

Xerophilia

the passion for cacti and other succulents

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Xerophilia

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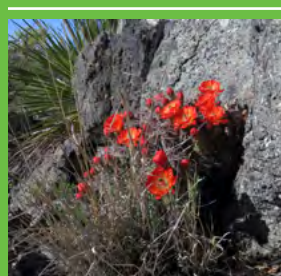
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Front cover

Agave gracielae
Lazaro Vega, Queretaro.

Photo by
Cristian Perez Badillo



Back cover

Echinocereus coccineus
Cuesta de Malena, Coahuila.

Photo by
Aldo Delladdio

Xerophilia

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editorial 19

It takes only a second to change your perspective on a certain issue. We struggle sometimes too much to disapprove the mutilation of Mexican habitats or the illegal sales of rare plants threatened by extinction (Note: I have not forgotten this subject - I will come back to this in March), forgetting completely the progressive deterioration of several other places, even if those places are apparently far less interesting and less attractive for us, cactus collectors. Why should we be outraged by the growing Chinese pollution? It's only Chinese being affected; isn't it? Why should we be concerned with water shortage? Bolivia's Lago Poopó (normally a fishing support for the local communities) dries out on regular bases when draught... last time in 1994 and now in 2016. Who cares about Bolivians fishermen anyway? Global warming and especially melting of the Arctic ice? Who really cares about an inch increase in sea levels in fifty years (not many of us will be around anyway).

The real problem is that we don't understand that we live in a world we are creating with every step we make... yes, for a while it can be supportable (or survivable). In California, Lake Owens was desiccated in only 13 years (between 1913 and 1926) when the water of the Owens River was diverted for irrigating farmlands. They must have had good crops back then. But still the problem remains: too much water is drained into the Ocean (say vocation specialists). Now, a century later, the dried bed of Lake Owens is the largest dust polluter in the Owens Valley. Well, it's not the peoples fault anyway... more, in recent decades it's being extracted more and more groundwater... and landowners can extract as much groundwater from their property as they can put to beneficial use (whatever this means). In 200 years California will be possibly a barren desert if people exhaust the groundwater, but by then we will be six feet under anyway. Why should we care? People will be focusing on colonising Mars anyway in 2216.

2016 was quite a complicated year: from politics to wars and from elections to the melting Artic. It's like the crazy world we are living appears to destroy everything it touches. We have gained more knowledge as ever



before, but the faith is gone... Don't blame the cactus looters for all what happens, the spectacular ant-plants form the Cairns Botanic Gardens have been ransacked as well and it wasn't the... ones you know.

However, 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 2017, Xerophilia team wishes you at the end of 2016: 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→

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Xerophilia 19's Favorite Quote

The agroecology
is not the past;
the agroecology
is the future!

Walter Pengue



On the rediscovery of

Mammillaria laui D.R.Hunt subsp. *dasyacantha* (D.R.Hunt) D.R.Hunt

and notes on the
Mammillaria laui
species complex



Dr. Leccinum J. Garcia-Morales

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For a long time, the cacti from the mountains of Tamaulipas have remained very little known about their distribution and demography. Among these poorly known species, the taxa that comprise the *Mammillaria laui* complex are ones of the most interesting because of their uniqueness and narrow distribution, all found growing on a single upper mountain slope west of Ciudad Victoria, Tamaulipas.

The story of the discovery of *Mammillaria laui* and its subspecies is also very interesting, being found by casually while looking for the mythical Rancho La Reja in the quest of *Mammillaria carmenae*, the *M. laui* taxa (*M. laui* ssp. *laui*, *M. laui* ssp. *subducta*

and *M. laui* ssp. *dasyacantha*) remained unknown until late in the 1970's, when discovered by Alfred Lau boys, and described later by David Hunt in 1979 as three different forms of a single species, status maintained also until 1985 (see Hunt, 1987). Interestingly, Reppenhagen (1991-1992) proposed the separation of these plants in two different species and a variety: *M. laui* and *M. laui* var. *subducta* and *M. dasyacantha* as separate taxa. Hunt proposed later in 1997 (see Hunt 2006) the sub-specific status of the three close related plants under *Mammillaria laui*, proposal that I do prefer to use because is coherent with the distinct altitudinal and ecological distribution of the populations showing also proper taxonomical differences between each other.





The habitat of *Mammillaria laui* ssp. *dasyacantha*, in the canyons west of Ciudad Victoria, Tamaulipas.

***Mammillaria laui* species complex “form an altitudinal series”**

More interesting above all these taxonomical proposals is that Lau stated that these different plants “form an altitudinal series” (see Hunt, 1987), ranging the lowermost from about 800 m elevation and the highest one reaching the 1700 m elevation ranges; he also noticed the presence of intermediate forms between them. An interesting gold slender spined form between *M. laui* ssp. *laui* and *M. laui* ssp. *subducta* was presented also by García-Morales (2013).

The notes of Lau are very interesting for understanding not only the characters of the taxa, but also for distinguishing their poorly known

distribution, particularly in the case of *Mammillaria laui* ssp. *dasyacantha*, known only from the original collections done in the late 1970’s years, and missing also from my thesis work done in 2006. Many attempts to find this elusive plant in habitat are known by running voices and have remained as a “myth plant” to many explorers, unfortunately nobody except Lau himself and probably Reppenhagen knew about the exact location of the plants, obviously found originally by “the agile boys of Lau” who deliver in search of seeds and plants of cacti with “a piece of bread and a bottle of water” as a supply for all day long trip (or work?), according to the still living land keeper of La Reja Ranch: Sr. Horacio.



A view within the canyons from the site of *Mammillaria laui* ssp. *dasyacantha*.

First attempt

In March 2010, we had the opportunity to go to La Reja accompanied by the *Mammillaria* enthusiast Marlies Schauer, in search of *Mammillaria carmenae*, and, maybe if we were lucky, also to rediscover the “mythical and elusive” *M. laui* ssp. *dasyacantha*. As interesting was the discovery of the plants at the time, the more interesting is the story of Horacio about the discoverers, who found one or two hungry and thirsty boys about 40 years ago in the top of the high mountain near La Reja, who commented they came from Veracruz and lived with Sr. Lau and they look for seeds and plants of cacti and other succulents. Horacio, as a good field knower of the area, knew about the “carmencita” (as he named the plant) since many years ago, the plant was named by the owner of the Rancho La Reja, Don Marcelino Castañeda in honor of his wife Carmen. The few remaining plants close to the Ranch head house grow on

a big vertical dark metamorphic rocks among mosses, ferns and *Tillandsia* plants, as was shown by García-Morales (2013). Horacio was certainly not familiar with of any *M. laui* looking plants near La Reja, in fact, he stated that these must not grow on this side of the mountain, but maybe up some kilometers north, near El Borrado peak. As we had our “doubts and hypotheses” on the *M. laui* plants we walked on the second day trip from La Reja north into the base of El Borrado. We did not find any *M. laui* plant certainly as commented Horacio before, but we did find several small populations of “carmencitas” along the 4 km long trail from the 1500 m to near the 1800 m elevation range on the northern side of the mountain.

The bad weather and the imminent need to return down to Ciudad Victoria kept us from climbing and walk more on the upper side of El Borrado and, maybe, find here any *M. laui* ssp. *dasyacantha* populations.

The feet of the author: climbing to reach this sloppy and loose soil location could be a dangerous activity.



Second attempt

In October 2011 we had also the opportunity to travel into the Cañón del Novillo with Wolter ten Hoeve and Anjo Kaizer, with whom we shared the same interest in finding the three subspecies of *Mammillaria laui*, - a hit if we do found them in a single day! We reached the upper part of the Canyon where the actual "Serpentinite Mines" are, which Reppenhagen (1991-1992) calls repeatedly "asbestos mines". We saw at the time several plants of *M. laui* ssp. *subducta* in the edges of the open mine and close slopes, a terrible fate for the whole population as the open space at the time was quite small compared to now. We walked up north from the mine for more than two kilometers, climbing from 900 m to the 1150 m, just reaching the open mouth of "El Novillo

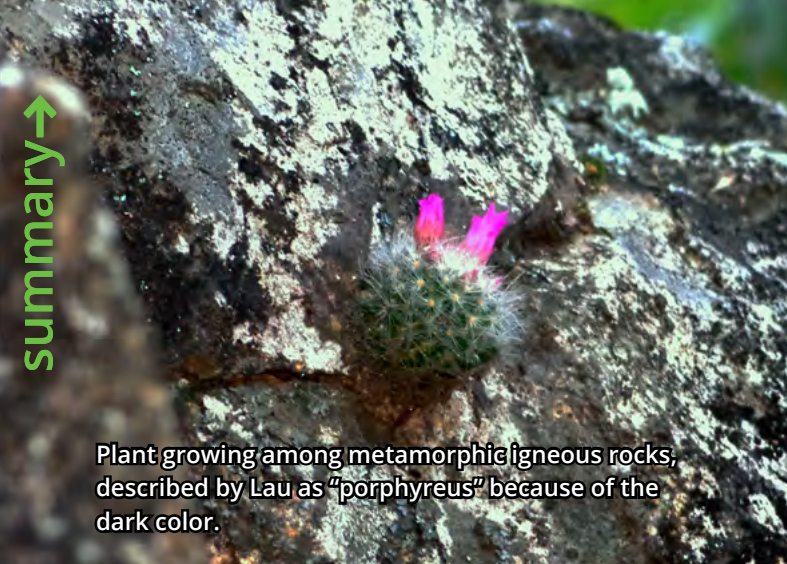
Mine" ... in that place we located several plants of *M. laui* ssp. *laui* with the typical pure white and also with some yellowish spines, growing on very dark metamorphic rocks in the northern side, but we could not climb more from this place as the inclination of the mountain and the loose soil keep us out from this route. We get back down to the 1100 m elevation and tried to climb again a little bit from the south side of the creek, but the groaning sound of a close black bear make us nervous, and the difficult loose soil and the very steep slope also prevented us from climbing more, looking for the very upper 1400 m elevation black rocks seen from this place, we needed to get back and plan a new trip later as we think that is the place where *M. laui* ssp. *dasyacantha* grows, some 500 m above in altitude.



The first sighted plant, showing a less clumping stem and closed flower buds.

As I was working on the floristic and vegetation of all the mountain range close to Ciudad Victoria (Natural Protected Area Altas Cumbres) since 2008, one of the goals was to find all endemic species within the area, and *Mammillaria laui* ssp. *dasyacantha* became a real challenge on each mountain trip, however, unsuccessfully. In several times I tried to reach the place sight from the Novillo Canyon going down south from the Peregrina Canyon, trying to reach the highest parts of the mountains and then down into the elevation range given by Hunt and Reppenhagen; after many years

and attempts my intuition proved to be correct! In 2002 with the companion of my father and Dr. Antonio Guerra, from the University of Tamaulipas, we found the northernmost population of *M. laui* ssp. *laui* in the ridge of the mountain that divides the Novillo and Peregrina Canyon, at about 1300 m elevation. This discovery gave me a hint about the distribution of the very elusive population of *M. laui* ssp. *dasyacantha*, but again, the long trail to reach this place and the time needed for the return back to Ciudad Victoria prevent us to climb more up into the mountain in look of the mythical plant.



Plant growing among metamorphic igneous rocks, described by Lau as “porphyreus” because of the dark color.



A group of *Mammillaria laui* ssp. *dasyacantha* growing among *Selaginella peruviana* and under oaks leaves.

A beautiful clump of *Mammillaria laui* ssp. *dasyacantha* showing the contrasting pink flowers and soft long spines.



Last attempt

In March 2015, after a near 5 km walk down south of the main top Peregrina Canyon in look for uncommon species of *Quercus* for my PhD thesis work, I spotted an open area with big black stones from below the place - maybe about 1 km. I then immediately switched my mind to the *Mammillaria laui* ssp. *dasyacantha*, my heart and head were suddenly very excited about the possibility of finally finding the elusive plant, but several uncommon *Quercus* appeared in the trail, some never seen before in previous trips, such as *Q. sapotifolia*, the uncommon *Q. glaucoides* and *Q. pinnativenulosa*, just to name some. The

collecting and photographing of them make the ascent into the place much slower, and at a time I complained that it was better to get back as I have my hands full of big bags with oaks samples. My partner Francisco “Pancho” Hernández aimed me to go to that place, as we were closer to the rocks than to the truck - obviously I used to do the same years ago when I got his age and weight! After a difficult climb through a creek for crossing a canyon we reached the big black rocks, from far sight we see some *Agave univitatta* growing on them and also the common *Echinocereus pentaloophus*... that’s a good start always as usually the rare species do not live alone, even the endemic ones.



A beautiful flowering plant among *Selaginella peruviana*.



A clumping plants showing the big pink flowers and the long and soft spines characteristic of this taxon.

We continued climbing and we took different paths for reaching the more open place, I took the southernmost, Pancho got the northernmost, separated each another by about 100 m.

Finally, I look on a big black rock and in a small crevice surprisingly was a very white small head above, "I found it!" - I yelled to Pancho. Finally, I rediscovered the mythical plant after 20 years of walk all over the place and nearly after 40 years the original discovery of Lau.

We hurry up to look for more plants, we checked around and see some small groups on the surrounding rocks, we counted not so many, maybe some 10 small groups plus several single headed plants, all with the characteristic long and soft spines as described by Hunt and Reppenhagen, and for not saying more, we found some of them with full open flowers! I can understand now why *Mammillaria laui* ssp. *dasyacantha* became so elusive all this time, as the habitat of the species is very restricted to grow on metamorphic igneous dark rocks in north facing slopes, as also does *M. laui* ssp. *laui* just a little bit south and at lower altitude, surrounded by pines and oaks trees that grow among in the more humid parts of the

canyons. Pilbeam (1999) shows a photo of the plant collected by Lau 1496, which fit with some shadow plants found also in this new location, mixed with the little bit thicker and appressed spine form, so I think both collections are of the same *M. dasyacantha* plants.

Conservation status

Anyway, the conservation status of the species as I have seen by myself should be considered as Critically Endangered according to the IUCN criteria, as there should be very few hundreds of plants distributed in all the upper slopes between the 1400 to 1700 if following Lau's and Reppenhagen's data, and restricted only to north facing black metamorphic rocks between the Novillo and Peregrina Canyons. I collected a couple of plants that were preserved for future studies and as reference for later publications in the Herbarium ITCV (Ciudad Victoria), the plant compared show the similar features shown by the isotype preserved at MEXU Herbarium.

What a great present and story ending for any plant explorer to find a lost plant for near 40 years in full blooming time!..

Acknowledgements

I appreciate specially the help and contribution of **Stefan Nitzschke** for sharing relevant literature to complete this manuscript. To my father **Jesús García**, and **Antonio Guerra**, **Francisco Hernández**, **Marlies Schauer**, **Wolter ten Hoeve** and **Anjo Kaizer** for joining me in my several trips into the mountains of Tamaulipas. My special gratitude to **Dag Panco**, editor of *Xerophilia*, for his aims and suggestions within the manuscript.



The author and Pancho eating in a safe place after the descent of the location of *Mammillaria laui* ssp. *dasyacantha*, note the happiness in the face of the author!

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Graptosedum 'Francesco Baldi'

history,
diffusion
and cultivation
of a mysterious hybrid



Marco Cristini

Felix, qui potuit rerum cognoscere causas!

Fortunate is he, who was able to know the causes of things!
(Virgil, *Georgics*, II, 490)

C*rassulaceae* hybrids occupy more space in gardens and greenhouses than they do in literature. In fact lots of them carry doubtful names, are poorly described and only seldom correctly labelled. Magazines, books and booklets devoted to succulents usually prefer species, leaving hybrids and cultivars to appendices and footnotes. This situation can be disappointing for all people who would like to label each one of their beloved succulents, but botanists have good reasons to avoid the mine-field of crossings between different species. Take for example the genus *Sempervivum*, which includes around 80 taxa and 4000 hybrids and cultivars. Nobody I know is ready to spend years of his/her life studying legions of synonyms, doubtful names and plants which seem to have disappeared from cultivation.

Close-up of *Graptosedum* 'Francesco Baldi'.



Nevertheless, if one goes to a nursery, walks in a street of a Mediterranean town or simply surfs the net, he or she will find lots of unnamed or unidentified *Crassulaceae*, not only sempervivums, but also crossings between sedums, echeverias, graptopetalums and pachyphytums. When I began collecting succulents, I almost immediately came across a robust plant which grows freely on balconies and windowsills in my hometown. Then I thought it was a pachyphytum, but I was not able to find it in any books. The plant remained a mystery for a couple of years, until I found it was an hybrid, *Graptosedum* 'Francesco Baldi'. To be pre-

cise, it should be written x*Graptosedum* 'Francesco Baldi', but in this article, for the sake of simplicity, I will call it often *Graptosedum* 'F. Baldi'.

Graptosedum 'F. Baldi' is a nice example of the popularity of *Crassulaceae* hybrids. It is widespread not only in Italy, but also in other Mediterranean countries, in the USA, in Australia and in New Zealand. Notwithstanding, very little has been written about this succulent. While writing this article I was much surprised by the lack of interest in it. Surely I missed something, but it is all the same unfair that such a nice and easy succulent has received so little attention. The reason why *Graptosedum* 'F. Baldi' is neglected has only to do with its origins: being a hybrid, it is not considered worth a place in literature.

In order to remedy this discrimination, I will try to shed some light on this succulent, describing briefly its history, features and cultivation.

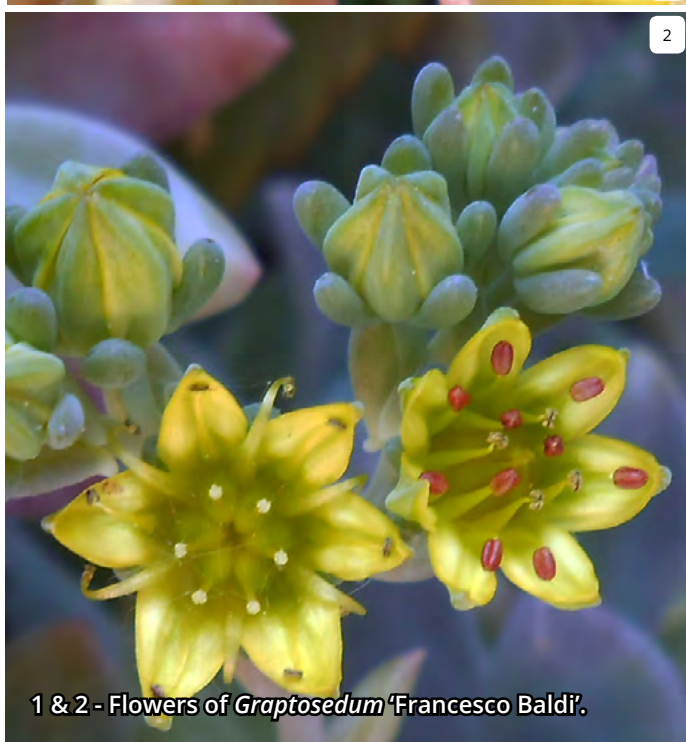
The official life of *Graptosedum* 'F. Baldi' begins in October 1991, when it was described on the Sedum Society Newsletter (SSN 19: 18) by Dr. Francesco Baldi under the somewhat unpoetically name of AB 316. Ray Stephenson explains this strange denomination writing that "the number 316 is merely that used by Daan Verggunst of De Aak, Holland who also grows the plant". The name of such an attractive succulent could not be this awful combination of numbers and letters, which reminds me of R2-D2 and C-3PO, so Ray put forward the suggestion of calling it *Graptosedum* 'Francesco Baldi', which was promptly accepted by sedum-enthusiasts throughout the world.

Who was the father of this succulent? Dr. Francesco Baldi was born on 4th February 1917 and he died on 13th March 2003. He had a degree in Chemistry. He was an active member of Sedum Society and participated in every Sedum Society Cuttings Exchange until 2003. "Francesco has furnished collections with taxa only he and very few other growers could cultivate successfully year after year" writes Ray Stephenson (2003a) in his obituary. Giuseppe Tavormina, a keen Italian grower of aeoniums and sedums, got in touch with him in 1992 after becoming member of Sedum Society and remembers Francesco as a "very humble and friendly man, who was always happy to share his experiences and his sedums". He lived in Livorno (Central Italy, on the Tyrrhenian Sea) and loved exploring the hills and mountains near his hometown, always looking for succulents. Dwelling near the sea, he sometimes had difficulties in growing alpine species, but he managed to cultivate many Mexican *Crassulaceae*.

The ancestry of *Graptosedum* 'F. Baldi' is shrouded in mystery. Francesco Baldi (1991) writes that the plant is "of unknown origin" and nobody, as far as I know, has ever found out where and when this hybrid was born. Ray Stephenson (1991) and Charles Uhl (1991) both agree that one parent could be *Graptopetalum paraguayense*. It is a sen-



1



2

1 & 2 - Flowers of *Graptosedum* 'Francesco Baldi'.

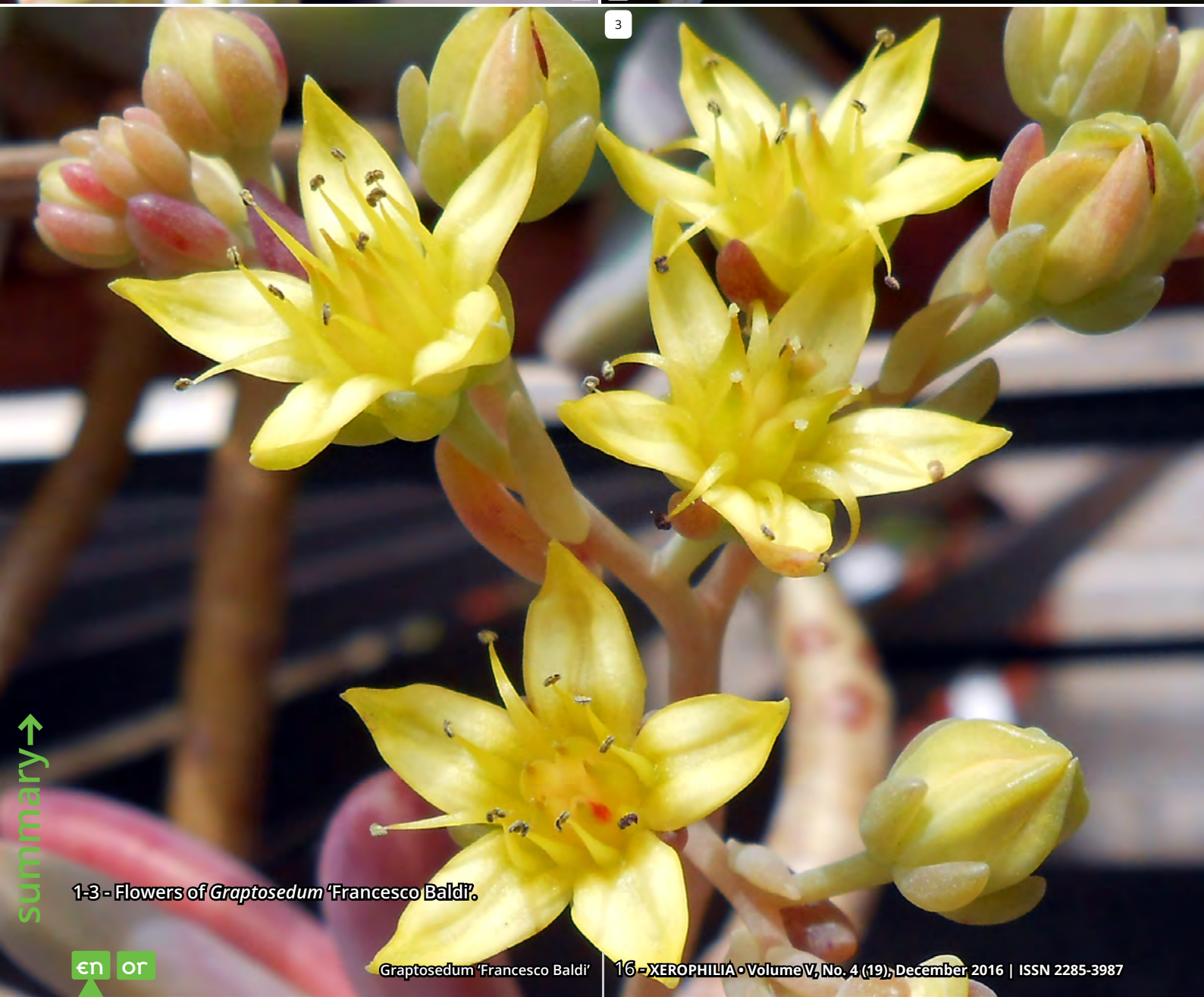
Flowers of *Graptosedum* 'Francesco Baldi'.



