Since mid-December, it has been obvious to us that we will have to interrupt the editing process of the magazine, for reasons beyond the editorial staff’s workload, but related to the unexpected delay in the arrival of previously scheduled material. It was equally obvious to us all that we will not be able to resume work until after the first few days of this year. Unfortunately, an extremely aggressive flu had other plans with the layout designer, so another three weeks were lost.

On top of that – just a push to go even worse - on January 12, we were informed by some of our collaborators about some serious suspicions of habitat looting flying over a new collaborator. Though partisans of the presumption of innocence, we have been forced to postpone the publication of his material until the situation has been clarified.

These are the few reasons that led to the publication delay, but also the smaller number of pages. We apologize to our readers, hoping we will not be placed in similar situations in the future.
There is a species that, unfortunately, was not included in any red list but cannot be regarded as being of the last concern: we refer to *Functionarius idioticus* or, in other words, to those called to make our life an inferno. Born and raised on the rich dung of bureaucracy, the stupid clerk flourishes with incompetence, sufficiency, and an absolutely specific arrogance, beginning so to speak since the Stone Age.

Here is a typical example: through a miracle explained only by the existence of “Big Brother Google”, somewhere, sometime, probably searching for his horoscope, a clerk discovered that there is a group of cacti called *Lophophora*, which some shamans eat (it does not matter where or why), just to get high. Immediately, vigilantly, in order to protect the man from himself, the discoverer of the Polichinelle’s secret has outlawed the entire group of plants. Well, he did not even bother to find out whether - here in Europe, in collections - the plants are or not, potentially risky drugs. He had no reason to ask: the incompetent does not ask questions, because he does not understand their meaning. The fact that, under our temperate latitudes, Lophophoras have to grow steady for decades to come up only with a quarter of the many alkaloids, yes, a quarter of what achieved growing five years in nature, it did not matter. The clerk did not care about, and even if he did, he would not have wondered who might be the madman who would grow a plant for 20-30 years, then eat it and not get it ...

From here to the first accusation, made by a benevolent friend, and then the police raid, seizing the plants - some grown hard for decades and incinerating them instead of donating to a botanical garden, are just natural steps, in the bureaucratic world we live in.

This is the reason why *Functionarius idioticus* cannot be “of last concern” and why it is a shame that he is not on the red list of endangered survivors.

(these lines are a pamphlet and not a generalization)
Herman Edward Daly is an American ecological economist and emeritus professor at the School of Public Policy of University of Maryland, College Park in the United States.

Daly is a recipient of an Honorary Right Livelihood Award, the Heineken Prize for Environmental Science from the Royal Netherlands Academy of Arts and Sciences, the 1992 University of Louisville Grawemeyer Award for Ideas Improving World Order, the Sophie Prize (Norway), the Leontief Prize from the Global Development and Environment Institute, and was chosen as Man of the Year 2008 by Adbusters magazine. He is widely credited with having originated the idea of uneconomic growth, though some credit this to Marilyn Waring who developed it more completely in her study of the UN System of National Accounts. In 2014, Daly was the recipient of the Blue Planet Prize of the Asahi Glass Foundation.

Xerophilia 23’s Favorite Quote

There is something fundamentally wrong in treating the Earth as if it were a business liquidation.

Herman Edward Daly
Where the practice in question allowed a meeting as well as a bridge between different indigenous groups, since it served to make predictions, marriages, political alliances, to prepare future wars against other groups, or - during the colony - to the Spaniards; all were marked by the conditions of the desert.”

(González 2016)

Wixarika offerings in which they add various representations, such as the sun, nopales and blue deers.

“Peyote” Worship and Constraint
1. Introduction

*Lophophora williamsii* or peyote is a species of the cactus family, endemic to the semi-desert of Chihuahua and sub-western part of Texas. It may take up to 15 years to reach the state of maturity. Isabel Gandola (1937) says that etymologically the word peyote (of Nahuatl origin) comes from peyon-alic and means to stimulate someone, or to activate. In Mexico peyote is consumed since imemorial times for ceremonies by some indigenous groups such as the Raramuli, who call it “jikuli”, and the Naayarit who call it “huatari”, the Tepehuanos) that lo nombran “kamaba”, the Raramuli who lo llaman “jikuli”, and the Wixaritari who call them “hiikuri”. Gonzalo Aguirre Beltrán (1963) identifies more than 30 places in Mexico where its use was known:

Here, in alphabetical order, the places that during 17th and 18th centuries, at least, knew about the use of the plant: Acámbaro, Antequera, Atlixco, Chalco, Chihuahua, Cholula, Cuautla, Cuitzeo, Guadalajara, Guadalcázar, Guanajuato, Hurepetío, Ixmiquilpan, León, Manila, Mexico Pachuca, Puebla, Querétaro, Salamanca, Saltillo, San Luis Potosí, San Juan de la Paz, San Juan del Río, San Pedro, Piedra Gorda, Santa Ana Maya, Santa Fe, Sinaloa, Tarimbaro, Taxco, Taximaroa, Tlapujahua, Tecoripa, Tepeaca, Tepuestion, Texcoco, Valladolid, Zacualpa and Zacatecas (Aguirre, 1963: 143).

“The formal prohibition of the use of peyote was dictated in the first years of the 17th century: in an edict of the Santo Tribunal de la Inquisición printed in Mexico in 1620” (Ibid.). Although in 1928 the Superior Council of Health of Mexico declared that peyote was not an “unnerving plant” or an “intoxicating” plant and that it had special pharmacodynamic properties, pressure from the United States coerced Mexico to classify the peyote as an illegal substance in the 1971 International Single Convention on Psychotropic. This is due to mescaline, a phenylethylamine that produces changes in perception, sensation, moods and level of consciousness. Likewise, this psychedelic agent is characterized by its low abuse potential.

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1. Recent analyzes with C14 in specimens of *L. williamsii* found in one of the caves of the Shumla archaeological site in Rio Grande Texas, show that the inhabitants of this place already used it since prehistoric times (3780 BC) for religious purposes (Seed et al, 2005).
2. It refers to the time it takes to carry out its first reproductive event or its first blooming (Nájera 2013).
3. (Bonfiglioli, 2006).
4. (Gandola, 1937).
It is currently in special protection under the official Mexican standard NOM-059-SEMARNAT2010. The general health law establishes it as a drug along with heroin, marijuana, etc. dictaminating a minimum allowable amount to carry for each drug, except for the peyote; this is due to the fact that it is subject to special protection under NOM-059 because of the excessive impact of human use on the taxon in the habitat. It is considered a species with little or no therapeutic value by the General Health Law.

The federal penal code based on the General Health Law establishes a penalty of four to six months in prison and a penalty of 50 to 150 days of salary to people outside indigenous communities for the possession of peyote.

The Mexican government has allowed and recognized its use for indigenous peoples who have traditionally used it, legally based on ILO Convention 169 and Article 2 of the political constitution of the United Mexican States.

In the indigenous peoples of Mexico their consumption dates from time immemorial, principally among the commonly called Chichimec who were numerous groups of hunter-gatherers, who were characterized by being nomadic and warlike. These groups commonly moved around the central and coastal highlands of the north and Gulf of México: a corridor that starts in the mountains of Veracruz and ends up in south Texas, which facilitated its consumption and propagation among these groups and their neighbors.
In Rio Grande south of Texas in the caves of the archaeological site Shumla, archaeological traits were found that show that the inhabitants of this place used it, when applying tests of C14 on a fossil of peyote it was determined that it dated from the times of prehistory, about the year 3780 BC.

As for the effects, Sahagún in book history XI chapter XII describes them as drunks among the natives, which causes them to have frightful visions or laughs:

“There is another grass like earth, it is called peiolt; it is white, make towards the northern part; (...); it is common to eat from the Chichimec because it keeps them and encourages them to fight and not to be afraid, thirsty or hungry and they say that it protects them from all danger” (Sahagún, Book XI, Chapter VII in Powel, 1996).

This perspective of the indigenous people towards the peyote was taken by the Spanish invaders by devil’s devices since these practices undermined the virtue of temperance: moral virtue that moderates the attraction of pleasures and seeks balance in the use of created goods. The foregoing caused a series of denunciations and confessions of the population of New Spai.

The Holy Inquisition determined sanctions ranging from “pecuniary and corporal punishment” to “major excommunication.” This primitive restriction, based on religious precepts, seems to have taken effect since the use of traditional drugs has been lagging behind indigenous groups in more isolated areas (Nidia Olvera: 2015).

9 - Catecismo de la iglesia católica, 1809 en www.vatican.va.
Situation that led some people to substitute the use of peyote for the consumption of fermented alcoholic beverages\textsuperscript{10}, or in some cases stimulating substances such as coca-cola\textsuperscript{11}, which caused the altered effect of perception. Its ceremonial consumption was and is during ceremonies called “mitote” which refers to “a broad system of transformations. Being a contemporary expression of an ancient ritual complex probably of Chichimec roots (...)” (Neurath, 2002: 81).

Species of dances used by the Indians, in which a large number of them entered, beautifully decorated, and holding hands, formed a large choir in the middle of which they put a flag, and next to it the brew, which will serve as a drink: and so they were making their moves to the sound of a tamboril, and drinking from time to time, until they got drunk and deprived of meaning (Cf. Grases: 395).

In these festivals or ceremonies, the participants make food exchanges or disorientation to what Turner calls “comunitas”. In this ritual the participants make food exchanges by initiating or strengthening alliances. Fernando Olvera Charles (2010) argues with respect to the ceremony, that this was fundamental for the indigenous resistance during the process of the conquest and that the indigenous peoples of the northeast\textsuperscript{12} and the west continue to carry out, which we describe as part of their agricultural ceremonial cycle.

\textsuperscript{10} - In the Pamería and in the ancient Chichimeca groups of the center and northeast of Mexico: the use of peyote and other hallucinogenic elements in pre-Hispanic times, there was a possible transfer, in the rituals of the use of peyote to drunkenness with wine” (1996).

\textsuperscript{11} - It is used during the Holy Week for the representation of the Pharisees by the Coras on Good Friday of the syncretic worldview between Catholicism and its original religion.

\textsuperscript{12} - Aguirre Beltrán, G. MEDICINE AND MAGIC. THE PROCESS OF ACCULTURATION IN THE COLONIAL STRUCTURE (1963), reports on its consumption in the north of the country by mentioning a healer from the north of Zacatecas who “when addressing the cactus, among other things, ending with the following words:” can ichichimeco “you who live in the country of the Chichimec” (P. 145).
2. Rarámuri/Tarahumaras

Lumholtz in his book The Unknown Mexico (1902) says that for the Tarahumara the jikuri was the twin brother of the sun, who left it as a great remedy on earth.

Carlo Boifiglioli also identifies this relationship between sun and peyote:

“For the direction in which it lives (east, characteristic that relates it to the rising sun) the jikuri can be seen as a nocturnal entity that leads to the healing dawn and by extension, to the rebirth of the participants” (Bonfiglioli, 2006: 261).

