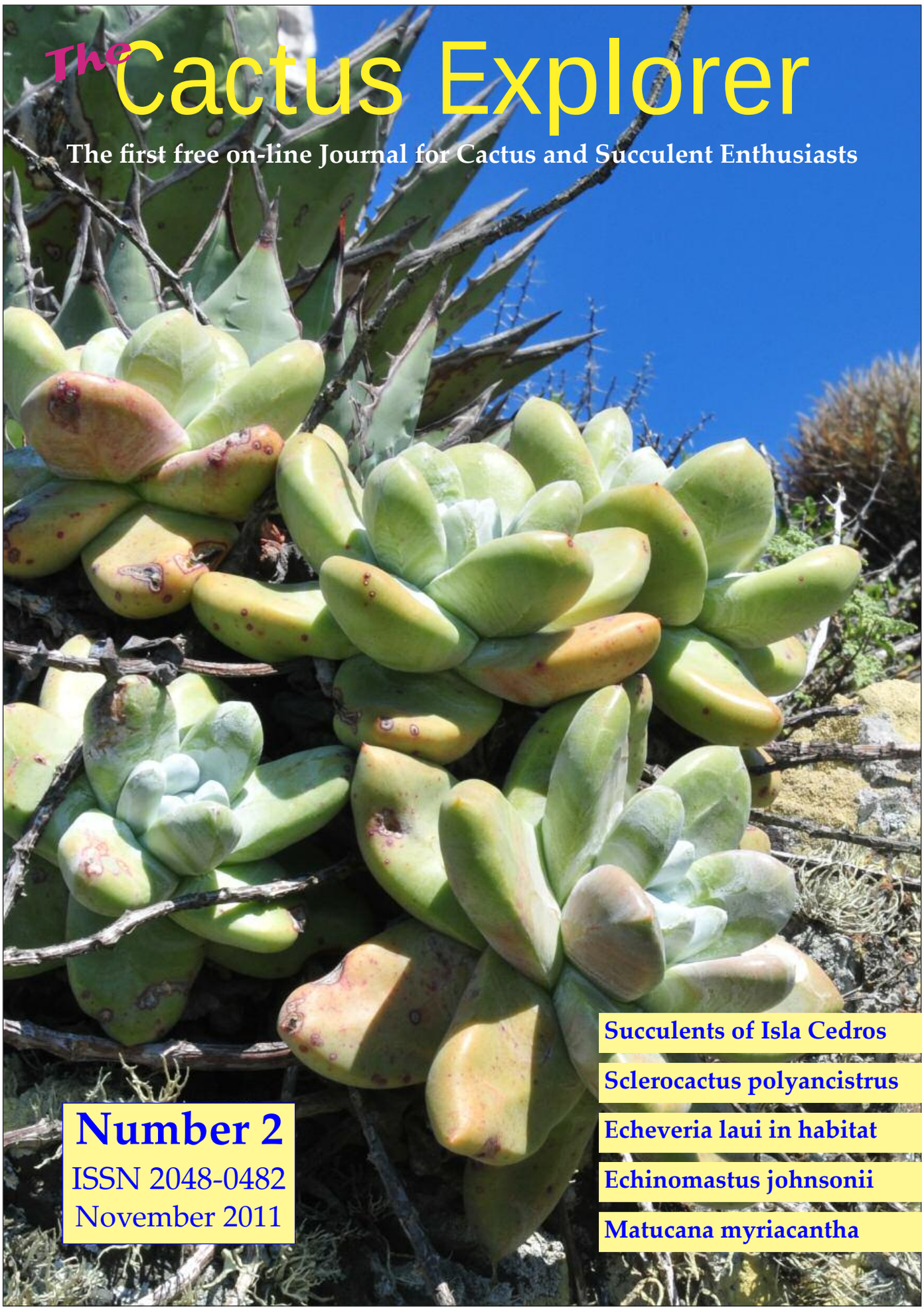

The Cactus Explorer

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

Number 2
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Succulents of Isla Cedros

Sclerocactus polyancistrus

Echeveria laui in habitat

Echinomastus johnsonii

Matucana myriacantha

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

Cover Picture by Paul Klaassen
Dudleya pachyphytum in habitat on Isla de Cedros, Baja California Sur, Mexico. See page 27

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 maximun 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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Introduction

What a welcome!

I have been extremely encouraged by the response to the first issue of the **Cactus Explorer**. Since its publication, I have received hundreds of emails from all around the world saying how enjoyable the journal has been to read and asking to be advised of future issues. So, our challenge is to keep the contents entertaining and relevant to your interest.

I feel that the remit of the journal is still evolving, but there is one thing I can certainly promise. **Cactus Explorer** will always be free as long as I am responsible for its production!

It is a pleasure to welcome Zlatko Janeba to our editorial team. Zlatko lives in the Czech Republic and is well connected in the cactus world. There is a long tradition of cactus exploration carried out by Czech people and it continues today. With Zlatko's help, we hope to bring you articles about their adventures.

It is also our intention to present you with information about aspects of the hobby which you may not already have explored, for instance unusual plants, unfamiliar habitats and literature you may never have seen.

Some of the responses to the first edition have come from traditional Cactus and Succulent Societies and clearly there is some concern about the impact of this publication on their membership. Our intention is that the **Cactus Explorer** will complement the activities of established Societies, not replace them. I also hope that we shall stimulate interest in succulents amongst those who do not belong to any of the existing Societies, particularly the young.

Before our next edition, there will be major changes to the rules of Botanical Nomenclature allowing the publication of new names in on-line journals, like the **Cactus Explorer**, for the first time. Roy Mottram, our expert on these matters, explains the changes on page 8.

The authority to publish nomenclatural changes in our publication is not to be taken lightly. The Cactaceae is already burdened with a vast number of superfluous names, and names at a higher rank than the differences exhibited by the proposed taxa justify. With this in mind, articles containing nomenclatoral innovations submitted to this journal will be subject to review by the editorial group and/or other specialists before being accepted for publication.

It is our intention to publish articles about other succulents as well as cacti. This issue has two such contributions, even though the habitats concerned are in cactus country. I hope enthusiasts for succulents from other parts of the world will share their adventures with us.

You will see that this edition includes articles from many contributors. I am very grateful to them and encouraged by their willingness to contribute. I hope to receive more articles from them as well as from new contributors in the future.

Here in England, our glasshouses are now tucked up for the winter with a hope that it will be less cold than last year. It is a time of mixed feelings, the growing season having come to an end, but the promise of more free time to read journals and books, visit habitats, or write an article for the **Cactus Explorer**. Now there's a good idea!

Graham Charles

The next issue of the **Cactus Explorer** is planned for February 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

Fig.1 Paul Klaassen showing plants of Pterocactus

Fig.2 Jaroslav Snicer selling 'goodies' grown in the Czech Republic

The Seventh Cactus Explorers Club Meeting 2011 by Roland Tebbenham

Photographs by Trevor Wray and Roland Tebbenham

A novice explorer reports on the seventh intensive weekend programme designed to share new information and appreciate the beauty of nature and plants from interesting places. The event was supported by more than fifty enthusiasts, including guest speakers and delegates from Brazil, Czech Republic, Italy, Peru, Sweden and many parts of the UK.

Nineteen sessions were planned spanning habitats from the USA to Patagonia. Though focused on members of the cactus family, other interesting plants were designated honorary cacti for the weekend. Many delegates contributed expert opinions on plant identities, observations on the presenter's intellect, or commented on the quality of the plants illustrated. Some politer interjections were recorded by the author to illustrate the good-humoured atmosphere among the assembled company!

Our first presentation was by Paul Hoxey, who spent seven days in NE Mexico during October after a summer of heavy rain. Memorable images included 25cm diameter flat discs of *Echinocactus texensis* with *Ancistrocactus scheeri* and *Ariocarpus trigonus* at 200m. By contrast the cereoid *Stenocereus pruinosus* makes large columns near Monterrey [NL]. Another contrast was the very cryptic *Astrophytum caput-medusae* found by Paul under bushes. This led to a discussion on the closest Astrophytum habitat – probably *A. asterias* in Texas. Paul featured favourite dwarf plants enjoying gypsum substrates and canyon walls, where competition is limited: *Mammillaria candida*, *Aztekium hintonii* and *Ariocarpus retusus* with white flowers, tinged pink. Paul journeyed to N Zacatecas seeking *Escobaria lloydii* at 2200m, but did not find any plants. However, he showed *Escobaria dasyacantha chaffeyi*, *Cylindropuntia tunicata* and many other nice cacti including a 2m tall *Echinocactus platyacanthus*. Finally to limestone rock pans at 1200m in N Coahuila, where Paul concluded his talk with memorable images of a large population of *Mammillaria luethyi*. The fine images reminded the audience why Mexico is rewarding exploration territory for cactophiles.

Martin Lowry stepped up to tell us about his Bolivian trip with John Carr and a Brazilian botanist during April/May-2011. They found some unexpected plants and others with differences that may revise synonomy. He started in the wet, hot tropical forests of the E Andes near the Rio Pirai (in Santa Cruz), where they found *Cleistocactus candelilla*, which appeared distinct from *C. dependens*. As they journeyed west into thorn scrub the habitats were dryer and they found *Corryocactus sp.*, *Weingartia neocumingii* subsp. *pulquinensis* and *Parodia comarapana*. The first honorary cacti featured; an Echeveria and a Bomaria [bulb]. Moving to higher altitudes *Austrocylindropuntia floccosa* with many fruits were seen above 4000m and *Lobivia maximilliana caespitosa* at 4600m: these are truly tough plants! Crossing the range we were challenged to identify a cereoid growing at 2400m – knowledgeable folk offered (correctly) *Yungasocereus inquisivensis* – a tropical forest species here found further north and east than previously. John Pilbeam enjoyed more Echeverias on canyon cliffs at 3600m. Moving towards Sucre we saw many Echinopsis, Parodia and Sulcorebutia plants, the latter including *S. purpurea* at 3000m, corresponding to *Lau* 331. South of Sucre in the area of the Rio Pilcomayo and its tributaries Martin commented that the original

Fig.3 Seedlings of Mexicn cacti grown in the Czech Republic by Jaroslav Snicer

Fig.4 Chris Pugh and Brendan Burke in discussion... planning another visit to South America?

habitat of Cintia had mostly been destroyed by roadstone quarrying. Around 3800 - 4000m *Lobivia lateritia* (or forma 'ferox') and Weingartia were evident together with *Ephedra americana* whose berries can be chewed to reduce hunger pangs owing to the effects of ephedrine. Martin continued without some thirstier explorers, who sneaked off to the bar; also the writer, who missed a few details owing to the effects of the excellent wine served at dinner! Fortunately I was awake to see some large Neoraimondia and interesting *Gymnocalycium pflanzii/zegarrae*, the latter extending their known distribution records. There was considerable discussion amongst the audience because the area needs more detailed exploration.

After a good breakfast on Saturday, the audience gathered for an interesting historical perspective from Roy Mottram titled 'The Linnean Cactus Legacy'. Following a brief summary of the life of Carl Linneaus [1707-1778] Roy guided the audience through the twenty-two cacti published in Species Plantarum [1753]. Since no herbarium specimens were cited, identification was frequently by reference to images published by Linneaus and others. Roy had researched the images, source publications and linked those details to modern phytogeographical data and contemporary taxonomy. So he was able to explain which images were defined as lectotypes and what names are applied at present for the majority of the species from *Cactus mammillaris* to *Cactus portulacifolius*. This was the first application of binomial nomenclature to the Cactaceae; oh how far have subsequent explorers progressed.

Roy's historical tour de force was followed by Paul Klaassen, who explained explorers' difficulties finding and identifying plants in habitat, notably *Copiapoa esmeraldana* from four well-known Chilean locations: Las Lomitas, Secret Valley, Quebrada Guanillos and Quebrada La Madera. Reference to Google-Earth maps and GPS location data from many explorers set the scene. He showed us examples of *C. grandiflora*, *C. laui* and many *C. esmeraldana*, many of the latter were partly buried by their tap roots drawing them down and consequently difficult to locate. Paul's excellent photographs coupled with images taken by Marlon Machado and Juan Acosta at different seasons emphasized the striking scenery and wonderful plants of a most desirable genus. He concluded with views of the endemic *Eulychnia sp.*, or nature's natural fog nets as he called them. The generic name Eulychnia means 'beautiful torch' or maybe as Paul suggested 'wonderful firewood'! They fit within Graham Charles' group defined as 'plants best left in habitat', though seedlings and young plants of *E. iquiquensis* can be very attractive.

After coffee we were transported back to Mexico, specifically Oaxaca in the south of that country, where Rick Gillman had been exploring mountains up to 3500m. *Pachycereus weberi* with *Bursera schlechtendalii* above cliffs made a fine introduction, together with *Mammillaria tlalocii* and *M. huitzilopochtli*; they were followed by traditional bulky *Ferocactus latispinus*, *Fouquieria purpusii* and lovely clumps of *Mammillaria crucigera*. One highlight for me was a view of rare cycad *Dioon califanoi*, interesting for others because of many epiphytic Mammillarias on them. More large *Ferocactus haematacanthus* and fine *Mammillaria mystax* with long, curved central spines maintained our attention. *Cephalocereus totolapensis* with ring cephalia [locally the 'totolapa'] and *Melocactus oaxacensis* [= *curvispinus*] with pink flowers drew the talk to a close, but Rick had a short test for the audience echoing the previous presentation by Paul. He showed multiple images of Mammillaria species for identification – there were many opinions expressed, with John Pilbeam asking a familiar question: "Where was it?"

Marlon Machado sought to educate us with his detailed presentation 'DNA and Modern Cactus Systematics'. He outlined the meanings of 'Taxonomy' and 'Systematics', the significance of common ancestry, and explained how DNA studies can facilitate insights into the classification and evolution of members of the plant kingdom. DNA extraction is a complex process presently conducted with the aid of machines; then the sequencing of the selected region of the DNA molecule produces data to be used to compare a number of taxa. Marlon explained 'Cladistics', but our schedule forced us to wait to see his results until the following day. He concluded part-one with the Gordon Rowley definition of DNA – 'Darn Nasty Answers'. [You can download the pages from Marlon's talk as a PDF here]

Fig.5 Aldo and Daina Delladdio from Italy

So the morning had ranged over literature, contemporary science, identification challenges in habitat and lovely plants. We needed some lunch and a stroll in the botanic gardens. The sundial on Beaumont Hall offered us all an exhortation [Fig.7]: 'Number not the hours unless it is clear'. Might it be interpreted for practitioners of Plant Systematics as 'Define not a new phylogeny unless the DNA data are clear'?

After lunch Zlatko Janeba took us to various SW USA locations to see Sclerocactus habitats, some with only a few plants evident, others with more numerous examples showing natural variation of appearance and flower colour. The talk began with examples of *Pediocactus sileri*, *Sclerocactus whipplei* and *S. mesae-verdae* the last just one seedling in the barren Shiprock Canyon. Thence to Natural Bridges National Park to see some fine *S. parviflorus* with 20cm spines and yellow flowers. Zlatko visited Utah where he found *S. wrightiae* together with *Pediocactus winkleri*, and *S. spinosior* with Yuccas. More species inhabit Nevada: *S. pubispinus* near to Wheeler Peak [3890m], *S. nyensis* and *S. polyancistrus* grow together at Silver Peak, the former preferring slopes, the latter flatter areas. Finally we saw *S. polyancistrus* in California with lizards and snakes, and *S.* (*Toumeya*) *papyracanthus*. Zlatko commented on the large black seeds of the genus and in response to the question "How do you get them to germinate?" he said "I just put them on the soil and I wait"; cue applause.