1



2



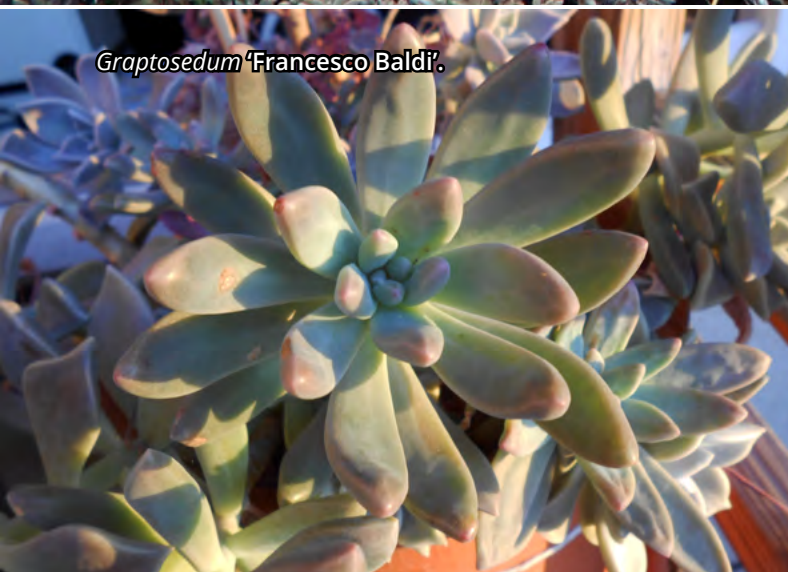
3

1-3 - Flowers of *Graptosedum* 'Francesco Baldi'.



G. 'Francesco Baldi' with *Centranthus ruber*.

Photo by Eduard Zimer.



Graptosedum 'Francesco Baldi'.



Graptosedum 'Francesco Baldi'.

Jardin Exotique de Monaco.

sible guess, this succulent hybridizes freely (Uhl 1991) and its inflorescences and stamens are similar to those of *Graptosedum* 'F. Baldi' (Stephenson 1991). Moreover, they flower in the same period (April-May). The identity of the second parent is more debated. Ray Stephenson (1991) writes that it could be "a yellow-flowered *Sedum* or an *Echeveria*", Charles Uhl (1991) thinks about *Cremnophila nutans*. Shortly afterwards Ray (1994) conjectures that "it probably has a member of *Pachysedum* group as a parent" and a few years later (2003a) writes that "*Sedum pachyphyllum* is a possibility". This guess has been widely accepted in Internet, but one should keep in mind that it is only a possi-

bility among others, not a certainty, as some websites let us believe.

Investigating the time and place of *Graptosedum* 'F. Baldi' appearance is an almost hopeless task. Such intergeneric hybrids arise quite often in gardens and nurseries, sometimes spontaneously, so that not even the owner of the plants can say what parents gave birth to them. Things being as they are, all we can do is put forth a terminus ante quem and a terminus post quem. That is, translating from philological into vernacular, we have to try to understand the date before which and after which the succulent must have appeared.

The official terminus ante quem is quite easy.

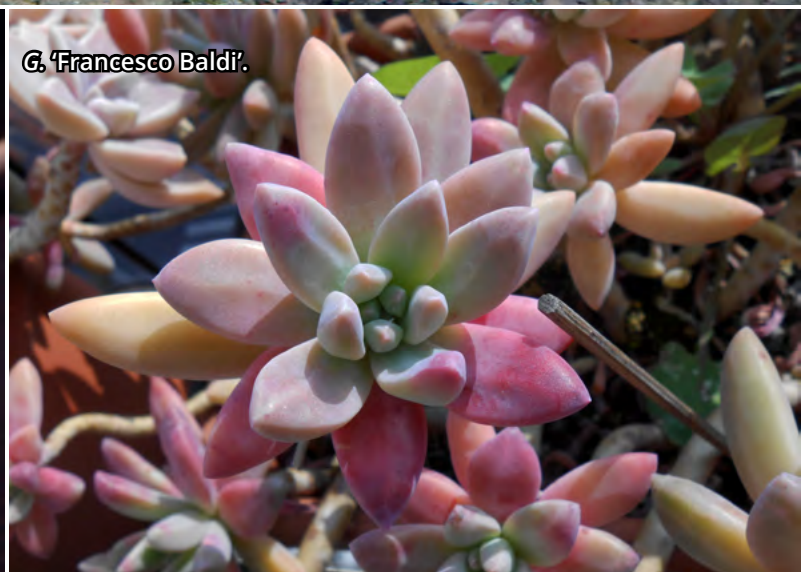


G. 'Francesco Baldi' & *Foeniculum vulgare*.

Photo by Eduard Zimer.



G. 'Francesco Baldi'.



G. 'Francesco Baldi'.

Graptosedum 'Francesco Baldi' was well known and widespread in 1991, so its "date of birth" should be earlier than that. I do not know how long does it take to spread a succulent across the Mediterranean, but I think that it is not a matter of months, so I guess that our graptosedum had been growing at least for a decade. This conjecture is confirmed by the fact that the succulent was cultivated in Australia in the early 1980s. Noelene Tomlinson wrote me that a friend of her, Bev Spiller, obtained *Graptosedum* 'Francesco Baldi' from the Netherlands in the early 1980s and Attila Kapitany told me that he had been cultivating it for more or less 35-40 years. Moreover, the plant grew in Nelson,

New Zealand, in 1986 (when W.R. Sykes collected a specimen and put it in an herbarium sheet, see below). So I would say that we could consider the terminus ante quem the year 1980. It is only a conjecture, but not an impossible one.

If we try to find the terminus post quem, the game becomes more difficult. As I wrote before, the parents of *Graptosedum* 'Francesco Baldi' are unknown, but there is a high degree of possibility that one of them is *Graptopetalum paraguayense*, so the history of this succulent can give us some interesting clues. Myron Kimnach and Reid Moran wrote a very good article (in 1986) about it and the reader will think that thanks to their work our task



G. 'Francesco Baldi' in Australia.

Photo by Atilia Kaplany.

is much easier. He or she, however, will be disappointed knowing that *Graptosedum paraguayense* carries the nick-name of “Ghost Plant”. This succulent “first appeared about 1904 as volunteer seedlings in the glasshouse of Frank Weinberg in New York” (Kimnach & Moran 1986). Nobody knew (and knows) its exact habitat, it was at first believed that it came from Paraguay, but botanists soon understood that it was a mistake. “For 80 years it has been spreading through the gardens of the world, winning friends and admirers but meanwhile acquiring a dozen names under five genera”. Kimnach & Moran (1986) sum up so the intricate history of *G. paraguayense*. As far as this succulent

is concerned, the terminus post quem is the year 1904.

Sedum pachyphyllum, the other putative parent, is “probably the most common member of *Pachy-sedum* group in cultivation” (Stephenson 1994, p. 228). It was described in 1911 and has been widely cultivated since. I do not know whether this succulent was grown - maybe in Mexico - also before that year, but, if we want to fix a terminus post quem, I think we could choose 1911 or, to be less strict, the 1920s. As a matter of fact, during the First World War the trade of succulent towards Europe was almost suspended and both parents of our plant must have spread slowly (at least at



Graptosedum 'F. Baldi' after rain.



Graptosedum 'Francesco Baldi' in a hanging basket.



Graptosedum 'Francesco Baldi' crested.

Photo by Noeline Tomlinson.

the beginning) in the USA, so it is quite unlikely that the cross occurred in second decade of the XX Century.

After this long series of guesses we can conclude that strictly speaking *Graptosedum* 'F. Baldi' appeared between 1911 and 1980, more probably between the early 1920s and the late 1970s. Fifty years are quite a long period of time, but, using available sources, it is impossible to be more precise. It is possible, however, to speculate a bit further in order to offer, if not tangible proofs, at least some conjectures.

As far as the place of birth is concerned, there are (again) no secure information. The plant is

often mentioned in Europe, less in America and in other countries (it came to Australia probably from Holland), moreover it was first noticed and described by European succulentophiles, so I guess that it appeared in the Old World, possibly near the Mediterranean, where sedums and graptopetalums can grow outside all year long. If this is true, its date of birth can be estimated more accurately.

Succulents, as a matter of fact, were cultivated by hobbyists since the beginning of the XX Century, but they did not spread widely (in Italy at last) until after the Second World War or even after the Sixties, when mass-tourism began and the deco-



G. 'Francesco Baldi' in Australia.

Photo by/Attila Kapitany.



Graptosedum 'Francesco Baldi' growing in Brescia (Italy).



Graptosedum 'Francesco Baldi' in a hanging basket.

ration of windowsills and gardens became more important. Before that period growing succulents was a hobby practiced by few people. It would be praiseworthy if someone decided to study systematically the diffusion of common succulents in Europe and America during the XX Century. While waiting for such an arduous task, I have to content myself with suppositions based upon history, collectors' memories and old photos. Growing Mexican succulents outdoors, as far as I know, was not very common between the two World Wars, in the Old World at least, so I have a sensation that *Graptosedum* 'F. Baldi' was born after 1945. Ray Stephenson writes me that the plant may be in culti-

vation "at least since the 1960s". This confirms my guess about its diffusion after the Second World War, more probably after the Sixties. So I conclude that *Graptosedum* 'Francesco Baldi' could have appeared spontaneously in Southern Europe (Italy, France or Spain) any time after 1945 and before 1970. The foundations of my arguments are not bombproof, I know, but lacking certain information we have to speculate, hoping that truth is not too far away...

Graptosedum 'F. Baldi', as the reader will have by now understood, is quite widespread in Europe. Its "father" wrote that it "is very popular in central and southern Italy, where it is cultivated both on



G. 'Francesco Baldi' in Australia.

Photo by Attila Kapitany.

balconies and in gardens but chiefly in pots" (Baldi 1991). I can add that nowadays it is widely grown also in Northern Italy. I observed it on the shores of Garda Lake, in Liguria and in lots of cities and small towns. Ray Stephenson (2003) reports that it is widespread "across the Mediterranean and on the Canary Islands". Ray saw it in Corsica (Stephenson 1995) and Malta (the front cover of *Sedum* Society Newsletter 111 shows a wonderful pot, rightly labelled "the best-grown specimen of *xGraptosedum* 'Francesco Baldi' ever!") and I photographed it in the Jardin Exotique de Monaco.

In the USA the succulent is quite widespread, "it is commonly cultivated in California due to its tenacity and attractive appearance" writes me Renee O'Connell. It is often sold as *Graptosedum* 'Blue Pearl' and *Graptosedum* 'Darley Sunshine'. Moreover, it is grown also in Mexico, where it is sometimes labelled *Sedum carnicolor*.

In South Africa it seems to be less widespread.

It is common in Australia (Queensland, New South Wales, Canberra and Victoria), although it is often sold under the label of *Graptoveria* 'Frostbite', *Graptoveria* 'Van Keppel' or *Sedeveria* 'Starburst'. A crested form can be found in cultivation in the Eastern Australian states. Moreover, W.R. Sykes has seen the *graptosedum* on Rarotonga, Cook Islands (Sykes 2004).

In New Zealand it is widely cultivated, although it is only seldom correctly labelled (Sykes 2004). It has escaped in Nelson, where it grows near "a road

(Nelson, SH6 - Rocks Road) following the shore almost at sea level, on a slope which is not too high, maybe 20-30 meters, but quite steep" as Eduart Zimer kindly informed me. When did the succulent begin spreading in Nelson? A very important clue is offered by the Allan Herbarium, where there is a sheet (CHR 437677 B) with a dried specimen of *Graptosedum* 'F. Baldi'. It was collected by W.R. Sykes on 3rd November 1986 and labelled "possibly *xGraptosedum* 'Peach Glow'". On 14th January 2003 W.R. Sykes guessed that the succulent could be *xSedeveria hummelii* Walther and finally on 27th January 2004 he identified it with *Graptosedum* 'F. Baldi'. Thanks to the wonderful Systematics Collections Data website, I was able to see a photo of the herbarium sheet (I wish I had a similar tool for the Italian herbaria...) and the dried succulent looks very similar to *Graptosedum* 'F. Baldi'. Moreover, when I did not know the identity of this beautiful crassulacea, I too misidentified it with *Sedeveria hummelii*. Assuming that the plants collected in 1986 are the same succulents that grow nowadays in Nelson, both seen on SH6 alias Atiawhai Drive (as written in the herbarium sheet), we can conclude that *Graptosedum* 'F. Baldi' was already cultivated in New Zealand in 1986.

How does *Graptosedum* 'F. Baldi' look like? It is a nice and robust succulent consisting of decumbent stems, bare except for the terminal rosette. Its thick leaves are 2-6 cm long, 0.5-1 cm wide, ascending, obovate-oblongate, subterete, with



G. 'Francesco Baldi'.

Photo by Attila Kapitány.

acute apex. They are gray-green and slightly pruinose, if grown in a sunny spot they can be tinged with red near the apex. Dimensions of course vary greatly depending on light, soil and water. I have seen overweight plants with leaves almost 10 cm long and much smaller rosettes composed of almost terete leaves measuring 2-3 cm. Stems can be very long. In 2011 one of my plants reached 54 cm, but I've seen stems 1 m long or more. They are, however, quite brittle and they break easily.

The inflorescence is lateral, cymose, 7-15 cm long, usually with three branches measuring 2-7 cm, each carrying 3-10 flowers. The flowers are composed by a pedicel 4-7 mm long; 5 grey-green linear sepals, 3-4 mm long, 1 mm wide; 5 yellow petals, triangular, 5-6 mm long, 3-4 mm wide, slightly keeled, with acute apex; 10 yellow stamens 4-5 mm long, at first erect, then curving (like *G. paraguayense*); 5 yellow carpels 4 mm long. The succulent flowers in spring, the bloom usually begins in March or April and the last flowers wither in June.

Graptosedum 'F. Baldi' is very easy to grow, it is an ideal plant for an absolute beginner who has just started to explore the wonderful world of succulents. It can be cultivated both in a shady and in sunny spots, requires little watering and can tolerate neglect and errors remarkably well. I prefer to grow *Graptosedum* 'F. Baldi' in a quite rich compost, the same I use for *Sedum palmeri*, but I saw it thriving in sandy and mineral substrates. If possible, I suggest to allow the plant to receive direct

sunlight, so that it blooms more profusely and its leaves are tinged with red. Moreover, if put in a hanging basket, it can be very decorative (as suggested in *Sedum Society Newsletter* 46: 96). I water it once a week during the growing season and I suspend watering in winter. Fertilizing is not necessary in my opinion, but it can help minute plants to grow faster and to fill more quickly their pot.

Propagation is never a problem. Stem cuttings root quickly and also leaves which fall accidentally give birth to plantlets in a matter of weeks. I noticed that it is much better to lay them on the ground without burying them partially. In this way they root and grow easier, whereas, if the inferior part of the leaf is put underground, it can happen that the leaf becomes bigger and bigger without developing a rosette. Once I tried planting leafless sections of stems and I observed that almost the half gave birth to little rosettes. I've never collected seeds, but sowing could be worth a try in order to see whether they are viable or not.

Severe frost can be dangerous for *Graptosedum* 'F. Baldi', but the succulent is able to withstand short periods of snow and ice, as wrote Baldi (1991): "In Mediterranean regions it can survive a moderate winter without prolonged frosts". I've been growing this succulent in Brescia (Northern Italy) for more than ten years and during the months of December and January the compost of some pots, previously soaked by rain, can become frozen. I sometimes mourn the loss of a few



G. 'Francesco Baldi'.

plants, but the majority has always survived outside all year round. Once the snow covered a well-developed specimen and its weight broke it. I noticed the mishap only when the snow melted, but the succulent looked quite good, so I waited for spring, potted it and, happily, saw it rooting and growing. On the other hand Jean Michel Moulec (2003) writes that the succulent died during the 2002-2003 winter, when it was left outdoors and temperatures fell as low as -9.5°C . To cut a long story short, *Graptosedum* 'F. Baldi' is not fully hardy, but it can survive outside through a not too harsh winter. If you are going to cultivate this plant in a greenhouse, remember that heat can be dangerous. Ray Stephenson reports that he lost his *Graptosedum* 'F. Baldi' growing under glass during the summer of 2003, when "temperatures day after day in the greenhouse ventured near 40°C " (Stephenson 2003b).

Graptosedum 'F. Baldi' has few enemies. Mealybugs fortunately tend to avoid grown specimens. They sometimes attack minute plantlets grown inside, but if you keep the plant en plein air, you should have no such problems. Aphids like inflorescences very much and during the bloom they can be bothering, but once the inflorescences are removed they disappear. In autumn some of my plants show signs of malformation on a few leaves, which grow shorter or with the apex somewhat rugose. I do not know the causes of this abnormal growth, but in spring all plants are normal again.

Diseases and parasites, in short, do not pose a major threat to our succulent. The same cannot be said of birds. If the reader would like to know why, he or she should read the following (true) story. A few years ago a blackbird took a liking to a pot of *Graptosedum* 'F. Baldi'. In spite of my efforts to drive him away, he kept coming back. One day I spotted something moving near the pot, then I heard a loud "crack" and I saw the bird flying away very quickly. I went outside and I found a big specimen of *Graptosedum* 'F. Baldi' broken on the floor, with leaves scattered in all directions. My feathery friend had been using it as a sort of perch, but he was a bit overweight and, as I said, the stem of this succulent is brittle, so it was not able to support the bird. At the time I was – quite understandably – far from happy and I collected all detached leaves thinking dark thoughts about the blackbird and his relatives, but not all evil comes to harm. In fact, I was able to replant the succulent, I put the leaves in little pots and the following year I had 30-40 little *Graptosedum* 'F. Baldi'. The moral of this is: if you are growing this succulent, beware of blackbirds!

Graptosedum 'F. Baldi' is very widespread, so nobody will be surprised finding out that there are a few synonyms of this beautiful succulents, which is also called *Sedeveria* 'Doinet', *Sedeveria* 'Pink Beauty' (Stephenson 2003a; Bishofberger 2011), *Graptoveria* 'Edelfrau' or *Sedeveria* 'Darley Dale'. In Australia it is sold under the label of *Graptoveria* 'Frostbite', *Graptoveria* 'Van Keppel' or *Sedeveria*



SH6 (Rocks Road), Nelson, New Zealand.

Photo by Eduart Zimer.

'Starburst' (Tomlinson 2016), whereas in the USA it is sometimes called *Graptosedum* 'Blue Pearl' or *Graptosedum* 'Darley Sunshine'.

It is impossible to understand whether these are names conferred upon the descendants of a single *Ur-Graptosedum* 'F. Baldi' by cunning nurserymen, eager to deceive customers into buying their plants, or they are new hybrids obtained from the same parents. For example, there are minor differences between *Sedeveria* 'Doinet' or *Sedeveria* 'Pink Beauty' and the standard *Graptosedum* 'F. Baldi' (Stephenson 2003a). However, they all look very similar, so, in order to avoid confusion, I think it is right to consider them synonyms and to label our succulents *Graptosedum* 'F. Baldi' unless we have specimens which are obviously different from it.

To conclude, *Graptosedum* 'F. Baldi' remains a mysterious plant. Since it lacks the rank of species, very few people have studied it until now, in spite of being widely cultivated in both the New and the Old World. This is the fate of many succulent hybrids, neglected in books and magazines, but beloved in gardens and nurseries. I hope that this article has shed a little light on such a common and nice succulent. I am well aware that much still remains to be found out.

Old nursery catalogs could hold the key to the solution of this and many other succulent puzzles.

So the history of *Graptosedum* 'F. Baldi' does not end here, it has just begun.

Acknowledgments

I would never have been able to write this article without the help of many other succulent-enthusiasts, who generously shared their knowledge with me. I would like to thank Ray Stephenson, who provided me with valuable information about Francesco Baldi and the graptosedum named after him. Giuseppe Tavormina wrote me about his friendship with Francesco and offered valuable insight into the life of this humble and devoted succulentophile. Noelene Tomlinson kindly informed me about the diffusion of *Graptosedum* 'F. Baldi' in Australia and sent me a few of her detailed articles about *Crassulaceae*, not to mention some very good photos. Also Attila Kapitany provided me with beautiful photos and useful information. Renee O'Connell wrote me about the distribution of *Graptosedum* 'F. Baldi' in the USA and in Mexico and told me under which names it is commonly sold in the New World. Eduart Zimer provided me with important information, bibliography and photos of *Graptosedum* 'F. Baldi' in New Zealand. I would like to thank also Margrit Bischofberger, Massimo Afferni, Mario Fasolato, Sean Gildenhuys, Gunnar Eisel and Brent Horvath for their help.

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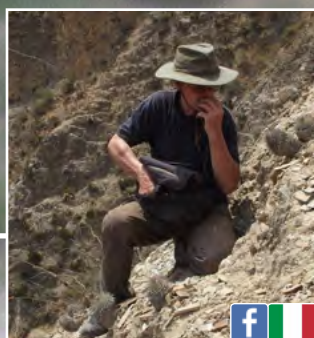
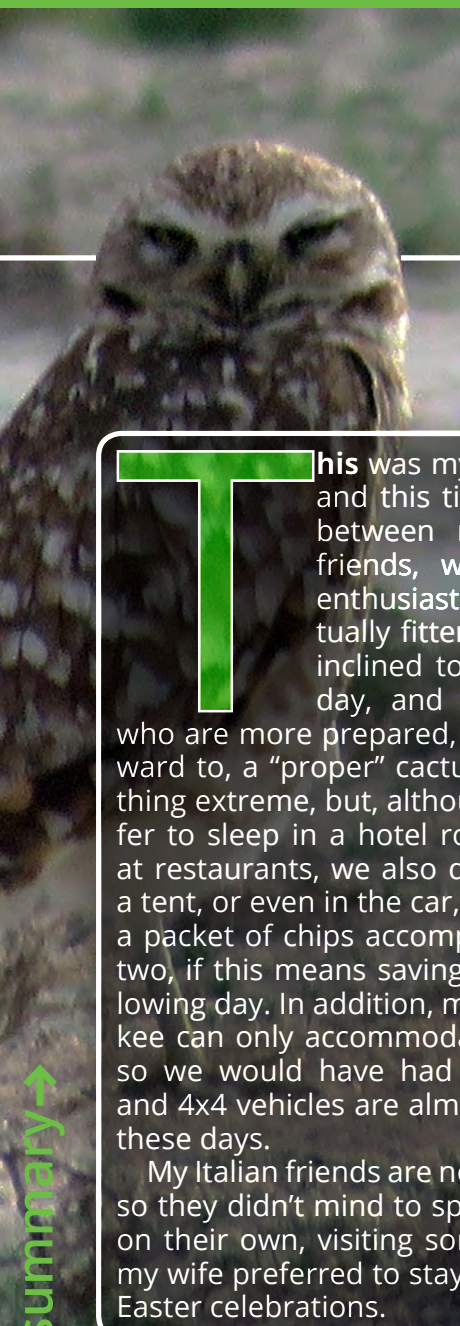
Graptosedum 'F. Baldi'.

