Issue 46 September 2025

Cactus & succulent REVIEW

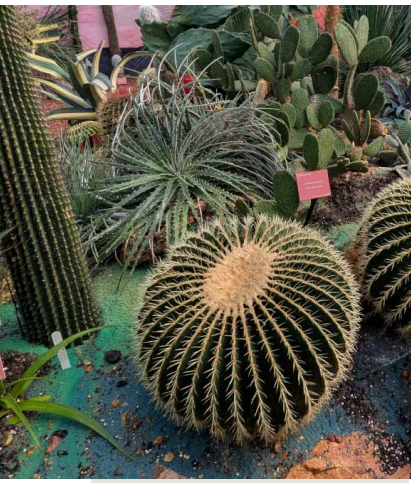
The online magazine for cactus and succulent enthusiasts

Contents

The front cover features *Echinocereus carmenensis* included in Peter Berresford's comprehensive article on the *Echinocereus viridiflorus/chloranthus* complex. See page 41

Editor's NOTES

Welcome to the September issue of the Cactus and Succulent Review



A small section of the World Garden

This year marks the 20th anniversary of the founding of the World Garden at Lullingstone Castle and the *Cactus and Succulent Review* is pleased to join with Cactus at the Castle to celebrate this. I am delighted that Tom Hart Dyke, who is the inspiration behind the World Garden, has written a fascinating article on this which you can read on page 6.

Cactus at the Castle also includes Lullingstone's Mexican Celebrations and, with this in mind, I have two Mexican articles in this issue. On page 31 Ian Woolnough introduces us to *Echinocactus platyacanthus*, one of the most magnificent of Mexican cacti.

Then on page 57 I have Part 1 of Paul Spracklin's Adventures in Mexico. More Mexican cacti? No, Paul is showing us some of the many other amazing plants that share this biodiverse country.

As you read this there are only a few days to go before Cactus at the Castle which is bigger than ever this year. More details are available on the following two pages. See also page 70.

As before vouchers are available for half price entry for *Cactus and Succulent Review* readers. Please note however that the last day for requesting these is **Friday 5 September**. Thank you.

Sheila Cude

Cactus & Succulent REVIEW

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The Cactus and Succulent Review is a free quarterly magazine published in pdf format in March, June, September and December.

Contact Sheila Cude

Back issues

All back issues are available to download from the website.

See page 72

Cactus at the Castle 2025

UK's largest annual cactus event

Saturday 6 & Sunday 7 September
11.00am to 5.00pm

Saturday

Bring and Sell Auction Start 2.00pm

Saturday & Sunday

Cactus Mart with 40 sellers

Talks and demonstrations
Including Graham Charles and Mellie Lewis

World Garden Tours
With Tom Hart Dyke

PLANT SALE

SOUTHFIELDS NURSERIES

Last chance to buy plants from this award-winning nursery at post-closure reduced prices

▶ Further details page 5

CACTUSLAND

Admission

Adults **£14.00*** Under 16s **FREE**
BCSS members **£12.00***
*One day entry – Saturday or Sunday

*Visit on Saturday and get **half price** entry on Sunday*

NB Admission does **not** include entry to the Convention. *See next page for details*.

ONE DAY CONVENTION

Sunday 7 September 1.00pm to 5.30pm

Cactus IN THE Chapel

See the following page for further details

Sunday

Lullingstone Open Show
Open from 11.00am

Download the show schedule from the website

Meet the Rheas

Mariachi Band

MEXICAN FOOD

T's Tacos

Mexican street food.

The Blue Agave Bar

Open all weekend, the bar serves a range of Mexican beers and Tequila cocktails. Harvey's beers, G&Ts and wine also available.

SPECIAL OFFER

For Cactus & Succulent Review readers

Cactus&Succulent REVIEW

1 DAY voucher 2 adults **£7** per person *(One day only – Saturday or Sunday)*

2 DAY voucher Visit on Saturday and get entry on Sunday for only **£3.50** per person

To claim your voucher please email contact@cactusandsucculentreview.org.uk indicating if you would like a 1 day or 2 day voucher. *Last date for requesting vouchers midday Friday 5 September.*

Cactus at the Castle

Lullingstone Castle, Eynsford, Kent DA4 OJA

https://www.cactusatthecastle.co.uk

To mark the 20th anniversary of the founding of the World Garden at Lullingstone Castle

Cactus IN THE Chapel

ONE DAY CONVENTION

Sunday 7 September 1.00pm to 5.30pm

TALKS

Graham Charles
Matucana in habitat and culture

Roger Ferryman
Chile and Argentina over 20 years of travel

Ian Woolnough
Some Mexican highlights

TICKETS

Tickets £16 per person
(includes booking fee)

Places limited to 60 people

Tickets in advance only via the Cactus at the Castle website

Entry includes

Early access to Cactus at the Castle from 10.30am

Coffee and cakes

Cactus at the Castle

www.cactusatthecastle.co.uk/convention

Lullingstone Castle, Eynsford, Kent DA4 OJA

PLANT SALE

SOUTHFIELD NURSERIES

Cactus at the Castle is delighted to offer sales plants from the award-winning Southfield Nurseries.

- A large selection of good-sized plants available
- Offered at specially reduced post-closure prices
- Sales available throughout the event in the Lakeside Marquee

Don't miss this opportunity to purchase these quality plants.

CACTUSLAND

The World Garden

A xerophytic tour

by Tom Hart Dyke

Aerial view of Lullingstone Castle and the World Garden today. Photo: Stephen Sangster

Tom Hart Dyke, a modern-day plant hunter, is the creator of the botanical gem that is the World Garden, located at the historic Lullingstone Castle in Kent.

The World Garden was my vision, conceived when I was kidnapped in Colombia in 2000 on a plant hunting mission for orchids. To help me endure my nine months in captivity I began sketching out ideas. On my release I came home to Lullingstone Castle and started working within the two-acre Victorian walled garden to transform it into the first World Garden of Plants.

Visitors walk through the Moongate to be greeted by some 7,000 plant species, varieties, cultivars and hybrids planted in representations of their respective countries of origin. Almost 80% of the plants grown are not native to this country. A feast for the senses in all seasons, the garden pays homage to the amazing achievements of the great plant hunters who risked life and limb in pursuit of the plants we now cherish in our UK gardens.

I have been helped to shape the garden for many years by volunteers, my family and the local and wider plant community, not forgetting my inspirational Granny 'Crac' who filled me with a passion for plants and adventure from an early age.

The Lullingstone estate includes three acres of formal gardens, 20 acres of arboretum, a woodland walk, river and lake and a small specialist World Garden Nursery selling many plants seen in the gardens.

A Mexican adventure

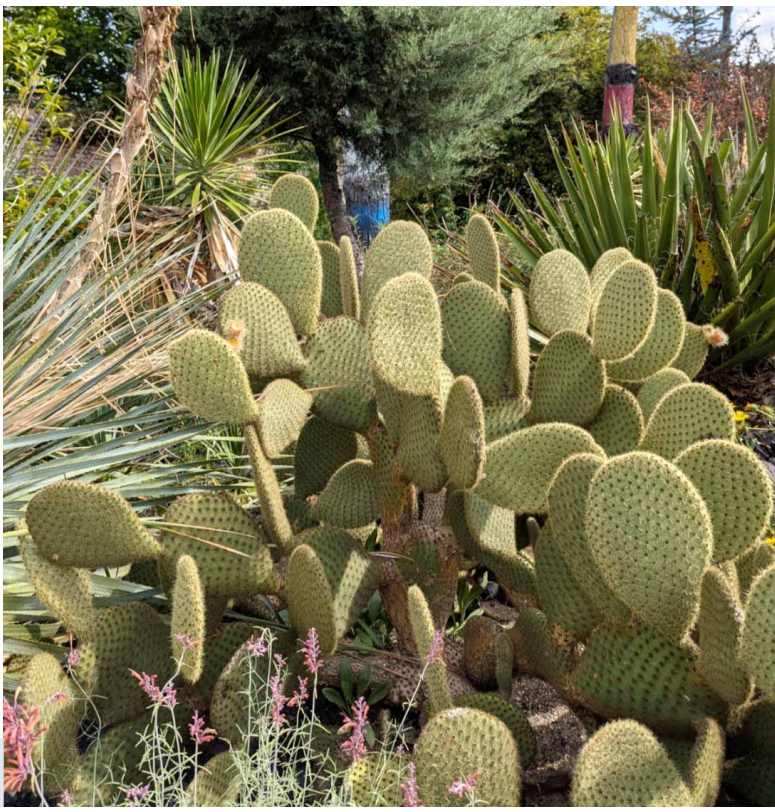
As you come through the Moongate you enter a botanical treasure trove, laid out interactively as a mini map of the world with countries and continents in their actual miniature shapes and specimens phytogeographically planted. Today, you will need to pass Great Britain and traverse the North Atlantic, finally disembarking on the eastern seaboard of Mexico.

The biodiversity hotspot that is Mexico is well represented with (at its widest) a 46ft x 19ft (14m x 6m approx) bed in its actual miniature geographical shape, the coastlines surrounded by glistening white granite rocks, which also serve to hold in the substrate.

The plants are sunbathed in a south-facing aspect in one huge, raised bed, contoured like mountain ranges using 50 car and tractor tyres, bricks, concrete rubble, gravel and tonnes of builder's ballast to create superlative drainage. Specimens when planted are angled towards the sun and mulched with a tonne of house coal which attracts copious amounts of extra heat and acts as a weed suppressant, while contrasting superbly with the various forms and hues of formidable foliage, especially when glisteningly wet.

Coupled with these mini-topographical adaptations, a temporary 50ft long, 23ft wide and 10ft high (15m x 7m x 3m approx) open-ended and open-sided 3ft (1m) from the ground polytunnel is constructed every November and removed at the end of March to keep the winter wet off, while still allowing good air circulation.

Agaves and cacti still freeze solid in extreme cold, such as during our worst winter since starting the World Garden, which was November–December 2010, when temperatures did not rise above freezing for 20 days and nights and dipped to –16.9°C. The plants did not have wet feet, however, and escaped the worst of the chilling winds and the direct effects of a severe frost. The results have been overwhelmingly exciting and my favourite prickly friends that follow were mostly planted before that big freeze in 2010.



Opuntia scheeri

Part of the Mexican bed

The most spectacular specimen in my opinion is *Opuntia scheeri* 'Upright Prickly Pear' from Querétaro State, with oval, heavily spined green pads that even the most determined molluscs cannot penetrate. I believe this species to be the best cactus for outdoor UK cultivation – it does not mind winter humidity and will withstand wet feet and low temperatures at the same time.

Other opuntias that have defied the winters are *Opuntia macrocentra* 'Purple Pad Prickly Pear' from Rincon in New Mexico, with bright yellow flowers with red centres. *Opuntia engelmannii* × *Opuntia minor* from Sunflower, Arizona, with delightfully large, oval pads and well spaced spines sprawls down the miniature mountain while *Cylindropuntia imbricata* (from Christas' Cactus seed) from Stanton County, Kansas, is arboreal in appearance with cylindrical stems and overlapping scales resembling reptile skin and is sporadically adorned with vibrant pink-purple flowers.

Paul Spracklin (left) and Tom Hart Dyke with *Nolina hibernica*

The polycarpic *Nolina hibernica* 'Mountain Bear Grass' is another stunner. It was gifted to me by legendary plantsman Paul Spracklin in 2009, who collected seed in north-east Mexico in 2004. It is now blessed with a significant trunk and pendulous foliage giving a dashing waterfall effect and, in June 2025, it produced an architectural 6ft (2m) scape with whitish flowers to which pollinators flocked. Paul considers it the largest and finest specimen of this species in Great Britain.

Hailing from Tamaulipas State is *Nolina nelsonii* 'Blue Bear Grass Tree', also from Paul Spracklin, and planted in May 2009. It now forms a significant specimen with its delightful blue-green upright, stiff razor-sharp streamlined foliage.

Dasylirion longissimum 'Mexican Grass Tree' which was seed raised in 1977, was sourced from the late, also legendary, plantsman Harry Hay. Only twice has a scape been produced in the UK: in 1994 at Harry Hay's and, in 2019 at the World Garden, a towering 15-foot spike that attracted the bees in droves and was a celebratory occasion.

Yucca faxoniana with wine corks to protect the unwary

Agave lophantha

Flower spike of *Agave mitis*

We have many other *Dasylirion* varieties, including *Dasylirion wheeleri* 'Weeping Blue Twister' with its wondrous blue foliage. The largest, however, is *Dasylirion berlandieri* aff. 'Dolores Form', donated by Elaine Scutt in 2005, originally from seed sourced from Yucca Do Nursery in Texas. In late spring 2025 three 10ft (3m) scapes were produced in a matter of days, with masses of entomologically enticing tiny greenish-yellow flowers and heaps of resultant green winged seed.

Noteworthy 2005 original World Garden plantings include the 'Desert Fan Palm' *Washingtonia robusta* (*Washingtonia filifera* var. *robusta*) with its huge splaying fan leaves; these are damaged most winters but always regrow vigorously. *Beschorneria septentrionalis* is blessed with bright pink-flowering stems, deep iridescent green flowers and huge inflated pendulous seed pods. Also *Echeveria elegans*, *Yucca faxoniana*, covered with wine corks for your protection, *Yucca rostrata* and *Yucca* × *schottii*.

Lastly the agaves: *Agave parryi*, *Agave americana*, *Agave mitis* (molluscs do love it though!) and *Agave ovatifolia* 'Whale Tongue' have survived well over the years with some damage. *Agave lophantha,* donated by the late cactophile Jim Earles, has been unscathed for many years, currently forming clumps of rosettes with decorative yellow-green striped leaves with strong wavy edges and small closely spaced sharp teeth. It's a stunner and I can't recommend it enough.

'Herbaceous' plants such as salvias, dahlias and erigerons contrast well with the spiky aristocrats. The most significant is *Penstemon* 'Crac's Delight' 'Mary Hart Dyke's Beard Tongue', with its supple purple flowers and a furry white throat, sourced by me in the Copper Canyon, Creel, Mexico in November 1999 and named after my dear Granny.

Trekking on another adventure through the Central American rainforest, across the Darien Gap and down the Chilean Andes we are greeted by *Colletia hystrix* 'Rosea' 'The Barbed Wire Bush', a very spiny specimen with spicy curry-fragrant flowers in late summer. We are heading for the richly biodiverse 'Hot and Spiky' polytunnel.

The World Garden Undercover – the 'Hot and Spiky' house

Built in winter 2008, this 53ft long, 23ft wide and 18ft high (16m x 7m x 5.5m approx) south-facing lean-to polythene structure showcases a diverse collection of some 1,000 xerophytic varieties of cacti, succulents and bromeliads from all corners of our green globe. It has become our 'Botanical Flagship' at the World Garden.

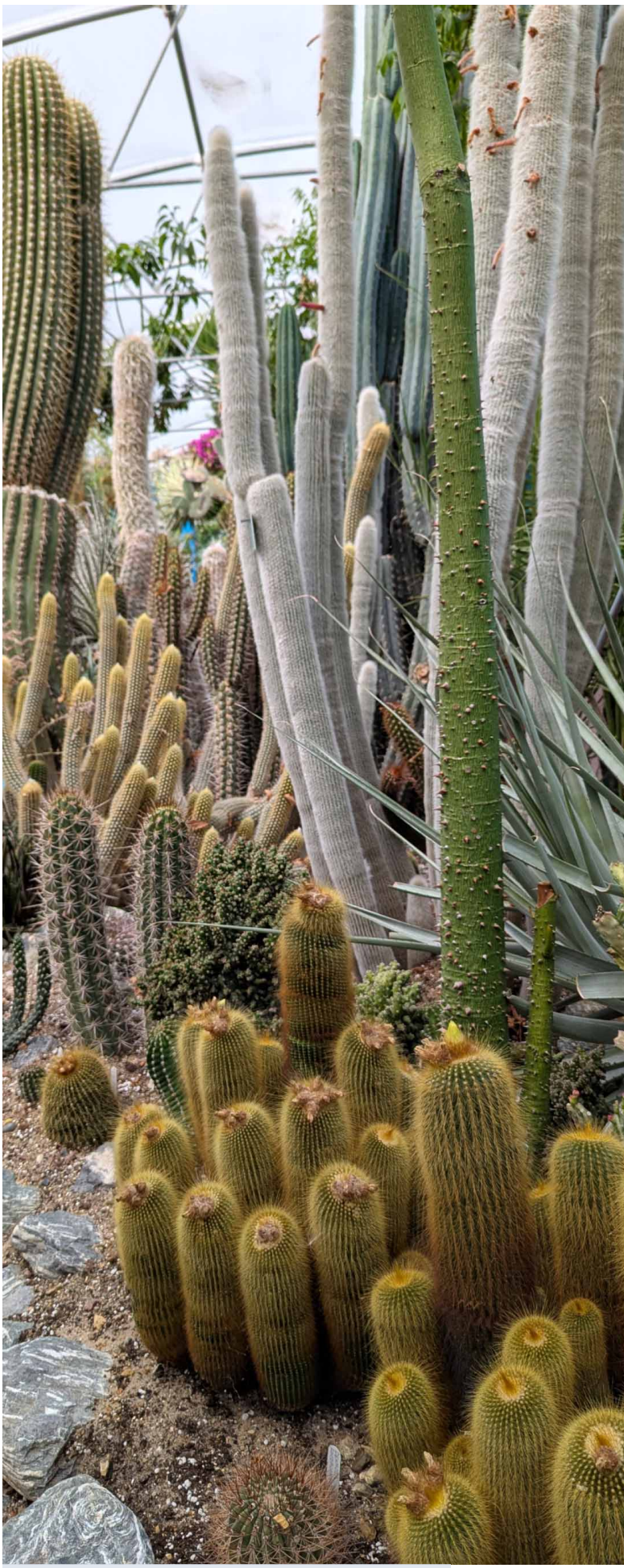
The floor space is phytogeographically planted with five raised themed beds, each edged with a different decorative rock for ornamental effect and to hold in the substrate. All of the beds are laid on a plastic 'honeycomb' floor that is filled with red porphyry rock chippings for an aesthetically pleasing effect (a luscious deep pink when wet!) adding good stabilisation for our substantial visitor footfall.

The backdrop for the entire structure is a rendered brick wall which my dear friend and sculptor extraordinaire Will Jordan painted before planting took place, with the aim of mimicking a moody desert sunset to set off the architectural specimens – it has worked a treat. The wall was built to support a Victorian glasshouse in my great-grandparents' time and, as well as providing its current ornate backdrop, serves to induce an 'oven effect' at night – critically useful during the colder winter months.