Peter Berresford is an 'Echinoceriphile' and he engaged us with three tales of hunting for them in Texas and Mexico. He emphasized the need for detailed planning and contact with local experts and park rangers. He explained the complex geology of the Solitaro Dome in the Big Bend Ranch State Park, the significance of the hard novaculite rock (a form of chert or flint) and showed us, amongst other cacti on route, *Echinocereus viridiflorus* var.. *canus*. This variety,

Fig.6 Participants enjoying lunch in the garden of Beaumont Hall

discovered in 1984, is interesting for its long-spined juvenile form, contrasted by the shorter-spined adult form. It can be compared to *Echinocereus neocapillus*, which is found on novaculite chert in the Marathon Basin. By contrast, exploring in Mexico presented different problems when seeking *E. laui* in a deep canyon of the Sierra Oscura. He showed us *E. scheeri*, *E. salm-dyckianus* and *E. laui*, the latter in flower on mossy rocks in a shady region rich in Tillandsia species. Peter's third tale was of *Echinocereus fitchii* ssp. *albertii*. This has been found at three low-elevation sites close to the gulf coast of east Texas. The third site was the most productive since a conservation-minded rancher had maintained the habitat, consequently many plants were evident with their showy pink flowers. These were tales of intrepid exploration!

Paul Klaassen gave a second short talk on S American plants after tea; the subject was Pterocactus and we saw habitats east of the Andes and into Patagonia. *Viola cotyledon* and *Senecio sp.* inhabiting cold, high places as do *Pterocactus australis* and *Austrocactus bertinii*, the latter at 3000m and 4ºC daytime temperature. Crossing to the east coast of Patagonia the latter species is also found at sea level and 44ºC; this is a very tolerant species! Then we saw *Eriosyce aspillagae*, *Pyrrhocactus villicumensis* and more Pterocactus plants. The latter prompted Roger Ferryman to comment "The only genus I know that looks better dead". However he uttered a follow-up when some Echinopsis plants came into view: "Sorry, two genera that look better dead".

Aldo and Daina Delladdio from Italy [Fig.5] had visited areas near Cordoba and Salta in Argentina early in 2011 after very heavy rain and Aldo showed us views of green landscapes that drew gasps from explorers who had travelled there in dryer seasons. We saw many familiar genera: Trichocereus, Lobivia, Parodia, Harrisia and Gymnocalycium and (the honorary) *Jatropha curcas*. The most striking were some very spiny *Gymnocalycium spegazzinii* and Oreocereus. Finally, another highlight were the very large plants of *Pyrrhocactus umadeave* with many fruits.

Fig.7 The sundial on Beaumont Hall

After dinner we explored Epithelantha with Jaroslav Snicer [Fig.2], who has made a number of trips to Mexico and found many interesting plants. Zlatko translated for Jaroslav, who does not speak much English. *E. unguispina* plants' appearance seems to be dependent on local geology, as does the associated vegetation. We saw a sequence of nine images emphasizing the extremes of spination from short white to 2cm black-tipped centrals. We 'diverted' to enjoy the new *Acharagma huasteca* [see CactusWorld 29(2):105-6, 2011] and a dark-flowered *Stenocactus multicostatus*. Returning to *Epithelantha bokei* we compared two types either side of the Rio Grande followed by four subspecies of *E. pachyrhiza* and various *E. greggii*. Both speaker and translator received well-deserved applause.

The assembled company was in boisterous mood after dinner when Trevor Wray stepped up to inform and entertain us with his talk 'Old and Neosclerocactus'. He showed images from a SW USA trip made in 2010 starting with *Echinomastus lutescens* in flower, or '*Neosclerocactus lutescens*' according to Trevor, followed by nice *Echinocereus engelmannii* and *Echinocactus polycephalus*. Visiting Colorado and Utah Trev showed us amusing signs, interesting geology and different habitats of *Sclerocactus glaucus* and *S. wetlandicus*, one of the latter with seven heads and dark flowers. He also found *S. brevispinus* near an oil-drilling site and provoked audience reaction with images of his smallest and largest *S. wrightiae* plants. He signed off with a plant of *S. nyensis* covered in flowers and proved a popular speaker because, despite interjections, he finished ahead of schedule, leaving more time for discussion and transactions over the bar.

Day three began with another interesting report from Paul Hoxey on a brief stopover in Colombia during April, between the two wet seasons. He visited Sagomoso in east-central Colombia in the Andean Cordillera Oriental, at an elevation of around 2500m. He hired a guide and visited the valley of the Rio Chicamocha. *Browningia hernandezii* was described from Colombia some four years ago, a disjunct distribution


Fig.8 'Conversation among friends'. Part of the sculpture exhibition in the gardens of Beaumont Hall

from the other species in Peru, N Chile and S Ecuador. *Mammillaria columbiana* '*bogotensis*' was growing on mossy rocks at 2500m and Chris Davies commented that this is a new record for that species. Paul also saw *Melocactus andinus* ssp. *hernandezii* at 2600m alt, the highest record for a Melocactus according to Nigel Taylor. *Browningia hernandezii* with ripening fruits may be related to *B. microspermus* from Peru and S Ecuador. Paul drew his traveller's tale to a close by showing us other members of the local flora: Peperomia, Furcraea, Asclepias and Passiflora, before engaging John Pilbeam in an 'Echeveria identification match' – two from three correct – *E. quitensis*, *E. ballsii*, but not *E. bicolor*. However Paul showed images of two other unknown species, so more exploration is needed to retrieve material for study and science.

Dorothy Minors was heralded as the first lady explorer to report back to the group when she spoke about her discoveries in Uruguay. She had researched Volume 2 of 'Flora Uruguaya' by Prof. J. Arechavelata (1838-1912), which covered the cacti growing there. Some names have changed since publication and Dorothy noted that *Parodia sellowii* has 58 synonyms; whatever it is called we saw many during her presentation. Other Parodia species were growing in coastal habitats including *P. apricus* (= *concinna*) and *P. scopa*. Honorary cacti included *Senecio crassifolius*, *Eryngium sp.* and the spiky shrub *Colletia paradoxa*. Moving inland Dorothy saw *Parodia ottonis*, *P. mammulosa* and *P. herteri* with shocking pink flowers; also *Echinopsis oxygona* and *Gymnocalycium uruguayense*. The ubiquitous *P. sellowii* provided her epilogue near the Brazilian border.

Martin Doorbar had spent three years in USA during

which he visited five notable habitats. His title 'Five Star Habitats' referred to the ratings of the hotels he used during his stay! Plants at Joshua Tree NP included *Opuntia bigelowii*, *Echinocereus engelmannii*, *Escobaria vivipara* and large red-spined Ferocactus. A CSSA Convention off-road trip to Anza-Borrego Desert State Park near San Diego yielded more Ferocacti, *Fouquieria splendens*, *Dudleya saxosa*, *D. arizonica* and nice *Mammillaria dioica*. Another CSSA trip to Redington Pass and Martin snapped more Mammillarias, Ferocacti with *Echinocereus rigidissimus*, *Echinomastus erectocentrus*, *Escobaria vivipara* and the iconic *Carnegia gigantea*. Monument Valley featured the striking rock formations and Yellowstone Park many geothermal springs, nice Sedums and bears. Martin signed off with views of the Kennedy Space Museum in Florida.

Marlon picked up the thread of his presentation 'DNA and Modern Cactus Systematics'. This featured some results that illuminated the phylogeny of the Cereeae, but since he expects to publish the details, I will not steal his thunder here. Marlon also investigated the evolution of cephalia to check generic circumscription and we await his results eagerly.

Zlatko reprised parts of his 2010 BCSS Convention presentation, but with many additions. His expert photography rendered the audience silent, save for gasps of appreciation of beautiful plants, far too many to list here. He roamed far and wide and some of the most arresting images were of *Thelocactus hexaedrophorus* with spine-colour variations, long-spined *Echinocactus horizanthalonius* and neat groups of *Mammillaria pottsii*. *Lophophora williamsii* were cryptic in silty mud with Epithelantha and big, old Leuchtenbergia on the stony slopes above. We saw some recent discoveries including *Acharagma huasteca*, *Mammillaria roemeri*, *Agave albopilosa* with terminal tufts and *Astrophytum caput-medusae* growing in sunny flat areas in Nuevo Leon. Zlatko completed his tour with beautiful images of *Echeveria colorata* and a host of Mammillarias.

After lunch we gathered around a table for a short demonstration and interactive session on Austrocactus and Pterocactus plants by Paul Klaassen [Fig.1]. I recall three comments heard during the session. "The nomenclature of Austrocactus is very confused." "He has a greenhouse packed full of all three species." "Some people ask me if they are dead … I will tell you next spring."

Marlon returned to tell us about some of his extensive explorations in some less well-travelled areas of his native Brazil. He started with views of a new Arrojadoa (to be published in Bradleya #30); it has large purple flowers reminiscent of *A. penicillata*, but the body similar to *A. dinae*. Following signs of habitat destruction he searched for *Melocactus azureus* at fourteen limestone rock areas with Paul Klaassen and Cliff Thompson and found plants on all of them. Discocactus plants are sought after by enthusiasts and Marlon visited a region near the Bahia/Pernambuco border. There he found the new species *D. petr-halfari* , noting both *D. bahiensis* and *D. zehntneri* within a few kilometers. *D. petr-halfari* may have originally been a natural hybrid now exhibiting intermediate characteristics. *Coleocephalocereus buxbaumianus* with hypertrophic spine development were growing on inselbergs in Espirito Santo amongst agricultural crops.

Discocactus caatingicola is the most widespread Disco in Brazil and Marlon saw many in Goias and Tocantins; also on Bambui limestone he found the columnar plants *Siccobaccatus estevesii* and *Cereus pierre-braunianus*. Mato Grosso do Sul adjacent to Paraguay and Bolivia is known for cattle and soya bean crops. Albert Buining described nine Discocactus taxa from that region and Marlon found most of them. 'Straying' into Bolivia we saw *Stetsonia coryne* and *Gymnocalycium anisitsii* and more Discocacti. Finally in Paraguay, Discocacti shared their habitat with nice spiky Dyckias. My highlights were the many beautiful Discocacti – quite difficult plants, but rewarding when they thrive and flower.

Graham thanked all the speakers and bade us farewell; John Arnold echoed the appreciation of the audience by thanking Graham for organizing the event. The nineteen talks included tales of intrepid travels, scholarship, science, encouraged debate and fostered good humour. Alternatively one of the sculptures in the exhibition staged within the botanic gardens summed up the event neatly – conversations amongst friends [Fig.8]. I look forward to the eighth event.

Roland Tebbenham

The next meeting of the Cactus Explorers Club will be at Beaumont Hall, Leicester, UK September 14-16th 2012
http://www.cactusexplorers.org.uk

Changes to the Code for e-publishing

Important changes to the new International Code of Nomenclature for algae, fungi, and plants (ICN – formerly ICBN)

The rules for forming and publishing new names of plants, fungi and other organisms "traditionally treated as plants" have been revised at the 18th Botanical Congress in July. The new Melbourne Code, replacing the Vienna Code of 2005, has not yet been published but will appear in mid-2012.

A preliminary paper, published online on 14 September, outlines the principal changes and provides a draft text of the new articles dealing with electronic publication, and certain recommendations. This can be viewed in a number of online botanical publications, such

as on the free:

Knapp, S.; McNeill, J.; Turland, N.J. (2011). "Changes to publication requirements made at the XVIII International Botanical Congress in Melbourne - what does e-publication mean for you?". PhytoKeys 6 (0): 5-11.

The two most important and rather revolutionary changes, both of which will come into effect on 1 Jan 2012, involve electronic publication of new names and a relaxing of the requirement for a Latin description or diagnosis.

From the beginning of 2012 it will be possible to validate new names in any online journal that is in Portable Document Format (PDF) and bears an International Standard Serial Number (ISSN) or an International Standard Book Number (ISBN). Descriptions and diagnoses may be either in Latin or English. Authors will still be required to deposit specimens with a recognised herbarium, as previously.

The **Cactus Explorer** journal meets these requirements as an effective place to publish new plant names, and the rapid speed with which this can be achieved from the receipt of a manuscript to appearing online will no doubt henceforth encourage many to send their first descriptions of new plants to this journal. The editorial team will subject all such articles to peer review before publication.

Authors will have a free choice on whether to submit new descriptions to The **Cactus Explorer** journal in English only, Latin only, or English and Latin. Recommendation 29A on archiving will be satisfied by the automatic deposition of The **Cactus Explorer** journal in the BCSS eLibrary, and with a link from the free access library of CactusPro.com.

Roy Mottram

A Great Day Out in England 2012

Every four years, The BCSS organises its National Show and 2012 is the next. If you are planning to be in Britain in August, maybe for the Olympic Games, it's an event not to be missed. The venue is about one hour's journey north of London, near to the A1.

The competitive show has 134 classes and attracts the best plants in the country. As well as the show, there are lots of trade stands selling plants, so a great day out is guaranteed. We will publish more details nearer the day but in the meantime, make a note of the date: The BCSS National Show Saturday 18th August 2012 at Wood Green Animal Shelter, Godmanchester, near Huntingdon.

You can find out more about the Show from the BCSS website

GC

Chuck Hanson

Many readers will know Chuck from his pioneering work propagating rare succulents. He ran the Arid Lands Nursery in Tucson, Arizona for many years, giving us the chance to buy his propagations of plants we may otherwise never have had the chance to grow.

He became very interested in orchids and after selling his nursery, bought a plot of land in Pangui, Ecuador and built his home there. It is a tropical paradise and, after just a few years from a clear site, his garden is already looking

quite full.

Having corresponded with him about the cacti of Ecuador, I joined him in February 2011 for a trip around the south of the country to look at the plants in habitat. Chuck is planning to study the cacti of Ecuador with a view to writing about them in the future.

His wife, Karen, retired from her job in the USA this year and now she has joined Chuck and the Dachshund dogs in their home at Pangui.

GC

IOS Meeting to be held in Cuba

The next Congress of the IOS (International Organisation for Succulent Plant Study) will be held in Cuba from July 3rd- 6th 2012. In addition to a programme of lectures, there will be some field excursions to see the country's native succulents. Anyone interested is welcome to attend. Details here.

The IOS is a group of people with an active interest in studying various aspects of succulent plants, including botany, conservation and cultivation. The congresses

are for the presentation of results and discussion on current study topics. Abstracts of lectures presented at the congresses can be seen at http://www.iosweb.org, together with other information about the IOS.

The annual publication Repertorium Plantarum Succulentarum lists all new names of succulents in all families, together with a bibliography of new publications.

Len Newton, President IOS

RHS Lindley Library news

In July 2011, the Lindley Library of the Royal Horticultural Society suffered a small fire in the Library's main stack room on the lower ground floor, London, thought to be the result of an electrical fault. This was detected and quickly brought under control, but it generated a great deal of fine soot. The items affected have been sent away for decontamination. Meanwhile the London library will be closed to all visitors until some time in 2012, but items may still be borrowed if arranged by telephone or online.

The Lindley Library began a series of occasional papers in December 2009 featuring rare books in the library, and so far six issues have been published. These are available here and may be read or downloaded free.

Vol.3 is devoted to Charles Darwin and his contemporaries, with some rare portraiture. Vol.5 deals with eighteenth C. science in the garden, focussing particular on Philip Miller and John Hill. Vol.6 is a history of the Wisley Garden, with many archive pictures.

Roy Mottram

Recent New Descriptions

A new species of the genus Strombocactus, *S. corregidorae* S.Arias et E.Sánchez

Zlatko Janeba tells us more about the new Strombocactus mentioned in the last issue.

