

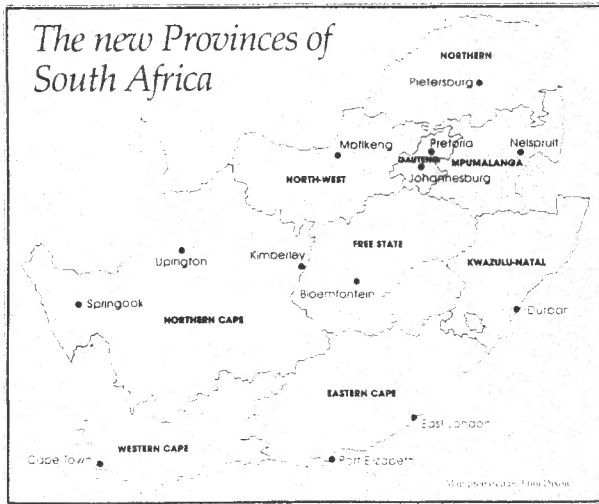
# Espinas y Flores

Newsletter of the San Diego Cactus and Succulent Society, Inc.  
Affiliated with the Cactus and Succulent Society of America  
Volume 35, Number 4, Saturday, April 8, 2000 at 1:00 PM



PHLOE LONGSTYLA

Barbara M. ...



**NORTHERN CAPE PROVINCE** consists of the northern parts of the old Cape Province including Namaqualand and the Richtersveld.

## APRIL PROGRAM

Last August, Andrew Wilson took a four-wheel drive trip with Graham and Francoise Williamson to remote areas of the Richtersveld. This month he'll be describing some of the adventures they had and some of the amazing succulents that grow in that part of South Africa. His overall impressions appear in the article "A Succulent Springtime" in this issue. In the talk, he'll cover the types of places where they found mesembs, pelargoniums, sarcocaulons and euphorbias in bloom. But he'll also have a few words about some plants that were not flowering such as crassulas, pachypodiums and, yes, aloes.

Come and see some of your favorite plants growing in their native habitats. Casa Del Prado, Room 101, Balboa Park, April 8 at 1:00 PM

Cover: This beautiful painting was done by Gerhard Marx, a well known South African artist who has had several works grace the cover of the Cactus and Succulent Journal. He now lives in Tucson, AZ with his wife Ina and works for Arid Lands Nursery.

The plant illustrated is *Aloe longistyla*, one of the smallest and also one of the most sought-after of the South African aloes. The species derives its name from its most distinct feature, the length of the style, which can reach 75mm when fully extended. The leaves are gray to glaucous green with a flower that ranges from orange-red to crimson. It inhabits the arid central and southeastern regions of the Cape Province where rainfall is low and occurs mainly in the summer.

Please send your letters, artwork, poetry, Cactus or Succulent of the Month articles, puzzles, comments, or criticisms, etc. to:

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 La Mesa, CA 91941  
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 FAX (858) 569-8510

Newsletter submissions are due before the 14<sup>th</sup> each month unless other arrangements are made

*Espinas y Flores*, the newsletter of the San Diego Cactus and Succulent Society, Incorporated, P.O. Box 33181, San Diego, CA 92163-3181, is published monthly with the exception of a combined May-June issue (11 issues per year). Newsletter circulation is approximately 330, with 20-30 issues going to educational institutions, botanical societies, cactus and succulent nurseries, local publications, related natural history events, exhibits, and other interested groups or individuals upon request. Subscriptions are \$15 per year for bulk mail within the U.S.A.

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# A Succulent Spring

by Andrew Wilson

A few months ago I took a trip to see the wildflowers of Namaqualand and the Richtersveld at the height of the season. Graham and Françoise Williamson, veterans of these parts, had acquired a new four-wheel drive truck and indicated earlier this year that this would be a good opportunity to take the trip. The past few years had been extremely dry in those areas and a change to wetter conditions was long overdue. Hopes of a good season were dashed when rains did not arrive until July. While those late rains failed to fill the desert landscape with the exuberant flowering of annuals they did produce some spectacular flowering of a number of the mesembs and of the euphorbias, which we were fortunate to see at their prime.

