The Cactus Explorer

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

1 Siccobaccatus

2 Morangaya pensilis

3 Espostoa in Tenerife

4 Barranco Rambla de Ruiz

5 Juab and Utah County

Number 17

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Cover Picture: *Siccobaccatus dolichospermaticus* See page 9

The No.1 source for on-line information about cacti and succulents is http://www.cactus-mall.com
The best on-line library of succulent literature can be found at:
https://www.cactuspro.com/biblio/en:accueil

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 quickly and the copy deadline is just a few days before the publication date. There will usually be three issues per year, published when sufficient material is available. 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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This issue published on
5th December 2016

Introduction

Time to think about buying seeds

Now that another growing season has come to an end here in England, I can turn my attention to the garden and indoor activities. I have just finished producing *Bradleya* 34 which, like last year, was very short of material at the start of August but after a hectic couple of months, ended up at a record size of 240 pages. It is a rich legacy of which the BCSS should be proud. I say a big 'Thank You' to the many members who subscribe to it, for supporting a valuable resource of knowledge for the future.

The contents of *Bradleya* are the usual broad mix of subjects but my particular interest in cacti is especially catered for by a very useful review of *Cleistocactus* by Martin Lowry and a learned explanation of what constitutes a cephalium by Root Gorelick. You can see more information about the contents and how to buy *Bradleya* 34 on page 7.

Thinking of the succulent experts who generously contribute articles to *Bradleya* reminds me of the sad death of Heidi Hartmann earlier this year. She was a regular contributor of detailed scientific studies to *Bradleya* and I very much enjoyed working with her to get everything just right. Her friendly and very polite emails sometimes referred to the health problems which had affected her in recent years.

Then, only last month, I heard of the sad death of Darrel Plowes at the age of 91. Just a few days before I had been in communication with him about a paper he was working on for *Bradleya* about the stapeliad genus *Angolluma*. His health was already failing and regrettably he never finished the work. You can find an appreciation of Darrel on page 4.

At last, I have got around to rationalising my gymnocalycium collection. I accumulated hundreds of speciments which I used to research and illustrate my book. Now I need the space to grow other plants, notably matucanas in preparation for my next project, a book about the genera *Matucana* and *Oroya*. The only specialist book on the subject, written by Rob Bregman, was published in 1996. It is now quite difficult to find for sale, and there have been significant new discoveries since it was written so it's time for a new one.

I would really appreciate hearing from anyone who has found matucanas in habitat or has good pictures of documented plants in cultivation that I could use in the book.

Raising plants from seeds must surely be one of the best parts of our hobby. It gives you the chance to grow plants which are not easily available any other way. Earlier, I mentioned the genus *Cleistocactus*. Anyone reading Martin's article in *Bradleya* will realise that only a few of the many species are readily available for sale in the trade. At the end of this edition, you will find lots of advertisements for seeds and many of these dealers offer species that are rarely offered for sale as plants.

It is really exciting to grow seedlings of plants you have never seen before. I remember when the new *Lobivia* species discovered by Walter Rausch were first offered as seeds and watching the young plants develop into plants I didn't recognize!

Please remember to send me pictures of unusual plants that have flowered in your collection to share with other readers.

Graham Charles

P.S. Those of you who attend the **Cactus Explorers Club** Weekend will be pleased to know that I have booked it for next year, the weekend of September 15–17th 2017. The invitations to regular participants will be sent out in January.

If you have not already told me and would like to be advised when the next issue of the **Cactus Explorer** is available for down-load, please send me your E-mail address to be added to the distribution list.

News and Events

†Plowes, Darrel Charles Herbert (1925-2016)

b. Estcourt, Natal, 4 Apr 1925; Mutare, Zimbabwe, 19 Oct 2016.

The celebrated 91-year old veteran of stapeliads, Darrel Plowes, finally succumbed to a 2-day bout of pneumonia on the night of 19 Oct., leaving two children from his first marriage, Carolyn & Robert, and Mrs. Nina Bauer, with whom he had been sharing a home during his final few years.

Following wartime service, Darrel graduated from Witwatersrand University in 1948 with a degree in agriculture, soil conservation and ecology, and then emigrated in 1949 to Zimbabwe, where he occupied several positions, first as a Research Officer, then Superintendent, and finally as a Regional Director of African Agriculture in Zimbabwe's Manicaland Province.

When not involved in his career work, he devoted himself to studying the natural history of Zimbabwe, sometimes being named for several plants and animals of his own discovery, and became a leading light in the National Trust of Zimbabwe, from where tributes are already pouring in. His particular speciality in stapeliads came rather later in life, but he soon made up for that by becoming an internationally recognised authority in their classification, describing numerous new taxa. His level of classification was considered by many to be too liberal, but he was a careful, hands-on observer and his work could never be dismissed lightly.

Roy Mottram

A. Castellanos & H. Lelong

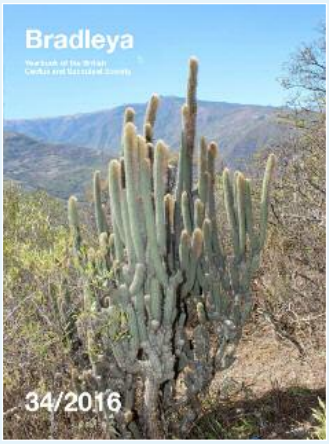
Publications devoted to cacti

This, the second e-book (416 pages) published by Au Cactus Francophone is devoted to articles by Castellanos and Lelong. The introduction presents the life of both authors who were husband and wife. After the series of articles, some original pictures by Castellanos are reproduced.

This very useful reference for Argentinian cacti can be downloaded (76Mbyte) from https://www.cactuspro.com/biblio_fichiers/pdf/KieslingRoberto/CastellanosLelong.pdf

Bradleya Index

An index to *Bradleya* 1–34 has been compiled by Roy Mottram and can be downloaded as a searchable PDF file



www.cactusexplorers.org.uk/Explorer17/Bradleya Index 1–34.pdf

Thank you Roy!

Cactáceas y Suculentas Mexicanas

The Mexican journal has been published since 1955 with the aim of sharing knowledge about succulent plant families, especially the Cactaceae, and to promote interest and research on different aspects of these amazing plants.

The journal is available on line and free at: web.ecologia.unam.mx/cactsucmex/

Any comments please contact: Dra. Mariana Rojas-Aréchiga (mrojas@ecologia.unam.mx)

What a Wonderful Day!

The BCSS National Show, August 20th 2016

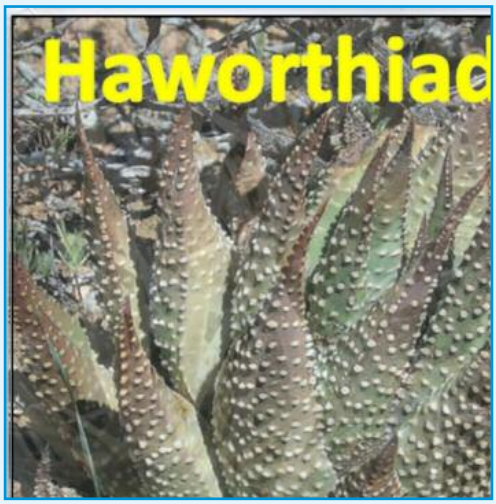
This is the day when the BCSS feels at its best. It is not just the plants on show, nor the plants for sale, but the chance to meet friends and enjoy the atmosphere of a successful event. This one must have hosted the biggest sale of succulent plants ever held in the UK and the whole event was improved by the longer opening hours and the opportunity for exhibitors to buy plants on the Friday afternoon.

At a time when we hear about the worry of reducing membership and branches struggling to keep going, it is encouraging to see how many people will turn out to this outstanding event. What a shame it is only every 4 years. It is said that it cannot be held more often because of all the work, but I wonder if someone would champion the cause for a more frequent event?

GC

The Haworthia Society

Haworthiad on DVD



A single searchable file of 3,572 pages contains all the issues of Haworthiad from 1986 to 2015 (Volumes 1 to 29) including the Special Editions.

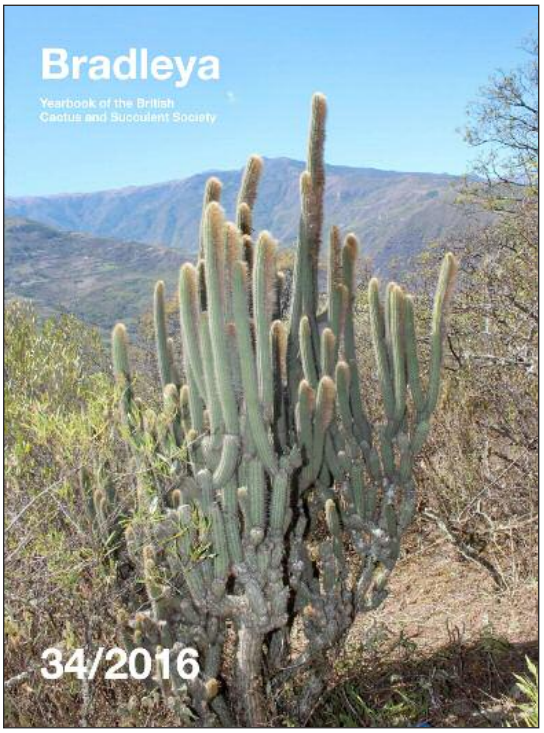
The DVD may be ordered through our PayPal Shop http://haworthia.org/shop.php or alternatively, contact the Treasurer: tony@robertscacti.co.uk

Members **£30.00** (UK), **£31.00** Europe, **£32.00** (Rest of World),
Non-members **£40.00** (UK0, **£41.00** (Europe), **£42.00** (Rest of World).
All prices include postage and packing.

Bradleya 34

Yearbook of the British Cactus & Succulent Society

The 2016 issue of *Bradleya* is now on sale.
23 well-illustrated articles to enjoy including
7 about cacti. 240 pages.



You can buy *Bradleya* 34, by sending **£21** (**£23** overseas) including post & packing to the BCSS Publications Manager, Brenfield, Bolney Road, Ansty, West Sussex, RH17 5AW, UK.

Payment accepted by:
£ sterling cheques drawn on a UK bank (payable to BCSS)
PayPal (paypal@BCSS.org.uk) or
Credit/debit card (Visa, Mastercard or Maestro)

The articles in this edition are:

An extension to the known distribution of *Austrocylindropuntia pachypus* in Peru

The correct author citation and date of publication of the name *Agave yuccifolia*

A further species of *Furcraea*: *Furcraea selloana*, naturalised in South Africa

Cylindropuntia fulgida var. *fulgida* is naturalised and spreading in Zimbabwe

Widely cultivated, large-growing yuccas: notes on *Yucca elephantipes*, *Yucca gigantea* and *Yucca guatemalensis*

Cactus survey at the Floresta Nacional of Contendas do Sincorá, Bahia, Brazil

Austrocylindropuntia vestita recorded from the Little Karoo in SA's Western Cape province

Reinstatement of *Aloe candelabrum*, a tree-like aloe of KwaZulu-Natal province, South Africa

Occurrence of the little-known *Kalanchoe leblanciae* confirmed in South Africa

A review of *Euphorbia mlanjeana*: its habitats on Mount Mulanje (Malawi) and new localities in Mozambique

The taxonomy and type of *Kalanchoe sexangularis*

What is a cephalium?

Tinospora fragosa subsp. *fragosa* adaptation to its hostile African habitat

Notes on the geographical distribution range of *Sedum mucizonia*, a miniature, annual succulent, in continental Portugal

Correction of a nomenclatural problem in *Cotyledon*, and notes on the taxonomy of miscellaneous succulent Hyacinthaceae

Permanent open flowers in *Nelia* – an approach to the secret

A synopsis of the genus *Cleistocactus*

Notes on the cacti of the Sandia valley, Puno, Peru and a description of a new species of *Echinopsis*

A review of *Agave mitis*

Kalanchoe winteri, a new species from the Wolkberg Centre of Endemism, South Africa

Sansevieria ballyi and newly found field notes

Dracaena transvaalensis, the dragon tree of the Limpopo Province, South Africa

Tylecodon florentii, a new cliff dwelling species from the Kookrivier cliffs, Richtersveld, SA

Guided Trip to Baja California

If you would like to see cacti in amazing scenery then Baja is a good choice. One of our regular Cactus Explorers, *Daina Delladdio*, lives in Mexico and will be leading a trip to see cacti and wildlife from 12th to 26th February 2017.

It will be a 15 day adventure trip dedicated to the discovery of Baja California and its surroundings. This is where you'll experience the extraordinary biodiversity and enchanting landscapes of this area: remote beaches, multicoloured deserts, breathtaking vistas, centennial cacti, endemic plants, and the wonderful grey whales that often approach you.

For information on the itinerary please see this download or contact info@timelessbaja.com

https://www.facebook.com/events/1211997358867677/

Copiapoa decorticans

Copiapoa ahremephiana

Copiapoa atacamensis

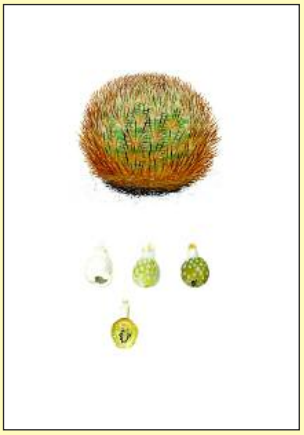
Copiapoa laui

Your chance to buy cards illustrated with reproductions of pictures from
CACTACEAS En la flora silvestre de Chile
by *Adriana Hoffmann* and *Helmut Walter*.
Each card is 124 x 174mm and is blank inside for your own message.
Set of any four designs of your choice: £10 plus postage (UK: £0.64; EU: £1.52; World: £2.25)
Orders and PayPal payments to Roger Ferryman email: rmf@f2s.com

Eriosyce aspillagae maechleri

Eriosyce napina challensis

Copiapoa krainziana



Eriosyce spinibarbis

In The Glasshouse

Siccobaccatus, a magnificent cactus genus from Brazil

Kamiel Neirinck tells us about one of the most remarkable and beautiful columnar cacti. Translation by R. Fonteyne. Photographs by the author except where stated.