Photos by E. Sánchez

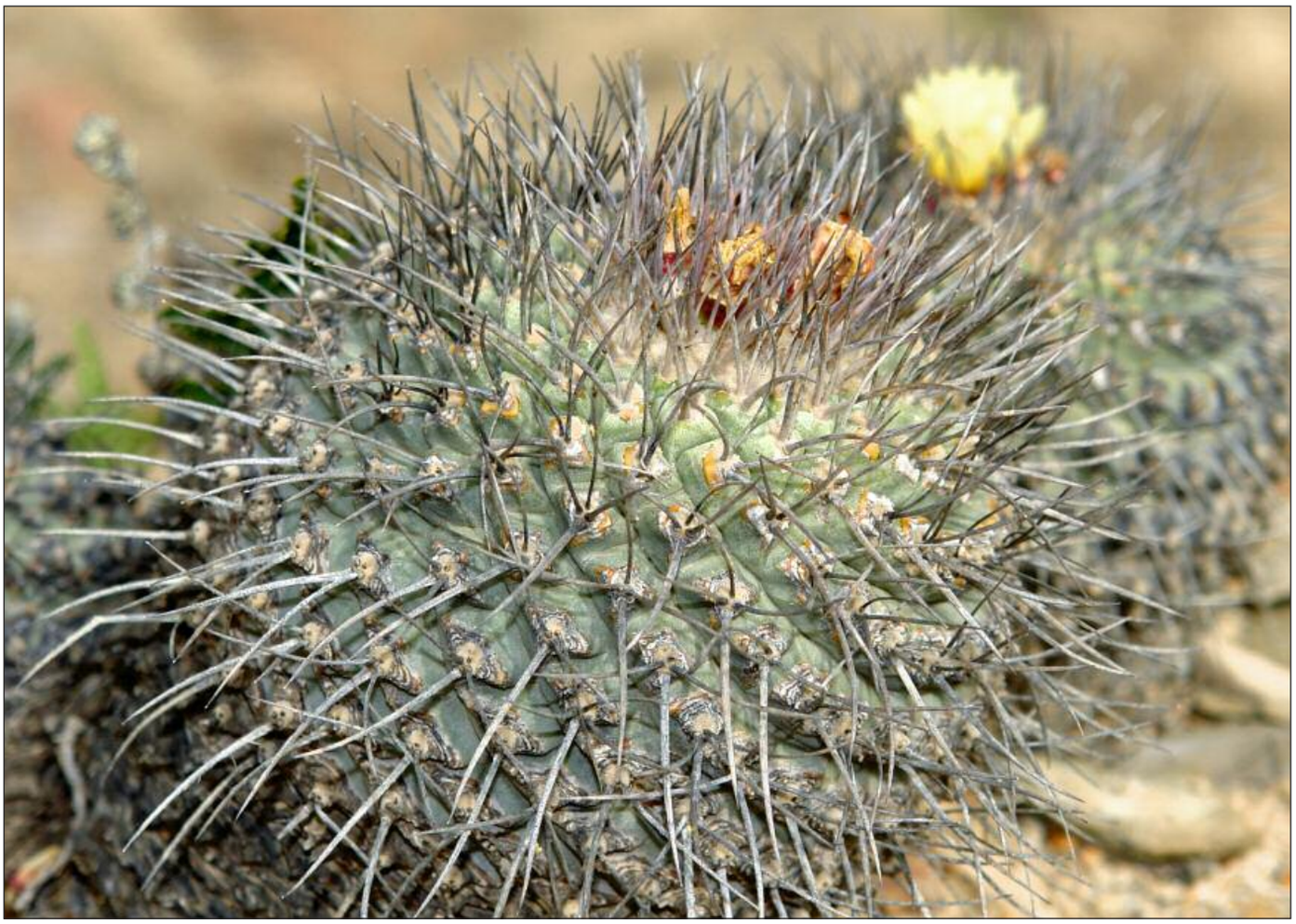
A *Strombocactus corregidorae* group growing in habitat.

Personnel of the Cadereyta Regional Botanic Garden descending the steep slope to reach a population of *Strombocactus corregidorae*.

Strombocacti are among the most popular and highly-prized of Mexican cacti and even laypersons can unhesitatingly identify plants belonging to this interesting and attractive genus. Until last year, only two taxa of the genus were generally accepted: *S. disciformis* and *S. disciformis* ssp. *esperanzae* (also known by the later name *S. pulcherrimus*). Although the magenta-flowering ssp. *esperanzae* was described relatively recently (Glass & Arias, 1996), very probably no one in the cactus world would ever have dreamt that yet another species of this ecologically highly specialized cactus genus would be found.

The genus Strombocactus was created by Britton & Rose (1922: 106) for the plant first described by De Candolle (1828) as *Mammillaria disciformis*. Later, the new genus was shown to be a part of a clade including other attractive North American genera such as Ariocarpus, Epithelantha, Pediocactus, and Turbinicarpus. Perhaps a little bit surprisingly, no direct relationship with the genus Aztekium was found (Butterworth & al., 2002).

The genus Strombocactus is endemic to the Mexican state of Querétaro, the western part of Hidalgo, and an extreme eastern region of Guanajuato. The newly described *S.corregidorae* was found in the Infernillo Canyon (Barranca del Infernillo) on the Querétaro – Hidalgo border. So far, the distribution includes only three, relatively small localities, discovered



Close-up shows the strong spines that characterize this species.

during the process of monitoring activities in the Infernillo Canyon on the Moctezuma River, thanks to a study of the ecological impact of the development of water supplies for the city of Querétaro. This interesting cactus grows in the lower parts of the Barranca del Infernillo at an elevation of 1500m, on very steep slopes with other cacti including *Echinocactus platyacanthus*, *Astrophytum ornatum*, and various Opuntias. The habitat and microclimatic conditions here are similar to those of the other two Strombocactus taxa, as well as species of Aztekium and Geohintonia.

According to the description and the pictures from the field taken by E. Sánchez, the new Strombocactus species differs from *S. disciformis* quite markedly in a number of vegetative and reproductive traits, with a much larger stem up to 23cm tall, compared to the 12cm of *S. disciformis*, longer and stronger spines of 2-3.5cm compared to a maximum of 1.5cm, which are blackish and persistent, compared with the deciduous spines of *S. disciformis*, and pure yellow flowers without the reddish centre of *S. disciformis* ssp. *disciformis* and of a slightly larger size. The most important distinguishing feature taxonomically seems to be the seed of *S. corregidorae*, with flat periclinal cell walls and finely reticulate micro-relief. Based on the important characters of the seeds and flowers, the status of the new taxon was chosen to be that of species rather than subspecies.

The specific name honours doña Josefa Ortiz Girón (1773-1829), in the history of Mexico also known as Josefa Ortiz de Domínguez (La Corregidora de Querétaro), who was an insurgent and keen supporter of the Mexican War of Independence (1810-1821). Thus, the specific epithet and the timing of the first description (2010) reflects the 200th anniversary of Mexican liberation on 16th September 1810.

One of the authors of the new description has kindly sent some pictures with captions to

be shared with the readers of The **Cactus Explorer**. Emiliano Sánchez also insisted on reminding all cactophiles and hobbyists of the importance of conserving this and other Mexican cactus species in their habitats. Although I completely agree on this, there are two other important issues: conservation of the habitat itself (the biggest threat currently being the proposed construction of a dam) and the controlled introduction of this potentially sought-after rarity into cultivation. Hopefully, the demand for this new species will be satisfied without any unwarranted disturbance to its natural habitat.

Literature:

Arias-Montes, S., & Sánchez-Martínez, E. (2010) Revista Mexicana de Biodiversidad 81: 619-624.

Britton, N. L. & Rose, J. N. (1922) The Cactaceae 3. Carnegie Institution, Washington.

Butterworth, C., Cota, J. H., & Wallace, R. S. (2002) Systematic Botany 27: 257-270.

Glass, C., & Arias-Montes, S. (1996) A new subspecies of Strombocactus from the Sierra Gorda in the northeastern portion of the State of Guanajuato, Mexico. Brit. Cact. Succ. J. 14(4):200-204

ZJ (desert-flora@seznam.cz)

A new species of Agave is described

A recent article in Acta Botanica Mexicana 95: 65-94 (2011) reviews *A. victoria-reginae* and its relatives, describing *A. pintilla* as new.

This taxonomic revision shows that *A. victoriae-reginae* represents a complex of three species. *A. victoria-reginae* with two subspecies: ssp. *victoriae-reginae* (western Nuevo León and eastern extreme of Coahuila) and ssp. *swobodae* (southern Coahuila and north-eastern Durango)

Also included are *Agave nickelsiae* from southeastern Coahuila and *Agave pintilla* (the most westerly distributed species in the group, from south-eastern Durango) which is described as new. The name *A. nickelsiae* is reinstated. There is a key to the taxa as well as ammended descriptions of some taxa.

No natural hybrids were found among the taxa of the *Agave victoriae-reginae* complex but three natural hybrids with other species are recorded: *A. nickelsiae* x *A. asperrima*, *A. nickelsiae* x *A. lechuguilla*, and *A. pintilla* x *A. salmiana* ssp. *crassispina*.

You can download the whole PDF article (in Spanish) from here

Where to find valid plant names

People often enquire about a particular plant name and ask what it is. Many names found on plant labels have not been validly published according to the rules of Botanical Nomenclature so it is not possible to say to which plant they refer.

A valid publication of a name includes a description and, sometimes, a reference to a specimen which should pin down the identification (often subject to speculation for older names!). You can find all validly-published names at the very useful website:

The International Plant Names Index

Two new species of Eulychnia described in the American Journal

The wealth of variety amongst columnar cacti cannot be appreciated by just looking at juvenile plants in cultivation, pleasing as they are. Columnars are often the most obvious cacti in habitat, and even if you don't go to habitat to see them, they are really interesting plants. The Cactus Explorer plans to introduce you to the fascination of these diverse plants.

During their many visits to northern Chile, Paul Hoxey and Paul Klaassen have taken a special interest in the Eulychnias they saw there. Most people go to this region to enjoy the splendid Copiapoas, but you cannot fail to notice the Eulychnias, even if you sometimes have to look closely to make sure you are not actually looking at Echinopsis (Trichocereus), with which they often grow.

Friedrich Ritter, who lived in Chile for part of his life, made a thorough study of the cacti of the country and described many new species, most of which we accept today. Even though he is regarded as a 'splitter' by some, there can be no doubt that he had a keen eye when it came to identifying something new.

Ritter realised that the Eulychnia growing near the town of Taltal was not the same as *E. iquiquensis* (= *E. saint-pieana*) with which it has often been confused. *E. iquiquensis* grows both to the north and the south of this small coastal town. He thought that the Taltal plant was related to *Eulychnia breviflora* (which grows further south) and gave it the name *E. breviflora* var. *taltalensis* based on his type *Ritter* 214 from Taltal.

In CSJ(US)(83)4:169 (2011), Paul Hoxey has now raised this taxon to the rank of species as *E. taltalensis*, retaining Ritter's name. As he points out, illustration 11.2 in the New Cactus Lexicon Atlas is not *E. iquiquensis* but actually is *E. taltalensis* (F. Ritter) Hoxey.

Another of Ritter's Eulychnia varieties, *E. acida* var. *procumbens*, is also raised to specific

Photo: P. Hoxey

PH659.03 *E. taltalensis* North of Taltal near the coast

Photo: P. Hoxey

PH658.05 *E. taltalensis* in the Quebrada Iscuña

Photo: P. Klaassen

Eulychnia chorosensis growing on the Llano de Choros

Photo: P. Klaassen

Eulychnia chorosensis growing on the Llano de Choros

rank in the same article. When making this change, Paul Klaassen created the name *E. chorosensis* because the name *E. procumbens* had already been used invalidly by Backeberg for a different plant.

Ritter's type, *Ritter* 650, was collected at Freirina. Paul explains that the plant grows on the nearby Llano de Choros, hence his choice of name. It is said to be related to *E. acida* but with significant differences.

The article in the American Journal by the two Pauls explains their reasons for the changes in detail and is well worth reading. It shows what can be achieved by thorough field exploration together with research of the existing literature. Note that the caption of Fig.7 in the CSJ(US) article should refer to *E. chorosensis* not *E. taltalensis*

GC

Photo: P. Hoxey

PH659.03 *E. taltalensis* North of Taltal near the coast

Photo: P. Hoxey

PH658.05 *E. taltalensis* in the Quebrada Iscuña

Pilosocereus frewenii

Photo: N. Taylor

A new species of Pilosocereus subgenus *Gounellea* is described in Bradleya 29(2011). Daniela Zappi and Nigel Taylor write about the plants they found on a private estate in SE Brazil and describe *Pilosocereus frewenii* as new.

This new species is a dwarf relative of the widespread *Pilosocereus gounellei*, the third species in the subgenus *Gounellea* which also includes *P. tuberculatus*. It occurs on just a few isolated outcrops of limestone in forest and, although not immediately threatened, it has been categorised as Critically Endangered because of the very small number of plants found.

The flowers of *P. frewenii* are very different from those of the other Gounellea species suggesting a different pollinator.

See Bradleya 29:131-136(2011)

Photo: N. Taylor

Copiapoa griseoviolacea

Photo: P. Pavelka

Photo: P. Pavelka

This plant was described as a new species of Copiapoa in Cactus & Co (XIV)4:5-15 (2010) by Schaub & Keim. It appears to be an attractive form of *C. echinoides* from which it differs by its farinose epidermis and dense spine covering.

Petr Pavelka, who took the pictures above, tells us that plants grow at the bottom of hills in a valley south of the Huasco river, the majority grow in a dry river bed or on its banks at the bottom of the hill, but they also occur up to the top of the hill where they are not so abundant. At the bottom they grow within about 100m of *Copiapoa coquimbana* so it is possible they could be sympatric at some places. Its closest relative is evidently *Copiapoa echinoides* which can be found growing north of the Huasco River.

GC and Petr Pavelka

In The Glasshouse

Success cultivating an unusual Haageocereus

There are very few cactus species that live on the dry coastal plain north of Lima in Peru. The ones that are able to survive there can only be found in a few places that are favoured by enough fog to keep them alive. One such plant is *Haageocereus tenuis*.

Aymeric de Barmon tells us about his experiences with this interesting plant.

Haageocereus tenuis FK, larger form

Haageocereus tenuis GC1052.03 in habitat

Photo: G.Charles

I've been interested in *Haageocereus tenuis* since my first sight many years ago at one of the Chileans' meetings in England. This dwarf creeping plant found growing in Peruvian sand and threatened by agricultural activities definitely needed to be propagated in cultivation. Unfortunately, at that time, no material was available either from friends or from major plant/seed suppliers. About 10 years later, Franz Kühhas rediscovered *Pygmaeocereus bieblii* from the same country and found a new taxon subsequently described by Diers as *Pygmaeocereus bieblii* var. *kuehhasii*. [see the **Cactus Explorer** No.1] Browsing on the web I arrived at Franz Kühhas' web site with many pictures of *P. bieblii* and to my great delight one of a cultivated *H. tenuis* in his collection [4]. I contacted him and he very kindly send me cuttings of his two habitat clones in 2008. A happy ending to this first stage and most likely a starting point for new challenges.

A series of good news events marked the first years in my greenhouse. First of all, the cuttings rooted very well (not surprising when you remember how wild plants grow), then they proved to be happy in standard cactus soil and withstood low temperatures in winter (just above 0°C). The first flowers appeared in 2010 on both clones, anthesis started just before dusk and fading occurred before dawn.

Haageocereus tenuis FK, both forms

Then the challenges started; the first plant to flower proved to be self-sterile; subsequently the plants never flowered together and standard pollen conservation was not effective. As a substitute, I cross-pollinated them with various Matucana and got several fruits. In 2011, the plants were relocated to a sunnier place and produced more flowers, hopes for synchronisation were higher and I decided not to hybridize.

Then unexpected good news arrived, one clone was definitely self-sterile or incompatible but the other one developed 100% fruits on self-pollinated flowers. It is an uncommon feature for cacti that all individuals of a species do not have the same compatibility mode. In 2010, the first plant to flower was the incompatible one and I wrongly assumed the same behaviour for the other one...

In the meantime, Pieter Colpaert collected seeds of *H. tenuis* cultivated in Peru. Some were given to Alain Laroze who very successfully sown them using the bag method.

The pictures show that young plants are slightly different then mature ones. They have smaller stems and white frosty spines. They are a good intermediate form between *H. lanugispinus* and mature *H. tenuis*. This might suggest that *H. lanugispinus* is a neotenous form of *H. tenuis*.

There are several creeping Haageocereus species. One closely related to *H. tenuis* is *H. decumbens*. However, it is remarkable that in cultivation *H. decumbens* never produces flowers on horizontal stems but only on those with their ends curved upwards.