For the Tarahumara the peyote is consumed only in the healing ceremonies performed by the Owirúame (generic term for doctor or doctor) within this group is the Sipaame who is the specialist in its use; the only one capable of channelling the virtues of peyote; he makes expeditions somewhere in the Chihuahua desert, to search for the jikuri. At the moment of finding it, he will prepare a circular space where he performs a ceremony around the fire, consuming it in a fresh state, and then take it to his community to perform ceremonies of the “mitote” type known as “raspas”, where a sacrifice of an animal will be carried out:

The raspas are celebrated when someone wants to heal and establish an alliance with the peyote. 1) Entrance of the participants in the ceremonial space; 2) Initial sermon of the sipaáme; 3) Collective intake of jikuri (peyote); 4) Several sessions of raspas, shamanic songs and dances of the participants; 5) Healing of the latter by the sipaáme and his assistants; 6) Farewell of the jikuri; 7) Final purification of the participants and the ritual space; 8) Exit of these from the ceremonial space (Bonfiglioli, 2006: 25).
María Benciolini (2012) comments “the peyote in healing acts as” agent of transformation “that allows the patient to move from a state of discomfort caused by an ethical and associated with the night, to health, which comes with the emergence of the sun, for this town the peyote is an ally, which can promote healing and should be treated with much respect and care because if it were affected in terms of its management and worship it would turn against the people involved in the act of transgression, that is why most Tarahumara maintain precautions regarding their use.

In 1900 Dr. Manuel Urbina reported as a disease or a supernatural condition the “transgression to jikuri (peyote) consumption” which means: not to meet the dead, sadness and excessive thinness that leaves the body dry are usually clear symptoms of being completely sick, so we must proceed to rescue the soul and recover the balance of the person with herself, with their community and with the cosmos.
3. Odam/Tepehuanos

The Tepehuanos are located mainly in the south of Durango just as the Coras and the Raramuri led a very violent process of evangelization where many of their practices were repressed and judged under the prejudices of the colonizers, such as the use of peyote in their dances. Currently they do not consume peyote despite having it very present in their culture.

For the Tepehuanos of Santa María Ocotán is absent in its ceremonies although it is known that it is used by its wixaritari neighbors of the Mezquital, Durango, to those who perceive them as a sinful people with many excesses: “they are from the devil” that is why they consume a lot of peyote already that they have agreed with him, as they say.

During the xiotalh [mitote] Tepehuanó requesting rains, the drink made from fermented mezcal fulfills a function similar to that of the peyote in hikuli nexa (...) for the night of dancing, in the clay pots a liquid has been obtained whitish and sparkling (mai baraá) that is drunk to continue dancing and “bring rain to the whole world” (Reyes, 2006: 224). In addition to this drink in the mitote, dances and abstinence from food and tobacco consumption are included in order to promote effects similar to those of peyote consumption.

Reyes (2006) proposes in this sense, makuche tobacco has attributes similar to those of peyote as an effective intermediary with the gods, hence among the Tepehuanos it is also known as “the divine mail”. The simple consumption of tobacco is not in itself hallucinogenic, although it does “get drunk”; but large amounts of it, combined with fasting and abstinence from salt can make possible an altered state of consciousness. “(Reyes, 2006: 224).
4. Náayarit/Coras
The Coras live in the state of Nayarit, their main “mitote patios” are located in the communities of Jesús María and at the table of Nayar.

Father Arias reports that yerba “was held by the Coras as a special creation of the evil genius, whom they designated by the name of Naycuric, was devoted to serving the numen and their drink served to have communication with him (Aguirre, 1963: 147).

María Binciolini (2012) in her work “Between order and transgression: the ritual consumption of peyote among the Coras proposes as a hypothesis, that the peyote among the Coras is an element that makes possible the association with what is transgressor and what that comes from outside; for this author the Coras resort to the consumption of peyote in some moments that they identify as of “ritual rupture”, in which it would seem that the forces of transgression took power to the detriment of the established order

Binciolini (2012: 186) describes the uses of peyote among the inhabitants of Mesa de Nayar and Jesús María during pachitas and Easter: identifies three groups that consume peyote: the Centuriones: those who consume it fresh ground; the Jews: those who consume it dry and unmilled and those who are inside the church who drink it in glasses of ground peyote. Relying on Adriana Guzmán (1997:23) indicates that for the Coras the semi-desert of the San Luis Potosí highlands or Wirikuta where the peyote grows, it is the place of the solar semen. Valdovinos (2002), the appearance of ground peyote, as well as the context in which it is consumed, refers to clouds and rain, a fact that refers again to the germinating liquid, to the rains of Wirikuta that represent the solar semen that will fertilize the earth.
María Biciolini proposes that in this celebration refers to the myth of a relationship between the virgin, who is the earth, and Christ. The Coras of Jesus María say that Christ, with deceits, urinated (liquid) the gourd (womb) of the virgin. [...] During the ceremony of the pachitas the malinches in the form of mockery and in the sense of transgression offer them to the governor and the peyote butler crushed in water and sparkling.

Geroncio García López, he is in charge of justice in his community in the Nogal municipality of Nayar in Nayarit. He tells me about the peyote that is in a ceremony that takes place at the beginning of May, where the priests assign three people the responsibility of leaving offerings with cotton and bring the peyote of "thet matha" located in the semi-desert of the Altiplano Potosino, between ponds and fourteen, the place that the Wixarikas call Wirikuta and where the goddess of the rain tuáaca-muú-ta inhabits, here come all the souls of the Dead, in this place there is much knowledge but there are also many evils. For Geroncio García López the peyote is very dangerous because it can drive you crazy and only the priests (the people in charge during the mitote) are the ones who consume it.
5. Wixarika

Their traditional ceremonial centers are located in the states of Jalisco, Durango and Nayarit, close neighbors of the Coras and Tepehuanes, which they also name their elder brothers. Year after year from October to March, the Kawitexutsixi or Wixaritari pilgrims depart from their ceremonial centers who will make the pilgrimage to Wirikuta, where they will leave an offering to the Kakayarite (deified ancestors), they will ask for the common good and favors from them; During the tour, collecting natural elements such as water, roots and the hiíkuri.

For the Wixarika people, the hiíkuri is a deity understood as a guiding teacher; that makes the function of a bible or dictionary, this knowledge are the traces of kauyumari, the older brother deer tail, or the blue deer; who was the guide in the first pilgrimage that was transformed in multiple ways and lives in Wirikuta. Francisco López Carrillo, Tsauxirika (guide of the pilgrimage) and mara’akame (chaman singer) of the ceremonial center of San Andrés Cohamiata, Mexquitic, Jalisco (2012-2017) tells us:

For the Wixarika people the hiíkuri is a dictionary, it symbolizes the footsteps of the kauyumari: the deer; that is why the Wixaritari have to make a pilgrimage to Wirikuta. This is the custom that our kakayarite left us; that’s why we have to do the ceremony; during the pilgrimage to wirikuta the mara’akame has to do the ceremony of hunting or deer hunting. Just like Paritsika did when I braced the hikuri deer during the first pilgrimage to Wirikuta. (Direct communication)

Myths tell that by means of the sacrifice of “wiri + wi” the kakayarite could leave the hiíkuri; sacred cactus through which the wixaritari (plural of wixarika) communicate with their gods establishing a strong commitments of 5 years. And that is why the Wixarika people call this sacred place “Wirikuta” in honor of the sacrifice “wiri + wi” made to leave the hiíkuri.

There is a peyote classification for the Wixarika people where we find the Ariocarpus or peyote sorcerer as Ekateiwari, as well as the peyotes whose segments go in the opposite direction to the clock hands these are dangerous. The hiíkuri as Wirikuta should be treated with respect “everything you take from Wirikuta should be with a commitment of 5 years, in which they will have to perform a ceremony, otherwise there could be strong repercussions for all involved (direct communication: Francisco Calletano Carrillo: 2014).

Unlike the indigenous peoples described here, the Wixarika people are the largest consumers of peyote, each of its ceremonial centers and family patios make annual pilgrimages to Wirikuta, to bring the peyote that will be consumed collectively during the hikuri neixa or the fiesta of the peyote.
In this ceremony the pilgrims who have returned from Wirikuta share the peyote that was brought from this sacred site. Food exchanges take place between the Teukari (pilgrimage companions) and the jikareros of other ceremonial centers. During this celebration the participants will perform ceremonies called “mitote” where they will dance and consume the hiikuri that is placed in 5 deposits of offerings, located in the four corners and the center of the ceremonial center; the ceremony lasts 5 days. In addition to the hiikuri neixa, the hiikuri is consumed by the jikareros normally during the other tukipa parties that they perform in each of the communities.

Ethnographic works such as Arturo Gutiérrez del Ángel, Johannes Neurat, Olivia Kilden and Paul Lifman describe the hermetic and jealous Wixarika communities of their culture; situation that can currently be contrasted since at present the presence of teiwari (mestizos) is very common in ceremonies and pilgrimages. Situation that has caused confrontation between communities that fight for the exclusive support of mestizos to perform their ceremonies, in addition to the numerous ceremonies announced on social networks where the consumption of peyote and the participation of a mara’akame huichol is announced.

The Wixarika people since 2011 have demonstrated against mining in Wirikuta and the projects that undermine one of their most important pilgrimage routes and sacred places. Since 2013 Margarito Díaz Gonzales, member of the board of directors of the Wixarika Union has requested the Attorney General’s Office (PGR) that the seized peyote not be burned as it is usually done with all the drugs seized, proposing that it be replanted in Wirikuta. This application did not had a favorable response to the date (2017).

14 - In 2017 during the pilgrimage to Wirikuta and the peyote festival, conflicts and tensions arose between the Wixaritari; because the organization called “Wirikuta Heart of the World” that initially supported the ceremonial center of San José de Wexika, decided to dedicate its support to the ceremonial center of Tunuwame.
6. The other “peyoteros”\textsuperscript{15}

In addition to these indigenous peoples of Mexico, there are other types of consumers who are not necessarily Mexican indigenous, who could be classified as a new era movement, New-Age or as Guillermo de la Peña calls them neo-Indians or from the Mexicanity [of Mexican national identity] (2016)\textsuperscript{16}.

It is made up of a large group of groups whose ideological universe is inspired by an idealized vision of pre-Hispanic culture in the exaltation of a romantic and hypostatized image of the Mexican Natives” (Peña, 2016: 58) the same author describes that most they come from urban areas whose common denominator is the desire to consciously assume and live an identity closer to the indigenous, seeking to rediscover their roots.

This trend has been present since the 1920s, with the Confederate Restoration Movement of the Anahuac Culture (MCRCA). The Native American Church of Mexico (INAM) which has more than 5 thousand supporters who meet monthly to hold “tepe” type ceremonies (Native American stores) where peyote consumption vary between 1 to 5 or more per person.

In the 90s based on the freedom of worship in Mexico, this organization requested the SEGO recognition and right to consumption of peyote which was rejected. After a second attempt in 2013 the association exhausted all instances, arriving in 2016 at the SCJN where I declared that it was inappropriate.

Following the decriminalization in Mexico of marijuana for medical and research purposes, in the year of 2016 various groups and associations that promote the general use of peyote for medicinal and spiritual purposes such as Nierika, AC: multidisciplinary association for the preservation of indigenous traditions of the sacred plants; seeks that the consumption of peyote is not only allowed to certain Mexican indigenous groups, but that their regulated use be spread in ritual contexts; for this association: “human beings being so intimately dependent on nature, we possess the virtues to be their active and practical conscience. […] “Peyote is not a drug, it does not cause addiction, it does not depend on any kind, and on the contrary it is a medicine that heals if it is used properly (Nierika, Peyote Conservation Project, 2017).