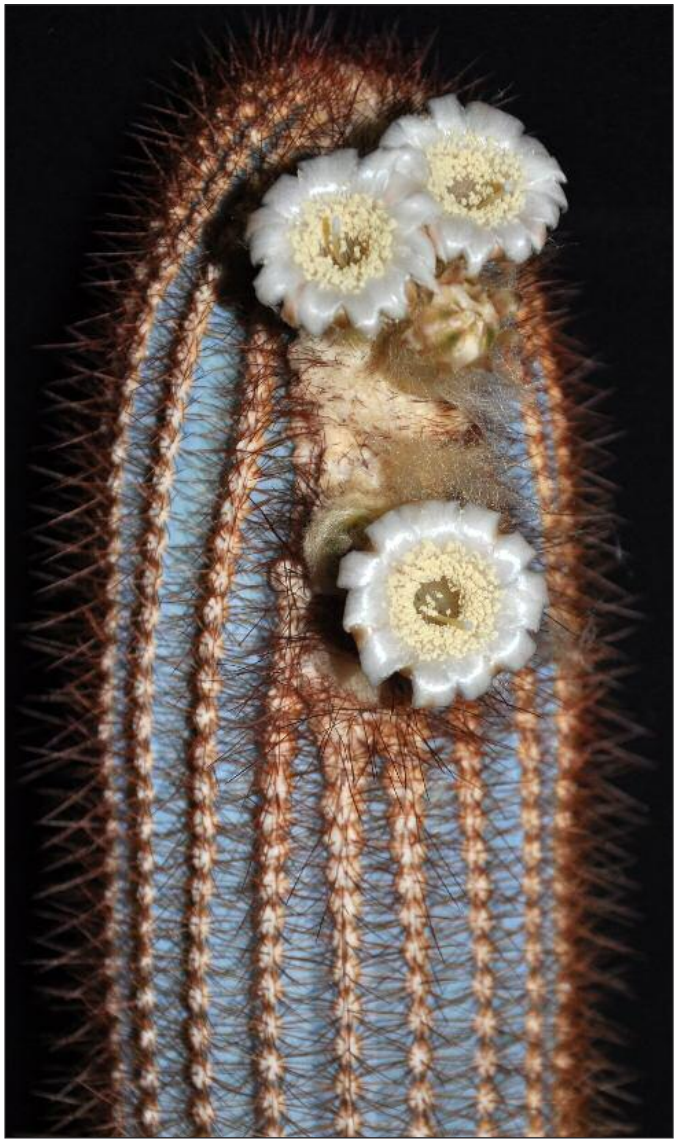


Fig.1 *Siccobaccatus dolichospermaticus* flowering in the collection of K.J. Neirinck.

The genus *Siccobaccatus* was set up by Braun and Esteves and described by them in *Succulenta* in 1990. There are only three very nice species which were discovered from the early 1970s onwards. In habitat these columnar cacti reach several meters high and have a striking appearance because of their size, the nice colour of the epidermis, the spination and the lateral cephalium. They do not branch and always grow on very remote, isolated places on bambui-limestone rock outcrops.

Siccobaccatus dolichospermaticus, the type species, with reddish spination, was described in 1974 by Buining and Brederoo as an *Austrocephalocereus*. Buining and Horst first found this plant in west Bahia in Brazil. Later in the 1980s it was also found in adjacent Minas Gerais. In 1999, also in southwest Bahia, thousands of plants were discovered by Braun and Esteves on a huge 120km long limestone massif. Thus, they are far from extinction. *Siccobaccatus estevesii*, which grows twice as tall

Photo: Graham Charles

Fig.2 *Siccobaccatus dolichospermaticus* in habitat near to Bom Jesus de Lapa. GC1014.03.

as *S. dolichospermaticus*, was discovered somewhat later in Goias by Eddie Esteves and described in his honour by Buining and Brederoo.

Two more subspecies of *S. estevesii* were described in the 1980s: ssp. *grandiflorus* from the state of Tocantins and ssp. *insigniflorus* from southeast Minas Gerais, the latter raised to species level in 2008. Taylor and Zappi consider *Siccobaccatus* as a subgenus of *Micranthocereus*, but this is not supported by Braun and Esteves, nor by molecular studies which suggest a closer relationship with *Coleocephalocereus*. This is why seeds and plants of *Siccobaccatus* species are sometimes offered under the genus name *Micranthocereus*. *Siccobaccatus dolichospermaticus* is very difficult in culture and is preferably grafted, while *S. estevesii* can more easily be grown on its own roots. "Siccobaccatus" means "with dry fruits", and "dolichospermaticus" means "with elongated seeds".

As with most cerei, the flowers are not spectacular. Compared with the general

Photo: Graham Charles

Fig.3 *Siccobaccatus dolichospermaticus* GC1014.03 near to Bom Jesus de Lapa.

Fig.4 *Siccobaccatus dolichospermaticus* in the collection of Gerhard Heimen.

appearance of the plants they are rather modest. They flower at night and have no scent. Insects and birds are attracted for pollination by the white colour. In Europe *Siccobaccatus dolichospermaticus* starts to flower from a lateral cephalium at a height of one metre.

The species are:

Siccobaccatus dolichospermaticus.

Siccobaccatus estevesii with subspecies *estevesii* and subspecies *grandiflorus*.

Siccobaccatus insigniflorus.

Siccobaccatus dolichospermaticus

Siccobaccatus dolichospermaticus was first described by Buining and Brederoo as *Austrocephalocereus dolichospermaticus* in *Kakteen und andere Sukkulenten* in 1974, then later included by Braun and Esteves in their new genus *Siccobaccatus*, published in *Succulenta* in 1990.

Description

Body: columnar, only branching or offsetting when the plant is damaged, up to 2m high, sometimes 3m and higher, up to 8cm thick, glaucous. The root system is branched off in rock crevices. *Cephalium*: up to 6cm wide, lateral, uninterrupted, with cream-coloured 4cm long wool and many 5cm long bristles. The cephalium can already be formed at a height of 40cm. *Ribs*: about 30, 9–10mm wide and 10mm high. *Areoles*: oval, 7mm long and 5mm wide, 2–3mm apart, initially covered with light felt, later naked. *Radial spines*: flexible, 4–7mm long, yellow or reddish. *Central spines*: 6–8, yellowish to light brown, up to 25mm long. *Flowers*: tubular, more campanulate towards the top, 40mm long and 25mm wide, naked, night-flowering. *Fruits*: 7mm long, 9mm wide, elongate-turbinate, cream-coloured, dry berry with flower-remains. Ripe fruits lose their lid, the open fruit with the free seeds remains in the cephalium, hence the name *Siccobaccatus*. *Seeds*: oblong, 2mm long and 0.5mm wide, the colour is chestnut brown.

Distribution

Brazil, federal state Bahia, type locality west of Bom Jesus de Lapa at a height of 460m, amongst others together with *Melocactus levitestatus*, several *Pilosocereus* species and bromeliads. The plants grow on limestone rocks. Also found in Minas Gerais by Braun and Esteves.

Cultivation

Even in South and Central Brazil top cuttings do not root. 30 years ago I grafted such an imported cutting (at that time it was allowed to import them) on a thick *Trichocereus macrogonus*. The stock, and finally the plant itself, rotted when it was planted into full ground. Hence, propagation by seed raising is recommended. Minimum temperature in winter is 10°C. If not grafted, the plant must grow in a mainly mineral substrate. In a sunny place in the greenhouse one gets an intense blue cereus with reddish spination. Very attractive are high grafts which stimulate a fast development of the cephalium. When cultivated plants loose their roots it is quite a task to root these again. They grow slowly on their own roots. It is recommended not to disturb the root ball when repotting.

Remarks

On the type locality this cereus is in danger and almost exterminated. The discovery of a new 120km long habitat keeps *Siccobaccatus dolichospermaticus* out of the danger zone. Local people regularly cut down the columns to burn them after drying.

Conclusion

A beautiful attractive columnar cactus that can only rarely be admired in its full glory in our collections.

Kamiel Neirinck

Literature

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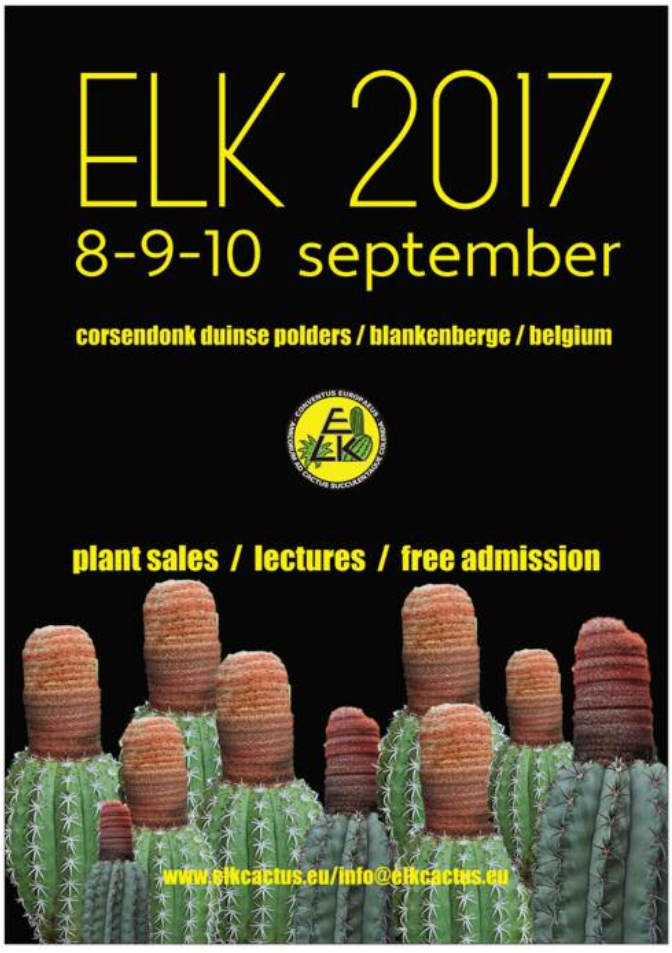

Copiapoa solaris does flower in cultivation!

At least it might if you live in California. Photographs by Duke Benadom

There are a few cacti that achieve cult status and certainly *Copiapoa solaris* is one. It is the most northerly occurring large clumping species that makes clusters comprising dozens of heads. This part of Chile is extremely arid and has probably got even drier over recent decades. Many of the plants in habitat are dead, either through drought or perhaps from infections caused by their weakened state. Only in favourable times do the plants produce a few flowers, hence seeds are hard to find.

There are old plants in cultivation but they are difficult to flower and I am unaware of a reliable report of a single plant flowering in the UK. I said the same thing in my *Copiapoa* book (1998) and, in response, Ralph Martin published a picture of his flowering plant (Martin, 1998), except that I don't believe the plant pictured is really *C. solaris,* but rather a form of *C. coquimbana* .... sorry Martin!

Duke Benadom recently sent me pictures of his *C. solaris* plants flowering in California. They clearly show the characteristic spination of this slow-growing beauty.

The species was first found in 1956 by Friedrich Ritter and then described by him in 1961 as a new species and a new genus *Pilocopiapoa*. When Ritter wrote his 4 volume *Kakteen in Südamerika*, he relegated *Pilocopiapoa* to subgenus status under *Copiapoa* (1980).

Ritter's type locality is El Cobre, a mine at the place where the coast road going north from Paposo turns inland. The distribution of the species extends north and south of this place, from Quebrada Botija in the south to north of Antofagasta.

A recent molecular study (Larridon *et al*., 2015) showed that *C. solaris* is basal to all the species of *Copiapoa*. It is certainly a distinctive species and one of the easier copiapoas to recognise.

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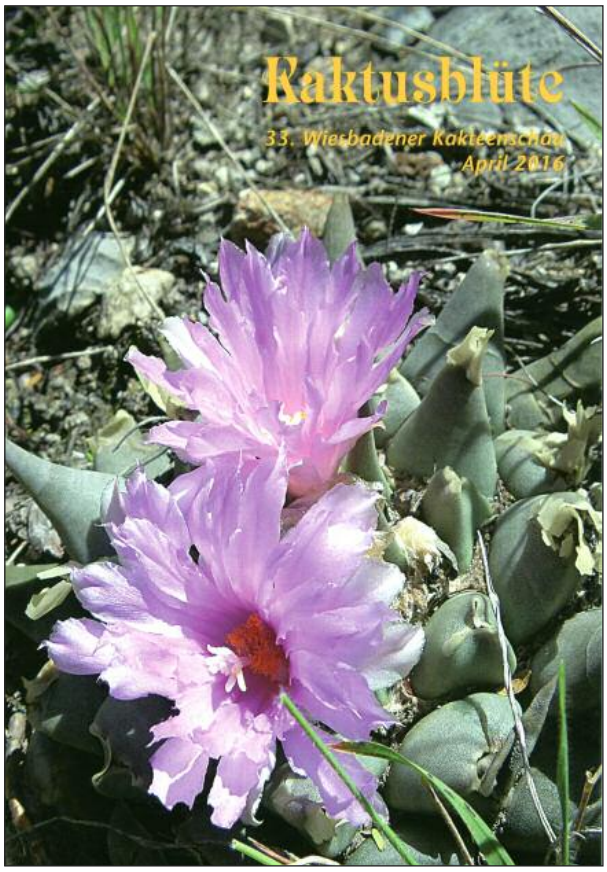
Journal Roundup

Kaktusblüte



I am always impressed by the enthusiasm of our German friends for their cactus hobby. They have produced many local regional publications over the years but the one I really enjoy receiving is *Kaktusblüte*. It is published by the Ortsgruppe Rhein-Main-Taunus and the Kakteenfreunden Mainz/Wiesbaden.

It started back in 1985 with a simply produced newsletter but soon progressed to a well printed black and white publication. High quality colour pictures were introduced in 1988 and the articles were of a quality usually associated with a national journal.

The journal has been produced annually ever since. The issue for 2016, shown right, includes well-illustrated articles about travelling in Mexico; *Echinocereus* from the Trans-Pecos, Texas; *Epiphyllum crenatum*; *Echinocereus* from the north Sierra Madre Occidental; the Mossen Costa i Llobrera gardens in Barcelona; the genus *Nolina*; *Melocactus warasii* and *Lithops optica rubra*.