Sitography

- http://www.sedumphotos.net/v/succulent+cy-gr/x+Graptosedum+_Francesco+Baldi+_1_.jpg.html (good photos)
- http://www.llifile.com/Encyclopedia/SUCCULENTS/Family/Crassulaceae/27659%D1%85_Graptosedum_cv._Francesco_Baldi (detailed description)
- <http://www.crassulaceae.ch/de/artikel?akID=60&aaID=2&ailD=F&aID=1279> (synonyms and very good photos)
- <http://www.plantegrassefrontignan.fr/plantes%20grasses%20mediterraneennes/fiches/Graptosedum%20Francesco%20Baldi.html> (photos and French description)
- <http://www.jardinexotiqueroscoff.com/site/mois/4/24/719/avril/x-graptosedum-francesco-baldi.html> (a few photos and a short description)
- <https://cactusysucculentascuatrohermanos.wordpress.com/2014/12/29/graptosedum-francesco-baldi/> (detailed description in Spanish)
- <https://scd.landcareresearch.co.nz/Specimen/CHR%20437677%20B?collection=CHR&searchCollection=CHR&query=%20437677¤tDisplayTab=list&pageNumber=0&sortField=relevance> (herbarium sheet CHR 437677, W. R. Sykes 205/86, 3 Nov 1986, Nelson, Nelson City)

Photo by Eduard Zimer

Spring in Mexico part 2



Aldo Delladio



Athene cunicularia, San Roberto, NL.

This was my 16th trip to Mexico, and this time I split my holiday between my wife and Italian friends, who, although cactus enthusiasts like myself, and actually fitter than I am, are more inclined to have a relaxed holiday, and my Mexican friends, who are more prepared, and actually look forward to, a “proper” cactus exploring trip. Nothing extreme, but, although we obviously prefer to sleep in a hotel room and have dinner at restaurants, we also don’t mind to sleep in a tent, or even in the car, and have dinner with a packet of chips accompanied with a beer or two, if this means saving a lot of time the following day. In addition, my ancient Jeep Cherokee can only accommodate three passengers, so we would have had to rent another car, and 4x4 vehicles are almost impossible to find these days.

My Italian friends are now at home in Mexico, so they didn’t mind to spend the second week on their own, visiting some cities by bus, and my wife preferred to stay in San Miguel for the Easter celebrations.

summary→





summary→

summary→

Mammillaria heyderi ssp. *gummifera*, east of Coneto Pass, Durango

March 20 – From Matehuala to Rodeo, Durango (901 km)

We left the hotel at 7:00 o'clock, and after a quick breakfast and filling up the tank, continued north. Today was also mostly a transfer journey, our goal being Paso de Coneto, Durango. The amazing thing isn't that we are driving such long distances, but that

my ancient Jeep Cherokee hasn't exploded yet. We made just a brief stop in Saltillo to eat a hamburger, then we drove straight to Paso de Coneto, stopping briefly before reaching the pass to explore some promising rocks.

Unfortunately we can only say that we found a *Mammillaria heyderi* ssp. *gummifera* in a shallow pocked of soil.



Xanthocephalus xanthocephalus, east of Coneto Pass, Durango.



Mammillaria theresae, Coneto Pass, Durango.



Agave parryi, Coneto Pass, Durango

Back to the car, our attention was attracted by a tree full of noisy, dark birds with a yellow head: *Xanthocephalus xanthocephalus*. We then continued to the Coneto Pass to visit *Mammillaria theresae*. Since we were here 10 days earlier than last year, there was no hope to find them in flower, and even *Mammillaria longiflora* and *Echinocereus polyacanthus*

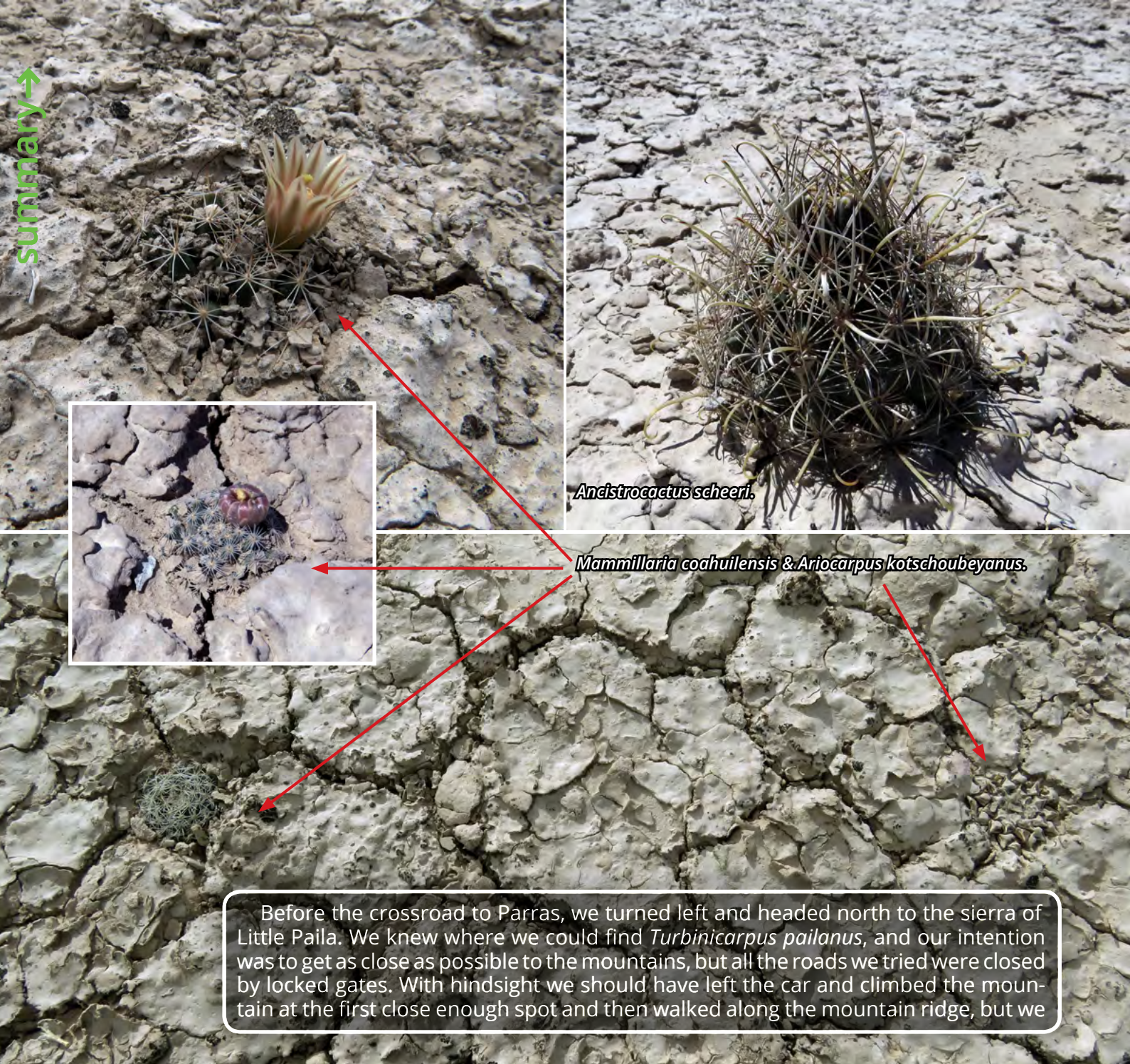
were just in bud. To soften the frustration I photographed the beautiful *Agave parryi* that was growing everywhere, and that I had ignored the previous year. The sun was very low on the horizon when we decided to drive until Rodeo, where we found a hotel first, and then a restaurant where we closed our day at 23:00 o'clock.

March 21 - From Rodeo to Parras de la Fuente, Coahuila (587 km)

We left the hotel at dawn, at about 6:00 o'clock. We would have breakfast at the first place we would find. We drove north along the Road 45 and then turned east at the crossing with the Road 30 and headed to Bermejillo. Between Mapimí and Bermejillo we explored a mountain slope where we found *Echinomastus unguispinus* and *Thelocactus bicolor*, both with their flowers still closed, since it was early morning, and also *Coryphantha delaetiana* and *Corynopuntia* sp.. For the first time in my life, I noticed *Larrea tridentata*, the most common bush in northern Mexico, in flower. We then continued our journey to Torreón and bypassed this large city by using the new ring road, saving a lot of time, but spending a lot of pesos, since there are several casetas de cobro (tollbooths) along this relatively short road stretch. At the junction with the highway 40d that goes to Saltillo, we were stopped by the Federal Police that searched our car with the help of a dog, very likely looking for drugs. We weren't carry any of course, but my friends attire apparently looked suspicious, since they kept asking them questions for a while, finally realizing that we were just cactus explorers and letting us go.

Echinomastus unguispinus, east of Mapimí, Durango.

Thelocactus bicolor, east of Mapimí, Durango.

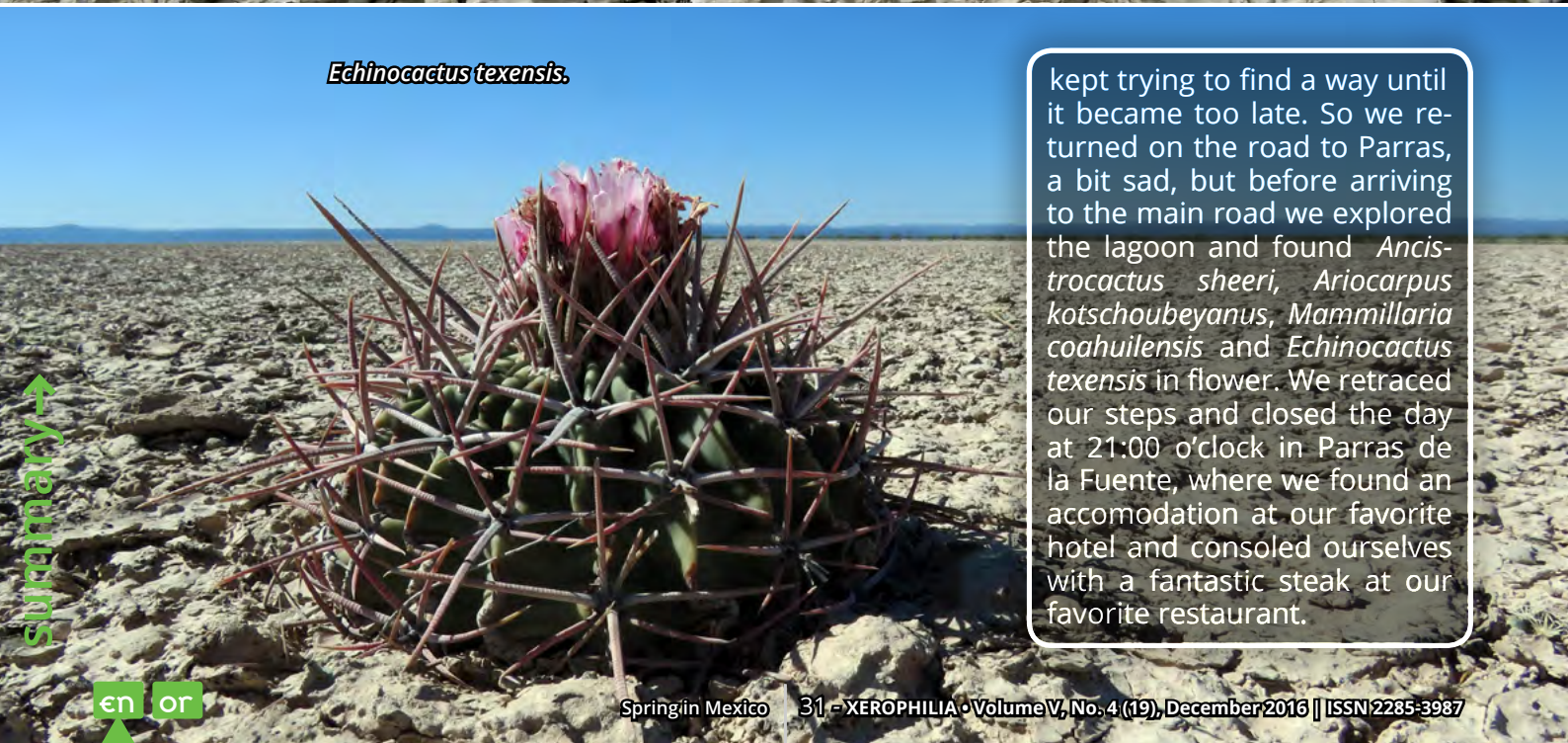


Andistrocactus scheeri.

Mammillaria coahuilensis & Ariocarpus kotschoubeyanus.

Before the crossroad to Parras, we turned left and headed north to the sierra of Little Paila. We knew where we could find *Turbinicarpus pailanus*, and our intention was to get as close as possible to the mountains, but all the roads we tried were closed by locked gates. With hindsight we should have left the car and climbed the mountain at the first close enough spot and then walked along the mountain ridge, but we

Echinocactus texensis.



kept trying to find a way until it became too late. So we returned on the road to Parras, a bit sad, but before arriving to the main road we explored the lagoon and found *Ancistrocactus sheeri*, *Ariocarpus kotschoubeyanus*, *Mammillaria coahuilensis* and *Echinocactus texensis* in flower. We retraced our steps and closed the day at 21:00 o'clock in Parras de la Fuente, where we found an accommodation at our favorite hotel and consoled ourselves with a fantastic steak at our favorite restaurant.

March 22 – From Parras to Cuatro Cié-negas, Coahuila (457 km)

After yesterday's failure, we decided that today we would visit the Sierra Paila proper, so we left the hotel at 7:30 o'clock, had a quick breakfast at the first Oxxo we found, filled the tank and headed north to the highway 40d then east in direction of Saltillo, left the 40d for the 40 libre and continued east until the crossroad to Estación Marte, where we turned north to Nuevo Yucatan. About mid-way between Estación Marte and Nuevo Yucatan we stopped at a well-known locality, where *Ariocarpus fissuratus* grows abundantly, together with *Thelocactus rinconensis* ssp. *nidulans*, *Astrophytum capricorne*, *Mammillaria lasiacantha* and *Epithelantha greggii*. Well...not anymore, for a while at least. We immediately got the impression that the ariocarpi were a bit difficult to see, and the few we found were a bit ugly, whilst there were suspicious-looking holes here and there, until one of us found a shiny, foldable, mini-shovel, that explained everything. I wish we could find its owner and stick it where you'd guess I would like to stick it

Ariocarpus fissuratus, between Estación Marte and Nuevo Yucatan, Coahuila.

Thelocactus rinconensis ssp. *nidulans*, between Estación Marte and Nuevo Yucatan, Coahuila.



Turbinicarpus pailanus, Sierra de la Paila, Coahuila.



Echinocereus longisetus ssp. *delaetii*, Sierra de la Paila, Coahuila.

Turbinicarpus pailanus, Sierra de la Paila, Coahuila.

We continued to Nuevo Yucatan, and, after a few attempts, found a small road leading east. We went along this road for several kilometers until it started to climb a mountain. Not willing to risk the car, we parked and continued on foot. Once we arrived close to the mountain top, we started to see many *Turbinicarpus pailanus* in flower. It would have been impossible not to see them, not only because they were in flower, but also quite big, the size of an orange and more. We continued our walk, finding the occasional prostrate clump of *Echinocereus longisetus* ssp. *delaetii*, then *Ferocactus hamat-acanthus*, *Mammillaria chionocephala*, *Epithelantha bokei* together with *Epithelantha micromeris*.





Thelocactus bicolor ssp. *bolaensis* 'wagnerianus'.



Lophophora williamsii, El Oso, Coahuila.

We walked over the ridge and to the other side, but the species we saw were the same, so we returned to the car, while taking photos of the beautiful landscape. On the way to Nuevo Yucatan we briefly stopped to take pictures of *Thelocactus bicolor* 'wagnerianus' in flower and *Lophophora williamsii*.



View of the valley from Sierra de la Paila.



Flower of *Yucca endlichiana*.

Yucca endlichiana, El Oso, Coahuila.



At this point it seemed convenient to continue north until we reached the Road 30, and then finish the day at Cuatro Ciénegas. With the sun already low on the horizon, we made just a brief stop along the way, after noticing that *Yucca endlichiana* was flowering.



Epithelantha greggii.

The plain south of El Oso, Coahuila.

Close to *Yucca endlichiana*, there were also many *Epithelantha greggii* and *Corynopuntia* sp.. Some kilometers south of El Oso we stopped again at a small ranch, and while we were opening the gate, we were approached by a local inhabitant, that informed us that it wasn't possible to continue to Estanque de Palomas since the land owner, who was living in Monterrey, had a sort of dispute with his neighbors, and fenced off the road. We didn't believe him and thought that he was trying to get some money from us, so we told him that with our Jeep we would find a way, and if not, we would return. Unfortunately, when we arrived at the fence, not without losing our way a few times, since it was pitch dark, we find out that they had fenced the entire valley from mountain side to mountain side, and had to return to the ranch. The guy, who was probably laughing to himself, escorted us to the nearest inhabited place, Las Coloradas. We gave him a tip and drove off. What a shame! Eventually we arrived to Cuatro Ciénegas at midnight, bought some junk food at the local Oxxo, no hope to find an open restaurant at this time, and luckily found an accomodation for the night.



March 23 – From Cuatro Ciénegas to El Guaje, Coahuila (268 km)

Today we had an ambitious plan, so we left the hotel at 7:00 o'clock, had a quick breakfast (coffee and doughnut) at the Oxxo, and headed north to Ocampo. In Ocampo we stopped to fill our tank, but unfortunately, or better said, fortunately, we realized that there was a little crack where the gasoline circuit connects to the tank and we were losing a small, but steady amount of gasoline. It took a while to find a mechanic, and another, longer while, to fix the crack with some resin. A temporary fix that lasted long enough to allow us to return home. This delay caused us to arrive at Laguna de la Leche, some 60 kilometers west of Ocampo when it was already late afternoon.

Escobaria abdita, Laguna El Guaje, Coahuila.



Escobaria abdita, Laguna El Guaje, Coahuila.

Nevertheless, we stopped to photograph *Escobaria abdita* and then headed north. We arrived at Laguna El Guaje when it was pitch dark, mounted our tents and went to sleep at about 21:00 o'clock.

During the night I woke up, since a strong wind was shaking my tent like a leaf, and I heard my friends talking, but I couldn't hear what they were saying.

March 24 – From El Guaje to Sabinas, Coahuila (385 km)

We woke up rather early, not surprisingly, packed our things, and were ready to explore at about 7:30 o'clock. My friends asked me if I had noticed something during the night, and I said no.

Apparently one of them was touched on the head, that was leaning on the tent's sheet, by a big paw. He woke up, but stayed calm, and then noticed a large shadow moving in the direction of my tent. I was asleep and didn't notice anything. The ground around the tents was dry and firm, but at some distance we saw what apparently were bear footprints. Was it really a bear what approached us during the night? I'm not sure. Anyway, after some searching, we finally saw *Escobaria abdita*, growing 100 kilometers away, as the-crow-flies,

from the type locality. We searched some other places in the lagoon, but didn't find any more escobarias, so we might have been very lucky, and very good at spotting them. We continued north, heading to Sierra del Carmen. Near El Pino, shortly before arriving to the paved road, we stopped at a promising locality, the hills seemed of a different type of rock, and found *Echinomastus mariposensis*, *Echinocereus dasyacanthus*, *Echinocereus stramineus*, *Escobaria tuberculosa*, *Coryphantha echinus* and *Corynopuntia* sp.. After driving for about half an hour, we stopped again, and this time we found *Echinomastus warnockii* and *Echinocereus dasyacanthus* in flower. A few kilometers after Cuesta de Malena, when the road descends to the valley, we stopped to search for *Echinocereus carmenensis*, which we found in flower, not far from the road.

Echinocereus carmenensis, Cuesta de Malena, Coahuila.



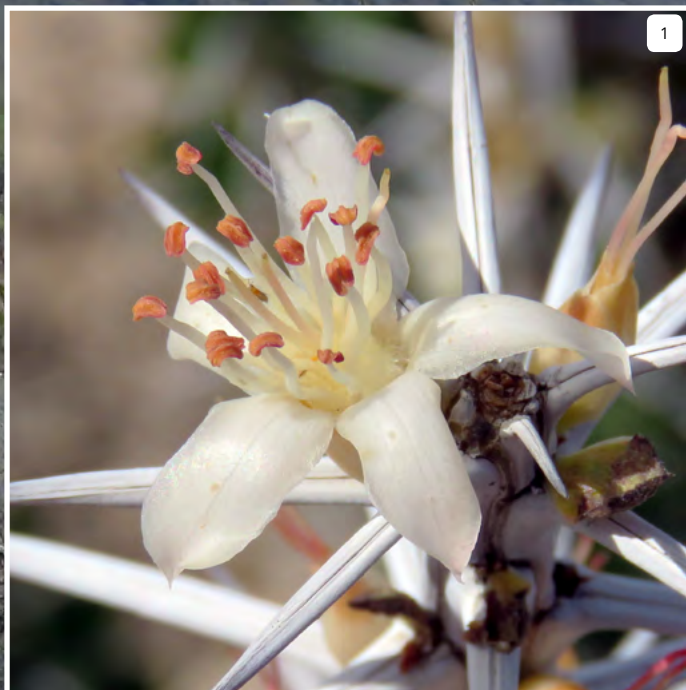
Echinocereus coccineus, Cuesta de Malena, Coahuila.

Echinocereus coccineus, Cuesta de Malena, Coahuila.

Next to it, we saw *Mammillaria heyderi* ssp. *hemisphaerica*, also in flower, and *Escobaria vivipara*. We climbed the mountain right behind and nearly on the top, we found *Echinocereus coccineus* in flower (fig.38). We then continued our journey in south-east direction, to Melchior Muzquiz, but along the way we stopped at a locality where I was told we would find *Escobaria hesteri* ssp. *grata*. Unfortunately the gate closing the road was locked, and we were told by a local inhabitant that we had to ask permission to enter to the owner, a mining company 200 kilometers away. Since it was already late afternoon, and more important, the Holy Week, we had no hope to find somebody, but we took note of where this company is, so we could ask permission in the future. We arrived in Sabinas at about 21:00 o'clock. Unfortunately the hotel on the zócalo, where we had stayed the year before, was full, but we found another one, albeit it looked a bit scary. Luckily our favourite restaurant was open, and we had a fantastic steak.



1 - Flower of *Fouquieria shrevei*. 2 - *Fouquieria shrevei*, El Hundido, Coahuila.