\textsuperscript{15} - Peyotero: colloquial denomination used by the inhabitants where there are peyote to those who come to cut the plant without having the bio-cultural context in its roots or in its culture.

\textsuperscript{16} - Lophophora williamsii, cuts of crowns of badly performed peyotes, which lead to the subsequent death of the root.
This organization seeks to promote and strengthen the protection of traditional uses of peyote from a perspective as bio-cultural heritage of North America (Canada, the United States and Mexico). Taking as an example the case of the Ayahuasca religions of Brazil, where the Ministry of the Environment is in charge of monitoring and certifying the management plans of the plants used for the preparation of the Ayahuasca drink. (Nierika, Peyote Conservation Project, 2017).

However, in most cases they are representatives of Neo-shamanism, a phenomenon that is less linked to the preservation of real shamanism and ancestral therapeutic practices than to their reinvention, due to the combative influence of several currents of ideas that go back to the seventies. Ideas that range from the culture of drugs, the interest in altered states of consciousness, environmentalism, naturalism and esotericism, to the movement of human potential and personal improvement, the development of the alternative therapies market, Orientalism and pseudo-anthropological literature of authors such as Carlos Castañeda. (Peña, 2016: 58).

The health secretariat has catalogued mescaline as a substance without medical properties, however, it is determined as therapeutic because of its effectiveness in the control of addictions, but because it is a species under special protection in NOM059-SEMARNAT2010 due to excessive collection and having other substances with the same or better effects, maintains its prohibition for medical-therapeutic purposes.
7. Conclusions
Consumption and worship were commonly during the ceremony called mitote, which was celebrated by hunter-gatherer groups generically called chichimecas. Currently, it is practiced among the indigenous people of the western or northern Mexico. To paraphrase V. Turner, the mitote is a stereotyped sequence of acts that include gestures, words, objects, etc. held in a certain place in order to influence the forces or entities depending on the objects and interests of those who perform\textsuperscript{16}.

At present ceremony presents different variants and absence among the people who practice this situation can be explained as a result of the colonization process they suffered. This leads to the suspension of the mitote, or suppress elements, such as peyote.

The components of this ceremony are: sacrifice (blood), offering (for the deities), dances (performance, accompanied by music) and a concoction that potentiates the alteration of perception.

In the case of the Wixarika and Raramuri indigenous peoples, the peyote makes contact or alliance with their deities or deified ancestors possible. In the case of the Wixarika people, the peyote represents kauyumari (the messenger of the gods); while for the Raramuri it is the twin brother of the sun\textsuperscript{17}. Beings with liminal characteristics, where lack of compliance can lead to misfortune for those involved.

\textsuperscript{16} - Turner, The ritual process. Structure and anti-Structure
\textsuperscript{17} - Onorúame
The ambivalence of these beneficial / nefarious beings ends up being even more forceful when they are considered “enecumenic”, that is to say, animals that exist in a time and space that are not those of this world. (Hugo Cotonieto, 2016) are extraordinary beings that transit between the ecumenus and enecumenus. (Lopez Austin, 2013: 33)

While for the Coras it allows a state of transgression.

The Wixaritari classify the diseases into two types that come from outside that can be cured with medicines or herbs, and those of the soul: caused by an ethical failure such as not complying with the custom the commitment acquired with the hiikuri or an evil that was deposited in the body. For healing the Tunuwi'iyari (healer, singer and shaman known under the generic name of mara'akame) has to dream or construct a ceremony (where peyote is not necessarily consumed) in order to know the origin of the evil. The healing is accompanied by sacrifice, the offering of offerings and the consumption of a sacred natural element such as “ja” (water), k+puri, among others.

In this work we have emphasized the different perceptions of peyote: For indigenous peoples, peyote is an element of sacred character left by their ancestors to generate a bridge of communication with them, their consumption and worship is accompanied by commitments and reciprocity. While for the peyoteros or people outside the native indigenous peoples its use is for recreational purposes with commercial connotations where a great number of reinterpretations have been generated.
The people who consumed and consume it have indicated restrictions or precautions on its use. As they are if the peyote is treated inadequately or is transgressed in its use as trodden it could bring strong consequences on those involved. When consuming or taking a peyote you enter into a commitment with the kakayarite, if a person consumes or takes a peyote it enters into a commitment of 5 years, in case of missing with the commitment, the person and those involved will fall heavy misfortunes.

At present, both the inhabitants and the traditional peyote collectors have reported a considerable decrease in peyotes as well as an overload of visitors and garbage in the sacred places where this cactus is found.

All these features of the neo-Indian world are related to one of the major effects of over-modernity in our times, as well as the fictionalization of the collective and individual imaginary in a syncretic construct of a new theology.

After this new syncretism that only the soft and uncompromising parts of cultures are adopted, a new form of tourism has been created aimed at facilitating shamanic sessions for third parties in which the consumption of entheogen is openly promoted and offered in a mercantilist manner.

To be able to visualize the problem in the descent of peyote populations, it is necessary to calculate the average number of adepts by the number of sessions per year and by the number of peyote heads per session.

<table>
<thead>
<tr>
<th>Number of consumers</th>
<th>Native American Church of México</th>
<th>Native American Church of USA &amp; Canada</th>
<th>Wixarika</th>
<th>Coras</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sessions per year</td>
<td>12</td>
<td>48</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Consumption per person per ceremony</td>
<td>3</td>
<td>13</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Annual consumption by the population</td>
<td>180,000</td>
<td>156,000,000</td>
<td>405,000</td>
<td>20-50</td>
</tr>
</tbody>
</table>

The current ban has restricted the study in captivity on this species ...

Richard Evans Schultes (1976) describes the consumption of peyote by the members of the Native American Church, in which he mentions that it is consumed weekly by the 250,000 members during a peyote ceremony that lasts all night between 4 and 30 peyotes.
The use of peyote among the unworthy groups that live in the current territory of the United States (mainly the culturally known areas such as Las Praderas and the southwest) derives from a religious movement that, from the second half of the 19th century, breaks into the local traditions to become a symbol of indigenous bread and fellowship. On the other hand, for the Tarahumara, and also for the Huichols, the peyote is not a central element of a religion, nor a political movement, but an important factor within a vast religious system, with a strong local roots and deep historical roots (Bonfiglioli, 2017: 258).

However, this representation is not static, it is in a constant historical evolution of reinterpretations that could and rework this bio-cultural knowledge.
Mara’akame talking to the mythical hero kauyumari (deer) represented by fire, before the hunting ceremony of peyote deer.
Enemy Plants

When I started growing succulent plants, fifty years ago, I would have thought a crazy idea to write an article with the title above, but the long experience forced me to this new point of view.

Mind you, not all the plants in my collection feel like enemies, that’s far from it! It would be ingratitude to forget the blooms that cheer the view in my greenhouse, month after month, in every time of the year. And I do not want to dwell on these gratifying aspects, it would be too easy to remember, in the Cactaceae family, during winter the Pediocactus flowers, in spring of Mammillaria, in summer of Copiapoa, in the autumn of many species in the Aizoaceae family and then Bulbine, Ornithogalum, and then again, returning to the cacti, the winter-blooming Turbinicarpus.

So who are the invaders in my greenhouse? What enemies? Let’s go over the parasites, animals, bacteria or fungi, the well-known group of coccinellas and many other insects, mites, nematodes, fusarium, etc. but will you tell what else is left out? We will take them out one by one.

It often happens that seeds that are not harvested in due course fall to the base of the mother plant and germinate there on their own. It happens a bit for all the Cactaceae, including those considered to be, rightly or wrongly, difficult to cultivate, such as Turbinicarpus, Ariocarpus, Strombocactus, etc. All this is part of normality and not for this reason we consider an Ariocarpus fissuratus intrusive, simply because it had the daring to appear all of the sudden in a Mammillaria pot, or because a Turbinicarpus grows in a vessel of Leuchtenbergia principis. The picture that I now intend to outline is much different.
I have long cultivated among my succulents, several plants from the genus Kalanchoe, a group that grows in the wild for most of Africa and Madagascar. These are generally small plants (in some cases shrubs or, rarely, small trees) that are very suitable for growing in the greenhouse or even in the home. Plants that often produce colorful flowers and in this regard many are the cultivars that we can find in all the flowers and gardens. Some bloom in the winter as Kalanchoe daigremontiana and for this reason they are even more appreciated and for the same reason collected by numerous plant lovers. Many years ago I introduced a specimen of this species in my greenhouse. After that, you know the spirit that animates some collectors, I wanted to have other plants of this kind like K. manginii, K. beauverdii, K. tubiflora and others, all beautiful, strange and often with unexpected flowers. Now a few square feet of my collection are coated with more or less large specimens of these species that feed at the expense of my other plants. How could this happen?

Some of the plants named above are self-fertilized and this happens very easily, producing a large number of offsprings, which easily invade all nearby pots by literally supressing other plants, depriving them of light and nourishment to the point that they end up killing them. You will think it would be enough to have the time and the desire to eliminate them one by one and the problem would be solved. Blessed naivety! I tried to do so ignominiously and so my commitment was beyond any doubt. Even with all the attention some invaders always remain, perhaps hidden by a pebble and after a year we will be in the same situation. Unfortunately, however, this is not the worst! Some species of this genus (all that belonged to the old Bryophyllum genus), once grown, form along the margins of the leaves plantlets, which though small and still attached to the mother plant are already rooted and the slightest shake (produced by the attempt to snatching the mother out of the usurped vases or simply watering) makes them fall into the nearby pots, juggling around with the invasion. To have a more precise idea of the problem, think that each leaf can carry from two to more than twenty plantlets and that the leaves can be very numerous on one plant. In addition, the plantlets that fall out of the pots, which some people think will be eliminated, miraculously grow equally and entering the drainage holes of the pots will lead to the death of the other plants that would rather be saved. 
Is everything here? Not exactly! Even staying within the same botanical family, the Crassulaceae, you can encounter other monsters of vitality, perhaps even more fearsome. In the past, traveling to Mexico I was interested in the genus Lenophyllum, all plants of easy cultivation and propagation, you only need a leaf to have a new plant. Some are very beautiful like L. guttatum, with brown or reddish dots on the leaves that form different designs. Buying a specimen of Notocactus rutilans in a nursery I noticed, years ago, that it was accompanied by a very graceful L. texanum seedling. I thought naively that I bought “two at the price of one”! At the first repotting of N. rutilans, while trying to separate it from the Lenophyllum, I could see almost all the leaves falling down and I felt sorry without understanding the meaning of that behavior and the inherent danger in it. After a couple of years I saw many other L. texanum specimens around the pot of the old Lenophyllum, on the table and in the nearby vases and still did not understand. Now I’m not able to tell the number of L. texanum seedlings in my pots, but surely it surpasses the tens of thousands of small and big ones.

The invasion can be stopped only by changing the soil of all the pots in the infected area.

Just try to remove these Lenophyllum texanum without multiplying them!