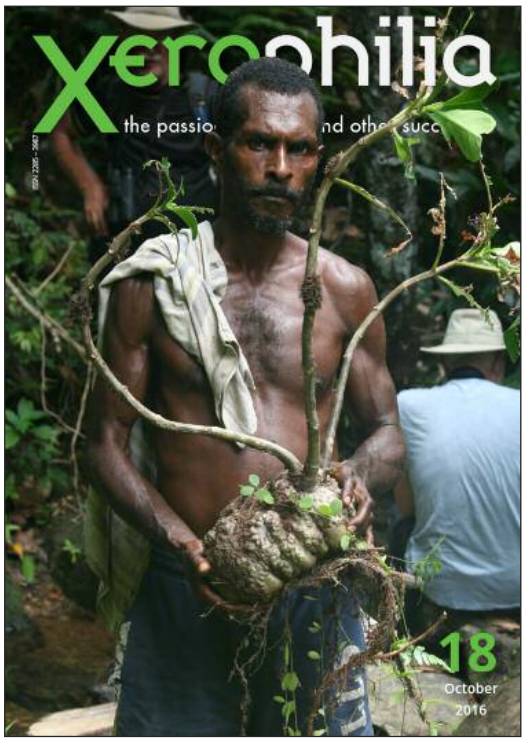
The cover pictures is *Ariocarpus* '*confusus*'.

The publication (and back issues) can be bought for about 6€ each from the book dealer Gottfried Gutte http://www.cactusbooks.com

On-line Journals

On-line Journals for you to download free

Publishing journals on the web is now very popular. Creating them is a lot of work so perhaps that is why some have ceased publication. Here are some links for you to download and enjoy.



Xerophilia

The eighteenth issue of *Xerophilia* appeared in October 2016. It is published in English as well as the language of the original article. The quality of the contents is varied and impressive.

Contents include: Sacred sites of the Wixaritari Community; A new old plant: *Turbinicarpus nikolae*; Cacti hybrids of Orogrande; *Rebutia* sensu Buining & Donald; Notes on *Mammillaria boelderiana*; Spring in Mexico - part 1; Growing *Lithops* in Mexico; Ant Palnts of Papua New Guinea; Vertical Garden Aeoniums;

The magazine may be downloaded free as a pdf from

http://xerophilia.ro

Contact: xerophilia@xerophilia.ro

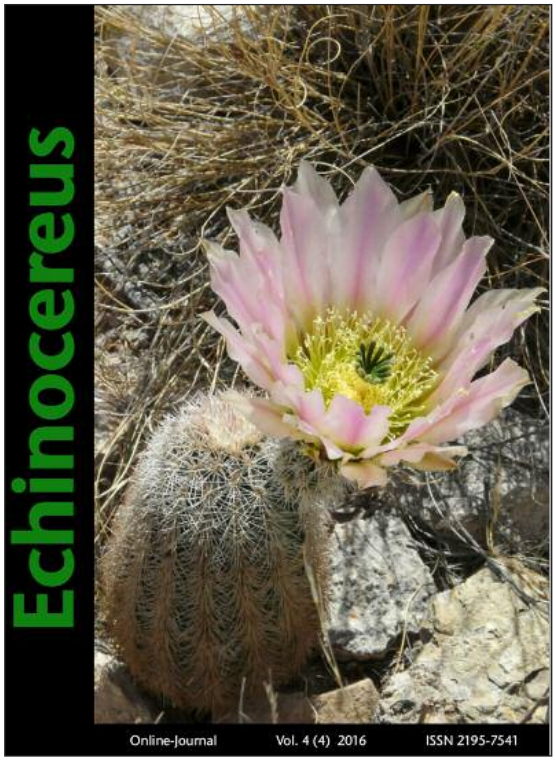
ECHINOCEREUS Online-Journal

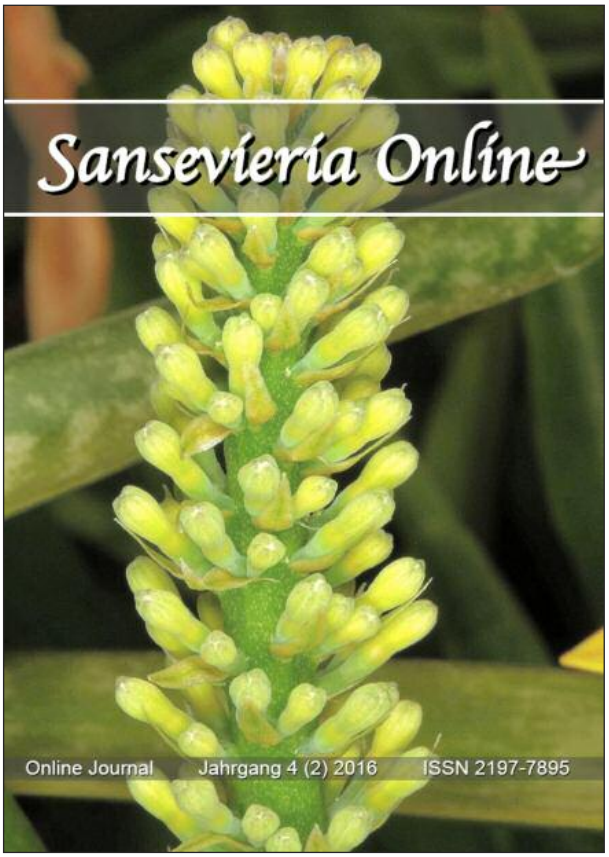
The German language on-line journal for Echinocereus lovers. The goals of this journal are to study the genus *Echinocereus*, to publish articles about the continuous research on these plants (classification, morphology, evolution) as well as to protect the genus *Echinocereus* by reproduction from seeds and distribution of the seedlings.

In this issue, 2016 04, there are well-illustrated articles: A long overdue correction: *Echinocereus salm-dyckianus* Scheer; Critically: variability and classification of the *Echococereus* x lloydii hybrids

The downloaded pdf file allows printing, but does not permit copying of the content. For those of us who do not understand German very well, the publishers also provide a downloadable MS Word document of the text making it possible to copy and paste it into a translation program. This is a major benefit of online journals and I thank them for this useful feature.

See website: www.echinocereus.eu





Sansevieria Online

The online journal for the growing number of enthusiasts for this genus. A small group of *Sansevieria* enthusiasts publish the first *Sansevieria* online journal in German. They welcome contributions on systematics, morphology, physiology, evolution etc.

This issue includes: The inflorescence of Sansevierias; a new cultivar: *Sansevieria cylindrica* 'Boncel'; Shield bugs (*Pinnaspis strachani*) as companions of Sansevieria; Not only sansevierias in the Botanical Garden of the University of Potsdam: a plant paradise in Welterbe "Park Sanssouci"; Flower pictures of *Sansevieria burmanica*.

The publisher of this online journal have set themselves the goal of contributing more to clarify this wonderful genus.

Download the PDF from www.sansevieria-online.de where you can also find a special issue containing field number lists and an index to the journal.

Schütziana

The latest issue of Schütziana, the specialist online journal for *Gymnocalycium* enthusiasts, features:

Gymnocalycium friedrichii (Werderm.) Pažout ex Schütz – Evaluation from a different perspective

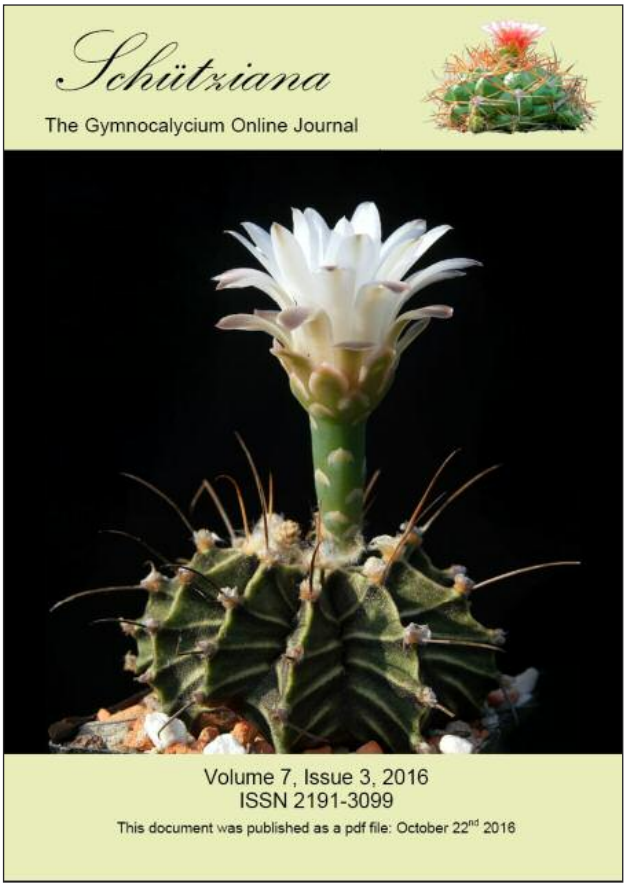
Gymnocalycium bruchii (Spegazzini) Hosseus subsp. *deminii* Gapon et Neuhuber

The text of this valuable publication is available in English, German, Russian and Japanese.

The pictures and distribution maps give a clear insight into the plants found in habitat and culture.

You can download free all the issues from:

www.schuetziana.org



Sukkulenten (formerly Avonia News)

Free German language on-line newsletter of "Avonia", the quarterly journal of the German Society for other Succulents.

From 2015, the on-line journal has been called "Sukkulenten"

This issue has a wonderfully illustrated article about Pseudolithos by the late Darrel Plowes.

See website: www.fgas-sukkulenten.de

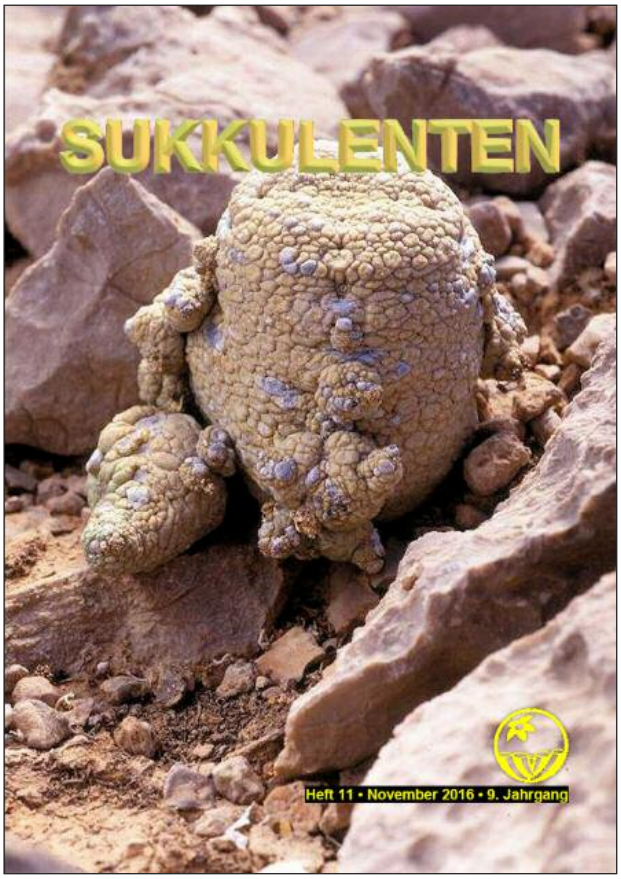
Annual seed list for members and much more.

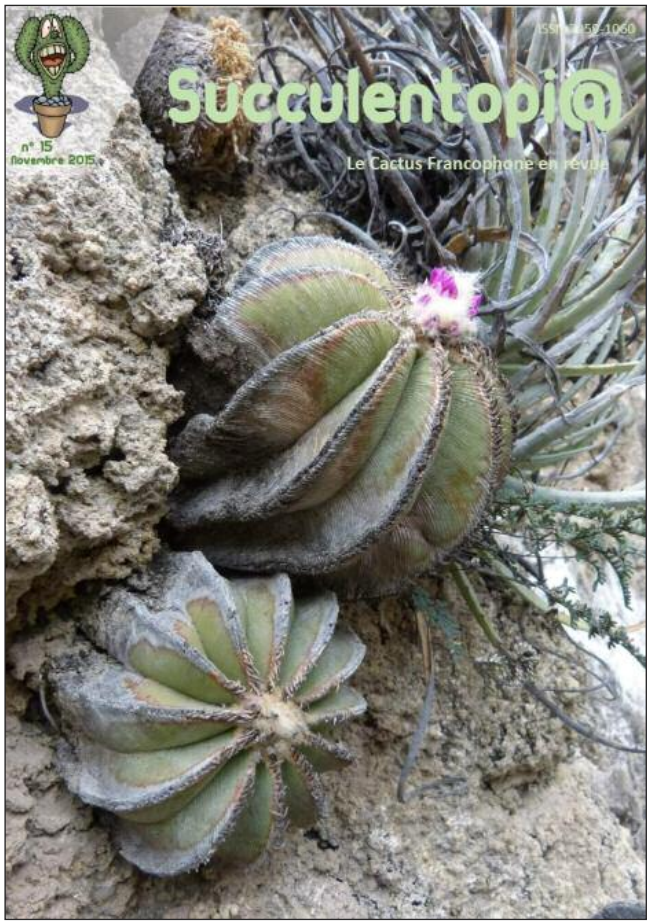
Special interest groups for *Aloe* (incl. *Haworthia* etc.), Ascleps, *Euphorbia*, *Mesembs* and *Yucca*/winter-hardy Succulents.

For membership and further information contact:

Dr. Jörg Ettelt: Morgenstr. 72, D-59423 Unna, praesident@fgas.sukkulenten.de or

Wilfried Burwitz: Postfach 100206, D-03002 Cottbus, geschaeftsstelle@fgas.sukkulenten.de





Succulentopi@

The 15th issue of this free online journal appeared a year ago. I wonder why no further issues have appeared. It would be a great pity if this valuable publication ceased to be published.

It was the first online journal published in French. The quality is excellent in every respect.