The polytunnel itself is twin-skinned with an inflator fan blowing air between the two layers of polythene – this maximises the insulative effect of the polythene and saves up to 50% on our heating bill! Internally, every November I attach two B&Q large circulatory office fans to the metal rafters, one each end of the structure, and at ground level place one 2kw electric heater beneath each of the circulatory fans. The plants love the air movement generated and this very mobile, basic system strives to keep every region of the polytunnel at a similar temperature, avoiding fluctuations. The desired minimum temperature is 5°C, but this is not always achievable. When we open in April for visitors all this is removed.

During the severe cold of December 2010 the temperature in 'Hot and Spiky' dropped below –5°C but, with this air movement and the minimal 4kw of heat, most specimens were fine. The minimum outside temperature dropped to –16.9°C! The steady, daily incremental temperature rise during a winter's day in this polytunnel is excellent, aided by its south-facing aspect, walled backdrop and rock edging and it saved the day in 2010.

Ventilation during the warmer months is provided by a wind-up vent, positioned along the length of the polytunnel at 5ft (1.5m) below the guttering to ground level. In addition two large sliding doors, one at each end of the structure, are open for most of the year except during cold spells. Temperatures at head height often reach 30°C but near the plastic 50°C is possible.



Columnar cacti including *Cleistocactus strausii*

Before I introduce our five phytogeographically-arranged raised beds here are some facts about our simple xerophytic husbandry. The beds are filled with tonnes of builder's ballast (very cheap to buy!) mixed with Levington's multi-purpose compost – an even mix was achieved in a cement mixer – less work too! When planting each individual, a mix of horticultural grit, silver sand and perlite is added to the planting hole and top dressed after planting. Specimens tend to prefer this substrate to the ballast – and it at least gets them off to a good start.

Watering is by garden hose (on average, a two-hour soaking fortnightly from April to the end of October; in the hot 2022 summer it was once a week in July) and is straight from a chalk aquifer, so yes Very Hard Tap Water (we're literally watering with liquid chalk!). As no plants are grown in pots, however, we do achieve a better 'margin of error'!

No feeding has ever been applied. Diffused light induced by the polythene can produce 'lush' plants, especially if watered too much, and rapid growth – resulting in opuntia pads for instance breaking away and root destabilisation occurring.

Specimens are planted far too closely, typical plantsman, but this ensures maximum visual diversity! Thus, pruning from June-September is vital. My dear friend and volunteer Jo Ebner is such a stalwart on a regular basis, and we have many scars to prove it. Lastly pests: occasionally a mollusc is satisfyingly squashed underfoot, mealy bugs and various scale are 'jet washed' with the hose and if red spider mite badly strikes a rebutia the cactus is removed and replaced.

South America

Walking in from the eastern side – you can often hear the audible gasps from visitors as they stroll through a gap in the hornbeam hedge and lay their startled retinas on the contrasting array of columnar South American cacti species. *Cleistocactus strausii* 'Tail of the Fox' from the Andes of north Argentina makes wondrous 8ft (2.5m) + clumps, is endowed with white hairs and, in summer, masses of burgundy tubular flowers which erupt horizontally from the furry yet deceivingly spiky stems.

The centrepiece is a substantial twin stemmed *Echinopsis atacamensis* subsp. *pasacana* (*Leucostele atacamensis* subsp. *pasacana*) 'Upright Sea Urchin' from Argentina – donated by the former Holly Gate Cactus Garden and Nursery.

Gifted by the late John Pilbeam and towering above every other South American plant is a humongous *Echinopsis pachanoi* (*Trichocereus macrogonus* subsp. *pachanoi*) 'San Pedro Cactus' from 2,000–3,000m in the Andes – now blessed with 16ft+ (5m) stems – each growing 3ft (1m) per annum – a ladder and a pruning saw are urgently needed – as they are currently piercing the polythene roof.

Echinopsis peruviana (*Trichocereus peruvianus*) and flower (insert)

My favourite in this bed, donated by plantsman Steve Tavener, are two significant clumps of 'Golden Towers' *Parodia lenninghausii*, with citrus coloured flowers in July.

The most vicious plant award goes to the 'Yellow Hummingbird Flower' *Puya gilmartiniae* from Chile – the lacerating leaf margins are forgiven when in late spring colossal multiple inflorescences thrust upwards – delighting visitors with rich yellow floral parts and, if you are brave enough, copious quantities of nectar to enjoy – despite an occasional crunch on a beetle!

Nearby, soon to be bedded out but for now in a pot, but worthy of a mention is a small 'Queen of the Andes' – *Puya raimondii*, a type of terrestrial monocarpic bromeliad endowed with the world's tallest inflorescence, sourced from a seed collection I made in Peru in 2009. I look forward to seeing it flower in approximately 75 years!

Pruning *Echinopsis pachanoi* (*Trichocereus macrogonus* subsp. *pachanoi*)

Parodia lenninghausii

Puya gilmartiniae

Mexico

The distinctly-contoured biodiverse Mexican bed takes centre stage. The jewels of Mexico are surely the 11 'Mother-in-Law's Cushions' – *Echinocactus grusonii* (*Kroenleinia grusonii*). These prominently-ribbed barrel-shaped cacti were sown in 1967 and are blessed with striking yellow spines. Originally from Querétaro State in Central Mexico and critically endangered in the wild, they are commonplace in xeriscaping designs around the world.

Vying for attention and centrally located is a humongous *Opuntia robusta* 'The Wheel Cactus' from central and southern Mexico. The whitish bloom-covered, blue-green pads are very attractive, especially when each pad can attain 18 inches (45cm) across. Its huge deep red 'pears' are mind-boggling for the salivary glands but just make sure that you extract the glochids with hot water beforehand!

Mammillaria compressa

Echinocactus (*Kroenleinia*) *grusonii* with *Opuntia robusta* visible in the background on the right

Astrophytum myriostigma and Echinopsis peruviana (Trichocereus peruvianus)

A real curiosity is observing a resplendent, grafted *Astrophytum myriostigma* being dominated by its now multi-stemmed *Echinopsis peruviana* (*Trichocereus peruvianus*) rootstock. Ignoring advice, I couldn't resist leaving the vigorous rootstock – it's a bizarre vision – especially when champagne and wine corks are inserted on to the spines of the *Echinopsis* for visitor protection. The 'Smooth Bishop's Cap' is as healthy as ever and the 'Peruvian Torch Cactus' delighted me in 2024 with many scented blooms.

After passing an outstanding *Agave americana* 'Striata', set off delightfully by the surrounding golden spey quartzite coastline, you will encounter a monstrously large *Mammillaria compressa* with exceptionally long spines and, in spring, covered with bright pink flowers. Visitors often remark on the 'underwater coral effect' generated by some of the cacti and succulents, coupled with their ballast, and rocky background. This *Mammillaria* and its environs epitomises this sentiment.

Southern USA and Guatemala

The phytogeographical nature of this bed is filled with prickly artistic licence and features a mix of botanical wonders hailing from the southern United States and Guatemala.

Overshadowing the entire bed is a giant multi-stemmed *Yucca elephantipes*. Originally from tropical Central America, I purchased this commonly grown houseplant from B&Q Dartford in 2009 in a 3-litre pot for £8.99p! Its curved, pointed leaves are caressing the polythene roof and it is endowed with a 3ft (1m) diameter trunk base. Luckily it takes well to pruning! It always makes my chlorophyll boil with jealousy observing superb specimens of this species growing outside in people's gardens in London!

Agave americana 'Variegata' in the southern USA and Guatemalan bed

The centrepiece to the front of this bed is an eye-watering example of *Agave salmiana* var. *crassispina* from Central and Southern Mexico. Its characteristic rosette of wide greenish-grey, pale blue leaves look mystical when our neighbouring Guatemalan volcano erupts, spilling 'smoke' through its architectural leaves!

Two curiosities adorn the edge of the purple schist rocky edging, *Wilcoxia poselgeri* (*Echinocereus poselgeri*) and *Stenocereus eruca*. The former, also called 'Dahlia Cactus', hails from xerophyllous scrub in alluvional soils in Southern Texas and Mexico. I love its cylindrical spidery stems and, of course, the exceptionally big funnel-shaped, pinkish magenta flowers.

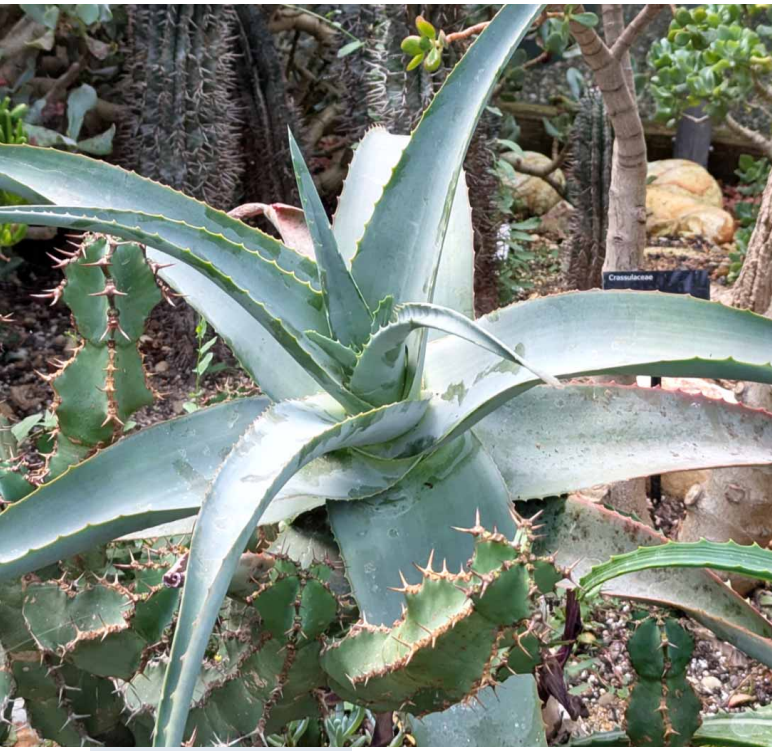
The latter curiosity, called 'The Creeping Devil', originates from Baja California Sur, and was gifted to me by a chap holding a section of his house guttering that had been suspended in his greenhouse by two coat hangers! What an ingenious way to grow a ground hugging species of cactus! I've half buried the lethally sharp stems to great effect and sprinkled multi-coloured children's play pit sand around them for a maximum ornate feel.

Above right and inset: Our miniature volcano erupts shrouding *Agave salmiana* var. *crassispina* in smoke

Stenocereus eruca

Africa

A highly ornate rainbow sandstone encircles the African Bed located opposite South America. You cannot miss a mammoth example of *Aloidendron* 'Hercules' (*Aloidendron dichotomum* × *Aloidendron barberae*) with its blissfully striated trunk. Repeated pruning of the upper crown to prevent it escaping the polytunnel has meant it has lost most of its thick fleshy leaves – but sculpturally the trunk is very pleasing.



Aloe rubroviolacea

Euphorbia clavarioides var. *truncata*

A splendid specimen of *Euphorbia clavarioides* var. *truncata* 'Lion's Spore' hailing from the High Drakensburg in South Africa adorns the base of 'Hercules'. My dear friend and obsessed xerophile Geoff Cooper donated this plant. Beyond are a sea of *Crassula* varieties, my favourites being two substantial *Crassula ovata* 'Blue Haze' – such a wondrously hazy contrast to any green leaves nearby.

Although *Aloe rubroviolacea* 'Arabian Aloe' is from the mountains of Yemen and Saudi Arabia on the Arabian Peninsula I had to mention it because of its exceptionally ornate blue-green thick fleshy leaves forming a 2ft (60cm) diameter rosette. Delicate care has to be taken when working around this plant as the fleshy leaves are so fragile.

Dominating the central section on the African display is a statuesque example of the 'Date Palm' *Phoenix dactylifera* – blessed with arching, blue-green, spiky leaves. The most prized specimen in the South African bed, however, is the 'Elephant's Foot' – *Dioscorea elephantipes*. This bizarre yam relation, donated by Graham Blunt from Plantbase, is 110 years old, making it our oldest plant in the World Garden. Twice yearly vigorously twinning growths emerge from the apex growing up to 12ft (3.6m) before dying back again.

Dioscorea elephantipes

Macaronesia

Macaronesia, the final raised bed in 'Hot and Spiky', is the collective name for the Canary Islands, Madeira, Azores and the Cape Verde Islands. Although no cacti are native to these Mid-Atlantic volcanic islands, xerophytic treats are in abundance.

Top of the succulent tree has to be the arboreal *Euphorbia canariensis* or (Spurge Candles). I have observed towering, dramatic 25-foot clumps of this species in Gran Canaria and become awestruck by their resilience in moonscape environs.

Ceropegia dichotoma

Ceropegia dichotoma 'Waxy Candlesticks' is blessed with smooth, waxy perfectly cylindrical stems, often endowed with weird lantern-shaped yellow flowers. In Tenerife I've seen them locally dominate desolate rocky banks. Beware of overwatering in the growing season – let the substrate completely dry out between waterings.

Kleinia neriifolia or 'Candle Plant' must surely be the most xerophytically weird plant in this bed. It dominates the Tabaibal-Cardonal zone (arid, subtropical areas, often with steep and eroded substrates) and is endowed with articulated branches (constrictions that make them look like rows of sausages) and thick stubby elongated leaves which grow directly from the main stem without a petiole. White to yellow fragrant flowers on the tips of stems are a bonus!

It would be rude of me not to mention the 'Tree Houseleeks'. *Aeonium lancerottense* is from a seed collection I made from the Famara Cliffs in Lanzarote. *Aeonium* 'Blushing Beauty' (*Aeonium arboreum* 'Zwartkop' × *Aeonium canariense*) and *Aeonium* 'Velour' with lovely dark purple leaves that contrast fantastically with its bright yellow flower spikes are also among my sumptuous 'Tree Houseleek' highlights.

Lastly, dotted throughout the bed are superb examples of Madeiran 'Tree Dandelions' (*Sonchus fruticosus*), 'Azorean Bellflower' (*Azorina vidalii,* now *Campanula vidalii*) and exceptionally rare in cultivation, the 'Cabo Verde Spurge' *Euphorbia tuckeyana*. ■

Photos: Tom Hart Dyke, Jo Ebner

For details of location and opening times for the World Garden and the Lullingstone Estate, please go to page 72.

Aeonium 'Velour'

Geranium maderense 'Guernsey White' with *Geranium maderense* behind and *Aeonium arboreum* in the background

First impressions of Cremnocereus albipilosus

by Ed Shaw

Cremnocereus albipilosus is a remarkable and distinctive recent cactus discovery, being a tall columnar species with its spiny stems hidden under a dense covering of white hair.

I first came across this species in June 2018, in a post on the British Cactus and Succulent Society (BCSS) forum entitled 'A fuzzy species nova'. The description immediately piqued my interest for its striking appearance and the fact that it was not just a new species but a new genus.

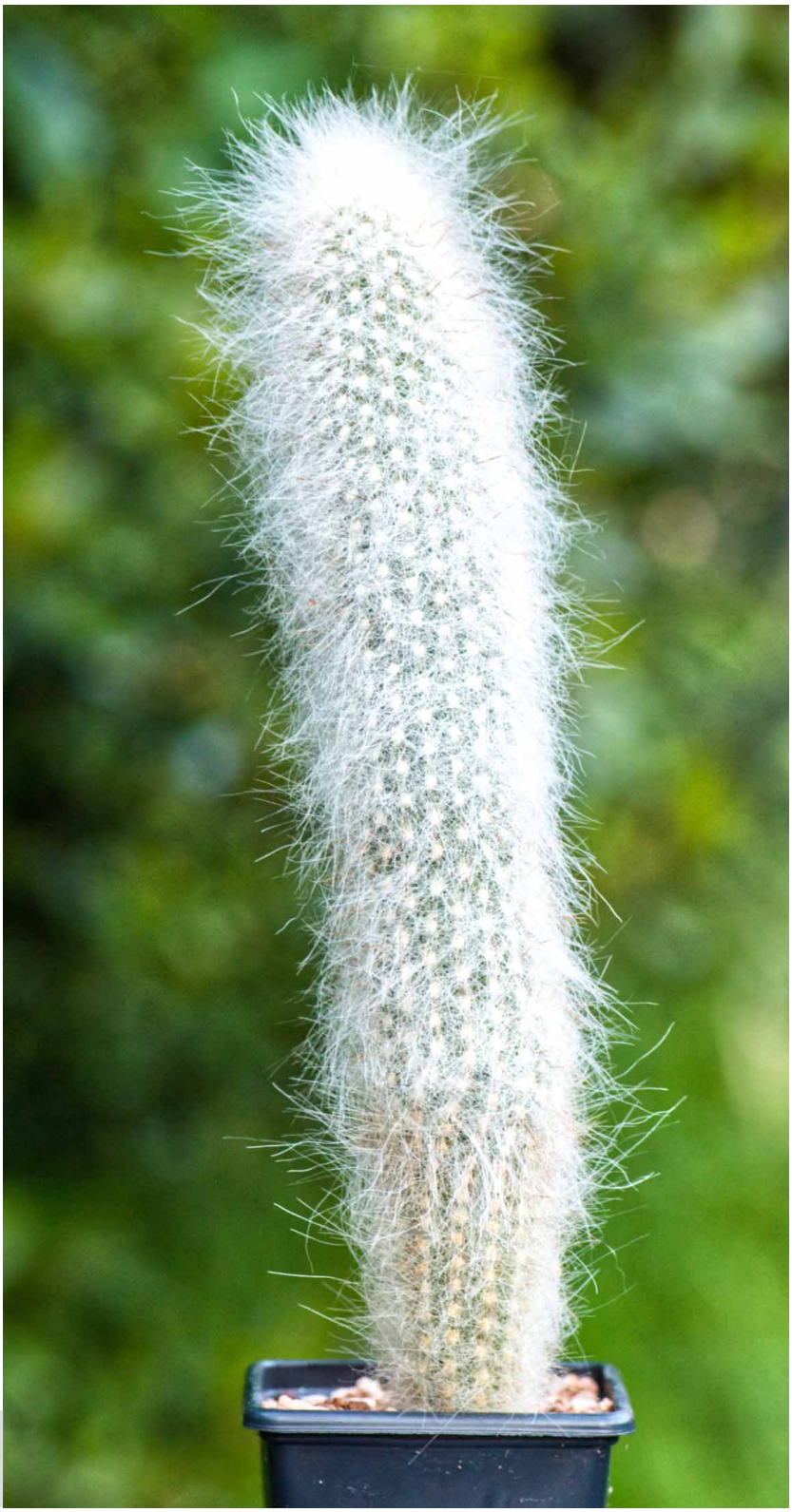
The post mentioned that a co-author of the species, with Martin Lowry, was Mats Winberg, the owner of the Swedish seed business Succseed, from which I regularly purchased seeds. I eagerly checked updates to Mats' website, hoping to see this species for sale.