Look at the number of the fallen leaves! From each of them, you’ll see growing a new plant!
Among my plants of the genus *Uebelmannia* there is now a carpet of *Plectranthus* sp. which with its lush branches took almost a square meter of other specimens, choking the vegetation. Every now and then I can find the time to take out a bucket full of this invasive plant that unfortunately becomes self-sustaining and then reproduces very quickly. This plant is also making one of the beautiful pink flowers of *Portulacaceae* and strong roots. It is the elegant *Portulaca pilosa*, which is self-fertilized and rapid in development, which is slowly colonizing many vases of slow growth plants including some *Euphorbia*.
There is a different story with *Talinum paniculatum*, which, with its erect and therefore not tarnished branches, its twisted stem and its pretty pink flowers, looks like a very ornamental seedling, but now it is spread in hundreds of pots, growing with plants of different genera such as *Agave*, *Tylecodon*, *Euphorbia*, *Ibervillea*, etc. For this species the seed dispersion (they are also self-fertilized) occurs in a very simple way: every flower, and numerous for each stem, matures a fruit, a sphere containing ten or so small and light seeds. In its desiccation it suffices a breath of air, a watering or even a small shake, because all the seeds are scattered around, which are untraceable until germination, and from that moment there will be only little time for a new fruit to form.
Grahamia coahuilensis cheers with its rose corolle (still pink flowers with a diameter of at least two centimeters) some old specimens of Ariocarpus lloydii and, at the same time, with its lush foliage, tends to suffocate them, thus posing to me the terrible dilemma: to repot or not to repot! Even in this case, you will notice that simpler and less risky (my master said that Ariocarpus and Turbinicarpus are clinging to the invaders) would tear these tiny seedlings but it seems that Mother Nature has foreseen this intention and has endowed this species with large tuberous roots and able to quickly reform the new plant that in vain you tried to tear. We realized that once this species is settled, it can only be eliminated quickly by the invasion of the attacked plants but how did it come? Obviously as in all other cases there is only one person in charge and in my collection the reindeer is the undersigned! Like many plants in the same family, for example all the species of Anacampseros that I grow, its seeds are light and papyrus-like and so you understand how they disseminate.
But the pinnacle, the unsurpassed summit, the Golden Palm of the invaders, perhaps touches the fleshy *Oxalis carnosa* while still being a cute seedling with a small juvenile cudgel which turns into a very fleshy stem with an elegant emerald green foliage with bright yellow flowers that in the favorable climate of a greenhouse continue to bloom throughout the year, the same behaves very badly, like its consorts. In fact, it tends to grow close to very thorny or very delicate plants that we do not want to disturb and then shoot its semi-bullet seeds in all directions even though no one touches it. This plant is also very frugal, so you can also find it on the ground, in the lower corners of the greenhouse.

*Xoxalis carnosa*, a seductive invader. Look at it spreading to the nearby pot!
I do not intend to produce a long list with series of plants that carry out similar strategies, as *Dorstenia* (*Moraceae* family) plants do, fortunately less invasive. But I still want to tell you about another *Grahamia* (possibly changed its taxonomic position); *G. bracteata* instead invades the other vessels by developing long thin branches that hold very minute leaflets. These branches fold back to the ground under their weight and where they touch ground there, and then climb on other pots. Do not underestimate them! They travel a lot! Some of these plants do not invade only the succulent greenhouses and it is not difficult to see them naturally growing on a different continent than the origin (*Aloe barbadensis* and several *Bryophyllum* can be encountered, in the wild, in America and hence a bit far from Africa!). In this case the ecological problem can be more serious, but the fault is always ours! Let's try to avoid these unpleasant and deplorable facts.
New records of interesting, non-native succulents from Alicante (Spain)

Abstract:
New records are presented for non-native succulents from Alicante province (Spain). Agave lurida, Astrophytum myriostigma, Opuntia engelmannii var. linguiformis and O. microdasys ‘rufida’ are probably reported for the first time from Alicante, whereas the presence of Mortolopuntia schickendantzii and Opuntia dillenii are confirmed. Trichocereus bridgesii is cited for the first time in the wild in Spain.

Fieldwork by the first author in the surroundings of Alicante (province of Alicante, Spain) in May 2017 yielded new records of interesting, non-native succulents, all belonging to Asparagaceae (incl. Agavaceae) and Cactaceae families. The identity of some of the species encountered was assessed in close collaboration with the two other authors.
(Asparagaceae s.l., Agavaceae)

SPAIN, Alicante: Alicante, Santa Faz, 38°23'31.26"N, 0°26'53.54"W, 35 m, rough ground, 12 May 2017, F. Verloove.

A single individual of *Agave lurida* was found growing on rough ground in Santa Faz, next to *Austrocylindropuntia subulata* and other less common escaped succulents such as *Austrocylindropuntia cylindrica* and *Cylindropuntia imbricata*.

This species shares large, glaucous leaves with the similar *Agave americana*. It is distinguished from the latter by its leaf margins that bear numerous shorter spines, all regularly inserted and of more or less equal length.

*Agave lurida* is rarely observed outside of cultivation in Europe. It has been known from a single record from El Puig (Valencia, Spain) where it was observed in 2003 (Guillot Ortiz & Van Der Meer 2008, Guillot Ortiz & al. 2009). It is naturalized in parts of the Indian subcontinent and some Atlantic and Indian Ocean islands (Ascension, St. Helena and Réunion) (eMonocot 2017).

This species is sometimes considered conspecific with *Agave vera-cruz* Mill. (e.g. Hochstätter 2015).
SPAIN, Alicante: Alicante, Santa Faz, 38°23'36.33"N, 0°26'52.79"W, 37 m, rough ground, 12 May 2017, F. Verloove.

This South American species is much rarer than the similar *A. subulata*, both in gardens as in the wild (as an escape) and many claims are erroneous, for instance in the Canary Islands (Verloove & al. 2017). It has been reliably recorded in Spain from Valencia province (Laguna & Mateo 2001, Guillot Ortiz & al. 2008, Guillot Ortiz & al. 2014) and is here reported from Alicante province, apparently for the first time. On rough ground in Santa Faz (Alicante) several small populations have been detected. It grows along with, among others, *A. subulata* and *Cylindropuntia imbricata*.

Compared with *A. subulata*, *A. cylindrica* has shorter spines and very small, early deciduous leaves.
New records of non-native succulents from Alicante

**Mortolopuntia schickendantzii** (F.A.C. Weber)
Guiggi, Cactology 5(Suppl.): 1. 2015.
=> **Cylindropuntia schickendantzii** (F.A.C. Weber) Backeb. in Backeb. & F.M.Knuth, Kaktus-ABC 122. 1936 (Cactaceae)

**SPAIN**, Alicante: El Altet, 38°17’37.43”N, 0°33.47.33”W, 38 m, alongside secondary road, 11 May 2017, F. Verloove.

This South American species (Argentina and Bolivia) with remarkably elongated cladodes was only recently recognized for the first time in Europe. A previous claim of **Opuntia engelmannii** var. **inguiformis** from Santa Faz (Alicante) turned out to belong to **M. schickendantzii** instead (Guillot Ortiz & Sáez 2014). Since then it was also observed in various other parts of Spain, in the provinces of Barcelona, Castellón, Gerona, Huelva, Tarragona and Valencia (Guillot Ortiz & al. 2014, Sánchez Gullón & al. 2014, Vázquez 2014, Aymerich 2015, Gómez-Bellver & al. 2016). It is here reported again from Alicante province.

The exact placement of this species is very controversial. It is morphologically aberrant and obviously does not belong to **Opuntia** Mill. s.str. Recent molecular studies (Majure & Puente 2014) suggest accommodating it in **Brasiliopuntia** (K. Schum.) A. Berger. However, it has little in common with other representatives of that genus. Guiggi (2015) therefore proposed accepting it as the sole member of a newly created genus, **Mortolopuntia** Guiggi.
New records of non-native succulents from Alicante

Opuntia dillenii (Ker Gawl.) Haw., Suppl. Pl. Succ. 79. 1819.

⇒ Opuntia stricta (Haw.) Haw. var. dillenii (Ker Gawl.)

(Cactaceae)

SPAIN, Alicante: Alicante, Santa Faz, 38°23'36.33"N, 0°26'52.79"W, 37 m, rough ground, 12 May 2017, F. Verloove; Elche, La Marina del Pinet, 38°09'11.82"N, 0°37'41.20"W, 1 m, coastal dunes, 13 May 2017, F. Verloove; Santa Pola, Pueblo Levantino, 38°12'25.23"N, 0°34'08.32"W, 27 m, degraded matorral, close to residential area, rather frequent, 16 May 2017, F. Verloove.

The presence of this widely cultivated species was considered doubtful in Alicante province: no records were reported by Guillot Ortiz & al. (2008) and according to Serra Laliga (2007) its presence required confirmation. However, it probably is not rare and locally naturalized, for instance in Pueblo Levantino (Santa Pola).


(Cactaceae)

SPAIN, Alicante: Santa Pola, Santa Pola del Este, 38°11′45.42″N, 0°31′09.30″W, 16 m, gravelly area adjacent to ravine, a single clone, 13 May 2017, F. Verloove; Santa Pola, Pueblo Levantino, 38°12′25.23″N, 0°34′08.32″ W, 27 m, degraded matorral, close to residential area, rather frequent, 16 May 2017, F. Verloove.

This taxon is originally native to Mexico (Coahuila) and the southernmost U.S.A. (Arizona, Texas) (Pinkava 2003) but it is widely cultivated elsewhere in warm-temperate areas of the world. Guillot Ortiz & al. (2008) reported single records from Valencia and Alicante provinces. However, the latter recently turned out to be referred to Mortolopuntia schickendantzii (Guillot Ortiz & Sáez (2014). *O. engelmannii* var. *linguiformis* is here reliably reported for the first time from Alicante province. In Santa Pola del Este a single clone grows on the verge of a ravine, whereas in Pueblo Levantino this species occurs with several dozens of individuals on the verge of degraded matorral, close to habitations. In this locality it is obviously naturalized. In the past years it has increasingly been recorded as an escape in Spain, especially in Catalonia (Aymerich 2015).
(Cactaceae)

SPAIN, Alicante: Santa Pola, Pueblo Levantino, 38°12’25.23”N, 0°34’08.32” W, 27 m, degraded matorral, close to residential area, rather frequent, 16 May 2017, F. Verloove.

Several clones of this red-spined cultivar of *Opuntia microdasys* were found in Pueblo Levantino (Santa Pola), along with *O. dillenii* and *O. engelmannii* var. *linguiformis*. It had, apparently, not yet been recorded from Alicante province (Serra Laliga 2007, Guillot Ortiz & al. 2008).
Trichocereus bridgesii (Salm-Dyck) Britton & Rose, Cact. 2: 134. 1920.


SPAIN, Alicante: Alicante, N-332, 38°18’37.38”N, 0°31’02.96”W, 12 m, rough ground, a single clone, 11 May 2017, F. Verloove.

This Bolivian species is frequently grown as an ornamental but is only exceptionally observed as an escape. It was recently reported from Tenerife in the Canary Islands (Verloove & al. 2017).

In May 2017 a single clone was seen on rough ground adjacent to the N-332 motorway south of Alicante where it probably established itself from garden debris.
New records of non-native succulents from Alicante

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Piet Van Der Meer is sincerely thanked for his help with the identification of Agave lurida.


References


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References

One of my favorite cactus sights happens when I visit the mountains of the Sierra de Alvarez in San Luis Potosi. There, exposed among oak forests, calcareous rock deposits are sprinkled with a multitude of a large and conspicuous hemispherical *Mammillaria* with a striking white cotton ring around its center and, if you are lucky to visit in late winter or early spring, beautiful carmine flowers. Quite a sight, they remind me that a beautiful cactus does not have to be rare or hard to find. This plant is known as *Mammillaria orcuttii*. 

