The Cactus Explorer

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

White Sands Park

Matucana comacephala

Rebutia pulvinosa

Echeveria nebularum

Maihueniopsis glochidiata

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In this Edition

Regular Features

Articles

The two photos in the *Echeveria laui* article credited to J. Peck (The **Cactus Explorer** 2 p. 37) should have been credited to M. Lesan.

The No.1 source for on-line information about cacti and succulents is http://www.cactus-mall.com

Cover Picture *Echinocereus triglochidiatus* at White Sands National Monument.
Photo by Daiv Freeman. See his article on page 40.

Invitation to Contributors

Please consider the Cactus Explorer as the place to publish your articles. We welcome contributions for any of the regular features or a longer article with pictures on any aspect of cacti and succulents. The editorial team is happy to help you with preparing your work. Please send your submissions as plain text in a 'Word' document together with jpeg or tiff images with the maximum resolution available.

A major advantage of this on-line format is the possibility of publishing contributions quickly and any issue is never full! We aim to publish your article within 3 months and the copy deadline is just a few days before the publication date which is planned for the 10th of February, May, August and November. Please note that **advertising and links are free** and provided for the benefit of readers. Adverts are placed at the discretion of the editorial team, based on their relevance to the readership.

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May 10th 2012

Introduction

Back to the Glasshouse!

May is one of the best months for flowers in the glasshouse here in England. Thankfully, this last winter was much kinder than the previous one so heating bills were much lower. I always look forward to March when the sunshine starts to feel warm on my face and the daytime temperature in the glasshouse regularly rises above 20°C. We had an unusually warm and sunny March this year, followed by the wettest April on record!

It is a matter of judgement as to when to start watering your cacti. I usually begin with heavy sprays and start watering the pots when the plants are showing signs of expansion or growth. I do this when we have the first period of bright weather at the end of March but some years it can be mid-April. It is important not to leave the soft-bodied South American genera (Rebutia, Gymnocalycium, Parodia etc) dry for too long, since they can struggle to become completely turgid as the temperature climbs. I leave watering Mexican cacti a little longer and some, such as Ariocarpus and other sensitive genera, until May.

Again, I am very grateful to the authors who have taken the trouble to write articles for the **Cactus Explorer**. We have a good selection, although I would have liked to publish more about the other succulents. It appears that more people are visiting habitats, and many of these travels are in search of succulents, so I hope to have more reports of these in future.

The **Cactus Explorer** team is pleased that relationships are now being established with other societies around the world. We are, for instance, exchanging advertisements so that our readers can see other organisations which may have a publication of interest.

We want to make the information in the **Cactus Explorer** available to as many readers as possible. If you are responsible for the production of a journal and would like to reproduce one of our articles, then please ask. As long as the author and photographers agree, then there should be no problem in granting permission. The reproduction in another language is especially welcome.

If you go to the download page you can now download an index to the Cactus Explorer. The index is the cumulative index of all four editions published to date. I am very grateful to Roy Mottram for compiling this useful index.

Now that the growing season has arrived here, I suspect that I shall receive less articles for the next issue. Please don't be disappointed if the August issue is smaller. Unlike printed journals, we do not keep articles 'in stock' so the size of individual issues will vary.

Of course, over the coming months, you may well see flowers on unusual cultivated plants. Please send us your digital pictures, with or without text, for use in our 'In the Glasshouse' feature, although it could be in your garden if you are lucky enough to have a suitable climate!

The editorial team thanks you for your continued interest and hope that those of you living in the northern hemisphere have a good growing season.

Graham Charles

The Cactus Explorers Club Meeting
September 14-16th 2012
Beaumont Hall, University of Leicester, UK
See Page 7 for how to attend.

The next issue of the **Cactus Explorer** is planned for August 2012. If you have not already told me and would like to be advised when it is available for download, please send me your E-mail address to be added to the distribution list.
Thank you for your interest and support!

News and Events

Mammillaria Society Members Day

The Mammillaria Society Members Day and AGM, including two short talks and plant displays, will be held this year at Wisley RHS Gardens on Saturday 26th May 2012 and includes free garden entry for members.

The day starts at 10am and more details can be obtained from the Chairman Chris Davies

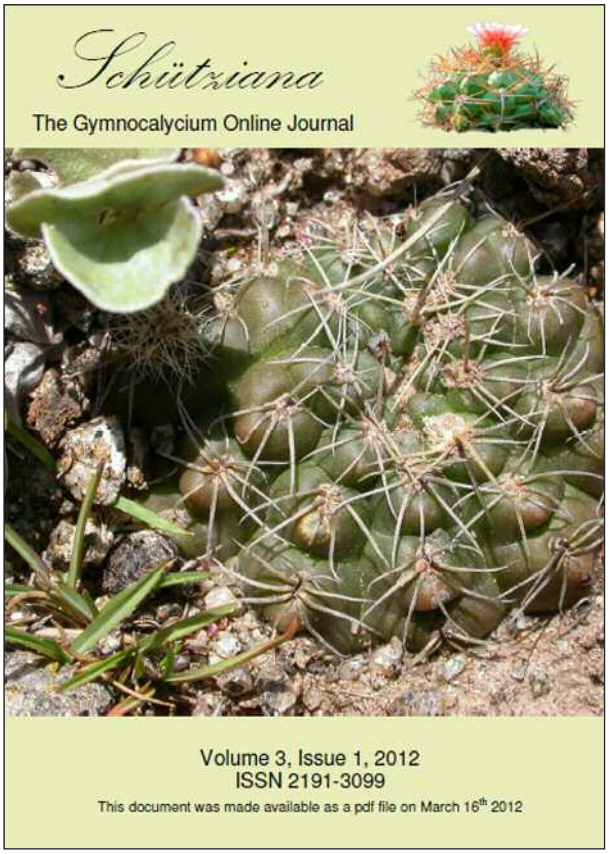
Gymno-Meeting in Carmagnola, Italy

The 6th Gymno-Meeting will be held from Friday 27th- Sunday 29th July 2012.

This year it is planned to further discuss the species of the *G. hossei*, *G. catamarcense*, and *G. pugionacanthum* complex.

Venue: Museo Civico di Storia Naturale, Via San Francesco di Sales, 188, Carmagnola, ITALY.

Details from Massimo Meregalli



Schütziana Vol. 3 Issue 1 is available to download

The latest issue of this free online journal for Gymnocalycium enthusiasts was published on March 16th. It contains an article about *G. catamarcense* by Jaroslav Procházka and the description of a new species *G. meregallii*, described by Ludwig Bercht and named for Massimo Meregalli, the famous Italian student of the genus.

You can download this and the previous issues from:

http://www.schuetziana.org/downloads.php

GC

It is with sadness that we report the recent death of **Charles Craib**, author of books about succulent plants, most recently 'The Bushman Candles' co-written with John Lavranos.

Derek Bowdery celebrates 80 years

Photo: G. Charles

Photo: G. Charles

Family and friends met at Derek's home on May 8th to share his 80th Birthday with him. As well as measuring him against his Saguaro, we enjoyed pictures of his habitat adventures since the early 1980's (when he had thick black hair!). He is known for his love of Ferocactus, about which he co-wrote the BCSS book with John Pilbeam, published in 2005. He also likes columnar cacti which enjoy growing in his huge glasshouse. GC

Thelocactus Website Redesigned

My favourite website about Thelocactus has been updated and redesigned. Alessandro Mosco has done a really good job and I am sure you will find his new site interesting and useful for identifying your plants. Look at http://www.thelocactus.cactus-mall.com GC

Another New online Journal

A new free online journal has just appeared. This is the first one published in French and it is called Succulentopi@

The quality is excellent as you would expect from Yann Cochard and his very active team. It is available as a free download from:

http://www.cactuspro.com/succulentopia

Publisher: Cactuspro, association, 63360 Saint-Beauzire, France, yann@cactuspro.com
Publication Director: Yann Cochard
Editor: Martine Deshogues
Drafting Committee: Yann Cochard, Martine Deshogues, Alain Laroze, Philippe Corman, Maxime Leveque, and Eric Mare
ISSN 2259-1060

The Journal is not printed, only distributed as a PDF file.

Succulentopi@ is a magazine in PDF format published by 'Le Cactus Francophone' and its team. Their goal is to publish it every three months, and to include articles, information, photos, etc. on the theme of cacti and other succulents.

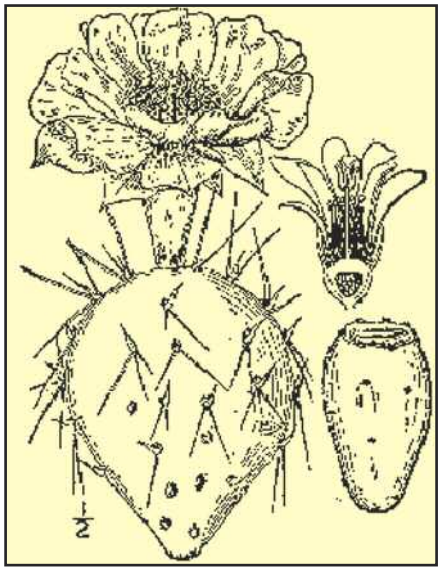
If you go to the website you can subscribe and receive notification as each issue is available.

GC

Caricature drawn by Neil Slater

After his 90th Birthday event, Gordon Rowley invited people to visit him at his famous home 'Cactusville'. The moment of sharing part of his extensive library with Prof. Len Newton, President of the IOS, and BCSS achivist John Cox is caught by Neil Slater in this caricature.

Annual meeting of the Tephrocactus Study Group.



Sunday 13th May 2011

Venue : Great Barr ex Service Men and Women's club, **Birmingham,** UK, accessed via the drive between houses 280 & 278 Perrywood Road, Great Barr. B42 2BJ Tel : 0121 357 3870

Illustrated talks by *Graham Charles* and *Tony Roberts*.

Entrance is **FREE** to members AND visitors. A warm welcome awaits you!

Lunch will be available for £5, but must be pre-booked. For more information and to book your lunch, please contact Alan Hill by Email or telephone 01142 462311.

BCSS Oxford Branch
with the Mammillaria Society

OXFORD BRANCH SHOW

Sunday 15th July 2012 at 10.30 am
at Langdale Hall, Witney OX28 6AB U.K.
(Cacti and Other Succulents)

Lecture by ***Wolfgang Plein*** from the German Mammillaria Society (AfM) at 4:30 pm

Information: Bill Darbon +44 (0)1993 881926

The Cactus Explorers Weekend 2012

Readers are invited to attend this year's Cactus Explorers Weekend. I expect there will be spaces available to enable new participants to attend. It will be held at Beaumont Hall at our usual Leicester University venue during the weekend of 14th to 16th September [the weekend after ELK]. Beaumont is where we met in 2011, and provides all the facilities close together. The day's events and the meals will be in Beaumont Hall and the sleeping accommodation is nearby.

I have booked **Davide Donati** from Italy and **Ralf Hillman** from Switzerland. Each will give us two talks. Davide Donati will speak about *Somewhere in Mexico.The crazy adventures of a botanist* and a talk about *Corynopuntia*. Ralf will speak about *Patagonia in Springtime*, and *A Journey to South-eastern Bolivia*.

The price for the whole weekend, including accommodation in en-suite rooms, all meals and wine with dinner, is £190. Everything you pay goes to the direct costs of staging the event. There is a private bar and time to socialise with like-minded people.

You are welcome to bring plants, books or seeds to sell. There is no charge and plants from known origin are particularly appreciated.

Please Email me if you are interested in attending. GC

ELK Meeting 2012

The 47th staging of this ever-popular international meeting of cactus and succulent enthusiasts will take place from 7th to 9th September 2012 at the usual venue on the coast of Belgium, a short distance east of Blankenberge.

As well as the biggest plant sale in Europe, there will be five talks given in various languages:

Friday 7th

20.00h **Cacti of Peru. Land of the Incas.** *Guillermo Rivera*, Argentina

Saturday 8th

10.30h **Echinocereus.** *Mieke Geuens*, Belgium

15.30h **Kleine Chilenen: Bodenschätze unter den chilenischen Kakteen.** Ricardo Keim, Chile.

20.00h **Cacti of the Marañon Valley, Peru.** *Graham Charles*, U.K.

Sunday 9th

09.00 **Echeveria.** *Jean-Michel Moullet*, France.

Details of the event can be found at www.elkcactus.eu

Recent New Descriptions

Graham Charles tells us more about *Maihueniopsis glochidiata* from Argentina which he described as a new species in Cactaceae Systematics Initiatives 25 (2011)

Fig.1 The type locality of *Maihueniopsis glochidiata*. A gentle slope near to a deep gorge at 2755m.

In the **Cactus Explorer** 3, I told the story of *Cumulopuntia iturbicola* and how the IOS molecular study had shown it to be a different species from those that were already described. The same study showed that a plant my friends and I had discovered in the Sierra Famatina, La Rioja, Argentina in 2000 was also new, an undescribed species of Maihueniopsis.

December 1st 2000 started early for us. The sun was still below the horizon as we prepared for the day's adventure. We had spent the night in the pleasant town of Chilecito, where a local man, Sebastian, had created a cactus garden. He offered to take us in his pick-up high into the mountains on a mine road to see cacti. For me, the main objective was *Lobivia famatimensis* which I had not seen during any of my previous visits to the country.

We drove along Rte.40 which skirts the mountains to the east. Somewhere near the town of Famatina, we took a dirt road towards the mountains. The traffic appeared to be controlled at a gate where Sebastian spoke to a man who then let us through. Eventually, the road started climbing steeply and at our third stop the altitude was 2500m. We were in a

Fig.2 Early morning in Chilecito, the Sierra Famatina beckons us for adventure.

Fig.3 The valley where we found *Lobivia famatimensis* at 2500m. The steep slopes were very loose and the plants were only in places where rocks or the roots of the bushes made the soil stable.

Fig.4 *Lobivia famatimensis* GC407.03

Fig.5 *Pyrrhocactus andreaeanus* GC407.06

steep-sided valley and exploration of one of the slopes revealed some pretty plants of *Lobivia famatimensis* (Figs.3 &4). This place was also a locality for *Pyrrhocactus andreaeanus* (Fig.5), the most northerly known form of *P. strausianus* which can have pink flowers although they often have yellow centres.

The slopes proved to be home to eight cactus species including *Denmoza rhodacantha* and large plants of *Echinopsis* (*Lobivia*) *formosa*. The other really interesting plant was another Lobivia which, at the time, I did not know occurred in the Sierra Famatina. The plant reminded us of *Echinopsis* (*Lobivia*, *Acanthocalycium*) *thionantha*. It has a bluish body and buds with dark hair (Fig. 6).

This location would extend the previously known distribution of *Echinopsis thionantha* further south and into a different mountain range. I was able to collect some seeds from which the resulting seedlings and their flowers were very similar to those of *E. thionantha* and, like with that species, variable in colour from yellow to orange (Fig.7).

Fig.6 Four young plants of *Lobivia kuehhasii* GC409.01

It was nine years later in 2009 that Walter Rausch published two new Lobivia names in the German journal KuaS, one of them, *Lobivia kuehhasii* is clearly the plant we saw in the Sierra Famatina and from near where we saw it.

The type collection WR817b was made in 1990 and in the WR field number list I have from 2008, it has the name *Acanthocalycium thionanthum* var. *australis*. I am not convinced that it is a separate species and I feel that a subspecies of *E. thionantha* would be more appropriate, bearing in mind its geographic disjunction.

You may be wondering when I will tell you about the Maihueniopsis! Well, it was our next stop at 2755m. There was some gently-sloping land (Fig.1) with a track leading down the slope from the road to a small building. We parked by the building where we could look down into a dramatic gorge with a river at the bottom (Fig.8). The water was an ochre colour which looked as if it originated from the soft rocks of the ravine.

We looked around and I was interested to see a plant that looked like a small *Echinopsis* (*Lobivia*) *formosa* but already flowering when less than 15cm in diameter (Fig. 9). Nearby we had seen the normal form of the plant, growing to a large size and becoming short columnar. I concluded that this miniature form was the plant described by Rausch (1979) as *Lobivia rosarioana*, a name he later made a variety of *Lobivia formosa*. He tells us that the plant is rarely found in the Sierra Famatina.

Fig.7 Seedling of *Lobivia kuehhasii* GC409.01. 8cm pot.

Fig.8 The ravine with the ochre-coloured river.

Fig.9 *Lobivia formosa rosarioana* A small-growing form which flowers when only about 10cm in diameter.

Photo: Cyrill Hunkeler

Fig.10 *Maihueniopsis glochidiata*
HUN47 Cachipampa, Prov. Salta, Argentina 3120m

Photo: Cyrill Hunkeler

Fig.11 *Maihueniopsis glochidiata*
HUN47 Cachipampa, Prov. Salta, Argentina 3120m

Photo: Cyrill Hunkeler

Fig.12 *Maihueniopsis glochidiata*
HUN47 Cachipampa, Prov. Salta, Argentina 3120m

My attention was drawn to a small Opuntia almost flat to the ground and with small coppery-yellow flowers (Fig.13). I thought it looked like a small-jointed relative of *Maihueniopsis glomerata* which is what I called it in my field list. The numerous glochids on

Fig.13 *Maihueniopsis glochidiata* GC407A at its type locality, 2755m in the Sierra Famatina, La Rioja.

Fig.14 *Maihueniopsis glochidiata* GC407A in cultivation

the old segments were very prominent in habitat. I brought home a few joints which grew well and now flower regularly (Fig.14).

For years I watched the plant develop very prominent tufts of glochids on its older joints. The joint size had made me think the plant might be a form of *Maihueniopsis minuta*, so I called it *M.* aff. *minuta* in my Bradleya article about Maihueniopsis in 2008.

When a survey of South American Opuntias was commissioned by the IOS, I donated a number of plant samples from my collection of documented plants, all with exact locality data. Among them was a segment of this plant. Dr Ritz, then at the University of Giessen, and her assistants extracted the DNA from the samples and undertook the study.

The results (yet to be published in full) showed that GC407A was an undescribed species, distinct from *M. minuta* and all other

Photo: Cyrill Hunkeler

Fig.15 *Maihueniopsis glochidiata* HUN47 in cultivation

described taxa. In preparation for the formal submission of the paper to an academic journal, the taxonomic implications were published in Cactaceae Systematics Initiatives 25 (October 2011). As part of this process I published *Maihueniopsis glochidiata* as a new species.

It is now clear that the type locality is not the only known habitat for this plant. In Cactus Adventures 78 (2008), Joël Lodé published a picture of a Maihueniopsis from the Park of the Cardones, Province Salta, Argentina which he thought was *M. minuta* but which I now think is *M. glochidiata*.

A location nearby has been confirmed by Cyrill Hunkeler (pers. com.) who also found a Maihueniopsis, HUN47, with small joints at 3120m on the Cachipampa (Figs. 10-12). He also found the plant (HUN467) in the same mountain range as the type locality but further south on the Cuesta Miranda (Fig.16). This pass is where the well-travelled main road crosses the Sierra Famatina, but this is the first record I have seen for a Maihueniopsis being found there.

Long before I found the species in habitat, I had been cultivating a plant of *M. glochidiata*, identified as *M. minuta* and said to have been collected by Herman Vertongen in 1992 on the Cachipampa. Presumably this is the same as HUN467, it certainly looks very similar to the plant in Fig.17.

GC

Photo: Cyrill Hunkeler

Fig.16 *Maihueniopsis glochidiata* HUN467 Cuesta Miranda, La Rioja, Argentina 2425m

Photo: Cyrill Hunkeler

Fig.17 *Maihueniopsis glochidiata* HUN467 in cultivation

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Charles, G. (2008) Notes on *Maihueniopsis* Spegazzini. Bradleya 26:63-74

Charles, G. (2011) *Maihueniopsis glochidiata* species nova. Cactaceae Systematics Initiatives 25:20

Lodé, J. (2008) Illustration of *M. minuta*. Cactus Adventures 78:13

Rausch, W. (1979) *Lobivia rosarioana* Rausch spec. nov. KuaS 30(12): 284

Rausch, W. (2009) Zwei neue Lobivien. KuaS 60(12): 319-321

Acknowledgement

I should like to thank Cyrill Hunkeler for his help and permission to use his pictures. His website is very interesting for anyone who likes Opuntias (German language): http://www.tephroweb.ch

The discovery of *Escobaria abdita* Řepka & Vaško

Finding a new species in habitat is a thrilling experience. Zdeněk Vaško tells us about how he discovered a recently-described tiny species of Escobaria in a flat basin which is seasonally flooded.