Ritter describes two forms of *H. tenuis* [2] growing together. For both forms the stems lie on the soil or are very slightly turned upwards. The big form has stems 2-3cm diam and 12-14 ribs 3mm high. The small form has stems 1.5-2cm diam and ribs 1.5-2mm high. It is remarkable that despite these visible variations amongst specimens of *H. tenuis,* there is a very low genetic diversity observed in DNA (about 10 times less alleles than in other species such as *H. acranthus*, *H. pseudomelanostele*, *H. repens*). *H. tenuis* is reported to be a triploid plant (3n = 3x = 33), which might induce sterility in certain specimens [3]. These characters, plus the narrow habitat range would suggest that *H. tenuis* is a recent evolutionary line amongst Haageocereus, it could have been triggered by hybridization.

Haageocereus decumbens OST_94941 (Atiquipa)

Haageocereus lanugispinus (top), *H. tenuis* mature form (middle pot), *H. tenuis* juvenile (bottom pot)

Special thanks to Franz Kühhas for his cuttings, Pieter Colpaert and Alain Laroze for the additional material from seeds and the bibliography [3].

Bibliography

[1] Englera 16, Eggli-Schick-Leuenberger, p120, 1995

[2] Kakteen in Sudamerika band 4, Ritter, 1981

[3] American Journal of Botany: e17–e19, 2010, CHARACTERIZATION OF POLYMORPHIC MICROSATELLITE LOCI IN HAAGEOCEREUS (TRICHOCEREEAE, CACTACEAE)

[4] http://cacti-at.info/

[5] http://www.cactaceae.be/leyenda.php?taal=en

A deB

Mammillaria (Cochemiea) halei

I have always had a fascination with the genus Cochemiea. Perhaps it is their unusual flowers and their exotic habitat locations in Baja California, Mexico. Most of the plants in my collection date back to the 1970s when habitat collected plants were being offered by nurseries in Britain. I understand that many of these plants were supplied by Alfred Lau who travelled in Baja during 1972. My attempt to 'get the set' was foiled by my inability to find anyone offering plants of *Cochemiea halei*. This one looks really different from the others with its straight spines.

At that time, my work occasionally took me to Belgium so I was able to visit the nursery of DeHerdt. I remember it being a revelation to see such a wonderful collection of mature plants and so many unfamiliar species .... exciting days for a novice like me.

The brothers were very friendly and allowed me to photograph plants on the high shelves in their collection. They kept a number of each of the plants they had imported in order to collect seeds to offer in their extensive list. High on a shelf, near the glass, they had some flowering plants of *C. halei* which I was told had come from Lau. It was from these that I was eventually in 1984 able to buy some seeds.

The DeHerdt seed list was eagerly awaited every year and was my main source of seeds for many years. The most desirable species were offered and the seeds always germinated well for me. I remember opening the packets, neatly folded cellophane envelopes with a


ESCOBARIA :
979. albicolumnaria - dichte, schneewe
980. chihuahuensis - dense, brownish
981. henricksonii - Mam. viperina sehr
982. sneedii - small, clustering plants ;
983. spec. (de Rayones/N.L.) - Mam. el
CORYPHANTHA :
X 984. recurvata - very dense, goldenyell
985. robustispina - grosse Warzen ; se
ORTEGOCACTUS :
X 986. macdougallii - dwarfsort ; pitchbla
COCHEMIEA :
987. halei - rötlichbraune, gerade Stach
988. maritima - bluegreen, clustering b
X 989. pondii - Körper kleiner ; feiner und
X 990. setispina - sehr lange, weisse Hak
SOLISIA :
991. pectinata - very narrow, long areo
MAMILLOPSIS :
X 992. senilis - dicht, schneeweiss besta
PHELLOSPERMA :
993. tetrancistra - pitchblack, hooked
1984
SAMENLISTE
ZAADLIJST
SEEDLIST
LISTE
DE
SEMENCES
GEBR. DE HERDT Schommeweg 3
B-2310 Rijkevorsel
België
☎ (03) 314 69 42

single staple. The images above from the 1984 catalogue show where I marked the seeds I was going to order, including *C. halei*.

You may be wondering where all this is leading! Well, this year, for the first time, two of the five seedlings I kept have flowered. [picture above] It took me 25 years but it was worth the wait. I could probably have reduced the time by more frequent repotting but you know how it is when you have a lot of plants. The plants are now multi-stemmed in 15cm pots, the tallest stem which flowered being about 25cm long.

Cochemiea halei Lau 40 was collected on Isla Santa Magdalena, its type locality, during November 1972. The discovery of this species was made by T. S. Brandegee in 1889 who described it as *Mammillaria halei* in the same year. He named it for Mr. J. P. Hale, a local landowner who helped with his explorations at a time when travelling in that region was very difficult.

Cochemiea was first recognised at generic level by an Englishman Frederick Walton in the second (and last) volume of his 'Cactus Journal' in May 1899. It is now usually treated as part of Mammillaria, a view supported by genetic studies. One example of many in the Cactaceae where some species of a genus are adapted for pollination by a different vector than the majority, in this case probably humming birds.

The type locality is Isla Santa Magdalena, an

island quite near the mainland of Baja California on the Pacific Ocean side. The most famous cactus of the region is *Stenocereus eruca*, the creeping devil, so when I had the chance to visit Baja, I really wanted to see this unique plant. It was not difficult to find, although it is said that local agriculture has reduced its range. While enjoying a habitat of the 'devil' near the coast, I was delighted to chance upon a large cluster of *Cochemiea halei* [image above]. I had read that it occurred on the mainland as well as the island but to actually find it was a real thrill.

GC

Whitesloanea Crassa enjoys the Maltese Sunshine

René Zahre tells us about his success at propagating one of the world's rarest succulents. Photos by René Zahre.

I bought two small *Whitesloanea crassa* plants from Exotica back in 2003. Soon they started to flower, but it was only in 2009 that they flowered together and were pollinated by flies (Greenbottles). There were only a few seeds in one of the two pods. From 12 seeds sown in the spring of 2010, only 5 germinated (this might have happened, because the flies did not pollinate the flowers very effectively). The

small seedlings in the picture are only 15 months old.

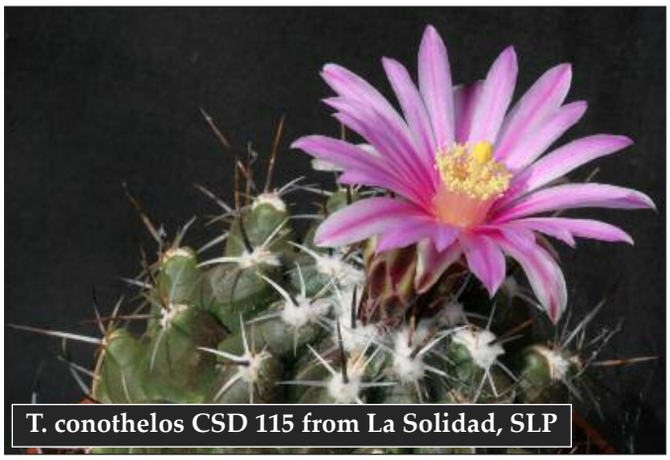
All the plants are grown in a mixture of peat and sand and given the very same treatment I give to all my cacti. This means that they are watered in the summer, but kept dry in the winter. In their first winter when they were very small, I sprayed them with water when it was sunny and warm.

René Zahre

Another Beautiful Species

Judging by the number of fine specimens seen in competitive show classes, Thelocactus is amongst the most popular genera of cacti. They are relatively easy to grow given a bright place in a glasshouse and flower after a few years of cultivation.

One of my favourites is *Thelocactus conothelos* with its symmetrical appearance, looking quite like a Mammillaria with its neatly-arranged tubercles. The type form was described long ago in 1860 as an Echinocactus, since the genus Thelocactus had to wait until 1922 to be erected by those remarkable American authors Nathaniel Britton and Joseph Rose. *Thelocactus conothelos* has pretty purple flowers and



T. conothelos CSD 115 from La Solidad, SLP

T. conothelos argenteus SB311

T. conothelos aurantiacus SB329

relatively open spination.

It was not until 1972 that Charlie Glass and Bob Foster described two new varieties, both with limited habitat distributions. *T. conothelos* v. *argenteus* has dense white spines and a purple flower, the collection usually seen is SB311 from Ascención, N.L., the type location. The other, var. *aurantiacus* is for me the star with its surprising and amazing bright yellow flowers, usually represented in collections by SB329 from Aramberri, N.L. the type location.

Alessandro Mosco's website is a really good place for information about Thelocactus. GC

Journal Roundup

Cactaceae Systematics Initiatives

This journal started life as 'Cactaceae Consensus Initiatives back in 1996. It was created as the bulletin of the IOS Cactaceae Working Party who were then working towards an agreement about the classification of the Cactaceae.

In 2000, its name changed to what we see today (CSI), the bulletin of the International Cactaceae Systematics Group. One of its principal objectives was to evolve a consistent classification that would be used as the basis of the New Cactus Lexicon published in 2006.

Since that time, the group has continued to meet to consider new research, new taxa and to prepare for an update to the Lexicon.

Starting with No.17, an issue dedicated to Hylocereae and published in 2003, CSI has featured colour pictures, adding significantly to its appeal.

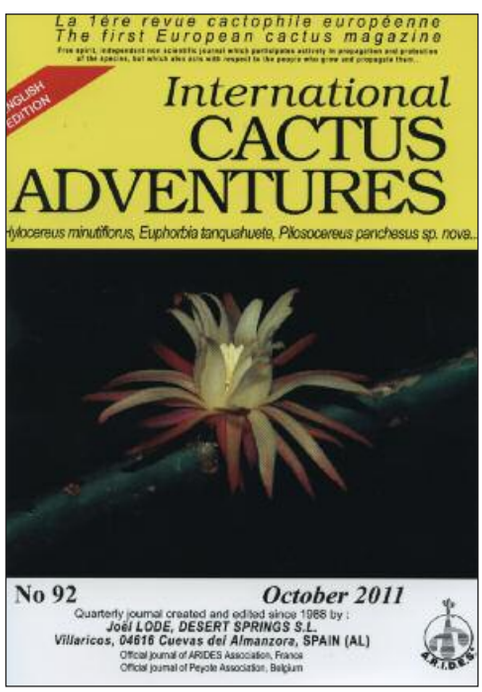
No.25 has just been published and should appeal to lovers of small Opuntias. It includes the taxonomic implications of a survey of South American Opuntias commissioned by the IOS and undertaken by Dr Ritz, then at the University of Giessen, and her assistants.

The results were discussed with Dr Ritz at meeting of the NCL editorial group at a meeting in July 2011 and will be formally presented in a paper to be submitted to a leading scientific journal shortly.

Among the innovations are two new species and even a new genus 'Punotia' erected by David Hunt for the plant formally known as *Austrocylindropuntia lagopus*. The new genus name is not only an anagram of Opuntia but also alludes to the habitat of the plant in Puno, Peru. More information about the two new species will be in the next **Cactus Explorer**.

You can subscibe by contacting David Hunt E-mail: dh@newcactuslexicon.org

GC



International Cactus Adventures

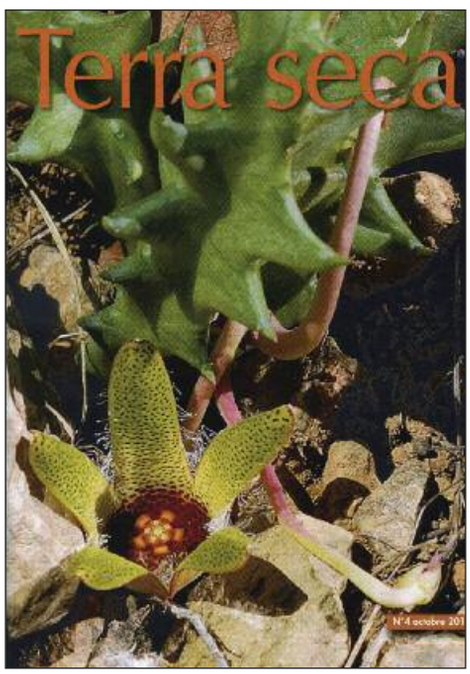
If you enjoy reading the **Cactus Explorer** then I think you would enjoy this publication. Joël Lodé produces it with his passion for plants and often features unusual species like *Hylocereus minutiflorus* featured in the most recent issue.

The magazine started in 1989 with No.1 of 'Cactus Aventures', then published only in

French. The page size was increased in 1995 followed by an English edition starting with No.29 in 1996. Since then, a Spanish edition has also been produced and the 100th issue is only a couple of years away.

Members also have the benefit of a very extensive seed list which can be seen on the website where you can read the full story of this remarkable venture: http://www.cactus-adventures.com/pageweb_ENG.html

GC



Terra Seca

This is one of the French language journals to start publication in 2009 following the end of the excellent 'Succulentes' which had been published since 1977 and published many interesting 'Special' editions.

Terra Seca is produced to a high standard and has carried a number of useful articles, notably those by the famous cactus explorer Anton Hofer from Switzerland, well-known in England for his knowledge of Mexican cacti. The four issues of 2011 have featured a series of articles by Anton about his beloved genus Turbinicarpus and illustrated by his excellent photographs.

For those interested in habitats, this year's issues have plenty to offer; Cacti of Curaçao, *Aloe pillansii*, *Pediocactus winkleri*, Plants of the Atacama in Chile, Sulcorebutia in habitat and

South African succulents.

Details of subscibing to the four issues per year can be seen at http://www.terraseca.org

GC

Pachypodium lealii

Although cacti are my favourite succulents, I have always liked Pachypodiums and have grown a number of species in my glasshouse over the years. *P. lealii* has proven to be the most difficult to cultivate, so adding to its desirability. I really enjoyed reading Dan Mahr's article in the May-June 2011 American journal (83): page 123 about this remarkable plant in habitat. Dan loves 'Fat plants' and I hope he will tell us about others in the future.

GC

Postscript to Pygmaeocereus bieblii

In the last issue I reported that Franz Kühhas had said that *P. bieblii kuehhasii* would not cross pollinate with the type form. This was a misunderstand by me of what he had actually said. He had failed to cross them with his first attempt, but has since succeeded by revealing the stigma which is situated low down in the flower. Jean-Marie Solichon, the director of the Jardin Exotique in Monaco, also reports success at making the cross. My apologies for my misunderstanding!

GC

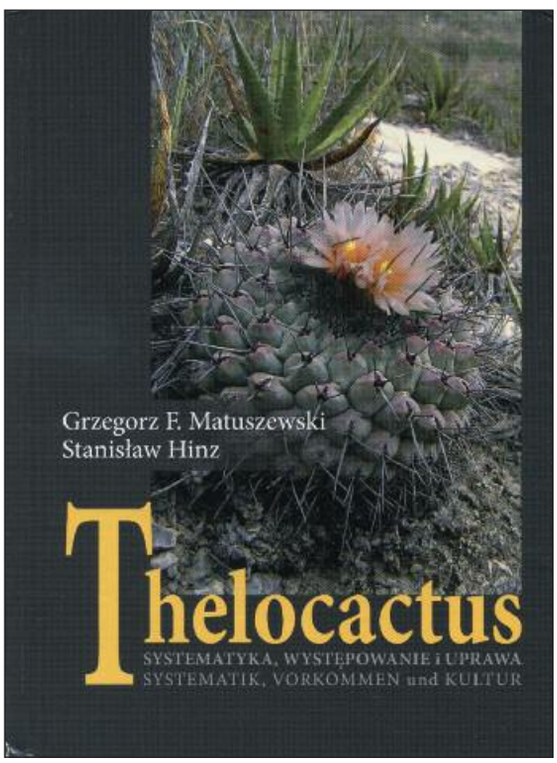
Lectures about Echinocereus

I am sure you will be inspired when you read the new BCSS book on Echinocereus so why not book Peter Berresford to give your group a talk? Peter is Britain's best-known specialist on the genus and gives entertaining talks about where he has been to see them. You can find out a lot more from his website which also has useful information and pictures about the genus. GC

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.