Camping out in springtime is no less hazardous in the deserts of South Africa than it is in Northern Baja or Southern California. Rain was possible, and did occur once; snow was present on the highest peaks and strong easterly winds from the interior brought hot days and cold nights. The first night out the temperature fell to  $-3^{\circ}\text{C}$  ( $27^{\circ}\text{F}$ ) before dawn but just six hours later, it rose to  $42^{\circ}\text{C}$  ( $108^{\circ}\text{F}$ ). With the long experience of the Williamson's for these conditions there were no mishaps and exposure to the elements rewarded me with the sight of flowers reopening their brilliant blooms in the heat of day after being blasted all night by cold winds.

After recalling many hundreds of species of plants on this trip I must resort to simply describing a few highlights. There were four of them, (1) the euphorbias, (2) the mesembs, (3) the drought, and (4) the rock gardens. The first two resulted from the timing of the trip, with many species of both families being the first to respond to the late winter rains. The third feature resulted from the unmistakable effects of years of little rain while the last feature represents a statement of the character of the remarkable geology in which many succulents find a home.

## Euphorbias

Everywhere we found euphorbias they were in bloom. They ranged from the luxuriant specimens of *E. tuberculata* in the Cedarberg foothills to the wind-blasted stumps of *E. ramiglans* near the estuary of the Orange River. They all appeared to be responding with determination to

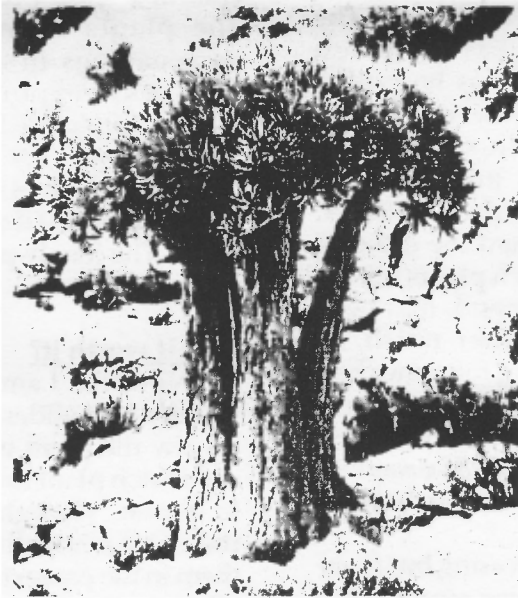
the first real rains in years. Most of them were those stubby, caudiciform sorts that have relatively large flowers.

Outstanding for form were *E. pentops* and *E. friedrichiae* and for massed flowers, *E. rudis*. Seed from any of these would have been most welcome, but the sight of this unusually heavy flowering was, for me, a greater fortune. Most endangered was *E. melano-hydrata*. With the jaws of the diamond industry chewing through mountains of soil in close proximity it appeared to be in imminent danger in its native habitat and most demanding of some effort to conserve it.

Of the non-caudiciform types the ubiquitous *E. mauritanica* covered hillsides in yellow and the less common *E. hamata* showed its red bracts. Even the huge *E. hotentotta* specimens and the fierce *E. virosa* showed their blooms. Unlike the caudiciform species, which occurred mostly on flat, sandy areas, these ones preferred steep, rocky inclines.

## Mesembryanthemums

Conophytums, of which we saw a great many species, were past their season of bloom. A subject of its own, I shall add nothing about it here except in describing how they formed part the natural rock



*Aloe dichotoma* flowering in habitat

gardens of the Richtersveld. Instead I'll describe our fortune in seeing the massed blooming of a number of the larger flowered mesemb genera. This began at the southern edges of Namaqualand as we drove north. Dazzling white blooms of *Mitrophyllum monilliforme* stood out atop low hills under blistering heat while, on southern slopes *Argyroderma fissum* and *Cephalophyllum spissum* showed their blooms. Later that afternoon and well north of van Rhynsdorp we encountered literally miles of *Cheiridiopsis schlechteri*, *C. denticulata* and *Cephalophyllum pillansii*, their yellow, pale pink

and golden blossoms resplendent in the setting sun.