1

2



March 25 – From Sabinas to Saltillo, Coahuila (729 km)

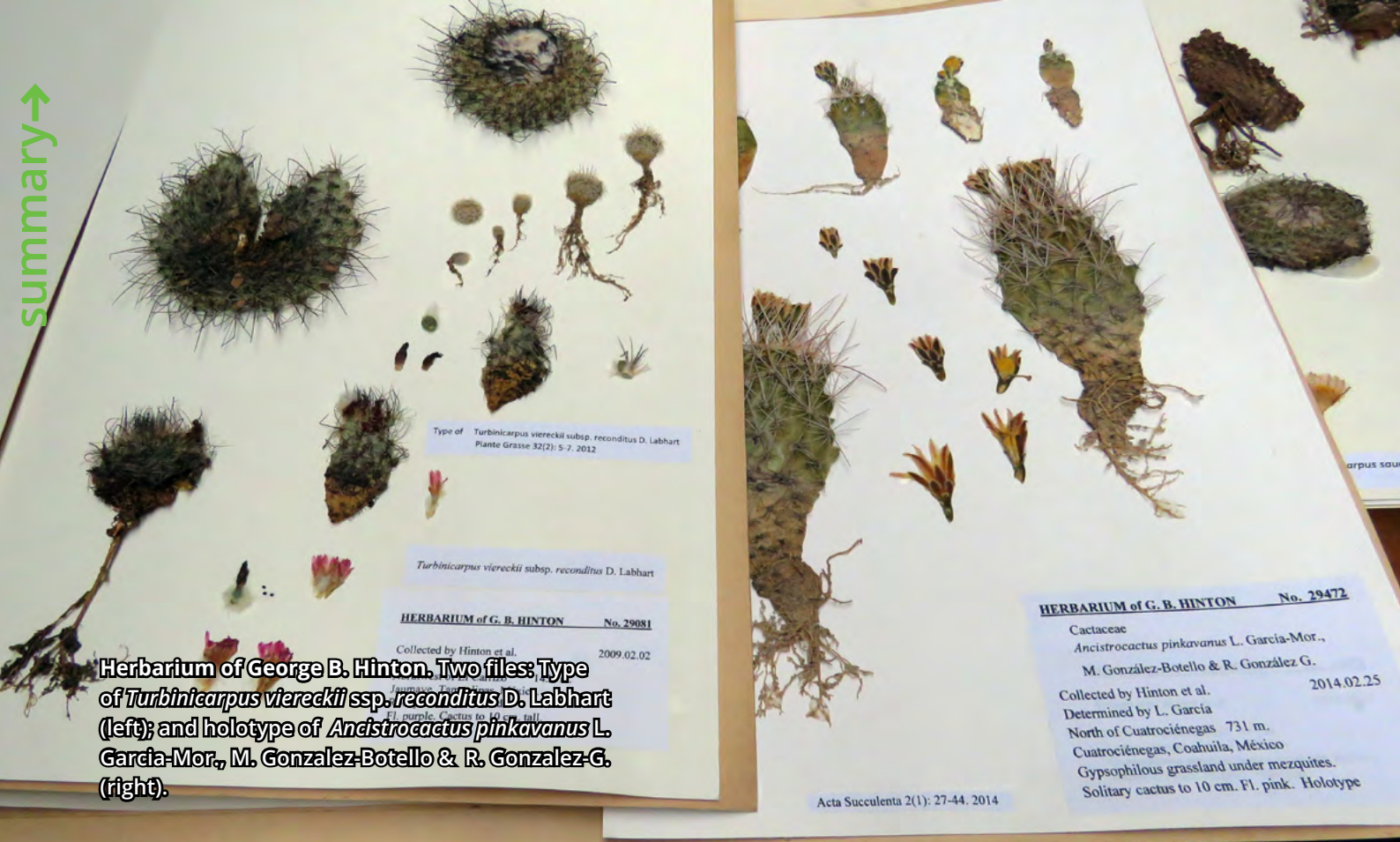
As if we hadn't made enough kilometers, we decided to start our return journey by taking a large detour to Saltillo. We left the scary hotel at 7:00 o'clock as usual, stopped at the first Oxxo for breakfast, and then drove without making a single stop for 250 kilometers, until we arrived to El Hundido, that is. My hope was to find *Fouquieria shrevei* in flower, and our driving effort was rewarded. The soil here has a high gypsum percentage, but another *fouquieria*, *Fouquieria splendens*, grows next to it, without any problems.

In this area there are many cactus species: *Coryphantha werdermannii*, *Coryphantha poselgeriana*, *Echinocactus horizonthalonius*, *Echinocactus texensis*, *Echinocereus stramineus*, *Corynopuntia* sp.. We continued south-west to San Pedro de las Colonias, and then east to Saltillo, on the highway 40d, but after a while we stopped to check the lagoon again, at a different spot, and this time I was able to photograph *Mammillaria coahuilensis* in flower and also next to *Ariocarpus kotschoubeyanus*. Since it was already 19:00 o'clock when we arrived at the crossroad to Parras, we decided to stop there, but unfortunately our usual hotel was full, and the city was incredibly crowded due to a festival for the Holy Week, so we decided that rather than wasting time looking for an unlikely accomodation in Parras, we would go directly to Saltillo, where we had some difficulties too. Finally we found a hotel and went to eat at our favourite restaurant, where you can have 10 beers in a bucket filled with ice at a very good price. We went to bed at midnight.



2

1 - View of Sierra del Carmen. 2 - *Coryphantha werdermannii*.



Herbarium of George B. Hinton. Two files: Type of *Turbinicarpus viereckii* ssp. *reconditus* D. Labhart (left); and holotype of *Ancistrocactus pinkavanus* L. Garcia-Mor., M. Gonzalez-Botello & R. Gonzalez-G. (right).

From left to right: Richard Raya and Cristian Perez Badillo listening George Hinton's lecture about how the plants are cut and dried up in the press.



March 26 – From Saltillo to San Miguel de Allende, Guanajuato (612 km)

Today we had another transfer journey, this time back home. However, we made a stop near San Roberto, Nuevo León, to pay a visit to George Hinton, since my friends had never seen his herbarium. Since we arrived a bit too early, we waited outside, and were able to see some *Cynomys mexicanus* (Mexican prairie dog or perrito de la pradera) and the ubiquitous *Athene cunicularia* (burrowing owl or mochuelo de madriguera). After a while, we decided that he could be awake, so we entered his property, with his dogs that where undecided whether they should bite us or play with us. In the end they did both. Finally he received us, and very kindly showed us his herbarium and even explained how the plants are cut and dried up in the press. We then continued to San Miguel de Allende, where I left my friends at the bus station.



Epithelantha greggii & *Echinocactus horizonthalonius*,
El Hundido, Coahuila.

March 27 – From San Miguel de Allende to Ciudad de México

This was supposed to be a very relaxing bus trip to Mexico City, but, as we got closer to the mega- city the traffic queues of people returning from the Holy Week holiday started to build up, and we started to wonder whether we would make it to the airport on time. We made it.

A new species and new populations of the genus *Agave* L. for the alien flora of Catalonia (north-eastern Iberian Peninsula)



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Agave americana subsp. *americana* along a trail margin, in Vila-seca (Tarragona Province). Road and trail sides are preferred habitats of *Agave* taxa in Spain.

Abstract

The genus *Agave* is well represented in the alien flora of Spain, with 29 taxa cited to date. In Catalonia, in spite of being the Spanish region with the highest concentration of invasive plants, the number of *Agave* taxa listed as occurring in the wild is relatively low. As a result of extensive fieldwork carried out in the southern part of Catalonia, a new *Agave* taxon has been observed for the first time (*A. franzosini*), which increases the number of agaves observed in this autonomous community to 17. In addition, new populations of two species recently cited for Catalonia (*A. salmiana* var. *ferox* and *A. sisalana* var. *sisalana*) are also provided.



The genus *Agave* in the alien flora of the Iberian Peninsula and the Balearic Islands

The genus *Agave* L. has about 200 species naturally distributed from the United States to Venezuela, including the Caribbean region (Good-Avila et al., 2006). Most of the described species are, however, native to Mexico (ca. 75%), with most of these (ca. 69 %) being endemic to the country (Eguiarte et al., 2013). *Agave* is a genus with a long tradition of uses, mainly alimentary, medicinal, and industrial (e.g. as a fiber plant); as a food, archaeological remains have indicated that *Agave* was already present in the diet of the Mesoamericans some 9000 years ago (Callen, 1965; Gentry, 1982). The genus is cultivated worldwide in tropical, subtropical and temperate regions, and species are often able to naturalize.

In the Iberian Peninsula and the Balearic Islands numerous taxa of the genus *Agave* have been cited as alien plants. Although most of them have a known area of distribution, others are only known from cultivation, and even some have been described from specimens cultivated in European gardens (e.g. *Agave gonzaloi*; Guillot & Meer, 2004b). In addition, various horticultural forms of several *Agave* species are also common, and hybrids described from specimens cultivated in the Iberian Peninsula or formed spontaneously out of cultivation of gardens have also been reported (Guillot et al., 2009). The most common agave in the Iberian Peninsula is *A. americana* L. (introduced in the 16th century), in particular the subsp. *americana* which is widely naturalized in all provinces of the Mediterranean coasts of Spain (from Girona to Huelva, and including the Balearic

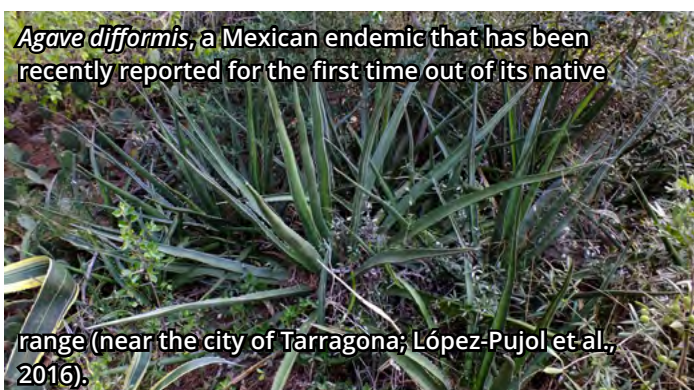
Islands), in the low-altitude areas of Andalusia and Galicia, and more rarely in sheltered areas from Extremadura, Aragon, Basque Country, Castilla-La Mancha and Madrid (Sanz et al., 2004). It has also been cited in Portugal, where it is common at least in some parts (Smith & Figueiredo, 2007), and in Gibraltar (United Kingdom) by Galán et al. (2000).

Together with *Agave americana* subsp. *americana*, other 28 taxa have been cited as occurring in the wild in the Iberian Peninsula and the Balearic Islands: *Agave amaniensis* Trel. & W. Novell, *A. americana* L. var. *marginata* Trel., *A. americana* L. var. *medio-picta* Trel., *A. americana* L. var. *striata* Trel., *A. angustifolia* Haw. var. *angustifolia*, *A. angustifolia* Haw. var. *marginata* hort. ex Gentry, *A. atrovirens* Karw., *A. cerulata* Trel. subsp. *dentiens* (Trel.) Gentry, *A. decipiens* Baker, *A. desmetiana* Jacobi, *A. difformis* A. Berger, *A. fourcroydes* Lem., *A. franzosini* Baker, *A. funkiana* K. Koch & C. D. Bouché, *A. ingens* A. Berger var. *ingens*, *A. ingens* A. Berger var. *picta* (Salm-Dyck) A. Berger, *A. karwinskii* Zucc., *A. lechuguilla* Torr., *A. lophantha* Schiede, *A. lurida* Aiton, *A. salmiana* Otto ex Salm-Dyck var. *salmiana*, *A. salmiana* Otto ex Salm-Dyck var. *ferox* (K. Koch) Gentry, *A. securae* D. Guillot & P. Van der Meer, *A. sisalana* Perrine ex Engelm. var. *sisalana*, *A. sisalana* Perrine ex Engelm. var. *armata* Trel., *A. weberi* J. F. Cels ex J. Poiss., *A. × cavanillesii* D. Guillot & P. Van der Meer, and *A. × winteriana* A. Berger (Guillot & Meer, 2003a, b, c, 2004a, 2005, 2006, 2008, 2009, 2010, 2013a, b; Guillot, 2006; Serra, 2007; Smith & Figueiredo, 2007; Guillot et al., 2009; Sánchez et al., 2009; Sanz et al., 2011; Rubal et al., 2013; Guillot & Sáez, 2014; Sáez et al., 2014; Aymerich 2015b; López-Pujol et al., 2016).



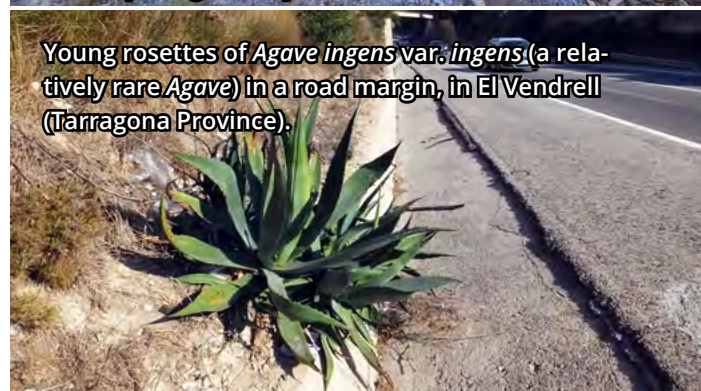
Agave ingens var. *picta* (with *A. americana* subsp. *americana* in-between) in Sitges (Barcelona Province), on the Mediterranean seashore. *Agave* taxa are

rarely found far away from coastal regions, given that they are generally non-frost tolerant.

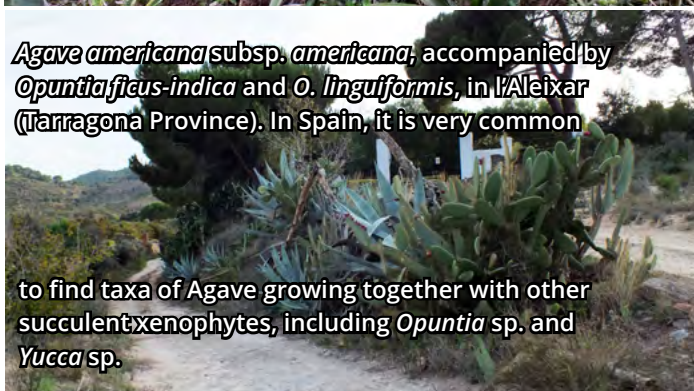


Agave difformis, a Mexican endemic that has been recently reported for the first time out of its native

range (near the city of Tarragona; López-Pujol et al., 2016).



Young rosettes of *Agave ingens* var. *ingens* (a relatively rare *Agave*) in a road margin, in El Vendrell (Tarragona Province).



Agave americana subsp. *americana*, accompanied by *Opuntia ficus-indica* and *O. linguiformis*, in l'Aleixar (Tarragona Province). In Spain, it is very common

to find taxa of *Agave* growing together with other succulent xenophytes, including *Opuntia* sp. and *Yucca* sp.

The genus *Agave* in the alien flora of Catalonia

In Catalonia, in spite of being the Spanish region with the highest concentration of invasive plants (Gassó et al., 2009), the number of *Agave* taxa listed as occurring in the wild is relatively low (especially when compared to the Valencian Community, where up to 25 taxa have been observed; Guillot & Meer, 2009, 2013a; Guillot et al., 2009); up to now, only 16 taxa have been cited in Catalonia: *A. americana* subsp. *americana*, *A. americana* var. *marginata*, *A. angustifolia* var. *marginata*, *A. atrovirens*, *A. decipiens*, *A. difformis*, *A. fourcroydes*, *A. ingens* var. *ingens*, *A. ingens* var. *picta*, *A. lophantha*, *A. lurida*, *A. salmiana* var. *salmiana*, *A. salmiana* var. *ferox*, *A. sisalana* var. *sisalana*, *A. weberi*, and *A. × winteriana*. The occurrence of *A. americana* subsp. *americana* has been widely documented in the four provinces of Catalonia (including the inland Lleida) since late 19th century (e.g. Cuní, 1880, 1883; Górriz, 1903; Pau 1905; Sennen, 1911, 1929; Batalla & Masclans, 1950; Losa, 1952; Marcet, 1952; Bolòs & Molinier, 1958; Montserrat, 1962; Balcells, 1968; Masclans & Batalla, 1972; Bolòs & Vigo, 1984; Casasayas, 1989; Hernández, 2004; Gesti, 2006; Royo, 2006; Curcó, 2007; Guillot & Meer, 2007). A variety of *A. americana* (*A. americana* var. *marginata*) was cited 25 years ago but without providing precise localities, in several coastal areas (Casasayas, 1989). Later (in 2000), *A. ingens* var. *picta* was observed in Ulldecona (in the southernmost part of Catalonia, very close to the Valencian Community; Guillot & Meer, 2005). About one decade ago, *A. atrovirens* was

cited from the southern tip of Catalonia but with no certainty that the population was truly wild (Royo, 2006). Up to 12 additional *Agave* taxa have been recently cited in Catalonia: *A. lophantha*, with a single individual observed in Llançà (a coastal village in northernmost Girona Province, near France; Aymerich, 2015b), *A. fourcroydes*, on coastal places of Barcelona and Girona provinces (Guillot & Sáez, 2014; Aymerich, 2015a), *A. ingens* var. *ingens*, both in Barcelona and Tarragona provinces (Aymerich & Gustamante, 2015; López-Pujol et al., 2015b; Aymerich, 2016), *A. weberi*, both in Girona and Tarragona provinces (López-Pujol et al., 2015b; Sáez & Guillot, 2015), and *A. angustifolia* var. *marginata*, *A. decipiens*, *A. difformis*, *A. lurida*, *A. salmiana* var. *salmiana*, *A. salmiana* var. *ferox*, *A. sisalana* var. *sisalana*, and *A. × winteriana* in Tarragona Province (Sáez et al., 2014; López-Pujol et al., 2015a, b, 2016; Aymerich & Gustamante, 2015, 2016). We believe that the two citations of an additional *Agave* species in Catalonia (*A. lechuguilla*; Giménez, 2011; Aymerich & Gustamante, 2016) are misidentifications of closely related species that are already present in the region (*A. lophantha*, *A. difformis*).

New *Agave* taxa and populations for the alien flora of Catalonia

As a result of extensive fieldwork carried out in the southern part of Catalonia, a new *Agave* taxon (*A. franzosini*), and new populations for two other species recently cited (*A. salmiana* var. *ferox* and *A. sisalana* var. *sisalana*), have been observed for this Spanish autonomous community.



Group of rosettes of *Agave salmiana* var. *ferox* growing between roads, in Vallirana (Barcelona Province).

1. *Agave franzosini* Baker

TARRAGONA: 31TCF4646, Salou (Cap de Salou), fossil dunes stabilized with *Pinus halepensis*, near habitation, growing together with other agaves and *Opuntia dillenii*, 52 m, 02-XI-2014, J. López-Pujol; 31TCF5654, Tarragona (Cala Romana), at least 20 individuals (some very large) in an uncultivated land adjacent to the road N-340, ca. 20 m, 12-X-2014, J. López-Pujol.

Agave franzosini has been already reported in the Iberian Peninsula, but only in the province of Valencia (Spain) (Guillot & Meer, 2003a; Sáez et al., 2014).

According to the description of Gentry (1982), this agave has very large, widely spreading rosettes [2–2.7(3) m tall, up to 4.5 m wide], freely suckering; leaves are lanceolate, narrowed above base, spreading, recurved, or sharply reflexed, hollowed above, thickened and concave below toward base, with the cuticle somewhat asperous, 180–220 cm long, 22–35 cm wide, light glaucous gray or bluish glaucous variously marked with green below mid-blade; leaf margins are straight to repand with remote, dark brown teeth, the larger along the mid-blade 8–10 mm long, on fleshy prominences; terminal spines are 3–6 cm long, dark brown, with short open groove above, decurrent along the inrolled leaf apex; inflorescences are ca. 8–11.4 m tall with a strong shaft and a deep, broadly cylindric panicle (to 2.9 m broad), with broad spreading decompound umbels of large yellow flowers; ovary is 3.5–4.5 cm long and 10–13 mm thick, with slightly narrower neck, light bright green; tube is 18–22 mm long; tepals are 30–32 mm long, soon withering; filaments are inserted in the mid-tube, stout, yellow, 65–80 mm long; anthers 38–40 mm long, yellow; pistil to 12 cm long, stout, 3-lobed with clavate stigma; capsule elongate-claviform, woody, 55–70 mm long; seeds are black, shiny, of 12 × 8–9 mm.

This plant is “one of the most handsome of the large agaves” (Gentry, 1982), much related to *A. americana* (Gentry, 1982; Thiede, 2001). *Agave franzosini* can be distinguished from *A. americana* by the combination of a wider leaf, highly contrasting teeth and spine colour, a flatter leaf surface over the entire length of the blade, rough leaf surface, and the lack of a groove on the top of the terminal spine (Irish & Irish, 2000). Although its native area is totally unknown, it has been cultivated as ornamental for more than one century, particularly in southern European gardens (such as in Mediterranean France, Italy, and Portugal; Irish & Irish, 2000; Smith & Figueiredo, 2007), which

Large rosette of *Agave franzosini* from Cala Romana (Tarragona, Tarragona Province).



would have contributed to its dispersion. It is rare in the United States, but the Huntington Botanic Gardens (San Marino, California) harbored several individuals for many years (Gentry, 1982). Quoting the words of Gentry (1982), “I have not found it in Mexico or Central America and it is not included in Trelease’s account of Caribbean Agave” (Gentry, 1982). The slight morphological differences between Huntington plants and Berger’s (1915) description could be attributed to seedling variation. The finding of *A. franzosini* in Catalonia is, thus, significant as within Europe we found a unique reference from Italy as occurring in the wild (as “casual” in Liguria; Celesti-Grapow et al., 2010) in addition



Agave franzosini, growing in Salou (Tarragona Province).



Detail of the terminal spines of the leaves of *Agave franzosini* in Salou (Tarragona Province).



Several individuals of *Agave franzosini* from the population of Cala Romana (Tarragona, Tarragona Province).

to the Spanish occurrences. The population of Tarragona has been found in a place very close to the oldest luxury residential area built in the region ("Cala Romana"), which dates from the 1950s. Uncontrolled disposal of plant debris from pruning and/or gardening is common in the area (J. López-Pujol, pers. obs.), which can be the origin of the observed individuals of *A. franzosini* as well as other xenophytes such as *Agave ingens* var. *picta*, *A. difformis*, at least two taxa of *Opuntia* (*O. cf. ficus-indica* and *Opuntia* sp.), and several species often used in gardening (e.g. *Asparagus plumosus*, *Lantana camara*, *Ligustrum lucidum*, *Pittosporum tobira*, and *Plumbago auriculata*). Similarly, the population of Salou is probably the result of uncontrolled disposal of garden debris; as in the former locality

(Cala Romana), the population of *A. franzosini* from Salou is located within a residential area ("Cap Salou") also dating from the 1950s, probably one of the ugliest examples of unsustainable urban sprawl in the Spanish coasts.

2. ***Agave salmiana*** Otto ex Salm-Dyck
var. *ferox* (K. Koch) Gentry (A. *ferox* K. Koch)

Medium-sized rosette of *Agave salmiana* var. *ferox* growing with *Agave americana* var. *marginata*, near Ulldecona (Tarragona Province).