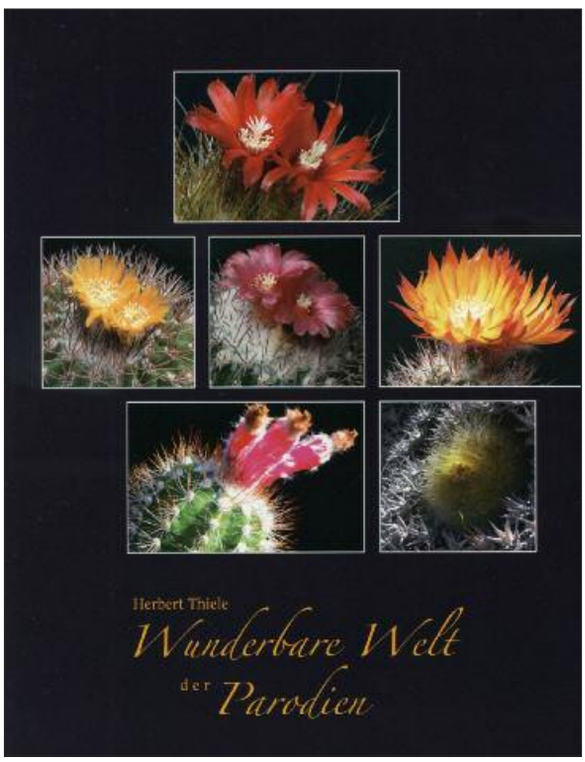
The first monograph of the genus Thelocactus?

284 pages, hardbound, 240 x 168mm with 261 colour photographs plus 48 SEM's and 8 maps. This well-produced book presents a detailed account of the genus including History, Ecology, Distribution, Climate, Geology, Biogeography, Morphology, Systematics and Classification.

The majority of the book details the accepted species, following a splitter's approach and resurrecting the old name *Thelocactus lophothele* for plants usually known as *T. rinconensis*.

The text is Polish with a complete German translation. The pictures are of a consistently high standard, the vast majority taken in habitat.

The book is available for 32.79€ from http://www.thelocactus.eu/Startseite.php



A new book about Parodia, in the strict sense. No Notocactus in here!

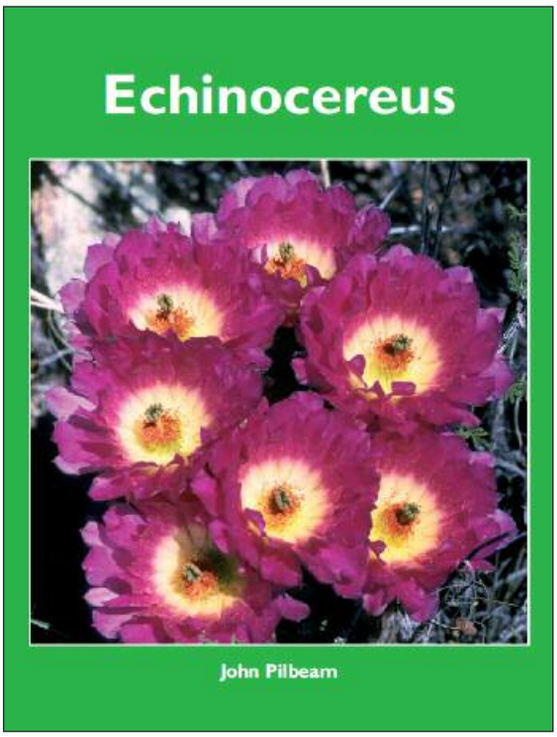
This is the latest volume is a series published by the German Cactus Society, and written by Herbert Thiele, a specialist in the genus.

144 pages, softbound, 239 x 170mm with 189 colour pictures and 3 maps. Produced to the usual high standard you would expect from the DKG, the book is principally a picture book of Parodia species. The treatment is based on a broad view of species, 24 being recognised. The New Cactus Lexicon accepted 23 but should have included *P. saint-pieana* which is accepted in this book.

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

Information in German

ISSN 2048-0482 The Cactus Explorer



The latest book from John Pilbeam is announced: Echinocereus

John has turned his attention to this popular genus to provide us with this, the first comprehensively-illustrated account in English. The landmark book 'The genus Echinocereus' by Nigel Taylor was published back in 1985, and has been in need of an update for some time. Much of the recent information about Echinocereus has been published in German, making it more difficult to refer to, but now John's book will give you easier access to the latest innovations.

As well as being lavishly illustrated with colour photographs, the text will be in John's easy-to-read style, making the book fun to read as well as a useful reference. Many enthusiasts have donated their pictures to help create a splendid pictorial record of the plants and the magnificent flowers for which Echinocereus is famous.

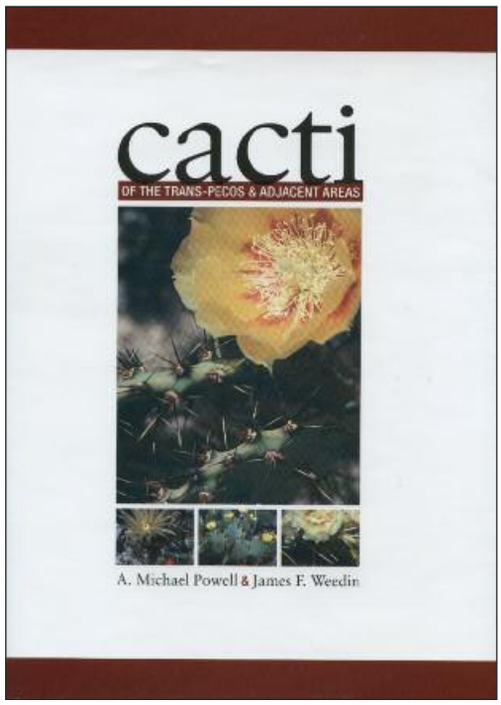
This BCSS publication is expected to be available before the end of 2011.

Available from the author at

http://www.cactus-mall.com/connoisseurs-cacti/

Price (including p.&p.): **£35** for delivery to a UK address or **£38** everywhere else.

GC



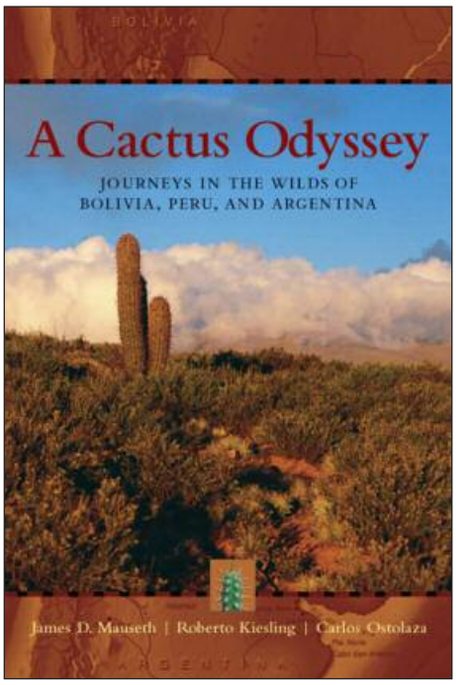
Cacti of the Trans-Pecos & Adjacent Areas. A reminder of a quality book.

Published in 2004, this impressive volume seems to have been rather overlooked. As the work in the glasshouse winds down for winter, I enjoy looking again at books which I didn't have time to read properly when I bought them. This is an example of one that I have recently spent time reading and really only just realised how excellent it is.

Perhaps, if you don't know the USA very well, you might wonder where the Trans-Pecos is! Well, it is the western point of Texas with New Mexico to the north and a long border with Mexico in the south. It is a region of mountains and basins, mainly comprising Chihuhuan Desert. Probably the most familiar part to us is the glorious Big Bend National park, a paradise for cactus exploration.

The authors tell us that there are 109 cactus taxa in the region and they go on to tell us in great detail everything we would want to know about them. This is an academic work but is also readable and entertaining. The colour pictures are the only disappointing aspect of the book. There are over 300 but they are small and of variable quality.

The book is still available from Amazon for about £50, link here



A Cactus Odyssey

Continuing the theme of my article in the first **Cactus Explorer** I'm again highlighting a book which I think deserves to be far better known - and again it doesn't fit in to the usual book categories. Whilst I do like the many monographs and books about plants in habitat, I do really enjoy books which take a totally different approach – and this is one that definitely does that!

We appreciate the beauty of our plants and flowers, but how much do we understand about how they have developed into what they now are, both through the millennia of evolution and also from the seed or cutting they have been propagated from?

Starting with the topic which is usually only briefly covered in general cactus books - what is a cactus - this delves more deeply in to the aspects we usually take for granted. Not only are we given a wealth of information but also how it has come to be known. The geological history of South America is also explained as a background to the environment in which the cacti evolved before North and South America joined together.

The book is based around a number of trips to various parts of South America and is partly a travelogue where you can share in their enjoyment – and challenges – of travelling around remote parts of South America.

And as they travel they come across various cacti that have special features which illustrate an aspect of their evolutionary history or plant development. Many of these plants don't feature in most of our collections for various reasons – some are tall columnar plants, others don't grow attractively in cultivation (what the founder of the **Cactus Explorer** often refers to as "Best left in habitat"!). But, in spite of their Cinderella status, some have visual aspects that illustrate the understanding which the authors are trying to put over.

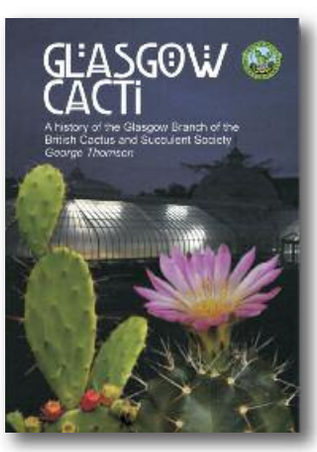
There is much in this book that probably isn't widely known. We tend to grow only a small part of the range of cacti that live in the wild and many of the species are jungle plants of which we grow very few. But even for the more familiar there are interesting ideas - do you know why the small Echinopsis species tend to have flowers with long tubes, and how parasitic plants use Trichocereus as a host?

Although it does inevitably have some more technical information, both the writing style and interspacing it with the travelogue makes it an easier read than a textbook might be. It repays re- reading which I have been doing recently as it has so much packed into it.

So again this book won't suggest what you might grow – unless you like to have the unusual in your collection! But it might give you some new ideas on cultivation from a greater understanding of the habitats the plants grow in. And you will certainly look at your plants in a new light – and impress your friends with your knowledge!

Keith Larkin

Book details



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Succulents of Isla de Cedros

The islands of Baja California hold a magical fascination for lovers of succulents and must be on the everyone's list of places they would like to visit. The logistics of making such a visit can be difficult as Paul Klaassen explains. Photos: P.Klaassen

Fig.1 View of Isla de Cedros

'How would you like to come to Cedros Island and look for *Dudleya pachyphytum*?'

The question came from Eunice Thompson, ex-President of the Long Beach Cactus & Succulent Society in California. We had travelled together before in Mexico. Eunice's favourites are Dudleya and Agave, while I'm known as a cactus nut. Fortunately, wherever we went to see Agave and Dudleya in habitat, interesting cacti were never far away and vice versa. So why not?

We were joined on this adventure by Mr. Kobayashi, President of the Japanese Cactus & Succulent Society and eight of his Japanese

Fig.2 Ensenada Airport

Fig.3 The adventurers assemble

Fig.4 *Dudleya pachyphytum* with *Agave sebastiana*

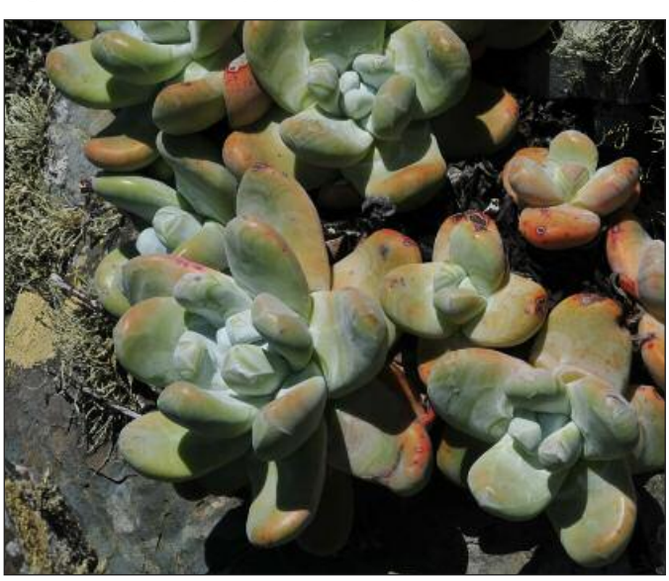

Fig.5 *Dudleya pachyphytum*

Fig.6 Eunice Thompson with *Agave sebastiana*

friends. The expedition was customised for us by Jose Angel Sanchez-Pacheco, a marine biologist, concerned with conservation, who works closely with local communities. Jose operates eco-tours to the Pacific islands off the Vizcaíno Desert with Cedros Outdoor Adventures.

Isla de Cedros (Cedros Island) is located off the west coast of the Mexican state of Baja California from which it is separated by the 100km (62 miles)-wide Sebastián Vizcaíno Bay, 22km (13.5 miles) northwest of Punta Eugenia - the westernmost point of the Baja California Sur mainland.

Many of the Californian islands have well-documented populations of endemic animals and plants. The hardest of these plants to find was *Dudleya pachyphytum*. Getting there involved a flight in a small 12-seater airplane from Ensenada to Pueblo Cedros and an hour long ride in two pangas, small local fishing boats, along the east coast of the island to the rugged Punta Norte. This is a small settlement of some 25 buildings, but from what we saw, only a fraction of the buildings are inhabited today. From here we walked inland and uphill until eventually reaching an old mine called Minas Los Crestones that was actively mined for gold and copper between 1890 and 1917.

Five hours after stepping off the pangas, we arrived at a ridge, some 500m above sea level on the west side of the island. We were glad to have reached the top of our hike and enjoyed some spectacular views. To the north we could

see the northern-most peak of the island, to the east we looked down the Quebrada through which we had walked and climbed in the heat and to the south, on the tops of the hills, were the remains of a California juniper and Monterey pine forest. These trees had been mistaken for Cedar trees by the Spanish Explorers in the sixteenth century and so the name of the island is misleading. But where was our target plant? To the west, the hillside dropped off quickly, down to the Pacific Ocean and it was on these windswept rocks that Jose eventually found the first *D. pachyphytum*.

At the time of its discovery, the plants were said to be abundant. We did not find many plants, primarily because we were running out of time, as we still had to make the long walk back to the beach for the boat ride back to Pueblo Cedros. The Dudleyas were hanging from steep cliffs, some nestled beneath *Agave sebastiana*, others on narrow ledges alongside *Echinocereus maritimus*, *Ferocactus chrysacanthus* and *Mammillaria* (*Cochemiea*) *pondii*, the latter two also reported to be island endemics. By contrast, *E. maritimus* is widespread in northern Baja California.

For me the Dudleyas were the stars of the show here, perhaps because of the satisfaction at the sense of achievement as, thanks to Jose, we had succeeded where others had failed. It was certainly the hardest hike that I have made just to see a plant – a peak of madness?!

Only a week earlier, a group of Americans had to return home without having found *D. pachyphytum*. Local information indicated that the island is frequently shrouded in fog and

Fig.7 *Agave sebastiana*

that Pacific hurricanes can hit at short notice. We had been fortunate!

Dudleya pachyphytum was discovered in 1977 by Alfred Lau and described by Reid Moran and Michael Benedict in 1980. The plants have thick stems, forming a caudex that can reach up to 40 cm (15″) in length that hang down the cliffs. Clusters of up to 20 stems have been reported, each with a rosette made up of blunt and very thick farinose leaves. The species name refers to a superficial resemblance of the leaves to those of some members of the genus Pachyphytum that occur on mainland Mexico.

In Europe, where few Dudleya are grown by members of the C&S fraternity, I have only seen it offered for sale once. It has survived three winters on a bright windowsill during winter time and from April to the end of

Fig.8 *Mammillaria* (*Cochemiea*) *pondii*

Fig.9 *Mammillaria goodridgii*

Fig.10 *Echinocereus maritimus*

Fig.11 *Agave sebastiana* with *Ferocactus chrysacanthus*

September seems very happy in a semi-shaded spot outside, unprotected from the elements.

I have already mentioned the cacti and other succulent flora growing with *D. pachyphytum* in habitat, but we photographed some more during our hike.

