with nothing special to see. We preferred to continue our way to the Red Crater. The Red Crater is a quite young (3,000 years old) scoria cone placed on much older volcanic structures. It is an absolutely terrific and wonderful walk down to the Emerald Lakes. Just extra care at the loose scoria track (sometimes it's funny to drift on it once you get the right moves).

There are three Emerald Lakes of an incredible colour, given by minerals infiltrated into the water, filling massive holes of a gigantic explosion just beneath the Tongariro summit. In this area there was quite an intense sulphur smell. We took a detour and went to one of the lakes, the one surrounded by water vegetation. This is surreal. Cristal clear water and the abundant green-reddish vegetation... surrounding only on one of the lakes. We spent a bit of time here... and I am unable to describe the splendour and peacefulness of this moment.

Mt. Ngauruhoe, the Red Crater and the second large plateau

Above: 1 & 2 - The vegetated Emerald Lake. 3 - The unique vegetation grows only on one of the Emerald Lakes. 4 - The vegetated Emerald Lake with volcanic steam arising in the background.

summary

Gentiana bellidifolia.
Above: 1 - *Celmisia spectabilis*. 2 - A flowering *Hebe tetragona*.

The Blue Lake and the endless descent

It is mid day and we paced up to reach the Blue Lake and to have our lunch break. There is another large plateau and a path that winds near the main crater. Sorts of rocks and plants everywhere, but we are hungry and stopped only at the Blue Lake. A huge lake indeed, but not as nice as the smaller Emerald Lakes. We had our lunch here and, as a reward, the skies got covered for couple of hours... it's windy and relatively warm, but fortunately we got a break from the harsh sun. In the distance, down in the valley, we could see the 616 km^2 Lake Taupo (which resulted after a gargantuan volcanic explosion 26,500 years ago).

After lunch and rest we continued our way. 60% of the trip was already gone... the wonderful landscapes were left behind and we had only to get back, to the end of the track.

summary →

After such a brilliant day the descent is rather boring, but still beautiful landscapes, curious rocks and increasingly number of sub-alpine plants – great specimens of *Phyllachne colensoi* (*Oreomyrrhis colensoi*) and *Gentiana bellidifolia* (unfortunately not in flower). Once arrived at the Ketetahi hut we had our last five minutes break and continued our last hour walk through the bush, to the car park.

Our entire walk lasted 8 hours and 15 minutes, which was a good time considering our age. We checked in at our operator and ... were told we missed the bus for 5 minutes, so we had to wait another hour for the next departure... Quite annoying, and delaying the opening of the champagne bottle at the Chateau.

Here & Below: ***Phyllachne colensoi*** ***(Oreomyrrhis colensoi).***

Mt. Ruapehu

Next day we slept in a bit longer. We planned to go to Mt. Ruapehu, but there was no hurry. After an extended breakfast we checked out and drove to the Ruapehu Alpine Lifts, a gateway of the skiers in winter and tourists in general. It was already late so we saved some effort and took the cableway up to the Knoll Ridge Café.

Parahebe hookeriana

Above: 1 - Up in clouds and snow to the Skyline. 2 - Dense vegetation mats. 3 - The rare *Wahlenbergia gracilis*. 4 - The succulent *Kelleria dieffenbachii*.

After a snack we walked to the Skyline Ridge, between snow patches, at 2,200 m altitude. We didn't walk to the crater (at 2,797 metres) as we were a bit too lazy (and too tired by the previous day walk), but while descending we took some time to look after plants.

Ruapehu is different from Tongariro, almost entirely andesitic, somewhat higher and with more dynamic forms and as a result the vegetation is quite different. Again, life in all forms is everywhere, in most corners. We could see here magnificent displays of alpine vegetation mats, and few plants I could identify: the rare *Wahlenbergia gracilis*, the succulent *Kelleria dieffenbachia*, and the silvery *Celmisia incana* (unfortunately not in flower).

Finally, down in the parking place we had a late lunch (or early dinner); we blessed our eyes with a last glimpse of the valley and started to drive home. Some day we will return here. It's a promise.

Here & right: *Celmisia incana*, unfortunately not in flower.
Below: The leathery leaves of a young *Brachyglottis bidwillii*.

Summary

The genus Aichryson Webb & Berthelot

Contributions

Massimo Afferni

Among the various genera of the *Crassulaceae* present in Canary Islands *Aichryson* is, without any doubt, the most elusive and less well known, both for the existent number of species, and for their morphology, being represented by small leaf rosette plants in most cases moderately succulent.