BARCELONA: 31TDF0981, Vallirana (Casetes d'en Muntaner), in the roadside (road N-340), a small group of rosettes of several sizes, growing together with *Agave americana* var. *marginata*, 220 m, 23-VI-2016, J. López-Pujol. TARRAGONA: 31TBE7598, Ulldecona (el Castell), in the roadside (road TV-3319), two groups of rosettes (including many young ones), 242 m, 18-VII-2016, C. Gómez-Bellver, N. Nualart & J. López-Pujol; 31TBE8592, Ulldecona (les Saleres), in the roadside (road TV-3319), a single medium-size rosette, growing together with *Agave americana* var. *marginata*, 153 m, 18-VII-2016, C. Gómez-Bellver, N. Nualart & J. López-Pujol; 31TBF9714, l'Aldea, near the toll gate of AP-7 expressway, several large rosettes growing together with *Opuntia ficus-indica*, 40 m, 23-XI-2014, J. López-Pujol; 31TCF0251, Móra la Nova, near the large roundabout that connects C-12 and N-420 roads, abandoned gardens next to houses, a very large rosette and some small ones, 33 m, 23-XI-2014, J. López-Pujol; 31TCF4250, Salou (els Emprius), four rosettes in an uncultivated land adjacent to the road C-14, growing together with *Yucca gigantea*, 29 m, 31-X-2014, J. López-Pujol; 31TCF4253, Reus (la Feredat), in the roadside (road C-14), two large rosettes (and a few small ones) growing together with other *Agave* taxa (*A. americana* subsp. *americana*, *A. ingens* var. *picta*, and *Agave* sp.), ca. 60 m, 26-X-2014, J. López-Pujol; 31TCF5655, Tarragona (els Boscos de Tarragona), a very large rosette in a vacant lot, together with *Aloe maculata*, 87 m, 19-X-2014, J. López-Pujol; 31TCF5856, Tarragona (Urbanització Escorpí), several big rosettes and some small ones in a vacant lot, together with other taxa of *Agave* and *Yucca*, probably planted long time ago (now abandoned), 60 m, 6-XII-2014, J. López-Pujol.

This plant has been previously reported in the Iberian Peninsula both in Portugal (in the Algarve Region; Smith & Figueiredo, 2007) and Spain [including Catalonia (Aymerich & Gustamante, 2016) and the Valencian Community (Laguna & Mateo, 2001; Guillot et al., 2009), as well as in the Balearic Islands (Moragues & Rita, 2005)].

Rosettes of *Agave salmiana* var. *ferox* are large, rather compact, urceolate, 1–1.5 m tall, ca. twice as wide, freely offsetting around base; leaves are 70–90 × 23–30 cm, broadly oblanceolate, short-acuminate, light bright green coloured, thickly succulent, with the margin cre-



nate, heavily armed with castaneous to brown teeth (which are 10–14 mm long on prominent teats); terminal spine is narrowly subulate, 6–7 cm long, castaneous to dark brown, long decurrent; inflorescences are like those of the typical variety, with heavy dense umbels, although flowers are more slender, 70–85 mm long, with the tube of ca. 15 mm broad; capsules are 58–60–70 mm long, obovoid, stipitate, long-beaked, grayish brown to dark brown; seeds are 7 × 5 mm, shining black, with narrow winged margin (Gentry, 1982).

Agave salmiana var. *ferox* is a “distinguished variety readily recognizable by its thick, graceful, light shiny green, outcurving leaves, with strongly teated margins” (Gentry, 1982). Despite its magnificent appearance, it is sensitive to frosts below -4°C (Gentry, 1982). Its native area is Mexico (states of Mexico, Oaxaca and Puebla; Thiede, 2001), where it is also common in cultivation (Gentry, 1982; Thiede, 2001). *Agave salmiana* var. *ferox* is the most commonly cultivated form of *A. salmiana* for landscape

use in the southwestern United States (Starr, 2012). Its regular habit of suckering facilitates its propagation. According to Berger (1915), it was already common in European gardens since the middle of the 19th century; in fact, the type specimen was an individual cultivated in Europe, in La Mortola (Breitung, 1968). *Agave salmiana* var. *ferox* has been cultivated in the Iberian Peninsula at least since the beginning of the 20th century; for example we can find this name in the document “Catalogus Seminum in Horto Botanico Universitatis Valentinae anno 1919 collectorum” (Beltrán, 1919). The plant is also cultivated in Catalonia, with many reports such as those of Isern et al. (1984), Vallès (2006), and Montserrat & Planes (2009) from Barcelona, and Guillot & Meer (2007) from Blanes. We have also observed it in private gardens in several places within Tarragona Province (J. López-Pujol, pers. obs.). The newly reported localities for Catalonia occur in highly populated areas, where tourist and residential development may have played a major role in the spread of this

Large rosettes of *Agave salmiana* var. *ferox* growing together with *Yucca gigantea* in Salou (Tarragona Province).



Young rosette of *Agave salmiana* var. *ferox* from Reus (Tarragona Province).



Minute rosettes of *Agave salmiana* var. *ferox* in the Castell neighbourhood, Uldecona (Tarragona Province).



Large rosette of *Agave salmiana* var. *ferox* from Tarragona (Tarragona Province), surrounded by *Aloe maculata*.

handsome agave in this part of Spain. All populations observed to date of *A. salmiana* var. *ferox* in Catalonia are of small size and always near habitation, suggesting a limited ability to spread to new sites.



summary→

→summary

Large rosettes of *Agave salmiana* var. *ferox* growing in the margins of the C-14 road, in Reus, Tarragona Province (in the background, *Agave ingens* var. *picta*).

3. *Agave sisalana* Perr. var. *sisalana*

TARRAGONA: 31TBF8821, Roquetes (la Torre de Gil), in a vacant lot, near habitation, 35 m, 23-XI-2014, J. López-Pujol; 31TCF3551, Cambrils (Riera d'Alforja); very close to a dry river bed, six large rosettes and a few small ones, ca. 60 m, 24-XI-2014, J. López-Pujol; 31TCF4254, Vila-seca (la Plana), in the roadside (road C-14), a few rosettes (with one showing inflorescence) growing together with other *Agave* taxa (*A. americana* subsp. *americana*, *A. ingens* var. *picta*), 76 m, 24-X-2014, J. López-Pujol.

In the Iberian Peninsula it has been reported from the Spanish provinces of Alicante (Guillot & Meer, 2005; Serra, 2007), Almería (Kunkel, 1987; Sagredo, 1987), Cádiz (Sánchez et al., 2009; Rubal et al., 2013), Tarragona (Aymerich & Gustamante, 2015, 2016) and Valencia (Guillot & Meer, 2003a, 2005), and also from the Balearic Islands (Moragues & Rita, 2005).

Gentry (1982) describes *Agave sisalana* as plants forming rosettes of 1.5–2 m tall with stems 40–100 cm long, suckering with elongate rhizomes; leaves are ensiform, 90–130 × 9–12 cm, with the blade green (somewhat lightly zoned in youth), radial, fleshy, finely fibrous, smooth; the margins of mature leaves usually tooth-less, but the young leaves show few minute teeth; terminal spines are 2–2.5 cm long, subulate, smooth, dark brown, somewhat lustrous, shortly shallowly grooved above, non-decurrent; panicles are 5–6 m tall, deeply elliptic outline, with 10–15(–25) lateral branches of umbellate clusters in upper half of bracteate shaft, bulbiferous after flowering; flowers are 5.5–6.5 cm long, greenish yellow, malodorous; ovary is shortly fusiform, 20–25 × 8–9 mm, nearly neckless; tube is broadly urceolate, 15–18 mm deep, narrowly grooved; limb lobes are equal, 17–18 × 5–6 mm, appressed to erect, conduplicate, involute, linear-lanceolate; filaments are 50–60 mm long, reddish or dark-spotted, inserted above mid-tube; anthers are 23–25 mm long, yellow, centric; capsules and seeds are generally lacking.

The origin of *Agave sisalana* (commonly known as “sisal”) is uncertain. Because it was exported from Mexico during the 19th century (due to its hard fibers) via the port

Individual of *Agave sisalana* var. *sisalana* with inflorescence, in Vila-seca (Tarragona Province).



of Sisal in Yucatan, it has long been erroneously reported as of Yucatan origin; however, as Gentry (1982) indicates, "no botanical collections of the plant have ever been made in Yucatan, and botanists who have worked in Yucatan [...] have told me they did not find the plant there". The same author (Gentry, 1982) indicated, instead, that its place of origin would be Chiapas, and that *A. sisalana* is a sexually sterile clone probably of hybrid origin (between *A. angustifolia* and *A. kewensis*). Its sterility would be supported by the general inability to produce seeds (as with *A. desmettiana*, capsules and seeds of this species are unknown; Reveal & Hodgson, 2002) and by its pentaploidy (Gentry, 1982). *Agave sisalana* is still frequently cultivated for its ornamental value but especially because is the main source of hard plant fibers (Brown, 2002; Nobel, 2003). The plant is at present considered as an aggressive

invader in many countries, frequently escaped from industrial plantations (CABI, 2014); the plants can produce thousands of bulbils that easily take root (Walters et al., 2011). For example, in SE Spain (Almería Province), where *A. sisalana* is now an aggressive invader (and where it was planted around middle 20th century for fiber production), mixed populations of *A. sisalana* and *A. fourcroydes* may reach up to 120,000 bulbils per hectare (Badano & Pugnaire, 2004). The plants observed by us in Tarragona might have originated from cultivated specimens nearby, probably by asexual reproduction by bulbils. Unlike in Almería Province, we believe that this agave does not represent a serious problem of invasion in Tarragona, as all the observed localities (by us or by Aymerich & Gustamante, 2015, 2016) consist of very few individuals.

Individual of *Agave sisalana* var. *sisalana* with inflorescence, in Vila-seca (Tarragona Province).

Conclusions

With the observation of this new taxon, the total number of agaves in Catalonia rises to 17, which is still a figure relatively low compared to that of the contiguous Valencian Community (25 taxa). The notoriously high number of *Agave* taxa observed in the latter region should be primarily regarded as the result of a continuous research of about 15 years on cacti and succulent xenophytes (mainly *Agavaceae*, *Aloaceae*, *Cactaceae*, and *Crassulaceae*) by the third author of the present contribution, and not to an “anomalous” con-

centration of *Agave* taxa in this region compared to Catalonia.

In Catalonia, however, we should take into account that, of the 17 recorded taxa, 13 have been observed since 2014, which is reflecting a growing interest in alien species in this Spanish region. We expect that the continuous efforts of the authors of the present contribution, as well as other local botanists (and, notably, including a PhD student whose thesis is focused in cataloguing the alien plant species of NE Iberian Peninsula) will result not only in the observation of species/populations not previously cited but also in shedding light into the patterns of introduction, establishment and spread of alien *Agave* in our country.

Individual of *Agave sisalana* var. *sisalana* with an immature inflorescence, in Roquetes (Tarragona Province).

Page 57: *Agave sisalana* var. *sisalana* growing together with *Agave ingens* var. *picta*, in Vila-seca (Tarragona Province).

Page 58: One of the six large rosettes of *Agave sisalana* var. *sisalana* found in Riera d'Alforja (Cambrils, Tarragona Province).

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The desert means... life !



Ricardo Ramirez Chaparro

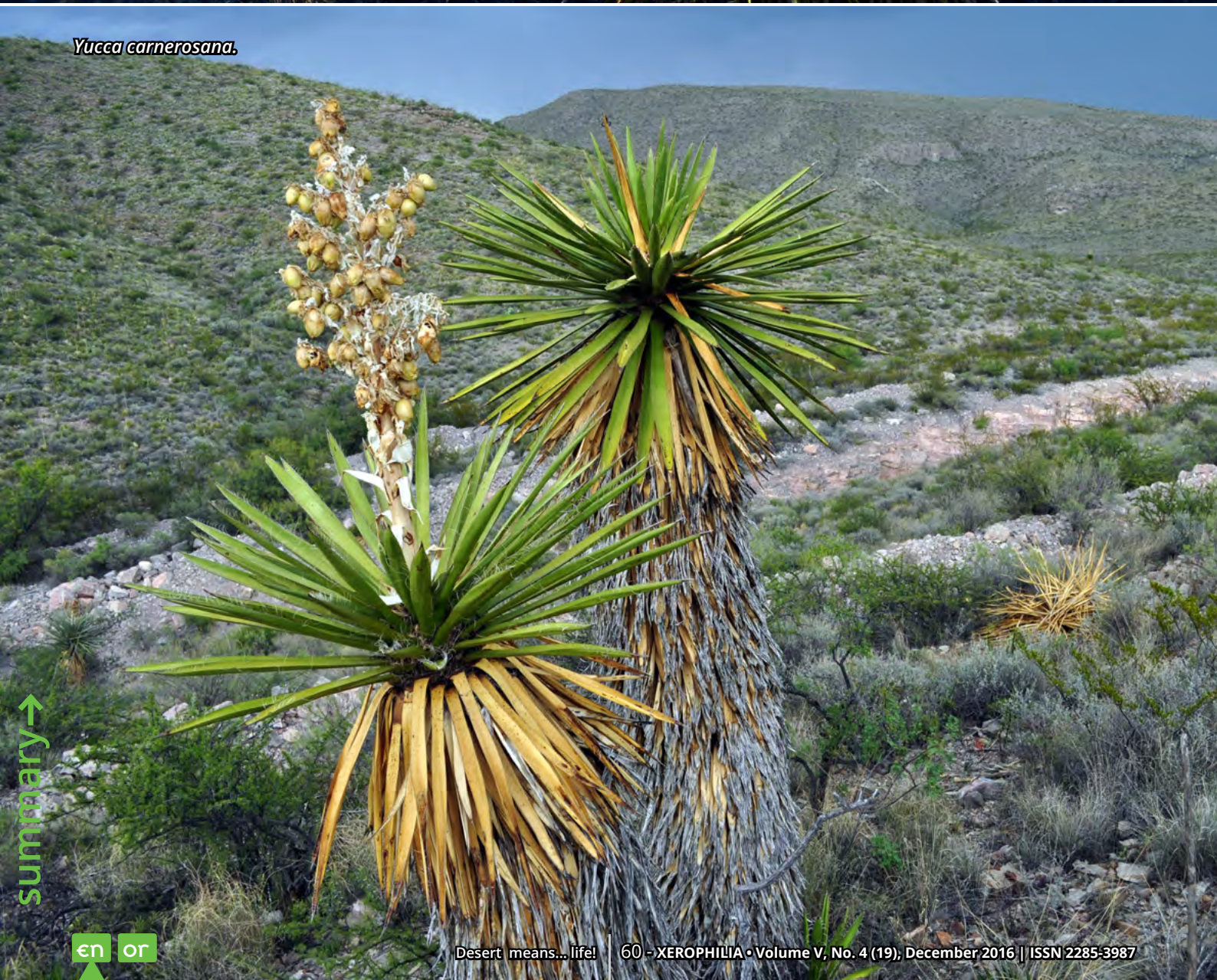
I love nature, I also love animals (especially reptiles), but cacti have been always my favourites. I like to travel in the wild to see these magnificent features of nature, I search for cacti between rocks, in steep mountains or in the grass or roots, I observe and take my time to photograph them.

An image can bring back thousands of memories long lost, and it can take me back, after many years, to that place again, or to that plant in particular.

I am enjoying nature: I am a wanderer of the desert and arid Mexican habitats. What better place to find beautiful landscapes or yourself than these?



Dasyliirion wheeleri.



Yucca carnerosana.



Yucca carnerosana.


The one thing that attracts me most to the desert is the fact that specifically, in time, the desert becomes a place where you stop to look, as it holds an endless parade of life forms, from the tiny millipede or wolf spider, to the majestic coyotes or badgers. All and each of this forms of life are somehow related between themselves, and play their part in the intricate role of life.



Escobaria tuberculosa.



Escobaria tuberculosa.



Escobaria tuberculosa.

Let's not forget that despite its magnificent beauty, the desert can be a harsh place, conditions are hard and it is difficult for life to subsist, however, life finds always its own way. Many plants and animal species are inhabiting these territories, and are spectacular in their own way and because of adapting to the conditions. Cacti are doubtlessly some of the most beautiful and enigmatic dwellers of those places. Whether growing solitaire, in the tiniest crack, between the rocks, in the dry and sandy soil or under other plants they always find a way to endure.



Sclerocactus uncinatus.



Sclerocactus uncinatus.

Sclerocactus uncinatus.

No specific season or time is required to watch the plants presented here, one can search for them any time of the year, however, if one wants to witness blooming or specific aspects of their ecology or nature, then one must try to synchronize the visit to their vegetative cycles. Flowers are one of the biggest credits they possess, or at least one that humans like to see, but they are visible only for a short period of time during the year in many species. Therefore, in order to see them, a little more knowledge is necessary about their ecology to know when is the best time or season to visit.



A road to nowhere.

Sellagynella sp.





summary→

summary→

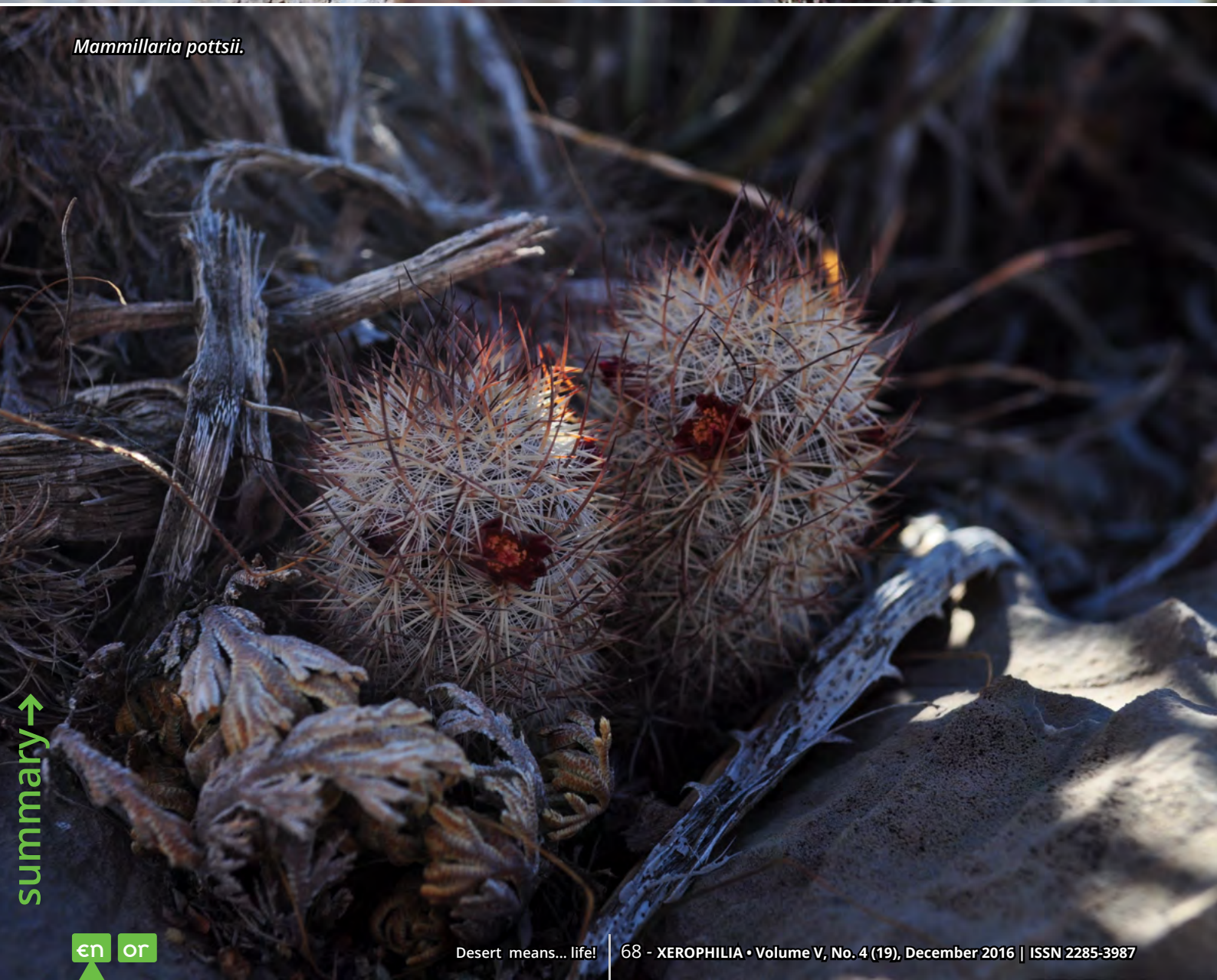
I believe beauty is that thing that makes us move, the force that drives us, keeping us expectant, or in the gift to be astonished with the simplest and at the same time complicated that our environment has to offer. The desert is one such place where this beauty is exemplified, in here every sunset, every new landscape and each new mountain keeps us awake, expectant and always on the move, always trying to get to the next frontier, to the next discovery.

Once immersed in it, the desert slowly starts to reveal its secrets, you are no longer looking at a simple *Yucca* or a simple *Sotol*, but a life form competing for resources, that shelters other living things, that has endured harsh conditions, time, that has a history and many other aspects that escape human comprehension.

Dasylirion wheeleri.



Mammillaria pottsii.



Mammillaria pottsii.



Mammillaria pottsii.

From the small *Mammillaria pottsii* flowers, to the big and striking flowers of cacti in the genus *Echinocereus*, all flowers are attractive in their design, color or shape. Flowers are an incentive to see these plants, or in other cases to own them, but let's have in mind that flowers allow the continuity of the cacti species, which is why, blooming is a worthy spectacle of knowing and watching.



Ariocarpus fissuratus.



Ariocarpus fissuratus.

Ariocarpus fissuratus.

The variety in shapes and sizes, and colors of plants found in the desert is noteworthy. There are plants that unless you have a good eye, go unseen because they resemble rocks, such is the case of *Ariocarpus*, but on the other hand we have the majestic genus *Opuntia*, which is maybe one of the most representative member of the family in any image that evokes the desert, a big *Opuntia* with many colorful (and edible) fruits is without a doubt an image that comes to mind when thinking of the desert, and they stand for the capacity of adaptation and survival this big family of plants has.



Opuntia sp.

Opuntia rufida.





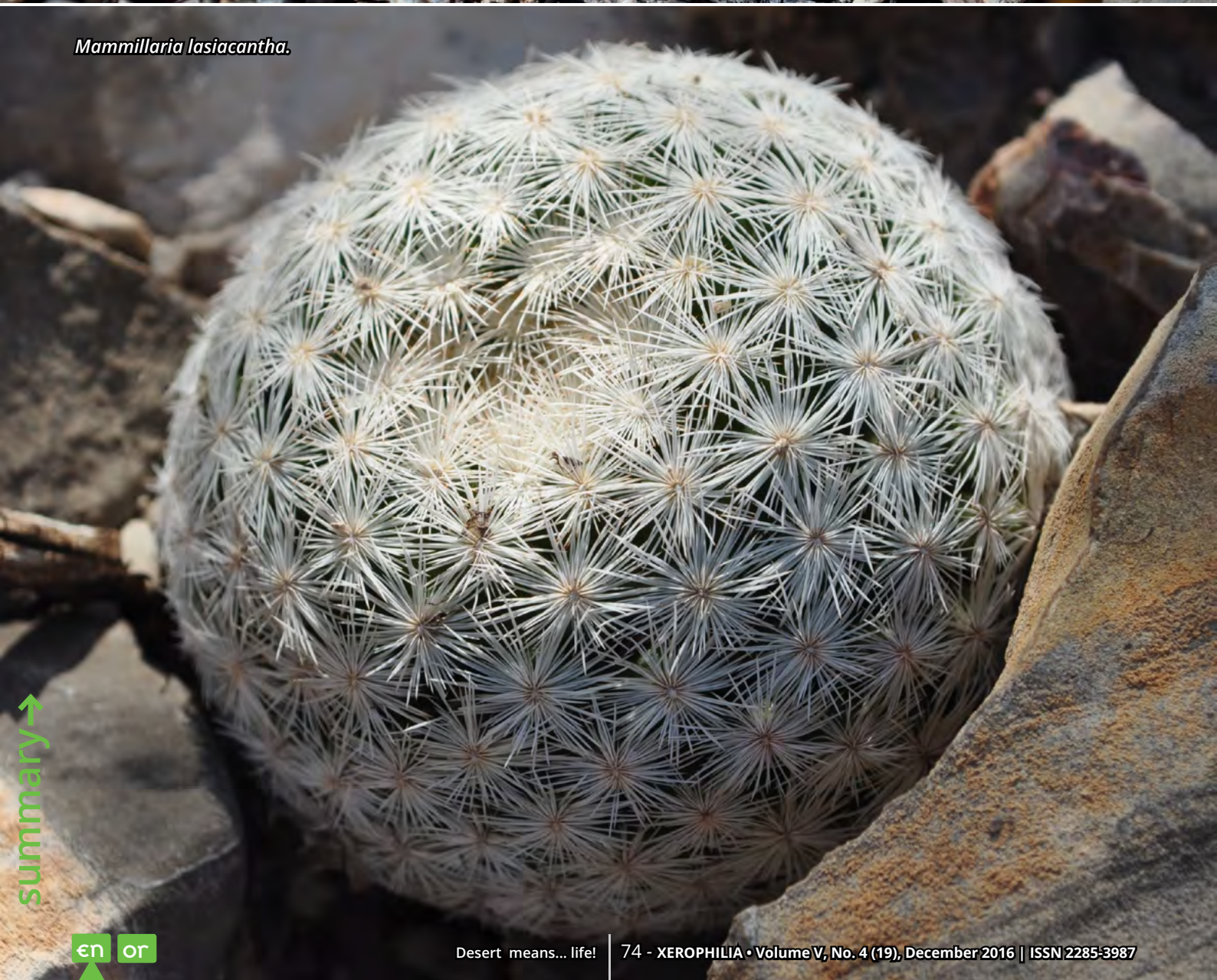
Opuntia rufida.