Back issues are available as a free PDF downloads from:

http://www.cactuspro.com/succulentopia

The Love of Books

Making Sense of German Journal Chronology

Germany was the most active country for cactus study at the end of the 19th century and during much of the 20th. Graham Charles lists the major journals which were published there under various names during this golden age.

Pictures by Graham Charles

The many titles of cactus journals can be confusing so I hope the following list will be a useful reference. It is based on information provided to me by Jörg Köpper who used to be a book dealer from Wuppertal, Germany. I am also grateful to Gordon Rowley for additional information.

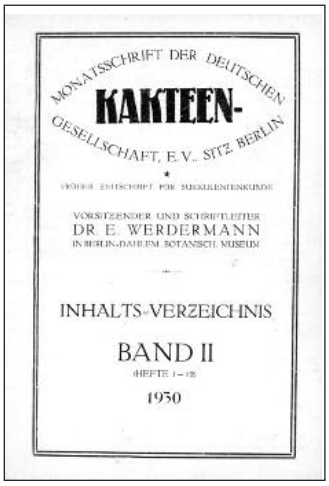
1891: the first German cactus magazine *Monatsschrift für Kakteenkunde* (MfK) started with No.0 and ran until No.12. It was founded on the initiative of a private cactus lover and then carried on as a publication of the Deutsche Kakteen-Gesellschaft after 1892. This rare volume was reprinted by the DKG (German Cactus Society) in 1992.

Vol.1 1891/2

1892: The Deutsche Kakteen-Gesellschaft, DKG was founded and the *Monatsschrift für Kakteekunde* became its official publication until 1922. It was founded by Karl Schumann who also edited it from 1892 until his death in 1904. Each volume of the publication comprised 12 issues published monthly and ran from January to December.

Vols. 2–32, 1892–1922

Index to vols. 1–XX. 1912



1923: The title of the DKG publication changed to *Zeitschrift für Sukkulentenkunde* (ZfS). Each volume of this new publication ran for two years and comprised a total of 16 issues. Three volumes (Vol.1: 1923/24, Vol.2: 1925/26 and Vol.3: 1927/28) were published.

Vols. 1–3, 1923/24–1926/27

1929: The title changed again, this time to *Monatsshrift der DKG*, again with monthly issues running from January to December. Only four volumes were published under this name until 1932.

Vols. 1–4, 1929–1932

1932: A free saleable cactus journal called *Der Kakteenfreund* was published for 4 years. (12 issues monthly until 1934, then just 6 issues bi-monthly in 1935)

Vols. 1–4, 1932–1935

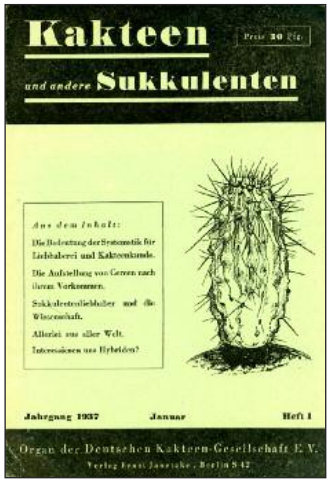
GC has some of these old German journals for sale, please see the advert on p. 61.

1933: The title of the DKG publication changed to *Kakteenkunde* (monthly, 12 issues per year) and ran until 1936 as the official organ of the DKG then, until 1938, as a free sale journal for cactus lovers. In 1939 it again became the official organ of the DKG with at first 4 issues and then from 1940 to 1943 just 3 issues each year.

Vols. 1–4, 1933–1936 (DKG)

Vols. 5–6, 1937–1938 (free sale journal)

Vols. 7–11, 1939–1943 (DKG)



1936: The DKG published its first yearbook called *Jahrbuch der DKG* 1935/36 (144 pages).

1937: The official DKG publication was named *Kakteen und andere Sukkulenten* for the first time. It ran for just two years, with twelve issues in the first and only 3 in the second.

Vol.1, 1937 (1–12)

Vol.2, 1938 (1–3)

1937: Also in 1937 the DKG started a new publication called *CACTACEAE – Jahrbücher der Deutschen Kakteen-Gesellschaft*. The first part of this publication was an issue named *Einleitender Sonderteil 1937* followed by part 1 and 2 of 1937. Then the publication ran until 1942 with 2 issues each year (except 1940 with only one issue) and was terminated with a double issue for 1943/44.

1937, Einleitender Sonderteil, parts 1–2

1938, parts 1–2

1939, parts 1–2

1940, part 1

1941, parts 1–2

1942, parts 1–2

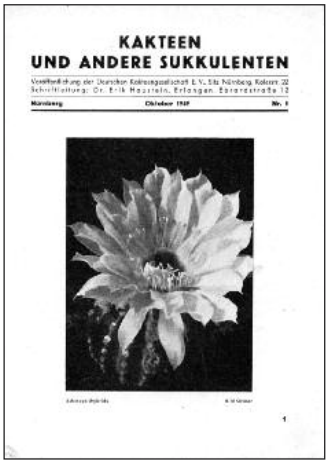
1943/44, part 1

1938: A second DKG publication was started named *Beiträge zur Sukkulentenkunde und Pflege*. This ran from 1938 to 1942 with 3 issues each year and it finished in 1943 with one last issue.

1938–1942, each with parts 1–3

1943, 1 issue

1949: During World War II all DKG publications stopped and only when the Deutsche Kakteen-Gesellschaft was revived in West Germany in 1949 was a new journal, again named *Kakteen und andere Sukkulenten* (KuaS), started. It was published irregularly but since 1957 it has had 12 issues every year until today.



Vol.1, 1949/50 (5 issues)

Vols. 2-3, 1951–52 (each with 4 issues)

Vols. 4-6, 1953–55 (each with 3 issues)

Vol. 7, 1956 (6 issues)

Vol. 8, 1957 to today (each with 12 issues)


NACHRICHTENBLATT
der
DEUTSCHEN KAKTEEN-GESELLSCHAFT E. V.

1949: Another DKG publication called *Nachrichtenblatt der Deutschen Kakteen-Gesellschaft* was started and appeared irregularly until 1956

Vol.1, 1949/50 (10 issues)

Vol.2, 1951 (7 issues)

Vol.3, 1952 (9 issues with Nos. 1–12)

Vol.4, 1953 (7 issues with Nos. 1–8)

Vols.5–7, 1954–56 (each with 6 issues)

1965: A good quality magazine titled *Stachelpost* with b/w and colour pictures was founded with No.1 (1965) and ran until No.51 in 1974.

Vols. 1–10, 1965–1974 (Nos.1–51)

Reference

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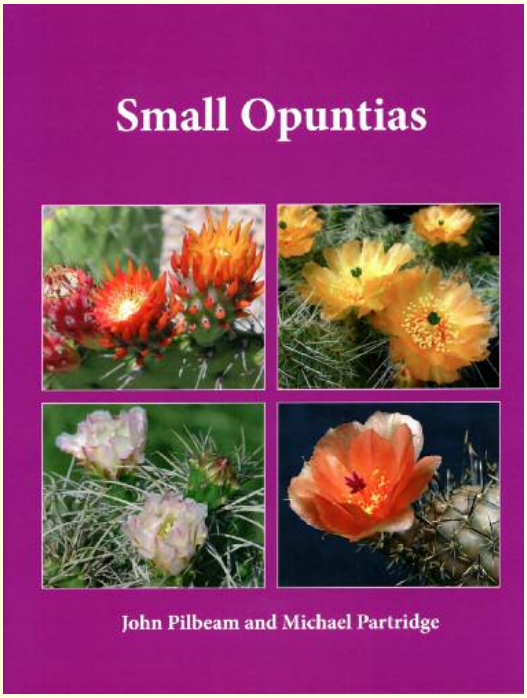
Die Echinocereus scheeri Gruppe

Another well-illustrated book from the German *Arbeitsgruppe Echinocereus* providing an in-depth study of ten taxa in section *Scheeria* of subgenus *Triglochidiata*.

This well-produced hard-bound book has 176 pages 233 x 170mm, and 219 colour pictures, maps, herbarium specimens and seed SEMs. Available to non-members for **24.50€** + carriage, 2€ less for members. German text. Text file available for use in translation programs.

Available from Ulrich Dosedal
dosedal-kakteen@ewetel.net

Small Opuntias
A new book from John Pilbeam and Mike Partridge



There is no doubt that small opuntias are currently very popular. They are easy to grow, most are cold tolerant, and many will produce their beautiful flowers while in small pots. And, if you see one you like, the chances are that you will be able to get a cutting!

This well-illustrated book provides a useful guide to the genera and species which may be described as *small* and also a few which are *not so small*. Also included is *Maihuenia* which is probably here because it will never find a place anywhere else!

The pictures, which were supplied by many enthusiasts, are the joy of this book and they comprehensively illustrate the available species. You can also find advice on cultivation, all in all making it easy to recommend this book to the keen cactophile.

150 pages 275 x 210mm, 250 photos of species flowering in habitat and cultivation, with maps and description references.

£38 UK, **£43** EU, or **£48** everywhere else including postage.

Payment by UK cheque to John Pilbeam, 51, Chelsfield Lane, Orpington, Kent, BR5 4HG, England or pay by PayPal to jpilbeam@tiscali.co.uk. GC

A naturalised population of *Espostoa melanostele* (Cactaceae: Cactoideae) on Tenerife (Canary Islands)

Filip Verloove, Botanic Garden of Meise, **describes his discovery of a population of *Espostoa melanostele* on Tenerife. The island is well known for the suitability of its climate for the cultivation of cacti, and these plants look remarkably similar to those growing in their natural habitat.**

Photographs by the author.

The genus *Espostoa* Britton & Rose is entirely South American and includes from about nine up to 16 species, depending on the species delimitation (e.g. Mabberley, 2008; Sánchez de Lorenzo Cáceres, 2000). Its center of diversity obviously lies in Peru with two species found in Ecuador. At one time, species currently accepted in *Espostoa* were accommodated in a few segregated genera, among which was *Pseudoespostoa* Backeb., but all these are now usually accepted as a single genus (Mauseth, 1999). Molecular studies, however, will certainly shed new light on its boundaries. Schlumpberger & Renner (2012) already demonstrated that, in its current (i.e., broad) circumscription, *Espostoa* is paraphyletic and that *Vatricania* Backeb., another segregate, is not closely related.

Species of *Espostoa* are highly appreciated for their decorative qualities due to their splendid white fleece. No wonder that several species are grown as ornamentals. In Europe, at least four species are more or less widely available: *E. blossfeldiorum* (Werderm.) Buxb., *E. lanata* (Kunth) Britton & Rose, *E. melanostele* (Vaupel) Borg and *E. senilis* (F. Ritter) N.P. Taylor (Hunt, 1998; Sánchez de Lorenzo Cáceres, 2000). However, in continental Europe none of the species is suited for cultivation out of doors: they are classified as "G2 – needs a heated glasshouse even in south Europe" (Hunt, l.c.).

In June 2016, a magnificent colony of a species of *Espostoa* was discovered on a bare, sun-exposed slope near Playa de San Juan in Tenerife (Canary Islands, Spain). This species was identified as *E. melanostele* (syn.: *Pseudo-espostoa melanostele* (Vaupel) Backeb.), a species that – to our knowledge – had not been recorded before growing wild outside of its area of origin. In this short note some details about this record are provided and the plants are copiously illustrated.

Espostoa melanostele is a species endemic to central Peru where it is found both in the coastal and the warmer inland valleys from about 800m up to over 2,000m (Charles, 1999). It is columnar and branched, usually from the base, with several erect stems to 10cm across. Most are densely covered in whitish, fuzzy hairs that cloth the entire stem (this is particularly attractive in young stems). In *E. melanostele*, the main central yellowish spines, the longest up to 10cm long, extend well beyond the hairs. The whitish to brownish (pseudo-) cephalium is lateral, usually on one side of the stem and bears numerous (nocturnal) flowers with a whitish perianth that is often slightly suffused with pink. The plants found in this Canarian locality are, despite being mature, relatively small (all well below 100cm) and have a pale-coloured cephalium rather than the dark brown cephalium of *E. melanostele* s.str. These are

traits typical of subsp. *nana* (F. Ritter) G.J. Charles, a taxon that was originally given species rank (*E. nana* F. Ritter). Young plants in cultivation, however, are indistinguishable from *E. melanostele* (Charles, 1999). Therefore, it is now accepted at most at subspecies rank or merely sunken in the synonymy of the latter (e.g. Hunt, 1998).

On a bare and sun-exposed stony slope on the verge of a shallow barranco, close to the sea cliffs near Playa de San Juan, *Espostoa melanostele* occurs with several tens of individuals (probably close to one hundred altogether). The plants in this population are of variable age and include young individuals as well as sexually mature ones with flower-bearing cephalia. *Espostoa melanostele* has a reputation for being slow-growing. Even well grown individuals are not more than 25cm tall after ten years in cultivation (Charles, 1999); hence, the presence of numerous mature plants in this locality suggests a relatively old introduction and the species looks perfectly established there.

As for all cacti currently found in the wild in the Canary Islands, *Espostoa melanostele* evidently must have been introduced on purpose initially, most likely as a garden ornamental (although it is sometimes grown for its edible, sweet and juicy fruits as well). In Playa de San Juan it probably naturalised from garden debris or may even originally have been planted intentionally. Nearby, on the other side of the barranco, an extraordinary collection of introduced cacti and other succulents is present and this is obviously an illegal, abandoned former plantation. It includes several exceptional alien species that ultimately managed to naturalise locally, e.g. *Cylindropuntia fulgida* (Engelm.) F.M. Knuth var. *mamillata* (Schott ex Engelm.) Backeb., *Euphorbia grandialata* R.A. Dyer, *Opuntia macrocentra* Engelm., *Tephrocactus articulatus* (Pfeiff.) Backeb., etc. (see Verloove *et al*., in preparation), but not *Espostoa melanostele*.

Acknowledgements

I sincerely wish to thank Graham Charles (Stamford, England) for confirming the identity of the Canarian plant.

Filip Verloove, Botanic Garden of Meise, Nieuwelaan 38, B-1860 Meise, Belgium.
filip.verloove@botanicgardenmeise.be

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Hunt, D.R. (1998) *Espostoa*. In: Walters, S.M. *et al.* (eds.), *The European Garden Flora* vol. 3. Cambridge University Press, Cambridge: 232–233.