There were many more species of *Cheiridiopsis* when we reached the arid expanses and jagged mountains of the Richtersveld. Unlike conditions further south where normal rainfall had occurred here there had been little in years, leading to the bronzed and even dessicated appearance of some specimens of the large aloes such as *Aloe pillansii*, *A. multiramosa* and *A. dichotoma*. While the previous

month's rain did not appear to rejuvenate them greatly the mesembs had responded impressively, including the rare *Cheiridiopsis umdausensis*. There were *Leipoldtia*, *Schneideriana*, *Schwantesia* and *Astridia* species in bloom. The color mixtures were beautiful, from the dazzling orange and yellow flowers of *Jordaaniella cuproides* to the glamorous pink and white forms of *Mitrophyllum scuttata*.

I could extend that list. With my preference for succulent plants having a good year-round form these mesemb species had never been my favorites. However, to see them bloom as this after a long drought while little else appeared was to experience a life and death drama. I was converted! Numerous dead plants appeared among the blooming mounds of the survivors. On returning ten days later to the site where blooms had covered the landscape to the horizon, all the flowers had gone. Heat and blowing wind had reduced their days of glory to but a few. We had been lucky.

### The Drought

In a normal year the rainfall in much of the Richtersveld may be 100 mm (4 inches) except on top of the highest peaks. According to Graham it had been five years since the last good year of rain, which means both good rainfall and good timing of it. Last year there was no rain in places, and this year, while there was some, it arrived late. As indicated already some of the larger aloes appeared desiccated and a few of them dead. The same was true of some of the hoodias and quite a few of the *Pachypodium namaquensis* bore little foliage. In the large mesemb display areas many dead specimens were obvious. In some places many *Crassula*, *Anacampseros* and *Othonna* specimens were either shriveled or defunct. According to Graham, not only had the drought been long, and the fogs upon which plants within 20 miles or so from the coast depend, had been less reliable than normal. Further north, in Namibia, many plants in the coastal fog zones had died. It was thus remarkable that at least four species of *Tylecodon* did not seem to be bothered and bulbous plants such as *Brunsvigia*, *Haemanthus* and *Gethyllis* species were present even in the most parched surroundings.

Drought like this sounds depressing but there were places where recovery was underway, following earlier rains. There the mesemb displays were splendid and, in rocky hillsides sarcocaulons and pelargoniums were starting to bloom. Some such as: *Sarcocaulon l'heritieri* and *Pelargonium incrassatum* in full flower. Some aloes such as *A. melanacantha*, *A. gariepensis* and *A. dichotoma* had already bloomed and the euphorbias, in all species encountered, were flowering.

### Rock Gardens

Much of Namaqualand and certainly the Richtersveld is hilly or mountainous. In such areas the complex of geological formations has produced a wealth of rock gardens. Some of these are formed of scree, others of eroded faces of rock layers and others of granite outcrops containing crevices. Conophytums grew in large numbers in such places, and far more luxuriantly than other species that lived in flatter areas. The adaptation of succulent plants to these places was, for me, one of the most impressive features of the visit. Caudexed forms of *Tylecodon*, *Crassula* and *Othonna* seemed perfectly suited to and even cozy, perched and protected between rock edges. Contrasts of uplifted strata with their rounded or vertical geometries made study of the plants inseparable from their surroundings.

We spent days clambering up among the rocks and inspecting crevices where, particularly on shaded south-facing faces, the richness of plant variation was amazing. It led me to think about growing these plants at home. In San Diego, while we concern ourselves with the right container for our favorite *Crassula* or *Pachypodium* for the next plant show, we might study with some benefit the sites in which so many of the plants we grow occur naturally. In places those plants emerged between rock crevices, in others they arose from steep clay-like soils while some stood alone among white quartz stones. I found it impossible to separate the plants from their incredibly difficult surroundings. In so many cases the steep inclines and rock sizes provided a scale within which the plants appeared hidden. Only the large aloes, some thirty feet high and often on exposed mountain crests, stood apart from their surroundings. All others were fully integrated into them. The lonely plant in its pot becomes a sterile statement.

### Was it worth it?

Now that I am back and have assembled my hundreds of slides, I have had the opportunity to review the plant wonders that I saw. If asked to say which plant impressed me most I would have to demur. Though there were many candidates the most compelling memory is that of seeing them in the context of their own habitat. That, after all, was the reason I went there. Without going anywhere I can see specimens of some of those plants but I can not see a large *Hoodia alstoni* growing out of a vertical rock face, massive clusters of conophytums perched atop cliff overhangs or thousands of *Cheiridiopsis* ablaze with color and hugging white quartz. Such sights made the trip memorable and probably more indelible than the slides.