Mammillaria goodridgii, another island endemic, was in flower, *Opuntia oricola* tried to hurt us as we walked between the plants and *Pachycormus discolor* ssp. *veatchiana* was a popular subject for the cameras of our Japanese friends, looking like huge Bonsais, shaped by the winds. But perhaps the most intriguing plant was the other Dudleya. *D. cedrosensis* is often listed amongst the endemic plants of the island, but I understand that its description is invalid. So, has the plant been described under a different valid name? Which one? What does it look like? *D. albiflora* occurs here and some of the plants photographed could fit this variable species. Regrettably, there were no plants in flower that might have confirmed the name.

More intriguing yet was (what I assume to be) a Dudleya that forms huge clumps, growing together with equally large clumps of *Echinocereus maritimus*. And what of the Dudleya plants found higher up the hill near the *D. pachyphytum* site? They certainly seem to have some *D. pachyphytum* genes in their make up, but are they within the concept of a variable species or should they be regarded as hybrids?

Answers on a postcard please …

So what of the other succulents reported?

Agave sebastiana was described by Greene as long ago as 1885. In 1949, Gentry placed it as a variety under *A. shawii*, a common plant on the mainland peninsula. These days it is regarded as a good species in its own right. It is a beautiful large plant with fleshy, blue-green leaves that feature large dark curving teeth along the leaf margin and a long dark terminal spine. They are more lethal than any of the cacti we encountered. The plants occur on the Cedros Island group that includes East and West San Benito Islands and Isla Natividad (visited the following day) and also found on the shores of Baja California on the opposite side of the Sebastián Vizcaíno Bay. It seems that the plant is named in honour of the Spanish explorer Sebastián Vizcaíno (1548-1624).

Fig.12 *Pachycornis discolor*

Fig.13 *Dudleya albiflora*

Fig.14 *Dudleya species 2*

Despite its vicious teeth and terminal spines, they are often offered for sale in Californian nurseries as a plant for the garden under the common name of Cedros Island Agave. UK Health & Safety would frown on this as a garden plant with pets and young children around. The labels on the pots in nurseries suggest that it can be quite variable (or mislabelled?) but the plants that we saw on Isla Cedros were quite consistent in their appearance. Many were in flower, with tall flower spikes bearing bright yellow flowers.

Echinocereus maritimus (M.E.Jones) K.Schum. is an old friend from previous trips to Baja where it can form large clumps with over two hundred heads! Here, they were looking as though they had been through hard times and without signs of the yellow flowers that make them so easily distinguishable from the other Baja Echinocerei.

Ferocactus chrysacanthus: Although the specific epithet is derived from the Greek for 'with golden spines' many of the plants here had red spines that Unger calls *F. chrysacanthus* f. *rubrispinus* (L.M. Ford ex Orcutt) G. Unger. It is another plant that is endemic to the Cedros Islands group. Here it showed yellow flowers, but the next day, on Isla Natividad the flowers were red in colour. It is one of the spiniest of the genus and well worth growing just for its spination. Flowers are a bonus.

Mammillaria goodridgei, is said to be another island endemic, although I would struggle to tell it apart from the widespread *M. dioica* that is common throughout Baja with lots of local variability. The name *M. goodridgii* predates *M. dioica*, which explains perhaps why both are retained for now. Unlike the type specimen collected by J. Goodridge in 1846, the plants we saw were in flower.

Opuntia oricola is the Opuntia reported from the island. Fortunately the poorly defined track managed to avoid close contact with this plant that belongs to the *O. engelmannii – O. phaeacantha* complex.

Pachycormus discolor ssp. *veatchiana*, the Elephant Tree form found on Isla Cedros, has small leaves and deep rose flowers. It also occurs in the western section of the Vizcaíno Desert.

Mammillaria (*Cochemiea*) *pondii* is the final name on my succulent plant list for the island. Again, it is said to be endemic to Isla Cedros, but we saw it in equally dense groups on Isla Natividad the next day. Some of the plants (less than 10%) were in flower. The owners at our hotel told me that the peak flowering of this plant occurs in October when some of the hills look soaked with blood, so dense are the flowers that according to the description are scarlet red in colour (I am colour blind, so always believe what I'm told in this respect). We discovered what they meant as the hills on Isla Natividad were red with most of the plants were in flower. The two islands are only 15 km (9.25 miles) apart, separated by the Canal de Keller. It is even closer (6 km – 4 miles) from Punta Eugenia on the Vizcaino Peninsula. Is the different flowering time caused by environmental conditions or does it point to a genetic difference? Some of the island endemic species are certainly very

Fig.15 Landscape with *Ferocactus chrysacanthus*

similar in appearance to plants found on the mainland.

Apart from the few groups of eco-tourists that visit the island, Jose also leads parties interested in fishing and diving around the island. There are endemic bird species and lizards reported from the islands as well. The trip was very rewarding in terms of unusual succulent plant taxa seen and another tick on my list of Baja islands visited – more of which in future articles. We failed to make a trip to nearby Islas San Benito due to bad weather on the day planned for the 25km boat trip. This island group boasts six endemic plant taxa:

- *Cryptantha patula* - only on West Benito
- *Dudleya linearis* - only on West Benito
- *Hemizonia streetsii* - West and East Benito
- *Lavatera venosa* - all islands
- *Mammillaria neopalmeri* - West and East Benito
- *Senecio benedictus* - only on West Benito

But then, it's always good to have an excuse to come back to Cedros for a second visit.

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PK

My Trip with Arthur 2006

When you read about the discovery of a plant in habitat, you often have no idea what the discoverer went through to find it. Rudolf Krajča gives us an unusually vivid account of his adventure looking for the form of *Uebelmannia pectinifera* known under the unpublished name 'crebrispina'. Photos by the author.

Fig.1 The ugly head of the lucky explorer and the beautiful head of the adult *Uebelmannia pectinifera* 'crebrispina'. The plant is about 25cm tall.

Fig.2 A typical plant with juvenile spination; at the point it is about to start forming its adult spination.

Well, I did it again. I went to Brazil to warm up my rickety body from the end of September till the end of December. I wasn´t alone, but my chick was substituted for a mountain bike. I named it Arthur after a few days of hard riding when it didn´t fail and gave me a boost. That´s why I named a man-made thing which shared weeks and weeks with me when I was lost in the mountains. I went with him through the bushland, soaked him in water... The whole three months, day by day, it was still raining. It was really a crazy idea to go searching for Uebelmannia plants during the rainy period on a bike... I nearly lost my old buddy Arthur, I´ll tell you about that soon....

I´ll skip a month of trudge on dusty, rocky, gravelly, sometimes sandy roads, when I partly repeated my previous year's trip. I got to a place which had already attracted me during my preparations in Europe.

So where?

I got to a growing place of *Uebelmania pectinifera* 'crebrispina' somewhere around the village of Barao do Guaicuí. It is sometimes referred to as 'crebrispina', or 'warasii' HU 642. By the way, *Uebelmania pectinifera* 'crebrispina' has not been officially described yet .... up till now ... There are heaps of them in Brazil...

Where does it grow?

That´s what I didn´t know. After days of riding with GPS navigation and searching many places, I was deeply disappointed. I had no information about the plant. With a buddy Vašek Toman from Prague, we guessed there was something wrong with the published photos ... They were often dark, shadowy, not very good shots...

Why is that I wonder?

I´m leaving Diamantina city, which was my base camp for my trips (sometimes lasting several weeks). Heading towards Datas on the good asphalt road, in one place that I found only thanks to GPS navigation, I turned onto an old railway track. It was built many years ago during the 'diamond rush' and was closed in the 1980's. I used it as a 'good' approach way towards places where *Uebelmannia pectinifera* var. *flavispina* is growing and also to search for

Uebelmannia pectinifera 'crebrispina'.

I think it too much to rank this plant as a variety or subspecies considering their habit. It is clear that both gentlemen, Leopoldo Horst the explorer, and Werner Uebelmann the businessman, wanted to profit from new discoveries. There is no point in talking about flowers when discussing *Uebelmannia pectinifera* forms. For the time being, we know only a plant with tiny yellow flowers with featureless differences between the forms. For cultivated plants I would prefer to use the term "form" in botanical terminology...

But?

My second attempt to find it was a few kilometers from Barao do Guaicuí. It´s a village with a preserved railway station, there is no shop, only a church and several houses. It is surrounded by beautiful landscape, so typical for the occurrence of *U. pectinifera* var. *flavispina*. It grows on flat rocks around the village. I picked a few rock hummocks and hoped to find them on the top, maybe.... nothing around, still I continue with a machete in my hand, dancing among cattle droppings. I remember Vašek's words about the way to new discoveries through cattle droppings! It really is like that here in Brazil. There are only a few places on the rocks, good only for chamois and mountaineers, where no cows can get. And there it happened on my shortcut to the top, I came across them!!!

Fig.3 A very nice plant with spines up to 3cm long.

My eyes popped, my jaw dropped in surprise and I said spontaneously (I didn´t speak to anyone for a week) something obscene …

I´ve got them!!!

I didn´t even get to the top where I would expect 'crebrispina'. The plants grow on the steep rocky sides, so that´s why you can only see not very good and dark photos from the authors...

After the standard craziness, taking photos and climbing up and down in three or four level climbing terrain, the sky becomes cloudy... I didn't mind and talked to myself like a crazy man: 'There´s another one, great!' It´s a pity that I cannot share my happiness with anyone.

Raining?

Yes, heavy rain. The storm came. I´m scared. That´s the second or third one during a single hour. I´ll hide under an overhang but it´s raining even there. Water pours down to the valley and I realize that my return with a bike will be difficult. Three small rivers merge into a big one in the valley. From a dried-up, small trickling river.... Just now, sitting safe at home I realize how horrible it was.

I definitely didn´t feel hot when I was

Fig.4 An efficient irrigation system!

crossing the flooded river, of course with my bike. After years spent as a professional triathlonist, I wouldn´t believe that it will be so difficult to swim 20 meters across the stream..... I feel like dropping my Arthur and saving myself. But my brain switches back into 'abnormality'. My last attempt and.... – I´m on the bank. I turn to the other bank; my rucksack with all my precious things (camera, passport, money) starts floating away. The water level had increased so fast that I didn´t think of it. I´m throwing my bike away and running about 100 meters up the stream and then jumping into the water. I have my shoes on, my clothes on but I´m without my bike, it´s a long 20 meters in the stream, I´m 200 meters below the place where I jumped into the water. I caught my rucksack near the bank. It´s still protected by a nylon fabric, so it was swimming. Luckily my camera survived and other things too. I´m ready for the third, last crossing of the river. I hide my rucksack high above the river under the overhang, I am wearing only pants and hiking boots. I take only matches which are in a plastic box. I put them into my mouth and jumped for the last time into the hated water. I swam breast stroke to keep my head above water level. I´m there, phew!

I can't find my bike, the water level went over the place where I left my bike. So it finally drowned. I ran naked along the bank like a crazy man. There is not a living soul here, who would be here.... Despair. Luckily, I was in a different place, my Arthur was 50 meters down the river bank and it had just started floating away! Like a crazy man I´m running along the river bank, pulling my bike out of the water, shaking with cold and nerves. I feel like

Fig.5 A recently eaten *Uebelmannia pectinifera* 'crebrispina' nov. prov. from Mocó. It looks like a guinea pig or other rodent had lunch here!

vomiting. It has stopped raining and mosquitoes start bothering me. Oh God, no!!! I don´t want to catch Leishmaniasis!

I mount my bike and ride away from all this, wearing only pants and hiking boots. Away! I return 5 kilometers back to my tent. It´s wet everywhere. Before I make a fire I stuff myself with dried milk, chewing raw pasta, shaking. It´s not cold.....

Next day I return for 'everything'. I find my rucksack easily. It´s been slightly eaten by termites, partly turned into a new termite mound..... Now, pulling it out of the overhang with disgust, removing termites. I come back to my tent. I'm going to rest today. Getting ready for my way back. Picking up my lost morale. I have a big plan. I want to find something NEW!

This was just a'crebrispina'…..

Mgr. Rudolf Krajča,
www.vzacnykytky.cz,
vzacnykytky@vzacnykytky.cz

Echeveria laui is in Care

Even those who prefer cacti must surely agree that *Echeveria laui* is a beautiful plant. Although it took some time to be found, visitors to the right part of Mexico can now visit its habitat in relative comfort. John Pilbeam tells us about his encounter with this beauty in nature

Photo: D.Bowdery

Fig.1 *Echeveria laui* happy in its natural habitat

Echeveria laui has long been high on my list of desirable species to visit in habitat, but the possibility seemed not likely. In the first place I was not sure exactly where it occurred, and with both Alfred Lau and Charlie Glass no longer with us to lead us to the remote place where it grows in northern Oaxaca, the chances of doing so had more or less receded from my list of possibilities.

Photo: D.Bowdery

Fig.2 John Pilbeam in his habitat

Charlie referred to his trip to see this highly desirable species as a four-hour trek. With my replaced hipjoints getting to a creaky age I estimated that to be a six-hour trip, which meant a whole day of laborious journeying there and back, with the likelihood without a guide that we would not find it anyway, and I might not be able to last the journey.

In late 2009, a party of three Brits (Derek Bowdery, David Neville and I) went to stay with our very agreeable, resident, ex-pat Canadian friends in Oaxaca, Jim Peck and Mary McLenahan, who had offered to put us up and put up with us for a week or two, where we were joined with two equally agreeable friends from California, John Trager and Myron Kimnach. Derek and I were particularly glad for the latter's company, since we were all three pre-war products, and this meant that the pace set would be more within our capabilities, not that I have noticed any hanging back on my account on previous trips

Photo: D.Neville

Fig 3 The sign makes everything clear

with post-war companions. We were taken to see a project set up to propagate *E. laui* with a view to replacing the almost entirely depleted natural habitat. To our astonishment we were confronted with a plastic covered large structure with thousands of plants of this species (Fig.11). At least we thought its future is assured, provided that precautions were taken to prevent a similar extirpation of the plants in their natural surroundings. Most interesting to Myron and me were a few plants being cultivated for the same purpose of what had been recently described as *Echeveria cuicatecana* (Fig.12), which, after some close examination with my trusty 10X lens, owned up to being really a Pachyphytum. As a result of this inspection of its intimate parts, this was subsequently put right by Myron in the US Society journal 82(3): 125 (2010).

In the following year (2010) Derek and I were invited to speak at the Tucson convention of the United States Cactus and Succulent Society, and took the opportunity to spend some time beforehand down south in Oaxaca.

With our resident hosts, we planned several trips over the short period we were there, including a visit to Quiotepec, north of Oaxaca city, near where *E. laui* grows. There had been much flooding in the previous month or so, and some of the mountain roads had partly fallen away on the more precipitous places, fortunately marked by locals with whitewashed small boulders around the collapsed part, leaving a fairly narrow, rear-end-champing way through. And when we

Photo: D.Bowdery

Fig.4 *Agave titanota* and *Mammillaria crucigera tlalocii*

Photo: J.Peck

Fig.5 *Echeveria laui* at Quiotepec in flower in March

Photo: J.Peck

Fig.6 Wild plants of *E. laui* growing amazingly well

came in sight of a roadbridge over the fast-flowing, wide river, the Río Grande Quiotepec, at the bottom of the valley, the middle section was leaning at an angle that precluded any question of proceeding. We retraced our way to a railway bridge we had passed, to find that it was no longer so designated, the rails shifted to the sides of the substantially-girdered bridge with its use clearly converted to road traffic. We stopped for some time before crossing, as *Mammillaria crucigera* subsp. *tlalocii*

Photo: D.Bowdery

Fig.7 The old railway bridge over the Río Grande Quiotepec

grew on the sheer, inaccessible cliffs by the river, as well as Agave titanota (Fig. 4). Mary expressed some anxiety on my venturing onto the bridge, especially as I nearly lost my walking-stick and my balance through a gap between the sleepers, but the view was terrific, and intriguing as the cliffs appeared to have been supported by structures at the base by the river a few hundred yards from the bridge. I still find myself wondering at the purpose of this work, and how old it was.

We pressed on along a difficult, steep, rough road until we came to the village, where we secured accommodation for the night.