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Travel with the cactus expert (16)

Zlatko Janeba continues his popular series of articles about exploring the American South West.

Photographs by the author.

As already mentioned, Josef Busek was involved in some business negotiations for the whole morning on 12th May 2006. Thus, I was left on my own. I was recommended to visit the Denver Botanic Gardens and I decided to use the opportunity while being in Denver. First I went to wash my dirty and dusty car and to do some shopping to replenish our food stock for the next couple of days. Then I headed to the gardens.

Denver Botanic Gardens (Fig.1) is a famous public botanic garden with an area of some 23 acres. It was founded in 1951 and currently features a variety of theme gardens. The garden is well-known especially for its large collection of plants from cold temperate climates around the world, which also includes my favourite frost-hardy cacti and other succulents.

Fig.1 The entrance to the Denver Botanic Gardens.

Fig.4 Flowering *Delosperma nubigenum* or "Hardy Yellow Ice Plant" in the outdoor exposition in the Denver Botanic Gardens.

The garden was quite busy as there was a fair with rock plants going on during those days (Fig.2). But imagine my disappointment when I figured out the tropical greenhouses were closed for reconstruction. I was only allowed to visit the outdoor exhibitions, but still, there was plenty to discover. I could see numerous frost and winter hardy plants growing in the rock gardens, especially various agaves, yuccas, North American cacti of genera *Opuntia* and *Echinocereus*, hardy Patagonian *Maihuenia poeppigii* (Fig.3) as well as flowering South African succulents, like *Delosperma nubigenum* (Fig.4).

Moreover, I could enjoy an outdoor exhibition of numerous sculptures called "Living Bronze", open from 20th April to 31st October 2006. Twenty-six bronze sculptures by artist Robert Wick were

Fig.2 Many people were interested in the sale of a great selection of rock plants in the Denver Botanic Gardens.

Fig.3 Even *Maihuenia poeppigii* from Patagonia is doing well in rock garden in Denver, Colorado.

Fig.5 Shiva (1990, Bronze 8' 6''). Shiva is the Hindu god of creation and destruction. Multiple arms are broken. A huge earth and sea formation behind her head carries much life as evidenced by the living plants.

placed in the landscape of the American West and various living plants were actually inserted into numerous cavities of the sculptures (Fig.5). So after all, I enjoyed my visit to the Denver Botanic Gardens anyway and I took copious photos.

Later I was told by Josef that we had been invited to a chalet of another colleague of his near Fairplay, that is situated in the Rocky Mountains not too far from Denver. We took off after lunch and headed along US Route 285 towards the southwest. We stopped just southwest of Denver, near the exit to the Red Rocks, and there we discovered several *Escobaria missouriensis* specimens with flower buds (Fig. 6). They grew in red sandy soil among grasses together with a small yucca species.

I am always more than happy to see *Escobaria missouriensis* or related plants in the field. This group of cacti is quite widespread in the southwestern and cental states of the U.S.A. (Arizona, Colorado, Kansas, Montana, Nebraska, New Mexico, North Dakota, Oklahoma, South Dakota, Texas, Utah, and Wyoming). They inhabit

Fig.6 *Escobaria missouriensis* was just about to flower. Southwest of Denver, Colorado (May 12, 2006).

mostly prairies and woodlands. They were recently also discovered in the Mexican state of Coahuila. And although the distribution range of *E. missouriensis* is wide, it is not always so easy to find as this is a relatively small-bodied and cryptic species. They can be easily spotted only when in flower or when bearing shining orange-red spherical and juicy fruits. Often they can be seen decorated both with flowers and with fruits at the same time. In cultivation they belong among the most tolerant cacti and are fully winter hardy. Although inconspicuous for their relatively unattractive spination, they attract a lot of attention among laymen when in flower and fruit. Interestingly, American botanists do not recognize the genus *Escobaria* and keep it as *Coryphantha missouriensis*. I, on the other hand, prefer to call these interesting cacti *Neobesseya missouriensis*.

We drove further in a southwesterly direction along US Route 285 and after some time we stopped in a pine forest at an elevation over 2500m (Fig.7), where we saw numerous small yuccas with dry open seed capsules (could be *Y. angustifolia*). I have also found a single specimen of *Pediocactus simpsonii* with delicate pink flowers (Fig.8).

Only about 4 miles further the pine forest thinned out and we stopped to search through montane meadows at an elevation of some 2500m. We encountered the same yucca species we had seen at the previous spot, and also several clusters of *Escobaria vivipara* without any signs of flowers (Fig.9). But the most common cactus on the open grasslands was *Pediocactus simpsonii*. We saw dozens of pediocacti but the flowering season there was already over. The largest pediocacti there were only about 6 cm in diameter.

We made our next stopover just about 1 mile before the Kenosha Pass (north of it) at an elevation of some 2900m. This is about 5 miles northeast of Jefferson in the Rocky Mountains (Colorado). This area is often recomended to search for pediocacti.

Fig.7 A habitat along the US 285 at elevation of some 2500 m. We found numerous yuccas and flowering *Pediocactus simpsonii* in the open pine forest.

Fig.8 *Pediocactus simpsonii* with delicate pinkish flowers along the US 285 (2500 m), Colorado.

Fig.9 Large clump of *Escobaria vivipara* along the US 285 (2500m elevation), Soutwest of Denver, Colorado.

Fig.11 *Pediocactus simpsonii* with pinkish flowers closing for the night, along the US 285 (2890m elevation), just North of Kenosha Pass, near Jefferson in Colorado.

We climbed up a grass meadow next to the road but we could not find any cacti there. The grass seemed to be too dense to allow any cacti to grow there. After a while we reached a rocky place (composed of granite rocks and gravel) within the grassland and there, finally, we discovered a rich population of *Pediocactus simpsonii* growing in slightly sandy to gravelly substrate among grasses. The plants were really almost everywhere, most of them bearing nice pink flowers (Figs.10 & 11). We also saw miniature species of *Sedum* with reddish-brown tiny leaves. It was indeed a wondeful experience to see such a plentiful and healthy

Fig.10 Population of copious small *Pediocactus simpsonii* along the US 285 (2890m elevation), just North of Kenosha Pass, near Jefferson in Colorado.

population of *P. simpsonii* at such a high altitude. Unfortunately, it was already getting late and cold, so the flowers were mostly closed at that time.

Pediocactus simpsonii, together with the above mentioned *Neobesseya missouriensis* and also *Escobaria* (or *Coryphantha* in the USA) *vivipara*, belongs to globular cacti with the widest distribution range in the southwest of the USA. *P. simpsonii* (in a broad sense) has been reported from Arizona, Colorado, Idaho, Montana, Nevada, New Mexico, Oregon, South Dakota, Utah, Washington, and Wyoming. It is mostly an inhabitant of woodlands and montane grasslands at altitudes usually between 1500m to 3500m. The large distribution range is reflected in high variability of these plants which actually led to descriptions of several subspecific taxa (variety and subspecies). These are not, however, accepted as good taxa anymore.

Then we headed further and just before sunset we arrived at the chalet of Josef's colleague that is located near Fairplay at elevation over 3000m. Nobody was there yet, but Josef had been given keys, so we could comfortably settle inside the house. The owner's family arrived later that evening and we spent a very pleasant evening together sitting around a warm fireplace.

Zlatko Janeba

Where lizards dare: an excursion to Barranco Rambla de Ruiz (Tenerife)

Marco Cristini describes an interesting day looking at succulents on the popular holiday island of Tenerife.

Photographs by the author.

The Canary Islands are one of the most spectacular places on Earth for succulentophiles. This remote corner of Europe is home to a rich endemic flora, whose species are cultivated in gardens and greenhouses throughout the world. But one thing is to grow aeoniums or monanthes in Northern Italy, in England or in the USA, another is to see them in their habitat.

In August 2016 I went for the first time to Tenerife, in order to see face to face as many Canarian succulents as possible. I was not disappointed. Although I arrived at the peak of the dry season, during my holiday I spotted at least 17 different species of Crassulaceae. The richer areas are surely those of Anaga (in the East) and Teno (in the West), but also in the central part of the northern coast there are quite a few interesting places. In this article I will shortly describe one of them, Barranco Rambla de Ruiz.

This narrow valley is situated between Puerto de la Cruz and San Juán de la Rambla. Reaching it is very easy: the barranco is perpendicular to highway TF-5, one of the most important roads of Northern Tenerife. It is impossible to miss it, because shortly before there is an unambiguous brown road sign. After a sheer embankment one has to turn left (coming from Puerto de la Cruz) and to park

Fig. 1. Barranco Rambla de Ruiz

Fig.2 A stressed *Aeonium canariense* var. *canariense.*

Fig.3 *Aeonium arboreum* var. *holochrysum*.

Fig.4.*Aeonium arboreum* var. *holochrysum.*

Fig.5. *Aeonium arboreum* var. *holochrysum.*

Fig.6. *Aeonium arboreum* var. *holochrysum* in a shaded place.

Fig.7. *Aeonium arboreum* var. *holochrysum* on the path.

Fig. 8. Barranco Rambla de Ruiz.

the car in a nice picnic area, where whole families of El Rosario, the tiny town which is in front of the barranco, spend their Sunday afternoons. An elegant stairway situated near the entrance leads to the beginning of the path.

When I was still climbing on the steps I saw the first succulent, *Aeonium arboreum* var. *holochrysum*, which had only tiny and compact rosettes because of the drought. Many leaves were bordered or veined with red, so some plants had a somewhat marbled appearance. Then, after few minutes, I saw the real "king" of the barranco, *Aeonium canariense* var. *canariense*. This succulent is quite common in Tenerife, I saw it for example near Puerto de la Cruz (on Sendero del Agua), in Barranco de Igueste and in Chinamada, where I spotted a solitary plant near the village. In Barranco Rambla de Ruiz, however, it is very abundant and it is found along the path, allowing the tourist to take lots of photos. I observed that this aeonium mostly grows under bushes, trees or cliffs, in sheltered positions, where the tropical sun cannot burn it. In spite of this quite a few specimens had red leaves, a sign of stress due, in my opinion, to lack of water.

When I arrived in Tenerife the flowering season had already ended for the majority of Crassulaceae. I spotted lots of inflorescences of *Aeonium urbicum* and a few of *Aeonium haworthii*, but I rarely saw a dried inflorescence of *A. canariense* var. *canariense*. I don't know the reasons of this circumstance, maybe the spent inflorescences of this species break off more easily or perhaps few plants flowered in 2016. But let us return to Barranco Rambla de Ruiz. After the first *A. canariense* var. *canariense* the path becomes steeper and if it is hot (as, for example, during my visit) one or two bottles of water are necessary.

The landscape, however, is unforgettable and aeoniums are ubiquitous. Every five steps you can see a plant or, more often, a nice group of plants, hanging on rocks, growing under trees or thriving along the path. Also *Aeonium arboreum* var. *holochrysum* is common in the barranco, but it was less conspicuous than *A. canariense* var. *canariense* and also less photogenic. The valley's cliffs are covered also by *Opuntia ficus-indica*, an invasive plant native

Fig.9. *Aeonium arboreum* var. *holochrysum.*

Fig.10. *Aeonium canariense* var. *canariense.*

Fig.11. *Aeonium canariense* var. *canariense.*

Fig.12. *Aeonium canariense* var. *canariense.*

Fig.13. *Aeonium canariense* var. *canariense.*

Fig.14. *Aeonium canariense* var. *canariense.*

Fig.15 *Aeonium canariense* var. *canariense.*

Fig.16 *Aeonium canariense* var. *canariense.*

Fig.17 *Aeonium canariense* var. *canariense.*

Fig.18 *Aichryson laxum.*

of Mexico which, since the discovery of America, has been spreading in Europe, Africa and Asia. I saw it in almost every corner of Tenerife, often competing with *Euphorbia canariensis*. The former succulent, however, is a good omen, at least for me. In fact I noticed that wherever I spotted *Opuntia ficus-indica* also a few Crassulaceae grow.

After an hour of climbing, the city-dweller and not-very-athletic tourist is authorized to be a little tired, but fatigue is quickly forgotten once you look at the valley and, on the horizon, at the Atlantic Ocean. Moreover, new botanical wonders are at hand! Near the end of the path I found *Monanthes laxiflora* and a very dried specimen of *Aichryson laxum*. The former species forms little mounds of tightly packed stems and it grows well on rocky outcrops and stone-walls. I saw it also in Barranco de Igueste, in the Anaga region, in Barranco de Bucarón (near Los Silos) and in Teno Alto, where the succulent thrives on old walls bordering cultivated fields. Also *Aichryson laxum* is quite common. I observed it, often together with *M. laxiflora*, in Anaga, in the Teno area and in Barranco Badajoz (near Güimar).

After having dutifully photographed *Monanthes laxiflora* I went on walking, but not for long. The path in fact reaches quickly a little square and this is the end of the journey or, at least, it was the end of my journey, because one can continue the excursion on an asphalted road leading towards La Vera and Los Barros, but that day I had seen enough plants. So I sat on a bench and admired a *Dracena draco* planted in the middle of the square, while groups of white clouds crossed the barranco eager to reach the Ocean. When I rested thinking of all succulents I had just seen, I spotted one of the most curious inhabitants of Tenerife, Gallot's lizard (*Gallotia galloti*).

This reptile is quite a bit bigger than the average Italian lizard, so when it crossed my

Fig.19. *Monanthes laxiflora.*

Fig.21. *Gallotia galloti* in the Barranco Rambla de Ruiz.

Fig.22. *Gallotia galloti* on the Sendero del Agua.

Fig.20. *Dracena draco* in the middle of the square at the path's end.

Fig.23. *Gallotia galloti* on Sendero del Agua near the Ocean.