Text and photos: Zdeněk Vaško; translation: Zlatko Janeba

Fig.1. General view of the habitat of *Escobaria abdita.*

In October 2010, I took off with two of my colleagues, Ladislav Vacek and Palo Jesenský, for a wedding ceremony of our good Mexican friend. We decided to spend some time in the field before this happy event, and especially in areas we had never visited before. For some

Fig.2. Fully hydrated *Escobaria abdita* with a flower bud.

Fig.3. A view of the root system of *Escobaria abdita*.

Fig.4. Another view of the habitat of *Escobaria abdita.*

five years I have had the desire to discover *Ariocarpus kotschoubeyanus* somewhere north of Ocampo in the state of Coahuila. I used to have strange feelings and expectations while roaming various flood-plains in search of Ariocarpus, but I seemed to be out of luck.

On October 16th 2010, we were exploring one such flood-plain in northern Mexico, again without having any success. While slowly coming back to our vehicle where my friends were already waiting, having decided to leave the place, I kept searching the last few metres of the arid land. Some 30 metres from the car I noticed a tiny hole in the soil, resembling the

Fig. 5 The flower of *Escobaria abdita*.

Fig.6 A dry fruit of *Escobaria abdita*.

Fig.7 *Escobaria abdita* is completely sunken in the soil and difficult to find during the dry season.

footprint of some small animal.

I bent over and blew the dust layer away. For a moment I was left speechless , but then I immediately called to my friends. It was a wonderful sight and at the same time, an electrifying feeling. Although it was not my desired *A. kotschoubeyanus*, my excitement from discovering an apparently new Escobaria was so great. During a very short time of crawling on our hands and knees we were able to encounter about 50 more plants.

In the field, the biggest of these Escobarias reach some 20mm in diameter and they evidently spend most of their life under the ground, in tiny holes. Their beet-like root is succulent, solitary or very little branched, about 10cm long. The spines are round in cross-section, ivory in colour, and pectinately arranged on the areoles. Flowers are formed from the youngest areoles on the plant apex and are 35-45mm long and 30-35mm wide, whitish with pink to brown midstripes. The style is green, with yellow anthers and the fruit is 6-8 mm long and 5-7mm in diameter, upon drying, becoming parchment-like.

Fig.8 A grafted *Escobaria abdita* seedling in cultivation.

We named it *Escobaria abdita*. The name means hidden or concealed, because the plants are buried in the soil for most of the year and they are very difficult to find during the dry season.

Reference

Řepka, R. & Vaško, Z. (2011) *Escobaria abdita* - a new species from northern Mexico. CSJ(US) 83(6): 264-269.

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More on *Cumulopuntia iturbicola*

Photo: U. Eggli

Following my article in the last issue of **Cactus Explorer**, Urs Eggli told me that the pictures I published reminded him of plants he had photographed in 1998 along the old RN 9, north of Humahuaca, about 8km south of Azul Pampa, Argentina. He saw all shades of flower colours from yellow to dark red (see picture above), and he thought at that time that he had found *Cumulopuntia rossiana*. In fact, I have yet to see an image of a genuine *C. rossiana* from Argentina .... any offers?

GC

In The Glasshouse

Photo: G. Charles

Strophocactus chontalensis

There is something really special about growing and flowering an unusual plant. It was my work on the New Cactus Lexicon which opened my eyes to the many genera which are rarely seen in British collections. It made me realise what I had been missing, but it has not been easy to find suppliers of these rare plants.

Strophocactus chontalensis first came to my attention when Ralf Bauer wrote his 'Synopsis of the tribe Hylocereeae' published in No.17 of Cactaceae Systematics Initiatives (2003). But the story began in 1940 when Tom MacDougall first collected the plant near San Miguel Tenango, Oaxaca, Mexico. The description of the new species was delayed until 1950 due to the lack of flowers to complete the description.

MacDougall wrote an article about some epiphytic cacti of the region in the American Journal (XVIII):147-150 (1946). He described how he re-found the plant referred to with his field number A44, the 'Tenango Cereus', growing only on rocks, often with *Epiphyllum crenatum*. The pictures in this article, and in the continuation on pages 165-168, show that the plant makes very large tangled groups of stems, each up to about a metre long tumbling over rocks. Flowers from this visit were then available to complete the description.

The plant was eventually described as *Nyctocereus chontalensis* by Alexander in the

Photo: G. Charles


Photo: G. Charles


Photo: G. Charles

American Journal (XXII):131-3 (1950). The genus was chosen because of the flowers and the specific name refers to the Chontal Indians who live in the area. Ralf Bauer in CSI 17 (2003), believing that this species should be in the same genus as *Deamia testudo* and *Strophocactus wittii*, made the resulting new combinations under the oldest generic name, Strophocactus.

My own encounter with *Strophocactus chontalensis* in habitat happened in 2006 when I was travelling in Oaxaca with Ivor Crook and David Yetman. It was my first visit to Mexico, an experience greatly enhanced by David's experience of the country and his fluent Spanish.

I had a vague memory of reading about the plant and its liking of growing on rocks in oak forest, but I did not think I would actually find it. We were driving along the main road from Mitla to Tehuantepec, passing through hills covered with oak woodland. It was February, the dry season, and there were no leaves on the trees.

As we rounded one of the endless bends, I spotted a hillside which looked different, with prominent rounded exposed boulders under the trees. I shouted to David to stop the car. I think he wondered why I should want to stop there, since our main interest on the trip was to see the remarkable columnar cacti of the area.

We crossed the road and walked a short distance up the hill, through deep piles of brown leaves, to the boulders. There, growing on the tops of the rocks, were long cactus stems with few ribs, surely they must belong to *S. chontalensis*. There were also two other cacti, *Mammillaria karwinskiana* and what I took to be a species of Hylocereus. David, who has a passion for huge cerei, was unimpressed, but for me it was a highlight of the trip.

I have now had the chance to cultivate this interesting plant and it has been a rewarding experience. It grows easily and quickly, forming a branched clump of stems close to the ground, making it suitable for a hanging pot. I am unsure about how much cold it can endure, but my plants have thrived with a winter minimum of 10°C. So far, my only disappointment is that only one of my two clones has produced flowers, so I have been unable to produce fruits and valuable seeds. However, I shall be able to propagate my plants by cuttings which root easily.

GC

Pfeiffera miyagawae

As I have mentioned before, working on the New Cactus Lexicon opened my eyes to the diversity and interest of epiphytic genera like Pfeiffera. I had the impression that the flowers were usually small and white which many are, but there are exceptions. One of those exceptions is the remarkable *Pfeiffera miyagawae* (see picture on the next page).

The plant illustrated is a clone distributed by the ISI under their number 91-18. It is the type clone, HBG 50888, collected on October 19th 1974 by Mario Miyagawa at 600m in the yungas of Alto Beni, near Mataral, Dept. Cochabamba, Bolivia. Ralf Bauer, in Cactaceae Systematics Initiatives 20, reports that the plant has never been re-found at the stated locality but has subsequently been found by

Photo: G. Charles

Wolfgang Krahn in Dept. La Paz, Prov. Sud Yungas, south of La Asunta at 750m. It is thought that the original locality was near this place and that the stated locality in Dept. Cochabamba was a misunderstanding.

The first description was published in 1987 by Wilhelm Barthlott and Werner Rauh in the American journal. Mario Miyagawi had been a student of theirs. As they say, the flowers are reminiscent of Corryocactus (Erdisia). After some consideration, they concluded that the plant was best placed in Pfeiffera. The recent molecular study of Pfeiffera and its relatives by Karotkova et al. confirms its placement in Pfeiffera and shows its close relationship to *P. ianthothele*, the type of the genus.

It has proved to be very easy to cultivate and flowers freely towards the ends of the stems. Propagation is also straightforward, cuttings rooting easily. The stems are somewhat lax and so a hanging pot in a part shade position suits this lovely plant in cultivation.

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GC

Photo: G. Charles

Thelocactus panarottoanus or flavus?

This species and its habitat have been well known for a long time. It can be found in the field lists of Lau and Reppenhagen described as a yellow-flowering *Thelocactus tulensis*. The first description as a new species was by Josef Halda (1998) as *Thelocactus panarottoanus*. The type locality was stated to be near La Hincada, San Luis Potosi, Mexico at 1100m.

Alessandro Mosco and Carlo Zanovello, presumably in ignorance of the Halda name, called the same taxon *Thelocactus flavus* in a well-illustrated article in Cactus & Co (1999). They later decided that it was better treated as a subspecies of *T. conothelos* and made the combination in Bradleya (2000). So, there are two names for this plant. As a species, *T. panarottoanus* has priority, but as a subspecies the correct name is *T. conothelos* ssp. *flavus.*

In cultivation, it is easily grown in a sunny locality and, for me, first flowered in a 10cm pot. The long spines and yellow flowers make it an attractive addition to a collection but, as yet, is not often seen in UK.

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GC

Photo: G. Charles

Disocactus nelsonii

For me, there is something particularly appealing about pink flowers. I became more interested in epiphytic cacti while working on the New Cactus Lexicon when we had the opportunity to see really good images of many unusual species photographed by Ralf Bauer. One I particularly noticed was this species and its beautiful flower so I asked Ralf for a cutting.

The piece he gave me has grown well and now produces masses of flowers in March each year. The stems hang down so it is a good plant for a well-watered hanging pot placed in a lightly shaded part of the glasshouse.

It was first described in 1913 as a species of Epiphyllum by Britton and Rose, but when they wrote their monumental work 'The Cactaceae', they erected the monotypic genus Chiapasia for it in Volume 4 (1923). This generic name refers to the Mexican state of Chiapas where the plant was found.

Britton and Rose had originally described the new species from a herbarium specimen collected by E.W.Nelson in 1896 but they also refer to an illustration of a living plant cultivated by Purpus and published in MfK in 1918 as *Phyllocactus chiapensis*.

The natural habitats of this plant are found in Guatemala as well as Chiapas where it is said to grow epiphytically on oak trees, as was the type collection. An excellent comprehensive account of *Disocactus nelsonii* was written by Myron Kimnach and published in the American journal of 1958. He agrees with the placement of this species in Disocactus, first made by Lindinger in 1942 in a largely overlooked paper. GC

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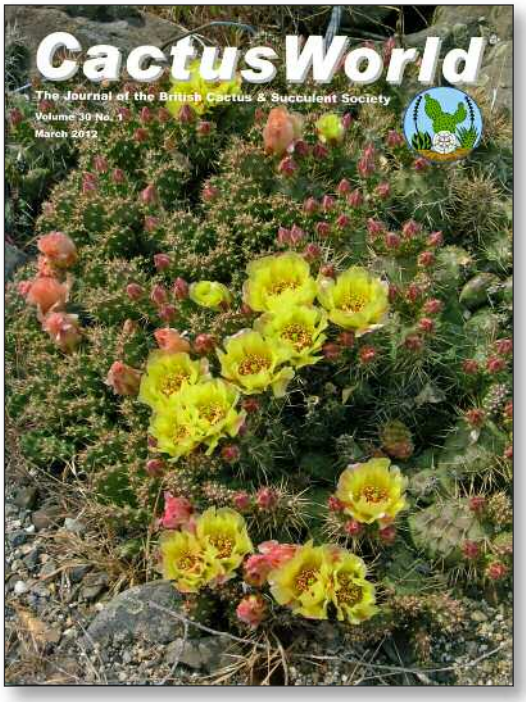
Journal Roundup



New Editors for CactusWorld

The British Cactus and Succulent Society publish their journal 'CactusWorld' four times a year. It contains information about the Society's activities and articles on a wide range of subjects. Following the retirement of Roy Mottram, the publication's excellent editor for the past six years, the Society has appointed Al Laius as the new editor. He has the support of Peter Berresford, who has accepted the role of deputy editor. Al is known for his love of Sansevieria and Peter is a well-travelled Echinocereus specialist.

The new editors promise to introduce new features and plan to modify the content in line with what the members have requested. So, in future there will be more about cultivation and selected taxa, but less long travelogues and technical articles which will be accommodated within Bradleya, the Society's yearbook.

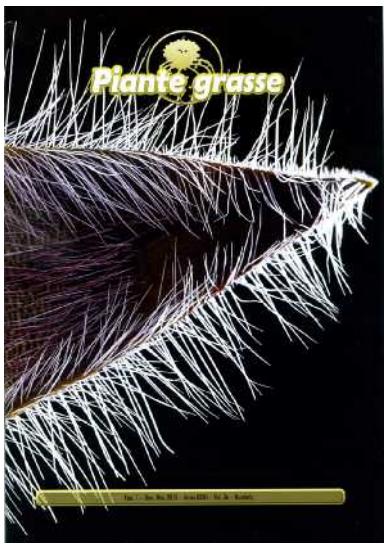
The March 2012 issue of CactusWorld, the first to be edited by the new team, features a long article from Johan de Vries attempting to clarify the application of three old Cárdenas species names for plants now regarded as Sulcorebutias.

There are also articles about the Jardin Exotique in Monaco; the Indian distribution of a Caralluma; *Opuntia fragilis* hybrids; cacti on St Lucia; *Mammillaria bombycina*; the Luton Hoo garden project and a revision of the series Cepaea in the genus Sedum.

The regular features 'BCSS News', 'Cactus Talk' and 'Literature review' are joined by new ventures 'Plant of the quarter', 'In my greenhouse' and 'Succulent snippets'. This issue is 8 pages longer than usual at 72 pages and continues to be excellent value for the modest subscription of £15 (UK) or £20 (world-wide) per year (Bradleya is available at an additional charge).

You can contact the editors by email:
Al Laius editor@bcss.org.uk
Peter Berresford deputyeditor@bcss.org.uk

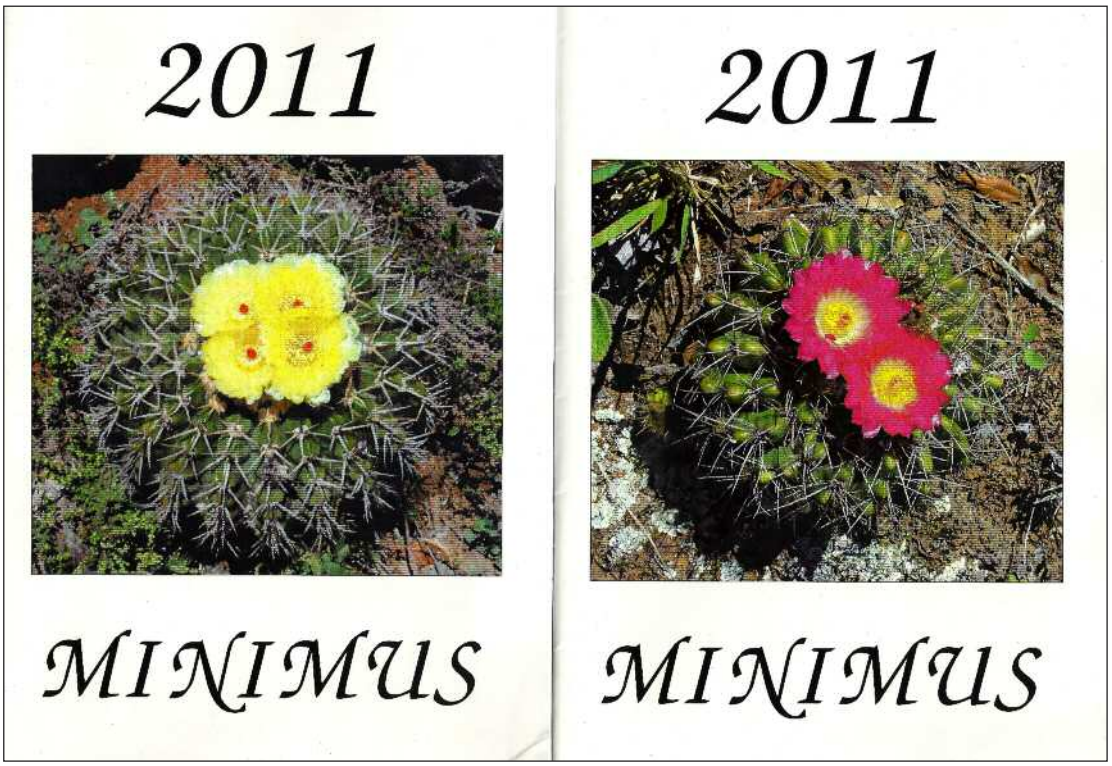
Subsciption information and everything else you could want to know about the BCSS can be found at http://www.bcss.org.uk GC



English edition now available

The long-running Italian journal 'Piante Grasse' is now published in an English edition. The quality of the pictures, layout and content are all excellent so I hope you will consider supporting this brave venture by visiting their very informative website:

http://www.piantegrassejournal.it/eng/index.html



Minimus: Journal of Czech Notocactophiles

The last issue of the **Cactus Explorer** Journal included a short article about Internoto, the German language journal focusing on the genus Notocactus. There is a similar journal in the Czech Republic. It has been published since 1970, so its history is ten years longer than that of Internoto.

The Czech study group for Notocactus, called Notosekce in Czech, was established in early 1970 and its first general meeting was held in August 1970. Among those present at this meeting was also the famous Dutch cactophile A.F.H. Buining who had come to Czechoslovakia to deliver a lecture about his travels in Brazil.

The number of members climbed to 123 within a year. At the peak of the Notocactus craze in the late 1970s, fuelled by discoveries of many new species and forms of Notocactus in southern Brazil, Notosekce had more than 230 members. Throughout the 1980s the number of members kept at just below 200 but it started to fall after 1990 when the attention of many Czech cactus lovers shifted to Mexico. In recent years, the number of members has fluctuated around 60, including several members from abroad (Germany). Annual general meetings are held every August.

'Minimus' was originally published monthly, then quarterly, and since the early 1990s two double issues per year are published. The journal has a colour photo on the cover and black-and-white photos inside. Articles in the recent issues have included travelogues of Stanislav Stuchlik (chairman of Notosekce) and Norbert Gerloff from Germany about their respective travels in southern Brazil, as well as articles on cultivation and treatises on selected species. Short German-language summaries of all articles are published at the end of each issue.

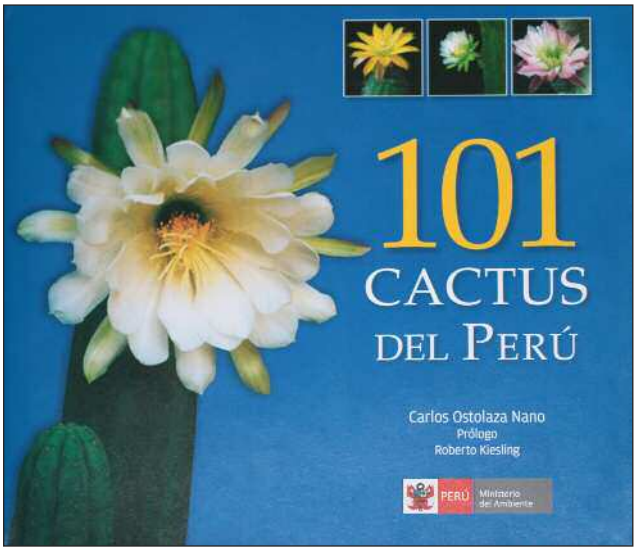
The name ´Minimus´ is after *Notocactus minimus*, a rather mystical Fric name, which was referred to *Notocactus* (*Parodia*) *tenuicylindricus* in the New Cactus Lexicon. However, according to botanists Zazvorka and Sedivy who published a review of Fric names in 1993, *Notocactus minimus* Fric et Kreuzinger (1935) was validated by Buining in Succulenta in 1940 and thus the name *N. minimus* has priority over *N. tenuicylindricus* Ritter (1970).