Spines can be big and small, protruding or discrete, but are in my opinion a very outstanding attribute of cacti, they can give in many occasions the threatening and aggressive appearance, or from another point of view, a delicate and pretty appearance, it all depends on the eye of the beholder. More, the spines offer the plants protection from predators.



Mammillaria lasiacantha.

Mammillaria lasiacantha.





summary→

summary→

Mammillaria lasiacantha.



Echinocereus dasyacanthus.



Echinocereus dasyacanthus.

Echinocereus dasyacanthus.

Life emerges even in the least expected or unlikely places, cacti are specialists in doing this. Cacti are able to develop in places like the tiny rock cracks, or on the top of the mountain where resources are hard to come by. All of this offers a prism of shapes and colors, of situations that we just now start to understand. Why did those plants choose those places to grow and live? Why do they have the shapes and structures they possess?



Echinocactus horizonthalonius.



Echinocactus horizonthalonius.

Echinocactus horizonthalonius.

With a little attention, we can observe how cacti are part of the environment, and how they beautify it in a way we all appreciate. Cactus lovers rejoice knowing how these plants establish themselves in any spot that holds a little soil and how they complement the ecosystem with their presence.



Thelocactus bicolor ssp. *heterochromus*.



Thelocactus bicolor ssp. *heterochromus*.

Thelocactus bicolor ssp. *heterochromus*.

It is always pleasant to find cacti in association with other plants or other cacti, both the omnipresent Sotol (*Agave lechuguilla*) or the stiff ocotillo (*Fouqueira splendens*) are common inhabitants of the everlasting desert where water is short and heat is a common denominator.

It is formidable to see a small plant growing between the rocks under a burning sun and with almost no water, cacti are true warriors in the world of plants!



Habitat - *Agave lechuguilla*.



Habitat - *Fouquieria splendens*,

The desert embraces a variety of landscapes, different locations can have different looks, from complicated rock formations to vast plains that seem to have been forgotten in time; however, all of them has been here on earth longer than we have and its inhabitants have consequently been in a pilgrimage of changes and adaptations to be better adapted to the beautiful and inclement desert. The life forms we see today are the result of all those changes, and of the different conditions in each one of them.

It is always pleasant to find cacti in association with other plants or other cacti, both the omnipresent Sotol (*Agave lechuguilla*) or the stiff ocotillo (*Fouqueira splendens*) are common inhabitants of the everlasting desert where water is short and heat is a common denominator.

Habitat - *Dasyllirion wheeleri* & *Yucca carnerosana*.



Echinocereus dasyacanthus.



Echinocereus dasyacanthus.

Echinocereus dasyacanthus.

Echinocereus pectinatus.

Although I am a common wanderer of the desert, with each new visit or trip that I make into its frontiers I get amazed and captivated. Each mountain or plane has a unique magic that is not easy comparable, cacti are one of their finest representatives and one of the things that I enjoy seeing each time I visit. I sincerely hope that all that people who share the same passion can keep visiting and enjoying the majesty of the deserts and their inhabitants in the same way that I do, but it is most important to say that we must learn to care and value it as well, because probably the desert was home to some of our ancestors who might have been amazed as well by the natural beauty it has, and because the desert has been in here for far longer than we have and maybe will remain long after we are all gone.

XeroArts

In this graphic folder we present here we have gathered the work of 15 graphic artists, which, for almost 2 months, found in the cacti and in the desert plants, the raw material to develop a small collection of unique images. The joint work, developed throughout the national territory, in graphic workshops where engraving takes strength and is part of the national artistic task, is a way to contribute to the research and dissemination of knowledge of plants living in unique ecosystems. The natural wealth of Mexico is of great importance for scientific research, and the conservation of these ecosystems is fundamental, not only to preserve diversity, but to ensure a place on the planet within the years to come ... Art and science, together with the greatness of humanity, are fundamental tools for evolving as a species, as a society but also as individuals.

This small sample of prints is developed with the effort and perseverance of Mexican artists to support the dissemination of knowledge, in this regard Xerophilia magazine is unique and its importance lies in being free and looking to provide quality information to its readers, collecting contributions of: biologists who study each species and the environments where they live; field explorers that with their cunning cross the deserts of the planet to study the environment where these plants inhabit; breeders who are responsible for reproducing and preserving the species; activists who defend natural resources and protect species from their dangerous extinction. That is

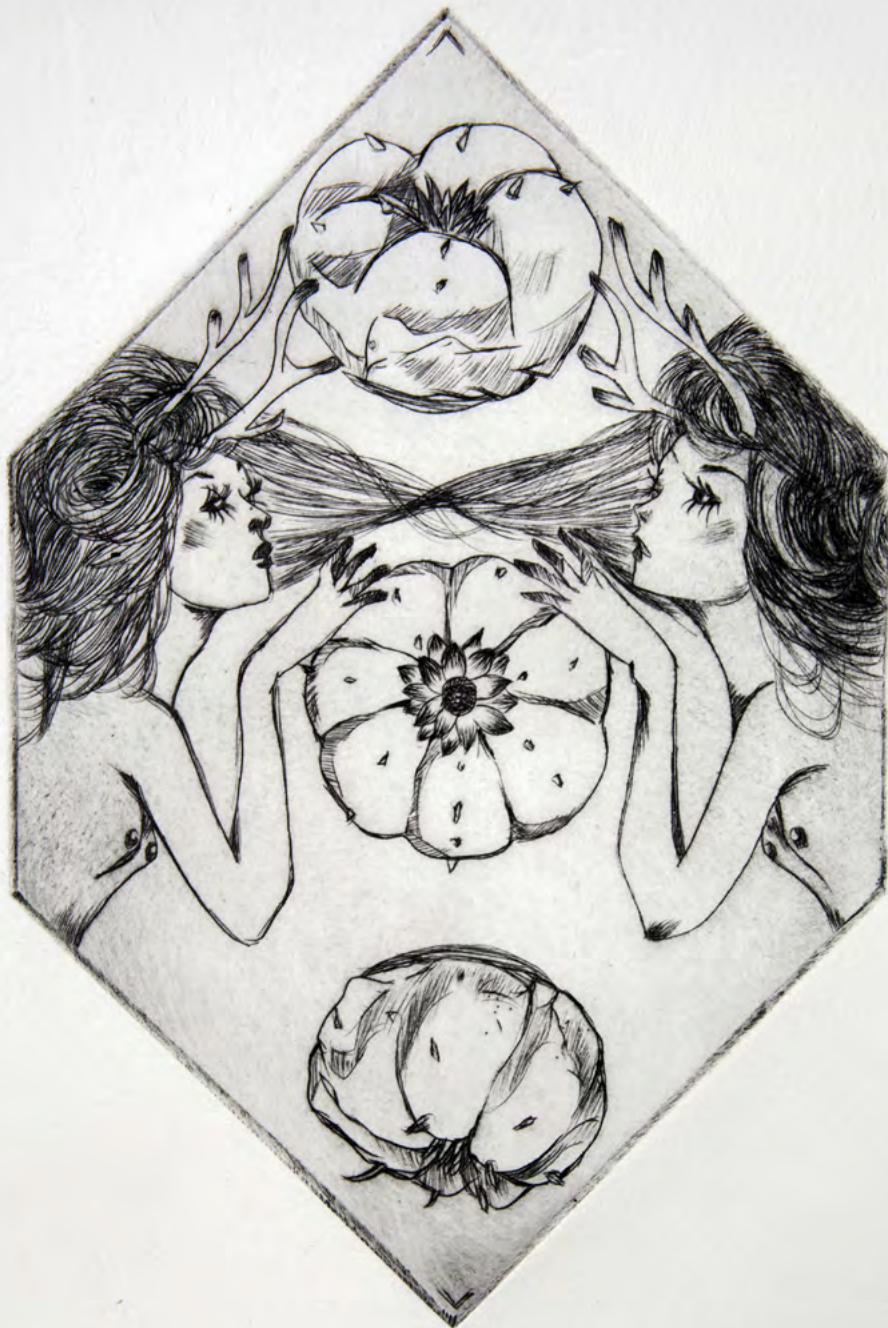
2016
Xerophilia

XeroArts

2016
Mexico

quite visible in the pages of the magazine Xerophilia, the effort and selfless dedication of people and professionals who share their experiences in each of its areas, non-profit, and all this is fundamental in generating consciousness. The sharing of knowledge disinterestedly in the middle of the XXI century is the only method we have for the development of our societies, an honourable work that deserves to make all the effort, to continue in making revelations. In this sense, the work of the editors of Xerophilia Eduart Zimer and Dag Panco, both responsible for the project is remarkable, as they understand very well the importance of disinterested dissemination of knowledge, and throughout the published issues of Xerophilia can be found real jewels.

As a plastic artist and as a cactus grower, I deeply appreciate the efforts of the artists who participated in this project: Chez Marabel, Robert Rodríguez, Maricela Casas, Eva Macias, María Mizrahi, Vampherya, Angélica Bracho, Enrique Pérez Martínez, Pablo Moya, Gabriela González Manuel Cuevas, Carlos Baptist Víctor Terrez, Paco Navéz, Gabriela Magdaleno. All of them with incredible talent developed this sample of prints, which in the end is to honour the protagonists of the project: cacti and other desert plants, which will continue to amaze us with their beauty and great ability to adapt to adverse climates.

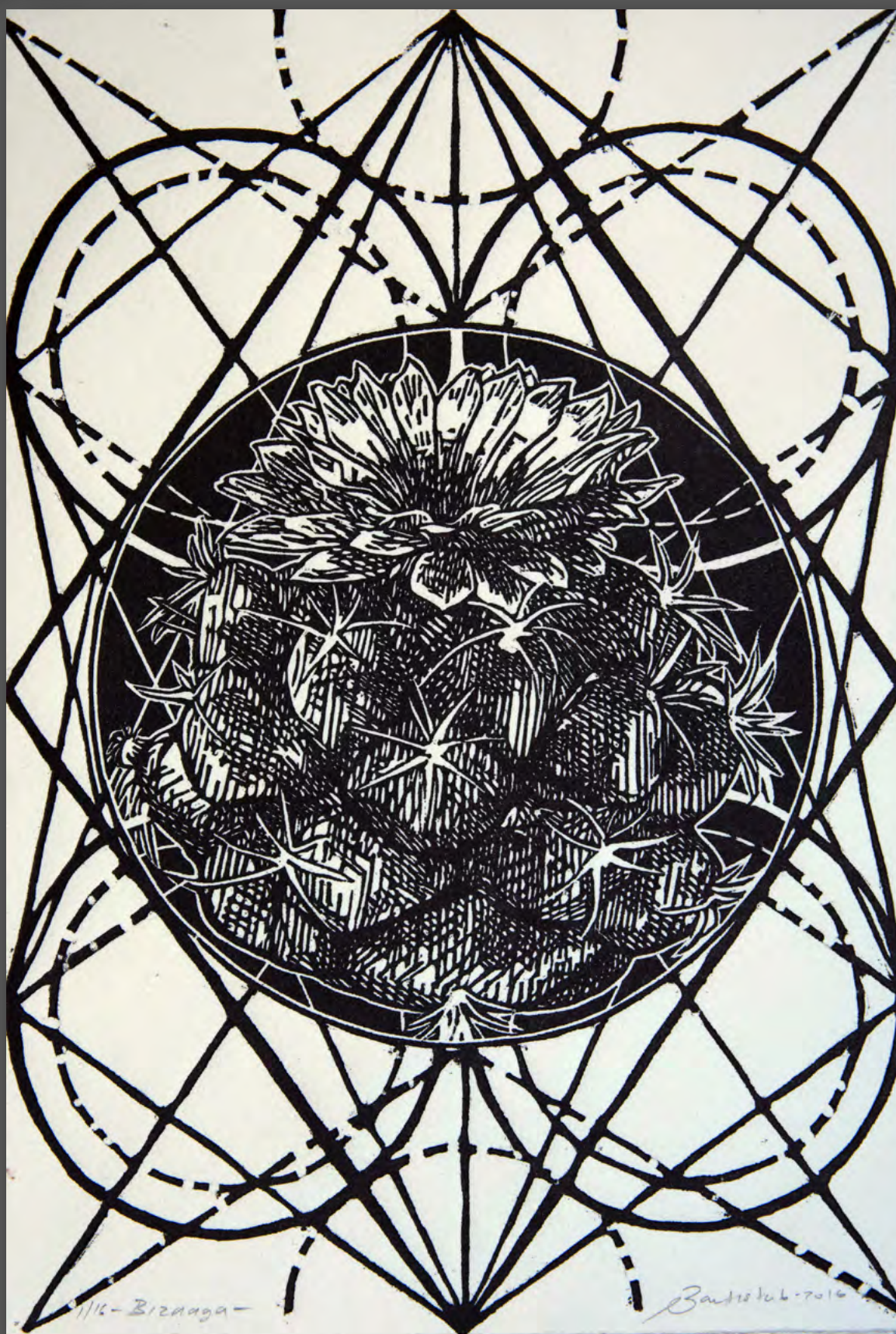


1/15

'Xerófilas'

Bracho [20/16]

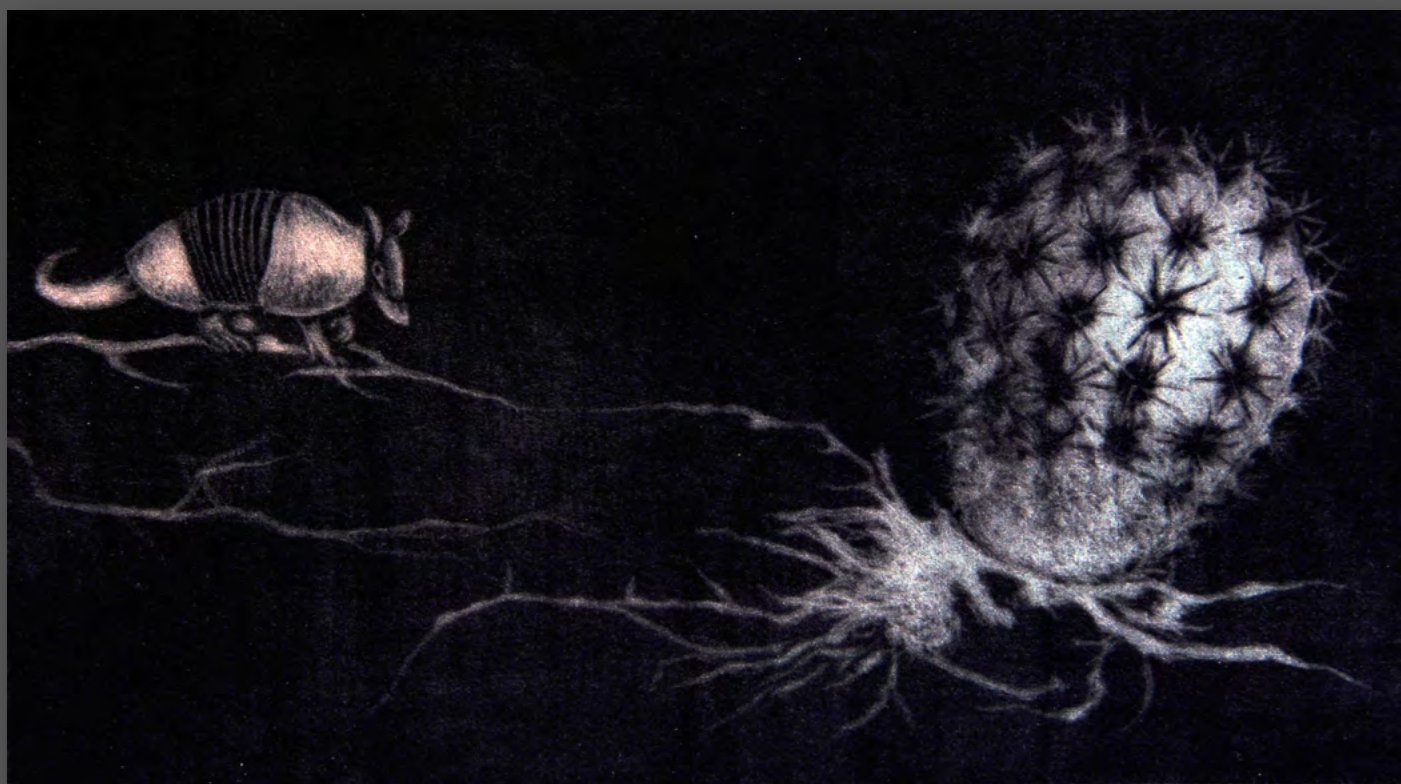
Angelica Bracho



Carlos Bautista



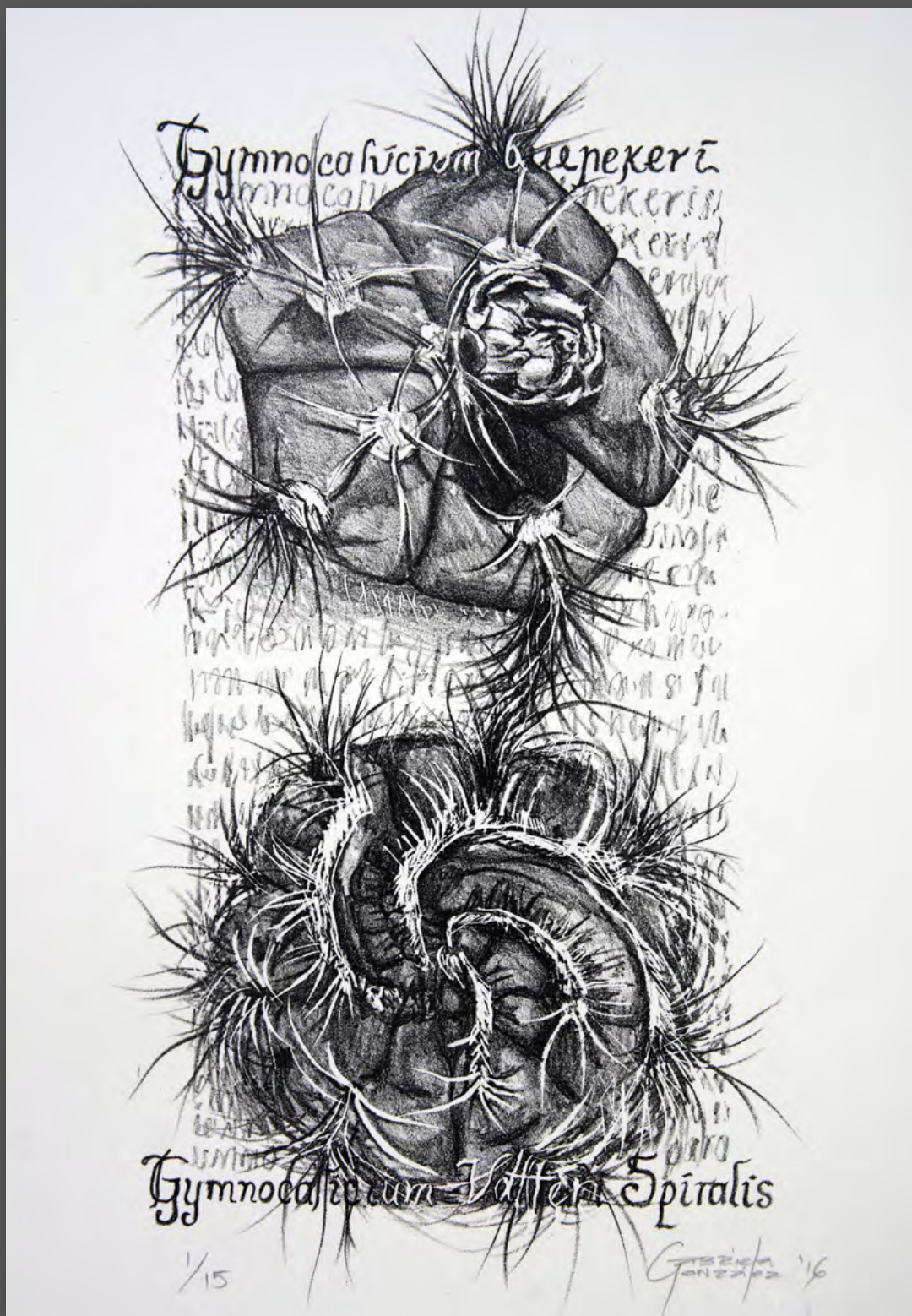
Chez Marabel



Enrique P. M.