Mammillaria orcuttii, growing in a crack in calcareous rock.
Above: Notice the different tones of flower coloration on this M. orcuttii growing together at Sierra de Alvarez, San Luis Potosi.

Taxonomy
The scientific description of *Mammillaria orcuttii* appeared published in the monthly journal of the German Cactus Society (Monatsschrift der Deutschen Kakteen-Gesellschaft) in 1930 (2:258-259), it was authored by Friedrich Bödeker (1867 - 1937), a German botanist who specialized in cactus and described several genera and numerous species. He was honored with the taxon *Mammillaria boedekeriana* Quehl 1910.
Mammillaria orcuttii, not rare but beautiful

Two pages, illustrated with a black and white picture, comprise the description of M. orcuttii, which is based on specimens collected by Charles Russell Orcutt (1864 – 1929), a noted naturalist, plant, mollusks and cactus specialist who promoted the foundation of the San Diego Natural History Museum in California, edited the journals American Botanist (1898-1900), American Plants (1907-1910) and Western Scientist (1884-1919). Orcutt participated in many cactus searching expeditions, and provided the plants with the locality Esperanza, Puebla State [Mexico] as collection place. He was honored with the specific name by Bödeker, one year after his death of Malaria.

The locality in Puebla, together with a plant that in the description picture appears etiolated and weakly spined, confused many people about the identity of M. orcuttii, which was declared synonym of M. carnea, a roughly similar species widespread in central and southern Mexico, by Hunt (1997).
In 1999, given the state of affairs, the plant in San Luis Potosi was described in the journal Cactáceas y suculentas mexicanas (Mexican cacti and succulents) as *Mammillaria phantasma* by Manuel Sotomayor, Alberto Arredondo Gómez and Mario Martínez Méndez. The name *phantasma* (Phantom) was taken from a small valley in the mountains of the Sierra de Alvarez in San Luis Potosí known as Valley of the Phantoms (because of the white limestone on the richly calcareous rocks, which sometimes are shaped as animals, if you were wondering).

That same year John Pilbeam (1999:210) suggested that Bödeker himself had reasons to doubt of the origin of *Mammillaria orcuttii* in Puebla and that instead it had to be referred to the south-east of San Luis Potosi. The described characteristics of *M. orcuttii* fitted perfectly with the plant in the Sierra de Alvarez. *Mammillaria phantasma* is therefore generally considered a junior synonym. (Pilbeam 1999:210, Anderson, 2001:435; Hunt et al, 2006).

*Mammillaria orcuttii*, growing in a crack in calcareous rock at Sierra de Alvarez in San Luis Potosi. Above left: A cluster of *M. orcuttii*, growing with *Agave mitis* and *Pittocaulon praecox* on a vertical wall of calcareous rock.
**Description**

*Mammillaria orcuttii* is a globular semi-spherical plant ranging in size between 10 to 20 cm in diameter and up to 30 cm in height for old plants. They have a bluish-green epidermis with short, conical tubercles with rounded apices. White wool is abundant in the axils and areoles in the central part of the plant. Some tubercles with 6-8 very short white, hair like 2 mm long radial spines are present particularly in young plants. Four to five short, strong, blackish-brown, 8-20 mm long central spines are present in each tubercle. Flowers are about 12 mm in diameter and colored bright carmine (somewhat variable between plants from clear to dark) with a darker midvein. They normally form a full crown in blooming time, even in their natural habitat. Fruits are short and bright red, and are produced in late spring. Seeds are brown (compiled from Bödeker, 1930:258; Pilbeam, 1999:210; Anderson, 2001:435; personal observations).

*Mammillaria orcuttii* sharing a crack in the calcareous rock with *Sedum retusum*, at Sierra de Alvarez, San Luis Potosi. Above: photo of the diagnose in the original description in Monatsschrift der Deutschen Kakteen-Gesellschaft. Below: Photo of *M. orcuttii* in the original description, same source.
**Distribution**

*Mammillaria orcuttii* is distributed in the Sierra de Alvarez in the state of San Luis Potosi, part of the Mountains of the Sierra Madre Oriental in north eastern Mexico, at a geographical altitude range of 2,000 to 2,400 m asl. It is estimated to grown over an area of approximately 200 km² (Fitz-Maurice, 2013).

Sierra de Alvarez en San Luis Potosi, habitat of *Mammillaria orcuttii*.  
**Below left:** *M. orcuttii* growing on a vertical rocky wall under an *Agave lechuguilla*.  
**Below right:** *M. orcuttii* growing on calcareous rocks.
**Habitat**

In their natural habitat in the mountains of the Sierra de Alvarez, *Mammillaria orcuttii* grows on mountain areas in a slight to vertical gradient among calcareous rocks or anchoring in the crevices among them. They grow in partial shade but mostly under full sun. Although they don’t regularly cluster and are found individually, a few clusters do exist. They inhabit in isolated colonies where they are quite abundant. Fitz-Maurice (2013) estimates a total population that consists of more than 5,000 individuals. Nevertheless, in my appreciation that number is very conservative, as each of the many colonies may consist of hundreds of plants.
**Conservation**

*Mammillaria orcuttii* is classified as of “Least Concern” in the Red List by the International Union for the Conservation of Nature, assessed in 2013 (Fitz-Maurice, 2013). More cautiously, the Mexican government in the National List of Species in Risk of Extinction (NOM-059-SEMARNAT-2010) classifies the plant as “subject to special protection”. It is estimated that illegal collecting, both commercial and amateur, represents a small threat to this species. Most of the range of *M. orcuttii* is found inside protected forestry zones.
In captivity

*Mammillaria orcuttii* is a common plant in cultivation as it is raised commercially for international trade (Fitz-Maurice, 2013). When keeping the plant in cultivation, four aspects of their natural habitat should be taken into consideration:

- First: the range of elevation where the plants inhabit (2,000 to 2,400 m asl) in central Mexico assure a benign temperature range, with temperatures rarely exceeding 25 °C during the day, cooling down at night. Winter temperatures may round 10 °C with some cold days and nights a few degrees under freezing point. Slim snow layers accumulate some years, but regularly just for a few hours.
- Second: Unlike several other *Mammillaria* species, *M. orcuttii* inhabits mostly under full sun.
- Third: The places where the plants chose to grow prevent the accumulation of water. The environment is dry, rains are present from late May to early November (accumulating some 60 cm a year) but mist is present every day,
and this is likely the source of water for *M. orcuttii* (and many other plants in the area) during most of the year. It is not uncommon to find *M. orcuttii* growing among moss.

Fourth: the plant grows in a highly calcareous substrate, the rocks where it lives are rich in limestone and even the area of Sierra de Alvarez is the place where a large industrial facility exploits this natural resource.

When kept on cultivation, Pilbeam (1999:211) advises against watering over the top of the plant, since this would wash away the attractive (and protective) wool growing on the lower part of the stem and the fresh wool near the top of it.
Mammillaria orcuttii, not rare but beautiful

References:
If you are a land owner in the state of Texas, you can dig up any plants you want and do anything you so desire with them. As such quite a few *Ariocarpus fissuratus* find their way to California and probably other states also. As I live in California I am not sure about the other states but I have to think other states get some plants also. I have bought some of the plants from people that have managed to get a bunch of them and wanted to sell some. In about the last fifteen years I have managed to buy maybe thirty or so plants. I have about a dozen of the plants still in my collection. Several of them are clusters and a couple have clustered in the last five to six year. The rest of the plants I had I have sold. A customer that would come and buy plants about ten to twelve years ago called and explained that she was having health problems and had to move to Washington state and wanted to know if I would take some of her plants. I told her ‘sure’ and she came in about an hour with a bunch of plants. In the bunch of plants were three *Ariocarpus fissuratus* that she had bought from me years ago and three she had bought elsewhere. The amazing thing is that they still had the original name tags in the pots that were there when she bought the plants.
The thing is that the plants are still about the size as they were when she bought them; that is the plants with my tags in the pot. To me that seems kind of strange but still I know why. When the lady brought the plants here it was in middle to late September of 2016.

Not knowing what kind of soil she had them in I repotted the plants and added them to the Ariocarpus area in my large hothouse. When I was repotting some of the plants it dawned on me that the plants were still in the same pots they were in a dozen years ago.

The soil also had not been changed as it was the same as when she bought them. Another thing I noticed is that none of the three Ariocarpus fissuratus she had got from me looked like they had grown any. They were still covered with the greyish mineral covering as when they came from habitat. Back in the day when I bought the plants I had not gone to acidic water yet. So the plants got my well water which is alkaline and full of minerals and leaves water spots on everything even the plants. If you look at some of my photos you can see the plant tubercles are light ash grey with a mineral coating.
In habitat the plants grow in and on limestone soil; when it rains the rain splashes calcium from the limestone onto the plants where after the rains it dries. This happens every time it rains and all the plants from smallest to largest have that calcium layer on them. In habitat it is a part of life. If you lived in habitat where the plants grow you could build a planter box and fill it with soil without limestone in it and the plants would grow green.

The planter box could be fifteen feet long and four to five feet wide and say at least three feet tall. Tall enough so no splash from habitat limestone would get on the plants. Now let’s say that you transplanted fifty plants that are two inches or less in diameter and four that are four to five inches in diameter. These plants would start to grow green because they have no calcium being splashed on them. The new tubercles would emerge green even on the large plants and in time the calcium build up would be washed off the plants.
I do not know what happened to one of the plants for it is almost flat as a pancake. I am not sure it ever grew for the lady but it has stayed alive all these years. If you look at the far side of the growing centre there is a tubercle that is not covered with the calcium. That happened after I was giving it acidic water. [All of the photos featured here were taken 6 months after the plants arrived here, that being at the end of March 2017 and so some growth is seen on most of the plants.] Even having been in cultivation for at least a dozen years the plant is still covered in the calcium; the reason is not because it was not watered but it was watered with alkaline water. Alkaline water will not wash off or dissolve the calcium or mineral that is built up on the plant. Another picture shows the plant really loaded with calcium and especially where the water would stand till it dried especially on the flat areas of the tubercle. Again, in the growing point can be seen some new growth without the calcium build up on it.
But some of the plants have another problem besides the layer of calcium on the plant body. That is that the plants are or have been stretching for light.