# CALENDAR OF UPCOMING EVENTS

## ☒ APRIL

— 2000 —

- 15 Palomar Cactus & Succulent Society Meeting, Call 760-743-1560 for details
- 22-23 Monterey Bay Cactus & Succulent Society Show & Sale, Info. Carole Keeton 406-773-9277
- 30 South Bay Epi. Soc. Show

## ☒ MAY

- 5-7 Sonoran 3 Conference, Tucson C&SS, Info. Cactus Carol Clapp, e-mail kitfox@azstarnet.com.
- 6-7 Sacramento C&SS Show & Sale. Info. Dorothy Williams 916-967-7988
- 6-7 Sunset Succulent Soc Show & Sale, Veterans Memorial Bldg., 4117 Overland Ave., Culver City CA. Info. Rosalie Gorchoff, show coordinator 310-822-1783
- 13-14 San Jose C&SS Show & Sale. Info. Carole Keeton 406-773-9277
- 14 San Diego Epi Soc Show, 9:00 AM, Casa del Prado, Balboa Park, San Diego CA.
- 20 Carmichael C&SS Show & Sale. Info. Pearl Lemkuil 916-483-4496
- 20-21 Gates Show & Sale in Redlands, call Barry Urman, 909-796-6417

## ☒ JUNE

- 3-4 SDCSS Show & Sale at Casa del Prado, call Tom Knapik, 619-462-1805

## FYI FYI FOR YOUR INFORMATION FYI FYI

⇒ Please help with *Earthfair 2000* This great event will be in Balboa Park on Sunday, April 16. We will be participating with a booth where we will talk to people about the wonders of Cacti and other Succulents as well as have plants for sale. We will need a few vendors and helpers...plan to come early and stay late we will be providing food and drinks to all vendors and helpers. Please contact **Pam Badger** for info. at 619-589-1223 ☎ or e-mail ✉ pambadge@earthlink.net.

⇒ The dynamic duo, **Pam & Lee Badger** have scored a first in the Benefit Drawing Department. Working together, they cracked the \$200 mark in sales. Lee has been selecting and purchasing plants for the drawing for the last few months. Pam stepped in to sell tickets for the drawing at the March meeting in Kay Quijada's absence. With many tempting plants, and Pam's ticket selling skills, they managed to take in \$204. *WAY TO GO, BADGERS!*

⇒ **Carl McLeod**, has been under the weather lately, drop him a note at: 8320 DuFresne Way, San Diego, CA 92129. He helped out a lot at the Baja Garden, and spread the word about the club to a lot of Folks over the years.

⇒ [ex] President and Editor of **Palomar Cactus and Succulent Society's (PCSS) Cactus Courier**, **Paul Steward**, recognized one of SDCSS's continuing strengths...did you? Paul noted the a wonderful Plant of the Month 'write-ups' and presentations we had in March by **Kelly Griffin** and **Ross Shumway**. Kelly used slides and Ross used a computer projector to display digital images on the screen. Both Paul and SDCSS **President Tom De Merritt** noticed that this was the first Digital and PowerPoint presentation at SDCSS. Good work Kelly and Ross!

⇒ Want to go out on a field trip with the **California Native Plant Society - San Diego Chapter (CNPS SD)**. There are two coming up. The first is Saturday, April 29 - Field Trip **Cuyamaca cypress and Descanso area flora**. Call Kay Stewart during business hours at 619-234-2668 for information on this trip and others – get outside for a change!

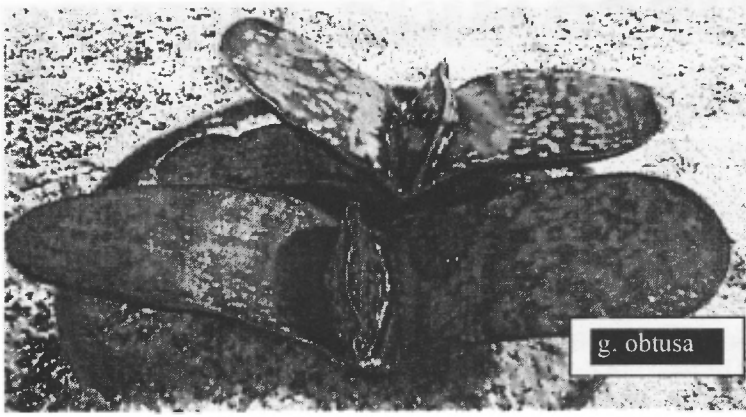
⇒ **Del Mar Fair** time is almost upon us, want to help the PCSS with their exhibit? Lend a hand to our sister organization by calling **Stan Yalof** at 760-743-1560.