It was not until autumn 2021 that my wish was finally fulfilled, and I wasted no time in adding it to an order I had already placed. A few weeks later my order arrived, including 22 seeds of the *Cremnocereus*.

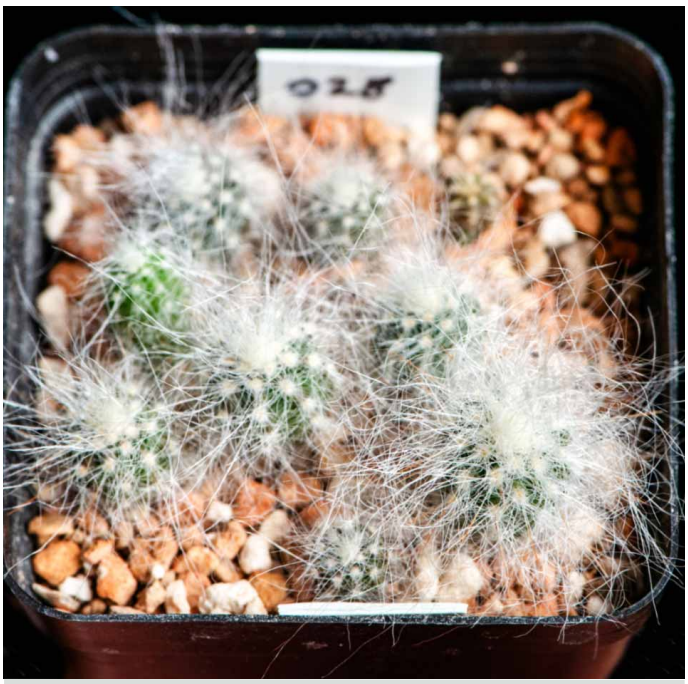
Seeds are black, about 1mm long and, without microscopic inspection, seem typical of many smaller-seeded cacti.

Germination

I sowed the seeds under my standard cactus seed-raising regime – an 80:20 mix of molar clay cat litter and perlite sterilised in sealed plastic containers, with some Chempak no. 8 fertiliser. Temperatures varied around 25°C plus during the day, rather lower at night, with LED illumination for 15 hours a day.



Cremnocereus albipilosus 27cm high after 4½ years



Slow starters – *Cremnocereus albipilosus* seedlings at 10 months

The same seedlings at 12 months after a growth spurt

Germination started from day 8. The seedlings were initially 1 or 2mm green blobs and progressed slowly at first. This slow growth seems reminiscent of *Cleistocactus* seedlings in my experience.

Once they reached a 'critical mass', maybe 1cm or so tall, progress accelerated such that they became quite fast growers. Tiny seedlings already show a distinct woolly character and the needle-like spines develop even under my slightly subdued LED lighting. Initially spherical, the columnar form starts at around 1-2cm tall.

Ongoing growth

Subsequent culture was rewardingly straightforward. Seedlings do not seem unduly susceptible to damping off and progress at an encouraging pace. They sometimes suffer a growth check and develop a 'neck' a few centimetres above ground level, perhaps as a result of some aspect of my growing conditions.

Once a few centimetres tall the young plants seem robust and, under their shaggy fur protection, can cope with full sun. By treating them well I have achieved 10cm of growth in 12 months from seed although normally it's rather less!

A 15cm plant in a 5cm pot

Plants live in my unheated greenhouse most of the year, being brought in to a cool windowsill during the coldest months. Some plants have endured brief spells of very mild frost without a problem but I have not felt inclined to further test their hardiness. Watering and fertilising requirements seem totally standard – this species does not seem to be finicky!

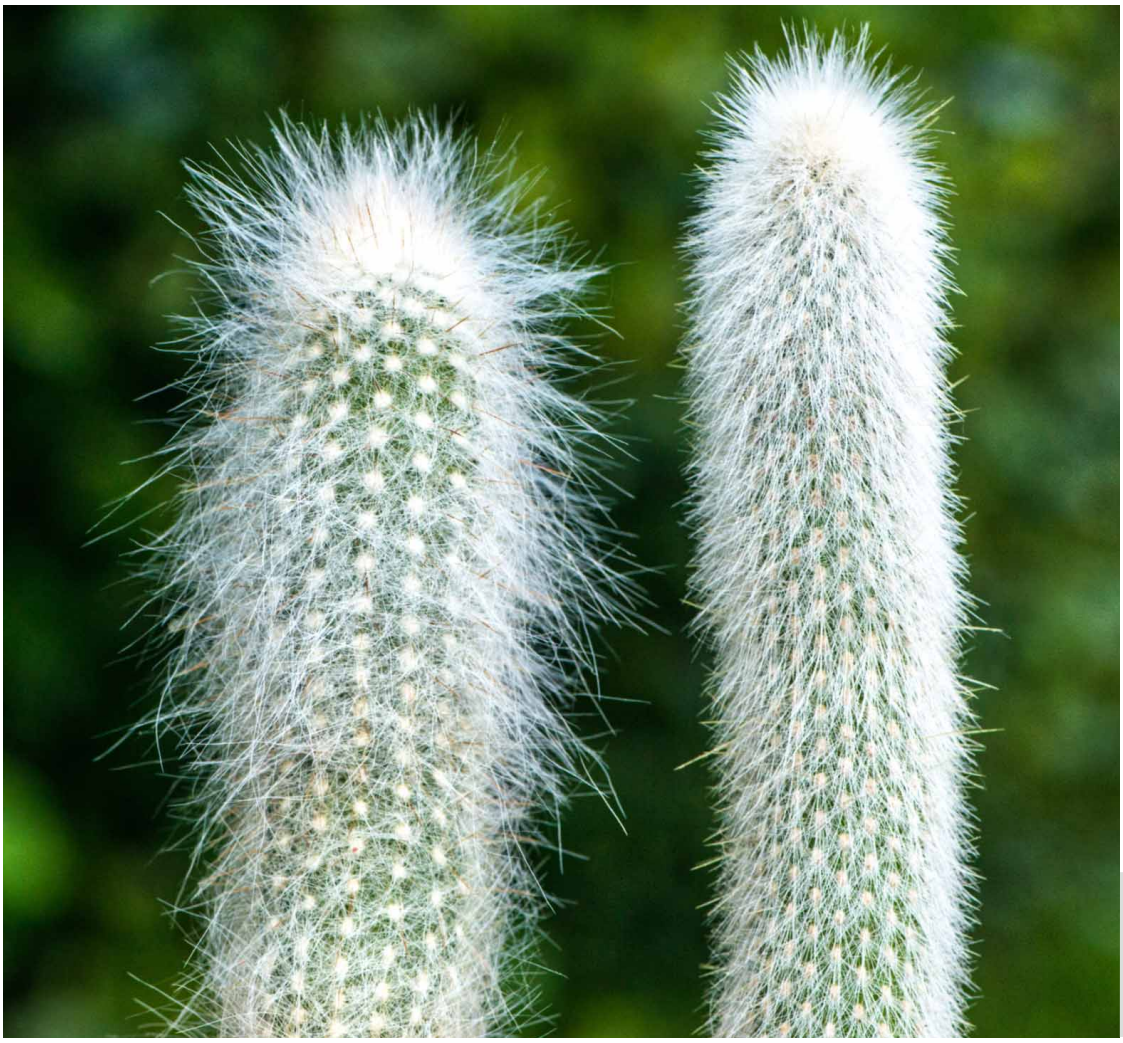
The largest plant I have retained from the initial sowing is now about 27cm tall. It has shown no signs of basal branching yet and presumably flowers are also a few years away.

One quirk I did encounter was that stems often grew a bit banana-shaped. I assume this is an accident of my growing conditions in some way, rather than a feature of the cliff-growing plants themselves!

If you are a fan of hairy columnar cacti, I would recommend this handsome species as worthy of a place in any collection.

Photos: Ed Shaw

Three plants, some showing a distinct banana shape



Comparison between *Cremnocereus albipilosus* (left) and *Cleistocactus strausii*

Turkish gems

by Ray Stephenson

When the subject of succulent habitats is broached rarely does one hear of Türkiye. It may surprise some when I say at least 61 taxa have been reported from this country, some of which are endemic.

They are all in the family Crassulaceae and 44 of them are sedums.

Türkiye is a massive country, as wide as the USA, although it works on only one time zone. Our trips have taken us to most parts but it is so easy to overlook plants with a limited range.

I worked with three Turkish professors (1) in 2006 when we published the distribution of the *Sedum* species of Türkiye as known at that time.

Further investigations in the field (2001, 2003, 2004 × 2, 2005, 2006, 2013, 2014, 2015 and 2025) made me question some of these records, especially when three sites for *Sedum acre* proved to be for the similar *S. urvillei* (Fig. 1). At one stage I convinced myself that *S. acre* (Fig. 2) was not native, but did eventually find it in a number of places in the north-east of the country.

Fig. 1

Few overseas visitors frequent the Turkish Lake District. Here on the side of Lake Beyşehir is *Sedum urvillei* which is common there and has regularly been misidentified as *Sedum acre*

There are a number of other yellow-flowered stonecrops in Türkiye, some of them annual, and even more species that are white-flowered. *Sedum ursi* (Fig. 3) was not described until 1990. As with other species of this genus, vertical cliffs seem to be a favoured habitat, away from larger-growing competition, and plants appear capable of growing on rock without apparent humus.

Sedum dasyphyllum grows from Spain right across Southern Europe and across North Africa but there are so many contrasting forms it is difficult to believe they all belong to the same species. In alpine Türkiye, plants are tiny and only grow in cracks or crevices on vertical faces, often being protected from above by an overhang.

Fig. 2

Growing on the remains of the phenomenal ruins of the Hittite capital Hattuşa in the bleak north central region is *Sedum acre* looking very different to the North European form of this species which is tetraploid. This diploid form is much bolder and larger

Fig. 3

Sedum ursi growing near the peak of Davos Dağı on limestone at over 2000m

Fig. 4

Another stonecrop, *Sedum dasyphyllum,* near the peak of Davos Dağı on limestone at over 1800m

Until the DNA studies of Henk 't Hart at the turn of the century it had not been realised that *Sedum rubens*, as it was understood at the time, was made up of two distinct species. *Sedum rubens* has a single whorl of stamens (hence Linnaeus said it was a crassula) and *Sedum eriocarpum* has two whorls. Since then the widespread latter species has been subdivided into nine subspecies and grows in disjunct sites from Greece as far east as Pakistan, (although the Pakistani find has not yet been published and may be another subspecies).

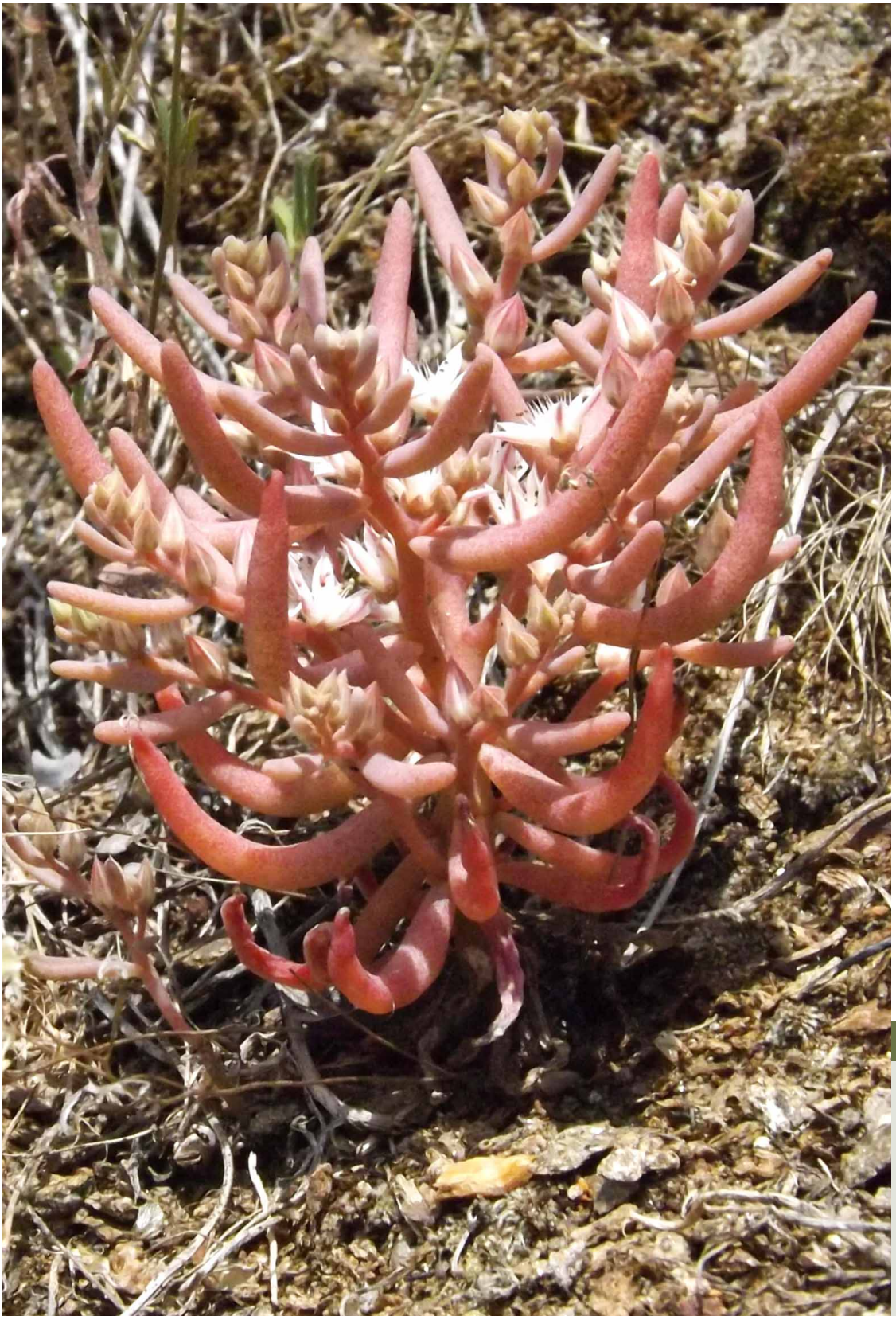


Fig. 5

This winter-growing annual is *Sedum eriocarpum* subsp. *caricum* which usually prefers serpentine rock but here is growing at Kömüreü Pass (975m),south of the ancient city of Tire

Of course, many more succulents other than sedums grow in Türkiye – two species of *Petrosedum* are common: *P. sediforme* (Fig. 6) grows in every Mediterranean country except Egypt and is usually found in relatively coastal areas. In contrast *P. amplexicaule* subsp. *tenuifolium* (Fig. 7) is from higher levels and is dormant all midsummer when it dries back to propagules.

Every library should have a copy of Urs Eggli's monograph on *Rosularia* (2). *Rosularia* are rarely seen in the UK as they are so difficult to perpetuate in cultivation, often flowering themselves to death. In the wild, like their sedum cousins, they prefer vertical sites and are regularly spotted at ancient sites growing in the joints of Lycian, Greek and Roman walls. The two species most likely to be seen near the south coast are *R. globulariifolia* (Fig. 8) and *R. serrata* (Fig. 9).