Rene Samek
Czech Republic
renesamek@hotmail.com

The Love of Books

News of Recent Publications. A Reminder of Old Favourites.

Many cactophiles enjoy reading about their plants, particularly in the winter when our collections are less demanding. This feature aims to provide you with inspiration.



101 Cactus del Perú

Peru is surely one of the most important countries when considering the cactus flora of the world. It has a remarkable diversity of biogeographic zones ranging from the very dry coastal strip to tropical rain forest. Many of these zones support cacti. Some species are small and hard to find but others are dramatic trees.

Dr. Carlos Ostolaza is very well known to enthusiasts around the world for his work with cacti in Peru over many years. He has been a pioneer in the education of the Peruvian people about the importance of their floral heritage and the need to conserve it. In 1987 he founded QUEPO, the Peruvian Cactus and Succulent Society and still edits their annual journal.

This impressive book has been printed and published in Peru and, being written in Spanish, should further promote interest within the country. As in many countries, the cacti in Peru face pressures on their survival from infrastructure developments such as dams, roads and mines, as well as the expansion of agriculture. The long-term conservation of cacti depends to a great extent on the value placed on them by the local people. It is to be hoped that books like this will help spread understanding of the plants and the need for their conservation.

The volume is hardbound, 240 x 273mm landscape, 256 pages. There are 546 colour photographs, all reproduced at a good size. The non-technical text is written in Spanish.

The 101 species described are about 40% of the cacti found in Peru and have been well chosen to represent the diversity of the family. Many of the featured species are popular in cultivation and are usually illustrated in culture and also in habitat. A brief description is given for each taxon together with an indication of its known distribution.

Some potential readers might be put off by the Spanish text but the pictures alone make it a valuable reference and the text is quite easy to follow even if you understand only a little of the language.

You can watch the launch of the book on youtube.

Carlos tells me that Mildred Margot Canales Azabache has copies of the book in Spain available for sale at 60€. You can contact her by email.

GC

Looking for a second hand book?

You can search the stock of book dealers around the world by using one of the specialist web sites for example:

http://www.addall.com/Used

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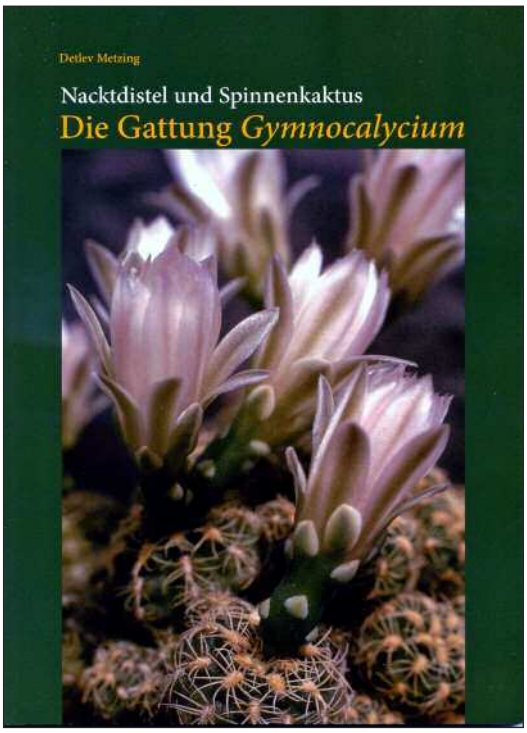


The Genus Gymnocalycium

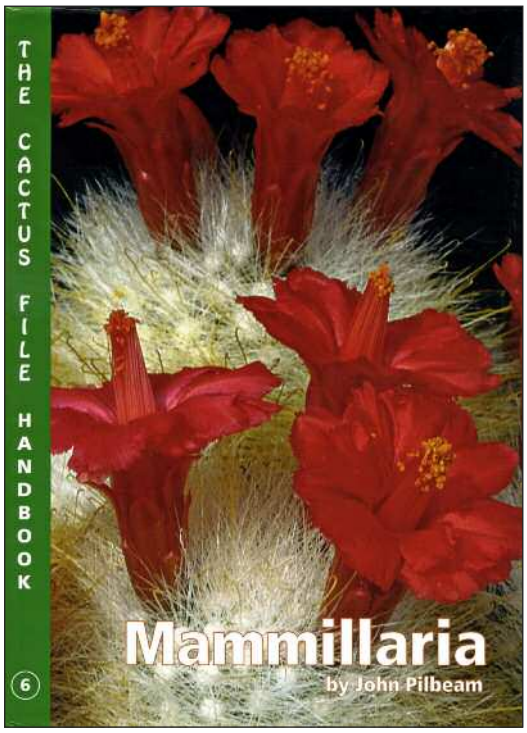
Another new book about this popular genus has just been published by the German Cactus Society (DKG) as the seventh title of their series of handbooks for the collector. In the **Cactus Explorer** 2, we reported on the recently published Parodia book from the same series.

This attractive volume has been written (in German) by Detlev Metzing, well known as a specialist in Gymnocalycium. The treatment is based on recent molecular studies and agrees quite closely with that which I followed in my 'Gymnocalycium in Habitat and Culture'. There have been changes in the application of names and a number of new names published recently, so it is good to have a period of stability.

144 pages, softbound, 240 x 170mm with 200 colour pictures and 9 maps (German). Produced to the usual high standard we have come to expect from the DKG, the pictures are very well reproduced.

As with the other titles in this series, it is available only to members of the DKG. The price is **10 €** (including p.&p.) for delivery to Germany and **12 €** for the rest of the world.

It can be purchased from the website of the DKG: www.dkg.eu.



Cactus File Handbook 6

This, the last title in a useful series of books, was the most ambitious. John Pilbeam had already written one book about Mammillaria, probably the single most popular of all cactus genera. His first volume '*Mammillaria - A Collector's Guide*' was published in 1981 and proved a popular reference to enthusiasts. At that time, the use of colour for pictures was limited by cost, so most species had only a black and white photograph. To overcome this, John published a series of colour pictures referred to the relevant page in the book. These were well produced and reproduced at a good size (17.5 x 13cm).

The arrival of John's Cactus File Handbook about Mammillaria in 1999 was greeted with universal acclaim. It combined his informative text with good colour pictures placed with the relevant text, so much better than putting all the pictures in a block within the book. It is an extremely useful reference and remains my personal favourite of John's many books.

New copies are still available, priced at £45 from Keiths Plant Books or direct from John Pilbeam

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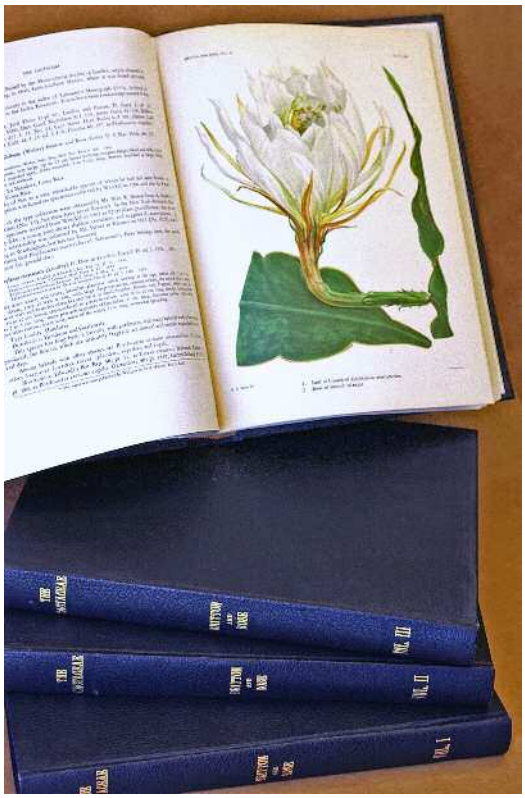

BOOKS FOR SALE

The Cactaceae. Descriptions and illustrations of plants of the cactus family, 4 vols.

Part original, 1919-1923, & part reprint, 1937. Comprising Vols. 1, 2 & 4 of ed.2, large paper, with a large proportion of the ed.1 colour plates, plus Vol. 3 ed.1. 985 pages, 76 [of 107] chromolithographs, 1120 text-figs; hardbound in standard black rexine library binding by Glass & Foster in 1975.

PROVENANCE: The odd Vol.3 of the first edition in this set was rescued from the Abbey Garden Press disastrous fire of 1960, which destroyed the presses and most of the unsold book stocks and library. This set was put together to become the personal copy of Bob Foster (1938-2002) and it bears his bookplate dated 19 Jan 1970. It then entered the Abbey Garden Press Library, with its bookplate nr.388, dated 1975. On dispersal of the Abbey Garden Press library, it was bought by the Whitestone Gardens library in 1998, the present owner.

CONDITION: A pleasing set comprising a Vol. 3 from the 1st. ed. & Vols. 1,2, & 4 from the large paper 2nd. ed. in a very clean, hardly opened condition, apart from slight damage to Vol.3 resulting from the Abbey Garden Press fire, but this is not obtrusive. Contains 76 original colour plates out of a possible 107: 19 in Vol.1, 20 in Vol. 2, 19 in Vol. 3, and 18 in Vol. 4. Vol. 3 has a badly soiled title page and slight tear in the lower margin. The first four leaves are water-stained along the lower margin. A few coloured and plain plates are loose, as though inserted later. The frontispiece photo of Vol. 3 is a later printing.

HISTORY: This seminal work first appeared softbound in printed wrappers, at intervals between 1919 and 1922. It was out of print by the mid-1930s so Scott Haselton, the founder of Abbey Garden Press, decided to issue a reprint. This appeared in 1937 in two formats, the larger run of 500 copies being a large paper version similar in size to the original.

The Carnegie Institution had random sets of a little over 40 of the colour plates from the first edition left over, and Haselton bound these into a few of his second editions until stocks were exhausted, which were otherwise published in monochrome throughout. Thus, copies with 21-41 colour plates can be found. Volumes 1,2 & 4 of the present set are from this source, while Vol. 3 is from a first edition set in the Abbey Garden Press library that survived the 1960 fire, so is original and consequently has the full complement of 19 colour plates.

Scott Haselton lost interest after his marriage in 1962 and the trauma of the fire so the business languished until 1967 when Charlie Glass and Bob Foster entered into partnership and bought the assets of the Abbey Garden Press along with its library. Charlie died in February 1998, and in March of that year Bob Foster instructed a Californian bookseller to dispose of the Abbey Garden library.

PRICE: Offers invited in the region of £850 or higher, plus postage. UK postage £25 by Special Delivery; Europe £57; Rest of World £115. It will go to the person making the best offer by 1st June 2012.

Roy Mottram, Whitestone Gardens, Sutton, Thirsk, North Yorkshire YO7 2PZ, UK. Phone: 01845597467 (UK), (+)441845597467 (internl.). Fax: 01845597035 (UK), (+)441845597035 (internl.). Email: roy@whitestn.demon.co.uk.

A free digital version of the first edition of this work can be viewed or downloaded at: http://www.biodiversitylibrary.org/item/100137#page/213/mode/1up

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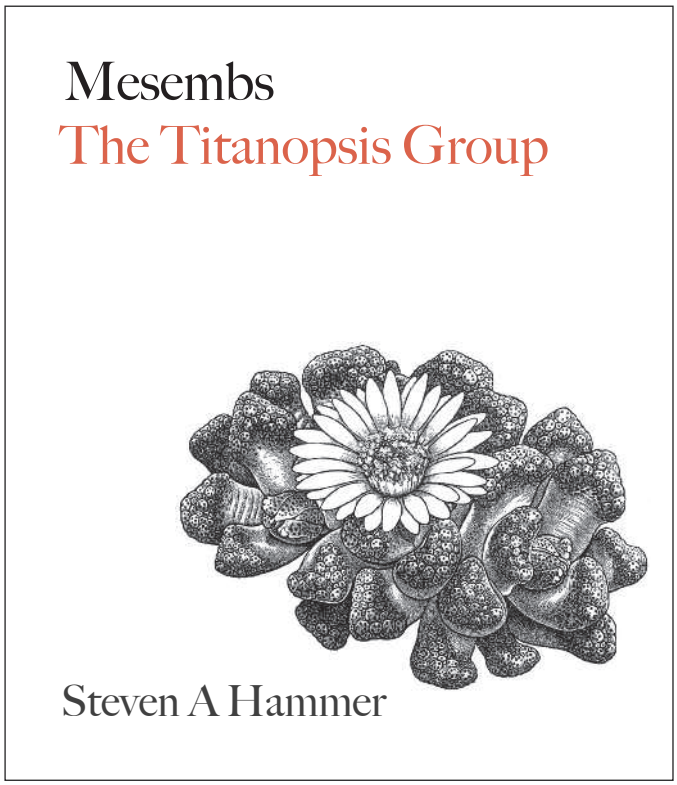

New Series of Books by Steven Hammer

Little Sphaeroid Press has joined forces with Steven Hammer to produce a series of eight new books that describe and illustrate every compact collectable member of the Living Stones from the unique perspective of this well-known and widely travelled mesemb expert.

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For information about how to pre-order this first title and more about the series, visit

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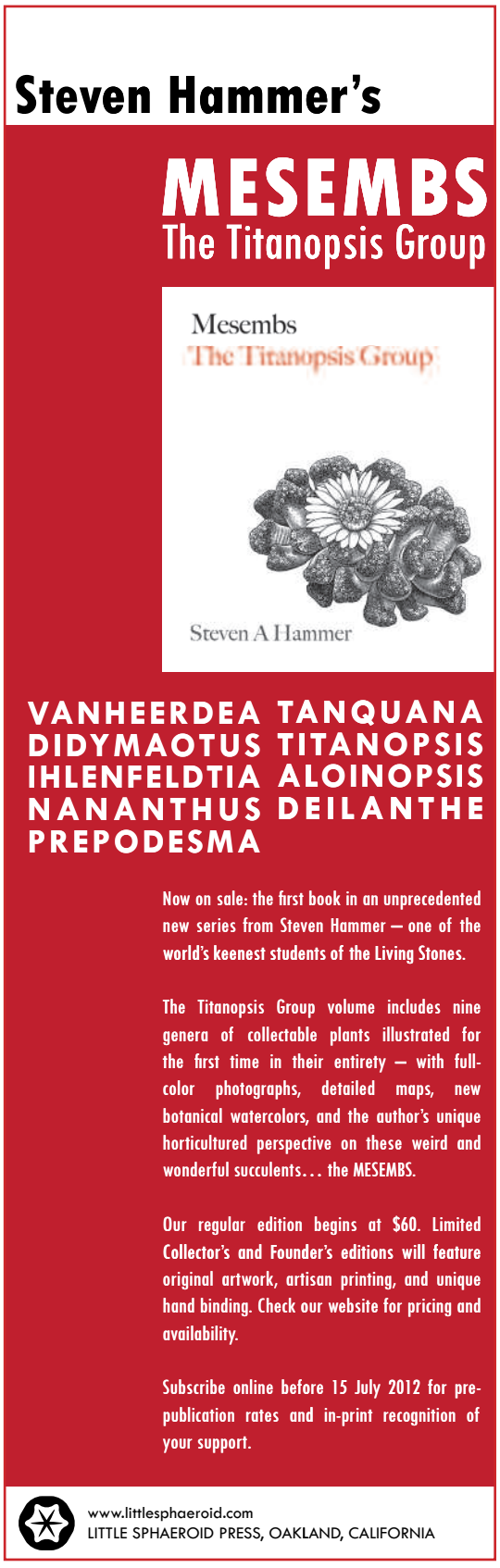


Some notes on Wigginsia corynodes

Andreas Hofacker explains the complicated history of some Wigginsia species names, makes a new combination and designates neotypes where appropriate.

Photo: A. Hofacker

Fig.1 *Echinocactus corynodes* in cultivation.

Photo: A. Hofacker

Fig.2 A plant discovered in Northern Uruguay, which resembles the first description of *Echinocactus corynodes*.

In scientific literature (e.g. Hunt 2006, Anderson 2001), and increasing in literature from cactus enthusiasts, the genus Parodia Spegazzini is understood in a broader sense to include the genera Notocactus (K. Schumann) Frič, Acanthocephala Backeberg (= Brasilicactus Backeberg nom. inval.), Eriocephala Backeberg (= Eriocactus Backeberg nom. inval.), Brasiliparodia F. Ritter and Wigginsia D.M. Porter.

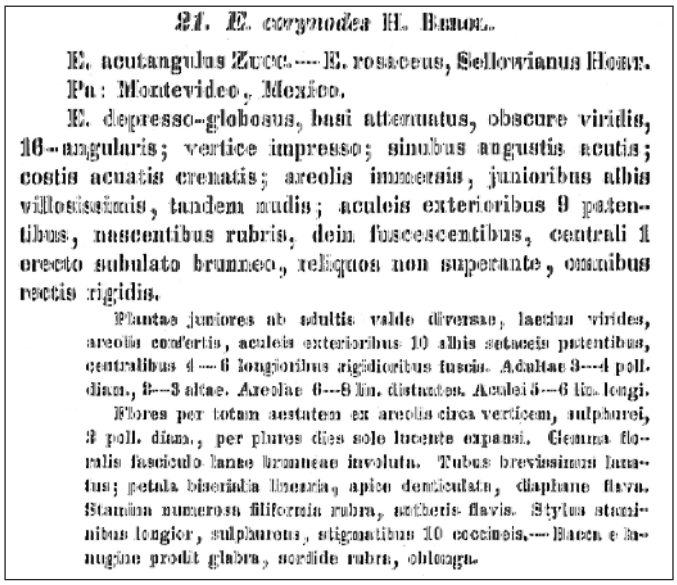
Photo: A. Hofacker

Fig.3 *Echinocactus corynodes* in Northern Uruguay.

Albesiano & Kiesling (2009) published a paper where they rehabilitated the genus Wigginsia as separate from Parodia. There, they deal with different plants of the genus Wigginsia. Unfortunately, this paper contains some errors, which need to be corrected.

In April 1905, Karl Schumann described a plant that he named *Echinocactus* (*Malacocarpus*) *arechavaletai*, not knowing that in January of the same year, Carlos Spegazzini (1905) also described a plant with the name *Echinocactus arechavaletai*. The latter plant is today included in *Parodia ottonis* (Lehmann) N.P. Taylor, whilst Schumann's plant is included in the genus Wigginsia. The descriptions were based on different plants and therefore the name *Echinocactus arechavaletai* Spegazzini has priority over *Echinocactus arechavaletai* K. Schumann, because *Echinocactus arechavaletai* K. Schumann is a younger homonym of *Echinocactus arechavaletai* Spegazzini and is therefore illegitimate (ICBN Art 53.1).

In the same publication, Spegazzini also



21. *E. corynodes* H. Bamb.

E. acutangulus Zucc.—E. roseaceus, Sellowianus Hoxr. Pa: Montevideo, Mexico.

E. depresso-globosus, basi attenuatus, obscure viridis, 16-angularis; vertice impresso; sinubus angustis acutis; costis acuatis crenatis; areolis immersis, junioribus albis villosisimis, tandem nudis; aculeis exterioribus 9 patentibus, nascentibus rubris, dein fuscescentibus, centrali 1 erecto subulato brunneo, reliquos non superante, omnibus rectis rigidis.

