Xerophilia

the passion for cacti and other succulents

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Xerophilia

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summary

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Front cover

Mammillaria senilis in habitat

photo by **Ricardo Ramirez Chaparro.**

Back cover

Echinopsis bruchii at Alfriston Botanic Gardens

photo by **Eduart Zimer.**

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Xerophilia
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editorial 13

We are at our second issue in the fourth year as we strive to share free information and - at this time! - we are preparing already for the third issue of September 2015. Looking back, the past years seem just beat shadows; however, crossed over from where we started and where we ended up was a long, very long and sometimes laborious and difficult way.

Reading now, with nostalgia, my first editorial, where we professed our declarations of intentions, I can not fail to see that changes asked by people and time went in a totally different direction, but were - finally - an enormous gain: we started as a local magazine for a small national group; today, we are an international magazine for all people of the world willing to read!

If, evolving, we made a streamer bearer for struggle for the protection of habitats, however, besides the vocation to share information, free and open, we kept for being open and supporting the promotion of youth. Just look at the pictures of the authors from our past issues and you'll understand what I mean! Without denying what others have done, on the contrary, respecting them and quoting them often, we managed to gather in the pages of **Xerophilia** a new expression, a new world full of diversity, following the principle: each must find what he wants in our pages, information, photography, colour ...and therefore, **Xerophilia** is, above everything, a personal virtual space, for each of its readers.

That is why, today - when we just celebrated three years since our first issue - we want to thank from the bottom of our souls to all those who contributed information, science, photography, beauty, colour, from the very young to those wearing white hair, for all what they wrote and what they did, so you can share **Xerophilia**, a free and open knowledge.

Thank you, especially to you dear readers worldwide, from more than 100 countries and territories, who constantly showing your interest and loyalty, always give good reasons to **Xerophilia**'s contributors to write, and our team a reason for being and working for you.

Eduart

summary →

Tutorial

Even from a technical standpoint, Xerophilia is not an online magazine, like all the others. Our team tried constantly to implement new improvements leading to an easier information intake by our readers.

As different new features were added to existent ones, the magazine has become more difficult to handle for our new fans, who were forced to seek for explanations. Therefore, from now on page 4 of this magazine will be reserved for an extremely simple tutorial. Thank you all for the patience to read it.

Reading of the layers

The Xerophilia magazine is built as an interactive pdf document, composed of several layers of which, while reading, only two of them can be seen at once, at the reader's choice, which is the graphical layer that remains constantly visible and one of the several text layers that can be switched on alternatively by using one of the following buttons:

en ro or

of which the en button selects the English language, the ro button the Romanian language, and the or button for the language the original article was written in. The document will automatically open in English.

To switch to the desired language, we recommend that the document is downloaded to your hard drive and to be opened with Adobe Acrobat Reader, which can be found free **HERE**. Also worth mentioning that Chrome has developed a pdf reading platform that enable interactive reading of pdf documents directly from the browser, but only in the as default layer, in our case, English.

If you try to read with the default reader of the operating system or any browser other than Chrome, it is possible to see all layers stacked and unreadable, the document interactivity being not recognized accordingly.

Flags

At the beginning of each article, you will find some small flags. Their meaning is the following:

The author's photo - link to the presentation;
Flag is of the nationality of the author - in this case, an author from Mexico - link to the Wikipedia webpage, relating to the country

Three languages layers: English, Romanian and, in this case, Spanish.

The fourth flag indicates that besides English, Romanian and original language, there is another version available, in this case, in Spanish.

Pictures

All or almost all photos are linked to maximum resolution version, which, if you are connected to the internet when you read, this will allow you to see them uncropped and full size, in case you want to examine details that cannot be seen in the usual illustration of a magazine.

Links

In the magazine there are several other types of links: leading to the presentation of the authors; leading to the eventual appendices not included directly in the magazine; to various video sources, authors or specific sites; or to some form of alternative information.

Except for the author's names, for which the font colour can vary depending on the layout, and the titles in the summary, always written in black, in all other cases the links are written in bold letters in same colour as the current issue's colour theme, that colour being the same with the titles background or the first capital letter in the article.

Titles of summary categories keep colour theme, but do not have links.

Icons linking to movie clips and relevant pdf annexes will be placed where the layout demands, for aesthetic and ergonomic comfort of the reader.

summary ↑

Advances on the study of cactophagous beetles in San Luis Potosí México

Pedro Nájera Quezada
Revised by Dr. Jose L. Flores Flores & MC. Leccinum J. Garcia Morales

There are two attributes of biodiversity that have strong implications in conservation: species richness and endemism (Caldecott, 1996). These attributes are affected by both natural and human factors. The effect of anthropogenic factors must be strictly regulated, while natural factors have to be profoundly studied in order to achieve the proper protection of species and be in command of their distribution. Esch and Fernandez (1993) through their studies in several species suggest that all superior species host at least one parasite, either internal or external. The study of wild parasitic organisms is just an emerging science that seeks to understand interspecific relationships in nature and this is a case of high importance for the conservation of biodiversity in Mexico.

summary ↑

summary ↑

Ferocactus hamatacanthus. *In habitat a very abundant exhudation could be a sign of an infestation with* Moneilema *larvae.*

Mexico is the country with the greatest diversity of cacti (Oldfield 1997) while within the country, the Chihuahuan Desert represents the main distribution center of cacti (Hernandez and Bárcenas 1995, 1996) and as a result it becomes imperative to protect them and this implies also to study the wild pests that affects them.

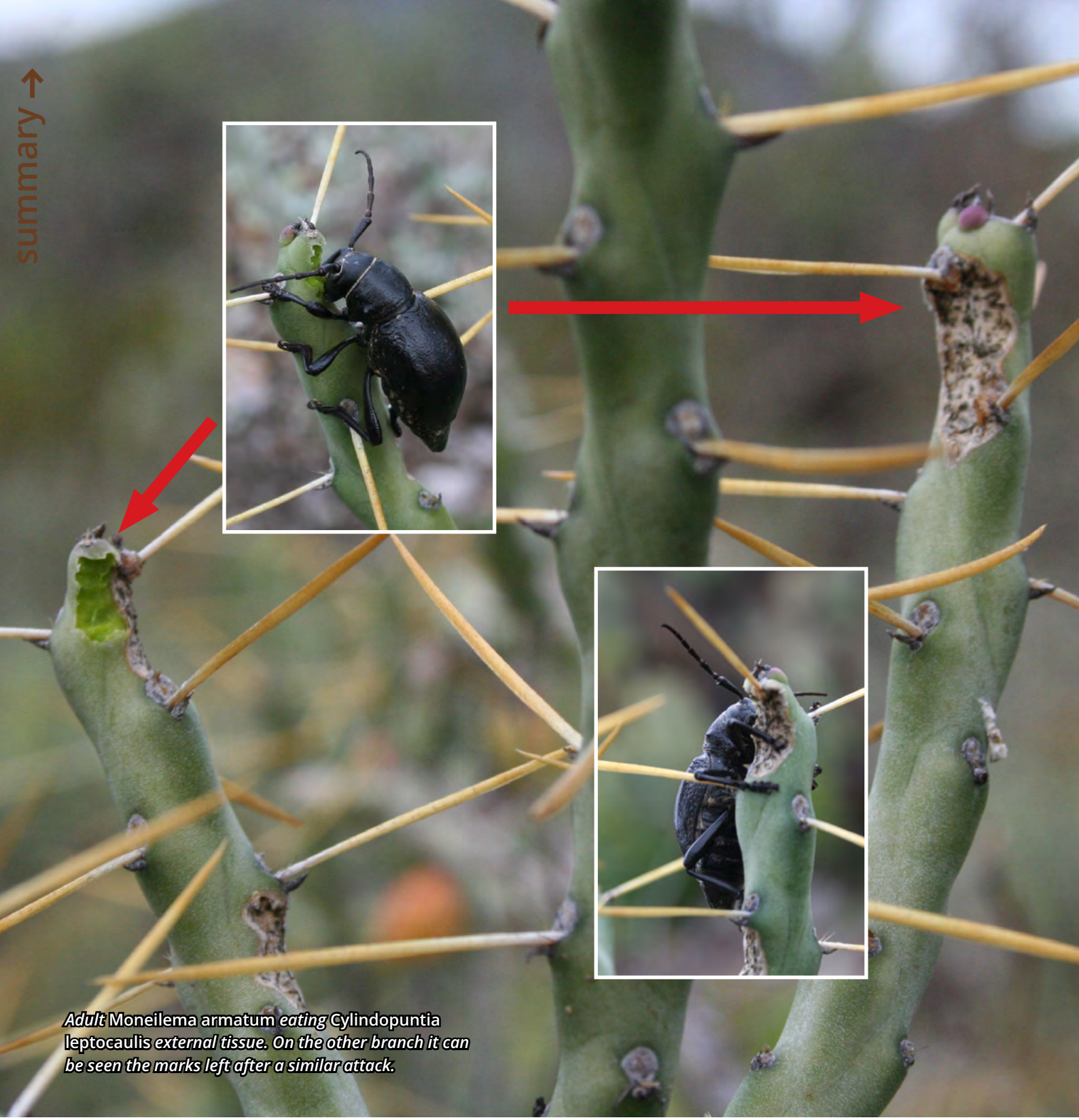
Among the beetle genera that eat cactus species are: *Archlagocheirus, Cactophagus, Coenopoeus, Cotinis, Cylindrocopturus, Diabrotica, Disonycha, Gerstaeckeria, Moneilema, Onychobaris, Phyllophaga* and *Tricorynu*; there are other orders of arthropods that include various species in Mexico, among these include: ***Diptera***: *Cecidomyiidae*; *Asphondylia, Mayetolia, Neolasioptera. Hemiptera*: *Capsidae*; *Hesperolabops, Coreidae*; *Chelinidea, Leptoglossus, Narnia. Homoptera*: *Dactylopiidae; Dactylopius, Diaspididae*; *Diaspidae*. ***Lepidoptera***: *Gelechiidae*; *Aerotypia, Metapleura, Gracilariidae; Marmara*; *Phycitidae*; *Alberada, Cactobrosis, Cahela, Eremberga, Melitara, Olycella, Ozamia, Rumatha, Yosemitia, Pyralidae*; *Laniifera, Rostrolaetilia, Upiga. Pyraustidae*; *Megastes, Mimorista, Noctuelia*. ***Thysanoptera***: *Thripidae*; *Sericothrips*. (A. Blanchard, 1975; A. G. Raske 1966, 1972;; Badii & Flores, 2001; Blackwelder, 1982; Burger & Louda, 1994; C. Heinrich, 1939; Carlton & Kring, 1994; D. Barrales-Alcalá et al., 2012; Fleming & Holland, 1998; Herring, 1980; Lawrence and Newton, 1995); Linsley & Chemsak, 1984; Mann, 1969; Nieman, 1991; Oliveira et al., 1999; O'Brien, 1969; P. Guerra & Kosztarab, 1992; Raske, 1966; Solis, Hight & Gordon, 2004; USFWS, 1993; Wangberg & Parker, 1981; Zimmerman & Granata, 2002).

It is also worth mentioning the possible invasion of "the cactus mealy bug", *Hypogeococcus* sp.; and of "the cactus moth", *Cactoblastis cactorum* Berg. (Hernandez et al., 2007; Zimmermann 2010).

During the work carried for the "Integrated multidisciplinary project to improve production; increased competitiveness and attention to socio-environmental problems articulated with the use of lechuguilla fiber in the Panino Ixtlero of San Luis Potosi" (**see the note**), we have been watching various cacti affected by beetle larvae or adults of the genus *Moneilema* (cactus longhorn beetle), the current work presents advances on the study of the effects of *Moneilema* sp. in San Luis Potosi deserts which exists in several localities of endemic cacti, as well as commercial plantations of *Opuntia* species and also in nurseries specialized in ornamental cacti in the same state.

Evans and Hogue (2006) report that *Moneilema* adults feed on the succulent tissues of the cacti, while the larvae feed from the area near the vascular bundles located near the root region and extensively present the damage caused by the larvae in *Opuntia* sp. The affected areas can be easily distinguished by obvious wound fluids of the plant and excretions expelled by the larvae through the disposal windows that are purposely built.

summary ↑



Adult Moneilema armatum *eating* Cylindopuntia leptocaulis *external tissue. On the other branch it can be seen the marks left after a similar attack.*

In recent times there have been only few records of these *Coleoptera* in regarding to the ingestion of non opuntioid cactus species. While *Coenopoeus palmeri* LeConte and *Moneilema appressum* LeConte consume stems of opuntioid species and as parasite larvae they consume stems of *Cylindropuntia imbricata* (Haw.) F.M.Knuth and *C. spinosior* (Engelm.) F.M.Knuth (Lingafelter, 2003), *M. michelbacheri* Linsley has been recorded on opuntioid hosts, such as *C. bigelovii* (Engelm.) F.M.Knuth, *C. cholla* (F.A.C.Weber) F.M.Knuth, *C. echinocarpa* (Engelm. & J.M.Bigelow) F.M.Knuth, *C. molesta* (Brandegee) F.M.Knuth, *C. prolifera* (Engelm.) F.M.Knuth, and also on *Echinocereus sp*., *Mammillaria* sp. and *Pachycereus pringlei* (S.Watson) Britton & Rose (E. Blom, 1987); *M. semipunctatum* LeConte has been recorded to consume both opuntioids and also other cactus species (Crosswhite & Crosswhite, 1985); *M. appressum* has been registered recently consuming *Echinocereus coccineus* Engelm. (Lingafelter, S. 2003); the only report of non opuntioid cacti consumption in San Luis Potosí state comes from Sotomayor (2002) who records and presents details of the damages done by *Moneilema* sp. on a population of *Turbinicarpus lophophoroides* (Werderm.) Buxb. & Backeb.

summary ↑

***Pictographic sequence of a* Moneilema armatum *larvae inside* Turbinicarpus knuthianus.**

The only records of *Moneilema* found for the state of San Luis Potosi are:

- Mexico, San Luís Potosí. (USNM). *Moneilema isolatum* Psota, 1930: 132; Chemsak, 1977a: 177 (lect.). *Moneilema isolatum*; Leng & Mutchler, 1933: 42 (cat.).
- México, San Luís Potosí. (USNM). *Moneilema aterrima* Fisher, 1931b: 198; Mann, 1969: 102; Lingafelter et al., 2014: 21, figs. 21c, d (type).
- México, San Luís Potosí. (USNM). *Moneilema opuntiae* Fisher, 1928a: 1; Duffy, 1960: 178; Lingafelter et al., 2014: 292, figs. 123u, v (holotype).

summary ↑

summary ↑

Simmillar affectations can be seen in differnet species of endangered cacti, such as: 1 & 2 - **Ariocarpus kotschoubeyanus*****, one with exit hole and another with an exudate one. 3 -*** **Turbinicarpus schmiedickeanus *ssp.* schwarzii*****; 4-6 -*** **Lophophora koehresii *is also parasitized.***

However, our records point to other species as well: *M. gigas, M. armatum* and *Moneilema blapsides ulkei.*

The observation and study of the effects of wild species of cactus done by *Moneilema* are very important for the task of conserving the biodiversity, since it becomes possible to witness an increase in the number of individuals due to probable gradual temperature increase, which generates a negative effect on the conservation of already depleted populations of cacti, especially endemic species and endemic species of restricted distribution, which I prefer to label micro-endemic since their distribution area covers less than 1% of the total national territory.

Among these observations it should be also highlighted that the images witnessed and presented here are: *Ariocarpus bravoanus* ssp. *hintonii* (Stup-

summary ↑

1

2

3

Here and above: Coryphantha poselgeriana,
Below: Ariocarpus bravoanus *ssp.* hintonii.

If we can detect the larvae before it finishes consuming the cactus and is removed, the plant can regenerate roots quickly if the cavity was not colonized by fungi or bacteria; this is easily recognizable as the color of the plant's tissue becomes reddish brown when infected.

summary ↑

py & N.P.Taylor) E.F.Anderson & W.A.Fitz Maur., *Ariocarpus kotschoubeyanus* (Lem.) K.Schum., *Coryphantha poselgeriana* (D.Dietr.) Britton & Rose, *Lophophora koehresii* (Říha) Bohata, Myšák & Šnicer, *Neolloydia conoidea* (DC.) Britton & Rose; *Turbinicarpus saueri* ssp. *knuthianus* (Boed.) Lüthy, *Turbinicarpus schmiedickeanus* ssp. *schwarzii* (Shurly) N.P. Taylor, of which all resulted only to host this beetle, while in *Opuntia stenopetala* Engelm., *O. robusta* J.C. Wendl., *O. engelmannii* Salm-Dyck ex Engelm., *Cylindropuntia imbricata* (Haw.) F.M.Knuth and *C. leptocaulis* (DC.) F.M.Knuth resulted to be consumed by adults.

According to the observations on the effects on culture conditions for ornamental cacti, this species has a preference to well-defined cacti genera, mostly preferring the genus *Astrophytum, Coryphantha* and *Ferocactus,* while *Echinocactus, Mammillaria* and *Echinocereus* seem to be able to avoid the parasite. Although in cases where the insect cannot decide between host species it can lay eggs and consume any kind of cactus.

summary

Typical coloration on Ferocactus *due to* Moneilema *parasite; this cactophagous beetle also affects ornamental and commercial plantations (**below**).*

In the botanical garden for cacti and succulents of the Faculty of Agriculture and Veterinary of the UASLP was observed a preference to parasite *Ferocactus pilosus* (Galeotti ex Salm-Dyck) Werderm. on comparison with nearby *Echinocactus platyacanthus* Link & Otto which was completely disregarded, but once was reported one *E. platyacanthus* affected by *Moneilema* in a cactus garden nearby.

The high density of ornamental plants in nurseries concurrently with their location in proximity to the natural distribution to areas of these insects encourages the proliferation of these insects and can generate big losses caused simply by an oversight.

summary

summary ↑

Here and above: Moneilema *sp. in a population of* Turbinicarpus lophophoroides.

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Here above and below: Moneilema blapsides ulkei *in the same population of* Turbinicarpus lophophoroides.