Fig. 6

Petrosedum sediforme can grow to 30cm and is seen here growing on the Adrasan peninsula in 2025

Fig. 7

Petrosedum amplexicaule subsp. *tenuifolium* (*Petrosedum tenuifolium*) is growing below the ski resort of Saklikent at about 1700m in early May 2025

Fig. 8

Rosularia globulariifolia growing in the joints of the ancient Greek city of Rhodiapolis

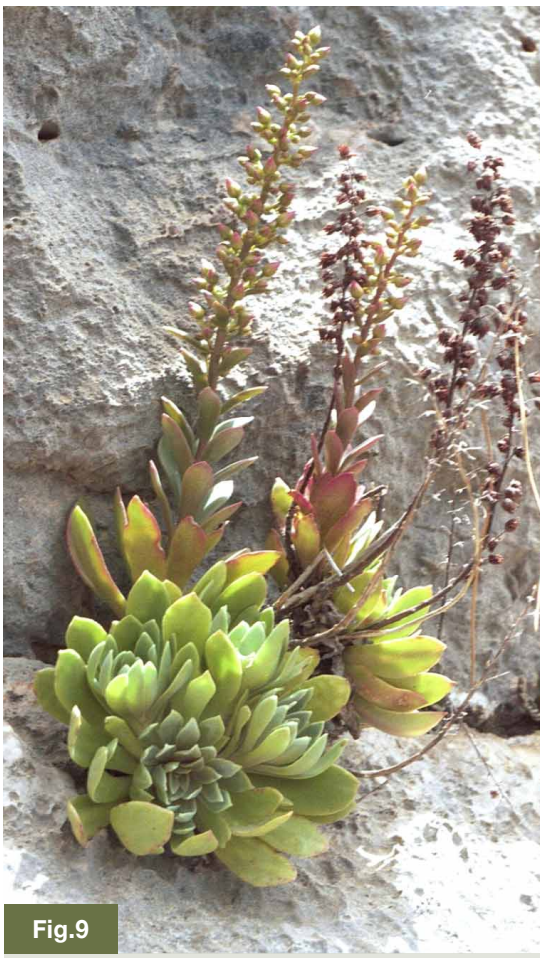


Fig.9

Rosularia serrata on the ancient site of Kadyanda

Fig. 10

Rosularia sempervivum in the Beydağları National Park growing in a natural rock joint

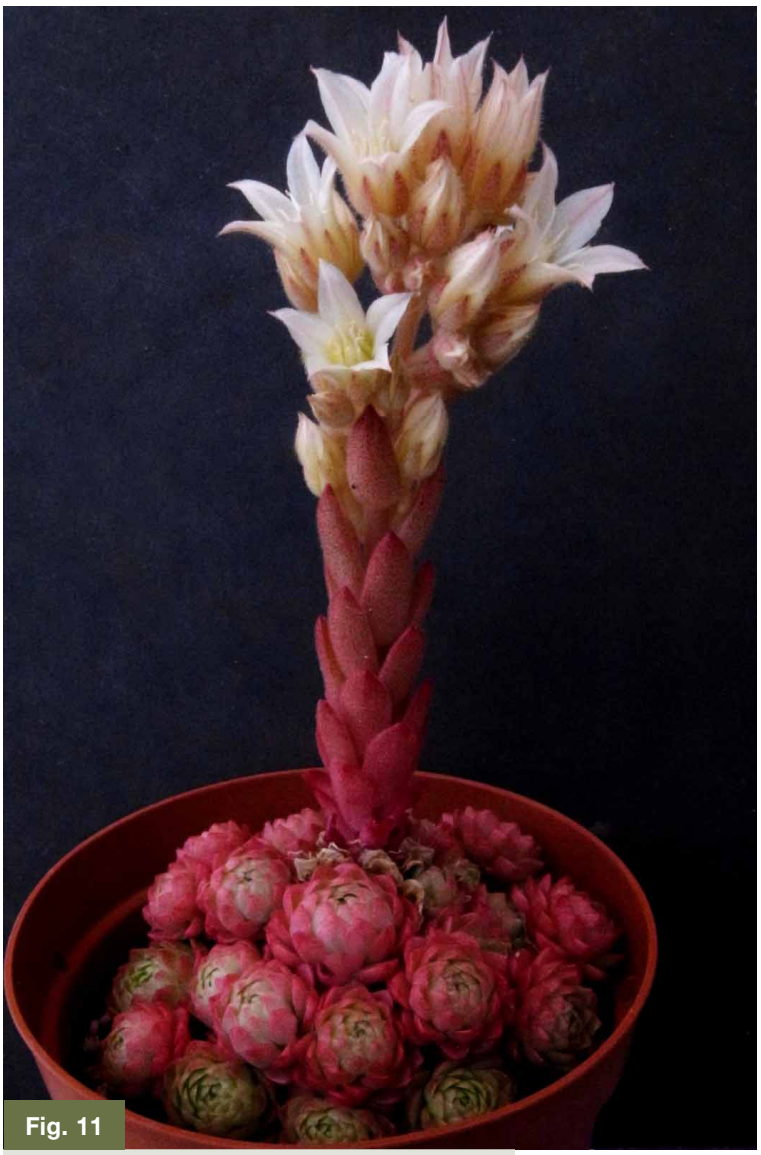


Fig. 11

Chaloupkaea muratdaghensis in cultivation

Eggli clearly realised in his monograph that the genus *Rosularia* was made up of two distinct chromosome patterns and since that time species have been removed to *Chaloupkaea* and *Prometheum*. Some species of the former can be acquired from alpine growers – usually with the old name *Rosularia* (Fig. 11). Sadly, the biennial, high alpine *Prometheum* are difficult to perpetuate in cultivation as it is important to sow the seeds with care. The Royal Botanic Gardens in Edinburgh grew a magnificent scree slope of *P. pilosum* and *P. sempervivoide*s but after three years all had disappeared.

Fig. 13

Prometheum sempervivoides

Fig. 12

Prometheum pilosum in cultivation

The final genus I wish to illustrate is *Umbilicus*. Several species are native to Türkiye but none as unusual as *U. parviflorus* (Fig. 14) which can grow well over a metre high with its spike of yellow stellate flowers (a real contrast to our native species).

Sadly many of the rich succulent sites near the south coast have been eradicated by mass tourism but it is still possible to photograph succulent gems. ■

Photos: Ray Stephenson

Fig. 14

Umbilicus parviflorus

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Maihueniopsis hickenii

by Phil Crewe

There are some cacti, even some opuntioids, that show up on multiple stalls at cactus marts, that receive frequent posts in online discussion groups and communities or that might comprise the majority of entries in a given show class. *Maihueniopsis hickenii* isn't one of them.

Despite being described by Britton and Rose as an *Opuntia* in *The Cactaceae* in 1919, where a short description is accompanied by a small line drawing that could not be mistaken for anything else, this species has not become popular among collectors in the intervening century.

Maihueniopsis hickenii, a typical long-spined form

Fig. 1

For much of that time it was not recognised as a good species and was thought to be either a redescription of the similar-looking *Maihueniopsis platyacantha* or merely a synonym of *Maihueniopsis darwinii*. Cultivated plants bearing the name were, and occasionally still are, one of these species mislabelled. The original *Opuntia hickenii* was not recognised at species level in the genus *Maihueniopsis* until 2011.

Maihueniopsis hickenii is one of the most southerly growing opuntioids, found in fairly scattered locations at low altitudes in Chubut and just over the border into Río Negro, Argentina. Perhaps it is more widespread, growing in other areas between the handful of known sites.

This region is seldom visited by cactus explorers because so few species live there, which also explains why seed has only rarely appeared in lists until recently. Thankfully, increased interest in *Maihueniopsis* and other cacti from this region, such as *Austrocactus* and *Pterocactus*, means correctly labelled seed is now encountered from time to time. It germinates well without any special treatment and young plants quickly take on an adult appearance (Fig. 2), unlike some other species that produce only bristly spines for a few years.

Fig. 2 Seedlings already producing their fierce spines

Fig. 3 A long-spined form of *Maihueniopsis hickenii* just coming into bloom

Fig. 4

Maihueniopsis hickenii DJF 214 (south of Sarmiento, Chubut, Argentina, collected as *Tephrocactus darwinii*)

I find it difficult to grow tight clumps of this species as it tends to lean, then sprawl. Although photos of young plants in habitat show tight clusters, mature plants appear to form low, loose mats, so maybe I am not doing anything wrong with my cultivation methods.

The stems are made up of green ovate cladodes with relatively few, large areoles on slightly raised tubercles. Each areole bears long, flattened spines. Of my three mature plants, two produce four spines of between 9cm and 13cm in length whereas on the third the spines tend to be produced singly or in threes and are only 2–3cm long. The lower third of the cladodes' areoles are spineless.

Whatever their length, the spines have a prominent, dark midrib flanked by grey edges (Fig. 5), which helps to distinguish this plant from *M. platyacantha* with its yellowish spines marked with obvious transverse ridges. Young spines are produced in a tidy fashion but become twisted and tangled with maturity. This, I think, is the great appeal of this plant.

Flowers are produced fairly readily; my three mature plants have all flowered, producing blooms of varying shades of orange, usually paler towards the centre and darker at the edges of the tepals (Figs. 3 and 4). The spines sometimes limit how widely the flowers can open.

With its tousled spines and orange flowers, this *Maihueniopsis* is one of the more attractive species in the genus and deserves to be grown more often, though probably better for the greenhouse or cold frame than a windowsill where it would pose something of a hazard. ■

Photos Phil Crewe

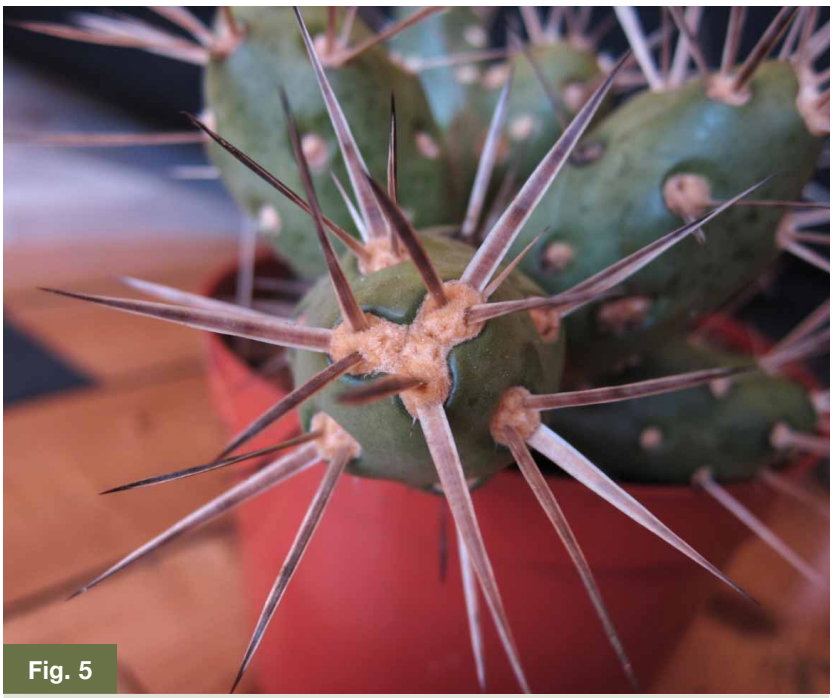

Fig. 5

Maihueniopsis hickenii DJF 214 The large areoles are less felted than on the other plants. The spines, although short, show the characteristic dark midstripe

Echinocactus platyacanthus

by Ian Woolnough

Fig. 1

At locations where *Echinocactus platyacanthus* likes to grow there can be hundreds of large plants. This hillside is near the Puebla/Oaxaca border

I have been lucky enough to travel to a number of cactus habitats in numerous countries and, although it is hard to pick a favourite, it is probably Mexico. Why? Because of the staggering variety of species that can be found and the food, people and overall experience.

Sadly there are many social issues being regularly reported from mainland Mexico, including drugs and organised crime, murders and kidnappings, which means that the Foreign, Commonwealth and Development Office advises against all but essential travel to most states, which invalidates any travel insurance.

Travel to the two Baja states, the bit of Mexico to the south of California, used to still be possible but again there is risk and the border areas with the United States have always been best avoided. Parts of southern Baja are now affected by violence as well so even this is now best avoided. Although Baja does have some great plants, including a number of endemics, it does not have the range of things that mainland Mexico has.

So I thought it might be of interest to cover one of the great Mexican mainland endemics I have encountered during my travels, *Echinocactus platyacanthus*.

Fig. 2

A typical grouping of large plants in Hidalgo

Fig. 3

Perhaps the tallest encountered plant of *Echinocactus platyacanthus* with the author in San Luis Potosí

In habitat this is an impressive plant forming large barrels often beach-ball sized and sometimes much larger (Fig. 2).

It is one of the many plants that we would struggle to grow to its full size in our greenhouses. This is not because they are particularly difficult, rather they are fairly slow growing and take many years and a lot of space and patience to reach their full potential.

Echinocactus platyacanthus is a reasonably common plant in the central and north-eastern Mexican states. As can be seen (Fig. 1) they can be locally numerous and in time reach immense proportions (Fig. 3).

They grow on limestone substrates and are often associated with palms and many other cacti, including the much smaller *Turbinicarpus*, *Ariocarpus* and *Thelocactus* as well as agaves and other succulents.

Fig. 4

This plant in Nuevo León has presumably had its growing point damaged to give this very strange growth habit

Fig. 5

A close-up of the cross-like spines. Picture taken in Hidalgo

One of the diagnostic features is the lovely cross arrangement (Fig. 5) of the spines although, apart from a couple of *Ferocactus* species including *F*. *histrix*, *F. haematacanthu*s and *F. pilosus* that grow in its range, it is hard to confuse big plants with anything else, especially on closer inspection.

For such a large plant the flower (Fig. 6), which appears from the dense felt-like wool in the crown of the plant, is not that impressive, only managing perhaps 5cm across and always a buttercup yellow.

I'm not sure I'll ever see my seed-raised plants flower though, as after five years the seedlings are only the size of ping-pong balls, although the fierce spination and beautiful bluey grey-green bodies make them very attractive none the less. Seed does not seem hard to germinate but they are not rapid growers.

Photos: Ian Woolnough
with thanks to Paul Klaassen for help with Fig. 3

Fig. 6

As with many large barrel cacti the flowers of *Echinocactus platyacanthus* are not particularly large or abundant. Picture taken in Nuevo León

Introducing Haemanthus

By Colin C. Walker

Introduction

Linnaeus named *Haemanthus* in 1753, the name being derived from the Greek '*haima*' meaning 'blood' and '*anthos*' (flower) that described the blood-red flowers of some members of the genus.

Haemanthus was among the earliest plant introductions in European cultivation because, being bulbs, they travelled and survived well on the long sea voyages from South Africa. Gouarus de Keyser was an early plant collector at the Cape who, in 1603, dug up some bulbs for his brother, Jacobus de Keyser, a wealthy merchant and plant lover from Wiesbaden. The bulbs were distributed in the Netherlands where they flowered in 1604.

Mathias de Lobel (1605) was the first to publish descriptions and illustrations of what were then considered to be species of *Narcissus* (Fig. 1). The plant shown on the left in flower is most likely what is now *Haemanthus coccineus* whereas the plant on the right, without flowers, is of uncertain identity (Snijman, 2025).

A new monograph on *Haemanthus* has just been published that recognises 25 species (Snijman, 2025). This includes three recently recognised species: *Haemanthus humanii* from 2022 together with *H. arenicola* and *H. leipoldtii* upgraded from their former subspecific status. This work is illustrated with excellent watercolours, mainly by the talented late South African botanical artist Ellaphie Ward-Hilhorst.

Haemanthus is a mainly deciduous group of bulbous geophytes confined to South Africa (all nine provinces), Eswatini, Lesotho and Namibia, where they are autumn-flowering and winter-growing. The centre of diversity for the genus appears to be Namaqualand. Just four species are considered succulent: *Haemanthus albiflos*, *H. avasimontanus*, *H. deformis* and *H. pauculifolius* (Van Jaarsveld, 2020), of which only *Haemanthus albiflos* is commonly encountered in cultivation.

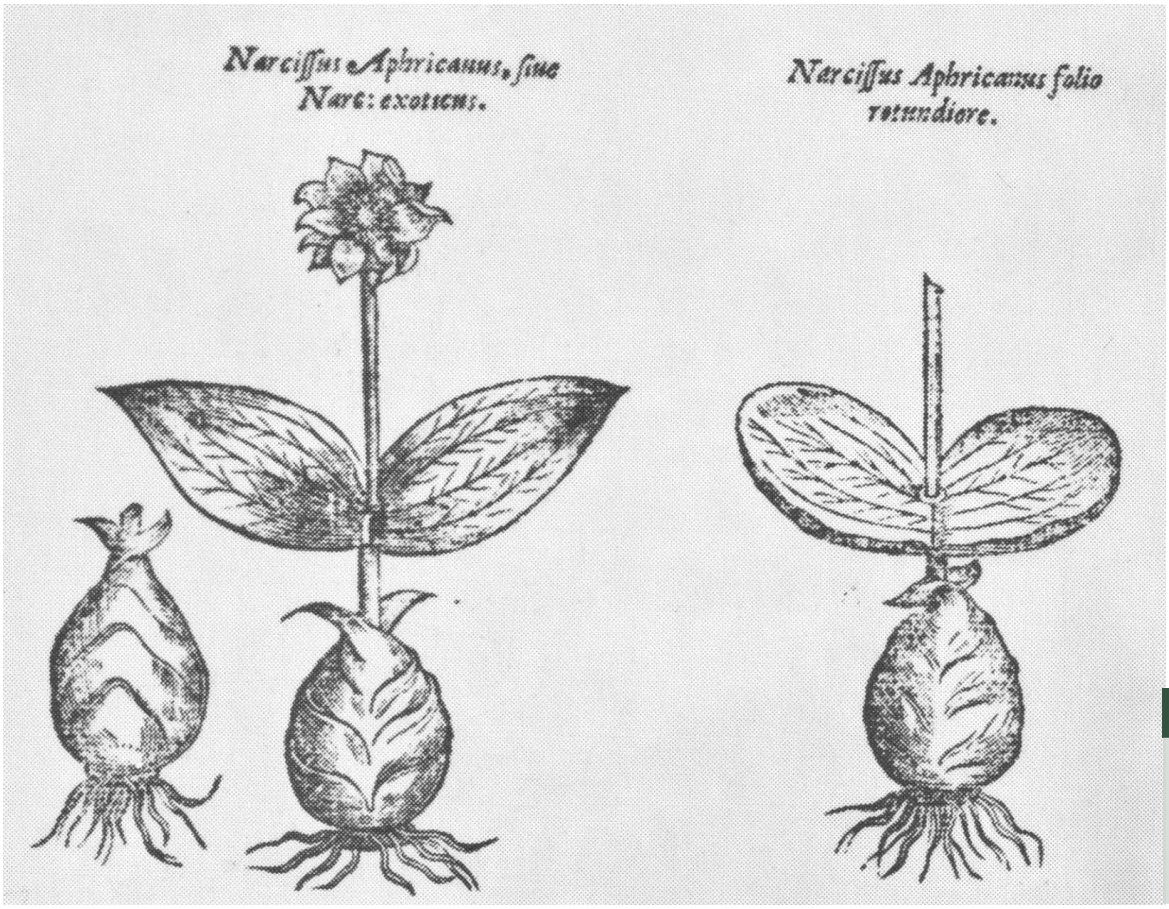

Fig. 1

The first published images of *Haemanthus* (from Lobel, 1605)

In Europe the plants are spring and summer growers, with the deciduous species losing their leaves in the autumn and hence are completely leafless in the winter and effectively disappear underground.

Regrettably, *Haemanthus* are not deemed eligible for showing at British Cactus and Succulent Society shows. Here, just a small selection of the species is showcased, focussing mainly on the succulents.

Haemanthus coccineus

This is the type species of the genus that has already featured here in an article by the late Roland Tebbenham (2023). This is one of the deciduous, non-succulent species.

As mentioned above, this was one of the earliest introductions to cultivation, first illustrated in 1605 (Fig. 1). It was later painted in a watercolour by Jan Moninckx in 1699 in Amsterdam (Fig. 2) that was used as the basis for the engraving published in 1701 (see Tebbenham, 2023).

It is widely distributed throughout the winter-rainfall region of southern Africa, from southern Namibia to the Cape Peninsula and eastwards to near Makhanda (formerly Grahamstown) in the Eastern Cape Province, where throughout this range its habitats vary greatly.