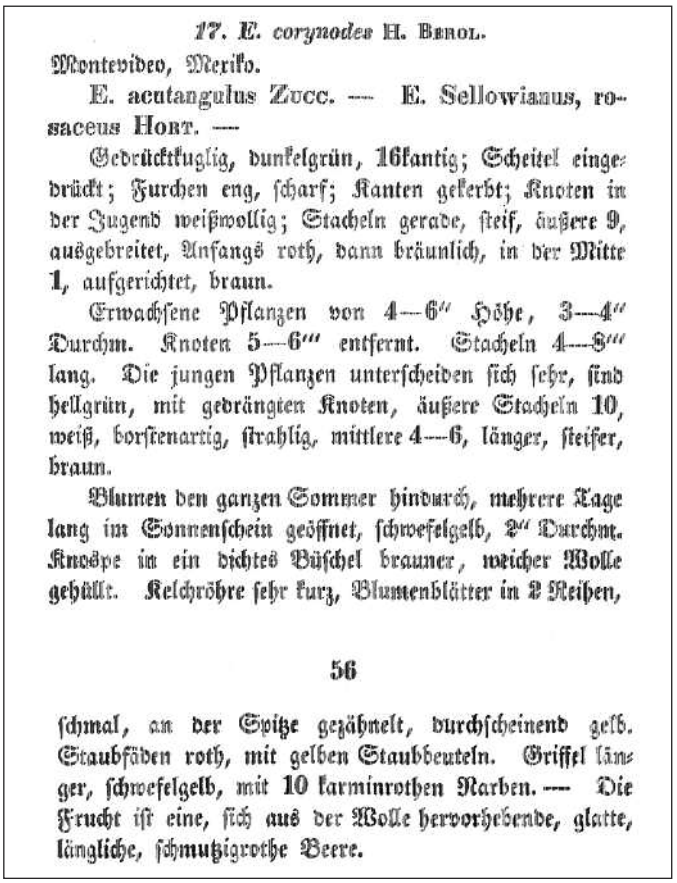
Plantae juniores ab adultis valde diversae, laetius viridis, areolis confertis, aculeis exterioribus 10 albis setaceis patentibus, centralibus 4—6 longioribus rigidioribus fuscis. Adultae 3—4 poll. diam., 2—3 altae. Areolae 6—9 lin. distantes. Aculei 5—6 lin. longi.

Flores per totam aestatem ex areolis circa verticem, sulphurei, 2 poll. diam., per plures dies sole lucente expansi. Gemma floralis fasciculo lanae brunneae involuta. Tubus brevissimus lanatus; petala biseriata linearia, apice denticulata, diaphane flava. Stamina numerosa filiformia rubra, antheris flavis. Stylus staminibus longior, sulphureus, stigmatibus 10 coccineis.—Baccae e lanugine prodit glabra, sordide rubra, oblonga.

Fig.4 The first description of *Echinocactus corynodes* from Pfeiffer.

published the name *Echinocactus acuatus* var. *arechavaletai* (K. Schumann) Spegazzini. This plant is identical with Schumann's *Echinocactus arechavaletai* and therefore Spegazzini published the first valid description of this taxon. Even if in the first description there is no provenance given, Spegazzini's indication of Schumann as author of the name shows that it is the same plant. Schumann's plant was collected by the Czech cactus-collector Alberto Vojtěch Frič in 1903 and originates from Piriápolis in southern Uruguay. Guillermo Herter (1930) created the new replacement name *Echinocactus maldonadensis*, the first correct name at specific level. Herter also published the combination of this taxon in Notocactus hence *Notocactus maldonadensis* (Herter) Herter (Herter 1943). Havliček (1989a: 79) then created the new name *Notocactus neoarechavaletai*, referring to the same plant that was described as *Echinocactus acuatus* var. *arechavaletai* and renamed at specific level as *Echinocactus maldonadensis*. The whole history of the names is described in detail in Albesiano & Kiesling.

In their publication, Albesiano & Kiesling deal with a plant that was described as *Echinocactus corynodes* Pfeiffer, today included in the genus Parodia. *Wigginsia corynodes* (Pfeiffer) D.M. Porter was first described by the German doctor and botanist Ludwig (Ludovico) Pfeiffer (1837a). In their paper, Albesiano & Kiesling try to prove that



17. *E. corynodes* H. Berol.

Montevideo, Mexiko.

E. acutangulus Zucc. — E. Sellowianus, roseaceus Hort. —

Gedrücktkuglig, dunkelgrün, 16kantig; Scheitel eingedrückt; Furchen eng, scharf; Kanten gekerbt; Knoten in der Jugend weißwollig; Stacheln gerade, steif, äußere 9, ausgebreitet, Anfangs roth, dann bräunlich, in der Mitte 1, aufgerichtet, braun.

Erwachsene Pflanzen von 4—6" Höhe, 3—4" Durchm. Knoten 5—6"' entfernt. Stacheln 4—8"' lang. Die jungen Pflanzen unterscheiden sich sehr, sind hellgrün, mit gedrängten Knoten, äußere Stacheln 10, weiß, borstenartig, strahlig, mittlere 4—6, länger, steifer, braun.

Blumen den ganzen Sommer hindurch, mehrere Tage lang im Sonnenschein geöffnet, schwefelgelb, 2" Durchm. Knospe in ein dichtes Büschel brauner, weicher Wolle gehüllt. Kelchröhre sehr kurz, Blumenblätter in 2 Reihen,

56

schmal, an der Spitze gezähnelt, durchscheinend gelb. Staubfäden roth, mit gelben Staubbeuteln. Griffel länger, schwefelgelb, mit 10 karminrothen Narben. — Die Frucht ist eine, sich aus der Wolle hervorhebende, glatte, längliche, schmutzigrothe Beere.

Fig.5 Pfeiffer's German translation from the first description of *Echinocactus corynodes*.

Wigginsia corynodes is identical with plants that are known as *Wigginsia arechavaletae* or *Notocactus neoarechavaletae* and therefore the name *Wigginsia corynodes* must be used for these plants. A neotype of *Echinocactus corynodes* was designated as plate 24 on page 243 in Arechavaleta (1905). In the protologue, the authors also synonymize *Wigginsia horstii* F. Ritter [= *Notocactus neohorstii* Theunissen = *Parodia neohorstii* (Theunissen) N.P. Taylor] with *Wigginsia corynodes*.

Fig.6 The first published picture and neotype of *Echinocactus corynodes* in Curtis's Botanical Magazine. Vol. 68 [ser. 2, vol. 15]: t. 3906.

	Pfeiffer,*Echinocactus corynodes* in„Enumeratio …"	**Pfeiffer,*Echinocactus corynodes* in„Beschreibung …"**	**Albesiano & Kiesling for *Echinocactus corynodes***	**Spegazzini *Echinocactus acuatus* var. *arechavaletai***	**Albesiano & Kiesling for *Echinocactus acutus* var. *arechavaletai***
Stem shape	Subglobose, attenuate in direction to base	Subglobose	Subglobose, attenuate in direction to base	Subglobose	Subglobose
Stem colour	Dark green Young plants brighter green	Dark green Young plants bright green	Dark green	Dark green, bright	Dark green, bright
Shape of apex	Submerged	Submerged	Submerged	Moderately submerged	Moderately umbilicated
Stem diameter	Not indicated	Not indicated	7.5–10cm	30–100mm	3–10cm
Stem height	Not indicated	Not indicated	5-7.5cm	30–100mm	3–10cm
Number of ribs	16	16	16	13-21	13–21
Rib shape	Narrow, acute, edges crenate	Narrow, acute, edges crenate	Narrow, acute, crenate	Slightly obtuse	Nearly obtuse
Areoles	Impressed. Younger ones woolly, white, later deciduous	With white wool, when young	Impressed. Young ones with abundant white hairs, later deciduous; spines rigid	Not mentioned	Not mentioned
Areole separation	6-8 Linien Kurhessen: 1.2cm–1.6cm Prussia: ?	5–6 Linen Kurhessen: 1.0cm–1.2cm Prussia: ?	1.38–1.84cm	Not mentioned	Not mentioned
Radial spine number	10 in young plants, 9 in adult plants	10 in young plants, 9 in adult plants	10 in young plants, 9 in adult plants	5–9	5–9
Radial spine colour	first red, then brownish, young plants white	first red, then brownish, young plants white	Base red, the rest dark	Pale	Whitish
Radial spine length	Not indicated	Not indicated	1.15–1.38cm	10–15mm	1–1.5cm
Radial spine shape	Straight, the younger ones setose	Straight, younger ones setose	Straight	Straight, radiating	Straight
Central spine number	Young plant: 4-6 Adult plant: 1	Young plant: 4-6 Adult plant: 1	Young plant: 4-6 Adult plant: 1	1	1
Central spine shape	Erect	Erect	Erect	Straight	Straight and erect
Central spine colour	Brownish	Brown	Brown, dark	Grey-white with darker tip	Grey, with brown tips
Central spine size	Not topping the other ones	Not indicated	Larger than radials	15–20mm, more often distinctive thicker	1.5–2cm
Flower diameter	2 Zoll Kurhessen: 4.794cm Prussia: 7.5324cm	2 Zoll Kurhessen: 4.794cm Prussia: 7.5324cm	5 cm	Not mentioned	Not mentioned
Perianth tube	Not indicated	Not indicated	Sparsely covered with wool	Not mentioned	Not mentioned
Tepal shape	Narrow, with denticulate tip	Narrow, with denticulate tip	Linear, with denticulate tip	Not mentioned	Not mentioned
Tepal colour	Translucent yellow	Translucent yellow	Yellow	Not mentioned	Not mentioned
Stamen filaments	Red	Red	Red	Not mentioned	Not mentioned
Stigma colour	Carmine	Carmine	Bright-red	Not mentioned	Not mentioned
Style colour	Sulphur-coloured	Sulphur-coloured	Yellow	Not mentioned	Not mentioned
Stigma lobe number	10	10	10	Not mentioned	Not mentioned
Shape and type of fruit	Berry, oblong	Berry, oblong	Berry, oblong	Not mentioned	Not mentioned
Fruit covering	Smooth, distinguishing from the wool	Smooth, distinguishing from the wool	Initially covered with wool and then glabrous	Not mentioned	Not mentioned
Fruit colour	Dirty red	Dirty red	Pale red	Not mentioned	Not mentioned

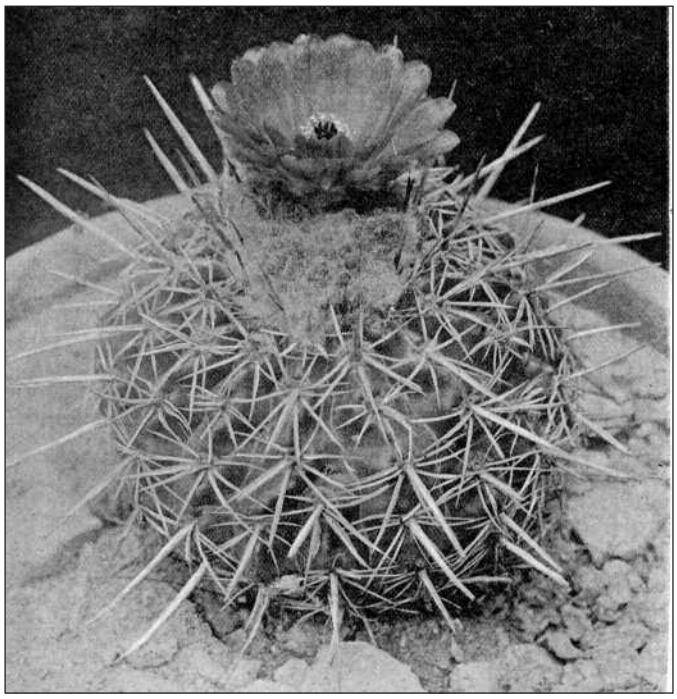


Fig.7 Schumann's picture of *Echinocactus* (*Malacocarpus*) *arechavaletai* in the Flora Uruguaya, April 1905.

To prove their thesis, Albesiano & Kiesling compare the original descriptions of *Echinocactus corynodes* and *Echinocactus acuatus* var. *arechavaletai* (and also of *Echinocactus arechavaletai* Spegazzini) in a table and come to the conclusion that the two taxa are identical. Unfortunately, the table contains some errors which give a completely wrong picture of *Echinocactus corynodes*.

— maldonadensis Hert. [Echinocactus Arechavaletai K. Schum. ex Arech., non Speg.] — Mald.

Fig.8 Herter's creation of the new name *Echinocactus maldonadensis* in Florula Uruguayensis, 1930.

Albesiano & Kiesling don't mention that there is also a German version of the "Enumeratio Diagnostica Cactearum hucusque cognitarum" from 1937, titled "Beschreibung und Synonymik der in Deutschen Gärten lebend vorkommenden Cacteen" (Pfeiffer 1837b). This book contains some additional information about *Echinocactus corynodes*.

Another point, which is not discussed by Albesiano & Kiesling, is the measurements. In 1837, Germany was divided into many small independent states (Grafschaften, Herzogtümer, Königreiche, Freie Reichsstädte, …), all with their own currency and measurements. Pfeiffer lived in Kassel, a town belonging to the Herzogtum Kurhessen. His book was printed in Berlin, belonging to

Photo: G.Charles

Fig. 9 *Parodia maldonadensis* Hofacker 357 from Pedras Altas, Rio Grande do Sul, Brazil.

Preußen (Prussia).

Pfeiffer used the measurements "Linie", indicated as '' and "Zoll", indicated as '. Depending which measurement Pfeiffer used, 1 Line was 0,2cm (in Kurhessen), in Prussia it didn't exist officially but the old Prussian "Linie" (only valid until 1816) with 0,21795cm was still in use. In Prussia, 1 Zoll was 3,7662cm, in Kurhessen 2,397cm. In the protologue, Pfeiffer didn't indicate which measurement he used. So, the conversion of Albesiano & Kiesling to centimetres is unsure, even if it is likely that Pfeiffer used the measurements of his home.

In the table on the previous page are listed the information given by Albesiano & Kiesling, facing the information given in the first descriptions and their German translation from Pfeiffer. The main differences between the original descriptions and the table of Albesiano & Kiesling are printed in red.

Very characteristic for the plants described as *Echinocactus acuatus* var. *arechavaletai* are the long, thick, downwards pointing, flattened central spines and the sub-globose stem shape. In the first description of *Echinocactus corynodes* it is mentioned that the central spines don't top the other ones, the name of the plant (corynodes = club-like) indicate the stem shape. These characteristics are completely misinterpreted by Albesiano & Kiesling.

Albesiano & Kiesling also do not mention an

Photo: N.Gerloff

Fig. 10 *Parodia maldonadensis* found at the type locality at the Pan de Azucar in Southern Uruguay.

Photo: N.Gerloff

Fig.11 *Parodia maldonadensis* found at the type locality at the Pan de Azucar in Southern Uruguay.

early picture of *Echinocactus corynodes*. Already in 1842, a picture of a plant named *Echinocactus corynodes* had been published in Curtis's Botanical Magazine (W.J.Hooker 1841). Even if the provenance of the plant is not mentioned in the protologue, it fits the description of *Echinocactus corynodes* perfectly.

This picture was used in several publications (e. g. Krook 1855, Förster & Rümpler 1886, Britton & Rose 1922 as *Malacocarpus erinaceus*).

Pfeiffer & Otto (1845) also mentioned *Echinocactus corynodes* again, a short time after publication. Under *Echinocactus sellowianus*

Photo: N.Gerloff

Fig.12 *Parodia maldonadensis* in habitat near Velasquez in Uruguay.

(plate 1), they wrote: "Durch Herrn Sellow zuerst im bot. Garten zu Berlin eingeführt, blieb diese Art lange Zeit sehr selten, wurde aber leider häufig mit *E. corynodes* verwechselt, bis endlich die ächte Pflanze durch Samen vermehrt und der Irrthum aufgeklärt wurde." (First introduced from Mr. Sellow to the Botanical Garden of Berlin, this species stayed very rare for a long time, unfortunately misidentified as *E. corynodes*, until the correct plant was propagated through seeds and the error could be corrected).

It can be interpreted that *Echinocactus corynodes* is similar to *Echinocactus sellowii* (which is the correct spelling of the name of that species), a taxon which is today known as *Notocactus sellowii* (Link & Otto) Theunissen or *Parodia sellowii* (Link & Otto) D.R. Hunt. But *Echinocactus sellowii* cannot be confused with plants which are described as *Echinocactus acuatus* var. *arechavaletai*. This is another reason, why the synonymizing of Albesiano & Kiesling is wrong.

Under ICBN Art 9.17(b), there is a serious conflict between the neotype of Albesiano & Kiesling and the original description of *Echinocactus corynodes*. Important characteristics of the protologue were not correctly appreciated. Therefore, the neotypification of Albesiano & Kiesling is superseded here.

Gerloff & Neduchal (2004) designated several neotypes for plants which they classify under Notocactus. For *Echinocactus corynodes*, they

Photo: N.Gerloff

Fig. 13 A typical habitat of *Parodia maldonadensis* at Velasquez in Uruguay.

chose a collection of Walter Rausch (WR 336) from Uruguay, deposited in FRP. But in the protologue it does not include the phrase "designated here". In the foreword (p. 37) is written "… ermöglichen es uns, bei den nun aufgelisteten Arten die Typen aufzustellen" (… made it possible for us to erect the types for the species listed below). In the list is also *Notocactus erinaceus* f. *corynodes* WR 336 mentioned. The text itself (p. 99) contains the combination *Notocactus erinaceus* f. *corynodes* and the designation of the neotypus as WR 336. It is doubtful whether this fulfils the regulations of Art. ICBN 7.11 which demands from 2001 for typification (lectotypes, neotypes and epitypes) the indication of the phrase "designated here" (hic designatus) or an equivalent.

The neotypification is therefore done here as follows:

Echinocactus corynodes Pfeiffer

Photo: N.Gerloff

Fig.14 *Parodia maldonadensis* in habitat near Pedras Altas, Rio Grande do Sul, Brazil.

Neotypus (designated here): Curtis's Botanical Magazine, vol. 68 [ser. 2, vol. 15]: t. 3906.

This neotype is not in conflict with the protologue.

Photo: A. Hofacker

Fig. 15 *Parodia nothohorstii* in habitat east of Minas do Camaqua, Brazil.

As mentioned above, Albesiano & Kiesling also synonymize *Wigginsia horstii* with *Wigginsia corynodes*. For this they studied only living material of a single collection of Omar Ferrari from Punta Ballenas (correctly written Punta Ballena) in southern Uruguay. This is a complete misinterpretation and shows the importance of knowing plants from their original habitat. *Wigginsia horstii* was described from Minas do Camaqua in the state of Rio Grande do Sul in Brazil, about 500km north of Punta Ballena. This species is different from both *Wigginsia corynodes* and *Echinocactus acuatus* var. *arechavaletai*. It is also the only Wigginsia which a non-specialist can recognize very easily. Typical are the small elongated globose to cylindric stems (9cm in diameter and 15cm high), the rib-number of 18-24, the close areoles (only 4mm apart), the very woolly areoles, the high number of radial spines (18-24), the short stigma lobes which are sometimes grown together like a plate and the small fruit less than 1cm long with only about 25 seeds.

Albesiano & Kiesling state correctly that the names *Notocactus neoarechavaletae* Havliček under ICBN Art 52. 1 and *Parodia neoarechavaletae* (Havliček) D.R. Hunt under ICBN Art 11.4 are incorrect because the oldest available name at the same rank is *Echinocactus maldonadensis* Herter.

The missing combination under Parodia for this species follows here:

Parodia maldonadensis (Herter) Hofacker comb. nov.

Basionym: *Echinocactus maldonadensis* Herter Florula Uruguayensis plantae vasculares 4, in Estudios Botanicae en la Region Uruguaya. Privately published, Montevideo, 1930..

Neotypus (designated here): Heinz Ruoff 107 (FRP).

The neotypification is necessary because there is no type designated for this taxon. Even if Albesiano & Kiesling indicated that Havliček

Photo: A. Hofacker

Fig.16 *Parodia nothohorstii* in habitat east of Minas do Camaqua, Brazil.