We then discovered that a path had been cut through the thick growth of the landscape leading down into the bottom of the gorge, and that a guide was available (well not that day, as his gait was somewhat affected by a liquid lunch it seemed) to take us to see the replanted *E. laui* population.

Photo: D.Bowdery

Fig. 8 Jim, John, Mary and David crossing the old railway bridge

Photo: J. Pilbeam

Fig. 9 View from the railway bridge

The species was clearly in evidence in the village in hanging pots outside some of the houses. A meal was provided by a local lady in her house, and we slept full of Mexican food and anticipation for the morrow.

The guide had slept it off by the morning, and led us with occasional stops for his tourguide spiel about the discovery of this plant and how it was beneath the care of the village. On the way down the wide path cut through really dense cactus country, with unthinkable heavy labour, we became aware of a recurring, small, solitary, Mammillaria in abundance among the rocks, which unbelievably was *M. huitzilopochtli*, also featured on the tourist-style billboard erected at the beginning of the path down into the depths of the valley.

The steepness increased as we descended and the temperature rose to an uncomfortable level. Eventually we got to the small, fast-flowing river at the bottom and there were the neatly, geometrically planted replacements in the original locality of *E. laui*, on the steep bank above the river. We were then informed that there was a natural population on the other side of the valley, and the guide set off to lead us to them. At this point, I contemplated the return journey from where I was, and reckoned that this was about all I had left in my energy tank for the day, and so I opted out and sat on a cool rock in shade, after checking for nasties in or around it.

An hour or so later as the rest of the party staggered back I was told that I did the right thing. The photos of *E. laui* in this location (Figs. 5 & 6) were taken by Jim and Mary on a subsequent visit when they were in flower.

During the climb back my temperature increased step by step, matched only by the messages from my hipjoints to my brain that I needed to stop. And so I did quite frequently. I had difficulty however in spite of my discomfort in stopping myself laughing, as the guide each time we stopped was positively glaring at me, and I realized that he was thinking that I might be about to expire on his watch, which would be very inconvenient for him if not costly.

Photo: D.Bowdery

Fig.10 The group outside the *E. laui* progagation centre

Photo: J. Pilbeam

Fig.11 Myron, Mary, a staff member and Jim in the *E. laui* propagation house

Photo: J. Pilbeam

Fig.12 *Pachyphytum cuicatecana* among many *E. laui*

With the amount of *E. laui* plants being produced by the aforementioned project, and the attention of the nearby villagers at the head of the path to the natural site, I am confident that its safety is assured for the foreseeable future.

JP

Matucana myriacantha

high above the Rio Crisnejas

Matucanas often live in places that are problematic to reach because the mountains are often steep-sided and there are no roads. Holger Wittner gives us an insight into the difficulties of reaching one of these inaccessible places. Photos: H.Wittner

Fig.1 On the way to Huagal

One morning in November 2010, Steffen Janke and I started travelled by bus from Cajamarca to Cajabamba. Due to the now paved and well maintained road we arrived relatively quickly in San Marcos. The Swiss man Olivier Klopfenstein together with Nelson Ceiza established here a botanical garden (AJABOSAM = Asociacion Jardin Botanico San Marcos) supported by the village in the late 1990s. An interesting account (in French) of a trip from here to the Marañon river done in 2000 can be found here; or a German translation can be found here

Fig.2 A short break without a backpack

With my steadily growing Matucana collection, I had already contacted Alfred Lau in order to solve the mystery of the more or less unknown *Matucana huagalensis*. A short time later it was Lau who managed to find the original locality again. It was the only and last time until now that there could be distributed seeds of this rare species (field number AJABOSAM 324). See also Wittner 2011.

Fig.3 Our taxi making its way along the winding road

On our trip we wanted to thoroughly explore the area at the confluence of the Rio Marañon and Rio Crisnejas. It was rather warm at the 2,700m altitude of Cajamarca, and now we had to bear the enormous heat of the blinding sunlight in San Marcos in the late morning. We had gathered the necessary equipment such as a tent, our sleeping bags, food and a gas cooker. Nearly 20kg of luggage was already enough for me standing, Steffen's backpack

Fig.7 View from Los Negros towards the Rio Crisnejas

Fig.5 Local farmers working their fields

with the tent was even heavier.

First we went to the car park in the outskirts of the town with one of the ubiquitous three-wheeled taxis. There, several of the usual Toyota station wagons were waiting. We wanted to go to Huagal, but no one was willing to take us there. Eventually, there was one driver who wanted to take us there for a considerable sum. A barely-ending journey up into the mountains started. The dirt roads were merely passable and it was hot, dry and very dusty. No European taxi driver would have taken such a trip upon themselves, and it seemed to be doubtful if the car would survive the trip at all. Many times we were startled when a large boulder under the bottom banged against the engine sump. In this situation a ride at walking pace would have been the right solution, but then we would not have arrived in Huagal before sunset.

Fig.7 The habitat of *Matucana myriacantha* on Cerro Los Negros

Fig.6 View of Rio Crisnejas, Rio Bachota gorge in foreground, top of Cerro Chimboyoc in the right backround

After more than two hours we loaded up our backpacks and proceeded on foot. The air was thin, we were not yet accustomed to the almost 3,000m altitude and dragged ourselves little by little further up. After almost an hour, and only slightly more than a 2km walk, we were lucky to ride on the back of a pickup. Already in the afternoon we reached our first milestone and could - with the permission of local farmers - put up our tent. After a clear and rather chilly night we went on in the morning after a light breakfast of tea and porridge.

In the beginning, the way was easy to make progress. It took little time to arrive at a vantage point high above the Rio Crisnejas named Los Negros: What a sight! We could look down from about 3,000m into the lower valley of the Rio Crisnejas nearly up to its confluence with the Rio Marañon. Nearly 2,000m height difference lay between us and in the distance we could spot the peaks of the Andes on the north side of the Rio Marañon! Simply terrific!

At this point, Steffen had recently discovered a habitat of *Matucana myriacantha* (Janke 2009) that we now wanted to continue investigating. The plants grew in shallow humus build-ups on some million year-old reef limestone, sometimes seemingly on the bare rock. These limestone rocks are quite brittle and it is just a matter of time before the entire edge of the cliff may slip off in an earthquake.

We seached around there and climbed down about 10 meters to take a closer look at the

Fig.8 *Matucana myriacantha* HFW 02.01 at 2,814m

Fig.9 All ages on almost bare rock

plants. There was evidence of nearly all stages of life, even one plant about 30cm tall. The plants differed by their almost white and very dense spines from the more familiar yellow-spined plants in culture. But then a flower quickly confirmed the plant's affiliation to *Matucana myriacantha*. I still can't understand what this species of Matucana has to do with *Matucana haynei* with which it was combined as a subspecies.

Later, and further down, on our way to the Rio Crisnejas, we found a second location of *Matucana myriacantha* also situated on almost bare limestone. The specimens here didn´t achieve such a size as at Cerro Los Negros. Evidently, the daily rising moist air from the Rio Crisnejas in the morning, contributes to the good growth of the plants at the location just higher up.

There were many different Bromeliaceae and Peperomia species to discover. But we had to continue down to Pay Pay to arrive in the evening before dark. What awaited us there? That's another story ...

Fig.10 Finally we find a flowering plant of *Matucana myriacantha* HFW 02.01

Fig.11 *Matucana myriacantha* further down at 2,712m

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Holger Wittner
Johanna-Beckmann-Ring 37
D-17033 Neubrandenburg
Germany
post@perucactus.de

Plea to Cactus Explorers

Ray Stephenson, famous for his love of unusual succulents, encourages those of us who travel to the habitats of cacti to keep our eyes open for interesting succulents we are at risk of overlooking.

Photos: R. Stephenson

Flower of *O. ptychoclada*.

Juvenile plant of *Oxalis ptychoclada*.

Expanded pedicels of *O. ptychoclada* are water-storing organs.

First I'd like to congratulate, Paul, Graham, Martin and Roy for such a splendid publication. I have enjoyed many hours viewing the cacti of Latin America in lectures across the UK and find there is a blinkered approach, more often than not, to the succulent flora.

I must have seen more than a thousand photographs of Copiapoa in habit but have only seen during such talks 1 Calandrinia and 1 Oxalis — both sympatric with Copiapoa. I'd hate for anyone to think I had anything less than a great love of Copiapoa, but in the field we all tend to be quite blinkered. I have often been ashamed when returning from a field trip to see a plant in the corner of a photograph I hadn't noticed at the time.

I hope Paul will forgive me when I say I wasn't particularly interested in his field photographs of *Aztekium hintonii* as I'd already seen scores of similar shots. I was very interested in a sympatric Villadia-like plant which turned out to be *Sedum wrightii*, an extremely plastic taxon, rarely photographed.

To redress the balance a little, I'd like to discuss an Oxalis I've never seen illustrated in any lecture or any journal and only in one book. Unfortunately, Oxalis are generally not greeted with enthusiasm by succulent growers as perhaps their only encounter with the genus is the rapacious weed *O. megalorrhiza* from Bolivia, Peru, Chile and Ecuador, which is usually misidentified as *O. carnosa*.

A species which has given me a great deal of pleasure is *O. ptychoclada*, sympatric with cacti in Peru. It has a strange life cycle, starting as a quite an ordinary looking mesophytic plant. Later, the hirsute pedicels of the leaves expand to produce succulent 4 cm-long fusiform organs with typical 3-foliate leaves at the extreme. Flowers are typical for the genus and are very similar to *O. gigante*a from Copiapoa territory. I've had both species flower but no seeds yet. Self incompatible perhaps?

So my plea is: many readers of this journal will also subscribe to, or at least read, a handful of others so will have seen many species as habitat photographs. I hope that future explorations will avoid too much repetition.

Ray Stephenson

Travel with the cactus expert (1)

Zlatko Janeba starts a series of articles about his 3-week-trip (4773 miles/7754km) around the southwest of the USA with Josef Busek. Photos: Z. Janeba

Fig.1 Josef Busek shooting large format slides.

I was really enchanted by South American cacti as I repeatedly visited Argentina, Bolivia and Chile back in 1994, 1996, and 1998. I enjoyed not only cacti but also tillandsias, splendid landscape, friendly local people, Argentinean wine, and I was about to plan another trip there. At that time I had finished my Ph.D. studies and was looking for a post-doctoral position abroad. And USA seemed to be just the perfect destination for me both from a career and cactus viewpoints. In the southwest of the USA there are also native cacti, though completely different from those I used to study in South America. So I moved to Utah in June 2001 and at that time I would not have believed anybody suggesting I was going to stay in USA for 7 long years!

Thus, I had to start from scratch. Completely different habitats and genera of cacti. I was looking for sources of precise information about cactus habitats anywhere possible. Here I really have to thank Steven Brack and Dave Ferguson, both from New Mexico, for their willingness to share field data. Later, many other people crossed my path so let me mention just some of them.

Richard Kalas and Olda Fencl (both of Czech origin) from Albuquerque , Gerhard Haslinger (Austria), Jürgen Menzel (California), Stan Welsh (Utah), Miloslav Hájek (excellent cactus grower in the Czech Republic) and many others. I also got in touch with Josef Busek (German, but again of the Czech origin), who 'hunted' cacti in the USA back in 1976, 1980, 1982, and 1989 and who made an enormous contribution to the knowledge of the cactus

Fig.2 the wonderful flower of *Opuntia basilaris*

flora of the region.

I had never met Josef personally before we got involved in endless correspondence, by E-mail of course. (In my opinion, the greatest communication invention of the last century). The E-mails were becoming more frequent and longer each time we discussed our favourite plants and habitats. So finally, after several years of my stay in the USA and after countless exploring trips to the deserts of the SW of USA (usually alone, later on with my companion Jiri Kroulik), the situation completely changed. As I saw more and more, as I visited copious new places and many places repeatedly at different times of the year, suddenly I became a source of information for others. And then Josef and I got the crazy idea to spend some time together exploring cacti in the field.

In this series I would like to describe to the readership of the **Cactus Explorer** my trip with Josef Busek made back in 2006. Although it might seem to be out of the date now, I believe it still has its scientific and conservation value. It can give some ideas to those planning to visit the southwest of the USA and also, after a period of time, we were able to judge how vulnerable some habitats actually are. We visited some places that Josef had seen some 16 to 30 years before our trip. Moreover, this trip was a kind of a confrontation of the wild inexperienced youth (me) with the older, wiser, and knowledgeable man (Josef). I guess it was a valuable lesson for both of us and I hope that Josef enjoyed our trip as much as I did.

So, on April 27th 2006, I picked Josef Busek up at Los Angeles airport (it was funny since we had to exchange our photos a couple of days before to be able to recognize each other) and immediately headed off with my Subaru Outback north-east using I-15 N, leaving Los Angeles behind us, later turning on US-395 N.

During a leg stretching stop just North of Adelanto (CA), only a few moments before sunset, we saw our first cacti (*Echinocactus polycephalus*, *Escobaria vivipara* and *Opuntia basilaris*). After that we found a motel in Ridgecrest (CA).

Fig.3 *Sclerocactus polyancistrus* f.'albino' in flower.

Fig.4 The typical red & white-spines of *S. polyancistrus*

The next day (28th April) we set off very early in the morning, full of excitement and eagerness to see *Sclerocactus polyancistrus* f. 'albino', our main goal of that day. We quickly did some shopping in nearby Wallmart at Ridgecrest, getting some basic stuff for our 3-week trip (including food which I remember Josef complained was more expensive than in Germany).

First, we stopped south-west of Ridgecrest to take pictures of flowering *Opuntia basilaris* (Fig.2). *Echinocactus polycephalus* was also quite common there. And then we headed to the area North of Johannesburg (CA) where the white-spined Sclerocactus, so prized in cultivation, was supposed to grow. And we were very lucky.

It did not take us long before we found huge plants of *S. polyancistrus* f. 'albino', since they were just starting to bloom and their reddish buds and freshly open flowers were easy to spot from quite a long distance away (Fig.3). The Sclerocactus population was not very numerous there and the plants were sparsely distributed along the hilly landscape. We had to walk around to see enough flowering plants to satisfy our starved apetite. Josef was, at that time, still shooting large format slides (6x6cm), a pretty expensive hobby (Fig.1). I was already using my first digital camera (Nikon D70) and all the pictures you are about to see in this series were taken by this camera.

Interestingly, all the spine-colour variations of the Sclerocactus are growing together there and it is probably the only known location with such a variability. There are the typical red and white-spined plants of *S. polyancistrus* (Fig.4), completely white-spined individuals, the so called 'albino form' (Fig.5), and also you can come across a quite rare and very attractive form with both amber and white spines (Fig.6). At this place, the white-spined (albino) form seemed to outnumber the otherwise common and widespread reddish form. A more detailed account of *S. polyancistrus* was published recently: Z. Janeba, CactusWorld (27)3:167-176 (2009)

Again there was *O. basilaris* in full flower, as well as creosote bush (*Larrea tridentata*) with its typical small yellow flowers, both plants common in the Mojave desert. The elevation of this place is 1100-1150m. It was almost noon when we were done there and it was getting pretty hot. The thermometer showed 27ºC (the air temperature in the shade) and the soil at the surface was 32ºC in shade and slightly over 40ºC in full sun.

Fig.5 *Sclerocactus polyancistrus*, white-spined form.

Fig.6 A quite rare and very attractive form of *S. polyancistrus* with both amber and white spines

To be continued.....

Zlatko Janeba

A day in the Quebrada de Tastil

Aldo and Daina Delladdio tell us about their day trip from San Antonio de los Cobres, a high-altitude town in northern Argentina. It is a stop on the famous 'Train to the Clouds' railway which used to take passengers across the Andes from Salta to Antofagasta in Chile.

Pictures by the authors

Fig.1 *Trichocereus pasacana* in the mist

On February 8th 2011 we left San Antonio de los Cobres at about 9 o'clock. The weather was completely overcast but we didn't want to waste a day there. After all, it was the rainy season, so this weather is what we should have expected.