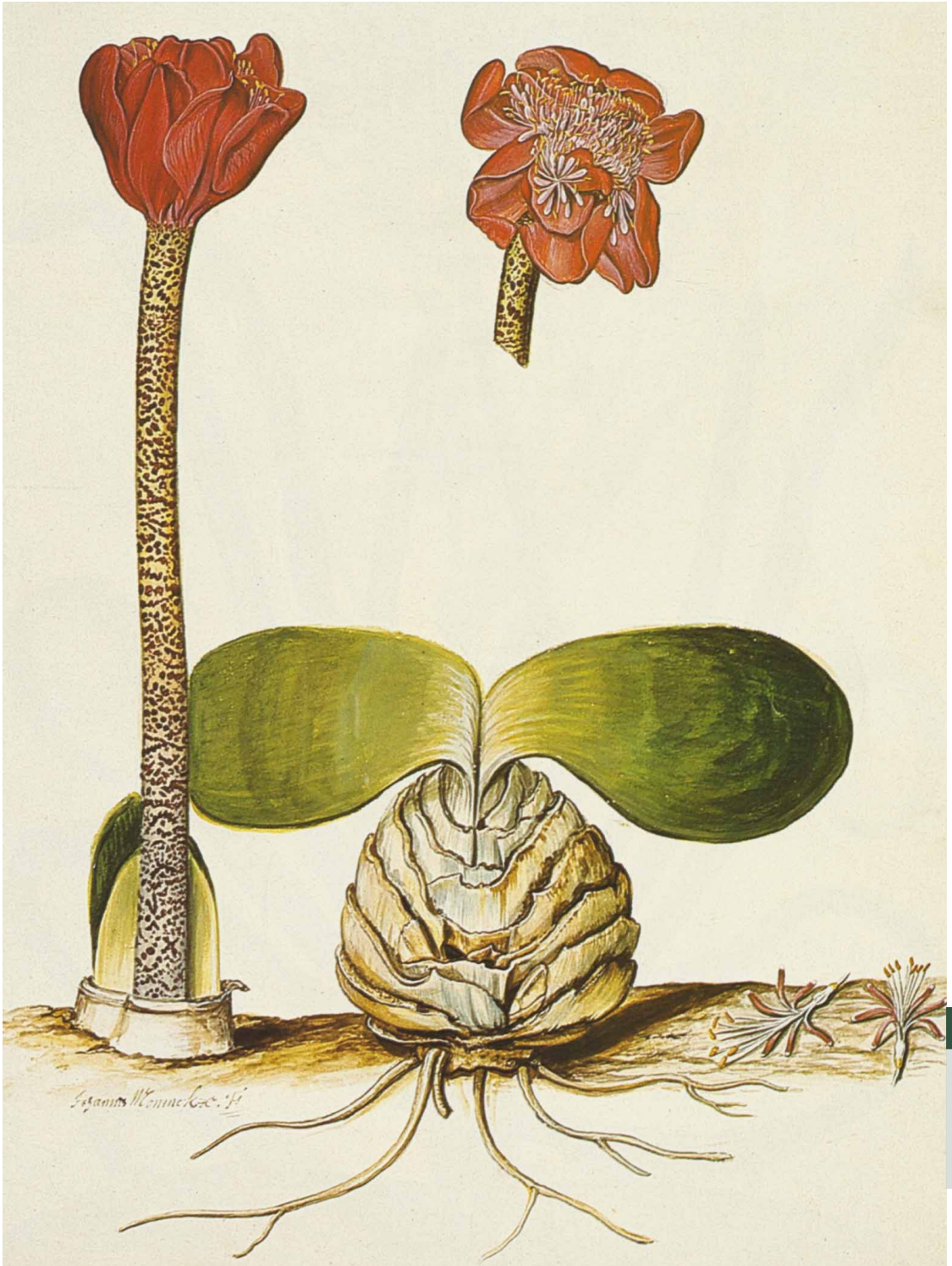

Fig. 2

Haemanthus coccineus (from the Moninckx Atlas, artist Jan Moninckx, 1699)

Fig. 3

Haemanthus albiflos in a family heirloom chamberpot

Haemanthus albiflos

This is undoubtedly the commonest species encountered in succulent plant collections and probably also in general cultivation, mainly because it is one of the easiest species to propagate and grow.

It produces ovoid bulbs to about 8cm across which cluster and develop partially buried in the soil (Fig. 3). Its smooth, slightly shiny, elliptic leaves are evergreen, up to six per bulb and are initially erect then reflexed to become flat on the ground. They can grow up to 9–40 (or rarely to 50) centimetres long and 11cm across at the middle and are finely ciliate just on the edges.

In my most impressive flowering event my largest clump produced 23 inflorescences, technically termed umbels (Fig. 4), which have the appearance of shaving brushes. Each is held on a peduncle up to 15–35cm long. Each umbel is compact, up to 7cm across bearing dense clusters of up to 50 small white flowers, hence the species name, which produce copious amounts of pollen.

Its fruits are berries which are white, orange or red in colour. Raising plants from seed, however, seems unnecessary since vegetative propagation is so easily achieved by the removal of bulbs from the circumference of a clump.

Haemanthus albiflos is endemic to South Africa with a mainly coastal distribution stretching from the east of the Western Cape Province to the northern parts of KwaZulu-Natal, occurring always in shady habitats in forest and bushveld vegetation where it receives summer rainfall.

Haemanthus deformis

This is a succulent, evergreen, close-relative of *H. albiflos*. Its appearance is most unusual, contributing to the species name *deformis* meaning 'misshapen'. Unlike any other species, the inflorescence appears between the persistent leaves of the previous season. The peduncle remains short, less than 6cm long, giving the impression that the inflorescence has not fully developed. The current season's leaves appear only after the inflorescence.

By comparison to *H. albiflos*, this species has a limited distribution in the Eastern Cape Province and KwaZulu-Natal.

Fig. 4

Close up of the inflorescence (umbel) of *Haemanthus albiflos*

Fig. 5

Haemanthus pauculifolius in a 15cm diameter pan

Haemanthus pauculifolius

This species is the third member of a closely related group, which includes *H. albiflos* and *H. deformis*, defined by white flowers and an evergreen, succulent habit.

Haemanthus pauculifolius most closely resembles *H. albiflos* in leaf shape and inflorescence habit but the two species are separated by consistent differences in the pattern of leaf growth and the floral dimensions. Its bulbs are clustered, ovoid, more or less exposed above ground and somewhat compressed (Fig. 5). Its leaves are mostly solitary, hence the name *pauculifolius* from the Latin '*pauculus*' meaning 'very few' and '*-folius*' 'leaved'.

When the new leaf of the current season and the ageing leaf of the previous season overlap for a short period each bulb can have two leaves. These are narrowly lanceolate, recurved, up to about 30cm long and 3.5cm across, hairy on both surfaces with the margin densely ciliate. Compared to *H. albiflos* the umbel is compact and compressed, only up to 3cm across and again the flowers are white (Fig. 6).

In South Africa this species occurs further north than *H. albiflos* in Mpumalanga. In the Barberton area only one localised population of a few hundred bulbs has been recorded and in the Blyderivierspoort Nature Reserve dense colonies of several thousand bulbs occur in shade and semi-shade under weakly developed gallery bush or arid bushveld in the transition between kloof forest and open rock ledges (Snijman & van Wyk, 1993). Its distribution also appears to extend into neighbouring Eswatini although limited data are available on its localities and distribution in that country.

Like *H. albiflos* this species grows moderately quickly to form good-sized clumps of small bulbs (Fig. 5), making the plant easily propagated from cuttings.

Fig. 6

Haemanthus pauculifolius in a 9cm pot

Haemanthus humilis subsp. *hirsutus*

Haemanthus humilis is a distinct but highly polymorphic species represented in the wild by many small, more or less continuously varying populations. Vegetatively it is distinguished by its round or medianly compressed bulbs, with more or less even tunics (formed from the leaf bases) and its flaccid, immaculate (non-spotted) leaves which range from being densely pubescent to almost glabrous (hairless) (Snijman, 2025).

It is one of the most attractive species of the genus and is typical of the non-succulent species in that the bulbs grow fully below the soil surface and are completely deciduous in the autumn-to-winter resting period.

In June 2025 two of my bulbs planted in the same pot started growing and one of them flowered for the first time with the inflorescence produced at the same time as the leaves (Fig. 7). Each pair of soft leaves per bulb grew up to 30cm long and 9cm across, mid green, hirsute on both surfaces, shallowly channelled and recurved. The inflorescence (umbel) was about 7cm across carried on a hirsute peduncle about 20cm tall (Fig. 8). Individual flowers were white, about 5cm long with stigmas and anthers exserted.

The name '*humilis*' means 'low growing' and '*hirsutus*' meaning 'roughly hairy'. Both subsp. *humilis* and subsp. *hirsutus* have hairy leaves and inflorescences but those of the latter tend to be hairier. Both subspecies also have either pink or white flowers with those of subsp. *hirsutus* being generally longer than those of subsp. *humilis*.

Haemanthus humilis has a widespread distribution throughout southern Africa. Subspecies *humilis* has a more westerly distribution in the karroid regions, ranging from the Northern Cape Province, Eastern Cape Province, the Free State and into western Mpumalanga. In contrast subsp. *hirsutus* occurs principally in the east and north-east of the range where it is widespread in the highveld and eastern escarpment of Mpumalanga, Eswatini, Lesotho and the midlands of KwaZulu-Natal (Snijman, 2025). ■

Fig. 7

Haemanthus humilis subsp. *hirsutus* in a 12.5cm diameter pot

Photos: Colin C. Walker

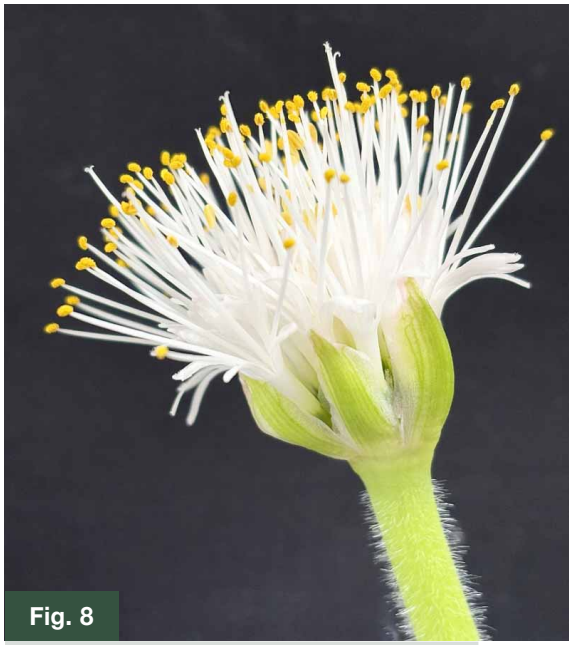

Fig. 8

Close up of the inflorescence (umbel) of *Haemanthus humilis* subsp. *hirsutus*

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The Echinocereus ‘viridiflorus/chloranthus’ complex

by Peter Berresford

Introduction

I have retained this historically popular title for the purposes of this article as it one which is familiar to many people with an interest in the hobby.

It has, however, become rather inappropriate as, despite there being several taxa containing these two specific epithets, there are now more plants in this group which do not contain these epithets, regardless of whether you accept the categorisation of the former German working group *Der Echinocereenfreund* or POWO. All will hopefully become clearer as you read on.

Which side are you on?

This question refers both to international boundaries and the differences of opinion on taxonomy between the two authorities already mentioned, which I shall sidestep until later when discussing specific taxa. For the purposes of this article I am using the classification structure devised by *Der Echinocereenfreund* in its publication *Echinocereus Die Sektion Echinocereus* (2012). In this the Section was split into three ‘Groups’ containing:

- *E. viridiflorus* and *E. chloranthus* and subspecies,
- *E. russanthus* and subspecies,
- Other taxa consisting of what might be informally called ‘oddballs’.

Geographically, you can see all but four of the taxa without crossing the international border into Mexico, which makes the logistics of any exploration much simpler; however the spread of this ‘complex’ is extensive even within the United States, reaching as far north as South Dakota, some 1,600km from Big Bend National Park. Then again, only one taxon (*E. chloranthus* subsp. *rhyolithensis*) does not respect international borders and can be found on both sides.

Fig. 1

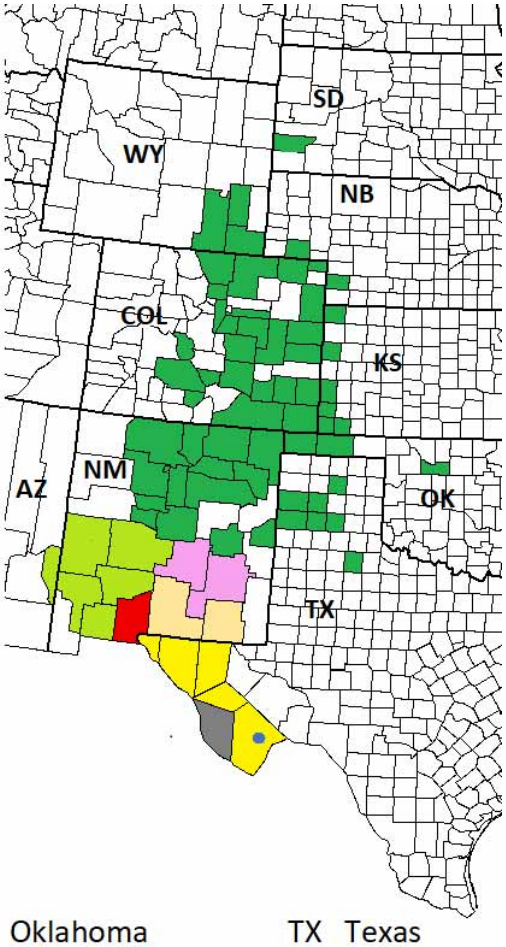
The yellowish-green flowers of *Echinocereus viridiflorus* RP 88 from Fort Union, in cultivation

Group 1 (all accepted by POWO)

Distribution of Group 1

Key

- *E. davisii*
- *E. viridiflorus*
- *E. chloranthus* and *E. viridiflorus*
- *E. viridiflorus* subsp. *correllii* and *E. chloranthus*
- *E. viridiflorus* subsp. *correllii*, *E. chloranthus* and *E. chloranthus* subsp. *rhyolithensis*
- *E. chloranthus*
- *E. chloranthus* subsp. *rhyolithensis*
- *E. chloranthus* and *E. chloranthus* subsp. *rhyolithensis*



States

AZ Arizona			
COL Colorado	NB Nebraska	OK Oklahoma	TX Texas
KS Kansas	NM New Mexico	SD South Dakota	WY Wyoming

With the exception of *E. chloranthus* subsp. *rhyolithensis*, all of the taxa in this group can only be found north of the US border with Mexico.

Echinocereus davisii

The original description by A.D. Houghton in 1931 is still current, named after its locality in the Davis Mountains, four miles south of Marathon in Brewster County. This is despite various attempts to associate this species more closely with other members of the group.

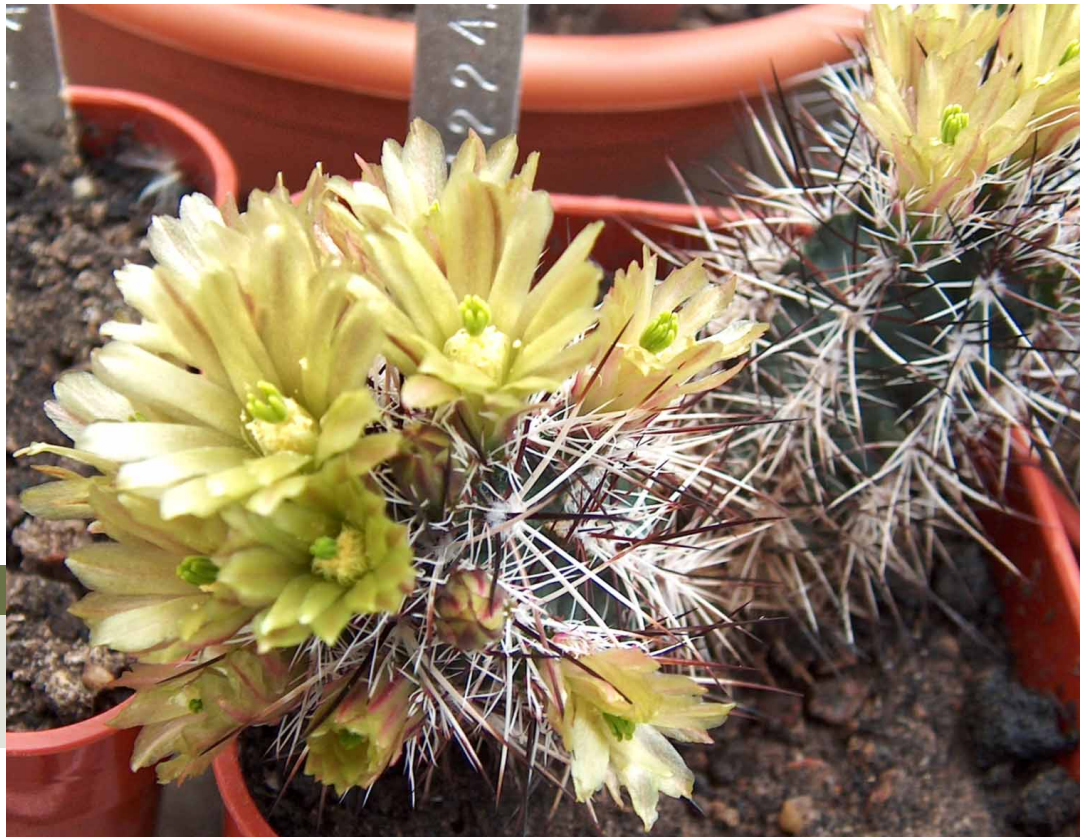


Fig. 2

Echinocereus davisii HK 1221 in the *Echinocereus* Reference Collection of David Parker

Fig. 3

The habitat of *Echinocereus davisii* – the perfect camouflage

In habitat the plants have a marked preference for outcrops of a white crystalline rock, Caballos novaculite chert, which is also populated by a few other smaller specialist cacti.

It is hard to see as it grows hidden in selaginella moss (Fig. 3). The white, brown-tipped spines help to blend the plant into both the white rock and dried moss as does its habit of colonising small gaps in the rock (Fig. 4).

For an *Echinocereus* it is a tiny, usually globular, plant reaching only 3cm with most being shorter, although when pampered in the greenhouse it can grow larger. It can flower prolifically in culture (Fig. 2 previous page).

Fig. 4

Only a flower gives away the position of the plant

Echinocereus viridiflorus subsp. *viridiflorus*

Originally this was collected from the prairies near Wolf Creek in Mora County, which Wislizenus crossed on 24th June 1846. It was first published by him as *E. viridiflorus* in 1848 in his *Memoir of a Tour to North Mexico* although the formal description was later made by Engelman. It has stood the test of time and remains current despite various attempts at change.