⇒ The **15<sup>th</sup> Annual Spring Home & Garden Show** will in on for April 7-9 from at the Del Mar Fair grounds. Plan to attend, there will be lots of booths with ideas and things for sale. Want to help, call 858-569-8510

⇒ Did you enjoy the rains that we had in March? Well you succulent plants may not have. If you have plants that were exposed to the rains take some time to inspect them for weak spots where bacteria or fungi may have got a place to infect. If you notice any soft areas take some action to protect them from further damage.

⇒ There will be a Plant Photography Workshop sponsored by the Fullerton Arboretum on May 20. SDCSS member **Chris Barnhill** and Ted Nichols will demonstrate techniques and equipment that they use. Chris will be the featured photographer in **Steven Hammer's** new book on Conophytums. Call 714-278-3579 for more info.

⇒ **Balboa Park's Secret Garden** (UNION-TRIBUNE, WEDNESDAY, FEB. 2, 2000) is no secret to SDCSS members. This cactus and succulent garden on the east side of Park Blvd. was started by life member **John R. Pasek**. John is retired and now lives in Tucson, AZ. He helped put the garden together in the 1970's. Many members were involved with this project. Former SDCSS member **Phan Van Lit** (Lit Phan) is the latest caretaker of this garden. If you have any memories of this city project write them down and send them in for publication. THANKS!



## Succulent of the Month **GASTERIA**

By Chris Miller

Gasteria are endemic to South Africa, with the main centers of distribution in the dry karroid and savanna regions of the south-eastern Cape. They are a drought resistant, shade loving, shallow root succulent. Gasterias are slow growing plants that range in height from 20 mm to 600 mm. They adapt well to indoor conditions and have been widely cultivated.

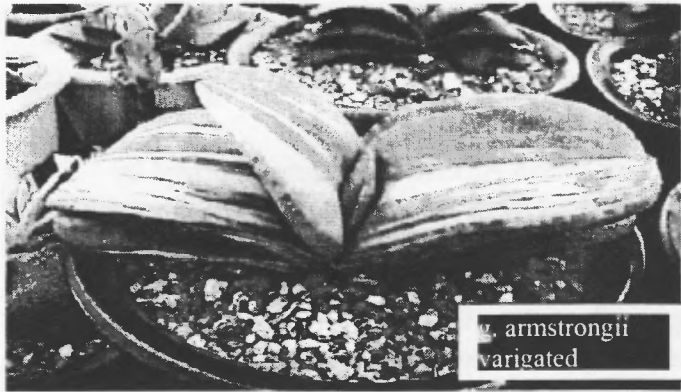
While similar to other members of the Alooideae sub-family of Asphodelaceae, Gasterias differ in both flower and leaf features. Some Gasteria flower stalks grow out from the plant and arc gracefully. The flowers stay pendulous until they are fertilized. The flowers themselves are shaped like a stomach, hence the name of the plant. Flowers are usually tri-colored green, white and a range of pale pink to red.

Most Gasterias can be identified by their green, brittle, mottled, textured, tapering succulent leaves. These plants are commonly known as Ox Tongue, Cow Tongue Cactus and Lawyers Tongue because of the shape of the leaves. The leaves are either distichous (arranged in opposite rows), spirally distichous or in a rosette pattern. The leather textured leaves can be flat or triangular with distinct raised patterns. The leaf width is usually 2 to 6 times wider than the depth. Leaf edges are notched or scalloped, with the edge pattern merging towards the tip of the leaf.

The typical habitat of Gasterias consists of dry rocky hillsides, inhabited by herbs, with taller emergent shrubs, under which the Gasteria grow. They also grow in rock fissures and in the shade of rocks. Occasionally they will be found in the open. Some forms have been reduced in their natural habitat due to farming, but most are still in large numbers in the wild due to their tendency to grow on rocky outcrops and cliffs.