Fig.2 A large plant of *Pyrrhocactus umadeave*

The day before, we had arrived at San Antonio from La Quiaca via Ruta 40. The road borders the Salinas Grandes and then climbs to San Antonio (3775m). For the last 20km, a nearby stream, the Rio San Antonio, had inundated the road and made driving a little difficult.

Ironically, despite there being water everywhere, San Antonio itself was without water, since a heavy thunderstorm had wiped away a chunk of the aqueduct the day before. Apparently, the lack of water even forced restaurants to close, the only exception was the best hotel in town, Hotel de las Nubes, which enjoys the luxury of a private well.

The more adept at negotiating amongst us managed to get a discount on the rooms, since the hotel was letting rooms, but only with the promise that we wouldn't shower and use the

Fig.3 A 'forest' of *Trichocereus pasacana* showing the change in spination as the plants mature.

toilets only "sparingly". However, after a few hours, tankers, presumably arriving from Salta, were already distributing water to the town, so the ban on showers was lifted, but the discount stayed in place.

When we arrived at the pass at 4100m, it was raining, and visibility was very, very low, so low that we couldn't see anything even at the roadside. We stopped a few kms before Las Cuevas, when we saw some *Trichocereus pasacana* emerging from the mist and decided we could take some nice pictures [Fig.1]. Once we were out of the car and closer to the plants, we noticed other cacti: *Pyrrhocactus umadeave*, *Lobivia ferox* and various opuntioids. Our GPS was indicating an altitude of 3600m and the temperature was just 2.5°C.

We descended the Quebrada de Tastil, and after a few kms, we were below the clouds, so we could start looking around. Shortly after passing Las Cuevas, we saw some small *Pyrrhocactus umadeave* on a hill to the left of the road. The ground was very wet, and some plants were dead. Only one was bearing a single fruit.

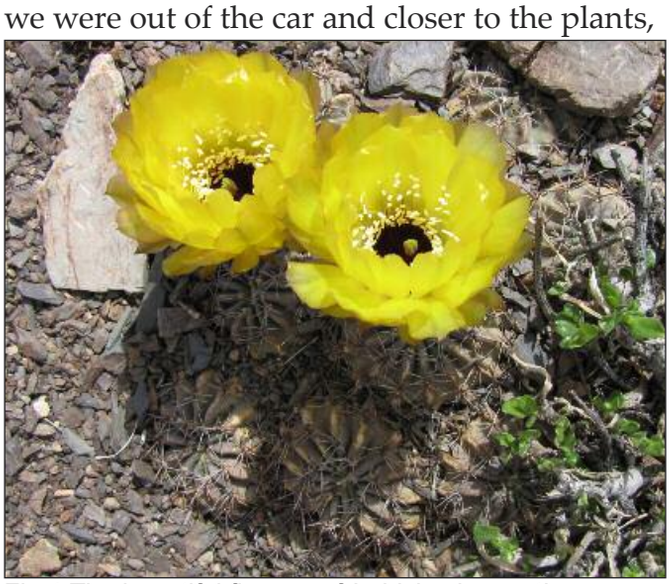


Fig.4 The beautiful flowers of *Lobivia chrysantha*

Fig.5 *Gymnocalycium spegazzinii*, very spiny here

Fig.6 A large population of *Pyrrhocactus umadeave*

More interesting was a locality shortly after Carrera Muerta, right where a sign "Corte Blanco" was probably indicating a place of interest, since there were no buildings around. Here the ground looked rather dry, probably because it was made up of a sort of white grit. A very healthy population of *Pyrrhocactus umadeave* was thriving, the largest specimen being about 40cm tall and 30cm wide, and bearing 2 rings of fruits [Fig.2]. Many specimens of *Trichocereus pasacana* were populating the hills in the background. Our GPS showed an altitude of 3136m.

Still descending the Quebrada, a couple of

Fig.7 The remarkable sight of a hillside with many flowering *Lobivia chrysantha*

Fig.8 *Lobivia chrysantha*, a plant with orange flowers

kms before reaching Alfarcito, the road makes two hairpin bends. Here we saw *Lobivia chrysantha* in flower, living sympatrically with *Gymnocalycium spegazzinii* (all of them in bud, but unfortunately no flowers), and an untidy looking Parodia, *Parodia stuemeri*. Apparently, the flowering season was over for this Parodia, since we saw only one spent flower, and no buds [Fig.10]. However, tiny seeds could be seen lying in the apex of the plants. Most were single stemmed, but we spotted the occasional clump (up to 20 heads), presumably due to damage to the apex.

We stopped just after Alfarcito to take pictures of a very dense stand of *Trichocereus pasacana*. The plants were bearing many ripening fruits [Fig.3].

Unfortunately, an unpleasant surprise was waiting for us at the point where the Quebrada de Tastil joins the Quebrada del Toro, which we hoped to travel upwards: the Rio Tastil was impassable with our 2WD car. After some hesitation and discussion, we decided to return to San Antonio, stopping at places we didn't explore on our descent.

Shortly after Alfarcito, on a hill to the left of the road, we found an incredible stand of *Lobivia chrysantha*, all in flower, with colours ranging from yellow to orange [Figs.4, 7 & 8]. But they weren't alone; they were in company of *Gymnocalycium spegazzinii* (bearing both buds and unripen fruits, but again, no flowers)

Fig.9 *Gymnocalycium spegazzinii*, spectacular plants

Fig.10 *Parodia stuemeri*

[Figs.5 & 9], and the occasional *Lobivia* (*Soehrensia*) *korethroides* and *Pyrrhocactus umadeave*, but *Lobivia chrysantha* was really the dominant species on that hill.

After Las Cuevas the valley widens, and here we saw a huge population of *Pyrrocactus umadeave*. That morning we had stopped almost on the other side of the road, but then we couldn't see either the Pyrrhocactus or the valley [Fig.6].

It was late afternoon when we were back to the pass at 4100m. The sky was now clear and we were able to see the famous Nevado de Acay, which was totally hidden in the morning, before arriving back in San Antonio.

Aldo and Daina Delladdio

aldellad@gmail.com

Echinomastus johnsonii

Darryl Craig, of Corona Cactus Nursery in southern California, tells us about his trip to find *Echinomastus johnsonii*. He gives us some idea of how wonderful it must be to live in a country where such splendid cacti can be found in habitat.

Pictures by the author

Echinomastus is a genus not often seen in collections, partly due to its reputation as being difficult to grow in cultivation. Yes, Echinomastus do have special needs and more care needs to be taken, but they really aren't that difficult to keep in a collection. By following habitat guidelines as closely as possible for greenhouse cultivation, you can successfully grow these great plants.

In an effort to better understand these plants in their natural habitat, my wife and I, along with our friend Jan as our tour guide headed out to the *E. johnsonii* population near Meadview, Maricopa Co., Arizona in May of 2011. In this part of the desert, bumpy dusty dirt roads are all that's here and they form washboard ripples that certainly take its toll on your vehicle's suspension (and your tooth fillings!) As we came to a crossroad junction Jan yelled out, this is it! Not even having come to full stop, we spotted the glowing red spines.

We were merely steps away from what seemed like hundreds of plants. All types of spine colors from red to pink to rose to maroon to black and all the way to gold and yellow. We had not seen these nice gold/yellow spined forms before, so this was a real treat. I was snapping photos like a madman.

This area was very sandy and gravely, and large water washes were easily spotted, some as large as 20 feet across indicating a very large amount of water runoff. We were approximately ¼ to ½ a mile (less than 1km) from the base of the mountains that separate this area from Lake Mead and the city of Meadview. The plants themselves all grew on shallow slopes above the wash lines, as to be expected. Most plants were out in the open fully exposed, while others used small nurse plants. The elevation here is about 2500 - 3000 feet (about 900m).

The plants were more or less uniform in size, averaging 6 -10 inches (15-25cm) tall and 3-4 inches (8-10cm) around and sporting the incredible spination they are known for.

These plants are normally solitary, especially in habitat. However, damage to the growing point by disease or animals will cause the plants to offset, as is the case with almost any cactus. The photo (top right, previous page) shows a healthy plant without any apex damage at all, growing offsets! A very rare sight indeed.

We found several clusters of multiple heads, without disturbing the plant(s) we found it very difficult to tell if there were multiple heads or multiple plants. Most of these clusters had short wide stems, ranging from 3 to 4 inches (8-10cm) tall and 3.5 to 5 inches (9-13cm) in diameter. We concluded that they were probably multiple heads from damage, due to their short fat stance.

At this time of year the plants had just finished flowering and fruits had formed. Unfortunately we were still a few days early for ripe fruit, but we managed to find 2 that had split open. Of the 10 to 15 seeds we collected, only 4 have germinated since being sown in June 2011.

Having walked around for a bit we started to spot small seedlings. We came across a small nursery of about 5 or 6 seedlings that were growing at the base of the mother plant, however, something had uprooted the mother and it was lying on its side. In a hopeful effort to save the plant, we dug a new hole and put momma back in the ground.

Overall, this population was in good health with many plants and a bounty of new seedlings growing steadily.

Echinomastus johnsonii was not the only cactus growing out here. *Ferocactus cylindraceus*, *Cylindropuntia acanthacarpa*, *C. multigeniculata*, *Opuntia ursina*, *O. basilaris*, *O. erinacea*, *Mammillaria tetrancistra*, *Yucca brevifolia*, *Y. baccata* and *Echinocereus engelmannii* scattered the landscape. Also being big fans of Opuntia, it was a treat to see two species we hadn't seen in habitat before.

Some of the Ferocactus had open flowers, as did a few of the *C. acanthacarpa* showing off their multitude of bloom colours. We found an

interesting pink-coloured flower, not one we or our friend Jan had ever seen. We did come across one lonely cluster of *Echinocactus polycephalus*, but did not find any others in the area. There probably are other plants out there, we just didn't see them.

We then travelled about 50 miles (80km) east almost to the entrance of the Grand Canyon West near the Hualapai Nation Reservation. This area had some very steep cliffs and was very rocky, the Grand Canyon scenery was incredible. We found a turn off and parked the car.

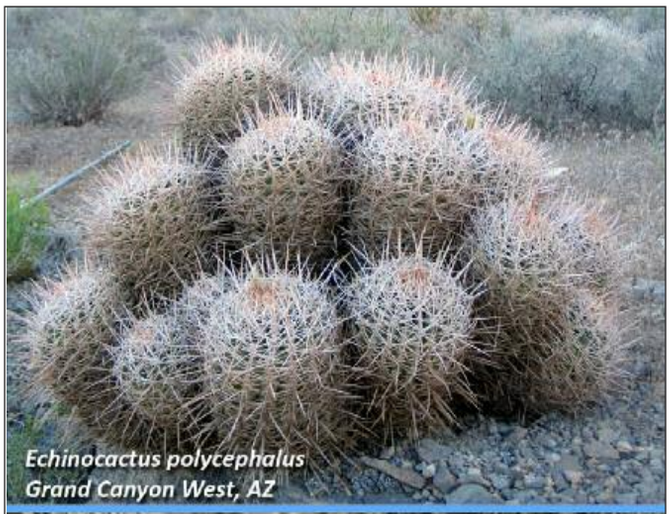
We started up a steep climb through the rocks to get to the lower ledge of the outcrop, finding *Echinocereus mojavensis* on the way up, clinging to the cliff edges. Once atop, we found a lot of *Agave utahensis*, more *E. mojavensis*, *Opuntia basilaris* and some very nice *Escobaria vivipara* in bloom. It was hard to walk more than 10 feet (3m) without coming across at least one of these plants. Heavenly!

Having our fill on the east side, we climbed down and headed up the west side cliffs. *Yucca brevifolia*, *Y. baccata*, *Echinocactus polycephalus*, more *E. vivipara* and *E. mojavensis* and *Echinomastus johnsonii* greeted us. Clumps of *E. polycephalus* where everywhere, as was *Echinocereus mojavensis*. *Echinomastus johnsonii* weren't as abundant, but certainly in account. The plants here were slightly smaller than the Meadview population, and again we found more seedlings. Some as small as a writing pen tip, others closer to golfball size.

The only downfall to this area was the massive dust clouds from the constant cars and tour buses along the dirt road.

We managed to find a few *E. polycephalus* with seed pods still intact and of the 15 or so seeds we collected, 3 have germinated since sowing in June 2011.

We have plans to return to these areas to catch more plants in bloom and to check up on how the seedlings have progressed. We'd like


Echinocactus polycephalus
Grand Canyon West, AZ


Escobaria vivipara
Grand Canyon West, AZ


Echinocereus mojavensis
Grand Canyon West, AZ


Agave utahensis
Grand Canyon West, AZ

to thank our friend Jan for his excellent tour guiding and his generous hospitality.

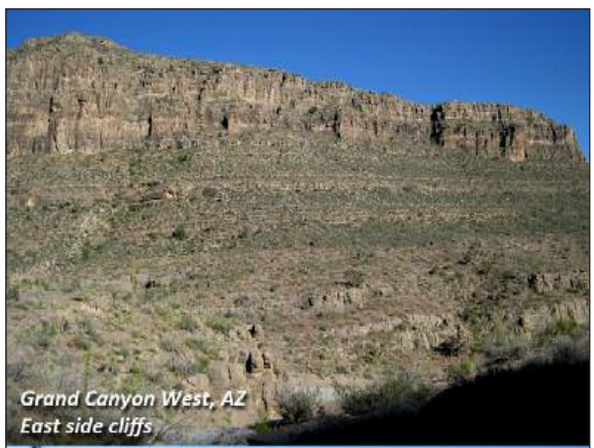
We concluded our travels with a beautiful sunset drive back to Jan's house. Along the road we saw a multitude of *Datura stramonium* [Jimsonweed] in full bloom and looking very lush.

These areas of Arizona did not get the freakishly cold spells that caught southern Arizona off guard. We did not see any evidence of cold damage.

We hope you've enjoyed this little tour, we certainly did! For the entire photo gallery of our three day travel to three different habitats, please visit our website at: www.coronacactus.com in the photo gallery section.

Darryl Craig

Click here for information on cultivation and pictures of seedlings


Grand Canyon West, AZ
East side cliffs


Grand Canyon West, AZ
West side cliffs

Society Page

British Cactus & Succulent Society

Website: http://www.bcss.org.uk Charity no. 290786

- Quarterly full colour Journal, CactusWorld, for all levels of interest, covering conservation, cultivation, propagation, plant hunting and habitats, botanical gardens, plant descriptions, book reviews, seed lists, news and views, and advertisements from suppliers worldwide.
- Optional subscription to Bradleya, a high quality annual publication, with articles of a more scientific nature.
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- Further details also available from our Membership Secretary:
  Mr A Morris, 6 Castlemaine Drive, Hinckley, Leicester, LE10 1RY, UK.
  Telephone: +44 (0) 1455 614410.
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The Sedum Society

Website: http://www.cactus-mall.com/sedum/
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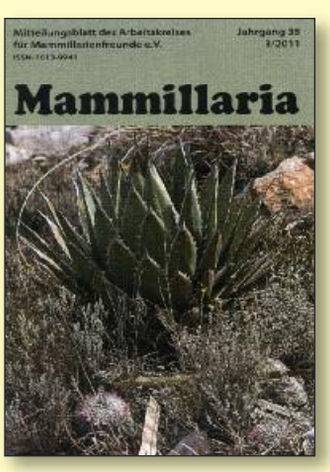
The German Mammillaria Society



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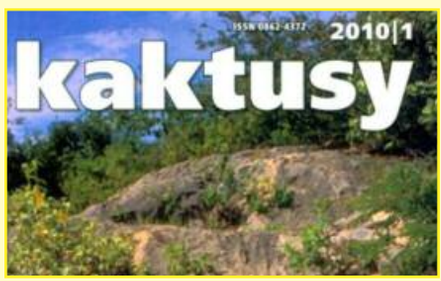
E.mail: jackson.343@ btinternet.com



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.

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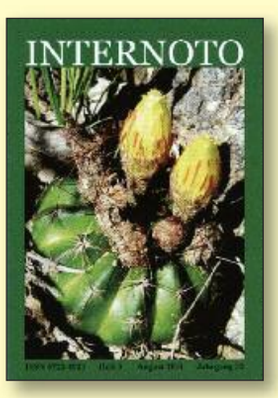

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