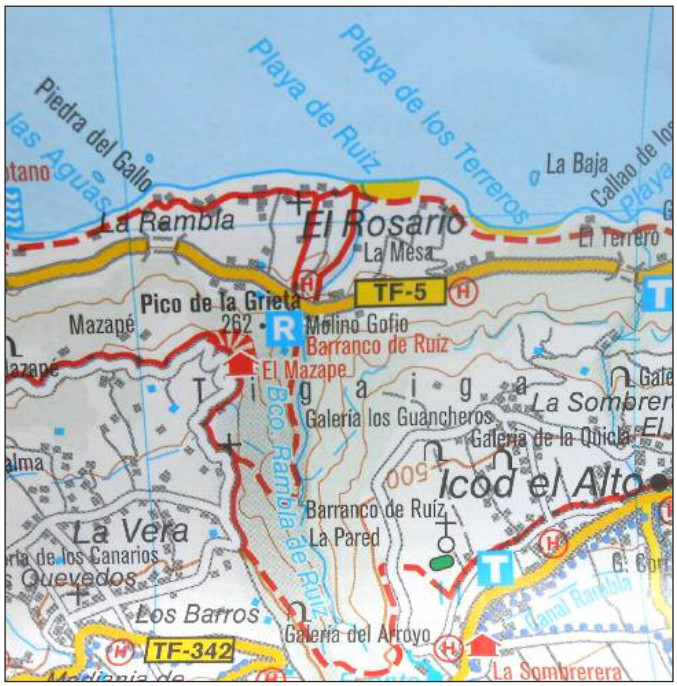

Fig.24. Map.

path for the first time, at the beginning of the holiday, I was a bit startled. By then, however, I had grown accustomed to them, so I cautiously came closer and I photographed the little dinosaur. Canarian lizards do not fear people too much. Naturally if you go towards them quickly they run away, but if you do not make a sudden gesture they ignore you. Moreover, I observed that they like crackers and, above all, bananas. If you eat a frugal lunch in a dry barranco, you can find yourself literally surrounded by hungry lizards, ready to fight for a crumb. Once an inquisitive reptile even entered my rucksack! During the way back I spotted and heard many lizards along the path. When they move on a cliff, in fact, they cause miniature landslides. I wondered how much they are responsible for the island's erosion...

The descent of the barranco is easier, but not too much quicker than the ascent. The path can be tricky and one has to pay attention if you do not want to admire an *Opuntia ficus-indica* up too close. Moreover, the descent offers the possibility of seeing (and photographing) again the wonderful succulents which grow along the barranco. After more or less an hour I returned to the picnic areas, tired but happy.

Surely Barranco Rambla de Ruiz is not the most succulent-rich valley of Tenerife, but it is worth a visit. The tourist can enjoy a typical Canarian habitat and know better some of the island's inhabitants, like the superb *Aeonium*


Fig.25.*Opuntia ficus-indica* in the Barranco Rambla de Ruiz.

canariense var. *canariense* and the astute *Gallotia galloti*, respectively king and queen of this arid but unforgettable realm.

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Marco Cristini

Juab and Utah County, Utah, throughout the year 2015

It must be a joy living close to where cacti grow naturally. One such place is Salt Lake City, Utah. Article by Petr Šimon. Photographs by the author.

My wife and I thoroughly enjoyed the year we lived in Salt Lake City, Utah. During this time we travelled frequently and spent almost every weekend enjoying the natural beauty of Utah and the neighboring states. During our very first trips searching for cacti we explored localities near Eureka in both Juab and Utah Counties. We were able to visit this region three times in February, April, and July.

Our first visit happened on the last weekend of February (Feb. 28th, 2015). Based on my map studies, we started at the area west of Eureka. We drove past the cemetery and stopped after a couple of miles to explore a small hill. The field was covered with sparse vegetation which predominantly consisted of Sagebrush (*Artemisia* sp.). However, we did not find any cactus plants.

We then drove to a second locality one mile east of Eureka on highway 6. We parked our car on a shoulder close to some rocky hills. After a few steps, we found our first *Echinocereus triglochidiatus* v. *mojavensis* on a rock, under a juniper tree (*Juniperus* sp.), (Fig.2). The plants were dry and limp but in good shape, undamaged. We

Figure 1. View from slope looking over the snowy landscape west of Eureka.

Figure 2: Rocky place under a juniper tree with snow and *Echinocereus triglochidiatus* v. *mojavensis*.

Figure 3: A lot of buds on *Echinocereus triglochidiatus* v. *mojavensis* at a locality north of Highway no. 6 near Eureka, Utah (April 11th, 2015).

decided to search the larger area, but as we travelled further from our car, we saw fewer cactus plants. Soon the weather became unfriendly including a snowstorm and freezing temperatures, so we decided to end our trip.

Our next visit to this area was in April (Apr. 11th, 2015). We decided to explore other localities east of Eureka. The first one was north of Highway no. 6. Unfortunately, the whole area was destroyed by human activity. Off-road driving and geological research had damaged the land rapidly and profoundly. Despite this deterioration, we found a couple of plants of interest on a hill. We studied our first *Pediocactus simpsonii*. The second slope of the same hill was covered by a very dense growth

Figure 4: Mid-April and flowering time at the *Pediocactus simpsonii* locality near Eureka, Utah.

of *Echinocereus triglochidiatus* v. *mojavensis*. These plants were well hydrated and prepared for flowering.

The same day, we visited a second locality south of Highway no. 6. Following a short walk, we found a very nice place at the top of a hill. The most common plants there included sparse growth of juniper (*Juniperus* sp.) and pine (*Pinus* sp.) trees with sagebrush (*Artemisia* sp.) and lupin (*Lupinus* sp.) in flower, but only one cactus species grew there. It was *Pediocactus simpsonii* with a diameter larger than 10cm and with yellow flowers. The amount of plants was breathtaking, and the adult plants were all in flower. We studied this

Figure 5: Detail of a yellow flowering plant of *Pediocactus simpsonii* with tapered petals at a locality near Eureka, Utah.

Figure 6: Detail of whitish flowering plant of *Pediocactus simpsonii* with rounded petals, locality near Eureka, Utah.

locality in more detail including the number of juvenile plants that grew there.

Since all the adult plants were in bloom, it was a perfect time to compare the flowers. It is common that collectors select plants according to their literature description which contains only limited information about the natural variability that is known among them. We explored the variation of the shape and colour of the petals.

The first plant had tapered petals with a yellowish interior and a pinkish tint on outer edge (Fig.5). Another plant had lighter petals than the previous one. Also, their colour was more uniform than the first plant. However, the most significant difference was the shape of the petals, which were rounded (Fig.6).

The last plant with flowers, I want to show you, had a petal shape between

Figure 7: Detail of pinkish-flowering *Pediocactus simpsonii* with slightly tapered petals, locality near Eureka, Utah.

Figure 8: *Opuntia* sp. with fruits, west of Nephi, Juab County, Utah.

Figure 9: Sparse junipers and *Pediocactus simpsonii* at a locality west of Nephi, Juab County, Utah.

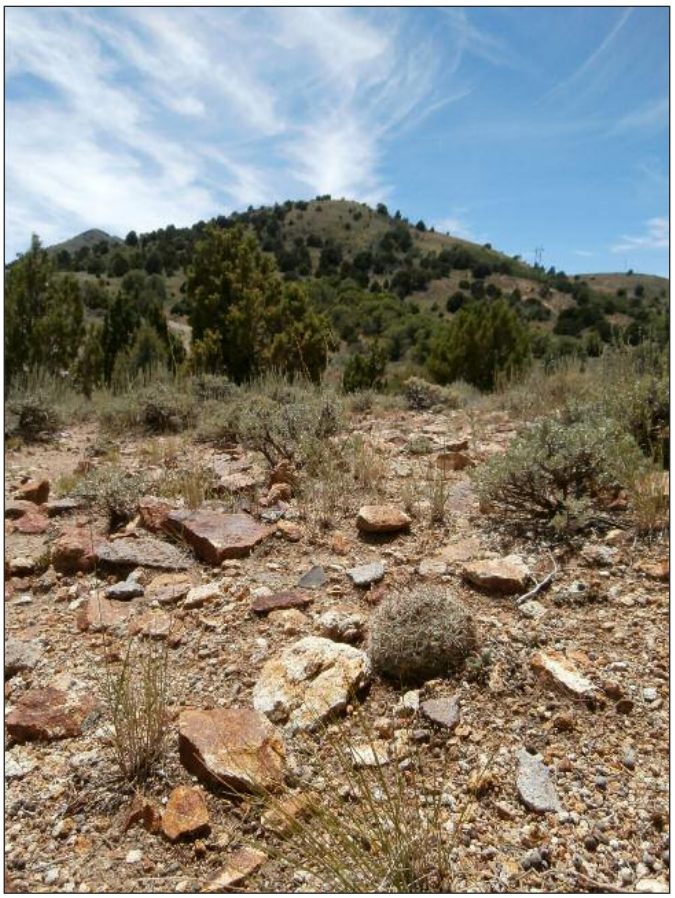


Figure 10: Summer view at a locality near Eureka, Juab County, Utah.

the two previous plants (Fig.7). It could be described as almost rounded but slightly tapered. Additionally, its colour was vibrant. It didn't have any yellow, instead transitioning from a light pink in the center to a dark pink at the flower's exterior.

Our last visit to the localities in Juab and Utah Counties was on Sunday July 12th 2015. The first stop was at a locality west of Nephi, Juab County, Utah. We found information about this locality from a herbarium. After a short walk into nature, we successfully found an opuntia with dry fruit (Fig.8).

The most frequent plants at this

Figure 11: *Echinocereus triglochidiatus* v. *mojavensis* in summer, east of Eureka, Utah County, Utah, and removed plants in distance.

locality were grasses, sagebrush (*Artemisia* sp.), and juniper trees (*Juniperus* sp.). As we continued further from the road, we found desirable cacti near the top of a small hill. It was *Pediocactus simpsonii* as described in herbarium files (Fig.9).

We also visited another locality in Utah county near Eureka, Utah. In comparison with the previous locality west of Nephi, this area had little vegetation and was full of stones (Fig 10). This arid microclimate increased the dryness of the cacti we found here.

On our way back to the Salt Lake City, we stopped on road No.6 east of Eureka, Juab County, Utah. However, we only found a limited number of viable cacti, which grew only in rocky areas (Fig.11). All the nearby fields were

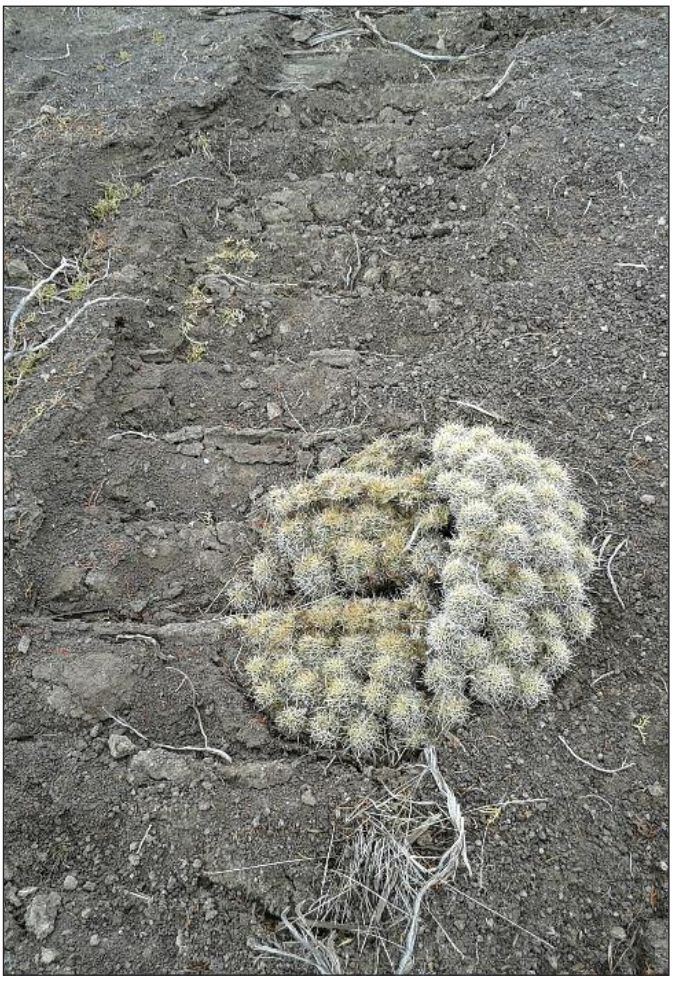


Figure 12: How bulldozers take care of cacti.

the private property of a mining company, who had removed all the trees and plants using bulldozers.

It is difficult to understand how this could occur in a world where CITES rules exist to protect these species (Fig.12).

As you read, the landscape and vegetation change dramatically through the year, so it is very nice to visit various localities in freezing winter, flowering time in mid spring, and the dry period in late summer. Each visit was distinct and will be deep in our hearts.

Petr Šimon

A Happy Medium?

A never ending discussion about *Morangaya pensilis* (K. Brandegee) Rowley! Michael Lange discusses its relationships and provides information about its distribution in Baja California Sur

Photographs by the author unless otherwhis stated.

'Pensilis' is a cactus, with a hard to explain phylogenetic background. It makes botanists breathless and leads us around by our noses like a dancing bear at a middle age market. Some say one thing, others like a different solution. I personally think this species likes itself best in the position defined as a (un-) happy medium (Rowley, 1974).

For a long time *M. pensilis* seemed to have been the only *Echinocereus* growing in the manner of an *Aporocactus* from the top hanging down, we shall not wonder why this character was over stressed in the genus definition for *Morangaya* by Rowley (1974). He also compared it with *Heliocereus*. And not to forget my own misinterpretation (Lange in Blum *et al*., 1998: 45) and the creation of *Morangaya* as a subgenus within *Echinocereus* is obsolete now; the former genetically based statement by Wallace & Forquer (1995) is now revised by the better knowledge published by Barcenas *et al*. (2011). And thus is confirmed by Sanchez *et al*.

Figure 1 *Morangana pensilis* in cultivation.
Photograph by Peter Hallmann

Figure 2 *Morangana pensilis* in cultivation.
Photograph by Peter Hallmann

Figure 3 *Morangana pensilis* in cultivation.
Photograph by Peter Hallmann

Figure 4 *Morangana pensilis* in cultivation.
Photograph by Peter Hallmann

Figure 5 *Morangaya pensilis* fruit in cultivation.