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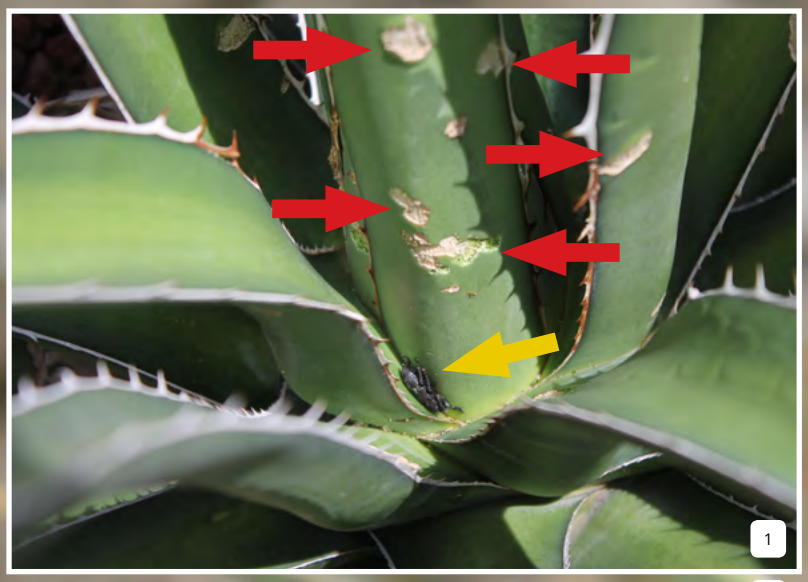


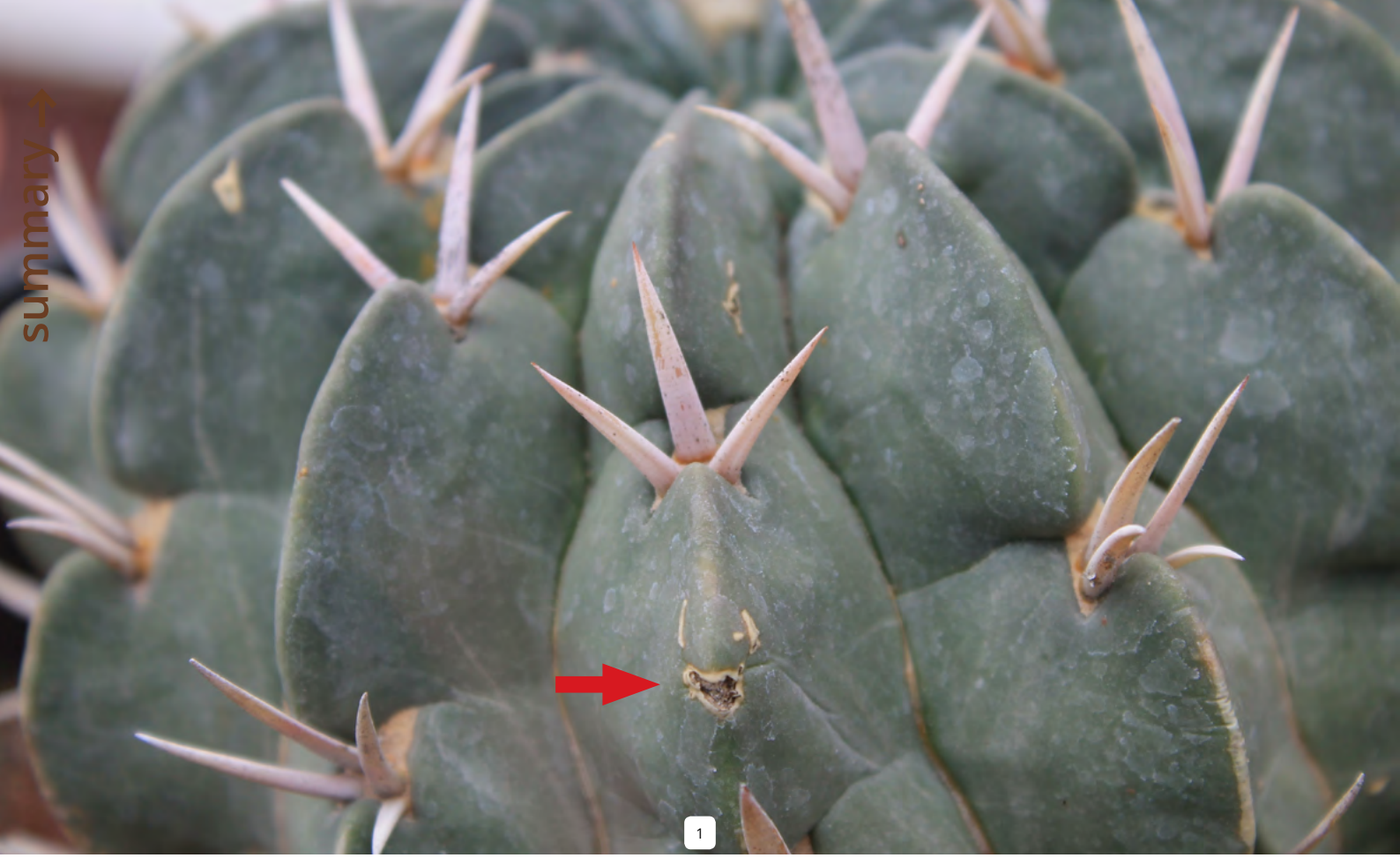
1

2

At the University it was observed *Acanthoderes funeraria* Bat. consuming *Agave lechuguilla* Torr.

3

1 - Acanthoderes funeraria *(yellow) on* Agave lechuguilla, *marks of attacks (red).* 2 & 3 - Acanthoderes funeraria.



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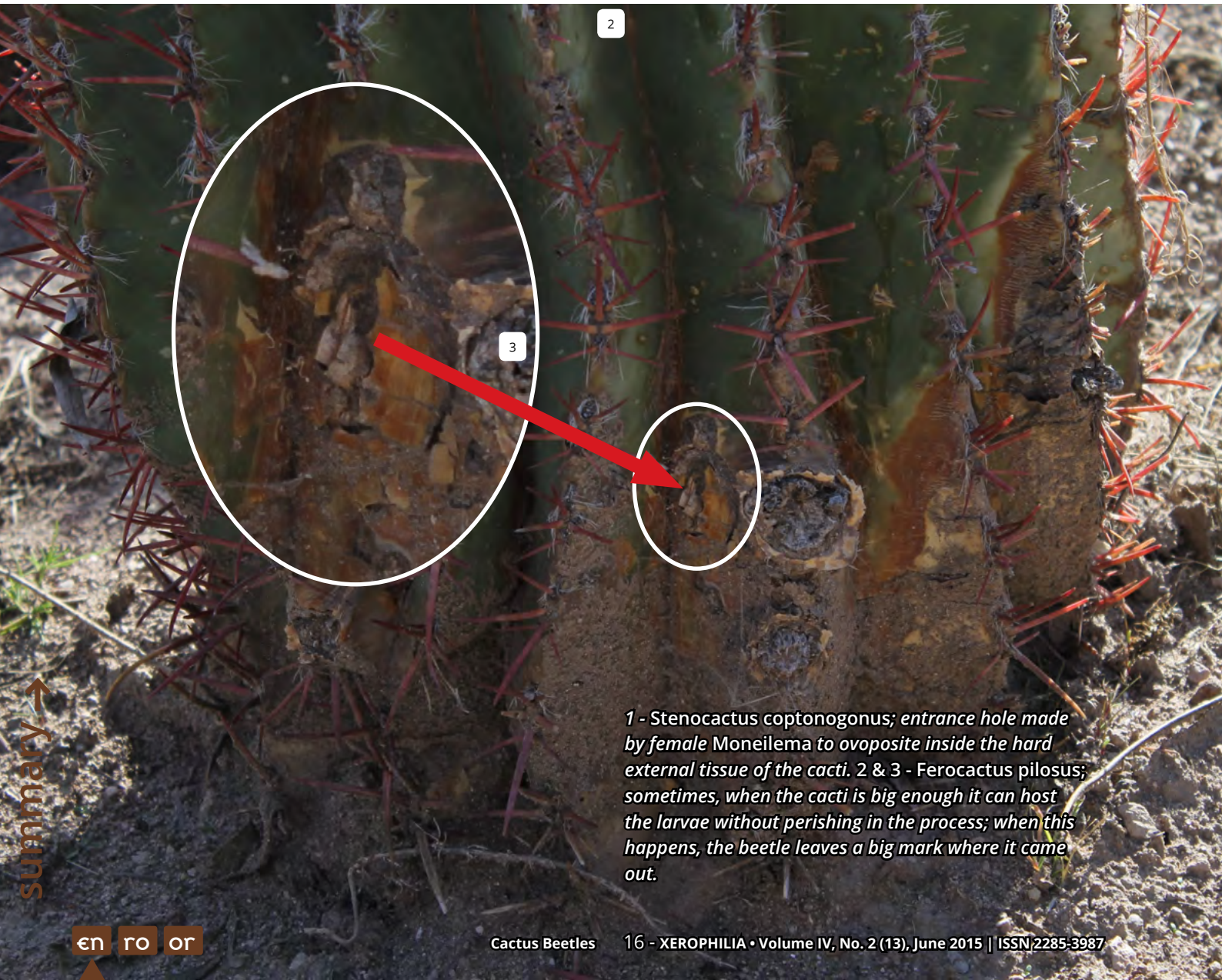

3

1 - Stenocactus coptonogonus*; entrance hole made by female* Moneilema *to ovoposite inside the hard external tissue of the cacti.* 2 & 3 - Ferocactus pilosus*; sometimes, when the cacti is big enough it can host the larvae without perishing in the process; when this happens, the beetle leaves a big mark where it came out.*

summary ↑

We thank Dr. Jose L. Flores Flores[1] for all the support for the realization of this and other research that arose peripherally from the "integrated multidisciplinary project to improve....", mentioned in the Note below; Likewise **we thank MC. Leccinum J. Garcia Morales**[2] for support in the identification, review and future continuity of this work.

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Note

"Integrated multidisciplinary project to improve production, increased competitiveness and attention to socio-environmental problems articulated with the use of lechuguilla fiber in the Panino Ixtlero of San Luis Potosi " in coordinated by MC. Claudio Ramirez Carera, from the Potosine Institute of Scientific and Technological Research (IPICYT) in association with the Autonomous University of San Luis Potosi (UASLP), the College of San Luis (COLSAN), the Center for Research and Assistance in Technology and Design of the State of Jalisco (CIATEJ) and the Polytechnic University of San Luis Potosi (UPSLP).

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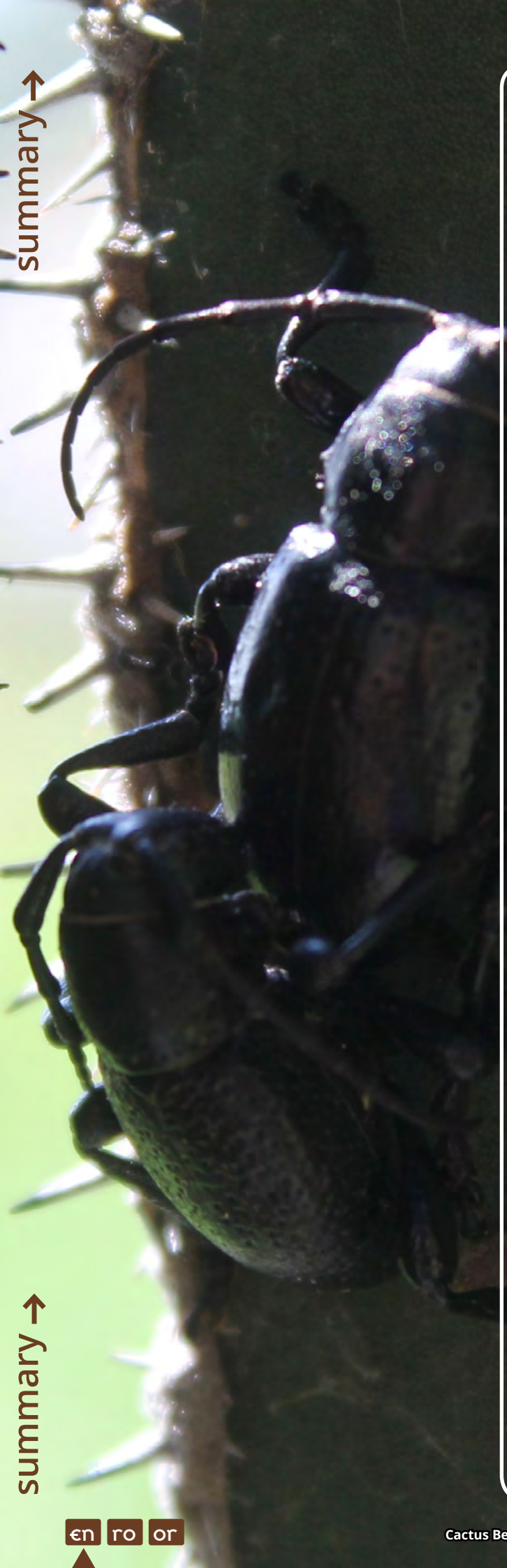

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summary

Mammillaria perezdelarosae Bravo & Scheinvar. ssp. *andersoniana* W.A.Fitz Maur. & B.Fitz Maur.

Ricardo Daniel Raya Sanchez

In March, a visit was made to the locality of Mammillaria perezdelarosae ssp. andersonia as well as other plants, in the Mexican state of Zacatecas, in this visit took place on 14, 15 and 16 of March, days in which he had a significant weather phenomenon in almost all national territory.

This phenomenon was generated by a low pressure channel and the entry of a cold front that caused moderate to strong rains over a period of 72 continuous hours and the temperature dropped, according to sources at national meteorological service this month was particularly cold and rainy with a rainfall of 12.8mm and temperatures of 5°C to 22°C.

summary

Bedding plants buds, in a den filled with water.

A crested specimen, full of buds.

Above and below: *you can see the budding or flowering specimens that are completely flooded.*

Mammillaria perezdelarosae Bravo & Scheinvar. ssp. *andersoniana* W.A.Fitz Maur. & B.Fitz Maur.

In the habitat plants have solitary body, being rarely more heads on one plant; they have globular stems up to 4 cm and 4 cm in diameter, with rounded edges, covered almost entirely by spines; mammillae are conical 2 mm width and length; radial spines 50-63 on each mammilla, straight, white, pectinates, 2 mm in length; 1 central thorn, straight up, dark red, 4 mm long and 0.25 mm in diameter, with dark brown to black tip; white flowers with pink stripe, 6 mm long and 8 mm in diameter; fruits are green, 2 mm in diameter; seeds are brown-black, 1 mm length and 0.6 mm width.

The habitat substrate is on volcanic rocks, at an altitude of 2100 m.

You may see grow with *Stenocactus zacatecasensis* and *Mammillaria gilensis.*

The journey through the state of Guanajuato was accompanied by moderate rain, making it hard to get to the location we searched, because of the rough, and their poor condition in some portions. The trip lasted nearly six hours, but finally we reached its destination. I had hoped for a sign for an hour and a half the rain intensity to drop, but this has not happened and I had to get out of the vehicle with bags and electronic equipment covered in plastic temporary housing. We walked about 400 meters in the rain and started to climb a small hill of volcanic rock, with a height of 20 meters. The ascent was very difficult because of the wet conditions, the lichens and biological crusts were completely waterlogged, therefore, having grip and sliding shoes almost always, but this has not stopped us. Emotion helped us to find the first plant, which we have made many photos to, as it had many flowers. But the ascent to the peak crowned us hope, seeing there many mammillarias increasing in small cavities, where it was only slightly crowded substrate, brought by the wind or other natural factors, which were now filled with water, completely submerging the plants. In culture, the excess water would have been a nightmare, especially at low temperatures 6-10 ° C; but in nature, such a situation does not stop the growth and survival of this beautiful species.

summary

While some plants are completely under water (above), others are almost emersed.

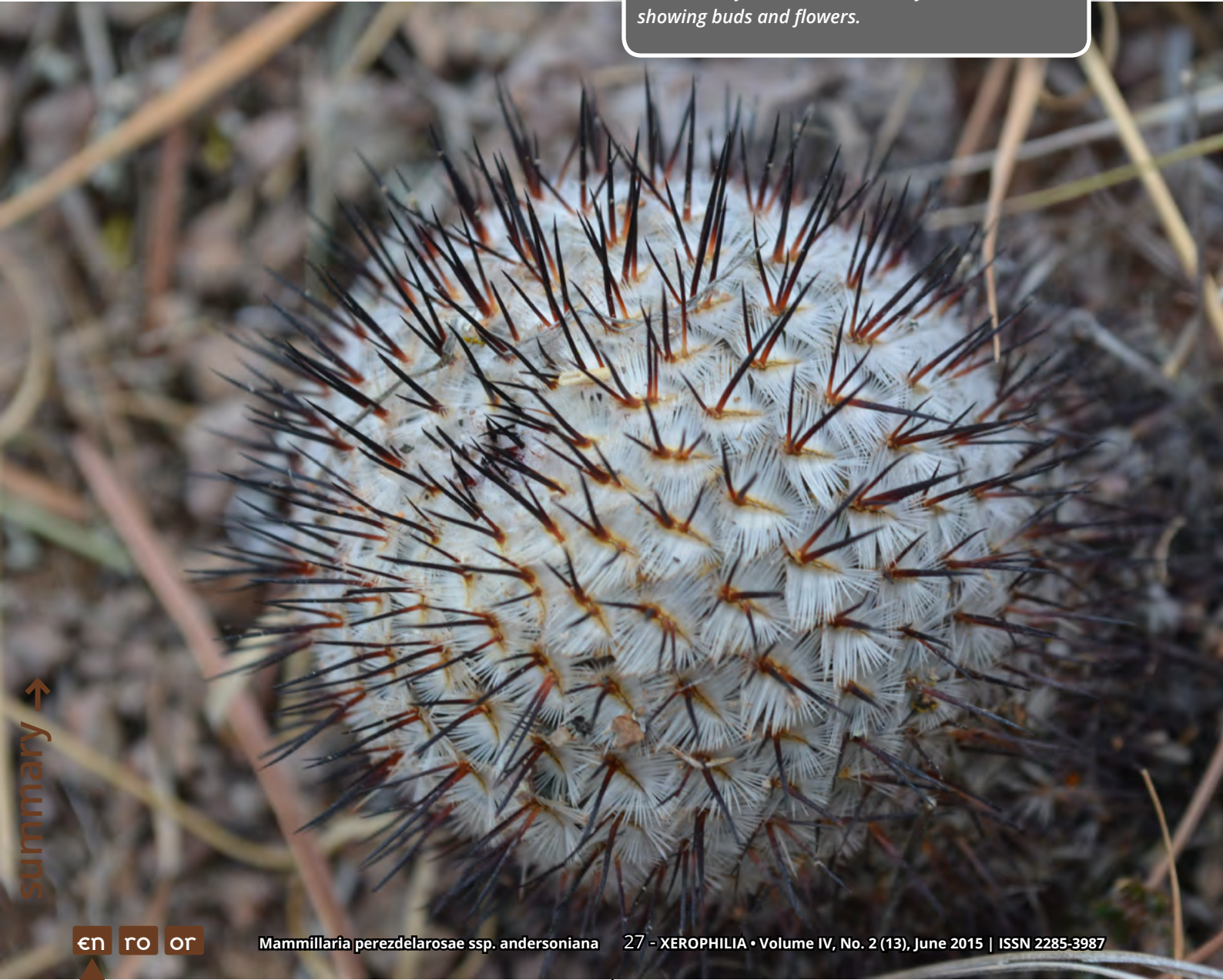
In the higher areas (above), the holes full of water have smaller areas, and emersed plants are becoming more frequent.

In places where the organic soil is too abundant, plants are much rarer, growing closer to the rocky edges.

summary ↑

Above and **below**:*In several places, there are numerous patches of plants not covered by water.*

As in the previous page, both here and in the following, it becomes noteworthy that the emersed plants, quite numerous, not yet flowering, while almost all of which are covered by water, are showing buds and flowers.



In that location, they could find hundreds of plants in small pits, almost entirely filled with water. Otherwise, the location is in good condition with a very high density of plants, but the space occupied by them is small, only a few square meters.

Finally, we made some shots, under the rain complicating things even more and I turned wet, but happy that we have seen in habitat this rare species, knowing that it is healthy and so we will wait for that place yet long, because such situations, as the one I caught in this pictorial, are repeated almost annually.

summary

An alternative way to combat illegal collecting

Karl Ravnaas

summary →

One of the many joys of growing cacti and succulents is to read about new discoveries. I'm sure every cactophile at the time recalls the excitement at the incredible discovery of *Aztekium hintonii* and *Geohintonia mexicana*. Since then we've seen many other fascinating discoveries such as *Lophophora alberto-vojtechii, Astrophytum (Digitostigma) caput-medusae, Strombocactus corregidorae, Turbinicarpus pseudomacrochele* ssp. *minimus, Mammillaria luethyi*, and most recently *Aztekium valdezii* and *Mammillaria bertholdii*. A number of other wonderful species and varieties have been discovered in Mexico alone over the past couple of decades.

Many of these new species have a limited habitat range and even moderate collecting of plants can have a detrimental effect on the population. It has been well documented how the type locality (and nearby localities) of *Ariocarpus bravoanus* was ravaged by collectors – either acting on their own or buying plants in bulk from locals [1, 2, 3]. Hernández [4] notes the same, as well as mentioning how one of the localities has been destroyed through agricultural development. Many of the other new discoveries over the past

A huge pile of wild **Sedum ebracteatum** *for sale at a local market - photo by Gabriel Milan Garduno.*

couple of decades have faced similar problems, though none perhaps as serious as *A. bravoanus*. It did not take long for this species and all the other new discoveries to escape Mexico, particularly through collectors from Europe and Asia, and with many of the species' habitats adversely affected by illegal collecting, it is clear that the laws and regulations put in place by the Mexican authorities and by CITES are not sufficient to protect the plants or are lacking efficiency.