This shows up quite well when the plants are seen in person. I remember years ago the lady telling me that some of her plants were getting sunburnt and so she got shade cloth and her husband covered her hothouse for her. I was kind of horrified at the percentage of shade she had put up. I told her it was way too much but she said it was up and there was no changing it. I do not remember the exact percentage of shade but it seems like it was either 60 or 70%. Two of the plants presented in photos are too tall for the number of rings of tubercles. This is easy to see as it is stretched and should only be half that tall. The plants just did not get enough light so as to stay compact like they should be. It is hard for me to think of *Ariocarpus fissuratus* being elongated but that is just what they are. It is not the tubercles as much as the entire plant is too tall. It can be also seen that the tubercles are quite thick looking and that is what is making the plant too tall.
One photo shows the highly unusual growing point of one of the plants. I am not sure how dead the tubercles are in the growing point but they look dead to me. I see some green on the tubercles around the growing point but so far see no signs of life down inside the growing point. If there is life in those tubercles and they grow the top will likely be dead and the plant will be scared for life. If the growing point is dead, then in time the plant will offset. I have one plant that has fourteen offsets on it since its growing point was damaged. As to what happened to the growing point, I do not know; the only guess I can make is a chemical burn. However, the next photo is of another habitat collected plant. This plant has been getting acidic water for years. Note the bottom tubercle there in the front still has some habitat calcium on it. In time the acidic water will dissolve that and in time it will end up green like the rest of the tubercles.
Rain falls from several hundreds of feet to even a mile in the desert. That rain hits and splatters the soil for several inches in all directions. As they live in limestone soil that is splashed on the plants and the calcium remain there after the rains and it is then baked on by the sunshine. If when I water the plants I watered with the same force as the rain hits, I would blow all the soil out of the pots but at least the calcium would be washed off the plants in short order. Gentle watering with acidic water takes a good while to slowly dissolve the calcium on the plants. There may still be some calcium on the plant but it is nothing like those in the first few photos. The plants are the same age and were covered in the same amount of calcium build up.
For my plants I gave larger pots and new soil so they will now grow along with my other plants. The plants I have been growing for years are all mostly green. I also have seedling *Ariocarpus fissuratus* I have grown from my own seed and they are all dark green in color. They have not been covered in mineral or calcium deposits, dark green is the natural color of the plants. This is one of my seedlings; it is 5 cm in diameter and shows the normal color of an *Ariocarpus fissuratus* that has not been splashed with minerals.
There are two other *Ariocarpus retusus* plants which were bought at about the same time as the *Ariocarpus fissuratus*. Most people would look at them and declare them beautiful plants. Beautiful plants they are, to say the least. But there is a problem with them. Most cacti that do not get enough light get etiolated and even bleached out looking. The interesting thing about these two *Ariocarpus retusus* is that the tubercles are elongated but the plants are not showing signs of growing pin headed. It finally dawned on me that the tubercles are quite a bit longer than on my other plants. I have at least thirty other *A. retusus* and none have these really long tubercles. So I decided to measure the tubercles to see the difference in them. On the plants I have had for a long time the tubercles are 2.5 cm with only a couple plants having tubercles 3 cm long. The tubercles on the returned plants are 4 to 4.5 cm long. I have to assume that the tubercles had to grow longer so the plant would then get the light they need.

In cactus club meetings I know it is stressed all the time that all desert plants (cacti and succulents) need all the light that you can give them to keep them compact and growing as natural looking as can be in cultivation. I also know that all books on cacti stress the importance of good strong light. Most speakers when talking about growing cacti stress the importance of good light. When people buy plants at the shows and sales and ask me how to grow them I tell them to acclimate the plant to where they are going to have it. Then depending on what plant it is I will stress good light but also if the plant is a high elevation plant I will point out that it needs afternoon shade, but that shade has to be bright shade. I am not sure that anywhere in habitat a plant grows in 50 to 90% shade. I do not know of any cactus plant that will grow in dark caves. I have had people tell me that they have 70% shade cloth on the west side of their greenhouse. As to why I do not know but several have said that 70% shade cloth is all they could find.
It has been eight years since we published the article on using acidic water (Elton Roberts & Malcolm Burleigh – Cactus and Alkalinity).

I have people ask why their plants are not growing and when I ask if they are using acidic water some answer that they did one or two times but do not have time. They will mix up water with fertilizer in it but it is too much of a hassle to make it acid by adding vinegar or sodium bisulphate. Keep in mind that all rain water is acidic for Mother Nature knows what is good for her plants. If you have Ariocarpus plants and like the look of a plant covered with mineral build up like those in photos 1 - 5, then water them with alkaline water. They will slowly get more mineral build up on them.

I use to allow the build up to stay on some plants for a couple years and then I would take a tool and flick thick flakes of build up off the tubercles. I had to allow the build-up to get quite thick or else I could not get it off without damaging the tubercles. The plant would then be green for several months, till the build-up got thick enough then the plant’s green color would not show through. Now all the Ariocarpus are dark green like they should be and they are mineral free thanks to acidic water.

Keep in mind that all water companies are required by law to add certain chemicals to keep the water alkaline. Many places keep the pH of the water at 8 to 8.5 and I have heard of a place or two that have the pH at 9. The idea is to keep the water from eating up the pipes and also keep you from getting heavy metal poisoning. If you water your plants by dip and pour, a sump pump from a 30 gallon (113 litres) garbage can or if you have a Dosatron or some other brand of mixer it only takes a few minutes to make the water acidic. I always shoot for a pH of 5.
If you are a good judge of size, you can see that the individual flowers are fairly large for the plants are in 25 cm in diameter pots and some plants are not too far from 25 cm in diameter also.
Some more large flowering *Ariocarpus*. These are in 23 cm and 25 cm pots also. The flowers are really quite large. I am surprised that the plants are blooming so wonderfully for we have had a very hot summer with greenhouse temperatures hanging around 54 °C to 59 °C for quite a few days. When it was a bit cooler it was 48 °C to 53 °C, these kind of temperatures lasted for several months. The heat insulted some of the plant and burned to a crisp other plants that were still young. It is frustrating to say the least.
Notes on Ariocarpus

Ariocarpus retusus, 25 cm pot.
Try to figure the diameter of these flowers. They are *Ariocarpus trigo-nus* and in 30 cm diameter pots. I have several plants that are trying to outgrow the 30 cm pots. That being the case I am going to be in trouble as the next size of pot I have is a 35.5 cm. I do not like to have *Ariocarpus* in bowls as there just is not the room for the root system to grow as well as in pans.
intend to present in the following article two succulent plants growing in Romania, discovered and studied in Mehedinți County, on the hilly area covered by deciduous forests (at altitudes of 200-400 m).

I think the most truthful order is to start with the distribution, so I will begin with *Euphorbia amygdaloides*, found on the outskirts of deciduous forests, especially those of oak (*Quercus robur*), sporadically occurring besides beech trees (*Fagus sylvatica*) and sessile oak (*Quercus petraea*).
Its habitat is quite interesting because it grows in dry and shady areas, where we found only a few other plants, generally low growing herbs.

However, the plants seem to develop best in the absence of competing species, especially in low-lying areas, preferring moisture, but can be also found in dryer, poor quality, clayey soils.

Therefore, among other plants, I found a population of 20 to 30 *E. amygdaloides* bushes covering the sloping land, so the water is leaking quite easily. The soil is quite acidic, formed from the rotting of the deciduous leaves, especially oak (*Quercus robur*), sessile oak (*Quercus petraea*), interpolated with cornelian cherry (*Cornus mas*) and European privet (*Ligustrum vulgare*) which appear quite often; less rarely also ash (*Fraxinus excelsior*), maple (*Acer campestre*), etc.
In the most uninviting and dark areas I happened to come across rather large sized specimens, bushes of up to 1-2 m in diameter, grouping from 2-3 to 5-10 plants, which illustrates another reason of success for this plant - the adaptation to a niche not covered by other species.

The bushy appearance of the plant is given by the underground rhizomes which, on the one hand, represent a propagation path, with fresh shoots appearing along them, and also a path of protecting the plant itself, since under very cold or very dry conditions its parts or organs hidden ground below ground level can survive.

The flowering period is spring, with flowers specific to the genus, with greenish-yellowish bracts surrounding the small, white-green flowers.

Between June and July, when the pictures were taken, I found some plants still keeping the dry floral rods.

Other details:
- the leaves are covered with small bristles that give them an interesting appearance, being soft to the touch;
- as with other plants of the genus, the latex produced by the plant is toxic, and is found in roots, stems, leaves and flowers;
- the plants are perennial and the leaves get a more intense green color in the shade, discoloring the higher the exposure to the sun;
- during the winter, the foliage gets tones of yellowish to red color and withers only partially, the plants bearing leaving leaves all year round.
As I mentioned before, I have encountered a few specimens on poorer, clayey soils covered with a superficial layer of dry leaves at the edge and through the slopes covered by young oaks, blackberry brambles (*Rubus fruticosus*), bushes and other transitional herbs, at the edge of some deforested areas.

In places with higher luminosity, where there are growing other herbs as well, I noticed that the *E. amygdaloides* plants were significantly less developed and also had a lower height, narrower leaves and a yellowish-green color, very different from the intense green of specimens occupying the forested area. Therefore, a certain degree of moisture, otherwise specific to the bush areas of the forest, is welcome, though not really necessary, but allowing the growth of healthier and more robust specimens.

Colony of *E. amygdaloides*, growing in full sun.
Unlike *E. amygdaloides*, which inhabits various areas of deciduous forests in the region, the second succulent plant observed was occupying an extremely very limited area of only 5-10 m².

I discovered it a year ago, growing up on a slightly overflowing land, among herbs, in direct sunlight, at the edge of a deciduous forest. To be more precise, the habitat of the species is represented by one of the banks of earth which surrounds a hollow bounded by the wood, which takes the form of a pasture.

It is *Sedum sexangulare*, a plant similar to the more common *Sedum acre*, the difference, as the name reflects, is given by the arrangement of the leaves on six rows (although there are plants with more / fewer rows) and the plant’s appearance is more compact and sometimes colourful.

One interesting thing is that although I found some plants growing also in shade, the population is well located and I have not discovered this species in the surrounding areas.

The reason, as I mentioned above, is not the light, but the drainage. The plants grow on sandy - clayey soil, grungy and drainable, in the slope. Even if the forest fringe areas do not lack clay or sand, I have never discovered this type of soil in any other place.

Although I have searched carefully, a similar area does not exist on a stretch of several kilometres. I have noticed that this soil is used by locals to produce handmade bricks, and, another interesting aspect, I have also found the shells of snails and other molluscs in the deeper layers.

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**General habitat of the species *E. amygdaloides* and *Sedum sexangulare***

**Colony of *Sedum sexangulare*, growing in full sun on a sandy slope.**
Besides these plants, the area is interesting because it hosts a turtle species, *Testudo hermanni var. boettgeri*, a species found in Mehedinți County and in Dobrogea. They are long-lived, peaceful, herbivore and very friendly reptiles, sometimes reaching the backyards of the people.

During the winter (when temperatures can reach -25 °C) they hibernate covered by dry leaves, leaving their litters in February-March to procreate. Reproduction takes place throughout the year, except for the rest period, the females depositing several eggs in sandy soils. Males are usually smaller than the females and often fight by colliding shells to win a partner. Once this obstacle has passed, it follows the follow-up of the females and their immobilization in view of the short coupling.