The distribution of this plant ranges over 1,200km from Chaves County in New Mexico (Fig. 6) as far north as Custer County in South Dakota. It is known by several 'local names', depending on where you are, varying from the understandable 'Green-flowered torch cactus' to the cryptic 'Nylon cactus'.

Flowers can vary between a yellowish-green (Fig. 1, see page 41) and green or have a brownish mid-stripe (Fig. 7). The raised areoles on the dark green body provide a suitable platform for showing off the 11–20 short, mainly white or red, radial spines and any longer central spine, which is not always present.

The plants are normally short in stature with a slightly elongated spherical shape and may occur in small groups. The site at Mule Canyon in Chaves County is a joy to visit with the added bonus of the thick twisted spines of *E. fendleri* subsp. *kuenzleri* (not recognised by POWO!).

Echinocereus viridiflorus subsp. *correllii*

A comparatively recent collection made in April 1965 and named after Benson's co-collector, Donovan Correll, this sports the common name 'Correll's hedgehog'. It was originally named *E. viridiflorus* var. *correllii* by Benson. The new combination, as a subspecies rather than a variety, was made by Blum and Lange.

The plant grows in between crystalline novaculite rocks on private grassland on which cows are grazing. Understandably the plant is rarely seen in habitat and is restricted to the location south of Marathon in Brewster County. With a lack of exact location, the plant remains hopefully protected unless this data is 'shared' or the cows finish them off! It looks about the same size and shape as *E. viridiflorus* subsp. *viridiflorus* but the radial spines are generally longer leaving less of the stem visible. Flowers are yellowish-green with a darker mid-stripe (Fig. 8).

Fig. 5

Echinocereus viridiflorus at Fort Stanton Snowy River National Conservation Area, Lincoln Co. NM 2,000m

Fig. 6

Detail of spines, buds and fruit on *Echinocereus viridiflorus*, Mule Canyon, Chaves Co. NM 1,822 m

Fig. 7

Brownish mid-stripe clearly visible on *Echinocereus viridiflorus* at Mule Canyon, Chaves Co. NM

Fig. 8

Echinocereus viridiflorus subsp. *correllii* in flower south of Marathon, Brewster Co. TX

Echinocereus chloranthus subsp. *chloranthus*

Originally described by Engelman in 1857 as *Cereus viridiflorus*, within the sub-genus *Echinocereus*, it has taken many years to reach the current combination, which casts off a number of former combinations at various ranks.

The name, taken from the Greek '*chloros*' and '*anthos*', refers rather unhelpfully to the green colour of the flower which, in reality, can be anywhere between orange, dark brownish-red and yellowish-green (Fig. 10, see next page).

It is generally a taller plant than *E. viridiflorus* and can be either solitary or grow in clumps (Fig 11, see next page). It is widespread throughout the southern counties of New Mexico and western Texas (Fig. 9).

The central spines can reach up to 3cm in length (Fig. 12, see next page) and the plant itself may even reach 30cm in height. All of the spines may be tipped with red or display a gradient being white or yellowish near the plant and progressively changing to a dark red.

Fig. 9

The habitat of *Echinocereus chloranthus* at 1,523m in Franklin Mountains State Park, El Paso Co. TX

Fig. 10

Yellowish-green flowers on *Echinocereus chloranthus* at Orogrande, Otero Co. NM 1,375m

Fig. 11

A lovely clump of *Echinocereus chloranthus* at Franklin Mountains State Park, El Paso Co. TX 1,523m

Fig. 12

Detail of spination and an example of a brownish-green flower of *Echinocereus chloranthus* in the Franklin Mountains

Echinocereus chloranthus subsp. *rhyolithensis*

Only described in 1998 by Blum, Lange and Rutow in the book on the genus published by the German *Echinocereus* study group, the specific name refers to the rhyolite rock around which the plant can be found at the type location in Lake Valley, Sierra County, New Mexico (Fig. 16). It is arguably one of the most attractive plants in this group with five to ten white or red central spines up to 3cm long surrounded by up to 28 shorter spines.

The outer petals of the flower are a darker reddish-brown and the interior of the flower is often greenish-yellow at the base with reddish tips (Fig. 13). It grows in seven counties in south-western New Mexico, spilling over into Greenlee County in Arizona and, across the international border, it can be found south of Villa Ahumada in Chihuahua.

Plants have been found up to 35cm tall (Fig. 14), exceeding the height of *E. chloranthus* subsp. *chloranthus,* and its spination is at least as colourful with central spines as long as the best of those of its sister subspecies (Fig. 15).

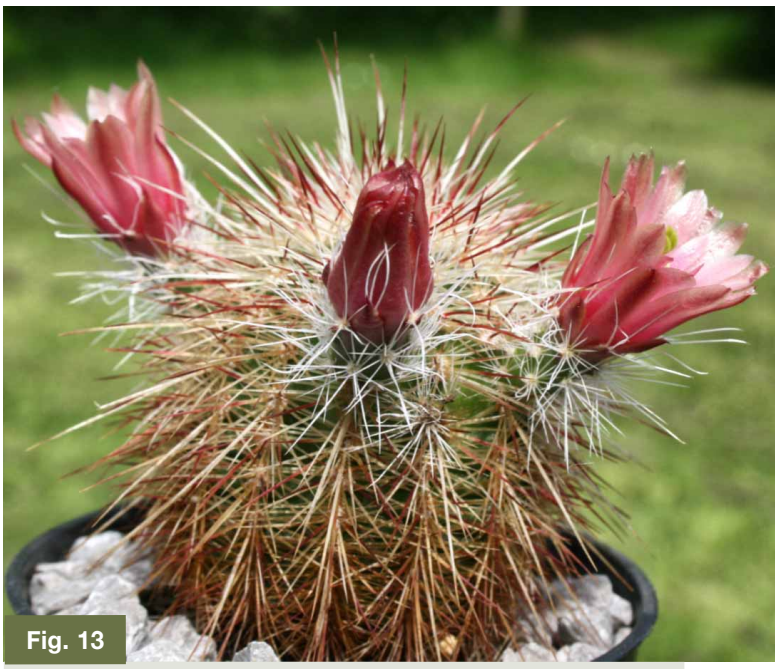


Fig. 13

Flowering *Echinocereus chloranthus* subsp. *rhyolithensis* SB 130 from the type locality, Lake Valley, Sierra Co. NM

Fig. 14

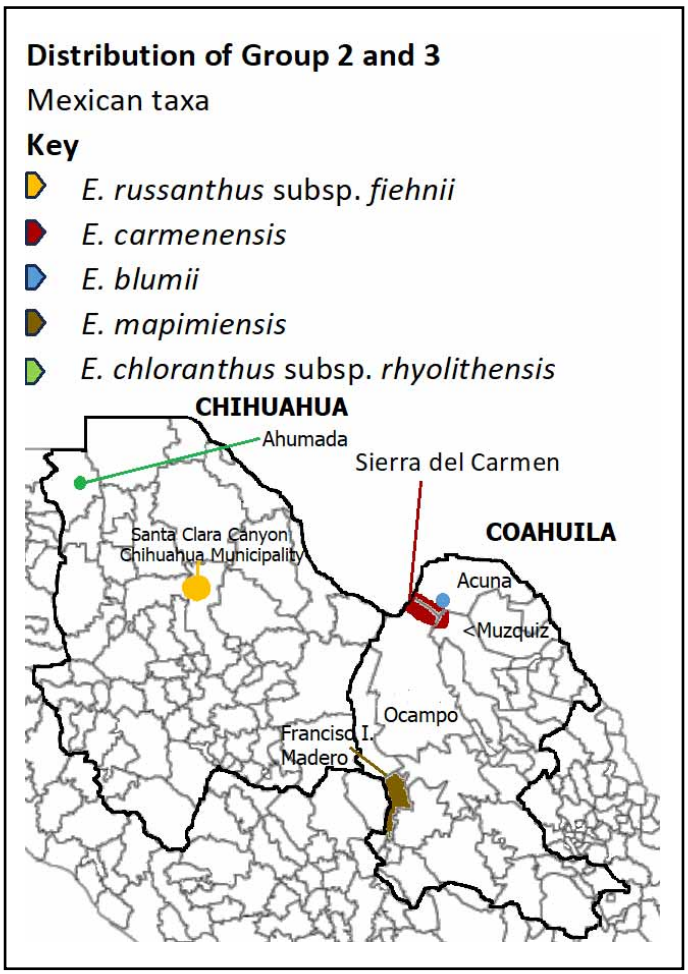
A group of *Echinocereus chloranthus* subsp. *rhyolithensis* in the Florida Mountains, Luna Co. NM

Fig. 15

Detail of spines on *Echinocereus chloranthus* subsp. *rhyolithensis* in the Florida Mountains, Luna Co. NM

Fig. 16

Echinocereus chloranthus subsp. *rhyolithensis* habitat, west side of Florida Mountains, Luna Co. NM 1,688m



Group 2

This group includes all the subspecies of *E. russanthus*, however *E. russanthus* subsp. *fiehnii* is only found in Mexico while the other two subspecies have only been found in the US.

All members of Group 2 are described as having juvenile spines that are 'feathered' or 'feathery'. Juvenile spines being different from adult spines is also a feature in common with several members of Group 3.

Echinocereus russanthus subsp. *russanthus*

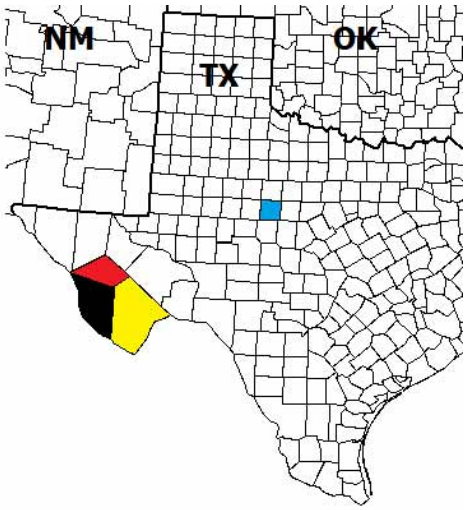
Known locally as the 'brown-spined hedgehog', this name was first published in 1969 in the US Cactus & Succulent Journal by Del Weniger. In his book published in the same year (*Cactus of the Southwest*) he describes finding it "in piles of *E. viridiflorus* var. *cylindricus* from the Texas Big Bend…usually the assortment was being sold as *E. chloranthus*." He noted that the shared characteristics of long central spines and round or oval areoles had probably caused buyers to overlook other differences, most significantly the flowers, which "are smaller, with more narrow and linear petals, and are rust or russet-red in colour" (Figs 18 and 19, see next page). This colour is probably the origin of the specific epithet '*russanthus*'.

Fig. 17

Habitat shot of *Echinocereus russanthus* opposite Burro Mesa, Big Bend National Park, Brewster Co. TX 1,166m

Distribution of Group 2 and 3
US (Texas) taxa
Key

- *E. russanthus* and *E. neocapillus* (Brewster Co.)
- *E. russanthus* subsp. *weedinii* (Jeff Davis Co.)
- *E. milleri* (Coke Co.)
- *E. canus* (Presidio Co.)



Both the radial count and central spine count are also higher in this species although authorities differ, probably due to its variability.

Weniger notes its range as “a small range of southwestern Brewster County...including the northern part of the Chisos Mountains and the country northwest of these to just past Study Butte”. Big Bend National Park is clearly the destination if you would like to see it in habitat (Figs. 17, previous page, and 20). There are a number of well-known sites.

Fig. 18

Echinocereus russanthus flowering in cultivation

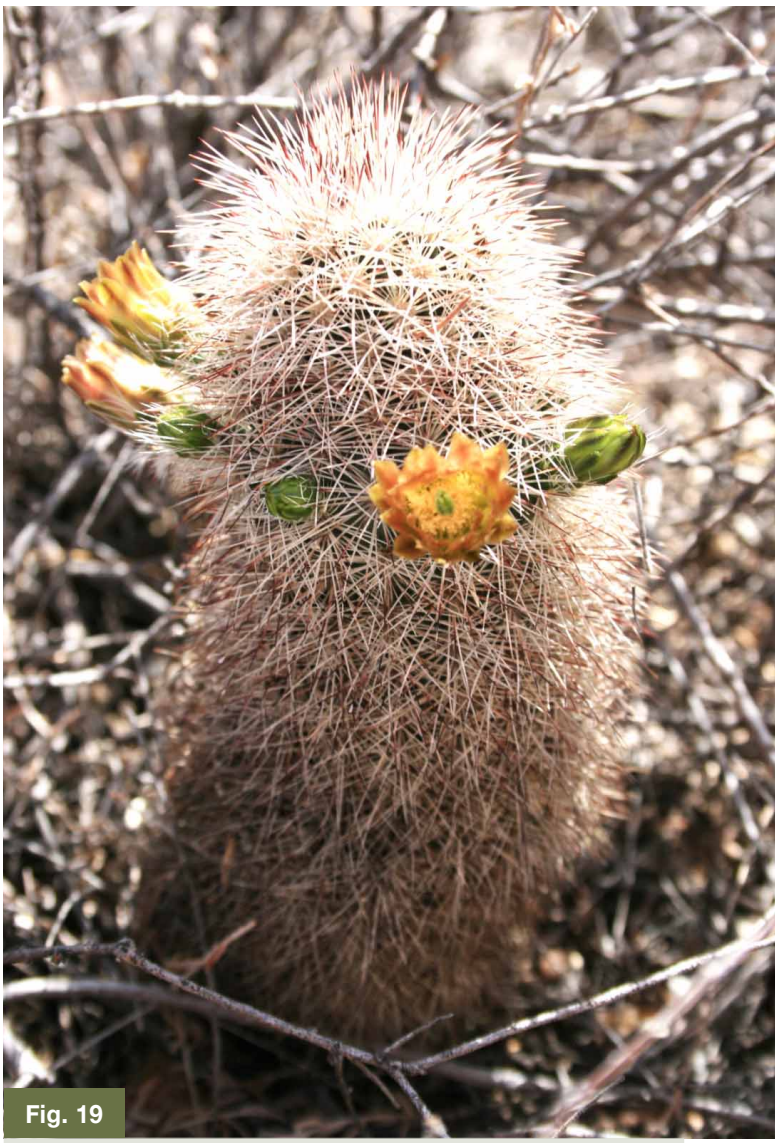


Fig. 19

Echinocereus russanthus flowering opposite Burro Mesa, Big Bend National Park, Brewster Co. TX 1,166m

Fig. 20

A nice clump of *Echinocereus russanthus* near Panther Junction, Big Bend National Park, Brewster Co. TX 1,100m

Echinocereus russanthus subsp. *fiehnii*

In early 1970, Ulrich Fiehn showed a plant to Alfred Lau growing at the top of a ridge at around 2,100m altitude, near Cañón de Santa Clara in Chihuahua municipality (in Chihuahua State) which is part of the Sierra El Nido. It was growing in knee-high grass and had yellowish-white, needle-like spines and bright red flowers (Fig. 22). Lau gave this his field number L1076 but unfortunately spelt the name of the plant as '*finnii*' which was later corrected to *fiehnii*.

This is the first of the names rejected by POWO despite the distance from the nearest *E. russanthus* locations, which are some 200km east of here.

Morphological differences cited by Trocha in the first description of 1997 included the striking features of *E. russanthus* subsp. *fiehnii*'s bright wine-red flowers and the straight spines (Fig 21) which were shorter than its Texan cousin's downward curving ones.

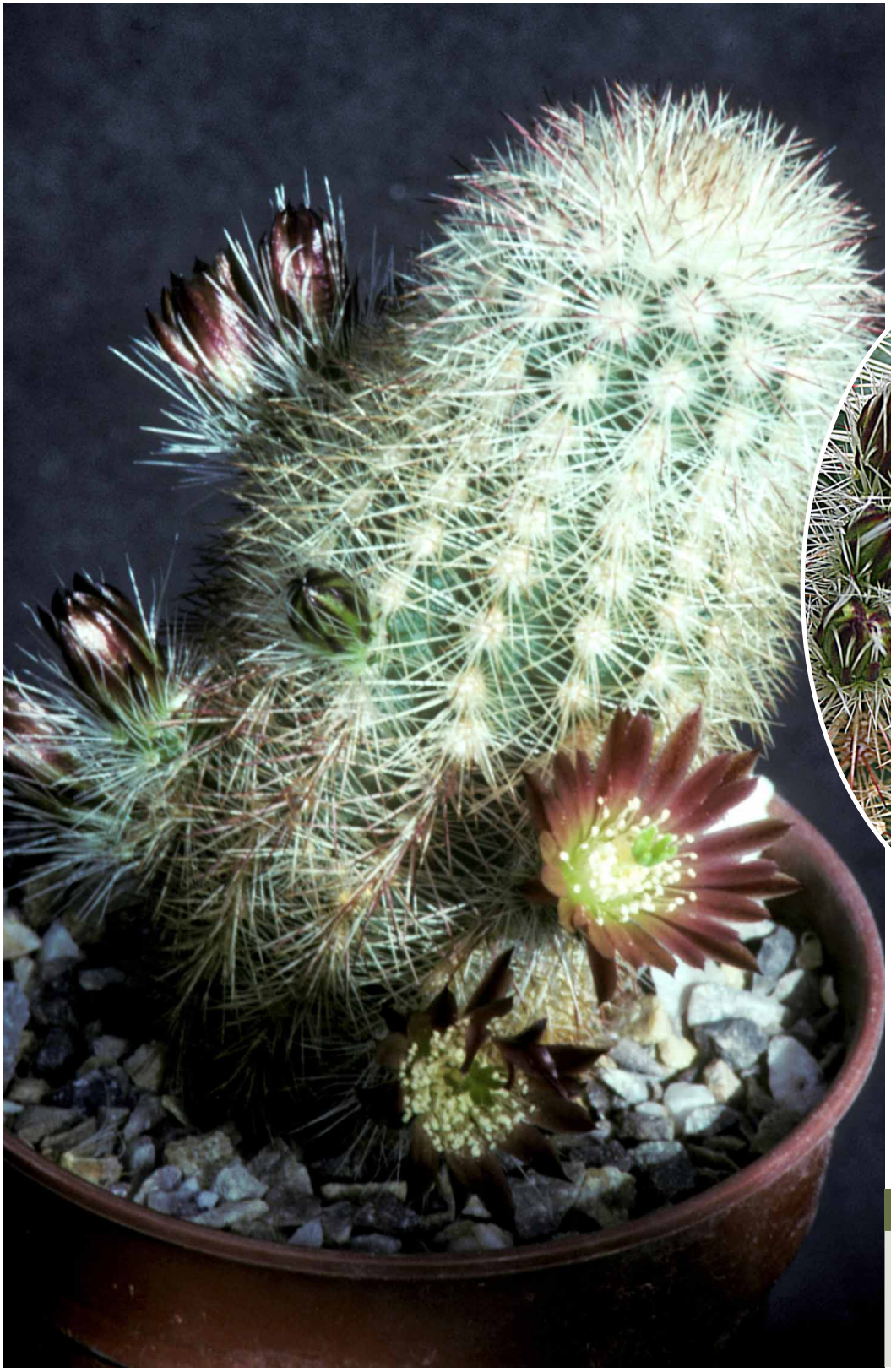


Fig. 21

The bright wine-red flowers of *Echinocereus russanthus* subsp. *fiehnii* from the type location in cultivation

Fig. 22

Detail of the spination and flower of *Echinocereus russanthus* subsp. *fiehnii* L 1076 from the type location in cultivation

Echinocereus russanthus subsp. *weedinii*

The last of the species in Group 2 takes us back to Texas and to the highest altitude for any *E. russanthus*. This taxon was first discovered in 1939 and collected at Mount Livermore (Fig. 23) in Jeff Davis County, by Barton Warnock and Dan Hinkley approximately 20km east of Timber Mountain (SRSC).