Mexican laws prohibit the removal and subsequent export of plants and seeds from habitat. CITES regulations further restrict or prohibit the distribution of any habitat collected material as most Mexican cactus species are listed in CITES Appendix I or II. Species listed in either appendix, but raised in cultivation, usually require export and import permits to buy and sell. The thinking seems to be that the stricter the law is the better the plants will be protected. I am not an expert on CITES by any means and I believe a lot of the work done by the organisation is very beneficial to the conservation of nature. And whilst the fact that it is far more difficult to export plants out of Mexico today than it was some decades ago is undoubtedly a good thing, I think the current legislation in many ways works against the intended goal which is to conserve the species in habitat.

To me, the reason why these regulations seem to fall short is simply down to the fact that there is a huge demand around the world for newly discovered species, yet no legal method to supply that demand. Many collectors will pay whatever the cost for the new and special or rare and exotic, and where there is a demand there will always be someone willing and able to satisfy that demand. This is not exclusive to cacti either. In the world of orchid collectors and elsewhere the pressure on newly discovered species is just as great, if not greater, with e.g. the UK's rarest orchid receiving constant police surveillance in order to protect its single habitat [5].

It's not just in the wild that rare species are under threat either. It's becoming more and more common for botanical gardens around the world

Ariocarpus bravoanus ***at the type locality after being looted - photo by Gabriel Milan Garduno.***

to install CCTV surveillance and to increasingly keep valuable and rare plants behind glass frames as rates of rare-plant thefts are increasing [6]. In January 2014 a specimen of an exceedingly rare water lily was stolen from Kew Botanical Gardens in England, which The Guardian wrote an excellent piece on [7]. The water lily is extinct in the wild in Rwanda, and only about 100 specimens exist today, with Kew Botanical Gardens caring for nearly all of them. The thief had gone to great lengths to steal one of the plants from their collection and obviously knew exactly what he or she was looking for.

According to articles in the Houston Chronicle and from the BBC [8, 9], trafficking of cacti out of Mexico is the country's third largest smuggling industry behind drugs and guns. This was seven years ago and there is no reason to think this smuggling has abated since. It's a multi-million dollar industry and collectors all over the world are fuelling it. The laws and regulations imposed by Mexican authorities and CITES have so far clearly not been effective in reducing collecting, or at least not effective enough. The business is too lucrative for these rules to work as intended, so what they in effect achieve is rather to help the criminals by making it impossible or very difficult to sell these species legally. The demand for these rare and special plants is therefore satisfied through the black market at extortionate prices which in turn only makes the business more attractive to criminals.

This goes on until in the end these new discoveries start appearing in one or two seed lists, then a few more the next year, then even more the year after, and so on until most larger nurseries carry them.

How common is *Geohintonia mexicana*, *Strombocactus disciformis* ssp. *esperanzae* or *Astrophytum caput-medusae* in seed lists today? Most of the seeds available now probably originate exclusively from plants originally sown and raised

Ariocarpus kotschoubeyanus*, cheap as chips when you buy in bulk - photo by Gabriel Milan Garduno.*

in cultivation, but where did the original plant matter come from and was it exported legally from Mexico?

I doubt it. I would guess that nearly everyone who reads this and has any of the above three species in their collection are growing plants that ultimately trace their origins back to illegally collected habitat plants and/or seeds. How long ago was it that *Lophophora alberto-vojtechii* and *Strombocactus corregidorae* were discovered? I see them on more and more seed lists every year.

This is the crux of the matter for me. As things stand today the likes of *A. valdezii* or any other new discovery will be collected illegally in habitat and sold around the world via eBay or other sites to satisfy demand until these habitat collected plants start producing seeds which slowly begin to trickle out into the market through ordinary seed lists. What the CITES regulations and the Mexican laws do is to make the matter worse by slowing down the time between discovery and when a sufficient number of seeds is commercially available to start meeting the demand. The species in question will always find its way onto seed lists, it's just a matter of time. Eventually it will be so common that it becomes acceptable for everyone to buy it, but from the point of discovery up to the point where it has become freely available in seed lists, thousands of plants may have been removed from habitat to satisfy the appetite of collectors around the world.

What I would suggest to combat this problem is not a novel idea. Others have thought of similar things before. Still, what I propose is that Mexican authorities together with CITES set up a program along with some of the most respected and well known nurseries around the world. In short the program would seek to collect a limited number

Mammillaria bertholdii ***TL 1134, the latest victim - photos by Thomas Linzen.***

of seeds in habitat and distribute them to the nurseries partaking in the program, which would then undertake to germinate the seeds and propagate the plants as quickly as possible. Cacti are quite special in the world of plants in that they are so easy to graft. Of particular relevance to such a program is grafting on *Pereskiopsis*, whereby plants can easily be grafted as seedlings and brought to flower within as little as six to twelve months. A single seed pod of *Aztekium valdezii* could produce dozens of seedlings which, if grafted on *Pereskiopsis*, could feasibly go on to produce thousands of seeds within a year. The nurseries partaking in the program would produce as many seeds as quickly as possible and then promptly proceed to distribute them through their seed lists, and in no time at all it could be as common as A. ritteri.

A. valdezii was discovered in 2009 and formally described in 2013 [10]. Almost immediately from the point of discovery the discoverer understood that this was a new member of the genus [11]. Whether it was a new species or a subspecies could maybe not be ascertained immediately, but what could immediately be understood is that this new form would become an object of the greatest desire among collectors from the moment it became known to the public. Had such a program as outlined above existed then, seeds could immediately have been collected in habitat once initial studies had been performed and been distributed to nurseries participating in the program. It is even possible that the first legally produced seeds could have been put up in seed lists at the time of the official description of the species in 2013.

The problem of distributing seeds before describing the plant officially could also be worked around by ascribing a collection number belonging to this program to the plant in question and distributing seeds under this number. Perhaps an agreement with the International Code of Nomenclature could be agreed whereby plants distributed under this number could not be described by anyone else for a period of five years. That would be enough time for those describing the plant to make thorough studies and come to a timely conclusion while the plant is already being propagated by nurseries.

Such a program could be even more beneficial for *Mammillaria bertholdii* which was discovered in 2013 and described in 2014 [12, 13]. Being a cryptocarp it hides its large seeds in its own body until they are eventually slowly released – often not before the mother plant dies. It follows that seeds of this species are produced in much fewer numbers than with *Aztekium valdezii*, and are far less accessible. Whereas *A. valdezii* will likely become fairly common in seed lists over the next few years, I don't see the same happening with *M. bertholdii*. The fact it produces fairly few seeds that are also hidden in the plant body, and are even likely

Sometimes, this is the tragic fate of seized cacti - photo by Gabriel Milan Garduno.

to be difficult to germinate (as with most species in the *Mammillaria saboae* group) all speak against it becoming available as quickly as *A. valdezii*. It isn't unlikely that the pressure on its habitat could well be greater than for *A. valdezii* and possibly over a longer time too. A systematic approach at a dozen or more nurseries around the world to produce seeds and plants of this species would likely mean that within a few years it too could become legally available in quantities sufficient to satisfy a large part of the market.

The money people are willing to pay for seeds and plants of *A. valdezii* suggests to me that such a program would probably more than finance itself. The nurseries partaking in this program could charge fair - but high - prices, and if a substantial percentage of the proceeds went back to Mexico it could fund salaries and field trips for those working on the program there. It is even possible that profits could be sufficient enough to help fund conservation projects to protect species from illegal collecting as well as various forms of habitat destruction which ultimately probably poses a greater threat to most cacti than illegal collecting. The nurseries would benefit from this too by not only retaining a decent percentage of the profits, but also by being able to sell these species legally. The fact they would be helping conserve the species in the wild would be an added bonus, though I'm sure that for some nurseries this would be reward enough in itself.

Advertising in cactus and succulent journals around the world and contacting as many societies as possible would also ensure that most growers who would be interested in the new rarities would be aware of the program and know that within only a few years of discovering a new species, seeds and plants would be legally available. I think this would encourage a lot of people to wait for legally produced seeds and plants to become available rather than seeking out illegally collected material at extortionate prices.

People would still desire habitat collected plants, of course. It would be naïve to think otherwise. However, removing a potentially vast segment of the market by providing a legal source for these species could feasibly push illegal collecting down to levels that wouldn't pose nearly as great a threat. The idea that the best way to protect the plants is to make it illegal or very difficult to acquire them

Aztekium valdezii, *a plant that has been washed by heavy rain and, in its struggle to survive, fastened itself to a rock, showing the world that it does not want to die - photo by Anonymous*

summary ↑

A. valdezii, ***the new peyote, a solitary plant and a colony in habitat - photos by M. Valdez & Anonymous.***

only works to serve those wishing to profit off of illegal collecting. The demand will always be there and if it isn't supplied through legal channels it will be supplied through illegal ones. The former way of doing it can serve to reduce the pressure on habitats, while the latter only increases it. With a growing market in the Far East and demand as strong as ever in Europe, coupled with ever easier ways of selling plants online, I can only see habitat pressure by illegal collecting growing stronger.

When the last new *Ariocarpus* species was discovered more than 20 years ago it was only a matter of a few years before the type locality was ravaged by illegal collecting. Thankfully new localities where it grows have been discovered (though some of these have also been stripped), but what happens if the next *Ariocarpus* species to be discovered only grows on a single hillside? Will it be the first *Ariocarpus* to go extinct in the wild?

A program such as the one outlined in this article might seem like a pipe dream, but it wouldn't necessarily require drastic changes to Mexican laws or to CITES regulations. The right people with the right contacts making the right enquiries could likely go a long way to at least bringing such an idea to the attention of government officials in Mexico and to CITES officials, in order to get the ball rolling. What I personally find especially attractive with such a program is that it would in all likelihood not just finance itself but likely also be able to finance other conservation projects. A lot of the money currently going into the hands of unscrupulous criminals or collectors could instead go back to Mexico. Every single cactus collector buying seeds or plants from these legal sources would know that a part of their money would be going back to Mexico to help conserve the most threatened species in situ, and so directly help fund conservation projects simply by doing what we all love – collect cacti.

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From a dichotomous/cristate flower resulting fruition

Turbinicarpus pseudopectinatus

(Backbg.) C. Glass & R. Foster

cv.

Barbora

Connoisseur's Notes

Stefan Nitzschke

Turbinicarpus pseudopectinatus *cv. Barbora, with crested flower in the rear right.*

summary ↑

Turbinicarpus pseudopectinatus cv. Barbora: This name is given to a plant found in culture as early as 1977 about which was subsequently reported in various journals in the early 1980s. This eye-catching cultivar is a spineless/poorly spined variant of *Turbinicarpus pseudopectinatus* ssp. *pseudopectinatus*. In a larger batch of seeding originating from wild seeds sown by Alexander Lux and Roman Stanik few of these abnormal plants were carrying on and were later continuously propagated by the two cactus enthusiasts. While propagating these abnormal spineless plants, also a crested form emerged. In 1996, the two growers suggested in the book "Rod *Turbinicarpus*" the name *Turbinicarpus pseudopectinatus* cv. Barbora for this cultivar.

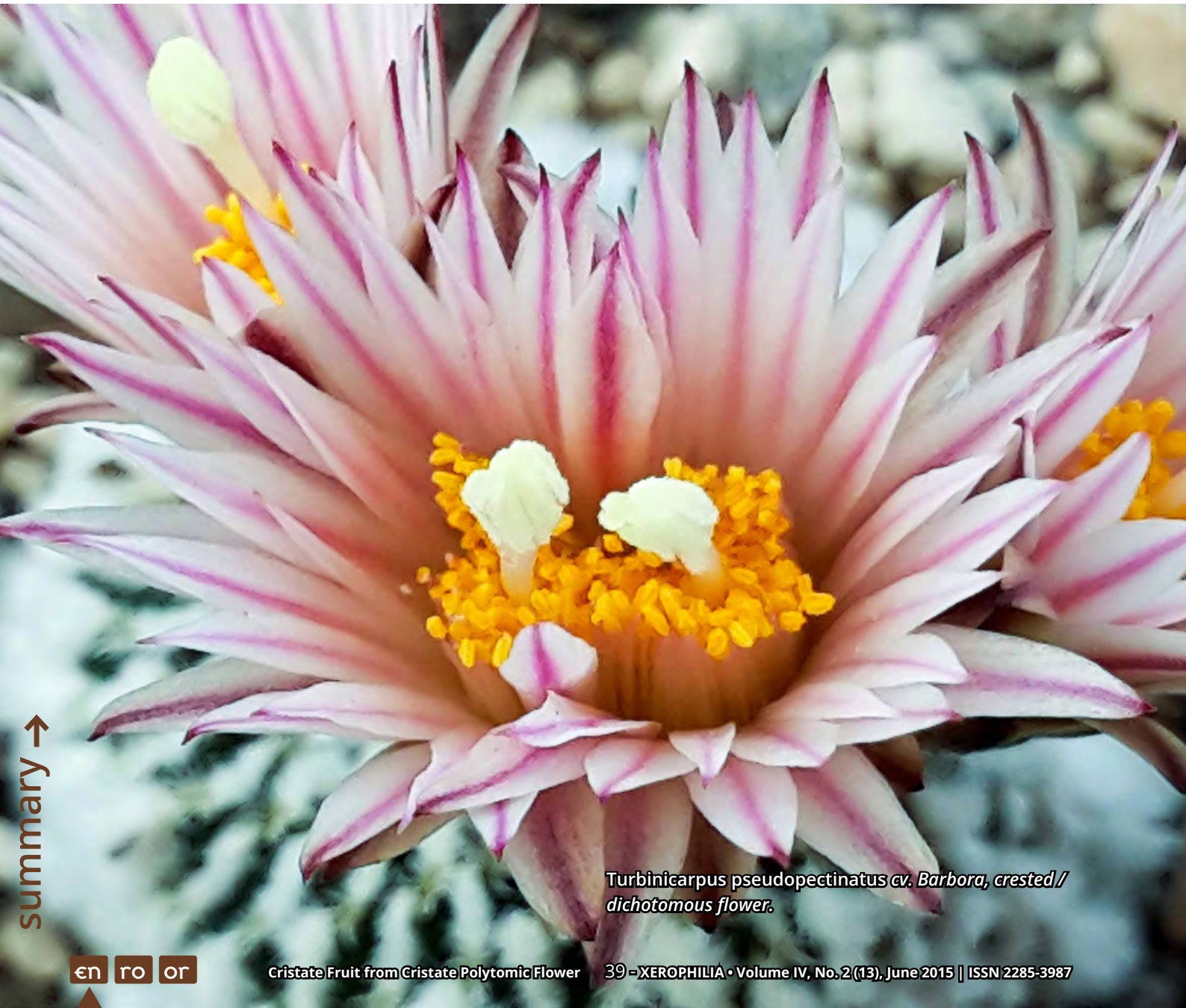
This interesting plant is currently also commercially available under the name *Turbinicarpus pseudopectinatus* var. *inermis*. Cross-pollinations of these plants rarely produce healthy fruits and seeds.

This season, one of my plants even produced a crested fruit and it remains to wait and see whether they can mature.

I would like to take this opportunity and thank to both friends for spreading this beautiful form.

Turbinicarpus pseudopectinatus *cv. Barbora, propagation of the original crested plant.*
Above: T. pseudopectinatus *cv. Barbora, with only few spines, but plenty of wool.*

Turbinicarpus pseudopectinatus *cv. Barbora, flowering plant.*



Turbinicarpus pseudopectinatus *cv. Barbora, crested / dichotomous flower.*

summary ↑

1 & 2 - From the crested/dichotomous flower resulting fruit on Turbinicarpus pseudopectinatus *cv. Barbora.*

1

2

summary ↑

A Greek in Mexico

Travelogue

Benjamin Sklavos

summary →

Ariocarpus kotschoubeyanus

summary

1 - **Mammillaria compressa *ssp.* centralifera*, Hidalgo.***
2 - **Echeveria *sp.*.**

Hello, friends of Xerophilia!
My name is Benjamin F. Sklavos and I've been in the hobby of cultiva-ting cacti and succulents for two years. I was born in America but moved and live in Greece since 2006. I have a small cactus collection: *Astrophytum, Turbinicarpus, Weingartia* and *Lophophora*, and some succulents as well: *Euphorbia* (from Madagascar), *Haworthia, Agave* and other such as small *Conophytum* and *Lithops*.

All started when I saw an *Astrophytum*

It all started when I saw the poster of E.E.K.A.P. (Hellenic Cactus and Succulents Society) featuring an Astrophytum and I went to my first group meeting in 2012. After discussion with the members of the group and a lot of reading on the internet and other sources of information, I found Xerophilia, Dag and other friends from Romania. Watching, reading and researching, I saw various ways of cultivation. I tried some of them and after several "courageous" decisions I chose which type of cactus cultivation I liked. I certainly never stopped researching, and am a true hobbyist: the more I read the more information I wanted to obtain so I delve even further into this hobby. I observed and listened to people and their dealings with seeds, hybridization, monstrosities, surveys, classifications, discoveries and many other "doors" that one can open, but always with a respect to protect the plants and populations. During 2014 I got to know better the members of the Society and gradually become a board member of E.E.K.A.P. Gathering whatever finances that I had and did not have, I decided to grab the opportunity and go along with Andreas Laras (who usually travels alone) on this trip to Mexico. Honestly it was a rare experience to be a fellow traveler with Andreas, I thank him for everything.

And our journey began

Our journey began on October 23, from Athens to Monterrey, with stopovers in Madrid and Mexico City. We traveled a total in excess of 4,500 km, crossing five states. The car was a Renault Duster, not 4x4 but tall enough to take us to incredible places. I took over 3,000 photographs, some good and some not. We camped in the open air, in mud plains, and at an altitude of 2,000 m, and a few nights in hotels to fill batteries literally and metaphorically (our metaphoric batteries were filled under the stars!)

The trip was intended to further research of *Ariocarpus*. When organizing the trip (Andreas), decided to add three sites where *Turbinicarpus* were discovered, only because of my love for this genus. Other species found during the trip were certainly recorded (photographs).

Personally, I did not take detailed measurements of the size and number of plants. I recorded populations based on their mileage posts, photos, and other notes. The exact coordinates will not be mentioned out of respect for the protection of species and the overall work and research of Andreas Laras. We saw old and new populations, young plants and old ones, healthy and damaged, and some which had suffered devastating damages from other human hands. In almost all the places we visited limestone was present.

summary

summary ↑

1 - **Echinocereus pectinatus**. *2* - **Ancistrocactus scheeri**. *3* - **Ariocarpus trigonus**.

First stop

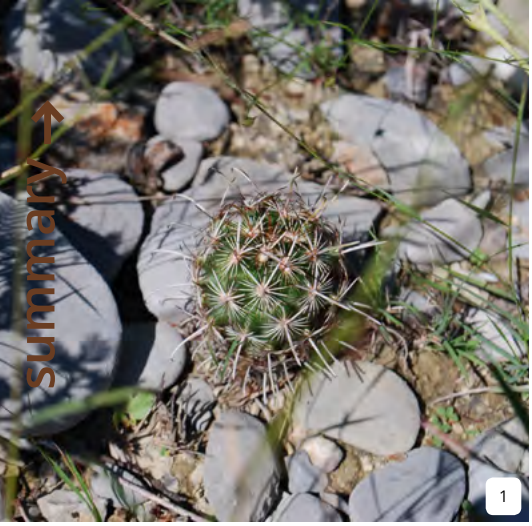
I decided to share with you our journey on the basis of populations observed and not in some specific order.