In addition to this we must take into account, as also Lodé (2010) noted, that the taxonomy of the genus *Aichryson* is very complex. Botanists have long sensed the need for its revision as also specific studies in this regard on its DNA demonstrated that species are closely related. More, these plants have a limited life cycle over time and are strongly affected by climate change that can influence their habitat, sometimes altering quite heavily their morphology, which can be also particularly shaped depending on the altitude and range orientation. This is confirmed and was checked by studying them in cultivation. Finally, their correct determination is problematic because of the formation of interspecific hybrids in nature.

Aichryson are generally annuals or biennials (only two species of them are perennial) of a certain resemblance to *Aeonium* Webb & Berthelot, other typical *Crassulaceae* of the Canaries, who prefer some shade and moist substrate; they are almost exclusively endemic of the above mentioned islands, with only a few species also present in Madeira, the Azores and Morocco. Of the 15 species listed for this genus, 11 are referred in the Spanish archipelago (not counting some subspecies). To these must be added at least three potentially new species, observed quite recently, but still not classified and described, with white flower unlike all the others that have an intense yellow flower colour.

In my travels to the Canary I managed to find and photograph as many as 8 species, while on one of them, *Aichryson pachycaulon* Bolle, three of its four subspecies: ssp. *parviflorum* (Bolle) Bramwell (present in La Palma), ssp. *gonzalez-hernandezii* (Kunkel) Bramwell (present in La Gomera) and ssp. *immacolatum* (Webb ex Christ) Bramwell (present in Tenerife). To these I have to add one of those un-described new species I was shown by a British naturalist in La Palma: although not in bloom, Robert Burton assured me that those plants had white flowers he already saw, and were also characterized by having regular rhomboid-shaped leaves, with much longer hairs on their edge, moderately crenulated, compared to the rest of the leaf.

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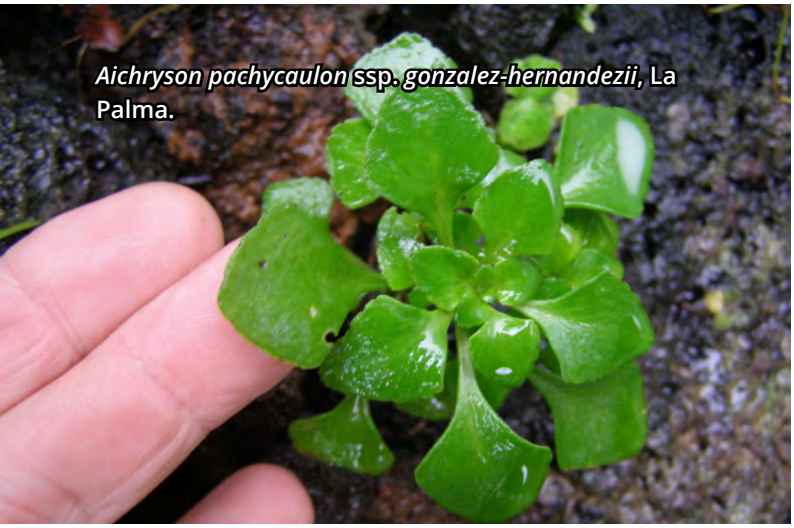
Aichryson pachycaulon ssp. *immaculatum* - Tenerife.



Aichryson pachycaulon ssp. *gonzalez-hernandezii*, La Palma.

Aichryson pachycaulon ssp. *parviflorum*, La Palma.

I must admit that for some of them I have had considerable difficulty in classifying them, this is the case of *Aichryson brevipetalum* Praeger found in La Palma, intially mistaken with *Aichryson parlatorei* Bolle also seen it in this island, and *Aichryson palmense* Webb ex Bolle mistaken for *Aichryson laxum* (Haworth) Bramwell, the first being seen also at La Palma where it is endemic, and the second observed and photographed in Tenerife, La Gomera, El Hierro and La Palma.

I have also found in their natural habitat *Aichryson bollei* Webb ex Bolle in La Palma, *Aichryson punctatum* (C. Smith ex Link) Webb & Berthelot in La Gomera, El Hierro and La Palma and the beautiful *Aichryson tortuosum* (Aiton) Webb & Berthelot in Lanzarote, the latter, being one of the perennial species, characteristic for its small rosettes of particularly fleshy leaves.

I have not found instead in my short botanical trip to Fuerteventura another perennial *Aichryson*, namely *Aichryson bethencourtianum* Bolle which is very similar to *Aichryson tortuosum*, so similar that an expert in this genus as Bañares Baudet (2008) considers it to be, I think with good reason, a subspecies the latter (*Aichryson tortuosum* ssp. *bethencourtianum* (Bolle) Bañares & S. Scholz).