The greatest danger to this interesting species is, unfortunately, the humans, with many animals ending up by being trampled by the wheels of the machines and carriages handled negligently and used to drive wood that is not always forested legally ...
My visit to Banks Peninsula was a delayed dream that I had for many years. Not that I would not have what to see and study in great Auckland area but I always felt that Banks Peninsula is a must see for a freak succulent enthusiast like me, interested more in succulent plant naturalization than in keeping an impressive collection of shop windows plants. I continued to read in time, of course, a series of interesting papers – starting with Healy’s 1959 article which was a starting point - but in the meantime, I became heavily involved in field studies in the North Island and, specifically, in Rangitoto Island. However, in 2014 we published in Xerophilia 10 Jennifer Pannel’s paper “When succulents attack! (a peninsula under threat)”, which was of definite relevance for me. It provided, first of all, a lot of first-hand information which prompted me to plan a five days’ travel to Banks Peninsula, the true “reservoir” of naturalized succulents in South Island becoming unfortunately completely out of control in some places. In the end, I managed to plan a short trip to Banks Peninsula. In the coming months there will be quite an extended article written on this subject.
One of the places visited - the exotic plant thicket in Bridle Path - provided me the opportunity to record one succulent plant species documented for the first time in nature or in areas of uncontrolled vegetation:

**Aeonium simsii** (Sweet) Stearn 1951 (very probably a hybrid of).

- **Location**: Bridle Path Road, Ferrymead, Christchurch, (-43.559, 172.709), on a very steep slope.
- **Date**: September 2016
- **Category**: Casual (possibly garden discard).
- **Origin**: The true species comes from Gran Canaria (Canary Islands), where it grows at high elevation. Most plants in cultivation seem to be a hybrid (garden origin).
Comments: *Aeonium simsii* is quite different from other *Aeonium* species by having small and highly denticulate leaves but especially by the lateral flowering, not occurring from the centre of the rosette. The plants offset profusely and form low mounds. The rosettes do not die after flowering (Schulz, 2007) which is another exception in the genus *Aeonium*. Most plants in cultivation seem to be hybrids, and the plants seen on Bridle Path are highly probably hybrids as well. I couldn’t match the plant with plants photographed in habitat (including internet and Schulz’s book) but is a very good match with pictures of *A. simsii* hybrids seen on the internet. They also seemed to grow more robust and taller than the true species. However, many characteristics of the true species were still present: summer flowerer, lateral flowerer, and the dotted marks on the outer leaves. The plants were growing here on a very steep slope (45-60 degrees) forming dense mounds and not really mixing with other species (photos on this page).
The northern end of Bridle Path is integrated, more or less, into the road network. It is actually a sealed road, with several homes scattered nearby. I mean, that is the crux of the problem: the man and his plants brought from remote corners of the world, plants that once escaped in uncontrolled areas – chances are they’re not just a plague, but are completely replacing the native ground cover vegetation. I parked the car on Cannon Hill Crescent and walked 300-350 meters north and up the Ferrymead Terrace few hundred meters and inspected the heavily vegetated steep slopes.

*Aeonium simsii* hybrid.
Quite a surprise of what I could see here, only on few hundred meters - a good collection of succulent plants: *Cotyledon orbiculata*, *Aeonium arboreum*, *A. ciliatum*, *A. haworthii*, *A. undulatum*, *A. urbicum*, *Sedum praealtum*, *Aloe arborescens*, *A. maculata*, *Senecio serpens*, *Echeveria 'Imbricata*', *Opuntia sp.* (possibly *O. ficus-indica*), *Agave americana* (incl. *A. 'Marginata' – the variegated form), *Furcraea foetida*, *Eu- phorbia characias*, *Carpobrotus edulis*, *Drosanthemum floribundum*, and especially the *Aeonium simsii hybrid*, a found which that gave me the opportunity of a first documented record as adventive plant in New Zealand.
First record in New Zealand - Aeonium simsii hybrid

Note: This small article is an excerpt from a larger one on my travel in Banks Peninsula and the numerous succulent plants seen there. This article is still a "work in progress", but hopefully it will be published in a special issue of Xerophilia (www.xerophilia.ro) later in 2018.

Literature

Euphorbia characias.
Over-fertilization is a term with specific application and, therefore, meaningless in absolute terms. Therefore, the validity of the term must be relativized virtually to each species, which is - in turn - related to environmental conditions, habitat, but also to the chosen cultural conditions. Thus, a plant specific to arid habitats will only be over-fertilized by a too generous composition of soil in pots, while another, originating from semi-arid or forest areas cultivated under the same conditions as above will develop normally.
Since humans began to make agriculture, in the true sense of the word, they have sought to “fatten” the earth, to have bigger and richer crops. First, they discovered natural fertilizers of animal and plant origin to later reach industrial chemicals.

More than two centuries ago, the first cacti were cultivated by gardeners: otherwise farmers. They reflexively used fertilizers, as well - also in a spontaneous effect - they considered organic soil to be the starting point for the cultivation of some plants originating from arid and very arid areas. Quite quickly, gardeners, who, finding an economic niche, have specialized in Cactaceae, found that organic fertilizers of animal origin could produce unpleasant surprises, so they enjoyed greatly, in the emergence of chemical fertilizers of industrial origin.

Since then, professional cactus growers - all gardeners! - continue to use fertilizers in one, because their cacti will grow as big and “beautiful” as possible. They need to produce much and fast, to sell well and to have the greatest profit, the future fate of the plant, being the problem of buyers and not theirs. So, don’t they sell cacti planted in peat, destined to a definite death, from the very day they were planted?!

The collectors, reading their advice and opinions, through books, commissioned or written by them, followed the same system. Not one or the other, though seeing the plants growing up at home, did not ask themselves how where the cacti fertilized in their habitat. It seemed normal for plants to be fertilized, and cacti should normally be fertilized. The supreme argument was and still remained: “To give them what they lack, what they have in nature, and we do not have here, in the pots we planted them. But must they be fertilized or not? Certainly, cacti must be fertilized!

And then you will ask yourself: why are we getting so crazy?? Well... because it depends on fertilization! For example, all these farmers/gardeners/ producers/growers when talking about fertilization they always refer to the so-called macro-elements: N (nitrogen), P (phosphorus), K (potassium). Depending on the company and producer, the proportion of these elements vary in different blends, but they are always in large proportion, exactly like farmers and gardeners used them.

I will not extend the subject now, because I have already extensively wrote about it in The Stone Eaters, but I will point out that although these elements exist in natural, even arid soils, they are there in proportions similar to the microelements - those mineral salts that the cactus extracts, especially from rocks and stones.
More importantly, cacti - living in artificially created soils, the so-called captive soil in pots, must find only what they need and not exactly what they have available in habitat. For these reasons, we believe that – when growing cacti - we need to avoid dedicated macro-elements solutions. We will be happy to offer them micro-elements.

Given that our plants still need NPK, half a dose of commercial fertilizer once every two to three years is sure enough for the next time.

There are some who give the plant the mace-rate extract of bird excrement - of all natural fertilizers, it is - after all - the only one that can be used if the doses are very moderate. Personally, I am against this system, which runs counter to the natural aspect of the plant, and which, over time, creates vulnerabilities. Remember, in cacti the vulnerabilities can be observed in years and some even in decades. Maybe we think if we had a plant for 20 years, it does not really matter if it did not live 40, because we cannot really know if it lived that much. You can be sure the cactus would have lived! Even some small cacti can become easily centenarians.

There are cacti that - specifically - do not offset or do offset only at very old age. One of the consequences of their exaggerated fertilization is that after a while, if they do not die, they start to grow or become multicephalous.

As in the case of grafting, the main meristem of the plant, unable to overcome the natural rhythm of the DNA, needs to grow somewhere... and then you get all sorts of heads and off shoots. Slowly, the plant grows, becomes impressive, becomes a monster, as it has never been seen, becomes a monster like the monster on this page!

Mammillaria schumannii ssp. globosa - a plant that should look like the adjacent specimen, photographed in nature, on a very poor soil. The subspecies, stated in the description as being smaller than the type, has specialized in unimaginable conditions! Its fertilization makes her look like a being that has never existed. Even on ordinary soil, it reaches immediately a much larger size than the type, and collectors are convinced that it should be like this.
The vegetative development of the stem, reaching a limit beyond which the plant can no longer sustain the required growth rate, but having to continue to transform the nutrients which will be absorbed but has nothing to do with, being genetically adapted to another feeding regime, is bound to apply any available vegetative solution.

Desperately, it uses the most expensive way for the plant: flowering. But the phenomenon is explosive and aberrant, as you can see (again) in the following pictures.

I do not need to remember how the Mammillaria cacti flower normally: one single flower, on each axilla, and never on the areole of the tubercle. Here it is, for the second time in this issue, the opposite! Without realizing that he is experiencing an alienated manifestation, the collector sees it as an extraordinary success and rejoices.

But the plant, NO!

Mammillaria schumannii ssp. globosa - multiple blooming, aberrant and sprouting (!) from the same axilla of the plant.

Matucana oreodoxa - a plant influenced by an excess of fertilizers, instead of blooming only apical, as it is specific, simultaneously develops a multifarious and aberrant flowering in the lower sideways of the plant.
On page 10 of my book about the cultivation of cacti, in a very dull way, we talked about both areoles and their two meristems, and about their separation to the genus Mammillaria: the spinal areola (determined) and the axilla (undetermined).

Here we can see how theory combines with practice - we have a Mammillaria that blooms from the spinous part of the areole, whose vegetative function has entered into latency but also from the axilla, is it normal? No, it is not!

Seeing a flowering, like this one on this page, we'll understand that I've come across an anomaly. An anomaly, by definition, cannot be a normal fact. The purpose of this presentation is to teach you how to cultivate normal plants.

Mammillaria schumannii ssp. globosa - aberrant flowering of the spinel areola (1) and normal flowering of the axilla (2) of the plant on the previous page.
Turbinicarpus valdezianus — photographed in 2013, in the collection of my late friend Basarab Popa. Under the influence of an excess of fertilizer, one single plant generated a monstrous colony of shoots, more than 20 cm in diameter and over 15 cm in height, became correctly cultivated, and under the new cultivated conditions right (bottom left), the plant should look like in the habitat, where there is a dwarf and solitary plant, a few centimetres, like the left fir. Compare by analogy with a man of 170 cm high that would weigh 400 kg ...
Species that live on soils with a lot of organic inputs will not visibly deform, if grown on such soils or with minimal fertilization. Species that have reached a highly specialized level of adaptation for extremely arid, completely mineral, calcareous and/or salty soils - conditions that inhibit stem development - the more prominent will respond to the balmy cultural conditions. A fertile soil will force them to grow up to the maximum limit of their genetic potential. Fertilization will force these limits, turning them into hypertrophic creatures, with abnormalities, sometimes even monstrous. Anomalies and monstruosities always have vulnerabilities that we will not know over time to deal with them.

Turbinicarpus macrochele ssp. polaskii - multiple aberrant flowering of the same floriferous meristems.

A special form of fertilization is the stimulation of flowering and it has the role of increasing the number of flowers produced by a plant either for the purpose of selling it or for obtaining an increased number of seeds. However, it is worth noting that the seeds thus obtained have a significantly lower germinating quality.

Therefore, if you do not have productive goals, if you grow cacti only because of the interest in having beautiful, healthy and strong plants, it is preferable not to use these abnormal kind of stimulation.

Blooming is a measure of the state of the plant. A cactus will always flourish to the maximum limit of its vitality!

Stimulating the blooming amount of flowers of a plant, can mask problems, which we cannot get in time.
Concluzion

- Slow plants (like Ariocarpus, Aztekium, Blossfeldia, etc.) can be fertilized in the first three to four years - very moderate - in sight stimulating their growth;
- Old plants, in a suitable soil, will be but left in their rhythm;
- Extreme adaptation plants will not be fertilized, lack of growth inhibitors (limestone, full sun), being sufficient stimulation in the first growing period; then the introduction growth inhibitors becomes required;
- Portals with or without their grafts can be fertilized, fertilization especially helping the support that however, deforms the graft;
- Simple rootstocks fertilize to be more quickly exploitable.

Natural growth leads to plants slower stronger and more likely to have us committed all our lifes, both them and out life as well.