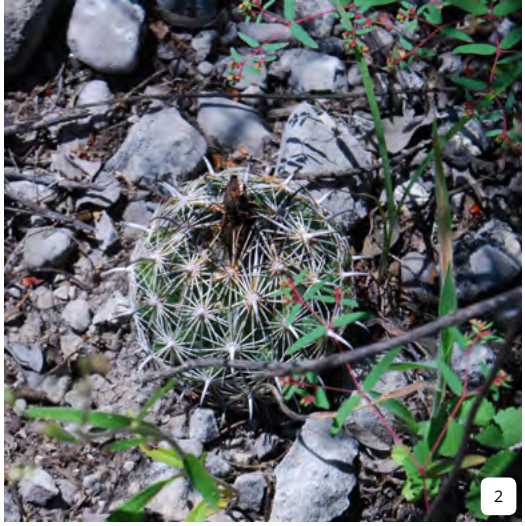
Let's start with *Ariocarpus trigonus*. The population I saw is in Linares, Nuevo Leon, which coincidentally was our first stop. Along with *A. trigonus* we found *Echinocereus fitchii* ssp. *bergmannii, Ancistrocactus megarhizus, Agave lechuguilla* (I'm still removing spines from my calves) and *Yucca* which coexisted in the region.

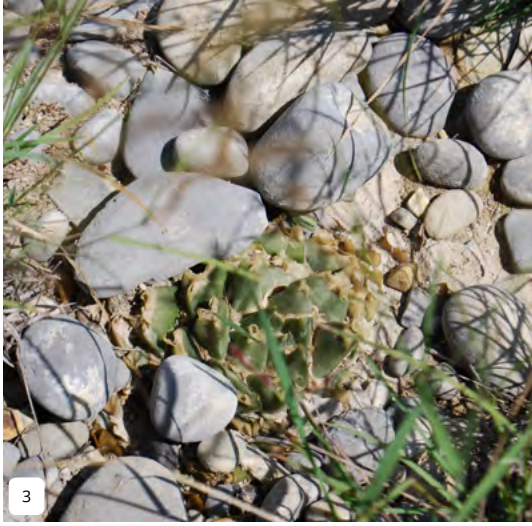
After populations have been documented with photographs and measurements, we started towards the city of Tamaulipas. We climbed Sierra Madre Oriental, blanketed in a lot of fog, where *Agave, Cycas* and Palms populations were observed, and the journey continued through the city Ciudad Victoria to our final destination Jaumave, where we stayed in a hotel.

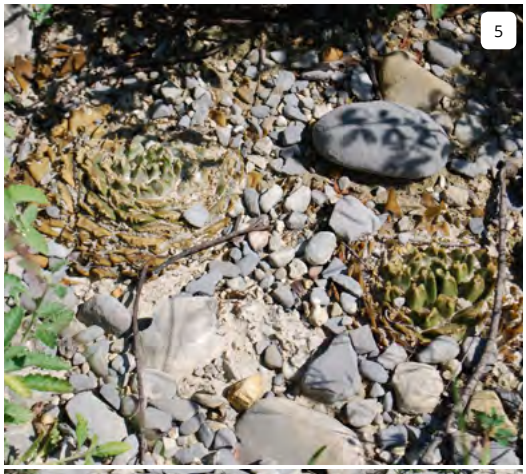
summary ↑

summary









***1 & 2* - Ancistrocactus scheeri *ssp.* megarhizus. *3-12* - Ariocarpus trigonus.**

summary

summary ↑

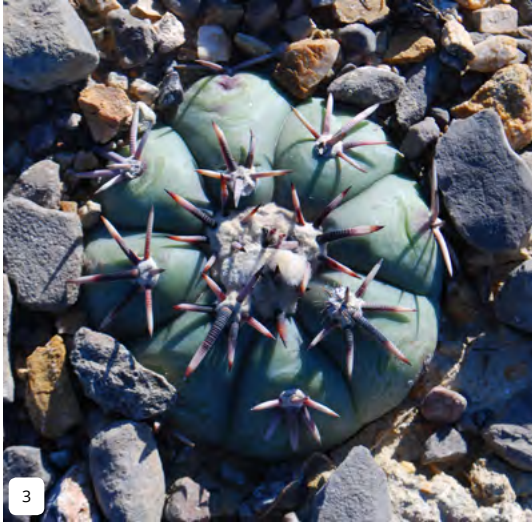
Second stop

The next population we saw was in Tula, Tamaulipas, where we visited two sites. The first was rocky and the second a mud plain. At the first location we found A*riocarpus agavoides, Echinocactus horizonthalonius, Stenocactus*, and *Coryphantha*, and few *Ariocarpus kotschoubeyanus* which coexisted with the *Ariocarpus agavoides* in a state of "sympatry". It is noteworthy that among the plants at the first population we observed a variegated *Ariocarpus agavoides.* The second location was on mud plains and there were no Ariocarpus agavoides. Here we saw A*riocarpus kotschoubeyanus, Mammillaria surculosa, Stenocactus* and *Lophophora*. Most plants in the second research location were *Ariocarpus* and *Lophophora*.

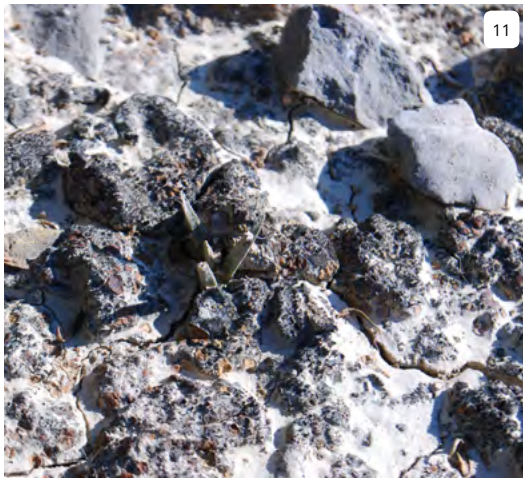
1-3* - Stenocactus *spp.

summary ↑

summary



1 & 2 **- Stenocactus phylacanthus.** ***3-*** **Echinocactus horizonthalonium. 4-6 - Coryphantha cornifera.** ***7 & 8*** **- Ariocarpus kotschoubeyanus.** ***9-11*** **- Ariocarpus agavoides.** ***12*** **- A. agavoides** ***ssp.*** **sanluisensis.**



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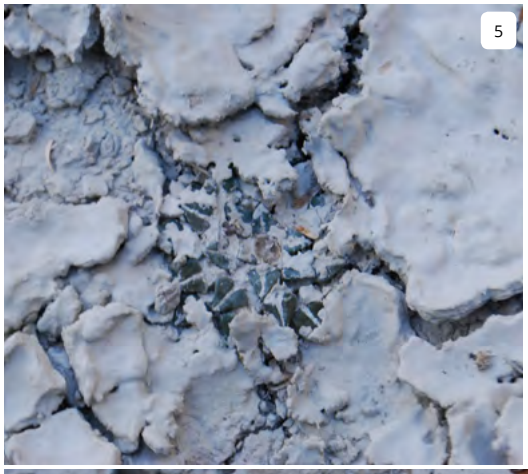
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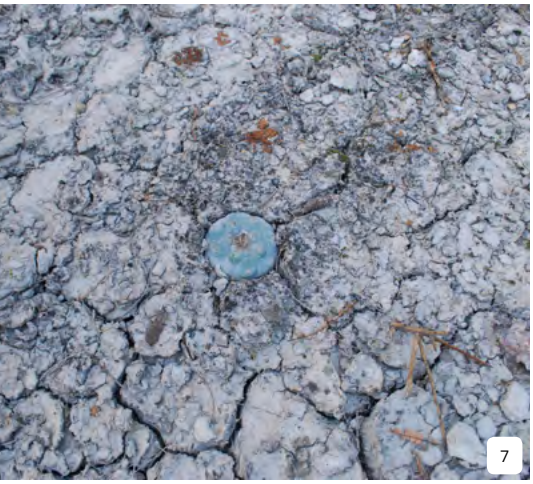
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1 **- Mammillaria compressa *ssp.* centralifera .** ***2-4*** **- Mammillaria pilispina.** ***5 & 6*** **- Ariocarpus kotschoubeyanus.** ***7 & 8*** **- Lophophora alberto-vojtechii.** ***9*** **- Coryphantha cornifera.** ***10*** **- Stenocactus phylacanthus.** ***11*** **- Stenocactus *sp.***

summary ↑


9


10


11

summary

1 & 2 - Ariocarpus kotschoubeyanus.

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Mammillaria compressa *ssp.* centralifera.

4

5

summary

4 & 5 - Ariocarpus kotschoubeyanus.

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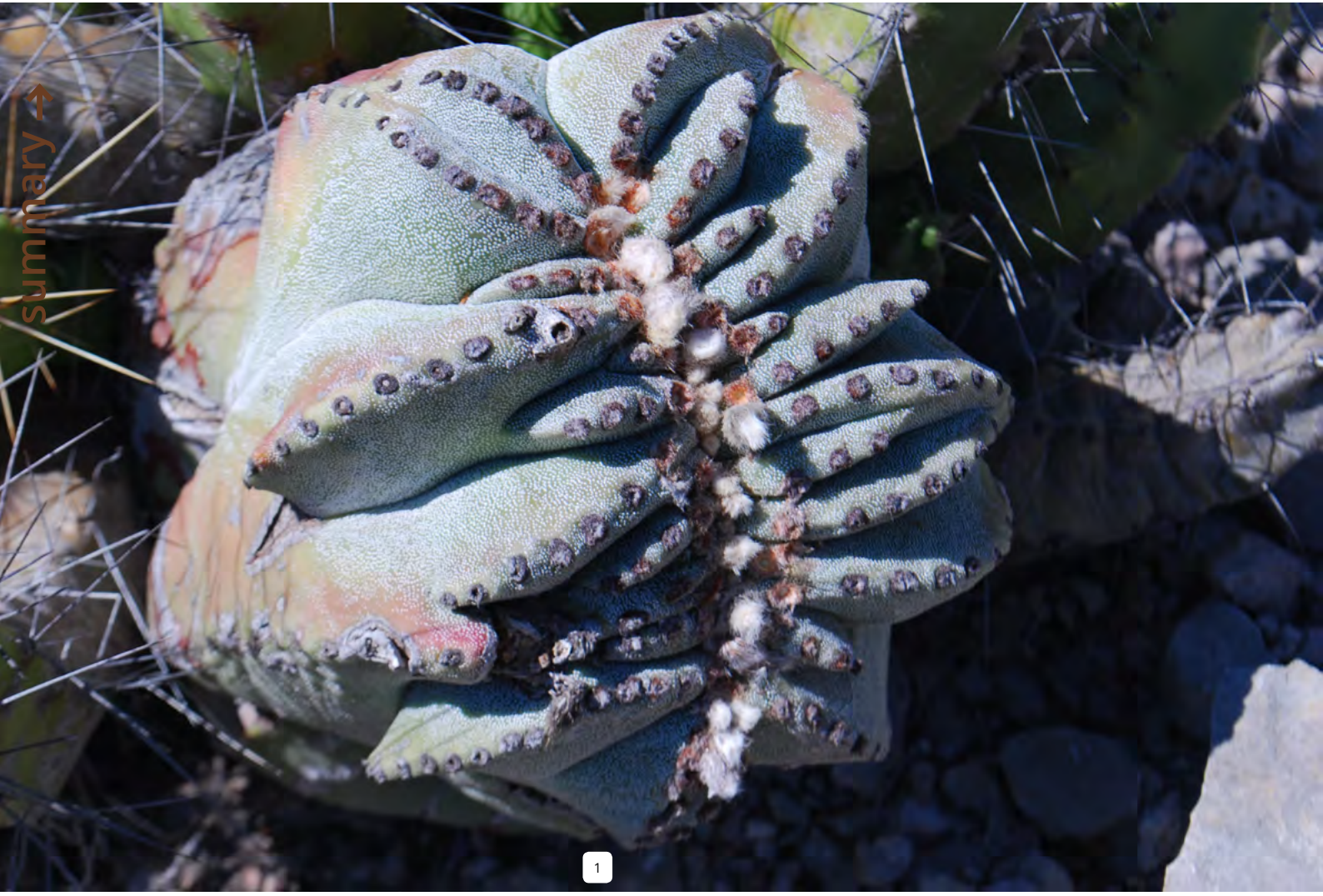


1

2

1 - Astrophytum myriostigma *fma.* cristatum. *2* - Astrophytum myriostigma.

Third stop

As I mentioned above, the trip included three *Turbinicarpus* sites, a genus of which I have a soft spot for. Along with *Astrophytum* they were the first cacti I cultivated and was the genus which motivated me to read in more detail about the cultivation of cacti and succulents. *Turbinicarpus jauernigii* were seen in San Luis Potosi, although there were not many plants in the population. My excitement did not allow me to record any of the plants that were around but I remember many *Neolloydia*. I also saw A*strophytum myriostigma* and crested *Astrophytum myriostigma*.

In the next article

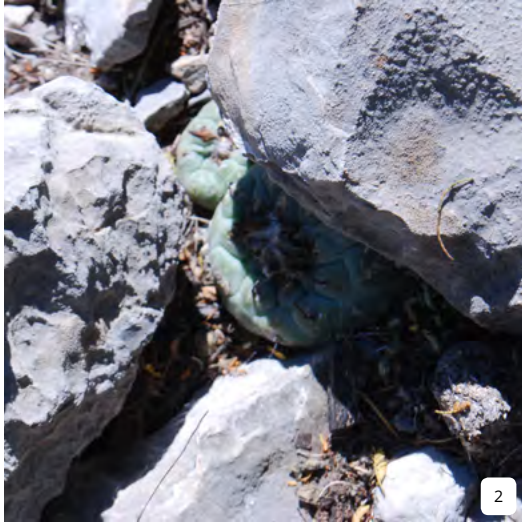
This first pictorial allows me to find my rhythm and to warm up a bit ... In the next articles I will take you to other locations and other populations with more photos and information. What I can tell you for sure is that as the days of the trip passed the plants and pictures improved. I wish I had the words to describe everything I felt and experienced during this trip. Fortunately "a picture is worth a thousand words."

Until the next article, I wish you good plants, healthy growth and good travel!

Thank you Mexico!

summary ↑


1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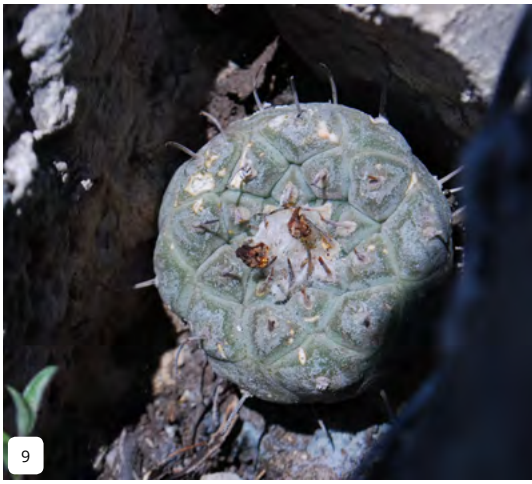

9

1-9 **- Turbinicarpus jauernigii.** ***10-12*** **- Astrophytum myriostigma**

summary ↑


10


11


12

From sunset to sunrise a night in the desert

César Cantú, *Maestro Fotógrafo*

How not to be intimidated, when you see the watch telling you it's eight o'clock in the evening and the temperature is around 49° Celsius and, in absolute solitude, you start installing your photographic equipment, being aware of the risks of nature, even in the desert, which is equally alive as the tropics? We associate the desert with austerity, but the desert lives and transforms itself every day. Note that in the desert storms are formed and it rains too, it is in all the survival manuals that the temperature can drop sharply or that snakes prefer night-time to hunt their prey, these aren't only Bear Grylls' tips. These possibilities have always existed, but with due respect for nature, the desert rewards us with incomparable sunsets and starry night that seemed to have come right out of a dream, with fantastic scenery, sculpted basalt mountains in the rigor of the geological movements that occurred millions of years ago. These majestic territories were considered sacred by our ancestors, designed for their adoration and respect, but especially creating a link where people, animals, plants, mountains and earth are interrelated and each imparts its own spiritual form, giving life and meaning to the universe. The Navajo people admired the day and the night, seeking the spiritual understanding of everything around them, but not worshiping any god, as nature was fit its purpose. In a picture, I can photograph the stars that represent the Scorpio constellation, the desert land as a suitable frame and it could headline "the scorpion in the desert".

Big Bend National Park, Texas, USA.

Saguaro National Park, Arizona, USA.

A desert is a landscape that receives little rainfall. They have a reputation of harbouring little life, but that depends on the kind of desert; in many there is abundant life, vegetation is adapted to low humidity and fauna usually hides during the day to preserve moisture. The establishment of social groups in the deserts is complicated and requires a significant adjustment to the extreme conditions prevailing in them.

The factors of latitude, altitude, temperature and rainfall, are what determine the microclimate that occurs in it, and whether hot or cold, it is usually unconquerable and it requires maximum precautions when visiting them, dehydration and hypothermia, so dissimilar, could be life-threatening consequences when in a desert.

summary ↑

Volcán de Colima, Colima, México.

Orion en el cielo de Coahuila, México.

Nation Monument of Navajo Tribal, Utah, USA.

Sierra de Arteaga, Nuevo León, México.

summary ↑

"Pueblo Fantasma" en Real de Catorce, San Luis Potosí, México.

Chisos Mountain, Big Bend National Park, Texas, USA.

summary ↑

Saguaro National Park, Arizona, USA.

Chisos Mountain, Big Bend National Park, Texas, USA.

Dunas de Yeso, Cuatrociénegas, Coahuila, México.

La constelación del Escorpión en el cielo de Arizona, USA.

White Sands National Park, Alamogordo, New Mexico, USA.