As I have never been yet on the island of Gran Canaria I still miss to see and photograph *Aichryson bituminosum* Bañares, *Aichryson porphyrogennetos* Bolle and *Aichryson pachycaulon* ssp. *praetermissum* Bramwell, endemic to this island.

Finally, I believe that instead of bringing the short and perhaps boring descriptions of these succulent I make up some space for some great pictures of them (of the 9 species I found) in their natural habitat.

summary ↑

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Aichryson punctatum & *Aichryson laxum*, El Hierro.

Aichryson punctatum, La Gomera.

Aichryson bollei, La Palma.

Aichryson brevipetalum, La Palma.

Aichryson parlatorei, El Hierro.

Aichryson spc. nova, with white flowers, La Palma.

Aichryson laxum, between Chinamada and Taganana, Tenerife

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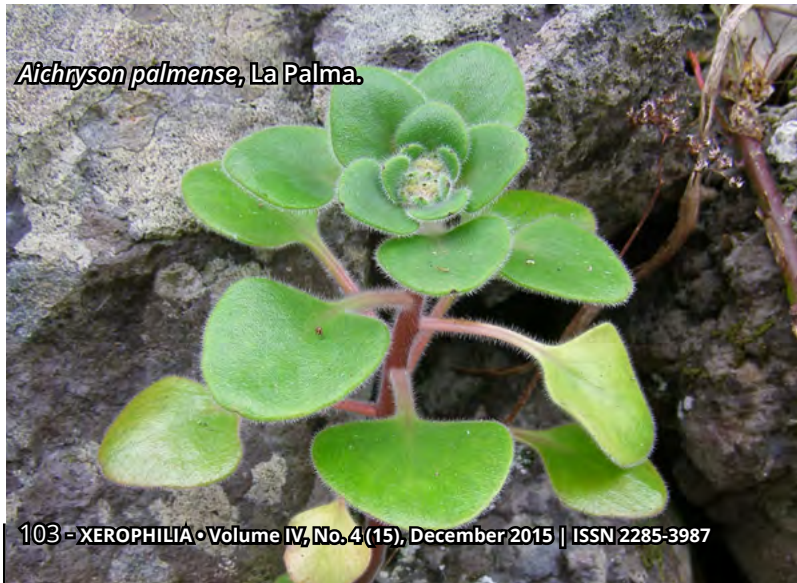

Aichryson palmense, La Palma.

Aichryson tortuosum, flowering plant, Las Ermitas de Las Nieves, Lanzarote.

Bibliography.

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- Bañares Baudet A. (2008) - Taxonomic and nomenclatural notes on Crassulaceae of the Canary Islands, Spain - Willdenowia 38: 475-489.
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summary

Online magazines

Succulentopi@ (French) - Quarterly online magazine of the Cactus Francophone. Latest issue: No 15, November 2015.

Sukkulenten (German) - Monthly free online journal of the FGaS - Fachgesellschaft andere Sukkulenten (formerly Avonia-News). Latest issue: Vol. 8, No 12, December 2015.

The Cactus Explorer (English) - the first free online C&S journal. There was no new issue from our last presentation. => Latest issue: Echinocereus Special Issue, September 2015.