Figure 7a *Stenocereus kerberi*
Photograph by J. Lodé

Figure 6 *Morangaya pensilis* in habitat at 600m, north of San Jose del Cabo. Photograph by P. Breslin

Figure 7b *Stenocereus gummosus*
Photograph by P. Hallmann

Figure 7d *Stenocereus gummosus*
Photograph by P. Hallmann

(2014) again: *Morangaya* does not belong to a monophyletic genus *Echinocereus* Engelmann!

Looking back, you will eventually admit that the proposed origin as explained by Blum *et al*. (1998: 39) is rather close to the updated point of view. Nevertheless I am still expecting the next change for the phylogenetic position of the taxon '*pensilis*'. Because today's position proposed by analysis (Barcenas *et al*., 2011: 5) as a sister taxon to *Stenocereus eruca* (indeed very close to the former genus *Machaerocereus*) is eventually telling the beginning of the next part of the whole (never ending?) story. Well, comparing the flower shape of these *Stenocereus* species and not to forget the less specialized flowers of the *Rathbunia*-group one will discover some parallels. Also the flower

Figure 7c *Stenocereus gummosus* fading flower.

Figure 8a *Morangaya pensilis* flower

Figure 8b *Morangaya pensilis* flower section

Figure 9 *Stenocereus alamosensis* small bud

Figure 11a *Morangaya pensilis* in culture

Figure 10 *Morangaya pensilis* small buds

Figure 11b *Morangaya pensilis* in culture

ecology (daytime and short-lasting anthesis) tells us something, does it not? Even the growing habit is quite similar but one should not over-estimate such features when identifying relatives; as we learned from the *Aporocactus* example!

Comparing morphological and ecological details

Growth

The people from the cactus community in general are well infomed about the shape and style of growth of the proposed sister-taxon *Stenocereus eruca* (syn. *Machaerocereus*)

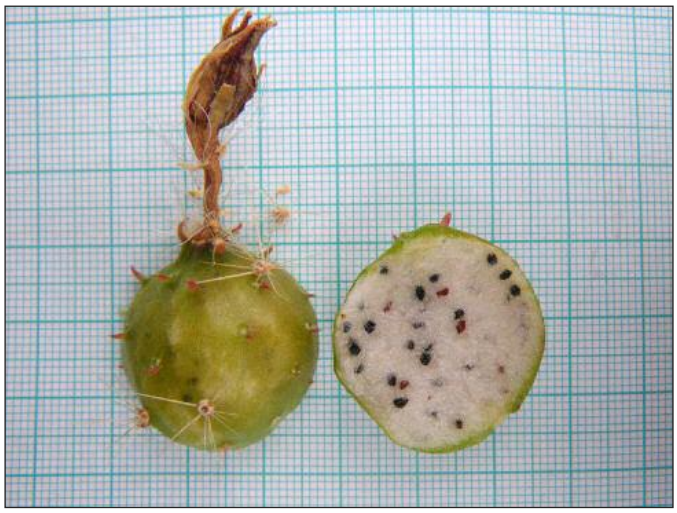


Figure 12 *Morangaya pensilis* fruit, ripe and juicy.

although we will never ever get the very special spination in our greenhouses.

We will hardly see *Stenocereus gummosus* in flower within European collections even if we will find it at all. So we do not know much about its natural variability.

Unfortunately we have a scanty knowledge of the daytime-flowering octopus-cacti (*Stenocereus* « cina »-group synonym *Rathbunia,* see Lange (2016) in the **Cactus Explorer** 16 and http://de.wikipedia.org/w/index.php?title=Datei:Teguise_Guatiza_-_Jardin_-_Stenocereus_alamosensis_03_ies.jpg&filetimestamp=20111028180537)

But there is some light thanks to a German picture-postcard from the 1980s and a well illustrated publication by Niestradt (2000). Another report by Earle (1972) briefly mentions the space-demanding growth with a single bending top of a specimen; a potential start for a new plant of the entire clone.

All these species share the opportunity of producing adventives roots in order to establish entire individuals. This is an interesting way of becoming immortal!

Flower

The so-called night flowering species normally share the character of keeping their flowers (depending on temperature) open until the following late morning. This is probably the reason for contradicting data about the time of flowering and for the flower colour. Hence those normally white flowers change to

Figure 13 *Stenocereus alamosensis* fruit in habitat. Photograph by T. VanDevender

Figure 14 Fruit of *Stenocereus gummosus* Baja California in 1997

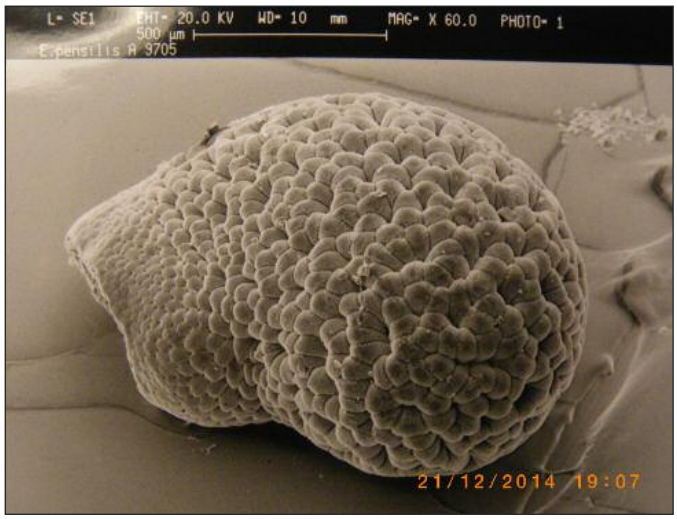


Figure 15a *Morangaya pensilis* seed. SEM from population „La Soledad“ SEM by G. Mettenleiter

Figure 15b *Morangaya pensilis* seed. SEM from population „La Soledad“ SEM by G. Mettenleiter

Figure 16a *Morangaya pensilis* seed. recieved as *Lau* 050 SEM by G. Mettenleiter

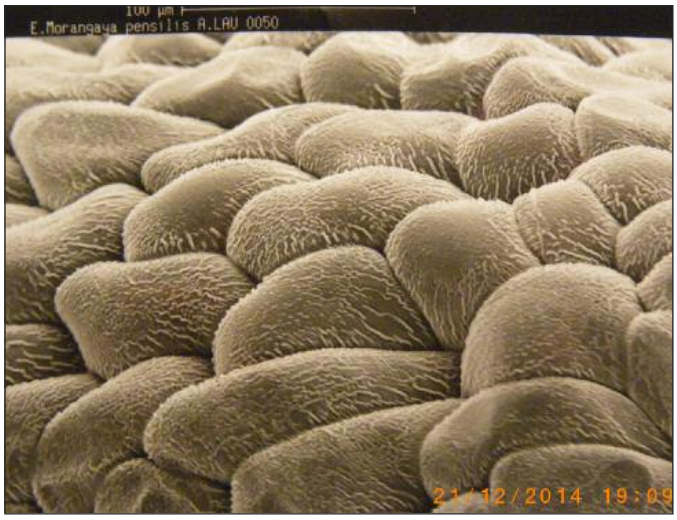


Figure 16b *Morangaya pensilis* seed. recieved as *Lau* 050 SEM by G. Mettenleiter

Figure 17a *Morangaya pensilis* seeds under light-microscope: ex W. La Haye s.n., ca. 2.000m (see Corbett, 1998: 69 Abb. 194)

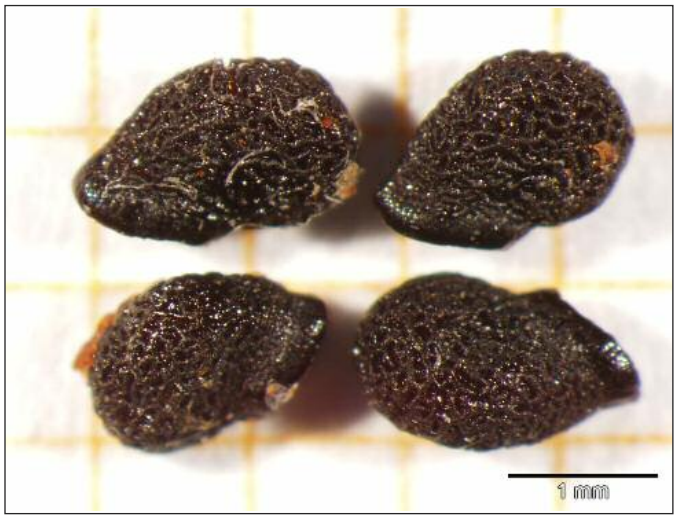


Figure 17b *Morangaya pensilis* seeds under light-microscope: ex W. La Haye s.n., ca. 2.000m (see Corbett, 1998: 69 Abb. 194)

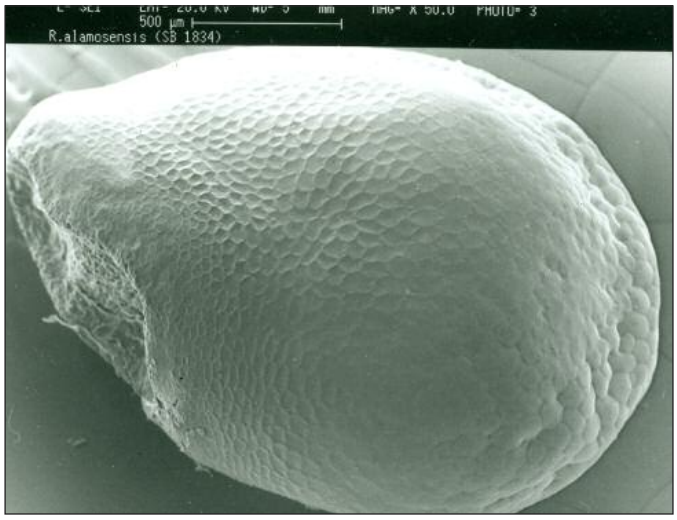


Figure 18a *Stenocereus alamosensis* SB 1834 seed SEM by G. Mettenleiter

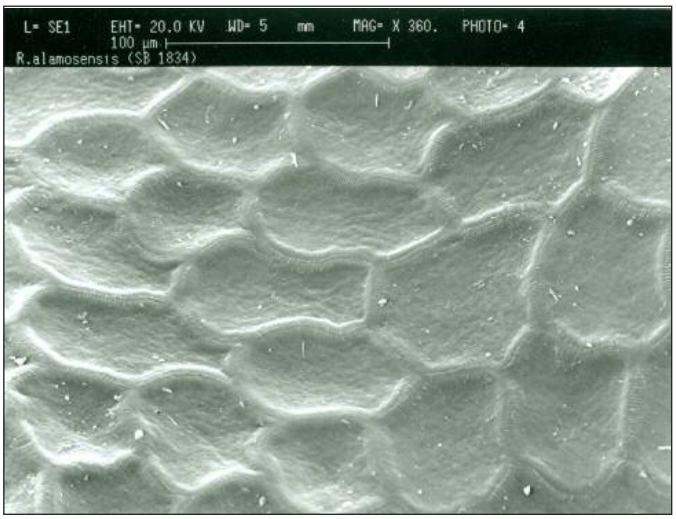


Figure 18b *Stenocereus alamosensis* SB 1834 seed SEM by G. Mettenleiter

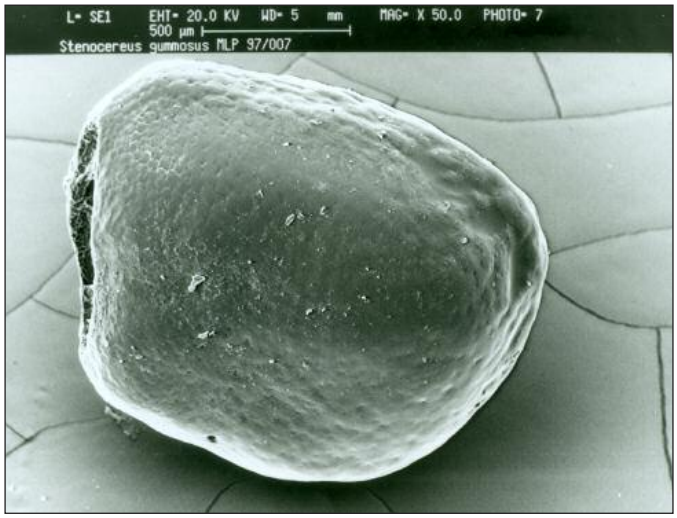


Figure 19a *Stenocereus gummosus* collected July 1997 SEM by G. Mettenleiter

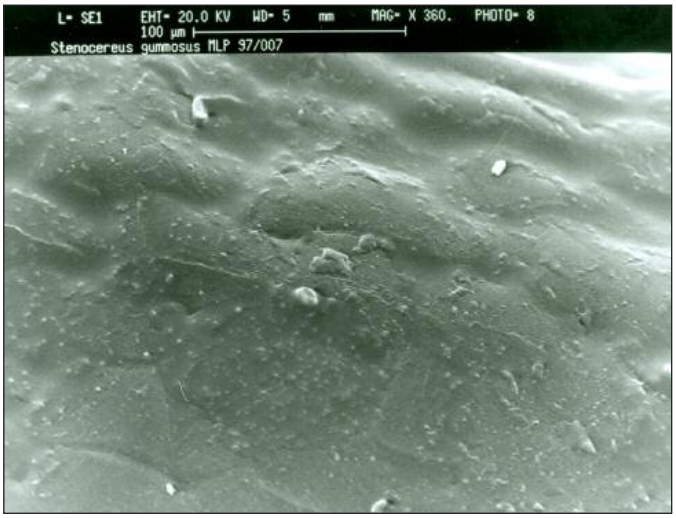


Figure 19b *Stenocereus gummosus* collected July 1997 SEM by G. Mettenleiter

light pink when ageing. Interestingly, we find specimens with really red daytime flowers in the *Rathbunia*-group and also one species with a white night-time flower (*S. standleyi*).

Morangaya itself occupies a middle way between these: The flowers open in late afternoon, stay open all night and fade the next day during early afternoon ; this is altogether about 20 hours of anthesis.