White Sands National Park, Alamogordo, New Mexico, USA.

summary ↑

A plant with tuberous roots and with a flattened globular form

Turbinicarpus pseudopectinatus

(Backbg.) C. Glass & R. Foster

Francisco Moreno

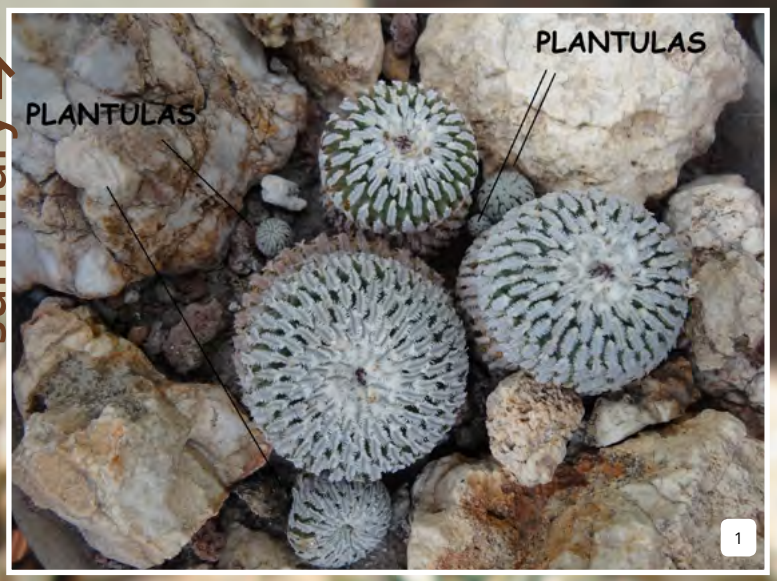
Turbinicarpus pseudopectinatus, *8 years old plant, in partly mineral substrate. The flowering occurs in January and February.*

summary

Turbinicarpus pseudopectinatus, *5 years old plant, in partly mineral substrate.*

I bought my first plants belonging to this beautiful species 16 years ago, and purchasing only two more since. From these I propagated several hundreds of specimens. We're talking about plants with tuberous roots and a flattened globular shape. Personally I am delighted of this species which I am able to propagate quite frequently, on a suitable substrate, the mostly mineral and free of organic matter. In culture, it grows without any difficulties and trying to avoid rotting doesn't pose a challenge.

summary



2

1 & 2 - When light conditions, protection, moisture, and substrate temperature are adequate, the seeds that falling in the pot between plants germinate in November and grow seedlings, like a "natural regeneration", simply proportional to the number of seeds I cannot collect but are reaching the soil surface. Perhaps if they would fall all, the pots should be full of plants.. 3 - In some years, the flowering is more abundant; waxy buds in the morning.

summary

summary ↑

1 & 2 - Full flowering of distinct T. Pseudopectinatus *plants.*

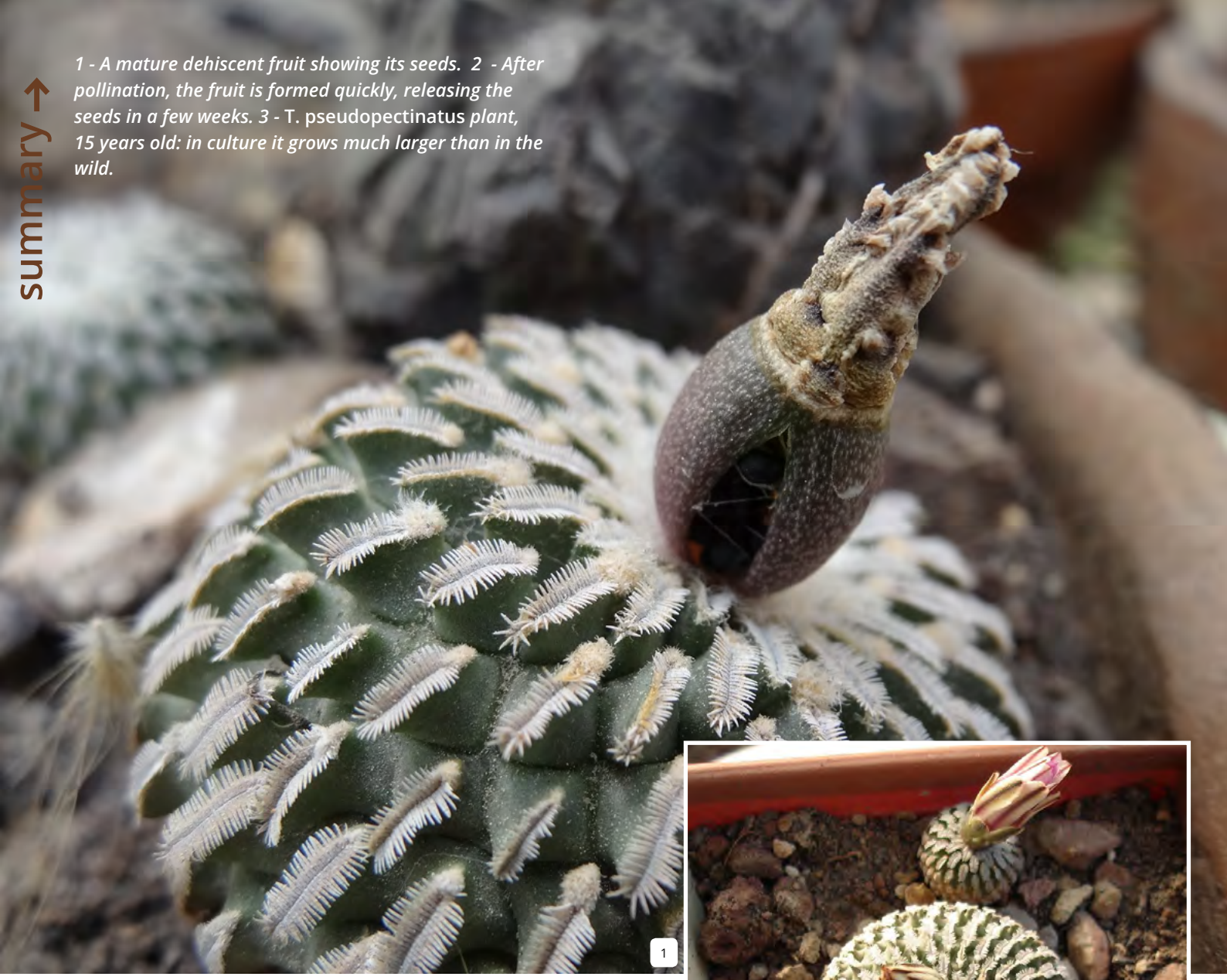
1

2

summary ↑

summary ↑

1 - A mature dehiscent fruit showing its seeds. 2 - After pollination, the fruit is formed quickly, releasing the seeds in a few weeks. 3 - T. pseudopectinatus *plant, 15 years old: in culture it grows much larger than in the wild.*



summary ↑

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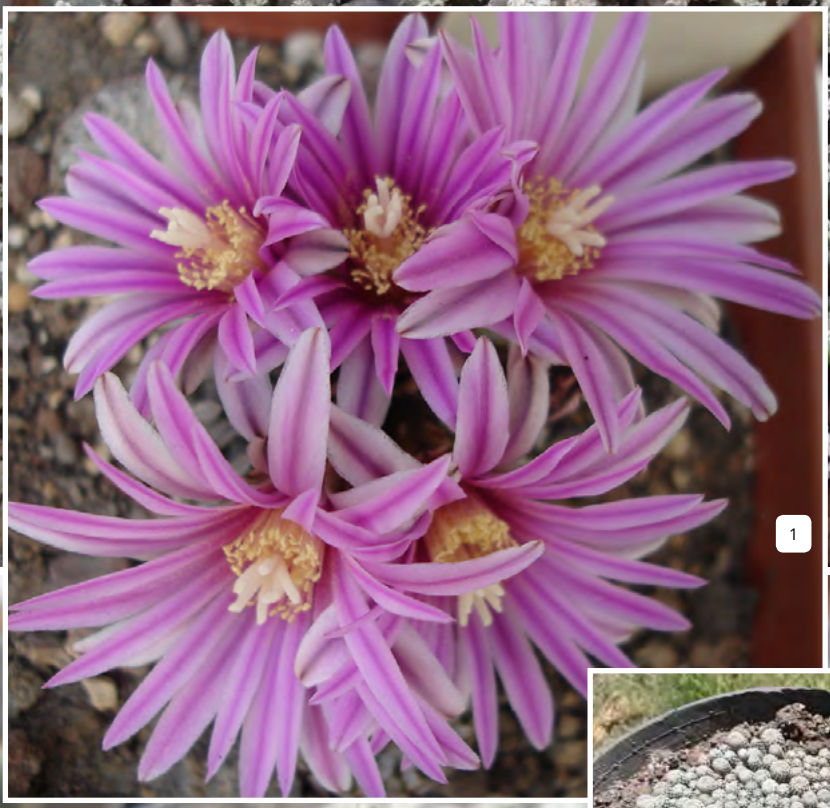

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3 4

1 - An adult plant. 2 - T. pseudopectinaus seedlings, 8 months old. 3 - Same seedlings 19 months old. 4 - They are easy to propagate if the conditions are right.

1 - T. pseudopectinaus *plants, 3 years old. 2 - A sloppy pollination and hybrids with* T. valdezianus *are quite a common occurrence as both species are flowering at the same time. 3 - Adult* T. pseudopectinatus *in full flower.*

summary

1 - The flower buds open midday. 2 - Pectinate spines and flower bud. 3 - Four years old T. pseudopectinatus *plants which I have allowed to dehydrating enough, with the sole purpose of permitting to bury themselves in the substrate, as they do in habitat.*

1 2

3

summary

summary ↑

1

2

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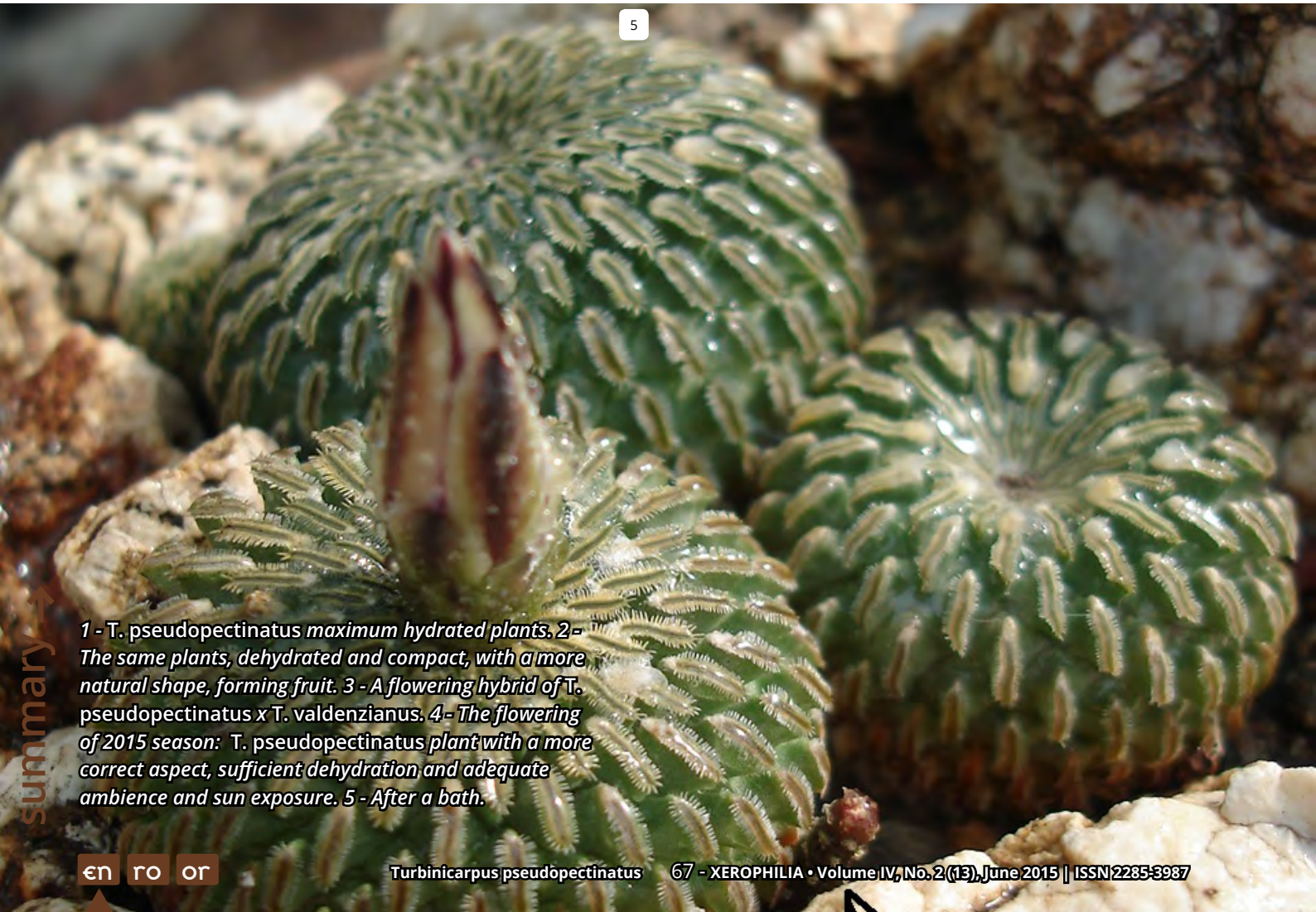


5

1 - T. pseudopectinatus *maximum hydrated plants. 2 - The same plants, dehydrated and compact, with a more natural shape, forming fruit. 3 - A flowering hybrid of* T. pseudopectinatus *x* T. valdenzianus. *4 - The flowering of 2015 season:* T. pseudopectinatus *plant with a more correct aspect, sufficient dehydration and adequate ambience and sun exposure. 5 - After a bath.*

summary ↑

The splendid T. pseudopectinatus, *it's undoubtedly one of the greatest joyS of the genus* Turbinicarpus*: beautiful form, incredible flowers and fabulous spines!*

An interviw with

Davide Donati & Carlo Zanovello

Mihai Crisbășanu

Davide Donati, born in 1975, is a naturalist par excellence. Fish pathologist and botanist, he has devoted part of xerophyte plant research. Years of exploratory areas and seldom missed beaten the foot of man led to the discovery of several xerophyte new plant species, which he described in botanically.

Davide Donati was first co-editor and, more, later editor and scientific director at the Italian magazine "Piante Grasse". Today he is Editor and Director of the prestigious online journal Acta Succulenta.

He has written numerous scientific and popular articles, in both Italian and foreign magazines and is also the author of "Principi di Alimentazione per Tartarughe e altri rettili erbivores", 2010.

Davide Donati lectures and seminars about xerophyte plants, about fish pathology and biodiversity and currently teaches at the University of Bologna, training and awareness for aquarium-culture and aquarium.

Carlo Zanovello, born in Barbarano Vicentino in 1947, was interested in succulents since 1967.

Finished Physics in 1973 from the University of Padua, but he did not abandon his passion for "Plant fat" and in particular for Turbinicarpus. He It was one of the founding members of Associazione of Succulent Italian Amateur (AIAS) and for the first five years, with his friend Luciano Battaia, co-editor of the Journal AIAS "Piante Grasse" also published during the years, many articles in Italian and foreign journals, mainly about Mexican cacti. It is also author of "Alia scoperta di cactus preziosi", F. Muzzio ed. (1992), about cacti in Sierra Madre Oriental, Mexico and co-author, along with Alessandro Mosco, of a remarkable article on Thelocactus genus review. He made several travel in Mexico, focusing primarily habitats of the genus Turbinicarpus and rediscovering habitat Turbinicarpus ysabelae, lost for over 50 years.

summary ↑

summary

Carlo Zanovello and Davide Donati wayting for me...

Davide Donati and **Carlo Zanovello** wrote together a few successful books: " Capire, conoscere, coltivare i Turbinicarpus-Rapicactus" in 2005, translated into German and English, "Epithelantha" in 2011 and "Echinocactus" in 2011

Knowing that at the end of March, I will travel to the country, via Italy, I arranged a route that allowed me seeing old friends, meeting new and interesting people and gather a few plants for a longer collection.

Unfortunately, what was planned to be the most important call of my heart had unexpectedly. My initial disappointment, however, was cancelled by the extraordinary two people that I met, which I will try to present you in the pages that follow.

Due to sound deficiencies however, we are able to present only the transcript of the movie I made. I would have liked to be added!

Thank them once in this way, to Carlo for a very warm reception and for the gifts received; to Davide because he travelled more than 300 km, especially to come help me in making this interview!

I hope to see them again soon!!

M.C.: *Hello Davide, hello Carlo, how did you become so passionate about cacti and succulents plants? How did you meet each other, in what circumstances? What brought you together?*

D.D.: I was always fascinated by plants since I was a child, mainly cacti. Then in 1999 I've been here for the first time (n.ed. Carlo's greenhouses), just to buy some plants. In 2000 I've been here again, in the late autumn, but an unexpected, terrible snowstorm blocked me here and I had to sleep in Carlo's home... that night we spoke a lot about plants, cacti, *Turbinicarpus,* noticing that we agreed about many thing and we shared some "crazy" ideas about them. This is the story. Since that day we studied many subjects together, I learned a lot from him and, over time, Carlo became almost a father to me.

M.C.: *And how about you Carlo, it was Davide who brought you in into this business for knowing cacti better and studying them or it was already your passion?*

C.Z.: I started in my passion as a collector in 1967 when I was 20 years old, then I grew thousands of succulents.

Fifteen years ago Davide visited our nursery and I discovered in him a beautiful mind and a potential "cactologist". I have to say that he motivated my interest in cacti and succulents, captivating me with his ideas.

M.C.: *So, in the end, you both decided to put all our knowledge at work and to combine your field trip experience and your interest for studying Mexican cacti, which has been materialized in writing the books on different Mexican cacti...*

summary

summary

So different, but so alike, these two good friends could be, for whosoever, not only an inexhaustible source of knowledge, but the mentors for a new generation of peoples who love the plants, the life, the Nature itself…

D.D.: Sure, then don't forget that Carlo has already been many times in Mexico in the 1980's and 1990's, looking for cacti. He taught me a lot of things with his expertise.

M.C.: *As a matter of fact Carlo, you already revolutionized the genus* Thelocactus*, proposing a new classification together with Alessandro Mosco.*

C.Z.: Our work was primarily based on Alessandro Mosco's studies and secondarily on my own contributions.

M.C.: *Carlo, in the meantime you have revised several groups of Mexican cacti together with Davide, by genus and by species, publishing books on* Epithelantha, Echinocactus, Turbinicarpus*… so what's going to be next?*

C.Z.: (laughs) I am old and already got over these things, so Davide will continue the work…

D.D.: Presently I am working on opuntioids cacti, but also on the genus *Sempervivum* and other plants.

There are a lot of things yet to find and to discover about *Sempervivum*, and in my opinion there are still many things to discuss about *Turbinicarpus* as well.

M.C.: *However, the base is already set for the species you are studying… the books cover for me and for many others readers the main area of interest and definitely cover the basics…*

D.D.: Thank you, but I think that in the light of the new, recent discoveries, which are actually filling the gaps and linking many taxa one to each other, it could be time for a new approach to the genus.

Anyway, Mexico is extraordinary from a biological point of view, biodiversity is incredible there, in some areas plant communities can completely change every few km.

M.C.: *So, Davide, do you intend to continue your scientific work in the same area, or do you intend to expand and take other field trips and perform studies on other cactus genera? Will you be focusing on other Mexican cacti or on* Sempervivum*?*

D.D.: I don't know, it depends also on the University of Bologna. I'm working also on hydrophytes since many years.

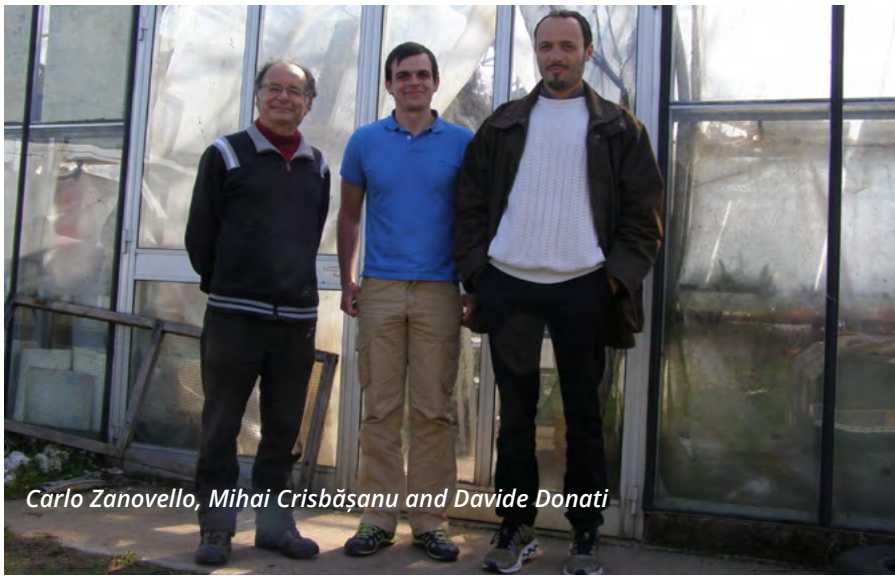
Looking for plants I've had many field trips in Europe, Middle East, Indochina, Africa, Americas, and Mexico is so extraordinary… there are still so many things to see!

summary

In the mean-time, Carlo returns with the book...

1, 2, 3 & 4 - Fabian's hardies.

One of Carlo's greenhouses



Carlo Zanovello, Mihai Crisbășanu and Davide Donati

C.Z.: One of the most interesting works I did is a book, distributed only in Italian language in 1992, where I was focusing on a small area of Mexico, distributed on the States of Coahuila, Nuevo Leon, Zacatecas, San Luis Potosì, Tamaulipas, Queretaro, Guanajuato and Hidalgo and having the shape of a seven. In this area the density and the variability of succulent species is incomparable with any other desert and in this "Seven"... just a moment (Carlo enters the glasshouse).