Three decades later Barton Warnock found identical plants in Big Bend National Park on Ward Mountain. The holotype was not collected until September 1977 by James Weedin, after whom this plant was named, from an altitude of 2,500m on Mount Livermore. From 1978 various attempts were made to associate this plant with a species but it was not until 1998 that Blum and Lange succeeding in placing it in *E. russanthus*.

The flowers are distinctive being short-funnelled, green to yellow-green and partly brownish on the outside, often with a dark central stripe. POWO refers this plant to *E. chloranthus* subsp. *chloranthus,* probably due to the flower colour which does not 'agree' with the reddish shades of other members of Group 2. Documentation for *E. chloranthus,* however, places it as growing only to altitudes not exceeding 1,850m (some 650m lower than *E. russanthus* subsp. *weedinii*) (Fig. 24).

It should also be noted that the yellow spines appearing on juvenile and some adult plants of *E. russanthus* subsp. *weedinii* (Fig 25) do not appear on *E. chloranthus*.

Fig. 23

Echinocereus russanthus subsp. *weedinii* at the type location on Mount Livermore in the Davis Mountains, Davis Co. TX. 2,436m

Fig. 24

Buds and mature spination of *Echinoceruss russanthus* subsp. *weedinii* at the type location, 2,200m

Fig. 25

The distinctive yellow spines appearing on juvenile and some adult plants of *Echinocereus russanthus* subsp. *weedinii* 2,436m

Group 3

This is a 'catch-all' group for any plants not falling within the two previous groups, which cover *E. chloranthus*, *E. viridiflorus*, *E. davisii* and *E. russanthus*. The following three taxa, *E. canus*, *E. neocapillus* and *E. carmenensis,* are linked in that they share a similar spine development in the form of very thin, dense wool at the earliest stages of growth that may persist as a ring at the base of the adult plant. *E. milleri* also has different juvenile spination, although not as fine as those taxa already mentioned.

Echinocereus neocapillus

The name is most appropriate as it refers to the very fine white wool (in place of the 'normal spination') on young plants which translates from Latin as 'new hair' (Fig. 26). This new growth is persistent and can be seen around the base of older plants (Fig. 27).

According to Weniger's 1969 first description as a variety of *E. chloranthus*, this plant had already been noticed by J.R. Leding in 1932, who published an article in August 1934 describing the juvenile 'spination' but he did not formally describe it as a new species, leaving it as *E. viridiflorus* var. *cylindricus* (this name was later 'absorbed' into *E. chloranthus*).

Looking at the adult plant it is easy to see how *E. neocapillus* was disregarded as the adult spination is similar in overall appearance to that of *E. chloranthus*. Closer inspection, however, reveals the number of central and radial spines on *E. neocapillus* can be double those found on *E. chloranthus*.

Flowers are described as yellowish/greenish brown with a darker mid-stripe (Fig. 28). Finally, *E. neocapillus* has a very limited distribution on hills 8-16km south of Marathon in Brewster County.

Fig. 26

A small woolly seedling of *Echinocereus neocapillus* south of Marathon, Brewster Co. TX 1,188m

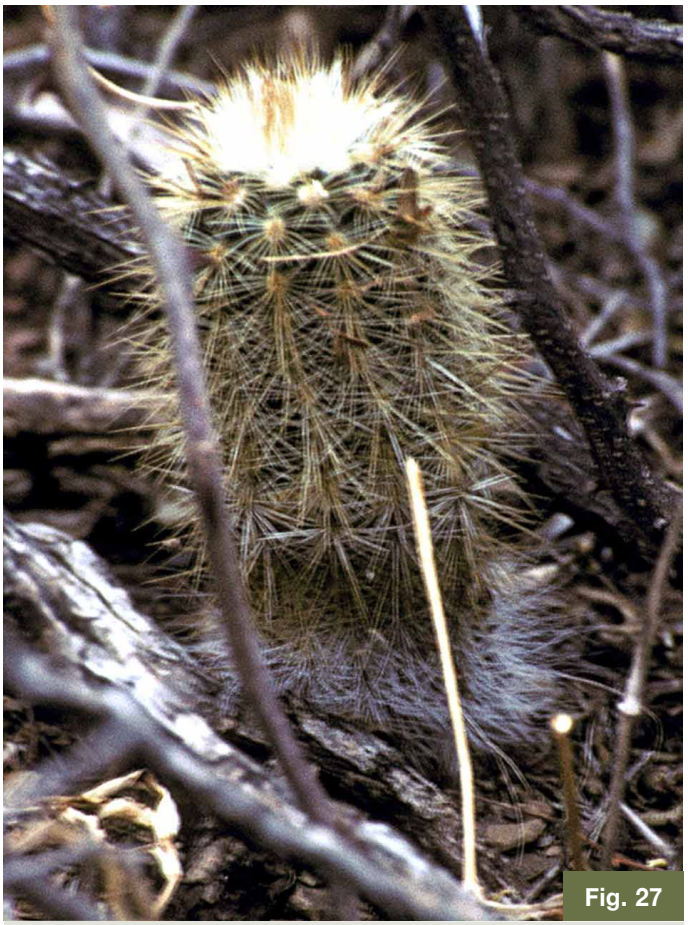


Fig. 27

A mature plant of *Echinocereus neocapillus* showing the residual ring of 'seedling wool' around the base, south of Marathon, Brewster Co. TX 1,188m

Fig. 28

Echinocereus neocapillus SB 395 flowering yellow-greenish with a brown mid-stripe, in cultivation

Fig. 29

Echinocereus carmenensis habitat in the Sierra del Carmen, Coahuila

Echinocereus carmenensis

Credit for the discovery of this plant goes to Egon Scherer whose name is already celebrated in the discovery of *E. schereri* in 1976. It was described by G Frank in 1990.

The plant name refers to its type location in the Sierra del Carmen of the Mexican state of Coahuila (Fig. 29). These mountains lie to the south-east of Boquillas del Carmen, the border crossing from south-east Brewster County in Texas. The range of mountains stretches around 65km from the border to La Cuesta de Malena. I have seen this plant growing between 1,374 and 1,600m but the literature indicates it may be found even higher.

It was described by Blum, Lange and Scherer in the 1998 book, *Echinocereus*.

The small flowers are yellow to brown-green with a darker mid-stripe (see front cover). It shares the oddity of different young spines with *E. neocapillus,* being densely hairy with tomentose new shoots but small spines can still be seen, unlike *E. neocapillus*. Central spines may exist but these are not common and most plants have a clearly visible oval areole surrounded by over 20 whitish radial spines. The habitat is shared by many other species (Fig. 30). Access to the plants is fairly easy but there are small dirt roads penetrating into the hills for the more adventurous!

Fig. 30

Echinocereus carmenensis sharing its habitat respectfully with *Ferocactus hamatacanthus* 1,560m

Echinocereus blumii

This plant was named in 2006 in honour of Wolfgang Blum who at that time had studied the genus both in the field and in cultivation for more than 30 years and has contributed a great deal to its study and understanding.

Like *E. carmenensis* this plant hails from the Mexican state of Coahuila and the two species overlap in Municipio Acuna (see Distribution Map Page 48). The type location is on the eastern edge of the Sierra Carmen. Richard Romer and Johann Strobl discovered this population on 6 March 1996, followed by George B Hinton on 19 May 1996. They initially suspected it was a form of *E. carmenensis* which had evolved due to separation by mountains.

Further investigations of the site over the following 15 years have shown that this is a distinct new taxon that is not common and limited to low hills around the type location (Fig. 31). In common with other species within this group seedlings form a few bristly hairs. Adult plants have projecting red central spines that are nicely 'set-off' by pale radial spines (Fig. 32). Flowers are brownish-green to reddish-brown (Fig. 33). Both *E. carmenensis* and E. blumii are small plants only reaching a height of 6cm.

Fig. 32 Projecting dark-tipped central spines and large buds on *Echinocereus. blumii* north-west of Las Cruces, Coahuila 1,259m

Fig. 33 Brownish-green flowers of *Echinocereus blumii* at Maria Morelos y Pavón, Coahuila 1,156m

Fig. 31 A typical *E. blumii* site, La Pila de los Caballos, Coahuila 1,374m

Echinocereus milleri

Juvenile spination on this taxon cannot be described as hairy but it does produce a dense, very fine covering of relatively long spines when young. The bright, yellow-green flowers are produced in quantity and stand out against both the darker green epidermis and grit-covered substrate in which it grows (Fig. 34).

Unlike other members of this group it hails from north of Robert Lee in Coke County, Texas, some 335km north-east of its nearest relatives.

Fig. 34

A floriferous HK 370 clone of *Echinocereus milleri* flowering in cultivation

The plant was named for Kimsey Miller, a retired sea captain from Lubbock, Texas who discovered it in 1969. After finding this plant, he delivered seeds to Horst Kuenzler in Belen. Kuenzler collected the plant himself a few years later and spread the seeds worldwide under his field number HK 370. Thirty years passed for the plant as '*E.* spec.' until Traute and Jorn Oldach visited the plant and were able to publish the new name in *Der Echinocereenfreund* with Wolfgang Blum. Like many of this section, the flower colour is variable between yellow-green and green (Fig. 35).

Fig. 35

Variation in flower colour of *Echinocereus milleri* from the same packet of HK 370 seed

Echinocereus mapimiensis

Back across the border for the next member of this group to the type location of Bolsón de Mapimí in Municipio Francisco I. Madero, Coahuila. The word 'Bolsón' here refers to a desert valley which has been raised due to the deposition of sediment while 'Mapimí' is a native Cocoyón word for 'high mountain or hill', which provides a fairly accurate description of the location. The dominant cactus at the type location is *Grusonia bradtiana,* forming large, localised populations.

Fig. 36

A specimen of *Echinocereus mapimiensis* that has managed to find a little shade under a creosote bush (*Larrea tridentata*) 47km. south of Laguna Del Rey, Coahuila 1,180m

Despite searching in several locations I found it difficult to find a plant in great condition. The plants usually look stressed, stems are dehydrated and appear brownish in habitat (Fig. 36) although when cultivated the stem is described as blueish-green.

Flowers are what could be described as typical *E. viridiflorus,* being golden yellow but dominated by a wide brownish midstripe (Fig. 37).

Fig. 37

Large brownish midstripes dominate the underlying yellow flower of *Echinocereus mapimiensis* 54km south of Estacion El Rey, Coahuila 1,231m

Echinocereus canus

For many enthusiasts this is the most beautiful plant in the group, producing yellow-green flowers through the long white spines which are peppered with darker spines at the apical growing point (Fig. 38). The seedlings have dense long hair which completely obscures the stem (Fig. 39). The adult spines start to emerge from the centre of the wool (Fig. 40) until finally only the young adult spination can be seen (Fig. 41).

For those who like adventure the plants are located on the edge of a laccolith (the Solitario Dome) in Presidio County, Texas which is only accessible by following the edge of the perimeter and with permission from Big Bend State Parks. Felix and Bauer went through a similar process on their 2003 visit.

E. canus grows on novaculite chert, a hard crystalline volcanic rock.

This species, which is sometimes referred to as the Graybeard Cactus, was found in 1984 by James Jeff Clark who was conducting a study of the flora in the Dome as part of his thesis.

Powell and Weedin treated this as a variety of *E. viridiflorus* in their 2004 book and used the Latin varietal name *canus* to describe the 'grayish-white' spines. Unfortunately Powell violated Article 8.2 of ICBN by adding pressed flowers from greenhouse-material to the sheet. After removing these additions, the sample could then be designated as a paratype rather than a holotype. In 2012 Felix and Bauer removed the varietal status promoting *E. canus* to species rank. ■

Photos: Peter Berresford

Fig. 38

Typical spination and flower colour of *Echinocereus. canus* at the type location on ridges of the Solitario Dome, Big Bend Ranch State Park, Presidio Co. TX 1,341m

Fig. 39

Young woolly seedling of *Echinocereus canus* at the type location Presidio Co. TX 1,083m

Fig. 40

Echinocereus canus adult spination starting to emerge from the young wool at the type location

Fig. 41

The new fully-spined young plant of *Echinocereus canus* 1,349m

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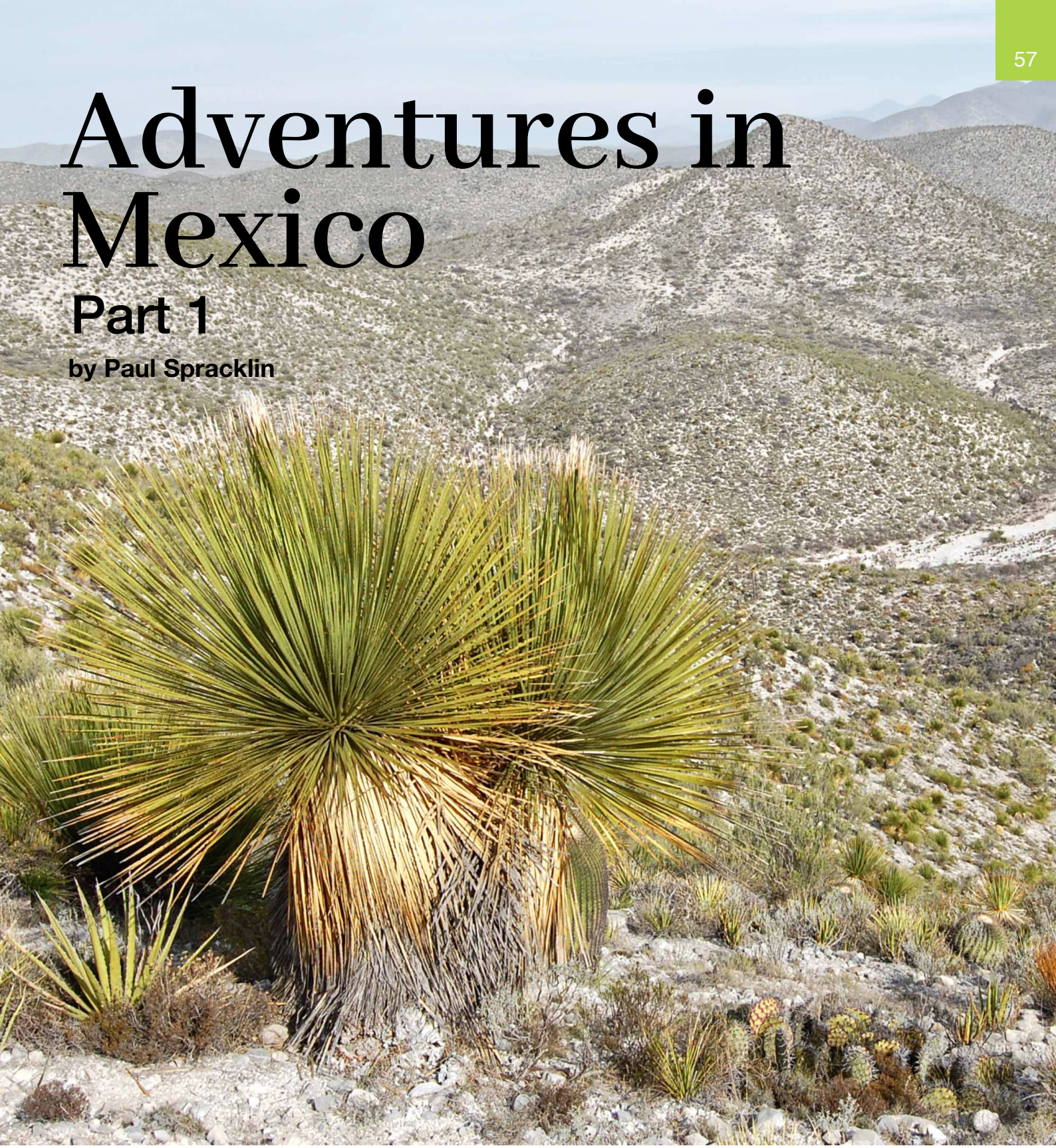
Adventures in Mexico

Part 1

by Paul Spracklin



It was still just dark as we flew over Mexico City and I watched the urban sprawl twinkle endlessly from the window. There were four of us: myself, Toby, a veteran of no less than eight previous visits to Mexico, and Neil and Phil, both keen plantsmen and visiting Mexico for the first time. They are both doctors – is it possible to travel abroad with too many doctors? Probably not!

Day 1

We hit the road at 9.30am in a hired jeep and, mercifully, found our way pretty well directly on to Highway 57, our route north towards the unfeasibly quaint city of San Miguel de Allende. Our first port of call was the excellent botanical garden, El Charco del Ingenio, rushed through on a previous trip so it was great to pop back.

Part of the garden at El Charco del Ingenio

Day 2

Mexico is a big country, perhaps ten times the size of England, and during the course of the trip we would need to do the odd hard miles day. This was one of them. Heading north on Highway 57 the landscape gets bigger as does the scale of the plant populations. At first a few lonely *Yucca filifera* appear on the roadside plains, studding the largely arable land.

Then things get a little wilder and the numbers of yuccas increase until there appear to be countless billions of them to be seen for miles into the distance, forming dense single-species stands.