Fruit

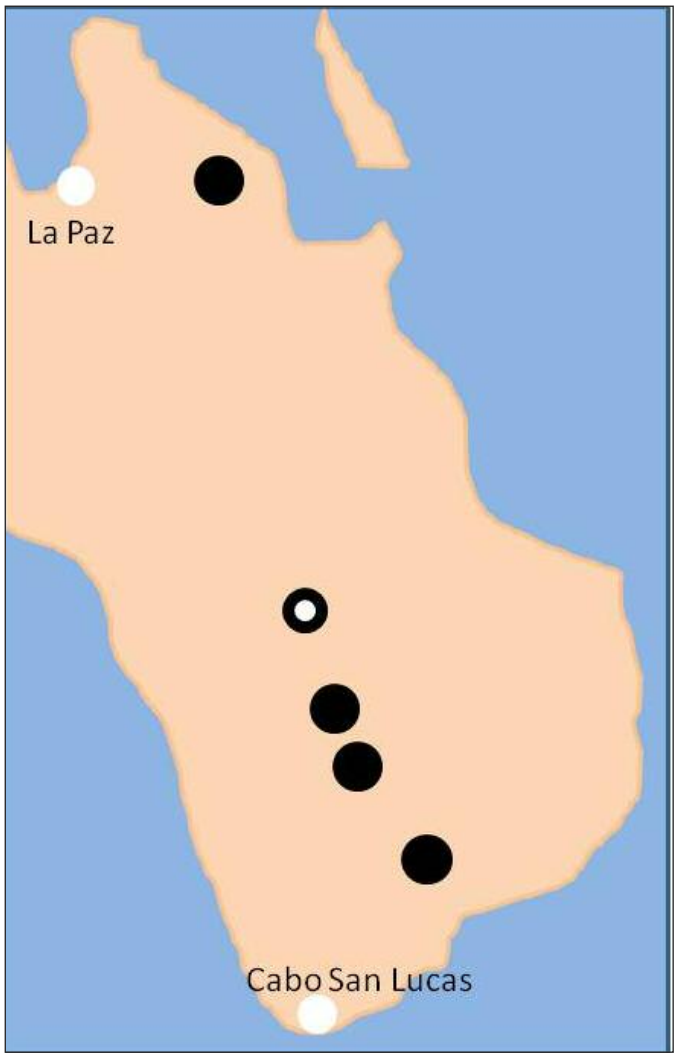
Its not that easy to get *Morangaya* to flower and it is even more problematic to get nice fruits and seeds. I have to admit, I have never ever investigated a *Rathbunia* fruit ! But here are some pictures.

Seed

For about 25 years, I collected seeds, both from undocumented and from plants with field data. Right from the beginning of my investigation, I was able to compare the original SEM for *Lau*050, kindly provided by Dr. G.R.W. Frank (see Frank, 1986), with undocumented (historical) material: I directly recognized that there are huge differences among them. Over the years I ordered more and more SEM-pictures and even today it is not easy to describe a typical seed character for the species. So it is best illustrated!

While seeds of most of the related *Stenocereus* taxa are hard to come by, here in Europe they are best compared by the illustrations provided by Gibson, Barthlott & Hunt (2000: 70 Fig. 15.5) bzw. Arroyo-Cosultchi *et al*. (2006: 986 Fig. 3d).

As a result I have to confirm that it is nearly impossible to compare SEMs with pictures



Map 1 Generalized distribution of *Morangaya pensilis* in Baja California Sur [black spots]: Recently documented populations from north to south: Sierra Cacachila, ca.1000m (Leon de la Luz, 2005), [white doted] presumed type location (Picacho) in Sierra de la Laguna ca.1800m (Römer, 2002, Wolf & Wolf, 1999), Sierra de la Laguna 600m (Breslin, pers. com.), San Pedro de la Soledad ca.900m (Römer, 2002) and San Jose del Cabo, ca.600m (Breslin, pers. com.).

produced by a conventional microscope and seeds from different sources do not look similar !

As a basis for interpretation of the seed characters we should remind ourselves of the diagnosis given by George Engelmann (1859: 28) describing *Echinocereus* seeds.

Following the character of the seed's surface (testa) it is possible to consider *Morangaya* as a member of the genus *Echinocereus* (or as a member of *Stenocereus* whose seed characters are not cited herein). There is a clear affinity to the seeds of *S. standleyi* (see Gibson:287 Abb 6

Figure 20 *Morangaya pensilis* from Sierra Cacachilas, cultivated specimen. Foto Leon de la Luz. For habitat pictures E of La Paz & N of road to San Juan de Los Planes; vicinity of Cerro El Llano, Sierra Cacachilas, all originated by Dr. J. Rebman see: www.bajaflora.org (http://www.bajaflora.org/BajaPhotoSearch.aspx)

Figure 21 A specimen of *Morangaya pensilis* at the so called Todos Santos (600m) site in flower Photograph by P. Breslin.

& 8) respectively to *S. stellatus* (see Barthlott & Hunt, 2000: 70 Abb. 15.1-2). But there is clearly a difference compared to the one species of "*Rathbunia*" available as SEM showing flat polygonal cells, being convex in the ventral part and more concave in the lateral part of the seed. *Stenocereus gummosus* instead is surprisingly smooth (see Barthlott & Hunt, 2000).

Habitat

Although "*Machaerocereus*" is well known

Figure 22 The situation at a well know habitat of *Morangaya pensilis* at ca.1800m, Sierra de la Laguna Photograph by P. Hallmann

Figure 24 P. Berresford visited the same location in 2001 and also photographed the hybrid

from Baja California, *S. gummosus* is also well distributed along the coastal area in the State of Sonora. So we have this species with a very wide distribution and the well known *S. eruca* with a very limited distribution. The rathbunias inhabit the western mainland of Mexico in a stripe between Sonora and Colima.

What I consider a kind of sensation and the background for this report is not the recognition of *Morangaya* as a separate genus but the discovery of a very few populations of the latter. '*Pensilis*' was only known from its type area in Sierra de la Laguna but as of today we have some reports of a more northern area, Sierra Cacachilas (Leon de la Luz, 2005) and more southern area near to the Cape Region (Breslin pers. com.). That leads me to the question, if the species will once become located in the Sierra Gigantea to!

Considering that Baja is well known to many botanists we should still be prepared for some surprises!

Figure 23 In habitat, ca.2011; the thicker bodies belong to the hybrid Photograph by P. Hallmann

Figure 25 P. Hallmann is touching the hybrid, so it is real! Photograph by P. Hallmann

Figure 26 P. Hallmann, in habitat, ca.2011; the thicker bodies belong to the hybrid Photograph by P. Hallmann

A Natural Hybrid

One of those surprises is very obviously the recognision of a natural hybrid in a well known population of *Morangaya* in the Sierra Laguna (if it is not a genetic mutant). So we can only know it by the photographic

documentation from the Sierra de la Laguna. But various cactophiles have been able to bring pictures of that entire plant, but none of them was aware of that entity! Its coming out was just on my desk when putting many pictures together, circumscribing the morphology by in-situ specimens.

In the local cereoid plant community only *Stenocereus thurberi* and *Pachycereus schottii* appear, so one of those is the potential sexual partner.

Summing it all up, it is one thing to philosophize about *Morangaya* in the greenhouse or at a desk or under a microscope. It is another thing and physically much more stressing to find it in nature. So my great thanks are sent out to our Mexican, US-American, French, English, Austrian and German colleagues for providing top secret data to me and very nice pictures to all readers. Especially I want to thank the late Dr. Richard Chr. Römer and the holder of his picture heritage. Richard made the "Cuesta del Infierno" a few times more than a decade ago.

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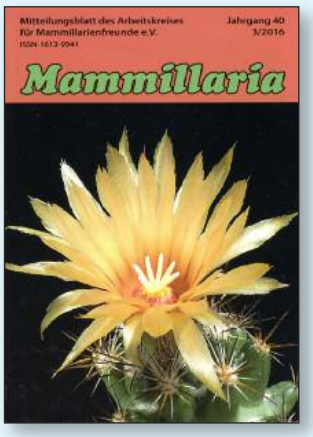

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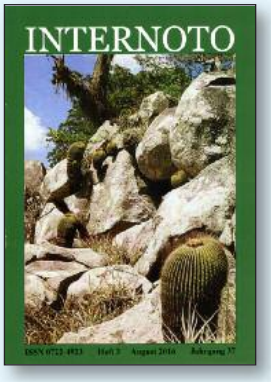

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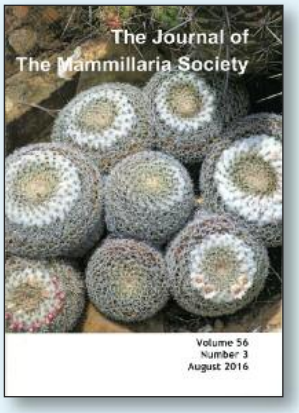

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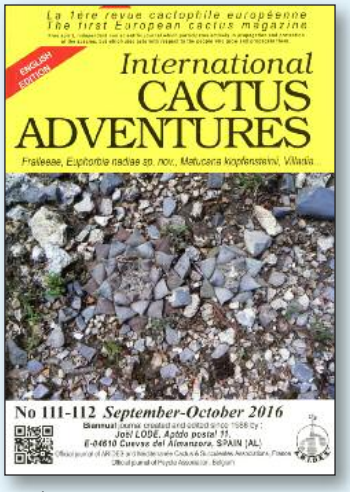

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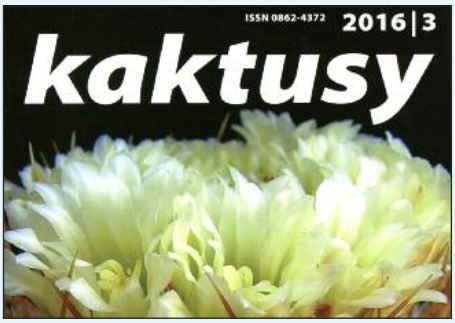

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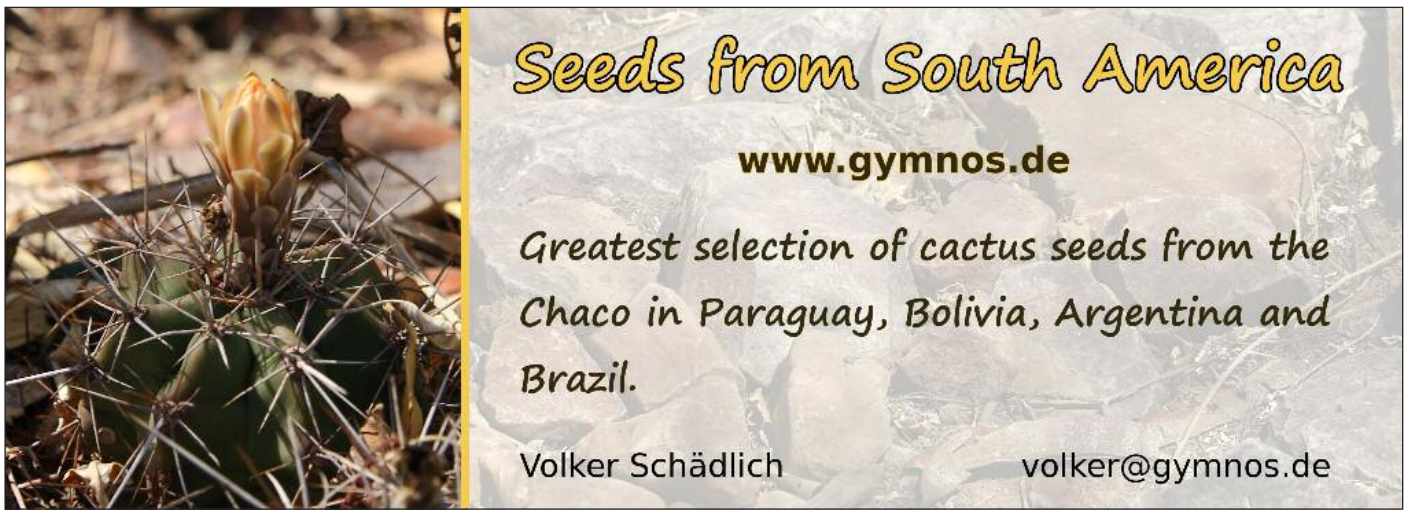

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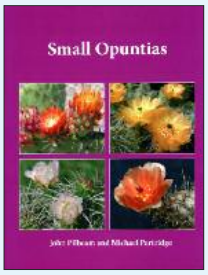

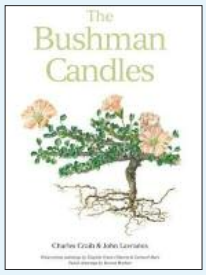

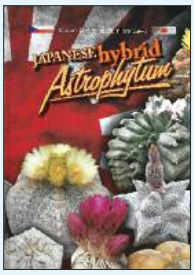

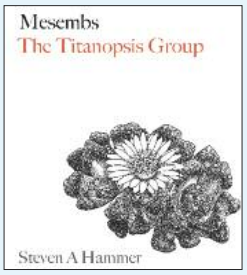

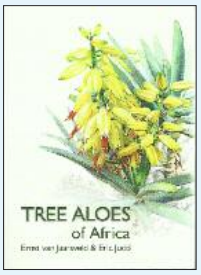

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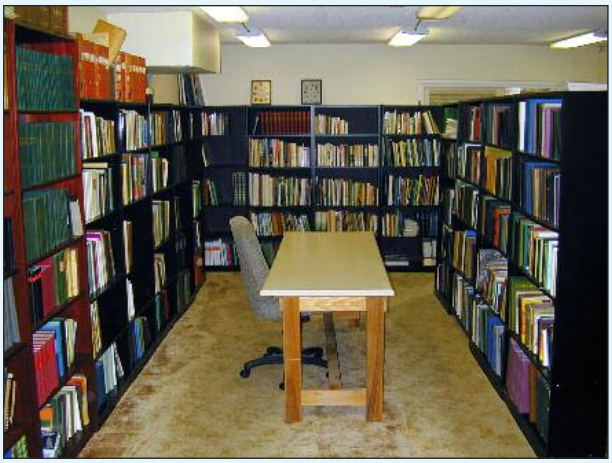

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