Mention

This article is an edited excerpt from the book "Cacti Cultivation in a Temperate Continental Climate", a revised edition already published by Xerophilia, in November 2017, in Romanian.

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Over-fertilization in Cactaceae

Turbinicarpus macrochele ssp. polaskii - an aberrant multiple flowering of the same floriferous meristem.

Bottom left: Turbinicarpus schmiedickeanus ssp. klinkerianus - another example of aberrant flowering of the same floriferous meristem.
In New Year’s Eve 2017/2018, at the age of 77, after a short, severe illness, a great expert and cultivator of cacti and succulents left us forever. Dr. Jürgen Menzel, known to many as Cactus Jordi, is no longer with us. With him we all lose a great connoisseur of the succulent world and I a fatherly friend.

Jürgen was a walking encyclopaedia, always hospitable and generous, open to discussion and frighteningly honest.

Many textbooks, forums and websites would not be complete without his pictures of rare plants.
Astrophytum crassispinum

His beautiful, well-groomed plants regularly received many prizes at exhibitions in the US.

Not to mention his devoted, long-time voluntary work in the Baja Garden of the Wild Animal Park, San Diego, where he spent many hours not only with the care of cacti but also mundane work, such as weeding, which was done to show visitors the beauty of the succulent world and to promote our hobby.
Jürgen has contributed significantly to the protection of species at their natural sites by his control of propagation. The legal import, propagation and distribution of *Digitostigma caput-medusae* must be emphasized here. He laid the foundation for working with this species on our joint trip to Mexico in 2004, with a visit to the discoverer of the species, Manuel Nevarez.

Many long-lost species, e.g. *Escobaria abdita*, *Turbinicarpus nieblae*, *Turbinicarpus krainzianus* and *Turbinicarpus sphacellatus* were in the process of propagation long before the first description - and therefore even before their rediscovery. This often resulted from the fact that since the 1960s he has maintained worldwide contacts and lively exchange with many of the cactus world's greats.

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Dr. Jürgen Menzel, in 2004 at the site of *Strombocactus disciformis* ssp. *jarmilae*, at La Plazuela Mexico.

As an eternal keepsake: Navajoa peeblesiana ssp. *menzelii* at the type site, in Arizona.
I like to think back to visits made back in the 1980s in Hamburg, later in Mallorca and in California as well as on trips and telephone conversations. I am very grateful for the last two meetings with Jürgen in October 2016 and in April 2017 in El Cajon / California with a short trip to the Baja California. At this point, none of us had any idea that it would be a goodbye forever.

His name is the cactus world forever with the, discovered by him in Arizona, *Navajoa peeblesiana* ssp. *menzelii*, to be preserved.

Our deepest sympathy in these difficult hours is his wife Beate.
Born on 6 January 1936 in Yorkshire, England, Philip later graduated from Sheffield University with a degree in dentistry. Although botany was his passion, he realized he had to support a family and thus chose dentistry.

He married Annette Forster, and they had three daughters, Susan, Helen and Georgina. It was after the birth of Helen that the family emigrated to South Africa, with its more appealing climate, and where job opportunities led the family to Amanzimtoti, south of Durban in 1967. A few years later, their third daughter, Georgina, was born.

Philip worked for the South African government in various public hospitals where he was respected and a very successful dental surgeon. In 1974 Philip and Annette’s marriage came to an end, where the three girls continued to visit their Dad regularly.

In 1980 Philip met Ansie and were married six months later.

It was during the years spent in South Africa that Philip’s passion for plants flourished and his quest to find many succulent plants to add to his collection which led him to all corners of Southern Africa and other parts of the world. The family have very fond memories of holidays spent hunting for plants in these remote areas.
The first plant to be named after him: *Sansevieria downsii*, he found in Malawi, and the second, *Aloe downsiana*, was named in Philip’s honour by two other well-known botanists - T.A. McCoy and John Lavranos.

Philip was a walking encyclopaedia and had many other passionate pursuits. With close ties to the Natal Parks Board he organised visitor’s wilderness trails in the game reserves. He became an authority in identifying trees, birds, wildlife, geography, history (especially of the South African Boer War), the South African Bantu cultures and languages, even world politics and classical music. Ask him about any subject and Philip had the answer, if he didn’t he’d look it up for you… and this was before Google!

With the political unrest in South Africa, Philip and Ansie returned to England in 1986 to settle in Chesterfield where Philip was chief dentist for North Derbyshire for a number of years.

On retiring in 2000 Philip and Ansie left for New Zealand where both Susan and Georgina had already settled. Helen and her family continued living in Amanzimtoti and are still there.

Philip and Ansie established their home in Waiuku where they have been very happy ever since. He became involved in many local community organisations like Rotary, Probus, the Cactus and Succulent Society of NZ, and the Auckland branch of the CSSNZ, of which Philip spent some time as president.

Philip also took an active role in the Pukekohe Methodist Church where he was a dedicated and enthusiastic contributor to their activities and established many lasting and meaningful relationships over time.

Philip was diagnosed with lymphoma at the end of 2016 and fought a brave battle but sadly passed away on 26 December 2017. Members of the Auckland Branch of the Society attended the celebration of Philip’s life on 29 December at the Pukekohe Methodist Church.

Farewell Philip, we will miss you. Rest in Peace.
Acc Aztekium Journal (Romanian) - The Romanian Acc Aztekium journal. Latest issue: No. 47, December 2017.

Sansevieria Online (German) - The free online journal about the genus Sansevieria. The next issue will be published on 01/11/2017: No. 5 (2), November 2017.

Succulentopii@ (French) - free online journal published by the site “Le Cactus Francophone” Latest issue: No. 16, May 2017.

Sukkulenten (German) - Monthly free online journal of the FGaS - Fachgesellschaft ander Sukkulenten (formerly Avonia-News). Latest issue: Vol. 11, No. 1, January 2018.

The Cactus Explorer (English) - The first free online C&S journal. Latest issue: No. 20, November 2017.
Huitzilopochtli

March 2009

Miscellaneous Mammillaria musings, brought to you by the left-handed postman

Yes, the left-handed humming-bird is on his rounds again ....... ten years since his last delivery. Why now? Well, with more enthusiasts exploring in Mexico, more taxa being described (or at least named), more discussion of documented introductions, a major reference collection of the genus being assembled, and communication by e-mail so cheap and easy, why not? No need to wait months for your comments to be published, no need to pay for printing, no need to collect subscriptions, and no need to beg for contributions to fill the next issue – the format is flexible!

The Lau mammillarias: a project to be revived?

Those with long memories will remember that back in 1983, in the Journal of the Mammillaria Society (hereinafter JMS), I launched a survey of Lau and Reppenhagen plants in cultivation. Subsequently (now 20 years ago, oh dear!), in the first issue of Mammillaria Postscripts (1999), I mentioned that Dr Lau had supplied me with detailed collection data for virtually all his Mammillaria collections, with a view to the production of a booklet. I had sent him a template to photocopy and fill in for each collection and in due course he complied with my request and sent me batches of forms, two to a sheet. (By that time I had also spent an uncomfortable week at St Veit, Austria, working and sleeping in a room at the end of Reppenhagen's potting shed, poring over a set of maps of Mexico on which he had marked his collection localities, and reciting the relevant latitude and longitude coordinates. But that visit and the Reppen... another story!)

In the 1970s and 80s, thanks to our mutual interest in Mammillaria, we exchanged frequent correspondence with Alfred Lau (much of which was later published in the JMS and other journals). My personal observation of the lack of adequate herbarium vouchers for many of the species of Mammillaria was the reason for the need to produce a book. I believe that the Lau mammillarias are a truly unique and valuable dataset. Ultimately in view was an eventual book, in English, edited by Graham Charles, that would be accessible to any Mammillaria enthusiast worldwide.

Quite early on in our correspondence, Alfred and I agreed for him to send me a draft report and photographs which I in turn passed on to Graham, who in turn submitted the draft to The Cactus Explorers website allowing free access to digitized versions.

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Huitzilopochtli

(who is a national Aztec deity of war, sun, human sacrifice and the patron of the city of Tenochtitlan)

is an occasional Mammillaria newsletter published by David Hunt since March 2009. This journal started to be published few years after finalizing the immense amount of work put into The New Cactus Lexicon. There are only 11 editions published so far, in sequential page numbering, but further issues are planned.

Graham Charles has introduced a link on his The Cactus Explorers website allowing free access to digitized versions.

Last issue March 2017.
The Chileans is a journal dedicated to South American cacti published by a group founded in 1965, founded by John Donald, David Whiteley and Harry Middleditch. The aim was to exchange information, share photographs and allow to exchange plants. The journal started to be published in 1966, in a time when more information was becoming available and access to remote habitats was much easier than in previous decades. Very popular, the journal was appearing several times a year and included exquisite information on new species just discovered by explorers such as Ritter, Horst, or Buining. The group was in fact very active and weekly meetings were held, where talks were given by members, followed by discussions. The weekly meetings were held until 2003. With the mid-1970’s The Chileans appeared once or twice a year, and with 1985 (excepting for two editions in 2006) only once a year. Graham Charles was involved in the production of the journals since 1994. He has introduced two links on his The Cactus Explorers website allowing free access to digitized versions of this bibliographical marvel!
ABSTRACT - scurtă sumarizare a articolelor

**Peyote: venerare și restricții** pagina 5
Fernando Augusto Olvera Galárza & Pedro Nájera Quezada

După o lungă absență, colegul nostru se reîntoarce, secondându-l pe antropologul Fernando Augusto Olvera Galárza, într-un articol documentat despre comunitățile indigene din Mexic care consumă peyote în cereniiile lor sacre.

**Plantele dușmane** pagina 25
Carlo Zanovello

Cunoscutul autor și coautor al mai multor cărți în domeniu, mare colecționar, dar și cultivator profesionist, apare în paginile noastre cu un articol despre mai multe specii succulente invazive, care pot transforma viața colecționarului, într-un infern.

**Noi înregistrări ale unor succulente invazive în Alicante, Spania** pagina 33
Filip Verloove & al.

Articolul interesant și documentat al unui grup de cercetători europeni, prezentând elemente invazive din flora succulentă, în provincia Alicante, Spania.

**Mammillaria orcuttii** Bödeker, nu rară, dar frumoasă pagina 43
Juan Miguel Artigas Azas

Un alt foarte interesant articol despre una dintre mammilariile foarte mari și frumoase, documentat, cu fotografii pe măsură. Este splendidă în natură și ușor de cultivat, în colecțiile noastre.

**Note despre unele specii de Ariocarpus; apă, lumină, înflorire** pagina 55
Elton Roberts

Cunoscutul nostru colaborator revine și de astă dată cu expresia experienței sale de o viață.

**Suculente din padurile de foioase din sudul României** pagina 69
Alexandru Bușe-Dragonmir

Un tânăr pasionat de cactuși și succulente prezintă observațiile sale din teren.

**Prima înregistrare pentru Noua Zeelandă a Aeonium simsii hibrid** pagina 75
Eduart Zimer

O documentare interesantă care premerge un număr special despre Banks Peninsula, Noua Zeelandă.

**Suprafertilizarea, factor determinant în creșterea aberantă la Cactaceae** pagina 81
Dag Panco

Extras tradus în engleză din Cultura cactușilor într-un climat temperat-continental.
CACUS & SUCCULENT FIELD TOUR MEXICO

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