Then, as if at some unseen signal, the *Yucca filifera* stop abruptly to be replaced by *Yucca carnerosana*. Then, after a dozen or so miles, the *Yucca filifera return*. Then both together.

A stand of *Yucca carnerosana*

At one stage the yuccas we were seeing started to look a little different, not as branched as *Y. filifera* and perhaps less scruffy, thinner-trunked than *Y. carnerosana* yet often just the single stem. A little book work beforehand indicated we were driving past the odd colony of a little understood species, *Yucca potosina*. Well, I don't understand them anyway. We stopped for pictures.

Then away we headed again, finally turning off Highway 57 at Matehuala travelling east along a fairly flat and botanically dull plain towards the small town of Doctor Arroyo, our planned overnight stopover. Soon we

Yucca potosina

Dasylirion quadrangulatum

A hillside with *Dasylirion quadrangulatum*

were driving through a hillside covered in a few hundred thousand *Dasylirion quadrangulatum* – some of them huge-trunked ancient beasts. A few *Yucca carnerosana*, some scruffy *Dasylirion berlandieri,* a nice form of the widespread *Agave americana* subsp. *protamericana* × *scabra* hybrid, *Agave lechuguilla* and *Agave striata* were also present, not to mention assorted cacti. Side lit by the evening sun, the setting could not have been more dramatic.

Finally we dragged ourselves away and made up the final few kilometres to Doctor Arroyo as darkness fell. A typical small desert town, it seemed to have unnecessarily complicated and, not unexpectedly, unsigned access to the main street. Indeed we soon found ourselves travelling the wrong way down a one-way street. Before we could do anything about this lapse we were approached by two motorcycle cops. As banker for that week, I hastily started hiding our cash in my underpants so no money was on show for the inevitable bribe. Yet, astonishingly, after a few words they not only gave us directions to the hotel but a full police escort, complete with flashing beacons, though town. “Enjoy your stay,” they said, “and if there is anything else we can do to help it would be a pleasure.” A far cry from their Mexico City *compadres*.

Day 3

Early breakfast at the hotel and we hit the road by 8.30am, heading north towards Galeana (Gal-ay-AH-nah). After a few kilometres we turned down a dirt track that seemed to lead to a large plain and then a hillside, just to see what was there. The answer to that was – lots. We spent a happy couple of hours clambering among a vast colony of a large, chunky form of *Dasylirion miquihuanense*, interspersed with *Yucca carnerosana*, true *Agave scabra* (with huge teeth) accompanied by the usual *Agave lechuguilla*, *Agave lophantha* and *Agave striata*.

Beautifully armed *Agave scabra* – those leaves were as rough as coarse sandpaper

Mexico is also home to a number of interesting palms. We passed a steep hillside of *Brahea decumbens* – the one shown here, which had survived a flash fire, demonstrates the creeping trunk structure nicely.

More agaves followed as we stopped to view a population of *Agave gentryi* known from a previous visit and took time to have a closer look at these beauties. They showed more variation than I remembered, yet were all identifiable as *A. gentryi*. Some were very large, Neil is 6'3" (approx 1.9m), though most were smaller. Some were nearly toothless, some were viciously armed. Wonderful plants.

Brahea decumbens

Agave gentryi with Neil for comparison

Agave gentryi

Agave gentryi

There was also a population of *Agave americana* subsp. *protamericana* × *scabra* plants, very attractive and extremely variable

Day 4

The aim for the day was to visit the type location for *Yucca linearifolia*, which the books state is conveniently situated on the road between Galeana and Rayones. What the books don't say is that the road between Galeana and Rayones is largely a bumpy dirt track. The weather was not kind to us as a thick grey mist all but cloaked visibility other than immediately round the jeep. Spotting anything smaller than an elephant was going to be rather tricky.

We reached the exact location specified in the book and wandered around the area for a while but, frankly, it was a waste of time. Visibility was really limited and there may well have been hundreds of yuccas lining the canyon sides for all we would have known. Or even that elephant! Yet, by complete chance, as we bumped our way a kilometre or so further along I wound down my window and caught a glimpse of blue at the mouth of a canyon just behind us – and there it was, *Yucca linearifolia*.

The canyon led slightly uphill from the roadside. It was very narrow with pretty steep sides and we saw many more of these beautiful yuccas. Perhaps unexpectedly, they were on the shady side of the slopes, and in the moister, lower part. Mixed in were ferns and the 'resurrection plant' *Selaginella* sp. looking verdant in the damp conditions. Not classic yucca territory yet here they were, growing in perfection.

Yucca linearifolia

We drove along what must have been the most spectacularly scenic mountain road, had we only been able to see the view, through a mountain range linking Rayones with the road to Linares, but all we saw was the immediate roadside vegetation that was surreally encased in ice – a true freezing fog. Gradually we descended from the mountain road, the fog and drizzle cleared and we headed on for a three-hour drive to our next overnight stop.

Yucca linearifolia growing in the lower part of the canyon

Day 5

A full day beckoned as we were headed for the mountain pass south out of Ciudad Victoria, which is possibly one of the most interesting little routes that can be driven along for the botanically minded. Thirty minutes from our hotel and we were climbing in altitude along this most fascinating road. Once the main route out of the city, a fairly recent bypass means that travellers along here are left pretty well in peace to explore all kinds of interest only a few minutes from the roadside.

The rock faces on the uphill roadsides are packed with plants. Here are just a few of them.

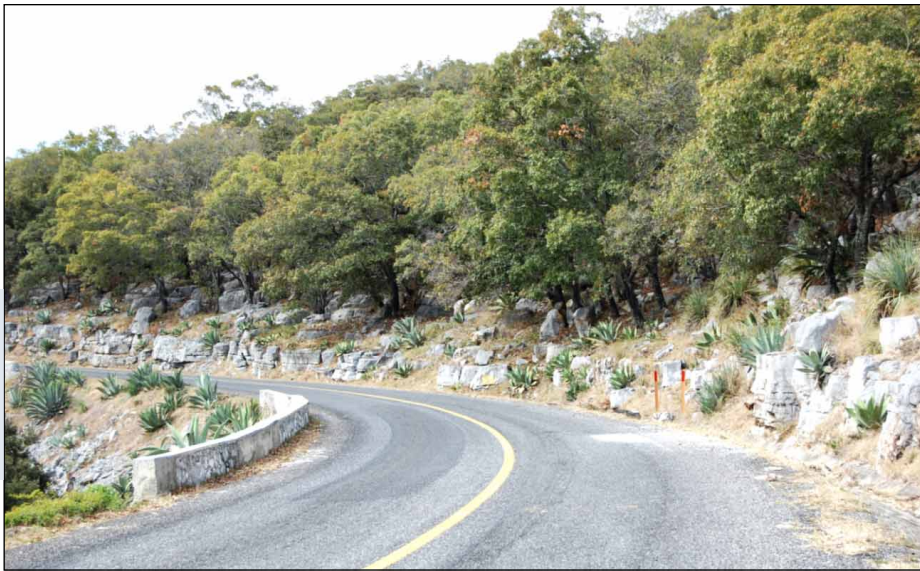
Agave lophantha

Sedum palmeri

A tradescantia

Above and right:

Two of the many striking hechtias



An idea of how the agaves are to be seen along the roadside. This is a huge and almost infinitely variable population of *Agave americana* subsp. *protamericana* × *scabra* that is the most commonly seen succulent in this part of Mexico

Further down the hill towards Jaumave the *Dasylirion* populations were different to those we saw earlier in the trip. It is either a new species or a form of *Dasylirion acrotrichum* growing some considerable distance further to the north-east than previously recorded. Very attractive plants indeed.

We still had around three hours of daylight left, so decided to call into a place I had visited previously. Just off the Jaumave (How-MAH-bay) to Las Palmillas road is a local beauty spot, a waterfall signposted as 'El Salto' (as are all waterfalls in Mexico).

We bumped down the dirt track, parked in the car park, walked down the hundred or more steep steps to the actual waterfall and then made our way to the mouth of a canyon for a small adventure.

We walked along the canyon with sides that alternately opened up and closed in and a footpath of water-worn pebbles from aeons of mountain rain run-off. We saw a number of palms, in particular the variable species, *Brahea dulcis*, although this actually conformed more closely to the previously described species *Brahea berlandieri*.

As darkness began to fall we left the tranquillity of El Salto, trekked back the few kilometres to the jeep and headed for Jaumave, just a short distance away.

Dasylirion species nova?

A beautiful cycad, *Dioon edule*, at the mouth of the canyon

Braheas in the late afternon sun

Agave gentryi growing in woodland

Day 6

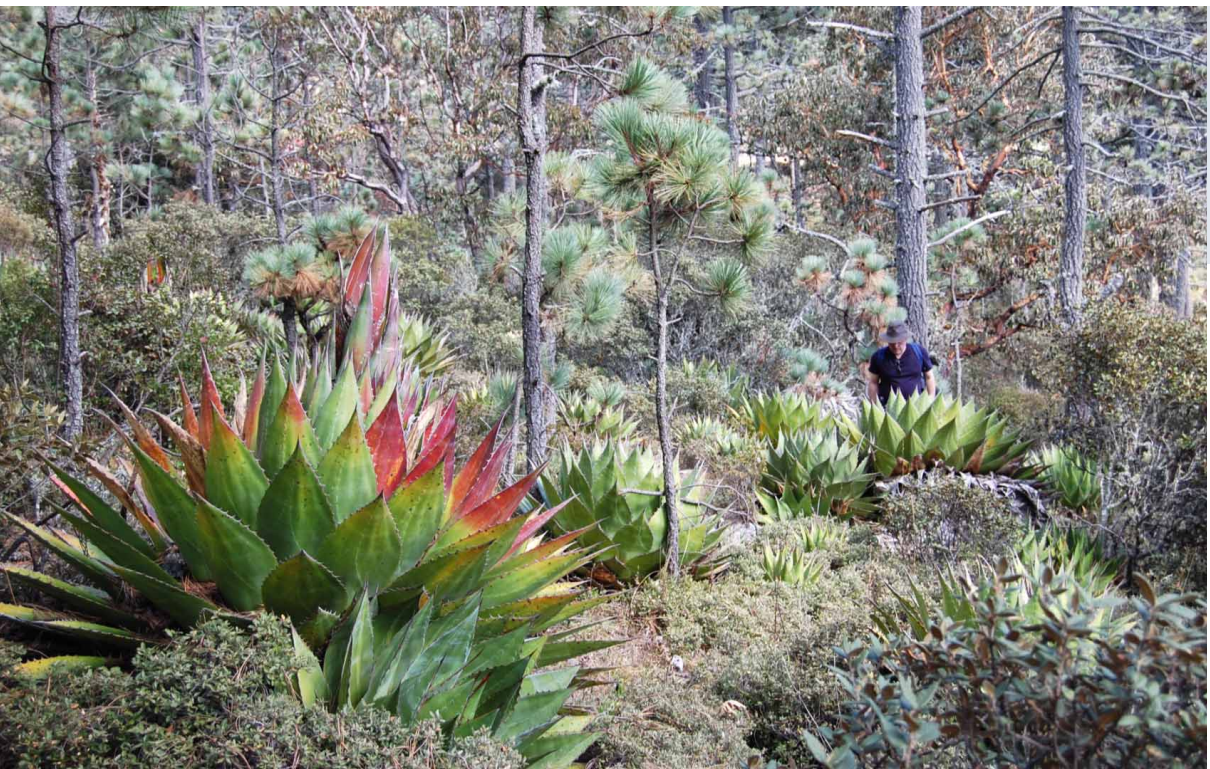
Only a few kilometres travelling were needed to reach the start of today's adventure, which was to see us driving up into the mountains from La Peña then back down and around to Miquihuana (Mick-ee-WAH-nah). We passed the, by now, usual stands of *Nolina nelsonii*, *Dasylirion quadrangulatum*, *Brahea decumbens*, *Yucca filifera* and *Yucca carnerosana* on the lower open slopes until, at around 2200m, the vegetation changes and woodland starts to appear.

This almost upside-down transition never ceases to amaze me. I would expect the higher ground to be devoid of plants, yet we were soon driving through a thick pine forest.

Anyway at around 2300m we started to see *Agave gentryi* growing mainly in the shade of the woods. Then, as we gained altitude, we started to see *Agave montana.* This was the main reason for driving up here and this magnificent agave never fails to take my breath away. Below is a conveniently staged picture showing small plants of *Agave gentryi* and *Agave montana* next to each other, highlighting their similarities and differences.

Agave gentryi (left) and *Agave montana*

Not only is *Agave montana,* for me, the most attractive of agaves, it also has to be by some magical quirk of nature the most suitable for growing in the UK and much of the temperate world. These woodlands receive adequate moisture throughout the year, with mists drawing in regularly, and get extremely cold at night. A friend who knows this area well reckons –10°C would be fairly routine for winter, with lower spells some years. Yet here these huge beasts remain in pristine condition.



Left and above: some forms of *Agave montana* in habitat, each one displaying its own character yet completely identifiable as *Agave montana*

You would imagine that it was quite enough for a stretch of woodland to contain just one of the world's most beautiful plants (in my opinion) but not here – there are two. Also to be seen in some numbers, both in the woods and in open stretches, is the supremely elegant *Nolina hibernica*.

For me part of the attraction is the way the old leaves are held in that beautiful petticoat in such a way that the slight twist to the leaf terminal tuft is accentuated into an almost spiral pattern.

Nolina hibernica

Dasylirion miquihuanense just before they started to get really numerous

Time was getting short – it was already mid-afternoon and we had a few hours driving to do, so we hardly took any of the thousand or so photo opportunities that were presented. We all promised to return and do this leg of the trip justice – a totally spectacular drive.

First of all we crossed a vast flat plain, edged by mountain tops, hiding in the centre of the mountain range at around 2400m altitude; so completely peaceful and relaxing. Then we reached the rocky edge and carried on descending along bumpy, twisting mountain roads where we were treated to the spectacle of hundreds of square kilometres of yuccas and dasylirions. Each hillside appeared perfect, with *Dasylirion miquihuanense* and *D. quandrangulatum* in their hundreds of thousands and each corner we turned revealed yet more.

We arrived at our hotel completely exhausted.

Day 7

Another long driving day ahead of us, we stopped briefly to look at this rather special *Nolina nelsonii*, plus the surrounding hillside, before making our way southeast to the subtropics and our next stop - Xilitla (Hee-LEET-la)

Nolina nelsonii

Day 8

This was a day off from botany. I opened these adventures with a garden, and I am ending this part with another – the uniquely bizarre garden at Las Pozas.

This was created by the eccentric (mad?) English surrealist poet and millionaire Edward James. The pictures give a small taste of what is there.

This was a completely magical experience and the sun shone for our entire visit too. Early afternoon arrived however, so unsure of how the weather would treat us, we left to make the drive to Jalpan (HAL-pan), our next stop. ■

To be continued

Photos: Paul Spracklin

Plants, books and talks in the Garden of England

Cactus at the Castle 2025

by Vicky Davies

Summer may be waning in the UK but that does mean it's almost time for this year's Cactus at the Castle at Lullingstone Castle, Kent.

Now the largest annual cactus and succulent event in the UK, there will be plenty on offer over the weekend of 6-7 September and once again *Cactus and Succulent Review* subscribers can enjoy half price entry.

We are very pleased to announce that we will be providing what will almost certainly be the last chance to purchase plants from Southfield Nurseries. We will have a large selection of plants available in the Lakeside Marquee all at post-closure sale prices. Don't miss this unrepeatable opportunity to pick up a top quality bargain from the legendary nursery that has won more RHS Gold Medals than any other.

The World Garden of Plants is celebrating its 20th Anniversary this year and Cactus at the Castle will be recognising this with the special one-off convention planned for the Sunday. We are delighted to welcome three of the UK's top speakers who will be giving talks on Sunday afternoon.

- Graham Charles will be presenting '*Matucana* in Habitat and Culture', providing insights into this genus of beautifully flowered cacti and doubtless offering titbits from his much anticipated forthcoming book on the subject.
- Roger Ferryman is creating a bespoke talk for the occasion, marking the anniversary with a guided tour through the last 20 years of his extensive explorations in Chile and Argentina.
- Ian Woolnough will be regaling the audience with images and anecdotes from his many trips to Mexico, doubtless presented with his customary observation and humour.

Tickets are just £16 (incl. a booking fee) and this includes entry to Lullingstone Castle and Cactus at the Castle, the talks and afternoon refreshments. Ticket holders also have the opportunity for early admission to Cactus at the Castle. To attend this special convention, pre-book your tickets at www.cactusatthecastle.co.uk/convention

Setting up in the early September sunshine

We are especially pleased that two newly published books will be available to the general public to purchase for the first time:

- *Copiapoa*
  Elisabeth & Norbert Sarnes
- *Ritter in Colour; Cacti in South America*
  produced by Paul Hoxey and David Hunt.

See below for more details. They are published by the Gordon Rowley Foundation and, for anyone who cannot attend Cactus at the Castle, they can be purchased direct from the Rowley Library. To pre-order for collection at Cactus at the Castle, please email rowley.library@btinternet.com

Of course, the ever popular mart will take place over both days and we are delighted to welcome all our new and returning sellers, growers and societies. With over 40 stall holders present and well over a hundred tables (600 feet) there will be plenty of tempting plants to buy.

Saturday afternoon will once again see the Bring and Sell Auction. Visitors are very welcome to bring plants to be auctioned for a small fee of £1.50 per entry. Auction lots must be registered by 1.00pm and the auction will start at 2.00pm.

On both days Mellie Lewis, who holds one of the National Collections of aeoniums, will be sharing her knowledge of this genus with various practical demonstrations and chats.

For those wanting to learn a little more about growing cacti, Graham Charles of the Gordon Rowley Foundation will be giving a talk in the Chapel on Saturday.

Sunday sees the return of the Lullingstone Open Show. The show is open to everyone to enter their plants and entrants also receive free entry to Cactus at the Castle on that day. The schedule can be downloaded from our website. Details of entries must be sent to the Show Manager, by post, telephone or email by Wednesday 3 September.

There will also be tours of the World Garden with Tom Hart Dyke, and the opportunity to look around Lullingstone Castle and grounds.

The Blue Agave Bar will be serving a range of delicious Mexican cocktails and excellent Harvey's beers. T's Tacos will be cooking up their delicious Mexican food and the Castle Café will have a selection of light lunches and cakes on offer. ■

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