Photo: Rodrigo Corrêa Pontes

Fig.17 *Parodia nothohorstii* in habitat east of Minas do Camaqua, Brazil.

designated a neotypus of *Echinocactus acuatus* var. *arechavaletai* with Heinz Ruoff 107, there is no such designation in Havliček's paper. The typification of Gerloff & Neduchal (2004) with Heinz Ruoff 107 is invalid under ICBN Art 7.11 for the same reason as mentioned above concerning the typification of *Echinocactus corynodes*.

The epithet maldonadensis was used by Herter (1930, 1943, 1954), Havliček (1989a: 79, 1989b: 53) and Havliček (1994) as a varietal name as well as by several collectors who named their findings with the epithet *maldonadensis* (e.g. Walter Rausch 352, Dirk van Vliet 11)

However, this name didn't assert itself, mainly the epithet *neoarechavaletae* was used. One should consider a proposal to conserve the name *neoarechavaletae* against the name *maldonadensis*, but this is not the aim of this paper.

The author thanks Dr. Urs Eggli, Zürich and Dr. Detlev Metzing, Kirchlinteln for discussing nomenclatural questions, Graham Charles, UK for English corrections and Norbert Gerloff, Ludwigsburg and Rodrigo Corrêa Pontes, Santa Maria for providing photos.

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Photo: A. Hofacker

Fig.18 *Parodia nothohorstii* in cultivation.

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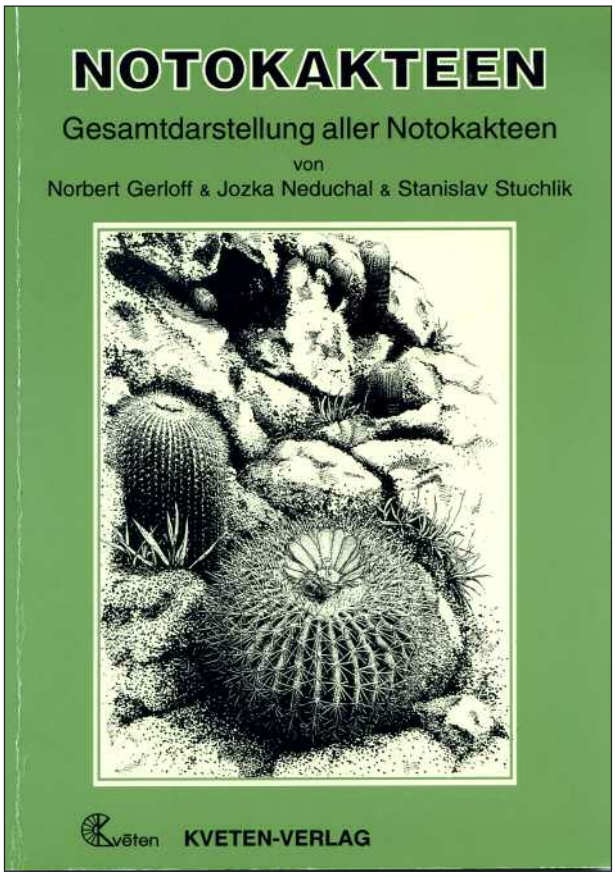

Notocactus was my favourite genus when I first started growing cacti but today it is just not popular, at least in the UK. However, it does have its followers and even a society dedicated to its study. You can find out about Internoto at

http://www.internoto.de

A useful softbound book 'Notokakteen', written in German by Norbert Gerloff and two co-authors, was published in 1995. Although most of the pictures are black & white, I still find it a useful reference because it covers the whole genus known at that time, including Eriocactus, Brasilicactus and Wigginsia.

Notocactus are often included in the genus Parodia but be aware that some species had their names changed in the process because the name in Parodia was already used. GC

Gymnocalycium bayrianum

Massimo Meregalli is passionate about Gymnocalycium and regularly goes to Argentina to see what he can find. He sent me some spectacular pictures of a population of *Gymnocalycium bayrianum* he found in Salta Province, so I thought you would enjoy seeing them.

Photographs by Massimo Meregalli

Massimo visited Argentina in January with his friends Tomi Kulhanek and Ludwig Bercht. There is plenty of rain at this time of year when you are travelling in Tucuman and the south eastern part of Salta, on the eastern foothills of the Andes. The rain-bearing winds from the east bring regular precipitation to these hills as can be seen by the leafy shrubs in the picture above.

January is a good time to see cacti in northern Argentina even though the rain can be a problem if it washes the roads away or turns streams into impassable raging torrents of water. So, if you can get to the plants, they should be growing, flowering and can often have ripe fruits.

Massimo had found a hillside with beautiful plants of *Gymnocalycium bayrianum* during a previous trip in 2010 and wanted to show his friends. It was a hill just in Salta Province, near to the Tucuman border, part of the Sierra Candelaria, Estancia San Antonio at 1245m. The plants grew among rocks in the clearings between the shrubs.

He told me: "This population was simply fantastic. I have visited the location twice, the

first time in 2010 we saw the hill, and asked the people at the estancia if there were globular "pencas" there. They confirmed and let us in. In the more open parts, there were only some *Echinopsis albispinosa*, then I moved to the other side of the hill, and there they were, just waiting for me! Really beautiful plants".

In terrain like this, the cacti are found only in places where they are not in competition with the leafy plants, for instance in rocky places, where their succulence is an advantage, allowing them to survive during the dry season. As you drive along the road, it can be difficult to see places which might be suitable for cacti because in this region the hills are generally covered with a dense evergreen or semi-evergreen vegetation, so it can take much patient searching to find the plants.

The name *G. bayrianum* first appeared (invalidly) back in 1967 but the plant is still not common in general collections. My seedlings first flowered when in 9cm pots and the plants get even more attractive when large. Its closest relatives are thought to be *G. cardenasianum* and *G. spegazzinii*.

For the full story of *G. bayrianum* see my book: 'Gymnocalycium in habitat and culture: p.132-133' (2009) GC

A Visit to Cajas Bajo, Bolivia

Friedrich Ritter made a remarkable number of new discoveries. The habitats of some of these plants still remain to be found. Martin Lowry describes his attempt to find *Rebutia flavistyla*, *R. pulvinosa* and *R. albiflora* in the Rio Cajas valley.

Photographs by the author

Fig.1

After his arduous visit to the Paicho Gorge in December 1962, Friedrich Ritter spent some time in Tarija city before setting out again in search of cacti on 4th February 1963. This time he travelled east to the little village of Junacas close to the Abra Condor on the route to Villamontes. Since 2006 this has been a good-quality tarmac road, but in Ritter's time it was probably a poor dirt road. Even now there are only dirt tracks leading off from this road into the hinterlands of Tarija Department.

It appears that Ritter wanted to revisit an area where, in April 1958, he had discovered several new species of cacti. On both occasions he had left his Ford truck at Jucanas and headed north on foot. He carried very little with him and spent the nights in the open or in the huts of local people, who were also generous enough to feed him. Amongst the plants he had discovered in 1958 were three Rebutias that are now quite common in collections: *Rebutia flavistyla*, *R. pulvinosa* and *R. albiflora*. First descriptions of the latter two had been published in January 1963, so perhaps it was this that had prompted Ritter to revisit the location in search of seed.

Few modern cactus enthusiasts have travelled to see these plants in habitat. I made my first attempt in 1997 with Brian Bates and Tim Marshall. We followed Ritter's directions and were able to drive north from Junacas as far as Alto España, but there we had to stop as the track came to an end in a field. We did find some cacti in a nearby ravine (BLMT154), but not the enigmatic Rebutias we were looking for.

Fig.2 John Carr preparing supper.

Fig.3 Rebutia pulvinosa with its small orange flower.

It wasn't until November 2009 that I made another attempt at finding these plants. By that time Google Earth had arrived and it was relatively easy to plan an alternative route from Tarija to the Rio Cajas valley. Leaving Tarija in the early afternoon, John Carr and I left the main road at Santa Ana and travelled north through Caldera Grande to Yesera. There we turned east and drove over the high mountains through dense cloud to Alto Cajas.

By a series of hairpin bends, the road then made a rapid descent of around 1000m in about 4km, taking us down through a band of forest to the banks of the Rio Cajas (Fig.1, BLMT769). Fortunately, the river was very dry so, even though the light was fading, we made a brief survey of the area before setting up

Fig.4 *Rebutia flavistyla* BLMT769.07.

camp for the night. Very quickly we spotted at least three species of cacti growing on the nearby cliffs: a Rebutia, a Parodia and a Cleistocactus. The Rebutia was especially exciting since it had very small heads, was offsetting profusely, and was in bud; could this be *R. albiflora*? Confirmation would have to wait until the following morning as it was now too dark to start climbing the near-vertical cliffs to take a closer look. We set up camp under some trees, cooked supper (Fig.2) and turned in for the night.

After a restless night, during which we were awoken by a passing truck making deliveries and by John continually fighting off mosquitoes (they don't bother with me if somebody else is close!), we rose with the sun, ate breakfast rapidly, collected our cameras and headed for the cliffs. A short climb brought us alongside the Rebutia we had spotted the previous night. The bud had now opened to reveal a small orange flower (Fig.3, BLMT769.08); it was *R. pulvinosa*, not *R. albiflora*.

Growing with it, and unseen the previous night, was another quite different Rebutia (Fig.4, BLMT769.07) and a small Echeveria (Fig.5, BLMT769.03). The second Rebutia grew as solitary plants with heads 2–3 times the size of those on the clump of *R. pulvinosa*. Superficially, it looked like the ubiquitous *R. fiebrigii*, but the spines were shorter, fewer and all the same glassy-white colour (*R. fiebrigii* has short white radial spines and longer, dark central spines). We decided this second

Rebutia was *R. flavistyla*. The Echeveria is as yet unidentified and may be a new species.

A few metres away, we investigated the Parodia (BLMT769.05) we had noted earlier. It grew in small colonies of solitary plants ranging from tiny seedlings to mature specimens up to 10cm in diameter and height. The body was glossy-green with about a dozen ribs and 10–15 short golden spines per areole. Many of the plants were sporting small orange flowers. This fits the description of *Parodia gracilis* found by Ritter on his first visit here in 1958 but not described until 1964. Further exploring allowed us to confirm the identity of the Cleistocactus as *C. micropetalus*, another species described by Ritter and now considered a subspecies of *C. tominensis*. We also found a few specimens each of Cereus hankeanus, *Gymnocalycium pflanzii* and *Pfeiffera ianthothele*.

Ritter described the location of *R. albiflora* as "a few hours on foot into the gorge in a tropical climate" and the cactus as having "of all Rebutia species the warmest habitat climate". So, since it was still only mid-morning and we hadn't found the species yet, we decided to drive a little further downstream. There was no road so we had to pick our way along the riverbed over boulders and through the river; it was very slow going! By midday we had managed about 5km with no sign of suitable habitat for the Rebutia and realised that, sadly, we would have to abandon the search if we were to reach Tarija that night.

The one or two offsets of the rebutias that we collected grew well and, once established, began to look exactly like the plants we have grown in our collections for many years. It is quite possible that the specimens of the three Rebutias circulating in cultivation are all derived from a few plants and seed collected by Ritter on his two visits in 1958 and 1963. Indeed, it has even been speculated that the many hundreds of plants of *R. albiflora*, in particular, are all derived by vegetative propagation from a single clone, since it very rarely produces viable seed when hand pollinated. In contrast, both *R. pulvinosa* and *R. flavistyla* readily produce significant quantities

Fig.5 Echeveria BLMT769.03, perhaps undescribed.

Fig.6 *Rebutia flavistyla* BLMT769.07 flowering more yellow than the expected dark orange.(in culture)

of seed, but their offspring show little if any variation.

It was therefore quite a surprise when the collected offset of *R. flavistyla* produced yellow flowers (Fig.6) rather than the deep orange ones normally seen on this species. Hopefully this specimen will be as fruitful as those in cultivation and we can add a little variety to the cultivated stock!

Martin Lowry

The Largest Echinocereus in the World (?)

Daiv Freeman describes the giant Echinocereus plants he found in flower at White Sands National Monument, New Mexico, USA. He wonders why the population has received so little comment and what the correct botanical name of the plants should be. **Photographs by the author**

Fig.1 The edge of the dunes – burying plants.

Background Story

In the spring of 2011 at the end of April, I had the privilege of visiting White Sands National Monument in New Mexico. I enjoy the outdoors and visiting parks and I've always wanted to see the famous white sand dunes of White Sands N.M. I had read about the unique conditions that merge at this location to form the pure white gypsum dunes that stretch on for a reported 275 square miles! These impressive mounds of blinding-white sand are definitely worth the visit for anyone travelling through the state. However, unlike most visitors there, the unique geology was not my primary purpose for visiting the monument, I was going to see a cactus – the dunes were just an added bonus.

The cactus I was looking for in particular was the giant form of *Echinocereus triglochidiatus*. I knew about this population primarily from discussions with other cactus enthusiasts. It occurred to me, that I had seen the "White Sands" plants referred to in books, but only very briefly – so brief that I didn't pick up on any distinction at the time. Before going into more detail about the available literature, I'll first relate my own experience and observations from visiting these unusual plants.

White Sands National Monument is

Fig.2 Blowing Sand over the White Dunes.

Fig.3 Habitat overview ~4000 feet.

Fig.4 A large dead Echinocereus plant.

southwest of Alamogordo, New Mexico. I came into the city from the north on Hwy. 54 and went out on Hwy. 70 for just a few miles. The visitor's center is right at the entrance and I stopped in to look over the exhibits and pick up a map of the park. I had plenty of past experience in spotting Echinocereus growing in the wild throughout their range. For the most part, they can be found growing on rocky hillsides or occasionally on flat, but rocky areas or at least, that was how I was accustomed to finding them. As I drove in on the only road into the monument, I had my eyes peeled for just such a location. Before I knew it, I was at the end of the road and headed back – surrounded by pure sand dunes with little to no vegetation around. After exploring the dunes a bit, I studied the map in more detail trying to determine where to find these plants. I decided to head back to the visitor's center and ask a park ranger.

The visitor's center is not built in the dunes and so the road passes through the edge of the dunes where the vegetation and sand collide. It is a transitional area where plants like Yuccas can be seen half-covered with sand; struggling to keep from being buried alive. After the last mound of sand, the landscape flattens out to clumps of grass mixed with scattered shrubs. Sparsely distributed *Cylindropuntia imbricata* from about 4 to 6ft tall were easily visible from the road. Passing through this area, I was scanning the vegetation for anything unusual and when I was almost to the entrance booth, my eye caught a quick glimpse of red among the drab foliage that I instantly recognized as none other than "Claret Cup" red. I came to a screeching halt and realized that I needed to get one of those "I Brake for Cactus" bumper stickers.

With camera in hand, I walked out among the dry grass. I walked for a few hundred feet and could not help but think how very unlike Echinocereus habitat it was. Maybe all I saw was a red gum-wrapper or something like that. Aside from the *C. imbricata*, I started to notice extremely well camouflaged *Cylindropuntia kleiniae* also growing here. Then, I finally found a three-stemmed *E. triglochidiatus*, but it was as dead as a doornail. None-the-less, I now knew that the red thing I saw was a flower and therefore there was bound to be live plants around. Yet, I would encounter another dozen completely dead plants with as many as 20 stems before I finally found a

Fig.5 Typical Echinocereus plant in bud.

living one.

I speculated that these plants may all be victims of the devastating freeze that hit the Southwest in the winter of 2010/2011. I could not say for sure as a dried cactus changes very slowly in the desert and looks nearly the same after being dead for years. I later learned that these plants have been grown in much colder areas with little difficulty. Either way, seeing so many dead plants was depressing and I changed direction in the hope of finding more live plants that were in better shape than the few I had found. This move paid off and soon I found fully green plants covered in bright-red buds. As I kept going, I found more and more plants with many open flowers. I seemed to be there just prior to the peak flowering period.

Description

The flowers are borne below the apex around the top of the stem and are a cone-shape. They are a brilliant, scarlet-red with pale-yellow centers, near-purple stamens and a bright green stigma. As with the rest of the genus, the peduncles are quite spiny. Flower size is quite large at around 4 inches in length and 2½ inches in diameter when open. That said, the flowers don't appear large in proportion to the size of the stems – especially in photos. Most stems are a good 5 inches in diameter or more with 8 pronounced, tuberculate ribs. Stems average 15-20 inches in length, but I found plants with stems at least 28 inches long and I suspect larger ones could be found.

Thick, angled, the grey spines number from 6-7 (occasionally 8) per areole measuring 2 inches in length and are spaced about an inch apart. This makes the wrinkled, grey-green stems clearly visible through the spines. Most plants consist of multiple stems joined at the base. The larger the stems, the more sprawled out they become. There are occasional small

Fig.6 Large, sprawling Echinocereus stem 28 inches long (note branch near stem tip).

branches further up along the larger stems.

Habitat

As mentioned above, these plants are not found in stereotypical Echinocereus habitat. The soil is a mix of gypsum and clay. According to one park ranger, recent core samples taken by the park service found that this type of soil extended at least 200 feet below the surface. Associated plants include *Yucca elata*, *Chrysothamnus nauseosus*, *Cylindropuntia imbricata*, *C. kleiniae*, *Atriplex canescens*, various grasses and other desert plants.

The elevation is approximately 4000 ft. and temperatures can easily hit 100°F in mid-summer and average 22°F for a low in winter. However, temperatures can get much colder than this. The park website lists -25°F for the lowest recorded temperature, but this seems extreme and I could not verify when and where that temperature was recorded. When I questioned a local park ranger about this, he did not think it impossible. The average annual rainfall is 10.5 inches with July and August being the wettest months.

Literature and Naming

Finding information about the giant White Sands Echinocereus is not easy. For instance, the latest monograph on the genus by John Pilbeam (2011) makes no mention of the White Sands plants, but lists a stem size for the species of 4.7 x 27.5 inches (12 x 70 cm) - obviously including the giant form. In the

Fig.7 Typical Echinocereus plant.

"New Cactus Lexicon", ssp. *triglochidiatus* is described in the text having stems less than 12 x 3 inches (30 cm x 7 cm) and no mention is made of the giant White Sands plants at all. Yet, oddly enough, the only two pictures in the NCL picture atlas of ssp. *triglochidiatus* are both of White Sands plants.

In Anderson's "The Cactus Family", stem size for *E. triglochidiatus* is listed as 2 - 16 inches high by 2 - 5.9 inches in diameter, but nothing else to suggest that even larger plants exist. Meanwhile in the 1998 "Echinocereus" by Blum et. al., we finally find mention of the giant form where the authors assign the var. *gonacanthus* as a specific reference to the giant form. Here they also mention it as being found in San Ysidro. They also speculate that it may be a variant of ssp. *mojavensis*.

With that we might be satisfied to simply call our giant plants from White Sands – *E. triglochidiatus* var. *gonacanthus*, but the type of *Cereus gonacanthus* Engelmann & Bigelow 1856 is from west of Zuni, NM (not at all near White Sands or San Ysidro). Furthermore, if we look at var. *gonacanthus* in Earle's "Cacti of the Southwest", the first three words in his description are "A small plant..." quantified as up to 8 inches. Likewise, Weniger in "Cacti of the Southwest" (1970) gives a size for var. *gonacanthus* as only 3-6 inches. Here, however, we finally find a discussion on the White Sands population.

On pages 38-39, Weniger devotes five paragraphs to the White Sands population. As

Fig.8 A wonderful Echinocereus plant in bloom.

mentioned, Weniger recognized var. *gonacathus* treating it as a valid taxon of plants with relatively small stature. He concludes after making observations of both White Sands plants and var. *gonacanthus* elsewhere that the the two are identical in every way except for size. To his credit, Weniger sought an explanation for this. He found his satisfaction in two examples of transplanted plants. Apparently he had friends in Albuquerque and Colorado who took 12 inch or taller plants from White Sands and planted them in their gardens. He claims that in both cases the stems shrunk to half their size within one year. Finally concluding that the population at White Sands is the most amazing example of the variation due to environment on any cactus species. In Flora of North America vol 4, page 168, the idea in Weniger's five paragraphs are paraphrased (repeated) in a half paragraph. Namely that the size is strictly due to environment.