Eva Macías



Gabriela González



Gabriela Magdaleno

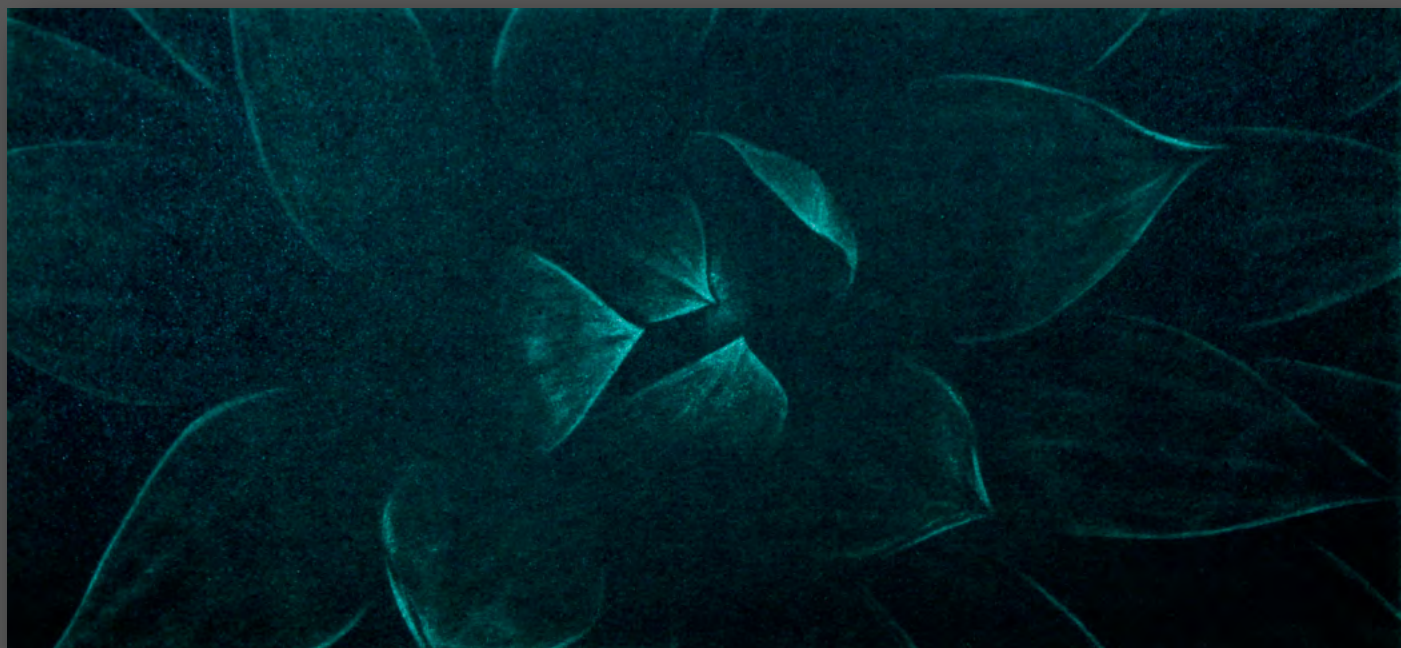


Leo Rodríguez



Manuel Cuevas

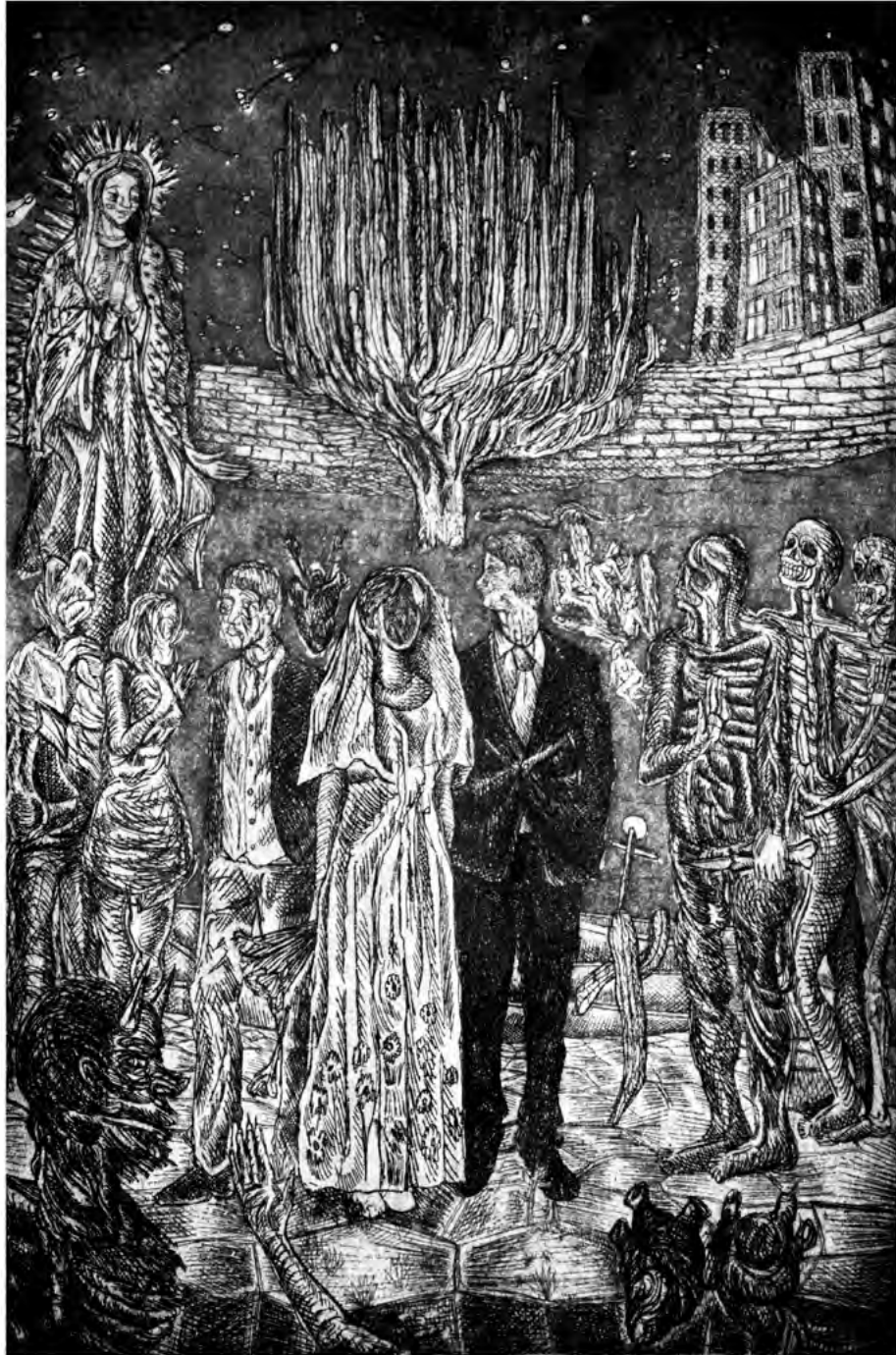
xero Arts



María Mizrahi



Maricela Casas-Solís

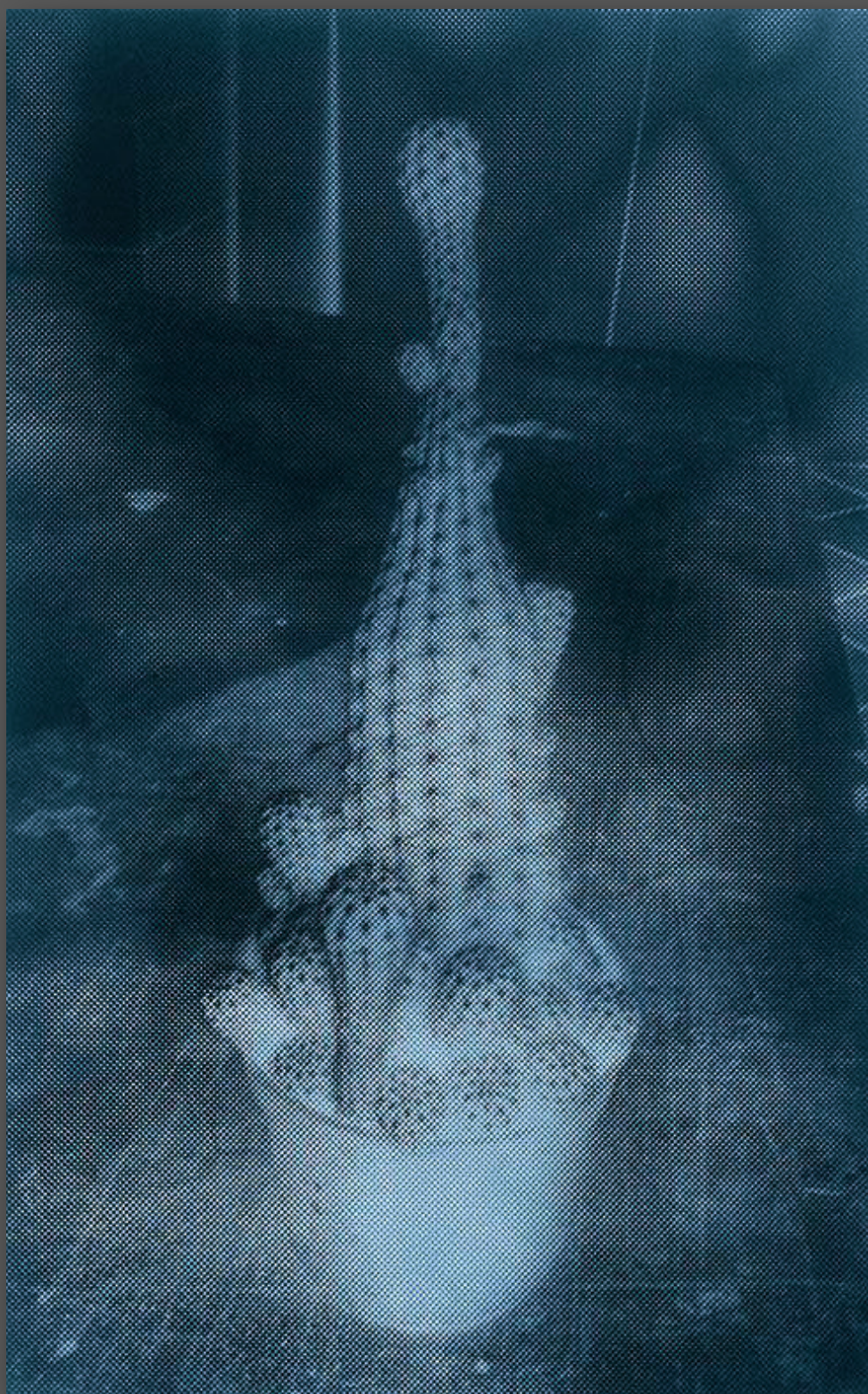


Pablo Moya



Paco Navéz

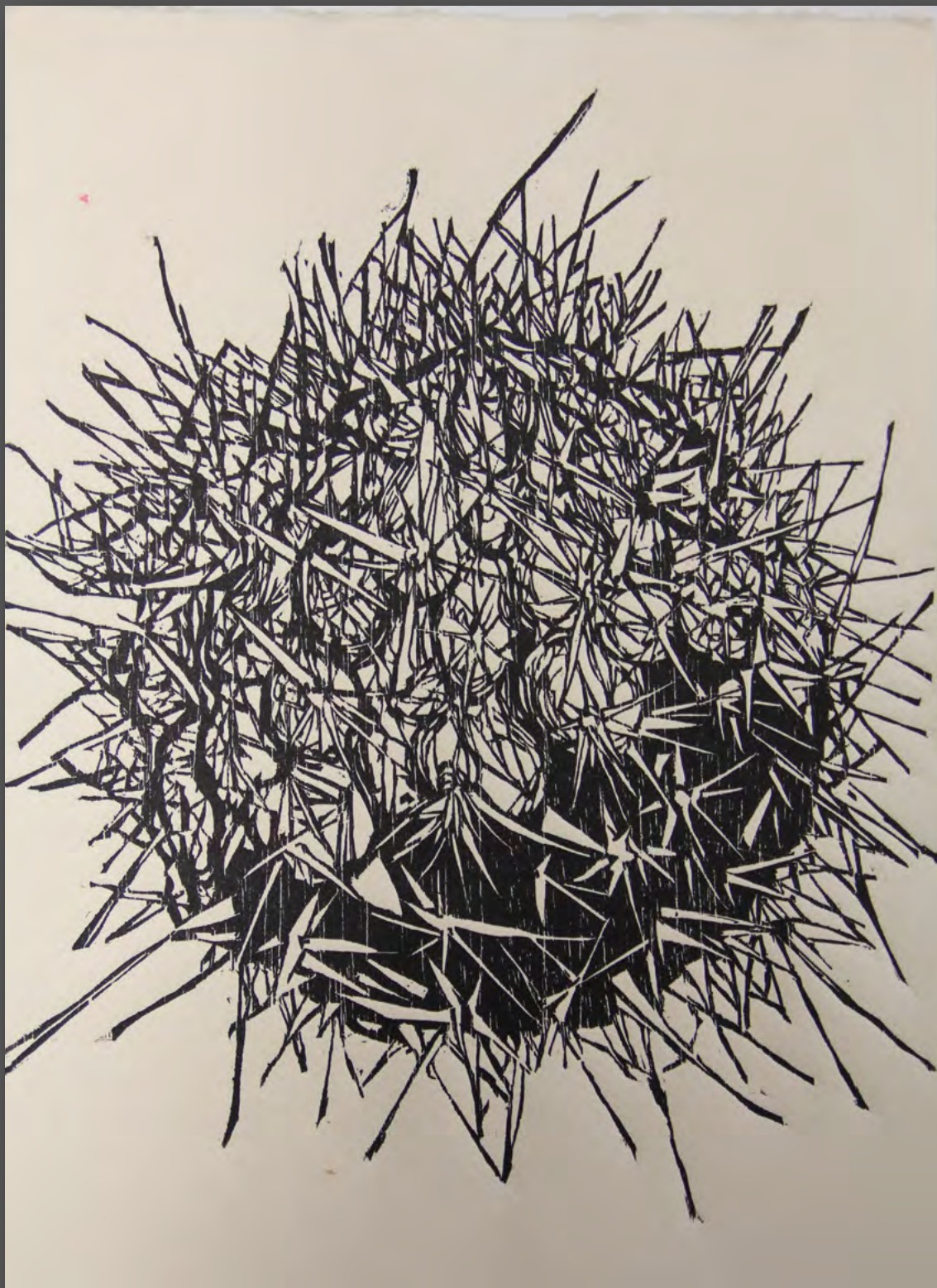
xero Arts



Roberto Rodríguez



Vampherya Green



Victor Terrez

Notes on

Aztekium

ritteri

(Boed.) Boed.



Elton Roberts

Around 30 years ago I got an *Aztekium ritteri* that was a nice looking clump of six heads as I remember. I do not remember where I got it from or who sold it to me. Looking back to those days I have to feel sorry for the plant and in fact all my plants.

When I moved here all my plants stopped growing and went into a sulk. It took me several years to discover that it was the alkaline water we have here. Where I had lived for years we had acidic water and I did not know anything about any kind of difference in water. That little clump of *Aztekium ritteri* just sat there and slowly turned into a fossil. The price to replace it was way too much and besides you could not find the plants in clumps anymore. Some years later I found a grafted plant and bought it. After that plant had grown and made offsets I figured that I would take an offset and root it down. I tried taking several offsets to root down but all they did was die. I think there was a combi-

Aztekium ritteri, flowers.

nation of two things that worked against me; one was the alkaline water and the second was the size of the offset. Since taking an offset to root down did not work; I did not want to lose a good size head. When I took the offsets they were only about 1 cm in diameter. The first one failed and sometime later the second one failed also; I figured that is enough, it will not work. That was many years ago and since then I have grafted quite a few heads but did not want to take the chance of losing a head by setting it down to root or see if it would root.

Photo by Grzegorz Matuszewski





Description from Anderson's book *The Cactus Family*:

Plants solitary at first, often clustering with age. Stems sub globose to globose, olive green, 1 - 3 cm high, 2 - 6 cm in diameter. Ribs 6 - 11 with numerous transverse creases of riblets, rounded edges, 5 - 9 mm high, 3 - 10 mm wide. Spines 1 - 2, often ephemeral, often bending or twisting. Flowers white with pinkish midveins, 7 - 14 mm in diameter.

Description from Cactus Lexicon by C. Backeberg:

Body depressed-spherical; root shortly napiform; crown woolly; main ribs 9-11, folded with subsidiary ribs in between these narrower than the former; spines not numerous, approximately 1-3, only 3-4 mm long, weak, contorted or bent; flower 8 mm in diameter, white; sepal pink above; fruit berry like, pink; seed black, 0.5 mm long.

About growing the plant

That grafted plant that I got many years ago has grown into a plant of many heads. I have not grafted any for many years so I decided it was time to take a few heads off and graft them. That worked nice and all the grafts took; then I decided on taking several heads and trying to root them. I decided to take large heads this time as the small ones failed

before. I took two heads that are 4.5 cm in diameter figuring I would give them a try. I have talked to several people that say that they have *Aztekium ritteri* on its own roots and that they put it down to root and it did root. Like *Ariocarpus* the *Aztekium ritteri* has the reputation of super slow growth.

I have had to up pot quite a few of my *Ariocarpus* into larger pots since they seem to grow to another pot size in something like three to five years. I am sure that *Aztekium ritteri* would not be that way even if it were growing just fine as it is a much smaller type of plant. The clump I had all those many years ago was maybe 12 cm in diameter; I am sure it was no larger than that. In habitat the plants do not grow much taller than about 3 cm tall and for the largest of plants no larger than about 5 to 6 cm in diameter. The clump I had, the offsets grew out of the side of the plant and was on the same level as the main head.

In cultivation on grafts the plants grow a lot different from those in habitat.

The plant in the photo above is typical of a grafted plant that has been grafted for several years. In time the main head will be almost covered by offsets that are to 4.5 cm in diameter as is my large grafted plant.

The head was grafted and then put where it stayed for some time; then it got more light as the top half is larger than the lower half.



This photo is an overhead shot of the same plant pictured above.

The photos on this page are of one of the heads that I removed from my large grafted plant and put down to see if they would root. It has now been about three months; the heads look to have rooted as they are still green and looking good. The heads were only about 2 cm tall and were 4.5 cm in diameter, so the heads, as planted are only about 1.5 cm tall. If the plants are as slow growing as it has shown itself to be it will take several years for the heads show any change in size height wise. I am just really happy that they are staying green for that shows me

that they have rooted down or I hope they have. The photos show what the plants look like with the tubercles that look like they are stacked one on another. Seen at the end of the tubercle is the areole still with some of the wool even on the old areoles. In the growing point can be seen the wool and also the 1 to 3 mm long horn colored spines. These spines are more or less straight when first they appear but in time they curl and twist. On the two ribs on the left side can be seen the spines that are still attached and they curl and make a circle other are only hooked.



The photo above is the top of an offset on a larger grafted plant. There it is easy to see the spines and areoles of the plant. Some of the areoles do not have any spines and one has two spines. If the spines fell out of the areoles that have no spines; I do not know. That offset is 16 mm in diameter and the wool is not matted down from watering. In time the offset can

grow to about 4 cm in diameter. The photo below is the growing point of a plant. It looks like it has started growing since I received it. I do not know the growing conditions the plants were growing in before I got them but some seem to be a bit elongated even for a grafted plant. So maybe they did not get the light they needed to grow as compact as they should be.



The photo **above** shows flowers from a couple heads on the side of my large grafted old plant. The flowers grow from the growing point of the plant. This can be seen in the photo pictured **here**. The photo shows a bud about to open and a flower that is mostly open.

Both show the delicate pink of the outer petals. Every flower I have ever seen on any plant has been that very light pink. I know that both descriptions above say that the flower is white but the flower here is light pink. I suppose that in habitat the sunshine could fade the pink so the flowers are white to the eye. The flower is 12 mm in diameter, the flowers open several days in a row and each day they are a bit larger. This explains the difference in flower size in the descriptions. The photo below shows flowers on a different plant and notice that they have also that delicate pink color.

For many people the only way they can have an *Aztekium ritteri* is on a graft. The plants that were given to me are grafted on *Stenocereus griseus*. When I graft plants I use *Trichocereus spachianus*. Other people use *Harrisia*,



The photo pictured here shows the same two flowers in page 108 opened a little while later. Below: A tormented *A. ritteri* in habitat.



Photo by Stefan Nitzschke.

The photo pictured here shows that the inner petals are light pink.



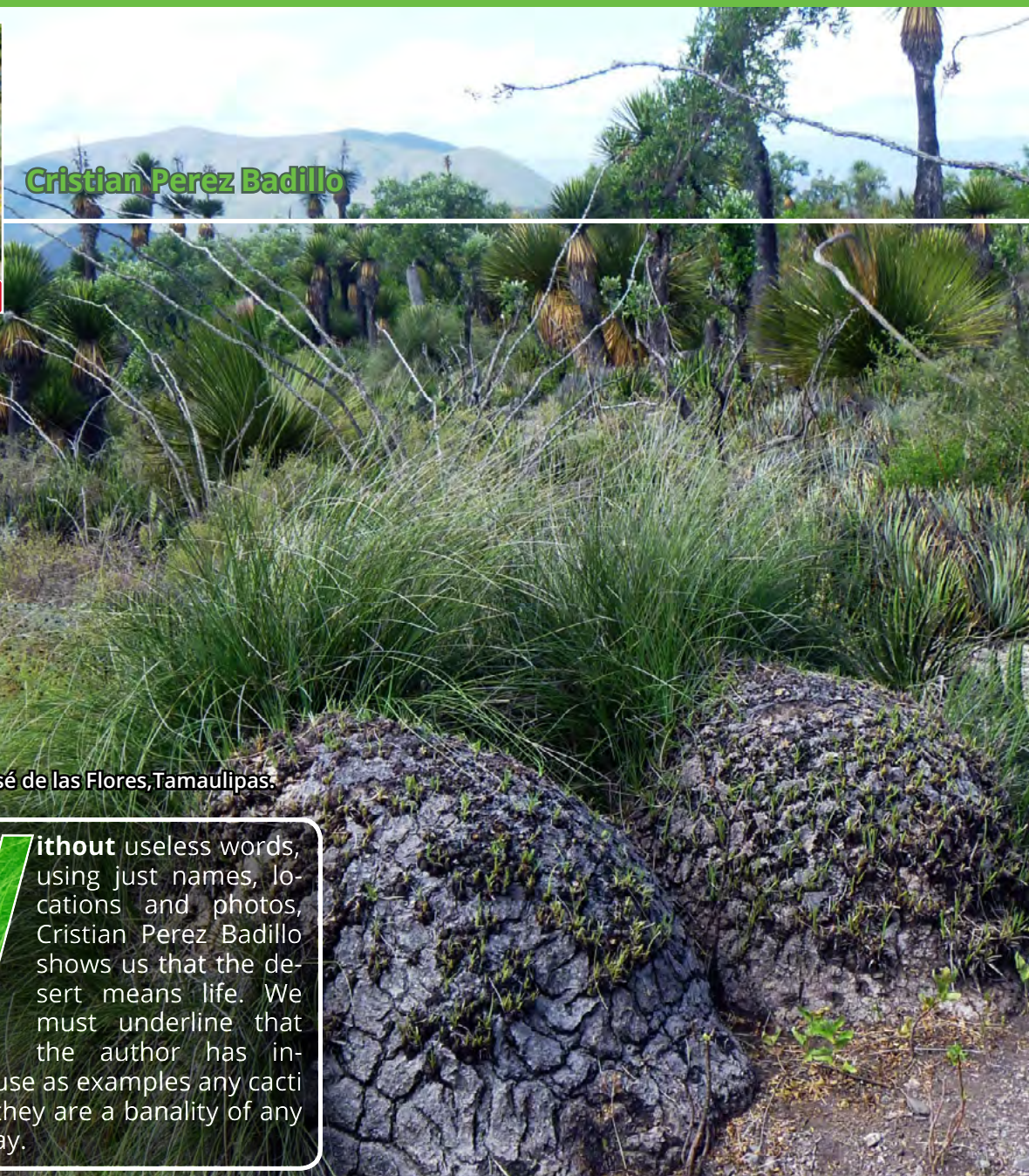
Myrtillocactus, and many other plants and then there are those colorful *Gymnocalycium* that are grafted on *Hylocereus undatus*. When grafting there is one thing to be considered and that is; is the graft stock hardy? I have seen quite a few plants tossed because the graft stock was killed by a freeze. *Stenocereus griseus* is a good graft stock of it is kept above freezing for it cannot really take much of a frost. *Hylocereus* is strictly a tropical plant and if you have a graft on it, it has to be kept above about 38F (3.3°C). *Myrtillocactus* had been used as a graft stock for many years but it is not really all that good either. The reason is that it too freezes quite easy but its problem is it wakes up late in the growing season. I have seen the stock sucked dry so about all that is left is a stick. The main problem with *Trichocereus spachianus* is the spine clusters. On the good side is that it can take many degrees of frost. I have it growing outside where it has been for years. It has taken temperatures down to 15F (-9.4°C) and showing no signs of frost burn. It also takes temperatures to 125F (51.7°C) and more.