M.C.: So, *Davide let's use this unexpected break, and tell what you already told me about your collection. (both Davide and Mihai are laughing).*

D.D.: Well, I am not a true collector (in the mean-time Carlo returns) I am very short of some group of plants... I will tell you later.

C.Z.: (shows the book) ...here the concentration of species is incredible.

M.C.: *You still have this book for sale, Carlo?*

C. Z.: No, I'm sorry it is sold out.

M.C.: *If one time you come across a copy or if you decide to reprint it, I am interested.*

C.Z.: At that time, I was the first to report the exceptionality of this "Seven", now many people know much more about it, but after almost twenty five years, despite the advanced knowledge, the importance of this area is still underestimated in my opinion, and the importance of its plant communities as well.

M.C.: *Yes, this is very little known. Tell me Carlo, nowadays you are combining the passion with business. You have four greenhouses; you already set up a business, what was behind your idea to combine them?*

C.Z.: I was a Physics teacher, and then I retired. When my wife lost her work, we thought to transform this hobby in a business. We started as a small business, but small from an economic point of view.

M.C.: *So, you put to good work your knowledge, in order to continue and to pass the knowledge, this is very interesting. Now are you pleased with it, have you succeeded from your point of view, are you OK with your work until now?*

C.Z.: Yes, it's OK.

M.C.: *Davide, now please tell me few words about your collection?*

D.D.: I don't have a true collection. I just grow few plants that are important for my studies, quite far from here, some 150 km (I live in Bologna): I gather some morpho-physiological observations, I cut them if needed, I use their roots... We cannot call it as "a collection"; I simply use them for my studies. But I'm growing some cacti, a kind of souvenirs of my past studies.

M.C.: *As I said before that is the future, that brings us to the development of another type of knowledge...*

D.D.: Absolutely!

summary ↑


Gifts fromCarlo!


Gifts fromCarlo!


Gifts fromCarlo!


Gifts fromCarlo!

M.C.: *... because collections and just collecting plants for fun and for their aspect, there are many reasons... but to study them in a systematic way is quite rare. So, Carlo, you are the true collector here! (both Carlo and Mihai are laughing) How did you start you collection?*

C.Z.: My collection started with a *Chamaecereus silvestrii*, a tiny plant, with a gracious flower, and this flower actually attracted my attention, and from here...

M.C.: *That was many years ago, I suppose.*

C.Z.: Yes, that was over 40 years ago.

M.C.: *Forty years...! (n.ed. Mihai is much younger!) How many plants?*

C.Z.: Hundred thousand, I think... in all the greenhouses, ten thousand mother plants altogether.

M.C.: *Do you have a message for our readers?*

C.Z.: My message is: Love the Nature, in all aspects, not only from a collector's point of view, which is a lower aspect primarily, and with attention and observation capacity.

D.D.: Me?

M.C.: *I don't know... (Laughs)*

D.D.: Be curious! And be patient! If you see someone who walks on your field and takes a look on some rocks: that would be me, I'm sorry, I'm looking for plants or something else!

M.C.: OK, thank you both.

Note: Sending this interview to Davide Donati for revision, our Editor, Eduart Zimer, asked him some supplementary questions. Davide had the kindness to answer.

E.Z.: *Let's assume you just want to start a new hobby; putting aside, cacti, succulents, generally plants... what else would you do? Do you have strong interest in any other disciplines?*

summary ↑

There are not only cacti in Carlo's greenhouses!

D.D.: Fishing, Tae Kwon Do, trekking, swimming... and reptiles, amphibians, fish, invertebrates, I've a degree about their breeding and their pathologies, I spent two months in a remote area of Vietnam for the University Internship. But it doesn't matter...

E.Z.: *You seem to be very interested in your work particularly in Mexican cacti, and Euro-Asian succulent flora (e.g. Sempervivum); is it any connection, as far as you are concerned and not necessarily from a botanical point of view, between the two rather different group of plants?*

D.D.: Yes, many of them grow in remote, difficult and sometimes dangerous areas, little explored, above all from a botanical point of view. A lot of things are waiting to be discovered.

E.Z.: *As we all know, nature is under huge pressure... extensive land use for agricultural or industrial purposes, destructive and uncontrolled logging, expansion of urban areas, biological invasions of all sorts, habitat looting and over-collecting, global warming (man-made or natural), and so on... do you see any positive outcome in this gloom and doom story? Or is it only a matter of time until the entire planet will be covered in "generic vegetation"?*

D.D.: Yes, this is the problem...

Nature could recover quickly if changes aren't important, even in few decades: frogs, green lizards, owls and hawks were rare in many parts of Italy until a decade ago, because of heavy pesticides and pollution, but now, with products of new generation, they are widespread and very common again. Talking about cacti, a population of *Turbinicarpus schwartzii* was almost completely collected, but now, without any collection of plants, it's full of specimens. I can cite also *Ariocarpus bravoanus*, after its discovery it was told that *A. bravoanus* was on the brink of extinction because of the illegal collection, even a sort of cage was built in habitat in order to protect a group of plants. Now the (unattended) cage is empty, but tens of thousands of plants are growing in the area.

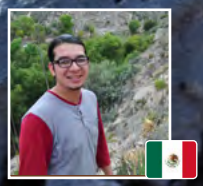
When the human impact is heavy, when changes are irrecoverable, the world around us changes forever. Honestly speaking, I don't see positive outcomes in this story; we are consuming any resource available.

The human approach to the world must change!!

Mammillaria senilis salm-dyck

in Baborigame

Connoisseur's Notes



Ricardo Ramirez Chaparro

Summary

I would like to thank to

Mayra Cristina Pérez

who has supported me through time and has accompanied me in these cactus journeys and trips. This article is dedicated to you.

This cactus species grows on oak-pine forests in the states of Chihuahua and Durango in the Sierra Madre Occidental in México. To access the population from which we speak here, you have to go to the small town of Baborigame. This village is located in the municipality of Guadalupe y Calvo, Chihuahua which is at 1800 metres high and, as stated earlier in pine-oak forest, with mild and rainy weather in summer

From the city of Chihuahua, it is a 10-hour journey by car, where you wander deep into the mountains of the Sierra Madre Occidental. The last 70 km are a precarious dirt road that leads from Guadalupe to Baborigame in a bumpy 3 hour ride. This makes the access to the locality somewhat difficult and not many tourists visit the area. There is also the possibility of arriving by air, taking a small airplane in the municipality of Guachochi, or in the city of Parral, which considerably shortens the time of arrival, a 45-minute flight from Parral and 15 minute flight from Guachochi, allowing a beautiful view of the deep Sinforosa Canyon. The municipality of Guadalupe y Calvo borders the states of Durango and Sinaloa.

Summary

Once in the town, you just have to enter the forest and find the type of habitat they prefer: this is on slopes of steep rocks; at the highest points, the plants are often solitary. They are rarely seen growing on the forest floor, but can happen. Canyons formed by igneous rocks are usually their favorite places, as these provide the high peaks and steep slopes where the species develops and is not suppressed by competition from other species.

This *Mammillaria* regularly grows in the organic matter formed by dead leaves from trees like pine and oak, grass and debris that are deposited between the rocks, and eventually forming on the rocks over time. It is in this soil where seeds settle. Once the plant grows its branched roots helps to keep in unit the substrate, which for obvious reasons is rich in nutrients and organic matter.

To settle in this type of substrate, in its way, it makes cacti to gradually gain ground to the rock and in this way form more organic material; as older plants die they lthey too become organic material that after will serve as substrate for future plants. You can also watch these growing among large concentrations of moss in those slopes.

It is noteworthy that they are sympatric with *Echinocereus scheeri*, growing in the same slopes, although *Mammillaria senilis* regularly prefers higher and sometimes inaccessible cliffs, it is also common to see them in the same space growing side by side.

summary

M. senilis is sharing its habitat with two very beautiful species of the genus *Echinocerus*: The red flowering *E.* aff. *chaletii* and the orange flowering *E. scheeri*, all of them growing at few meters one from the others.

summary

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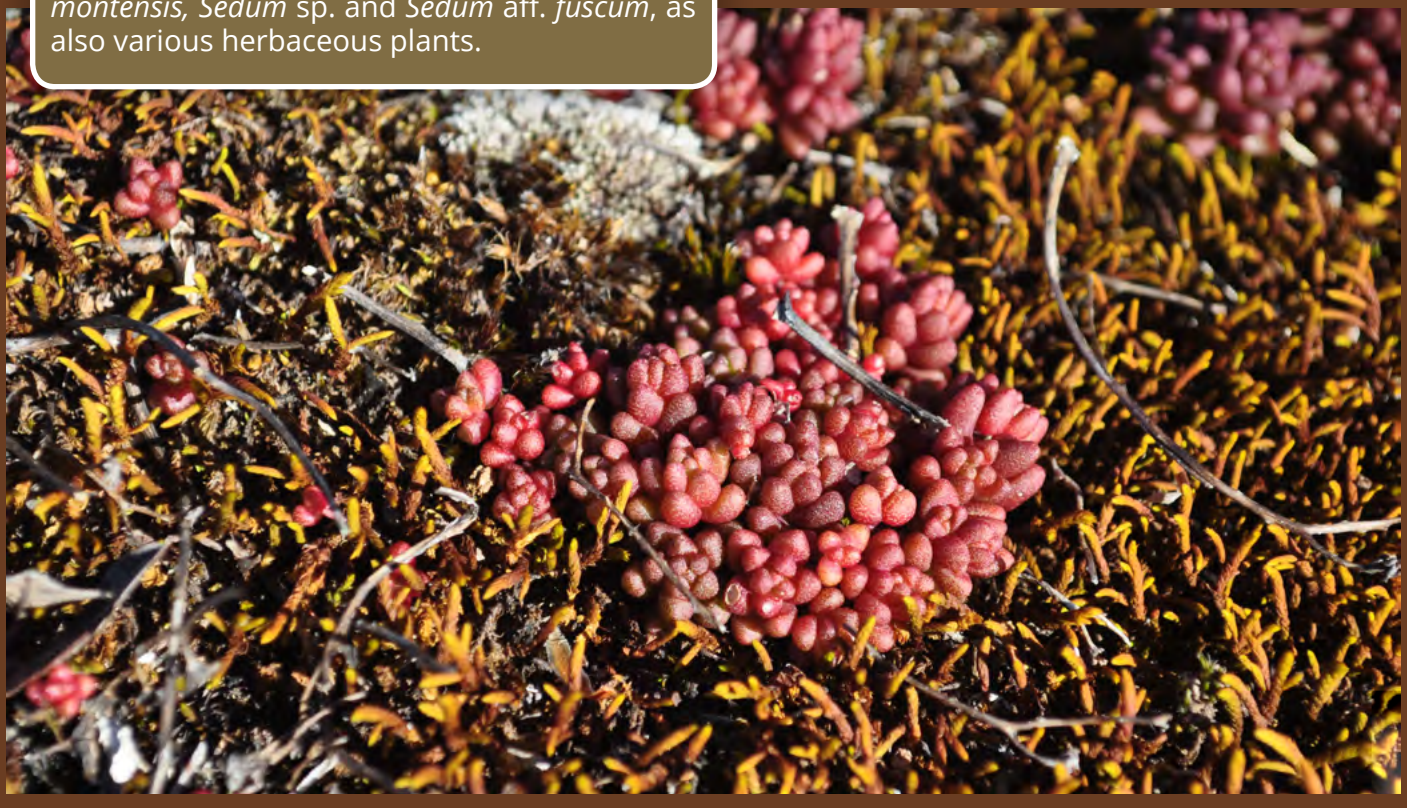
In other places I have seen *M. senilis* growing beside *Echeveria chihuahuensis*, *Mammillaria montensis, Sedum* sp. and *Sedum* aff. *fuscum*, as also various herbaceous plants.



The Agaves that share this mammillary habitat are present, very visible, and with a great ornamental power. From place to place, they sink their roots among the rocks and cliffs, sometimes remaining suspended in the void.

1 & 2 - Agave poliantiflora. *3* - Agavae schidigera.

summary

In the islands of organic matter produced by fallen leaves on the same rock, next to the *Mammillaria senilis*, you can see growing lichen, moss, ferns, grasses and other cacti.

summary

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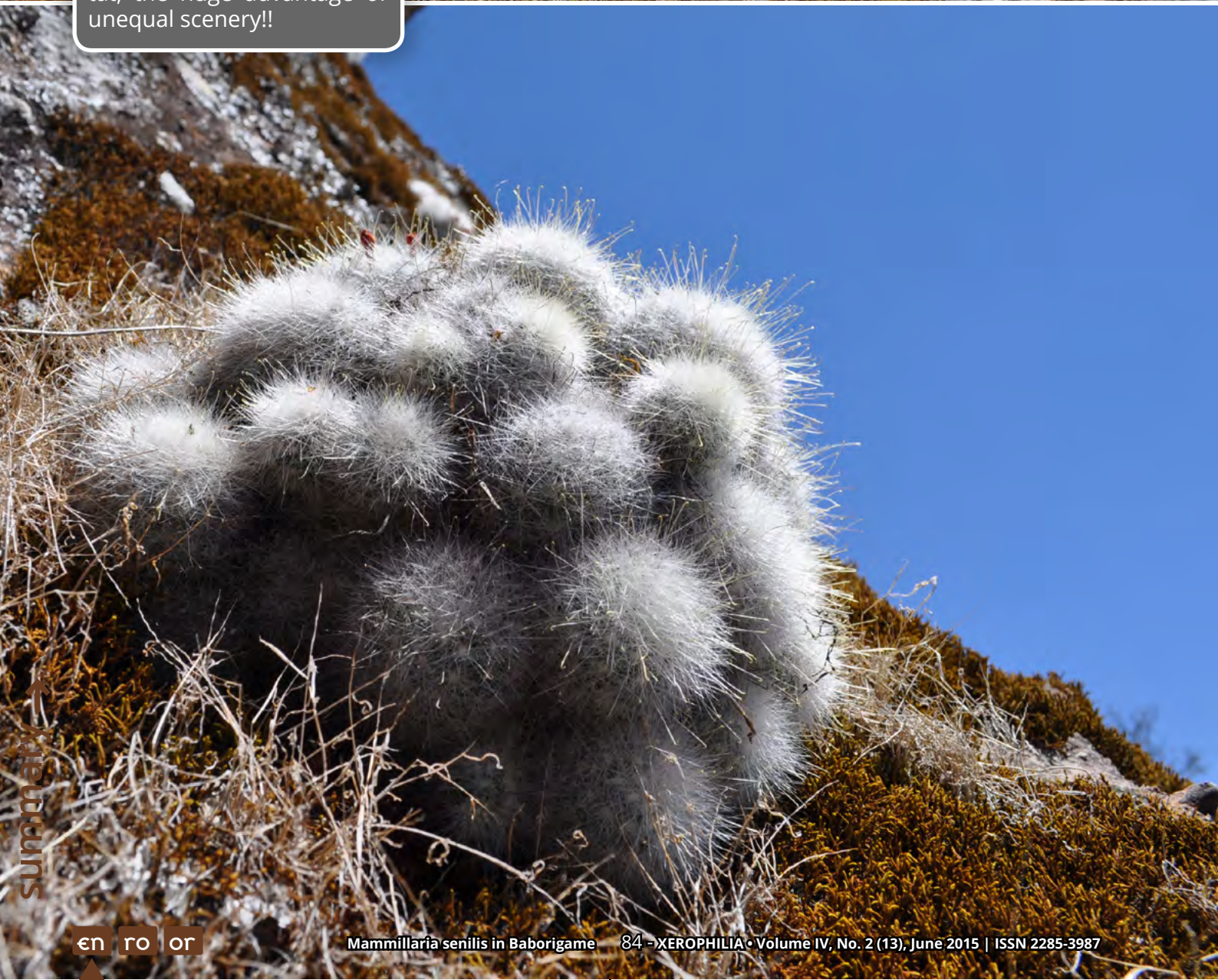
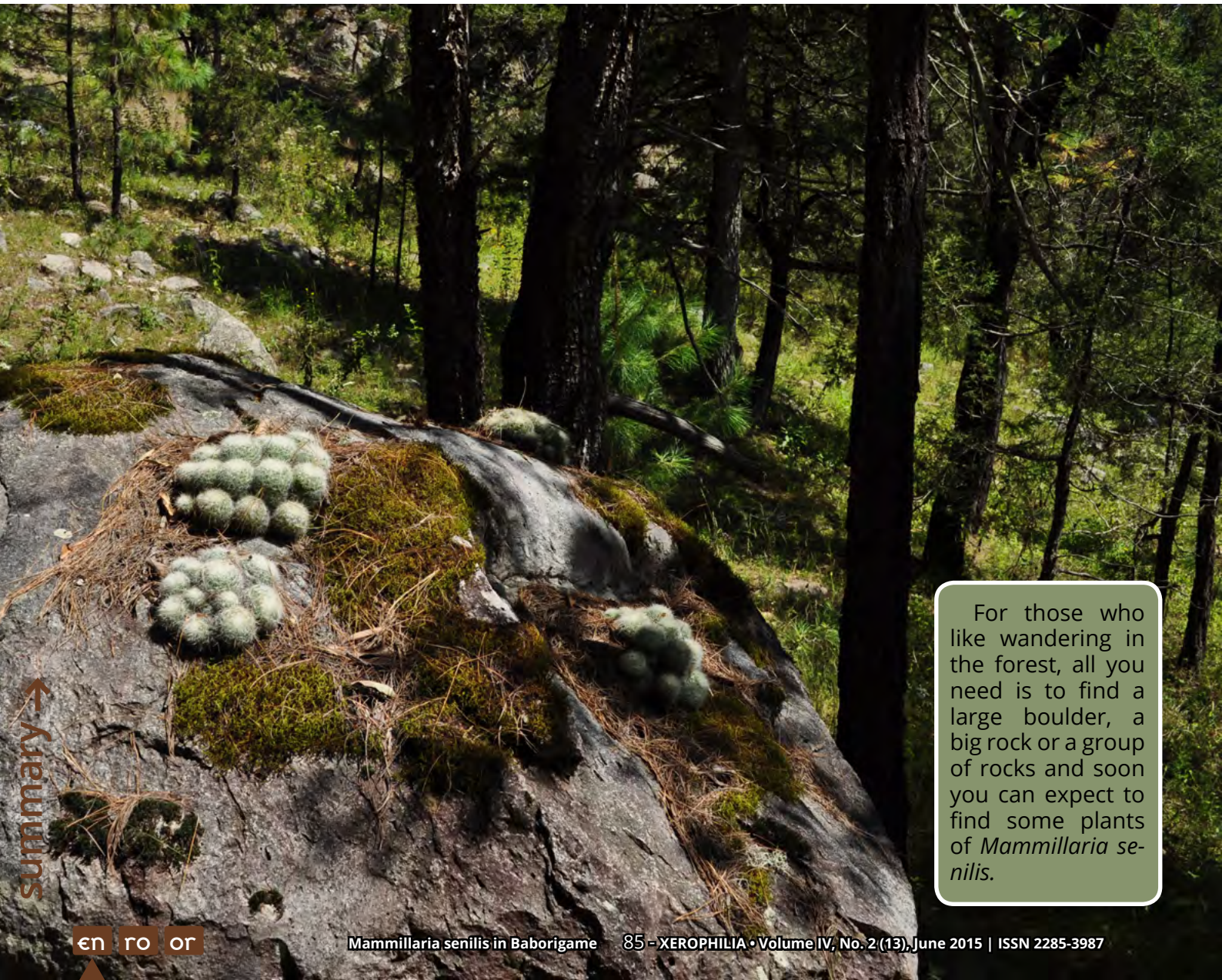
They can be found growing on these slopes in groups, forming colonies or as solitary plants, although the trend seems to be to grow in groups forming colonies. So, when you find a plant its very likely that you´ll find many more nearby. Sometimes it is difficult to observe and photograph these plants, precisely because of the habitat they prefer, as the stone walls where they grow can sometimes be very high and the only way to access them, would be by rappel or climbing.

summary

These plants so splendid in collections have in habitat, the huge advantage of unequal scenery!!