Xerophilia

Clarifications

In regards to Andrea Piombetti's article published in our last issue

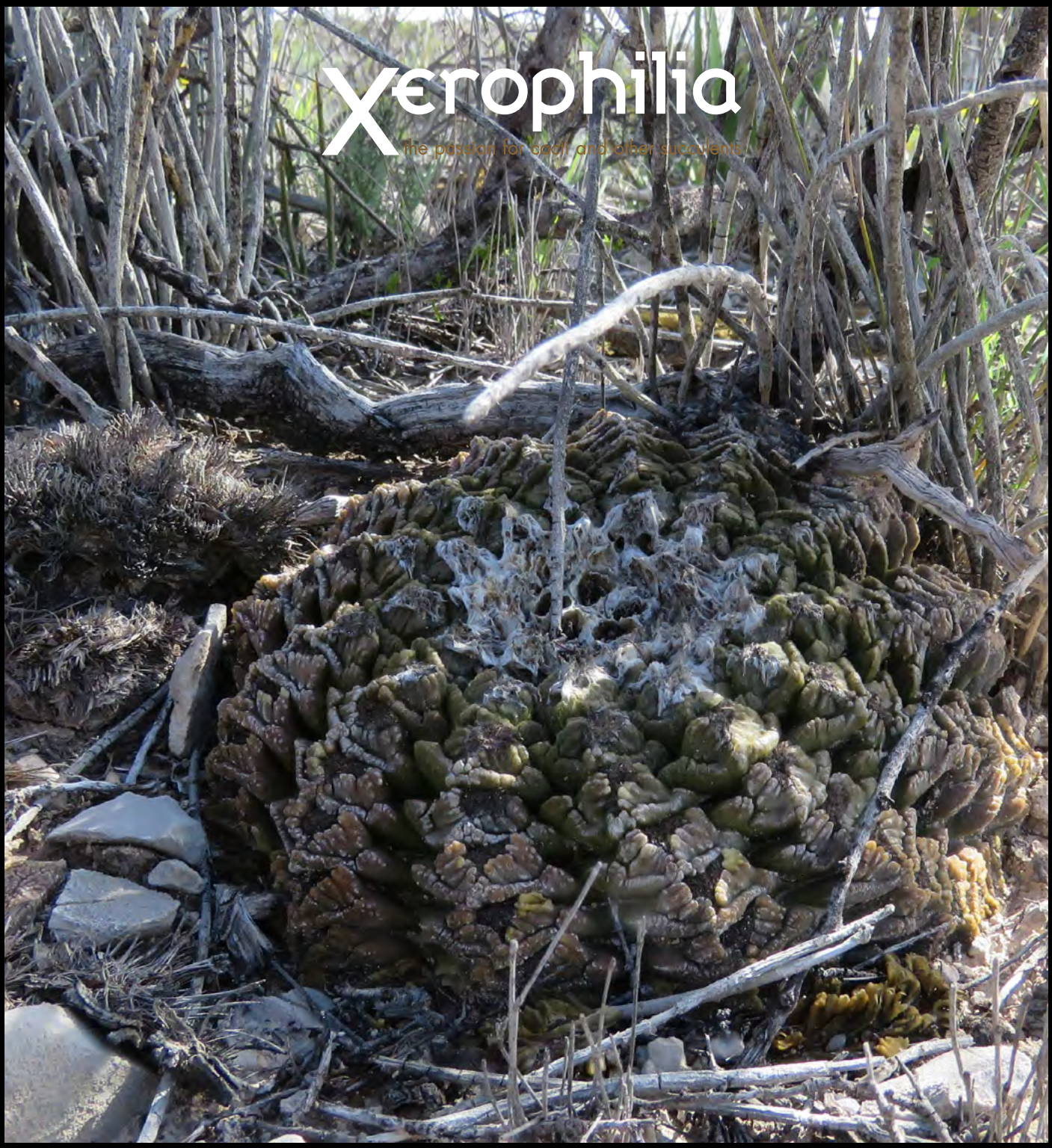
The publication of the article "Two new possible subspecies in the genus *Copiapoa*" by Andrea Piombetti in our 14th issue, November 2015, has generated discussions at various levels, some of them – presented below – being even unpleasant.

1. In this article the author requested the introduction of an acknowledgement box, which mentioned the name of our friend Davide Donati. We assume our mistake of not checking his cooperation in drafting the article. The error started when Andrea Piombetti presented himself as recommended by Davide Donati, while leaving it clear and explicit that the submitted text was developed with his support. Therefore we thought that this acknowledgement seems natural and as such, we accepted to publish it while, for the same reason, we treated the validity of the content quite superficially. The editorial team accepts the light approach and apologizes for it. We confess there had been discussions about the text within our team. Being not fully convinced of the value of the article, we preferred to include it in a current issue, leaving room for discussions and debates, instead of publishing it as a special issue, as we have done so far with all the first descriptions published by our magazine.
2. While Andrea Piombetti was suggested to approach us, he deliberately failed to inform that previously the presented material was dismissed by the editor in chief of Cactus World, a journal published by the British Cactus & Succulent Society, an information clearly requested by Davide Donati to be supplied. Of course this omission has diverted us from raising a number of legitimate questions, leaving us without an overview of the situation and of the first assessment of respectable value.
3. Both in the incoming mail and in the virtual medium, there have been several voices challenging the need to classify the plants concerned, being considered at most only slightly different forms, undeserving a special taxonomic status. None of the members in our editorial team is neither taxonomist or specialist of the genus *Copiapoa*. We cannot therefore comment on these opinions, but we took note of them.
4. There was, on the official forum of Cactus & Co (link), a negative reaction to the publication of this article. As a result, the discussion on the forum was both questioning the author's direct interests and the need to formally describe these plants. We don't know Andrea Piombetti, as we don't know directly the persons opening this discussion in that forum.

We have always supported open debates. Therefore, we consider being our duty to provide open access to our journal's pages, for all people who want to support a substantial review, straight to the point. Equally, the author has the right to reply. So, if you have any comments to make, please write us directly!

This note was published on November 30, both on our **Facebook web page** and on our **Facebook fan-group web page**, not receiving any replica or comments to day.

Eduart Zimer



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