Like *Ariocarpus*, *Aztekium* do not like alkaline water; to grow and be healthy they had to have acidic water. The soil needs to be fast draining I give the plants the same light as I do my *Ariocarpus* so as bright as I can without burning them. Keep then dry over the winter and do not be watering too early in the spring. If you have *Aztekium ritteri* on its own roots keep it above freezing. If it is grafted on a hardy stock the plant will have some antifreeze from graft stock, like *Trichocereus spachianus*. If grafted on some of the other stock, then keep the plants at least above 36F (2.2°C). If grafted on *Hylocereus undatus* keep at least at 40F+ (4.4°C+).

Taking pictures in the... desert



Cristian Perez Badillo



Calibanus hookeri, San José de las Flores, Tamaulipas.

Without useless words, using just names, locations and photos, Cristian Perez Badillo shows us that the desert means life. We must underline that the author has intentionally chosen to not use as examples any cacti picture, considering they are a banality of any Mexican desert display.



summary→



Echeveria simulans, El Carrizo, Tamaulipas.



Phrynosoma modestum, La Morita, San Luis Potosí.

Echeveria lyonsii, El Carrizo, Tamaulipas.





Euphorbia pulcherrima, Nogales, Tamaulipas.



Ollotis occidentalis, Palmillas de San Juan, Guanajuato.



Euphorbia radians, La Chicharrona, Zacatecas.



Eleanus leucurus, Querétaro.



Toxostoma curvirostre, Terreros, Guanajuato.

Left and right: *Caracara cheriway* &
middle: *Coragyps atratus*; Jaumave, Tamaulipas.





Hirundo rustica erythrogaster, San Luis de la Paz, Guanajuato.



Athene cunicularia, San Roberto, Nuevo León.



Corvus brachyrhynchos, Ocampo, Coahuila.

summary→

summary→



summary→

summary→

Cyrtopodium punctatum, Carrizo, Tamaulipas.



summary→

summary→

Agave albopilosa, Huasteca, Nuevo León.



Echeveria bifida, Cieneguilla, Guanajuato.

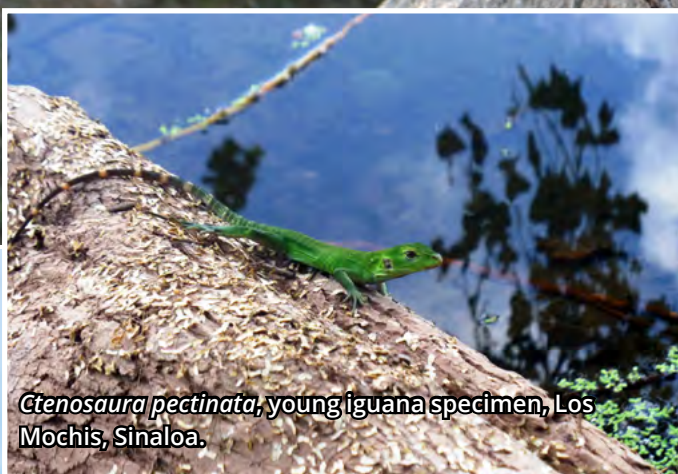


Ardea alba, Dolores Hidalgo, Guanajuato.



Echeveria unguiculata, Huizache, San Luis Potosí.

Agave bracteosa, San José de los Nuncios, Coahuila.



Ctenosaura pectinata, young Iguana specimen, Los Mochis, Sinaloa.

In front: *Fouquieria shrevei* with *Grusonia bractiana* & behind: *F. splendens*; El hundido, Coahuila.






summary→

summary→

Agave graciellae, Lazaro Vega, Queretaro.



Pachyphytum viride, Sierra del Doctor, Queretaro.



Crotaphytus collaris, Arteaga, Coahuila.



Pituophis deppei deppei, Cañada de Moreno, Guanajuato.



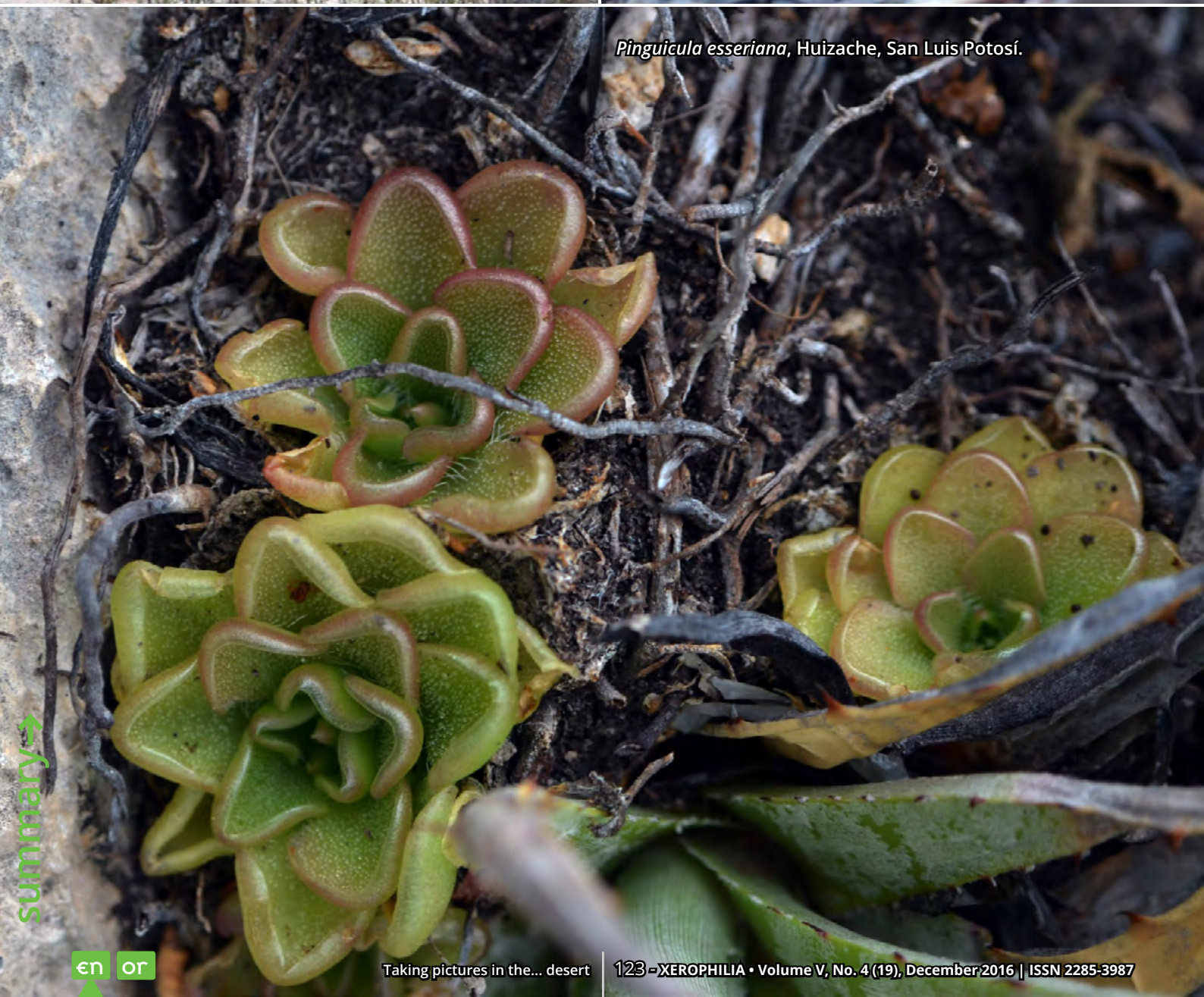
Cynomys mexicanus, San Roberto, Nuevo León.




Lepus californicus texianus, Sierra Mojada, Coahuila.



Troglodytes aedon, Pozo blanco, Guanajuato.



Pinguicula esseriana, Huizache, San Luis Potosí.




Tradescantia crassifolia, Huizache, San Luis Potosí.



Gopherus berlandieri, Los Herrera, Nuevo León.



Gasteracantha cancriformis, Las Tablas, San Luis Potosí.



Yucca endlichiana, Las Coloradas, Coahuila.



Pachyphytum hookeri, El Cubo, Guanajuato.



Tyranus vociferans, Jaral del Progreso, Guanajuato.



Geococcyx californianus, Sierra Maderas del Carme, Coahuila.



Villadia aristata, La trinidad, Nuevo León.



Pyrocephalus rubinus, Mulatos, Guanajuato.



Pinguicula elizabethiae, Sierra del Doctor, Queretaro.

CSSNZ

Auckland Show

2016



Eduart Zimer

Ariocarpus lloydii.

Between the 4th and 6th of November 2016 took place a well-known and much appreciated (and awaited) biennial cactus and succulent show organized by the Cactus and Succulent Society of New Zealand – Auckland branch. This event was held, as always in the last few decades, in Mt Albert War Memorial Hall on Great North Road, where are we used to keep our monthly meetings until

last year. A large and welcoming hall, with excellent light in good weather.

This event has a great tradition and is a cause of pride for many local cactus and succulent collectors. More than a few of those who have prepared and brought the plants in this exhibition, are doing this for two or even three decades now.

Or maybe even more. It is a source of real pride, even if very local, supported by a handful of enthusiasts.

summary→





Astrophytum asterias (hybrid).



Astrophytum asterias 'Super Kabuto'.



Albuca spiralis.

It is actually quite sad, because we mention the same people ... few changes have been observed in the 12 years since I passed through the tables of this exhibition for the first time, back in 2004. The number of exhibitors has decreased over time, the number of cacti as well (this issue was mentioned in my article two years ago), now seemingly followed by other groups of plants.



Bowiea volubilis.



Cephalopentandra ecirrhosa.



Calibanus hookeri.

Twelve years (this means seven editions) offered me a lot of time to see and photograph, year after year, a good number of extraordinary plants. I won't insist on this with this occasion, but it is highly interesting to watch them growing, evolving, or simply declining in time. The plants seem to be themselves in a relation and depending on people and doing sometimes better or sometimes worse, clearly subject to the state of their owner. I have couple of plants in mind, and maybe I will write about them in the future...

summary→

summary→



Pachypodium
namaquanum

Pachypodium namaquanum.



summary→

summary→

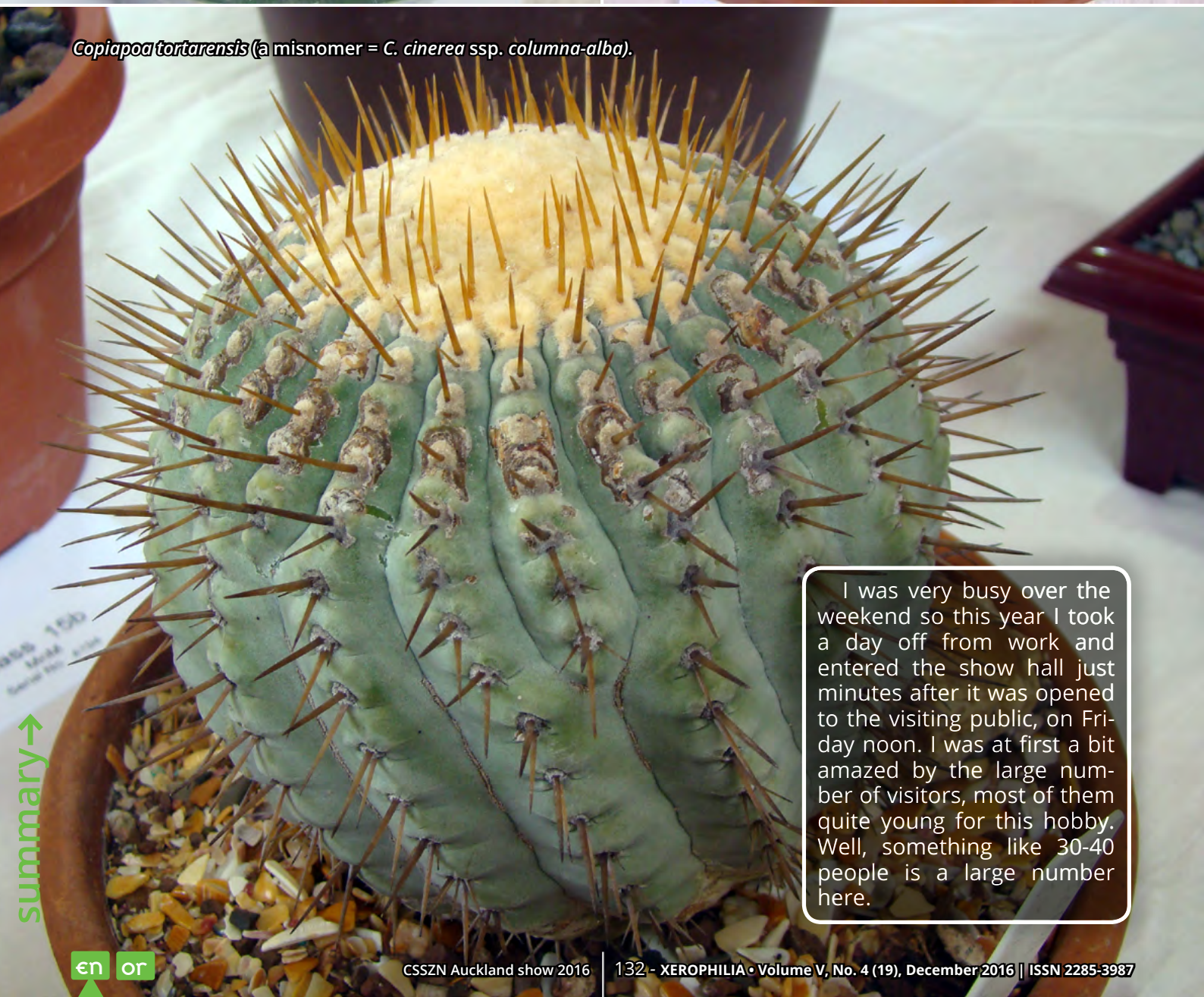
Euphorbia 'Toxic Milkshake'.



Crassula 'Claudia'.



Dioscorea sylvica var. *paniculata*.



Copiapoa tortarensis (a misnomer = *C. cinerea* ssp. *columna-alba*).

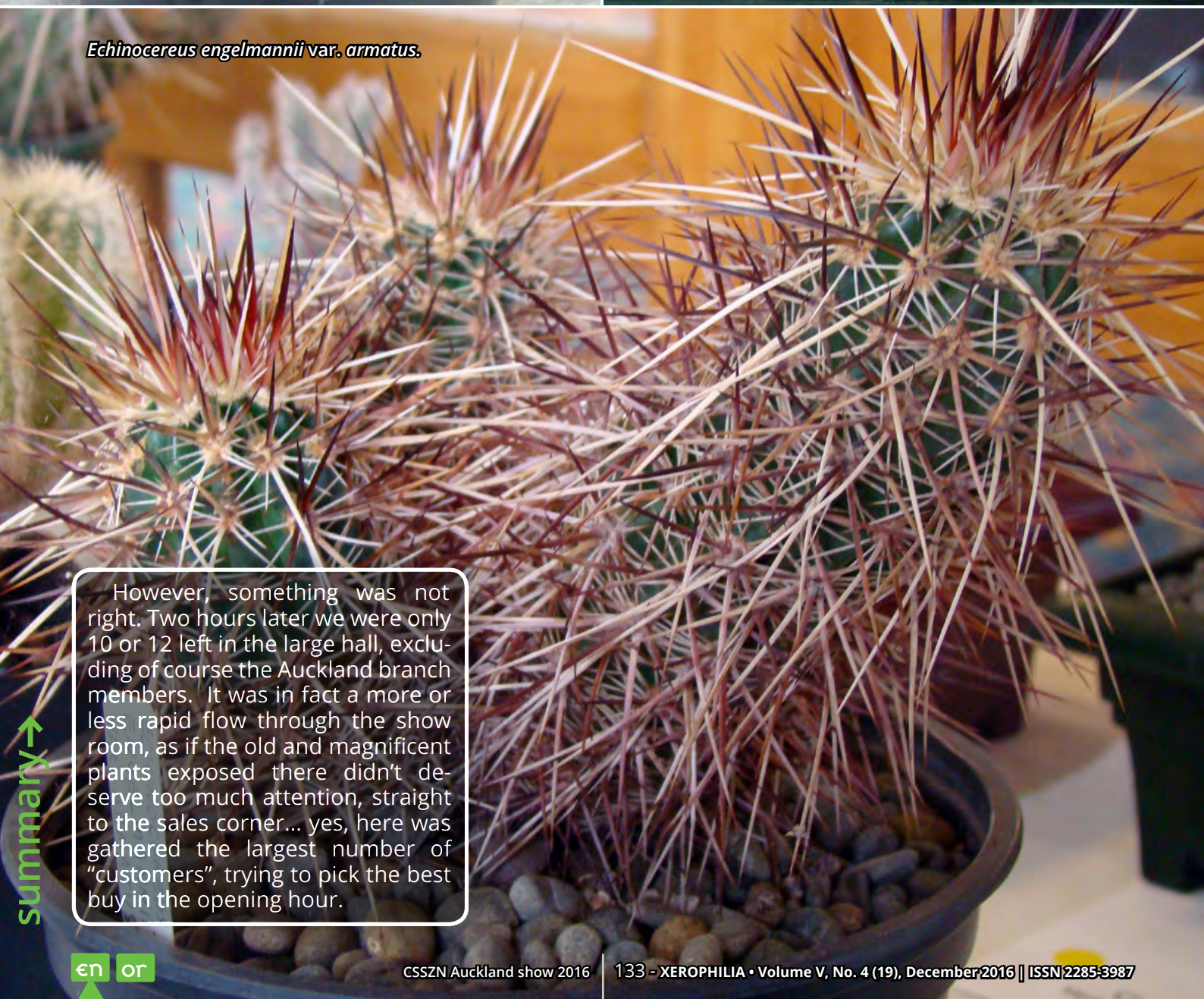
I was very busy over the weekend so this year I took a day off from work and entered the show hall just minutes after it was opened to the visiting public, on Friday noon. I was at first a bit amazed by the large number of visitors, most of them quite young for this hobby. Well, something like 30-40 people is a large number here.



Euphorbia (Monadenium) ritchiei.



Echeveria minima.



Echinocereus engelmannii var. *armatus*.

However, something was not right. Two hours later we were only 10 or 12 left in the large hall, excluding of course the Auckland branch members. It was in fact a more or less rapid flow through the show room, as if the old and magnificent plants exposed there didn't deserve too much attention, straight to the sales corner... yes, here was gathered the largest number of "customers", trying to pick the best buy in the opening hour.



Euphorbia symmetrica.



Gymnocactus horripilus.



Mammillaria perezdelarosae.



Graptoveria 'Southern Queen' (a misnomer = *G.* 'S. Belle').



Notocactus nigrispinus (= *Parodia nigrispina*).



Zygosicyos pubescens.



Sulcorebutia langeri (crest).



Pseudolithos cubiformis.



Kedrostis puniceus.

Quite sad to be honest, and without any little recognition of the value of the exposed plants. And yes, I just realized this happens, although on a different scale, even at the branch meetings... where few young Asian visitors come and buy a relative large number of plants only to disappear before the actual meeting starts. I don't get it. I can only hope the small entry fee and sales commission brought some extra revenue to the Auckland branch.



Euphorbia squarrosa.



Melocactus melocactoides.



Euphorbia bupleurifolia.

I preferred to spend almost three hours between the show plants, photographing especially unusual plants. Personally I wasn't very pleased with the winning cactus and succulent, so let's forget about it. I am not a judge, but I still don't agree with their judgement. Don't forget that last show the public's winner was actually a nursery accident. So, just enjoy the pictures!



Melocactus rubrispinus.

MELOCACTUS
RUBRISPINUS
1330

Online magazines

The Cactus Explorer

The first free on-line Journal for Cactus and Succulent Enthusiasts

Acc Aztekium Journal (Romanian) - The Romanian Acc Aztekium journal. Latest issue: **No 45, December 2016.**

Sansevieria Online (German) - The free online journal about the genus Sansevieria. Latest issue: **No 4 (2), November 2016.**

Sukkulenten (German) - Monthly free online journal of the FGaS - Fachgesellschaft andere Sukkulenten (formerly Avonia-News). Latest issue: **Vol. 9, No 11, December 2016.**

The Cactus Explorer (English) - The first free online C&S journal. Latest issue: **No 17, December 2016.**

Number 17

ISSN 2048-0482
December 2016



1 Siccobaccatus

2 Morangaya per

3 Espostoa in Te

4 Barranco Ran

5 Juab and Ut



ABSTRACT - scurtă prezentare a articolelor

Despre redescoperirea speciei *Mammillaria laui* ssp. *dasycantha* pagina 5 Dr. Leccinum J. García Morales

Cunoscut cititorilor români, Dr. Lex Garcia-Morales descrie cercetările sale, pentru a identifica în teren *M. laui* ssp. *dasycantha*, specie a cărei locație nu era cunoscută cu exactitate. Articolul cuprinde expuneri taxonomice și note despre complexul *M. laui*.

Graptosedum 'Francesco Baldi' pagina 13 Marco Cristini

Pasionat de suculente, cunoscut pentru articolele sale publicate în mai multe reviste de specialitate, Marco Cristini se reîntoarce în paginile noastre cu un articol despre un hibrid „misterios”. Pe lângă notele istorice și considerațiile privind distribuția speciei, autorul adaugă și sfaturile sale de cultură.

Primăvara în Mexic - partea a doua pagina 27 Aldo Delladdio

La fel de frumos ilustrat, condimentat cu întâmplările care-l așteaptă pe vizitatorul meleagurilor mexicane, articolul continuă și termină călătoria începută în numărul trecut.

O nouă specie și noi populații de *Agave* în provincia Catalonia pagina 45 Vanessa Mesquida et al.

Un nou articol tehnic, de certă valoare științifică, privind prezența genului *Agave* pe teritoriul peninsulei iberice. Este un articol pentru specialiștii în domeniu, puțin interesant pentru cultivatori.

Deșertul înseamnă... viață! pagina 59 Ricardo Ramirez Chaparro

Acest pasionat de peisaje, de reptile și cactuși, de suculente și de frumos, ia la picior deșerturile mexicane, în căutarea lor. Aveți din nou la dispoziție un pictorial, purtând atât semnătura sa, cât și impresiile pe care i le trezesc locurile întâlnite.

Xero-Arts pagina 87 proiect coordonat de Leo Rodríguez

Cu ocazia sfârșitului de an vă prezentăm un grup de cincisprezece artiști gravori mexicani care și-au dedicat operele revistei noastre.

Note despre *Aztekium ritteri* pagina 105 Elton Roberts

Neobosit, Elton Roberts, continuă să-și împartă cunoștințele și experiența, acumulate în peste 50 de ani de cultură profesionistă a cactușilor. În acest număr el vorbește despre una dintre speciile care reprezintă o „stea de avut”, în toate colecțiile: *Aztekium ritteri*.

Taking pictures in the desert pagina 111
Cristian Perez-Badillo

Fotografiile vorbesc de la sine. Puteți urmări un pictorial al vieții vegetale și animale din deșert, din care, în mod voluntar, autorul a exclus doar cactușii. „E pentru altă dată”, mi-a spus el.

CSSNZ Auckland Show 2016 - expoziție de plante de colecție pagina 127
Eduart Zimer

Ca de fiecare dată, Eduart ne prezintă expoziția de plante a asociației de profil din Auckland, remarcând cu tristețe, înapoierea membrilor și a expozanților, pe măsură ce anii trec și colecționarii tineri nu mai au timp și interes pentru aceste manifestații



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Brazil

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*Acanthocalycium, Borzicactus, Cereus, Cleistocactus,
Echinopsis, Frailea, Gymnocalycium, Harrisia, Lobivia,
Opuntia, Oreocereus, Parodia, Soehrensia, Trichocereus,
Weingartia etc.*





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