There are a number of problems with Weniger's observations, however. First is his claim that the maximum size of these plants is a mere 18 inches. In my short visit to habitat, I easily found many plants over this and reaching up to 28 inches. However, Dave Ferguson reported to me that the largest example he found was a stem 6 inches in diameter and 6 feet in length. To imagine that a 3 feet long stem is going to shrink and become a 6 or 8 inch specimen as var. *gonacanthus* has been defined, is quite a silly thought. Furthermore, a vigorously-growing large wild plant that is dug and moved to somebody's garden 100s of miles away is certainly going to suffer greatly from transplant shock. This is especially true within the the first year after transplant as Weniger cited. Last, but not least, the characteristics of seed-grown plants would be a far more proper test to determine the

Fig.9 Stem close-up -note the angled spines.

Fig.10 Close up of the flower.

genetic predisposition of any given population.

The natural next step is to determine whether anyone has grown both *E. triglochidiatus* from seed and White Sands plants from seed in the same environment and if so, is there a difference in size? Indeed this has been done. Dave Salman of High Country Gardens in Santa Fe is one such grower. He has found that plants from seed will reach larger size than seed-grown plants from other sources grown in the same conditions. He even offers both plants for sale and hand-pollinates the White Sands plants to carry on the genes which produce the larger size.

Conclusion

Most publications ignore entirely or summarily dismiss the giant White Sands Echinocereus population. Based on my observations and research, it seems to me that these plants are, in fact, a genetically distinct population. Perhaps they are not so distinct to warrant species designation, but I think they are worthy of recognition at some level.

I also got information from Dave Ferguson, who has much more experience in the field than I do with these plants. He has made observations, not just at White Sands, but throughout the region. His broader perspective has shown him that while these plants in the White Sands area are the biggest of the big, other locations also have populations with plants of very similar size. The area around San Ysidro, NM is one of the better known examples. More importantly, he has observed that there is a gradual change in stem sizes from the large plants growing in the flats, to those in the mountains. This could likely be explained by simple natural selection in which the large plants can't survive in the harsher mountain areas while they dominate the flats due to their size advantage with bigger flowers and ability to compete with surrounding vegetation that might otherwise choke out smaller plants. I can only speculate at this point, but I hope this article heightens the interest in these magnificent largest-of-all Echinocereus. They are well worth visiting for anyone traveling to New Mexico. And a great addition to cold-hardy gardeners being readily available through sources such as High Country Gardens.

Reference

Heil, K.D. & Brack, S. (1986) The Cacti of the White Sands National Monument. C&SJ(U.S.): 58(2):67-69, 80-81.

Daiv Freeman

(With special thanks to Peter Breslin, Juergen Menzel, and Dave Ferguson.)

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Does Mammillaria yucatanensis still exist in Yucatán?

We usually hear from explorers who manage to find what they are looking for. Readers might get the impression that finding plants in nature is easy. Here, Rene Samek explains that persistent searching did not enable him to find his quarry.

Photographs by the author.

Fig.1 Terrain at Laguna Rosada

Nearly ten years ago I made a trip to the Yucatán penninsula, primarily to see Maya pyramids and other sights, but determined to look for cacti along the way. As I was travelling with two non-cactophiles, opportunities for thorough searches further from the roads were limited, but we had a rental car so we could make a stop whenever the terrain seemed suitable for cacti. We travelled almost the whole length and width of the peninsula, from the lowlands of Tabasco north to Merida, due east to Cancun. From there, we went South to Tulum and more-or-less retraced our steps back to Chiapas, making various stops and detours on both ways at places such as Campeche, Uxmal, Merida, Valladolid and Chichen Itza.

One of the cacti I wanted to see in its natural habitat was *Mammillaria yucatanensis*. It is relatively common in cultivation, both in the Czech Republic and in the UK, but it seems that it has not been collected in Yucatán during recent decades, since all the field numbers of *M. yucatanensis* (also listed as *M. columbiana* var. *yucatanensis* or *M. chiapensis*) are from Chiapas, either from El Aguacero/Cascada de Aguacero (L 1507, FO 304, ML 373), the nearby Ocozocuautla (Rep 960), or without precise data (FO 325 - Chiapas).

It seems that even the great Austrian mammillariophile Werner Reppenhagen, who travelled the length and breadth of Mexico during his 26 expeditions to the country between 1959 and 1989, did not find *M. yucatanensis* in Yucatán. We know that he did visit the state - his four field numbers of *Mammillaria gaumeri* are a proof of that. He even took the effort to travel to Haiti to see such an ordinary plant as *Mammillaria prolifera* in its habitat (as well as to Venezuela, Curacao and the Virgin Islands to collect a single species of Mammillaria in each of these countries).

Thus, although *M. yucatanensis* is not a striking plant - neither the body nor the flower are particularly beautiful or interesting - and I am not a Mammillaria specialist, I wanted to see it in habitat. Information I had before departure found in books by Backeberg, Craig and Pilbeam (his first Mammillaria handbook, published in 1981) was that *M. yucatanensis* grows at Progreso, a port on the northern coast of the peninsula. On the return journey we thus turned north at Merida and followed the road No. 261 to Progreso. The terrain did not seem very suitable for cacti. Fields, palm tree groves, even marshes or lakes could be seen on both sides of the road.

At Progreso we took the coastal road No. 27 to the east. The road sometimes hugged the coast, forming the crown of a beach and sometimes running a hundred or so metres inland. Again, for miles and miles the terrain did not seem very suitable for cacti. The side with the beach was formed by sand - a material most cacti do not like to grow in. The other side was covered by a metre or two tall thickets from which appeared inflorescences of Agaves and an occasional palm tree.

Quite frequently we could see a glint of water. Indeed, there were several lagoons on the inland side of the road, the largest of them called Laguna Rosada (Pink Lagoon) is a sort of protected area, mainly for flamingos. We took the opportunity offered by a wooden observation tower there to inspect the terrain - it seemed to be the same as far as the eye could see. Along the road at various intervals, especially near the beach, there were many of what appeaered to be weekend or holiday cottages.

Could it be that all the *M. yucatanensis* were destroyed by these developments or by the construction of the road which runs at the highest point of the terrain in the vicinity?

A few kilometres further, just before San Crisanto, we made our final stop of the detour to have some rest. It was here that we finally came across some cacti: on the landward side of the road, in a thicket, I found *Selenicereus donkelaarii* and *Acanthocereus tetragonus*, on the

Fig.2 *Agave vivipara* at San Crisanto

Fig.3 Terrain at San Crisanto (to the right of the road - landward side) with Agave inflorescences.

Fig.4 *Selenicereus donkelaarii* at San Crisanto

Fig.5 *Acanthocereus tetragonus* at San Crisanto

Fig.6 *Acanthocereus tetragonus* at San Crisanto

Fig.7 *Acanthocereus tetragonus* at San Crisanto showing 2 growth forms

beach side we could see an Agave growing in sandy ground. Both cerei were growing entangled in bushes, especially the Selenicereus. Only one Selenicereus was growing on a dead stem of an Agave and branches of this plant had a reddish colour, unlike the dark-green colour of stems of plants growing shaded by the bushes. The number of ribs of *Acanthocereus tetragonus* varied between three and five, but I saw one plant where a new shoot growing from the base of a dying stem had more than ten ribs. We had seen the same (or similar) Acanthocereus species at Uxmal.

The Agave was later identified by Ms. Ivana Richter, the author of a 2011 book on agaves published in Italian and German by the Italian society AIAS, as *Agave vivipara*. There was also a plant which resembled very much a South African Cotyledon with less succulent leaves(Fig.9). I have not been able to identify that one.

Yucatán is also a major area for growing Agave for fibre. I was surprised to learn later that the plants grown for the sisal fibre are not *Agave sisalana* as the name would suggest but - *A. fourcroydes*, a sterile hybrid long called henequén by the Mexicans. It differs from *A. sisalana* by having slender, dark teeth spaced widely along the margin of the leaf. *A. sisalana* has no teeth, or very minute ones. I suppose many of the plants and inflorescences we saw driving around Progreso belonged to these two Agaves. After all, Sisal, once an important port, lies only some 20 kilometres west of Progreso. Another plant we saw a number of times along the way was *Opuntia dillenii* with large pads, yellow flowers and huge (up to 10 cm long and 6 cm wide) dark violet fruits.

Having returned to Merida we made another attempt to find *Mammillaria yucatanensis* by driving east towards the Rio Celestún reserve on the western coast of the Yucatán penninsula. The reserve covers the estuary of Rio Celestún and protects mangrove vegetation as well as large flocks of flamingos, pelicans and many other birds. On the way to Rio Celestún and back we were driving through a dry (semi-deciduous?) forest of thin trees and tall bushes but during several stops we found neither the Mammillaria nor any other species of cacti.

A few years after the trip I purchased 'The Cactaceae' by Britton and Rose, a book I did not have access to when preparing for the trip. There I read the original description of M. yucatanensis with the location given at Progreso and the note: "He (Dr. Gaumer) says that the plant is rare on the land side of the coastal marches". It is interesting that this vital information which appears just two lines

Fig.8 *Acanthocereus tetragonus* at San Crisanto

below the information on the type location of the plant was not repeated by subsequent authors mentioned at the beginning of this article. They all stated just Progreso as the location of the plant. Only John Pilbeam in his second Mammillaria handbook (published in 1999 and not available to me at the time of my trip) repeats this more-detailed information.

I suppose most, if not all, authors write journal articles to show their successes. Unfortunatelly, I cannot report such a success whilst hunting for *M. yucatanensis* but I am writing this to give other enthusiasts some hints on where to look for the plant. None of my maps of Yucatán, nor the road atlas of Mexico nor the internet show any roads immediately south of the lagoons - the closest roads are shown to be some 15-20 kilometres further inland. Nevertheless, when looking at aerial photos of the Progreso / Laguna Rosada that are on the internet, one can clearly see that the land to the South of the lagoons seems to be divided into different fields and pastures or perhaps henequén plantations. There must be some unpaved access roads and paths leading to them.

I also came across a 2009 study (in Spanish) evaluating the impact of a planned tourism development on the environment near Laguna Rosada - it seems that a "Flamingo Lakes Golf and Country Club Resort", may be built south of Laguna Rosada. While this development may pose some threat to the ecosystems aroung the laguna, it may also open access to the interior south of the lagunas, to the "land side of the coastal marches". *Mammillaria yucatanensis* may still be growing there.

Fig.9 "Cotyledon" on the beach (to the left of the road) at San Crisanto

Another possibility is west of Progreso, in the direction of Sisal which was a much more important port in the past than it is now. There is a challenge for cactophiles who will have the opportunity to visit Yucatán - it seems that no one has seen *M. yucatanensis* growing in wild in Yucatán for almost a hundred years, since George F. Gaumer collected his samples in 1918 and 1921 for Britton and Rose. Who will be the next person to see (and photograph) this unassuming plant in its habitat?

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If any of our readers know if *Mammillaria yacatanesis* still exists in habitat in Yucatán, then I am sure Rene would like to hear from you and we would be happy to publish a postscript!

Can anyone identify the plant in Fig.9? It may not be a succulent, but rather a plant with leaves having a downy covering. Could it be a Senecio?

GC

Matucana myriacantha and M. comacephala are different Species

The two Matucana names in the title have recently been treated as synonyms but this has not always been the case. Holger Wittner explains why, although they look superficially similar, he believes the two are separate taxa.

All photos by the author

Fig.1 *Matucana myriacantha* HFW 02.01 with one flower and one bud at Cerro Los Negros, high above Rio Crisnejas, 2814m

Summary:

Matucana myriacantha, *Matucana comacephala* and *Matucana crinifera* are compared. According to this comparison, *Matucana myriacantha* is recognized as a distinct species. *Matucana crinifera* is presented in a new combination and as a subspecies of *Matucana haynei* (*Matucana haynei* ssp. *crinifera*). *Matucana comacephala* can temporarily be seen as synonymous with *Matucana haynei*.

Zusammenfassung:

Matucana myriacantha, *Matucana comacephala* und *Matucana crinifera* werden verglichen. Danach ist Matucana myriacantha als eigenständige Art anzuerkennen. *Matucana crinifera* wird in einer neuen Kombination als Unterart zu *Matucana haynei* gestellt (*Matucana haynei* ssp. *crinifera*). *Matucana comacephala* ist vorübergehend als Synonym zu *Matucana haynei* anzusehen.

Resumen:

Matucana myriacantha, *Matucana comacephala* y *Matucana crinifera* son comparados. A continuación, *Matucana myriacantha* es reconocida como una especie distinta. *Matucana crinifera* es una nueva combinación como una subespecie de *Matucana haynei* (*Matucana haynei* ssp. *crinifera*). Matucana comacephala temporalmente considerada como un sinónimo de *Matucana haynei*.

This article is intended to finally show the fallacy in the statement that *Matucana myriacantha* is the northernmost form of *Matucana comacephala*, which itself is now

Fig.2 An old flowering plant of *Matucana myriacantha* KK 1041

Fig.3 Flower of *Matucana myriacantha* KK 1041

Fig.4 Cross section of the flower of *Matucana myriacantha* KK 1041

Fig.5 Old columnar flowering plant of *Matucana myriacantha* Lau 173

Fig.6 The biggest plant of *Matucana myriacantha* HFW 02.01 at Cerro Los Negros, high above Rio Crisnejas, 2814m

Fig.7 Cross section of the flower of *Matucana myriacantha* HFW 02.01 (look at Fig.10)

regarded as a subspecies of *Matucana haynei* (Anderson 2001, Hunt 2006). The origin of this belief will probably have been the contribution of Donald (1974), in which he presents a variety of pink-flowering Matucana and concludes that they are all related. Whether such theories serve as a basis for future studies and are confirmed or not, they can be helpful. Often these statements are frequently repeated and come to be regarded as true, without any further investigations to prove their truth.

Investigations must reasonably be done in the habitat. Especially in inaccessible areas, there is often a lack of the necessary time to examine the plants themselves, their flowers and seeds in more detail. The necessary equipment for these studies cannot all be carried. So we are often left with only precisely

Fig.8 An old short columnar plant of *Matucana myriacantha* Lau 103

Fig.9 Flower of *Matucana myriacantha* Lau 103

Fig.10 An old *Matucana myriacantha* "roseoalba"

documented offspring from seeds to study, which should include the maximum number of plants in order to investigate e.g. the flowers in culture.

The investigations described below were performed almost exclusively on plants in cultivation. The sources for these seed-grown plants are indicated to make later comparisons possible. The investigation presented in this article can only be a fragmentary one. Readers are encouraged to review the information and add new, if possible.

As a matter of fact, there exists a variety of forms of *Matucana myriacantha* found at various places, which were reported under different catalogue names and locations (Wittner 2004):

Matucana myriacantha

Matucana myriacantha (Vaupel) Buxbaum 1973 - Krainz Kakteen 54: CVb. Basionym: *Echinocactus myriacanthus* Vaupel 1913: Cactaceae andinae. – Bot. Jahrb. Syst. 50(Beiblatt 111): 25-26.

Investigated plants

Matucana purpureoalba KK 1041 (Peru, Aricapampa, 2800m) - Mesa Garden 972.032; *Matucana herzogiana* var *perplexa* Lau 103 (Peru, Amazon, Chanchillos, 2300 - 2600m) - Gebr De Herdt 54b/77, *Matucana myriacantha* Lau 173 (Peru, Cajamarca , Rio Crisnejas) - Mesa Garden 971.1; *Matucana roseo-alba* - Mesa Garden 971; *Matucana myriacantha* HFW 02.01 (Peru, Cajamarca, San Marcos, Los Negros above Rio Crisnejas, 2814m)

Fig.11 Seeds of *Matucana myriacantha* HFW 02.01

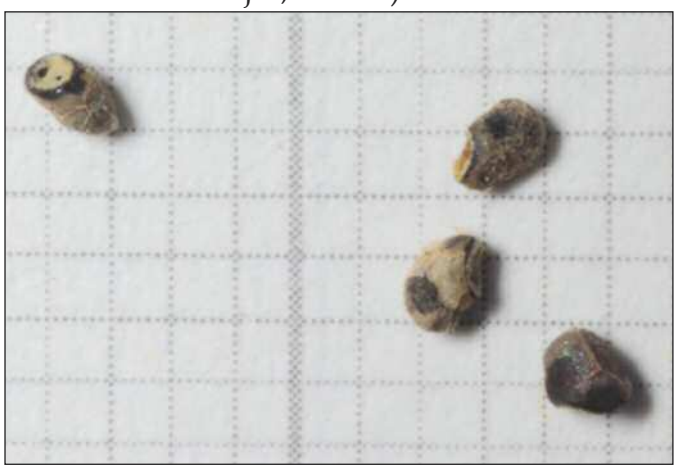

Fig.12 Seeds of *Matucana myriacantha* Lau 173

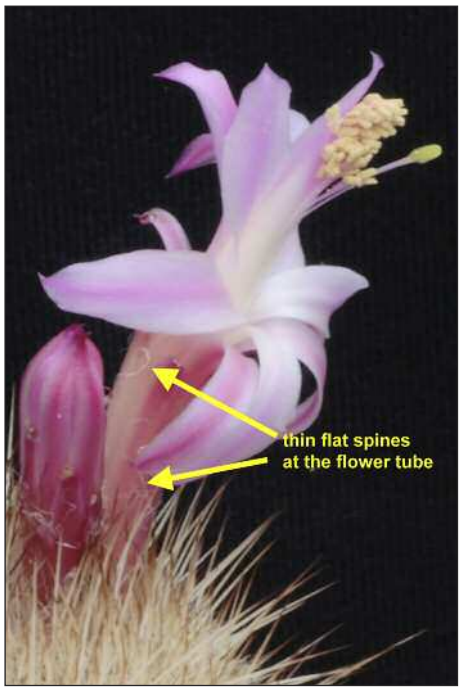

Fig.13 Flower of *Matucana myriacantha* "roseoalba"


Fig.14 *Matucana haynei* "*comacephala*" KK 577, sown as "*Matucana crinifera* KK 577"


Fig.15 Cross section of the flower of *Matucana haynei* "*comacephala*" KK 577

Matucana comacephala & *M. crinifera*

Matucana comacephala Ritter 1958 - Succulenta 37 (8): 92

Matucana crinifera Ritter 1963 - Taxon XII (3): 125

Investigated plants

Matucana crinifera KK 577 (Peru, Machac, 2500) - Mesa Garden 970.32; *Matucana lutea* KK 1299 (Peru, Uchupata, 2800m) - Mesa Garden 970.06; *Matucana comacephala* KK 1711 (Peru, Machac, Chavin, 3800m) - Mesa Garden 970.13; *Matucana lutea* - G. Koehres No. 3675

The names of the plants examined above were taken from the corresponding field number lists or lists of seeds.

Seeds

The seeds of *Matucana myriacantha* are fairly consistent, round and have a flat Hilum-Micropylar-Area [Figs.11 & 12]. At the attachment site of the funiculus, there is no extension to the hilum. All examined seeds of *M. comacephala*, M. *crinifera* [Figs.15 & 16] and also *M. haynei* have a more or less protruding extension in the Hilum-Micropylar-Area. They can easily be confused with the seeds from plants related to *Matucana aurantiaca*, but here they are quite differently shaped. Regarding this extension, there may be a parallel development in the hilum of *M. aurantiaca*. The seeds from the relationship of *M. haynei* and *M. comacephala* are more elongated.