Plants grown on moss are always strong.

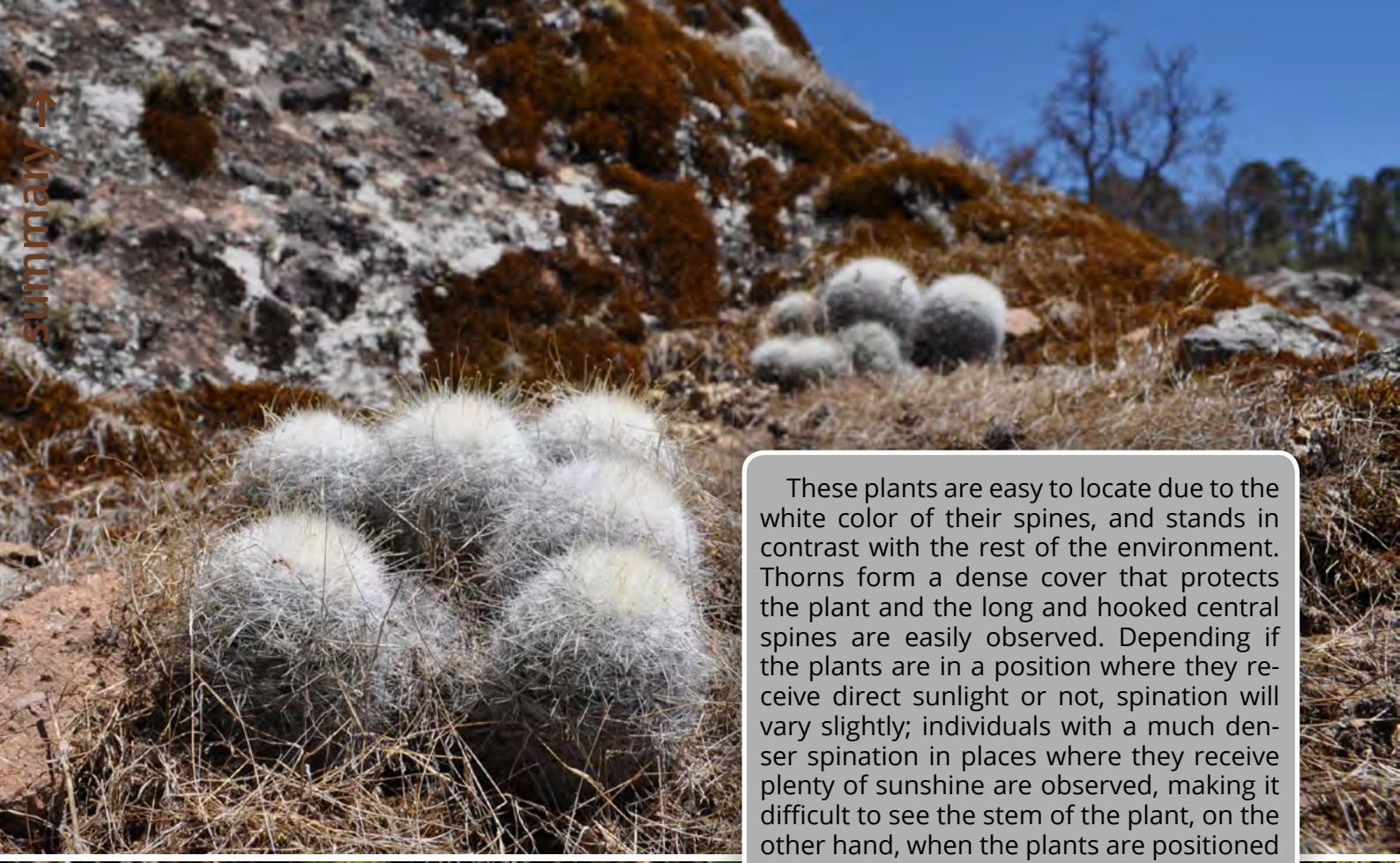


For those who like wandering in the forest, all you need is to find a large boulder, a big rock or a group of rocks and soon you can expect to find some plants of *Mammillaria senilis.*

It is common to find offshoots near adult plants, or young individuals with older ones, which may indicate that populations are stable. Plus the fact that they are fairly common in their habitat.

The moss is extremely useful to young plants, keeping the moisture they need and protecting them in the early months of life from a burning sun.

summary ↑



These plants are easy to locate due to the white color of their spines, and stands in contrast with the rest of the environment. Thorns form a dense cover that protects the plant and the long and hooked central spines are easily observed. Depending if the plants are in a position where they receive direct sunlight or not, spination will vary slightly; individuals with a much denser spination in places where they receive plenty of sunshine are observed, making it difficult to see the stem of the plant, on the other hand, when the plants are positioned in the shade, show a less dense spination, and showing a greater degree of the green stem of the plant.

Fruits are pinkish-brown capsules with black seeds inside. Seeds are probably scattered by ants or other insects that come to taste the sweet pulp of the fruits.

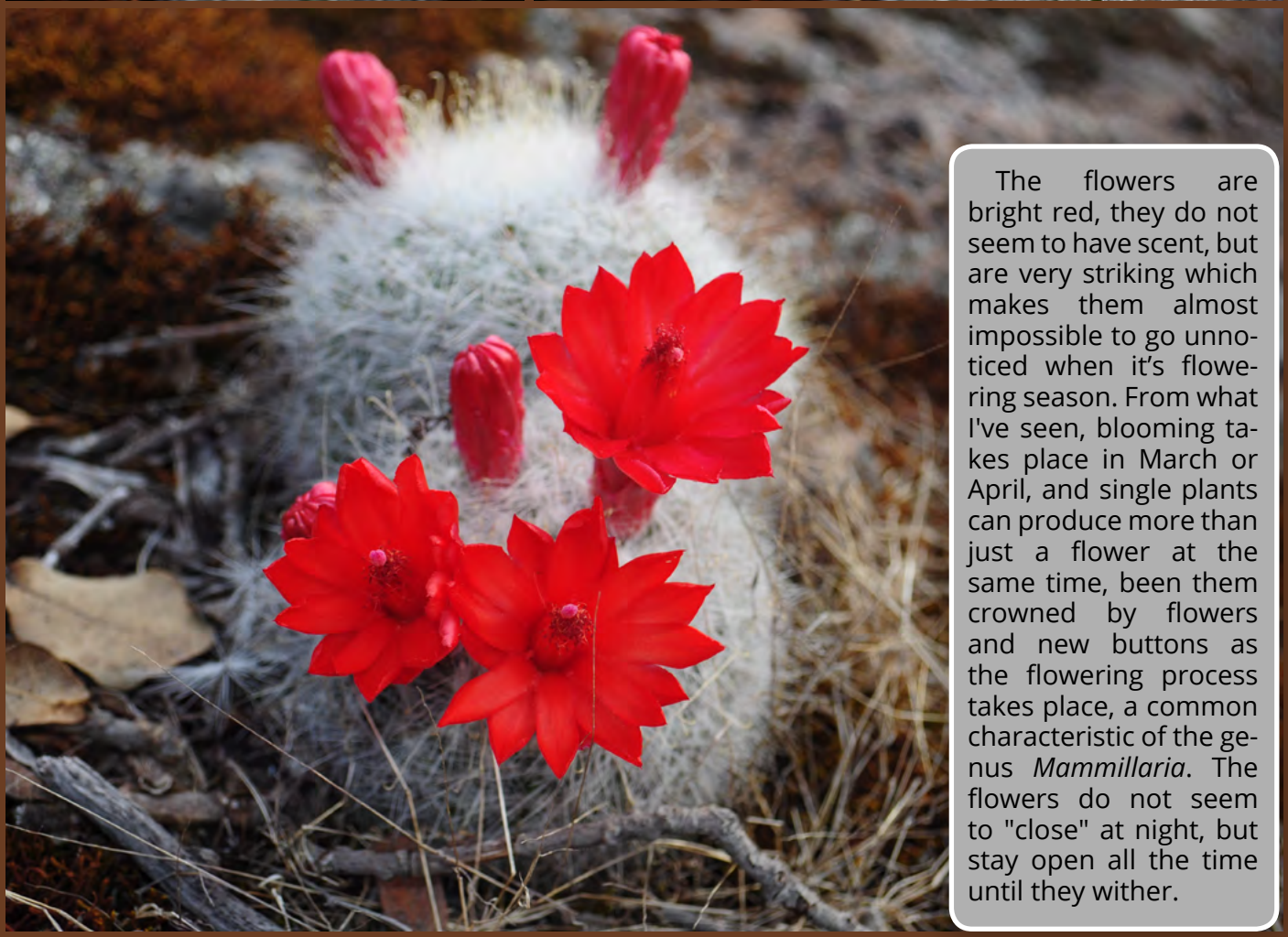
↑ Keywords

Growing in the shade is favouring the development in height, of the plant stems, giving them a look that you will not be able to ever meet in plants grown in full sun.

summary

Mammillaria senilis typical situation consists of a rock, in whose recesses gathered pine and oak leaves, moss, allowing a colony to form a healthy plant that flourishes and fructifies.

summary



The flowers are bright red, they do not seem to have scent, but are very striking which makes them almost impossible to go unnoticed when it's flowering season. From what I've seen, blooming takes place in March or April, and single plants can produce more than just a flower at the same time, been them crowned by flowers and new buttons as the flowering process takes place, a common characteristic of the genus *Mammillaria*. The flowers do not seem to "close" at night, but stay open all the time until they wither.

Dominating the valley from high cliffs...

summary ↑

Under the first rays of the morning sun.

No matter how the slightest organic soil should be gathered on the rocks and boulders, it is clear that the plants prefer the solid support, sometimes inaccessible, but poor, than the rich soil of the forest.

summary ↑

The NOM-059-SEMARNAT-2010 lists this plant in category “A”, as threatened. However, these plants are quite common within their habitat, once the characteristics desired by the plant are found, it is almost certain to observe them on the slopes above. Although it´s common presence in the forest, it seems to be a selective kind of cacti, because you can walk for hours in the forest without seeing a single plant, but finding the right conditions they are quite common.

Perhaps it is a good thing these plants are only found in the deep canyons of the Sierra Madre Occidental, and not many people know about them or the localities where they grow, all these factors can help protect the plant from illegal looting allowing the species to continue its course without human pressure.

At last but not at least, I would like to thank the Xerophilia team for the oportunity to contribute with free knowledge sharing.

summary ↑

About the unexplainable dynamic of some cacti

Dag Panco, *text and photos &* **Valentin Posea,** *story and photos*

1 - Eriocactus leninghausii, *Leni, between* Eriocactus varasii *and* Eriocactus magnificus. *2 -* Toumeya papyracantha, *flowering in Valentin's collection.*

Most novice cactus collectors learn, at about the same time with "take care of how you water them", also the fact that they deal with extremely slow growing plants, where changes can be hardly seen and only by the eyes trained for their imperceptible changes. For most of us, cacti are just being "motionless".

Next I will present you two exceptions, two ... dancing cacti. One of them was part of my collection, while the other was part of Valentin Posea's collection, one of the founders and editor of the magazine.

summary →

summary ↑

First case – photos from 2004: *Eriocactus leninghausii* (K.Schum.) Backeb. ex Schaffnit

Who is not familiar with this species which is easy to grow, not rare at all, but when it exceeds a certain size, it becomes - without a doubt - a pride for every collection?

In 1942 Curt Backeberg classified this species within the genus *Eriocactus*. Forty years later, F. H. Brandt reassigned it to *Parodia*. For various practical reasons and because, in confidence, I had a total indifference to the fratricidal struggles of taxonomists, either splitters or lumpers or undecided, I preferred to stick to the name *Eriocactus*. This was the botanical name I took the freedom to use it here, partly because I like it more, and partly because freedom is fashionable. Otherwise, conversant, I call the plant in question Leni - but the reason remained an intimate matter between the both of us.

In the summer of '89, a crow nibbled through its "haircut"; being back then less on the ball as I am today, I treated it only with coal dust; it remained an ugly black scar which, twelve years later, was still visible slightly above the first third of the stem

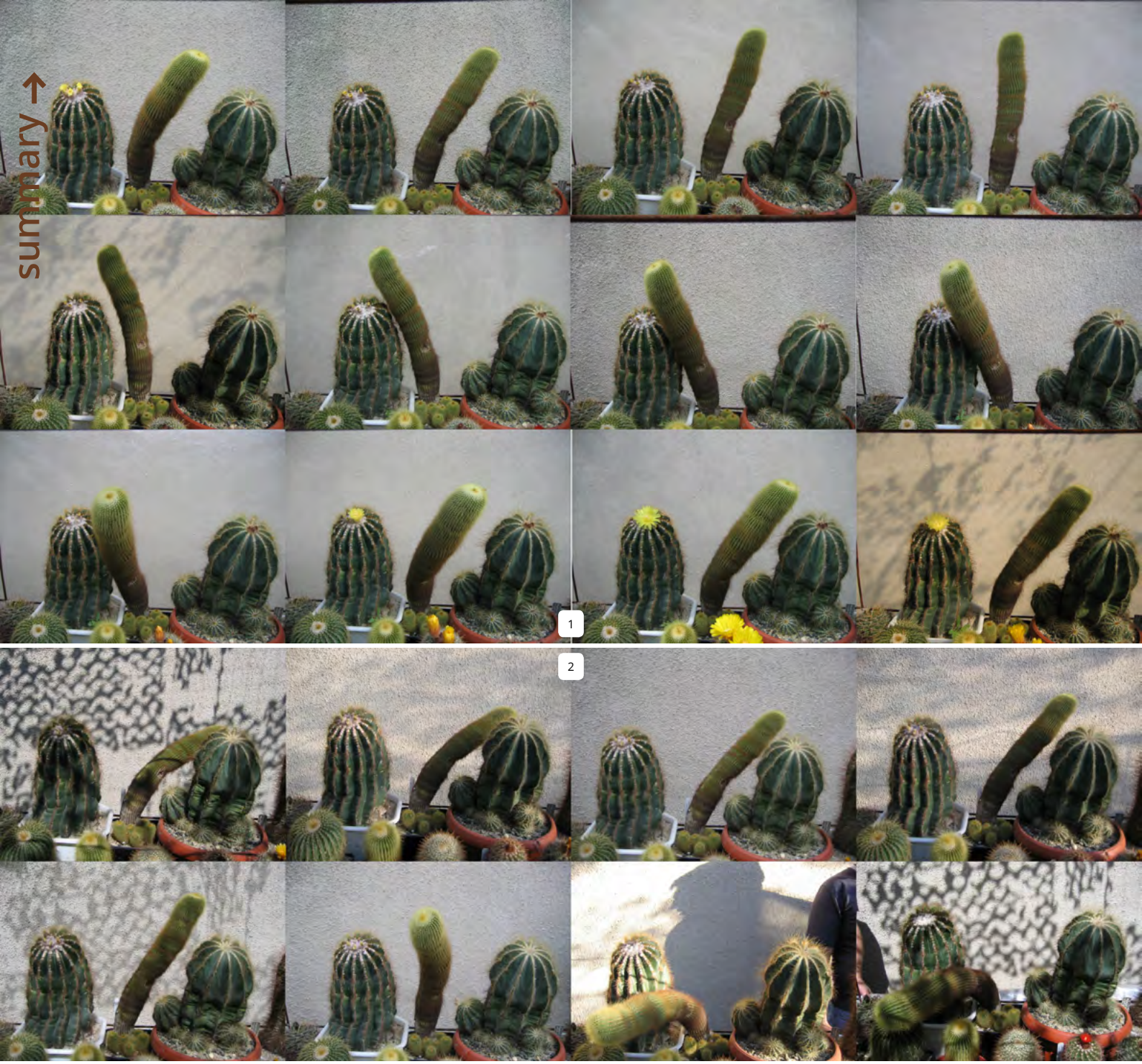
1. The Parodia *table; in the back Leni and his two years younger brother.*

... In 2004 Leni was over 20 years old (1981). It wasn't grown in a rich soil, nor benefited from contributions of NPK and micronutrients neither. Back then I used for Eriocacti an almost classical soil, well drained, slightly acid, based on a so called "forest earth" (natural compost of leaves) up to approximately 40%.

It is worth mentioning – in relation to the following photographic presentation – that neither this year, nor in previous years, I have not seen and even less, could demonstrate, any correlation between Leni's phantasies and any of the following events: repotting, watering, atmospheric humidity, precipitation, temperature, sun exposure or noise. I do not know if Leni's action is linked to the phases of the moon - the idea just came to me when I was writing these lines, few years after I stopped growing plants. Somehow neither seasons seem to have been involved, although it is clear that Leni was more agitated during the grow-

summary ↑

summary ↑



ing season. However, he did not remain immobile during his winter rest; his movements were just very, very slow.

In short: a columnar cactus, some 38 cm high, performs 360 degrees gyration movements (clockwise or counter clockwise – as if it was depending on the mood) and "bowing" forwards and backwards, steady, but not constantly. Sometimes it moved so little in a few days that you almost couldn't notice, sometimes "gushing", moving with several centimetres within a few hours. Leni set some records in 2004: a complete gyration of 360 degrees, horizontally, in 14 days between May 27th to June 9th; in a period of four days, between May 4th and May 8th, it managed to bend from the rear to the front, performing an arcuate distance in the vertical plane, roughly on the east-west axis, of nearly 180 degrees.

1 - The first 12 photos, showing a turn of 360° in the horizontal plane between May 27 and June 9, 2004.
2 – An 8 pictures oscillation in a vertical plane about 180°, between May 4 and May 8, 2004.

I have another plant of the same species, (see photo), two years younger, maybe a different form or coming from a different location, shorter (approx. 30 cm) and thicker, similarly grown, having a single offset, which flowers profusely every year and did not move at all, not even in a storm! However, Leni was driven by his blond head. Since I can remember this plant (1986), it did not look like the others, without being able to be very specific – it was perhaps taller, maybe it was already moving, but not enough to amaze. Since '92 I started noticing that it was moving very obviously. In '97 offsets

summary ↑

On the 13 and the 26 of May 2004 in approximate intervals of time of seven hours, Leni made some sudden movements, absolutely amazing, the latter being followed by the turn shown on the previous page.

appeared. More and more were appearing, but growing only very slowly – it's visible in the photo as well. But it never flowered and there were no signs that he intends to.

Why seemed Leni to be so special to me? Probably from a personal point of view and entirely subjective, because of the uniqueness of the case and the lack of explanation, I personified subject, seeing him as a whimsy individual.

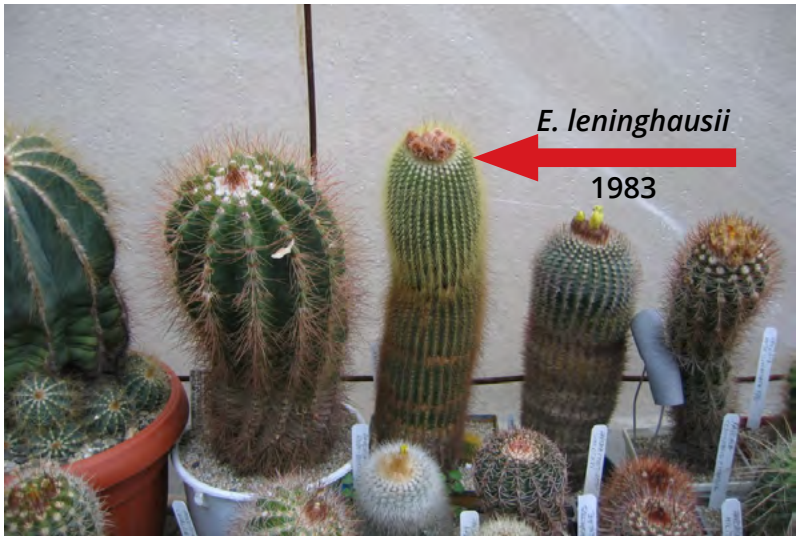
A whimsy woman has charm – if not exaggerating; a whimsy man is simply ridiculous - whatever he does; but a whimsy cactus, well, a whimsy cactus does not exist!!