Fig.16 Seeds of *Matucana haynei* ssp. *crinifera* KK 1711


Fig.17 Seeds of *Matucana haynei* "*comacephala*" KK 577

Fig.18 Orange flowering *Matucana haynei* "*comacephala*" KK 577

Fig.19 Light pink flowering *Matucana haynei* "*comacephala*" KK 577

Fig.20 A flowering *Matucana haynei* "lutea" ex Köhres

Seedlings

All seedlings of *M. myriacantha* have feathery spines visible with a magnifying glass a long time after the initial spine development. This equally applies to the seedlings of *Matucana spec*. KK 577. All seedlings from the relationship of *M. haynei*, including *Matucana spec*. KK 1711, only have feathery spines a few days after the first spine development; later they are quite smooth. All seedlings of *M. haynei* need a lot of light and, even with stronger light intensity, they still have a grass-green epidermis. This also applies to *Matucana spec*. KK 1711. Seedlings of *M. myriacantha* soon develop very long and dense white spines. For those of *M. haynei* the spines at first remain rather short, just as with *Matucana spec*. KK 577 and KK 1711.

Young plants

Up to a size of 4 to 5cm, young plants of the discussed taxa all look very much alike. Without knowledge of flowers and seeds it is almost impossible to distinguish one from another. This might be the cause of much of the confusion and misidentifications. All spines are densely white or yellowish, and require intense light radiation and a lot of air. Even greater might be the confusion when studied in nature, e.g. at a habitat where only seedlings were found.

Old plants able to flower

After a few years, all plants discussed leave their spherical form and start growing more columnar. If there is insufficient water available the base will shrink, the areoles will stand close together, the ribs will break through the spines and turn dark brown to almost black.

Matucana myriacantha: This species is the easiest to flower. Central spines can already be found on young plants. The flowers are produced from the areoles near the apex, after they have somewhat grown out of the centre. In general, they form a whole tuft of flowers. An outstanding feature of the flowers of this species are the few, but always present, very much flattened, papery spines, which spring from the axils of the scales on the flower tube, see Wittner 2004 [Fig.13]. The flower colour varies from light pink to dark red. The plants from high above the Rio Crisnejas (HFW 02.01) have been reported in a recent article (Wittner 2011).

Matucana spec. KK 577: The flower buds emerge from the young areoles at the apex of the plant. Compared with *M. myricantha* the central spines are shorter and stronger. The whole flower is relatively short. The flower

Fig.21 Same plant as in Fig.20, but two years later

Fig.22 Cross section of the flower of *Matucana haynei* "lutea"

Fig.24 Old, short columnar plant of *Matucana haynei* ssp. *crinifera* KK 1711

colour ranges from light-orange to almost purple [Figs.14, 18-21]. It lacks the strong flattened spines on the flower tube known for *M. myriacantha*. The nectar chamber as such is more obvious and much longer in contrast to *Matucana spec.* KK 1711.

Matucana spec. KK 1711: It took 8 to 10 years in culture before the first flowering of this plant. Only then were very long spines formed in the apex. The growing point of the plant is so low, almost within the plant (similar to the unrelated *Yavia cryptocarpa*) that at first the areoles' spines can only be perpendicular to the top. There is a growing tuft, which looks like a bird's nest. The flower tube is perfectly smooth, very long and reaches deep into the apex of the plant. There is no other Matucana which forms flowers so deep in the apex and nevertheless opens the way to flowers. Consequently, the ovary is very small, simply because there is no space to grow. The flowers are open and stepwise grow beyond the tuft. Another typical appearance is the tiny nectar chamber which is substantially wider than high [Fig.26].

Fig.23 First flowers of *Matucana haynei* ssp. *crinifera* KK 1711, sown as "*Matucana comacephala* KK 1711"

Discussion

The descriptions by Friedrich Ritter bring clarity. The description of *Matucana comacephala* Ritter (1958) fits the plants called "*Matucana crinifera* KK 577" studied here and the description of *Matucana crinifera* Ritter (1963) fits the examined plants named "*Matucana comacephala* KK 1711". The description of *M. crinifera* Ritter with the particularly small nectar chamber applies to the plants of "*M. comacephala* KK 1711.

The image of Donald (1973, p 23), the named type FR 587 as *Matucana comacephala* shows a typical plant with the relatively short flower.

Fig.25 Cross section of the flower of *Matucana haynei* ssp. *crinifera* KK 1711, note the very tiny nectar chamber

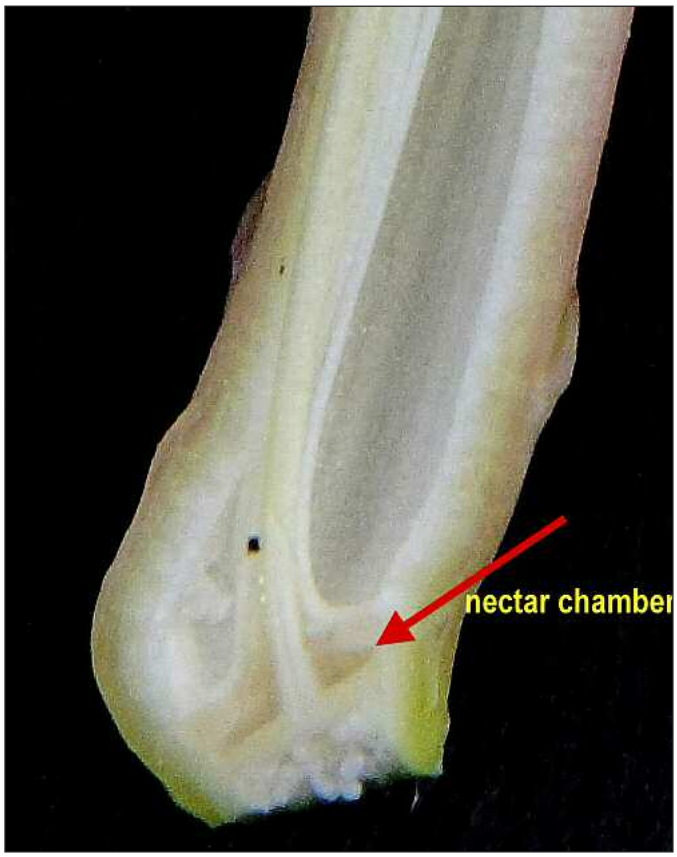

Fig.26 Detail of Fig.25 showing the tiny nectar chamber.

These are the plants studied here with the name "*M. crinifera* KK 577 ". Ritter also shows in the first description a columnar plant with exactly the same short flower. The confusion of the plants collected by K. Knize is probably the reason for the chaos and confusion of *Matucana crinifera* with *M. comacephala*. Bregman too (1996, p 54) was not able to explain what *M. crinifera* actually looks like.

It could be that plants appearing here to be *Matucana crinifera* (KK 1711) grow at a greater altitude than e.g. the *M. comacephala* (KK 577). Up to now the necessary attention has not been given to the altitude of the habitats of the Matucana species. On a home-made vegetation map of the Andes (see Schumacher & Wolff 2002, IAI's inventory no. N-0030 f 86, unpublished), Weberbauer has impressively shown that with the help of detailed vegetation studies in Peru (Weberbauer 1945) the flora of Peru is bound to certain altitudes. It is not primarily the horizontal distribution of individual species that is important, but the ecological adaptation because of the existing moisture level at a certain altitude.

Especially in the arid inner andine region along the Rio Marañon, altitude plays an essential role, because the available amount of moisture depends on it. The lower the altitude, the drier the area and the less rainfall is available. Small seedlings here are adapted better, the more they can absorb water, for instance, by using feathery spines (eg *Matucana formosa* and *M. krahnii*). The plants from altitudes above 3000 m (*Matucana aurantiaca*, *M. huagalensis*, and *M. haynei*) soon get smooth spines. In this way precipitation can be driven to the roots faster.

Summary

The plants considered here as *Matucana crinifera* KK 1711 can clearly be distinguished from both *Matucana comacephala* KK 577 and *M. myriacantha*. *Matucana crinifera* is regarded as a subspecies of *M. haynei*. It can be distinguished because of its long, bare, tubular flower that appears in the very deep-seated crown and has a very small nectar chamber. *Matucana myriacantha* is to be regarded as a separate species. The status of *Matucana comacephala* is unclear, for the time being it can be regarded as a synonym of *Matucana haynei*

together with the many different habitat forms.

For these reasons, the following taxonomy is appropriate for the taxa discussed:

Matucana haynei (Otto ex Salm-Dyck) Britton & Rose - *Echinocactus haynii* Otto ex Salm-Dyck 1850 in: Salm-Dyck, Cact. Hort. Dyck. Cult. Anno 1849: 165.

Synonym: *Matucana comacephala* Ritter 1958 – Succulenta 37(8): 92; Type FR 587, Peru, Ancash; Huari; Rahuapampa, east of Cordillera Blanca.

Matucana haynei ssp. *crinifera* (Ritter) **comb. et stat. nov.** Wittner

Basionym: *Matucana crinifera* Ritter 1963 - Taxon XII(3): 125; FR 595, Peru, Machac, 3800m.

Matucana myriacantha (Vaupel) Buxbaum - *Echinocactus myriacanthus* Vaupel 1913: Cactaceae andinae. – Bot. Jahrb. Syst. 50(Beiblatt 111): 25-26.

Synonym: *Matucana haynei* ssp. *myriacantha* (Vaupel) Mottram 1997: Cact. Consensus Init. 3: 11.

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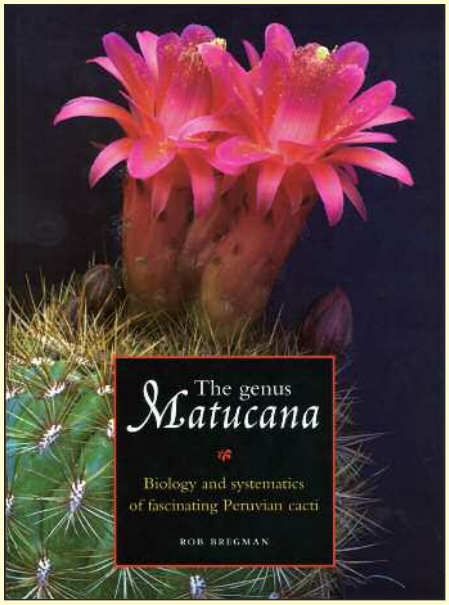

Rob Bregman's 1996 book is still the only specialist book about the genus Matucana and second-hand copies can be difficult to find. It is still a useful reference to these fascinating Peruvian plants.

A Visit to Isla Esteban

Continuing our visits to the islands of Baja California, Paul Klaassen takes us to Isla Esteban after a period of drought. The plants certainly look like they need a drink!

Photos: P. Klaassen except where stated

Fig.1 Isla Salsipuedes, a rarely visited island on the way back from Isla Esteban

What would a cactus trip in Baja be without a boat trip?

It is Monday 14th February and we set the alarm for 5 a.m., watched the sunrise and at around 6:35 we were on our way to Isla Esteban. This is one of the more difficult islands to get to, half way between Isla Tiburon (technically part of Sonora) and Isla Angel de la Guarda that protects Bahia de los Angeles. The reason for this boat trip? To see *Echinocereus grandis* and *Mammillaria estebanensis*, two species that are endemic to the island.

Kyle, the nephew of one of Eunice's friends, was spending the year in Bahia de los Angeles as caretaker manager of the marine field centre of the Glendale Community College, joined us for the day. He had used our Capitan, Pancho, many times for the Field Study trips. We would spend some three hours on the water, covering 110km (66 miles) to reach a bay that Kyle had selected on Google Earth as the most fertile looking site on the island. Despite the forecast for a nice sunny day and a sea as flat as a mill pond, I had taken the precaution of putting on a T shirt, Shirt, jumper, safari jacket and windproof jacket, as these boat trips can be very chilly, particularly first thing in the morning. No regrets there.

We interrupted our journey as Kyle had spotted a pod of whales – not the grey whales that we were used to seeing on the Pacific Ocean side; these were sperm whales, but much larger and much less willing to interact with us. They seemed to be sun bathing, occasionally taking a deep breath and a short dive. They were not bothered that our panga drifted close to them. As they moved by, a pod of dolphins provided the entertainment by swimming around and underneath the boat, all very useful fodder for cameras – still and video.

Fig.2 Map showing the locations of Isla Esteban and Isla Salsipuedes Map from Google Earth

We passed by Isla Rasa ('Flat Island') where millions of birds were amassed on the rocks, flying off in all directions as our panga approached. The island is the world's main breeding spot for Heermann's Gulls and Elegant Terns, about half a million birds nest on the 150 acres of rock. Royal Terns also breed here. We could see some cacti, *Pachycereus pringlei* we assumed, but the bird population was so dense that a landing did not appeal.

Searching the internet led me to http://www.oceanoasis.org/fieldguide/islarasa.html which reports that the most abundant plants are two species of cholla (*Opuntia cholla* and *O. bigelovii*) which, together with the saltbush (*Atriplex barclayana*), cover large areas of the island. There are also a few dozen cardons (*Pachycereus pringlei*), and a few individuals of sour pitahaya (*Stenocereus gummosus*) and senita (*Lophocereus schottii*), as well as some shrubs (*Lycium brevipes* and *Cressa truxillensis*).

And so we arrived at Isla Esteban, where Pancho found a nice bay with a beach, suitable for landing. We have become experienced enough not to expect the plants that are the targets for our excursion to line up and greet us when we arrive at a location name where they are said to grow. With an area of some 40 km², should we look on the hills, half a day's walk away from our landing site or on the other side of the island, another 3 hours by boat?

But Lady Luck was with us (again) and as soon as we were off the shingle beach – there they were: *Mammillaria estebanensis* and *Echinocereus grandis*, together with *Agave desertii*, *Stenocereus gummosus*, *Cylindropuntia* sp and *Pachycereus pringlei*. Although not reported from the island I had half expected to find a Ferocactus as well – but not this time.

Mammillaria dioica ssp. *estebanensis*, to give

Fig.3 Isla Esteban showing the landing site

Fig.4 *Mammillaria estebanensis* on Isla Esteban

Fig.6 *Mammillaria estebanensis* on Isla Esteban

Fig.5 *Echinocereus grandis* on Isla Esteban

Fig.7 *Pachycereus pringlei* on Isla Esteban

the plants their currently accepted name, was larger than I had expected, based on plants that I had owned and killed in the UK. It is variable in spine colour from almost white to yellow-brown and, while some heads had hooked central spines, other stems on the same plant had straight central spines. Looking at weather stats on Wunderground, these plants had not seen rain for a while, showing very tight spination. With only 10.7mm rainfall recorded in nearby Bahia de los Angeles during the whole of 2011 suggests that they rely on fog and dews for their water needs – humidity recorded ranges from 1 – 98% with an annual average of 47.2%. There was no evidence of flowering but this did seem to be a healthy population with plants of different ages.

Like *M. estebanensis*, *E. grandis* is an island endemic. Both have Isla Esteban as their Type Locality, but are also reported from nearby islands such as Isla San Lorenzo and Isla

Fig.8 *Stenocereus gummosus* on Isla Salsipuedes

Nolasco. *E. grandis* looked much like the plants in cultivation – but a bit more battered by the elements. Their habitat on a rocky hillside made for excellent photos. As the name 'grandis' implies, they can get big, although I don't recall seeing any 50cm tall stems mentioned in literature. I have managed to flower these plants in cultivation and the large (5-8cm in diameter) white to pale yellow flowers are unusual among the usually much brighter-coloured Echinocerei. Here, there were only the typical scars from previous flowering left.

Kyle and Eunice went on to explore just over a low hill and found the same plants growing on flat soil. They also saw and photographed a spiny-tailed iguana (*Ctenosaura conspicuosa*) also endemic to the island. Other endemic reptiles include the spiny chuckwalla (*S. hispidus*) and the giant chuckwalla (*Sauromalus varius*).

We were in good time and took up Pancho's offer to stop at another island on the way home. Our landing on Isla Salsipuedes was less productive. Once we were off the shingle beach we were confronted with a solid wall of *Stenocereus gummosus*, with *Pachycereus pringlei* dotted in between, right down to the beach. We tried farther along on sand rather than shingle – same story. There was Cylindropuntia here as well. I took some close-ups of the hillside to enlarge at the hotel, but so far these have not revealed any small genera like Mammillaria, Ferocactus or Echinocereus. The Pachycereus looked different from their mainland brethren in that they branched right from the base, rather like *Stenocereus thurberi*, the Organ Pipe

Fig.9 *Pachycereus pringlei* on Isla Esteban

cactus, instead of a metre or more above the ground.

Back on the boat, we spotted our pod of sperm whales again. It may well have been the same group that we had seen in the morning. We counted 14 individuals, including at least one calf – the size of a boat! As you can imagine today's picture count was in excess of 600, with probably a number of rejects where the whale or dolphin had disappeared below the surface just as I pressed the shutter.

We arrived back in Bahia de Los Angeles exhausted and after a meal of grilled fish were in bed before 9 p.m.

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Paul Klaassen

Travel with the Cactus Expert (3)

Zlatko Jabeba continues the story about his trip to the southwest of the USA with Josef Busek. In this episode he tells us about the cacti of the Death Valley National Park.

Photos: Z. Janeba

Fig.1 Scenery at The Sand Dunes, Death Valley National Park, California, USA.

The next morning (April 29th 2006) we drove through Stovepipe Wells and stopped at The Sand Dunes to take some pictures of the very beautiful scenery (Fig.1), so typical for this part of Death Valley National Park. The Mojave Desert and Great Basin Desert meet within this well-known park which contains such diverse desert environments as salt flats, sand dunes, badlands, valleys, canyons, and mountains. The most famous place here is probably Badwater Basin, the second lowest point in the western hemisphere (86m below sea level).

We continued on SR 190 eastwards, towards Furnace Creek. Southeast of Furnace Creek, just next to the turn-off towards Dantes view, we photographed the widespread *Echinocactus polycephalus* (Fig.2 & 3), flowering *Opuntia basilaris*, and some other herbs just in flower, e.g. quite common Desert five-spot (*Eremalche rotundifolia*, Fig.4).

Our next stop was more or less on the border of Death Valley N.P., some 17 miles southeast of Furnace Creek, where we had hoped to take pictures of *Echinomastus johnsonii* in flower. To our big disappointment, *E. johnsonii* only had numerous flower buds (Fig.5) and it seemed to me that flowering of cacti that spring (2006) was about one week delayed compared to other years. And while *Echinocereus engelmannii* had only very recently opened its flowers (Fig.7), my favourite *Mammillaria tetrancistra*, while usually not easy to encounter in the field, could easily be spotted, thanks to its bright red fruits (Fig.6). *M. tetrancistra* is a widespread species in the southwest of the USA and extends much farther into the very arid California deserts than any other Mammillaria species, but it is never numerous

Fig.2 Desert landscape S.E. of Furnace Creek with the “many-headed barrel cactus” or “cottontop cactus” (*Echinocactus polycephalus*).

and always hard to find. Although I saw this interesting cactus in many places, I never saw its flowers in the field, but on the other hand, it almost always had some fruits to offer.

Not far from here, we also encountered a very interesting form of *Echinocactus polycephalus* (Fig.8), with spination resembling more or less *E. polycephalus* ssp. *xeranthemoides*. This subspecies, nevertheless, grows much more to the east in the state of Arizona, quite far from here. Much to our surprise, both red and yellow-spined forms were seen next to each other at this location, especially the yellow-spined plants of *E. polycephalus* that are quite rarely seen.

Upon leaving Death Valley National Park, it might be useful to summarize what cactus species can be seen in this Californian wonderland. I visited (although sometimes only passed) Death Valley at least 20 times during my stay in the southwest of the USA and I saw most of the cactus species growing there, and usually each species at numerous

Fig.3 Close-up view of *Echinocactus polycephalus*, S.E. of Furnace Creek, Death Valley National Park.

Fig.4 Desert five-spot (*Eremalche rotundifolia*) from the family Malvaceae, S.E. of Furnace Creek, Death Valley National Park.