I did not understand, not even today, the origin of the phenomenon. In over thirty years of growing cactus, I did not see nor hear about another case. I wished very much to hear about plants behaving the same way. Years passed and I did not find anything similar, until the communication which you will read below.

We - as humans - tend to anthropomorphise our impressions concerning the living world. It is

summary ↑

1 - Vertical movement, at vegetation start, inside, between March 13and April 26, 2004. 2 - Vertical oscillation, on May 7, noon and until May 8, 2004 at 7:25. 3 - The second **Eriocactus leninghausii.**



human but unscientific, it is without any support, but ... during the year Leni stood tied between four welding electrodes, in 2002, it seemed to me as miserable as a dry stone would be and I feared that this will kill him - and maybe it was true. In the month that followed his release, he whirled around as if to catch all the lost time.

summary ↑

Six photographs taken every few hours of each other, representing a vertical motion of 90 ° and turning horizontally 180 °, respectively, from August 15, 2010 at 8.39 and August 16, 2010, at 13.49.

The second case– photos from 2010: *Toumeya papyracantha* (Engelm.) Britton & Rose

I was writing in the above lines, with anecdotic flavour, that I wished to hear about a similar case. My wish was fulfilled in 2010 when a plant of our friend and editorial colleague, Valentin, started dancing as Leni, if not more spectacular.

Valentin and I we know each other for a long time (going back to the last century!) and we talked for years about cacti, ways of growing them, taxonomy, observations, failures and successes and lots of other things. So, I know he likes to maintain older names, following the general classification of Curt Backeberg. Adherent of Paolo Panarotto's witticism – "una volta Pediocactus, una volta Sclerocactus, per me solo Toumeya! ", Valentin refused to include Toumeya in genus Pediocactus or in genus Sclerocactus, keeping it as such. I could not say how intimate and romantic is he with his plants, so cannot tell you if, in confidence, he is using a diminutive, as I did with my cactus, and I cannot speculate whether the protagonist of his photographs was cossetted "Tumi" or "Papi" or not at all... Having more of a scientist's soul than myself, I cannot really see Vali pampering his plants...

Beyond laughter and joking, the gyrations and reverences of his plant are absolutely incredible because of their amplitude, relative to the time. If Leni took several days to rotate its august person, Valentin's plant has had just little more than 24 hours for a turn of 180º!

From our discussions, it appeared that until it's being moved Valentin's Toumeya stood in a south-facing balcony, being moved for photos, in a balcony facing east. The difference in number of hours of insolation, relative to when the building overshadow their plants, has been quite high. Valentin takes the view that light is the cause of regime change, although a second plant located near the former did not manifest in any way. Given his experience Leni, who moved anyway and anywhere, I have some doubts.

To Valentin's gallery

The fact is, we're both aware that we know nothing about the phenomenon with which we met and that, therefore, we have no solid arguments to support our views against each other. Therefore, in the end, both Valentin and I launch an appeal to people who have never met such a dynamic unexplained phenomena at the cacti and ask them to send us pictures with few explanatory words. Materials - if they could be sent - will be published in future issues with accurate indication of the authors. Thank you!

I preferred to choose Valentin's uncropped photos, being the expression of the way in which he rigorously classifies and retains, both his collection and the gallery.

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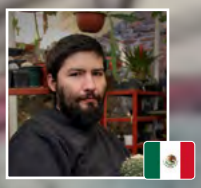
Engravings for

Xerophilia

Xero-Arts



Leo Rodriguez

summary

summary ↑

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Engravings for Xerophilia

summary ↑

Sedum urvillei DC. & *Sedum reflexum* L.

from the natural rezerve of

Hagieni

Constanța, România

Our Readers' Pictures

Mihai Ionescu

The Natural Reserve "Hagieni Park", located in the southern historic region Dobrogea in Romania, is a protected area, having a great flora and fauna. During visits undertaken there and, especially during voluntary sanitation works, which my students and I took there, I met two species of *Crassulaceae*: *Sedum urvillei* and *Sedum reflexum.*

Sedum urvilei

summary ↓

1 - Sedum reflexum.
2 & 3 - Sedum urvillei

In southern Dobrogea, *Sedum urvillei* was located in the Cascaia area, and the natural island formed on the Hagieni water flow, which has its sources in the forest with the same name. Here, the plants meet and grow in an area covered with Sarmatian limestones, generally on exposed cliffs facing west and northwest.

The species has also been located south of Romania, in Bulgaria, also in a Sarmatian limestone habitat, on the Kaliakra Peninsula, just at Cape Kaliacra, about 5 km inwards from the Black Sea.

The second species, *Sedum reflexum*, is much rarer at Hagieni, however, it is more common a few kilometres further north, in the forest of Comorova, and in several areas of the coastline from the north of the city of Mangalia.

Unlike *S. urvillei*, *Sedum reflexum* is not growing on limestone, it prefers the arid soil near the pins.

summary ↑

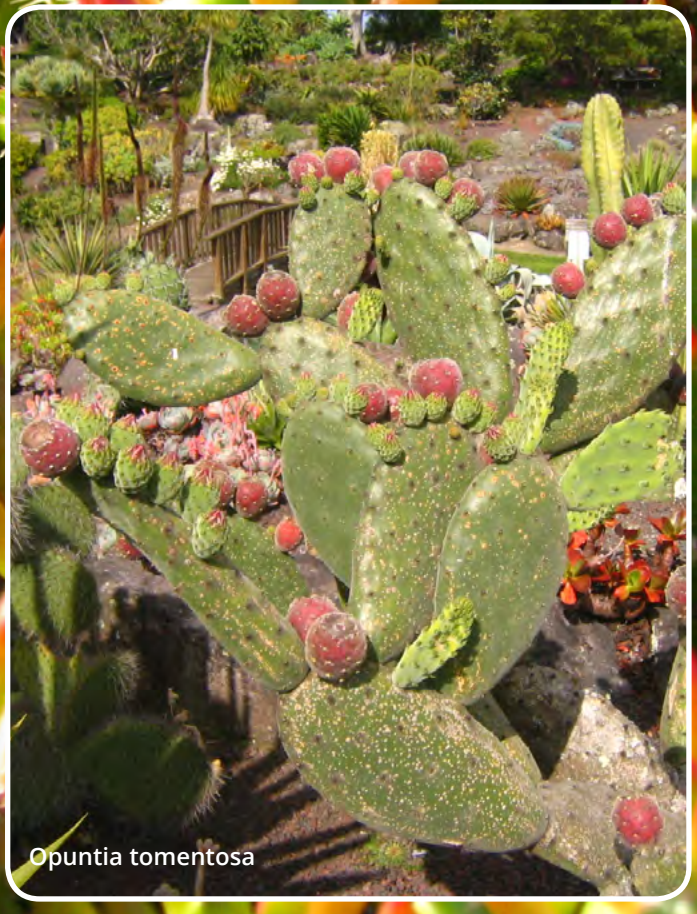
Alfriston

Botanic Gardens
Auckland, New Zealand

Part IV

Eduart Zimer

Well, after a lengthy break it's highly time to write few lines about the cactus species housed by the Alfriston Botanic Gardens. It's not easy to grow outdoor cacti in Auckland, not because of the winter cold (a bit of frost wouldn't hurt, on the contrary) but because of the relatively high winter rainfalls. Rainfall is dramatically limiting the number of species you can use in unprotected outdoor plantings. More, not only that the days are shorter and number of daily sunshine hours drop significantly, but the air humidity increases sometimes to the point that drizzling or not, you won't feel the difference... Another annoying thing is the winter hail... it does a lot of damage especially when plants are dormant (and most cacti are dormant in winter, aren't they?). See by right the pictures of this *Opuntia tomentosa* and you will understand what I mean! However, at ABG dozens and dozens of species have been acclimatized and do well outdoors.



Opuntia tomentosa

summary ↑

summary ↑

Few years back The American Collection was the only garden hosting cacti (and most species still reside there), but in recent years a new development named The Desert Garden was specifically designed for cacti and other xerophytes. However, I still believe indoor facilities are a must if you want to pleasure the visitors with a respectable cactus collection. There is a small indoor collection, but not open to the public; only every now and then some of the plants are placed in temporary displays in the foyer.

Except for the very popular golden barrel *Echinocactus grusonii* - I doubt there is botanic gardens without one - there are three major cacti groups present on the ABG grounds: Cereoids, Opuntioids and Trichocerei.

Cereus *sp. flower.*

summary ↑


1


2


3


4


5


6

Cereoids

Cereoids are quite common in cultivation in Auckland or anywhere else in New Zealand and seem to be quite tough and relatively easy to please. Unfortunately there are only few older specimens at ABG as they seem to prefer to start fresh with new cuttings once in a while. I've seem much older and impressive specimens in private gardens. True is that sometimes plants are vandalized or emblazoned by ignorant visitors and need to be refreshed. However, without having a wide range of rare and spectacular species, the few specimens scattered on their grounds produce nice flowers and (especially when young) are clean and beautiful. *Cereus uruguayensis* (common also in gardens), *Pilosocereus glaucochrous* (for some reason also very popular here in New Zealand), *Pachycereus marginatus, Weberbauerocereus winterianus*, and several other species are among the must see plants here at ABG, all of them having nice architectural features.

1 - Cereus uruguayanus. *2 & 3* - Pachycereus marginatus. *4* - Pachycereus pringlei. *5 & 6* - Pilosocereus glaucochrous.

summary

3

2

1 - Pilosocereus glaucochrous.
2 & 3 - Weberbauerocereus winterianus.
4 - The Desert Garden.

summary ↩

1, 2 & 3 - Opuntia monacantha

Opuntioids

Opuntioids are even more common in New Zealand in outdoor plantings, few species being even represented in the naturalized or casual flora (*Opuntia monacantha, O. robusta, O. ficus-indica*, etc.).

They seem to be very tolerant to cold and damp winters, sometimes with some damage but rapid growth makes this a minimal inconvenience. There are several species at ABG: *O. dillenii, O. phaeacantha, O. pilifera, O. ficus-indica, O. robusta, O. monacantha, Austrocylindropuntia subulata, Consolea rubescens, Cylindropuntia fulgida*, etc. *Cylindropuntia fulgida* is not producing big plants as it falls apart quite easily. There is also a small plant labelled *Opuntia curassavica* which I think it is a misidentification. Few years ago in the American Garden there used to be a large *Austrocylindropuntia subulata* (pictured in part 1 of this series), unfortunately they pulled it out to save some space.

Some of the Opuntioids make really great

summary

Opuntia dillenii.

Opuntia dillenii.

Opuntia phaeacantha

Opuntia phaeacantha

Opuntia pilifera.

Opuntia pilifera.

Opuntia robusta.

summary

Consolea rubescens.

summary ↑


Opuntia tomentosa


Opuntia microdasys *fma.* rufida


Opuntia robusta


Cylindropuntia fulgida

sculptural plants. One of my favourites is *Opuntia pilifera* with its pads covered in long white hairs. (However, be aware of the dagger spines!) It flowers freely here and at any time you can have dozens of ripe fruits. I took the liberty to take couple of fruits from here. The seeds germinate readily and seedlings grow relatively quick. In time it makes really impressive plants.

Opuntia dillenii and *O. phaeacantha* seem to do well at ABG; however, these species are rarely seen in private rock gardens. They could be tricky, I don't know.

I have an *O. dillenii* pad for years in my rock garden and it simply rooted quickly but other than that it only sits there, looks well, but doesn't put any growth on. I love its apricot flowers!

Opuntia monacantha is relatively poor studied. There are dozens of forms, some almost dwarf sized, some huge trunk forming plants. Fieldwork hasn't been done on this species and, as far as I am concerned, being already a garden plant no one seems to bother. I find it quite intriguing that species interesting to science (and the *O. monacantha* complex I think is one of them) are much less studied than any other rare or just weird looking piece of vegetation. The dwarf form from ABG is relatively common in gardens, but naturalized plants are mostly large growing and trunk forming plants. When I came here to New Zealand 13 years ago there were still a few available in garden centres, now it's completely out of fashion!

summary ↑


Echinopsis bruchii.


Echinopsis bruchii.


Echinopsis *sp.*


Echinopsis bruchii.


Echinopsis *sp.*

Trichocerei

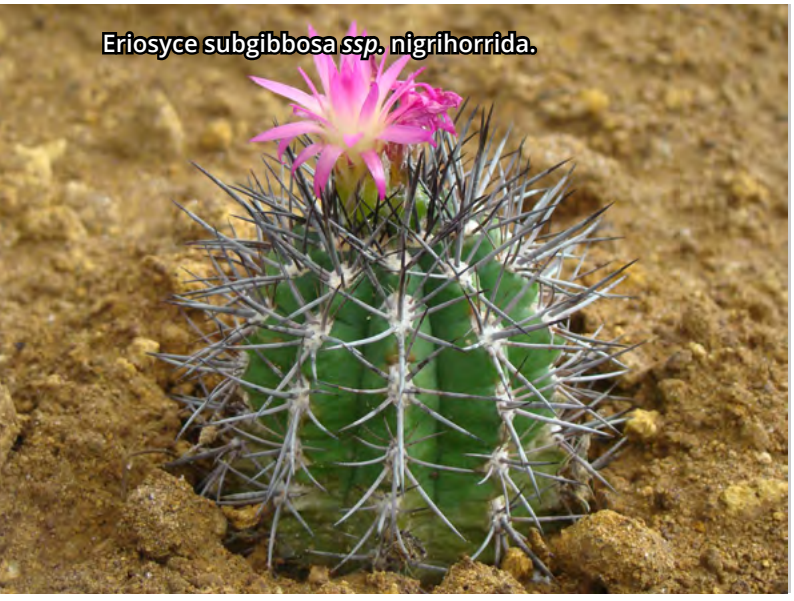
Trichocerei and allied genera (well, the old *Echinopsis* bucket if you want) give another bunch of nice plants. In later years few dozens of *Soehrensia bruchii*, this is the name used by ABG, have been acclimatized and seem to have the best outdoors survival rate among this group. They use to flower here from mid spring to early summer. There's at least a half a dozen of massive plants scattered in The American Collection and The Desert Garden. The latter used to be known as The Potter's Children Garden in the past, actually an infrastructure for educational programmes. In some extent it still is.

Several other unlabelled *Trichocereus* or *Echinopsis* species are also among the most interesting cacti when in flower. Unfortunately labels are sometimes either wrong or completely missing, which is quite annoying. If there is to bring one and only one critical assessment to ABG, that would be it: labelling is a bit too loose, non-existent or inconsistent. I'm afraid worldwide botanical gardens are not always a foothold of botanical science in recent years. But this is another story.

summary ↑

Ferocactus *sp.*

Echinocactus grusonii.



Eriosyce subgibbosa *ssp.* nigrihorrida.

Hatiora salicornioides.

Parodia *sp.*

summary ↑

Too few other specimens

Here and there the visitor can encounter proximity with other cactus specimens as well, unfortunately too few for the passionate cactus enthusiast. Hopefully, in time, indoor settings will compensate relative the lack of outdoor cactus plantings.

In the next (and probably the last) part I will present few other succulent and xerophyte groups. Don't get me wrong, even if cacti and succulents are not the main reason one wants to visit ABG, there are plenty of other interesting plants here.

Harrisia (Eriocereus) jusbertii.

summary ↑

summary ↑

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online magazines

Xerophilia

Acc Aztekium Journal (Romanian) - bimonthly publication of the homonym Romanian Cactus and Succulent Society. Latest issue: No. 43, April 2015.

Acta Succulenta (English, Italian and French) - quarterly international C&S journal. There was no new issue from our last presentation.

Succulentopi@ (French) - Quarterly online magazine of the Cactus Francophone. There was no new issue from our last presentation.

Sukkulenten (German) – Monthly free online journal of the FGaS - Fachgesellschaft andere Sukkulenten (formerly Avonia-News). Latest issue: Vol. 8, No 5, June 2015.

The Cactus Explorer (English) - the first free online C&S journal. There was no new issue from our last presentation.

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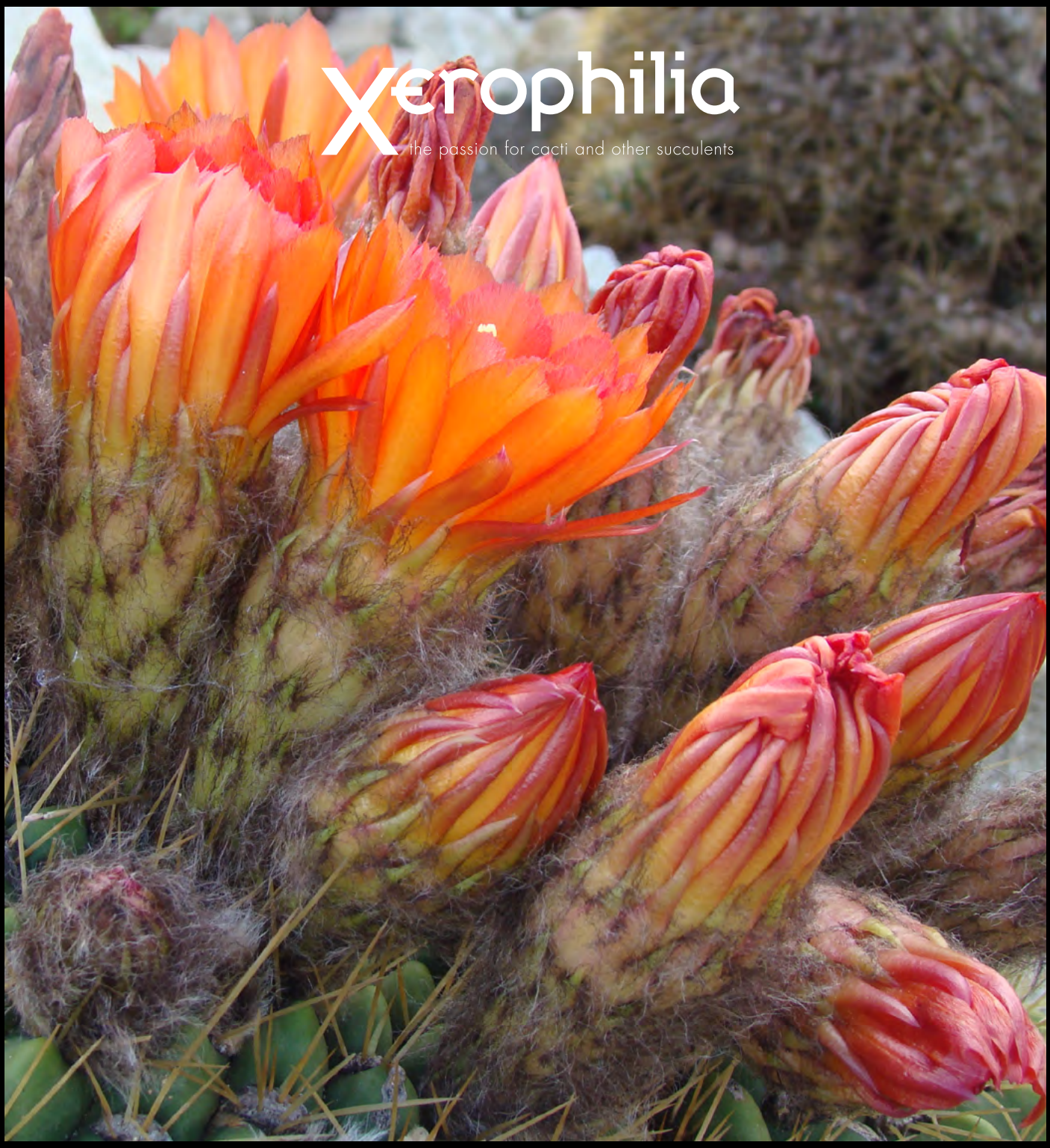
Xerophilia

the passion for cacti and other succulents



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