Fig.5 Johnson's pineapple cactus or pygmy barrel cactus (*Echinomastus johnsonii*) with flower buds, Death Valley National Park, California.

locations. The most popular among park visitors and certainly the most widespread cacti found in the park are *Opuntia basilaris* (beavertail cactus) with their gorgeous magenta flowers, and *Echinocactus polycephalus* (known as the barrel cactus), with its attractive strong spination. Cactus hunters are often looking for more rare and less easy to find plants, like *Echinomastus johnsonii*, *Mammillaria tetrancistra*, and *Sclerocactus polyancistrus*. But there are many other taxa of the Cactaceae to find: *Echinocereus engelmannii* (including the form called 'chrysocentrus'), *E. triglochidiatus* ssp. *mojavensis*, *Escobaria vivipara* var. *deserti*, *Ferocactus cylindraceus* (var. *lecontei*), *Opuntia echinocarpa*, *O. polyacantha* (including names O. *erinacea*, *O. ursina*, and *O. rufispina*), and *O. ramosissima*. There are also two Yucca species growing there, *Y. brevifolia* and *Y. schidigera*. Sometimes other cactus species are reported to grow in Death Valley, namely *Opuntia chlorotica*, *O. phaeacantha*, and *O.* (*Micropuntia*, *Corynopuntia* or *Grusonia*) *pulchella*. I do not remember seeing *O. phaeacantha* there and I do not think the other two species grow in Death Valley either. The distribution range of *O. chlorotica* is more southeast and *O. pulchella* is typically widespread more to the north in the Great Basin Desert, mainly in the states of Nevada and Utah. To the best of my knowledge, the only reports of *O. pulchella* in the state of California are from around Deep Springs, north of Death Valley, but on the other hand, not that far from there.

Fig.6 Although called "Common fishhook cactus", *Mammillaria tetrancistra* is quite scarce in the field. Here found on the border of Death Valley National Park.

With only a very few short field stops, we continued through Lathrop Wells and Pahrump to Las Vegas, where we did some shopping. Then we drove along I-15 to the north towards Utah. We checked another *Echinomastus johnsonii* population on the way, just next to the exit 93 to Overton (I-15 to SR 169), but again we found only cacti with buds, but no flowers. Again and again, only *Opuntia basilaris* was in flower. We started to become desperate about whether we would eventually see any Echinomastus flowers during our trip.

To be continued …

Zlatko Janeba

Fig. 7 Engelmann's hedgehog cactus *(Echinocereus engelmannii*) starting to flower in Death Valley National Park, California, USA.

Fig.8 A very nice and very rare, yellow-spined form of *Echinocactus polycephalus* growing together with its red-spined sibling on the border of Death Valley National Park in California.

Echeveria nebularum at a heady height

John Pilbeam describes his adventure visiting another Echeveria in habitat. By continuing his explorations, he is a great inspiration to us all. Well done John!

Photo: D. Neville

Fig.1 *E nebularum*, doing well as an epiphyte.

A few years ago I was asked by my doctor, who knew that I often frequented Mexico looking for and photographing the plants we all love and care for, how high in Mexico I ventured. When I asked him why he asked, he advised me that with a recent problem I had had (and survived), it would be risky for me to go above 10,000 feet (3,050m). I thought there was little chance of my doing so, as most of my interest at that time was satisfied at a few thousand feet below this heady height.

However, in the early nought years of this century I started thinking seriously about producing a book on Echeveria, a genus I had been in love with for many years. Myron Kimnach, a champion of this genus who I had hoped would undertake this task, had encouraged me to do so. So, over the next few years the book took shape and was finally published in 2008 by the British Cactus & Succulent Society.

A species included that I had not seen at the time of publication was *E. nebularum*, named for having its head in the clouds of the Sierra Juarez in Oaxaca, southern Mexico.

During previous visits, in the company of Derek Bowdery and the late Bill Weightman, I had visited our hospitable friends resident in Oaxaca city, Mary McLenahan and Jim Peck, and had enjoyed several forays into the Sierra Juarez and farther afield in their company to see such Echeveria delights as *E. montana*, *E. megacalyx*, *E. secunda*, *E. fulgens* var. *obtusifolia*,

Photo: D.Neville

Fig.2 *E nebularum*, the eternal chicken and egg question, which came first the moss or the Echeveria?

E. pinetorum, and what has been taken to be *E. juarezensis* (more of which later). But, with over 40 Echeveria taxa reported from this Echeveria-rich state, there were still many left to pull me back.

So in 2009 with Derek Bowdery and David Neville in tow together with Myron Kimnach and John Trager from California along for good company, it was with delight that we pored over maps to plan visits to other as yet unvisited Echeverias. It was at this time that our hosts offered to take us to see *E. nebularum*. A warning bell rang in my head and I thought I had better check the altitude of this species, just in case my doctor's advice was relevant. The highest recorded was 9,360 feet (2,865m), still below the danger point it seemed. So it was on, and we set off once again into the magic of this mountain region.

It was a good time to visit Echeverias, in autumn, when this genus is at its most productive, often in flower, and growing well. We first paid a brief visit to see if *E. pinetorum* had yet woken up, without too much expectancy as this is a species which hunkers down for the dry season, losing almost all of its leaves, producing each year fresh growth

Photo: J. Pilbeam

Fig.3 *E. pinetorum*, just starting into growth after its hibernation.

Photo: D.Neville

Fig.4 *E nebularum*, a clump as big as it gets, swarming down the tree-trunk.

from the thick stem/root lurking in the pine-needles and other leaf litter it favours. To our delight it was just coming into leaf, and the new leaves were posing nicely for the eager lenses of our cameras [Fig.3]. Having grown this species from seed to a good size, filling a 5 inch (12.5cm) pot, and then clumsily dropping it on its head after photography, from which it did not recover, I was happy to add a photo of it in habitat for the record, as it has rarely, if ever, been illustrated in the wild.

In cultivation, apart from the one that I dropped, I have found this species not easy to keep from one year to another, as in the winter it clearly wants to become deciduous, and takes on a sickly appearance. Along with the few similar thick-rooted species of this inclination, I have found a little water now and again in a saucer beneath the pot stops the roots drying out completely to the point of no return, without triggering too much activity above soil level.

Onwards and upwards we went to the dizzy heights of *E. nebularum*, which were confirmed when we stepped from the hot-engined vehicle, after a laborious climb through steeper

Photo: J. Pilbeam

Fig.5 There's always refreshment of some sort in Mexico

and steeper, rougher and rougher roads to its chosen habitat. I was somewhat comforted to see Jim, even with his partly acclimatized lungs, also performing a slightly inebriated-looking slow foxtrot up the slope to where it grew, matching my swaying progress at this head-swimming height.

It was an area of woodland with the trees thickly coated with a covering of what looked very like sphagnum moss, and it was in this moss that the plants we had come to see chose to anchor themselves, with no evidence of them on the thickly leaf-littered floor of the steeply-inclined bosky glade. A less likely place and positioning of an Echeveria I could never have imagined [Figs.1,2,4 & 6].

After some time wandering in this delightful area, still breathless from the rarefied air, we descended to a more comfortable altitude a hundred feet or so lower, and stopped at an inviting, roadside shop with Cola adverts prominently displayed, and took our ease on a bench outside. It was then that for the first time in Mexico I was attacked by natives. I had got into the vehicle and sat down, when I thought I must have picked up an Opuntia spine cluster on my rear end. I leaned over and reached around with my hand to explore, and promptly was stung by a tiny wasp about a dozen times in less seconds. The next few days my hand resembled a Big Mac bap; I cannot report the effect of the first sting, as I was unwilling to have it inspected! Imagine my further surprise when David discovered on the

Photo: J. Trager

Fig.6 *E nebularum*, the beautiful flower of this high mountain species.

other side of the road from the shop that *E. nebularum* also grew on the trees there, similarly in moss cladding. It has been reported quite widespread in fact between 8,360 and 9,360 feet (2,550 and 2,865m) altitude, in Oaxaca and neighbouring Veracruz state. Some time after this we made another stop for refreshments of a different kind [Fig.5].

In cultivation I have found this species not difficult, but not relishing prolonged direct sunshine or the conditions sometimes prevalent in a glasshouse during the hottest summer months, when a position during the day by an open window in the dwelling house seems to suit it better. Given this sort of abode it will rapidly cluster to form a dense clump of rosettes, and produce an abundance of its very attractive flowers, well worth the extra care needed.

John Pilbeam

Society Pages

British Cactus & Succulent Society
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Further details available from our Membership Secretary: Mr A Morris, 6 Castlemaine Drive, Hinckley, Leicester, LE10 1RY, UK. Telephone: +44 (0) 1455 614410. Email: membership@bcss.org.uk

INTERNATIONAL ASCLEPIAD SOCIETY

The INTERNATIONAL ASCLEPIAD SOCIETY is for all those interested in the Asclepiads and all members of the Apocynaceae family, particularly the succulent species. Asklepios journal 3 times a year, seed lists, meetings, CDs
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plantsman@tiscali.co.uk
Or e-mail: alan-brook-side@hotmail.com
Or visit our web site: www.asclepiad-international.org for on-line subscription or details of local representatives.

The German Echinocereus Society

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Well produced with good colour pictures and English summaries.

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http://www.arbeitsgruppe-echinocereus.de/html/home_english.html

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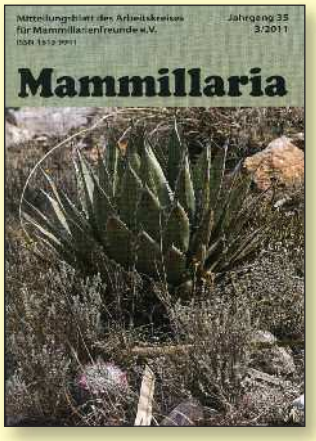

The German Mammillaria Society

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Articles in English as well as German.

http://www.mammillaria.eu/en_index.html

"**Avonia**", the quarterly journal of the German Society for other Succulents.
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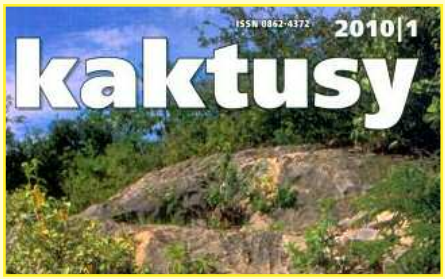

Kaktusy is an international (Czecho-Slovak) journal about cacti and succulents with many interesting articles (travel, descriptions, growing, exhibitions, books, taxonomy) published since 1965. It is in the Czech language with summaries in English and German.

Volume 2010 has 292 pages, 451 color photos, 54 B&W photos and one CD-ROM.

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http://www.cactus.cz/english/kaktusy/kaktusy_2010/

The Haworthia Society

Dedicated to the furtherance and knowledge of the Aloaceae, including Haworthia, Gasteria, Astroloba, Aloe and also Bulbine.
Membership details are available from
Mrs. Joyce Jackson
E.mail: jackson.343@ btinternet.com

further information: www.gymnocalycium.info

This magazine already exists for 25 years and is internationally recognised. Its printing is of a technologically high standard on good quality paper. It appears 4-5 times a year. To accommodate collectors the issues are presented in loose leaf form.

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The Sedum Society

Website: http://www.cactus-mall.com/sedum/
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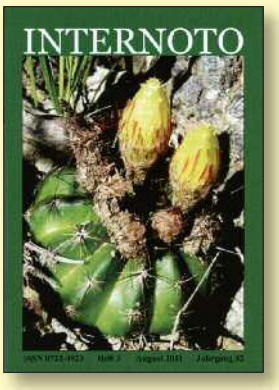

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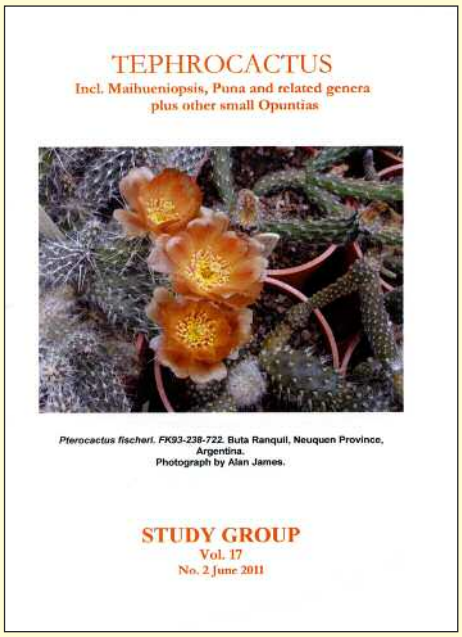
What is the BCSS doing this year?

The British Cactus and Succulent Society produce a list of their events. It is available online at

http://www.bcss.org.uk/events.php

The major event of the year is the National Show, held only once every 4 years. You can find out the details here:

http://www.bcss.org.uk/nat_show.php



The Tephrocactus Study Group

Small Opuntias are very popular at the moment. They are generally quite easy to grow and many species are tolerant of low temperatures. You may have heard about the Tephrocactus Study Group which started life in the early 1990's as a 'Round Robin' under the guidance of René Geissler.

In March 1995, the group produced and distributed its first journal, illustrated with colour pictures, to just twelve members including Alan Hill, the present Chairman. Since that date, a colour publication has been issued quarterly to a growing band of members, now more than eighty strong.

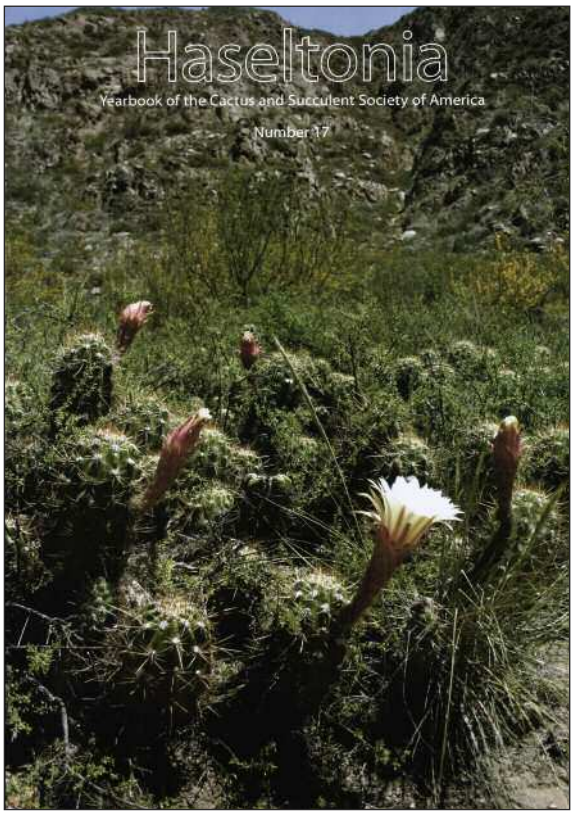
Each issue includes articles principally about the smaller South American Opuntias, including such genera as *Cumulopuntia*, *Maihueniopsis*, *Tephrocactus* and *Pterocactus*. Articles about the smaller North American Opuntias are also sometimes included.

The 2012 subscription is £10 for the UK, €14 within the EU and $25 for the USA and Canada. New members are very welcome, so why not contact the Secretary: John Betteley, 25, Old Hall Gardens, Coddington, Newark, Notts. NG24 2QJ U.K. Tel: +44(0)1636 707649

johnbetteley@another.com

http://www.cactus-mall.com/tsg/index.html

See details of the 2012 Meeting on page 6



Haseltonia, Yearbook of the CSSA

The prestigious yearbook of the Cactus and Succulent Society of America has reached Number 17 this year and has just been published. This, the second issue under the editorship of Martin Terry, has the usual mix of more 'technical' articles which have been peer reviewed to ensure high quality prior to publication.

The majority of the pages in No.17 are concerned with cacti and include two articles about Trichocereus, three about Opuntia and others about Coleocephalocereus, Cipocereus, and Turbinicarpus. The four succulent offerings are about Sedum, Yucca, Manfreda and Rhytidocaulon.

There is plenty to read in the 100 pages and the pictures are reproduced at a good size and to a high quality.

All the previous issues of Haseltonia are still available to be purchased from the CSSA on-line shop at

http://shop.cssainc.org/haseltonia.html

GC

The Mammillaria Society

It is perhaps no surprise that Mammillaria, the most popular of all cactus genera, has two specialist societies dedicated to its study. The German Society, AfM, was started in 1977, but long before that the Mammillaria Society was founded in Britain in 1960.

The first journal was a simple quarto, typed document. The only illustrations for the first six years were loosely inserted black & white photographs of cultived plants. The journal continued in quarto size until 1985, after which it changed to A4. Colour pictures made their first appearance in 1989 and the A4 size continued until 2005 when, in a determined attempt to upset all bibliophiles (who hate size changes in journal runs), changed the page size again to A5!

Perhaps the most remarkable thing about this story is that Bill Maddams has been the editor ever since the first issue! Is he the *only* serving editor after 52 years? Well done Bill!

The Members' Day and AGM, with two short talks and plant displays, will be held this year at Wisley RHS Gardens on Saturday 26th May which includes free garden entry for members.

For information and membership details see:

http://www.cactus-mall.com/mammsoc/index.html

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Download the PDF of his list

A very comprehensive Gymnocalycium seed list and other genera, many with data:
http://www.bercht-cactus.nl

The famous Uhlig nursery in Germany has a large seed list of cacti and succulents:
http://www.uhlig-kakteen.de

An extensive seed list from Prochazka, strong on Mexican cacti:
http://www.kaktusy.com

A comprehensive list of seeds from the Czech Republic:
http://www.cactus-hobby.eu

Cactus and succulent seed from a long established German nursery:
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Plant Request

Hi all!

I'm still trying to source some plants or seeds of *Euphorbia sapinii* and don't mind a grafted plant.

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t.wardhaugh@open.ac.uk

Tina

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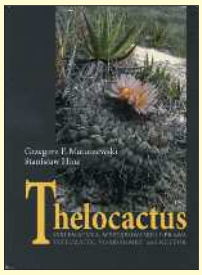
http://www.cactusshop.co.uk

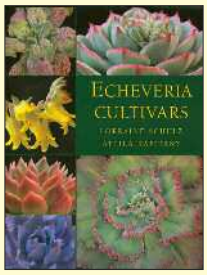
Pictures Wanted

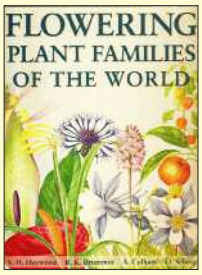
John Pilbeam is looking for photos of Agaves for a tentatively projected book, in particular unusual species and variegates, but stunning photos of any of interest too.
High-res digital preferred but high quality scans of slides are acceptable.
email: jpilbeam@tiscali.co.uk

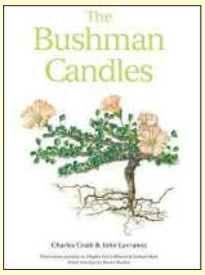
Books for Sale

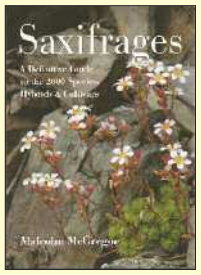
Keith's Cactus Books

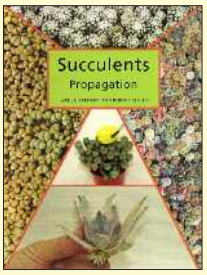












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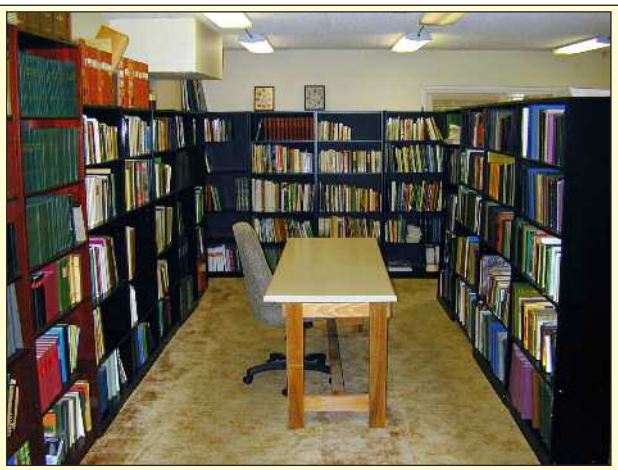

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