Gasterias have been in cultivation for over 300 years, with plants being shipped to Europe almost as soon as colonization started in South Africa. They have proven to be hardy plants that are easy to grow if you keep the following information in mind.

- 1) Gasteria propagate readily from leaf cuttings, division or seeds
- 2) They should be planted in well drained sandy soil to which plenty of compost or leaf mould has been added
- 3) Most of the species prefer bright shade and should be protected from direct sun and severe frost
- 4) An inorganic pebble mulch around plants will suppress weeds
- 5) They transplant easily, but beware of moving them rapidly from protected shade areas
- 6) The plant needs to be firmly down in the soil
- 7) Organic material in the form of compost or mulch and ample bonemeal should be applied at the start of the growing season
- 8) Fertilize throughout growing season
- 9) Most Gasteria need water year round, but it should be applied sparingly
- 10) Re-pot every 3 to 4 years



When growing Gasteria in pots, clay provides better aeration and drainage, but other types of pots work equally well. Some recommendations for soil mixtures include: 2 parts sand, 1 part mulch, 1 part loam (good garden soil) or ½ peat and ½ perlite. Gasteria tend to grow more quickly in the second mixture, but remember to fertilize frequently with a liquid fertilizer.

Classification of Gasteria did not have a sound base and is complicated further by the ease with which it interbreeds. Below is a list of Gasteria, some are hybrids of others on the list.

***g. armstrongii***: Distichous rosette, up to 10 cm in diameter. Red flowers.

***g. bastensia***: Distichous turning to rosette in maturity, 80 to 300 mm in diameter. Leaves dark green with white spots arranged in transverse bands. Light pink flowers from October through December.

***g. baylissiana***: Distichous leaf pattern, up to 10 cm in diameter. Reddish pink flowers from September through October.

***g. brachyphylla***: Distichous leaf pattern, up to 25 cm in diameter. Smooth dark green leaves with dense white spots arranged in obscure transverse bands, wavy leaf margin. Pink flowers from September through October.

***g. carinata***: Most variable of species. Distichous at first, may transition to any form in adulthood. Forms dense groups 150-600 mm in diameter. Pink flowers July to November

***g. croucheri***: Rosette, up to 600 mm in diameter. Pink flowers from November through February. Zulu warriors prized this Gasteria for its magical properties. It was believed to render the user partly invisible.

***g. excelsa***: Distichous leaf pattern, up to 25 cm in diameter. Dark green with indistinct white spots. Pale pink to white flowers from November to February.

***g. nitida***: Distichous leaf pattern (may become a rosette), up to 25 cm in diameter. Smooth, shiny leaves, dark green with faint to dense white spots arranged in irregular transverse bands. Bright reddish flowers from December to February.

***g. pillansii***: Distichous leaf pattern, up to 400 mm in diameter. Pink flowers from November to April

***g. rawlinsonii***: Distichous leaf pattern, up to 15 cm in diameter. Leaves green with faint white spots. Pink flowers from August to October and occasionally at other times of the year

***g. verrucosa***: Distichous leaf pattern, 30 cm in diameter. Red Flowers.

REFERENCE: *Gasterias of South Africa*, E Jvan Jaarsveld, 1994

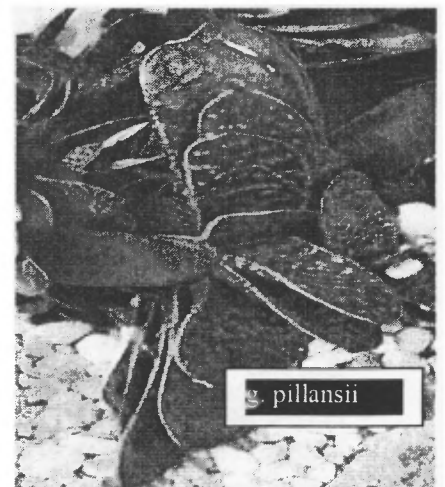
Some Internet sites to visit for more information on Gasterias:

<http://www.botany.com/gasteria>

<http://www.com/~amdigest/gasteria>

<http://www.indoorsun.com/pages/gasteria>

<http://www.desert-tropicals.com/Asphodelaceae>



# CACTUS OF THE MONTH

## ECHINOCEREUS

by Phyllis Flechsig

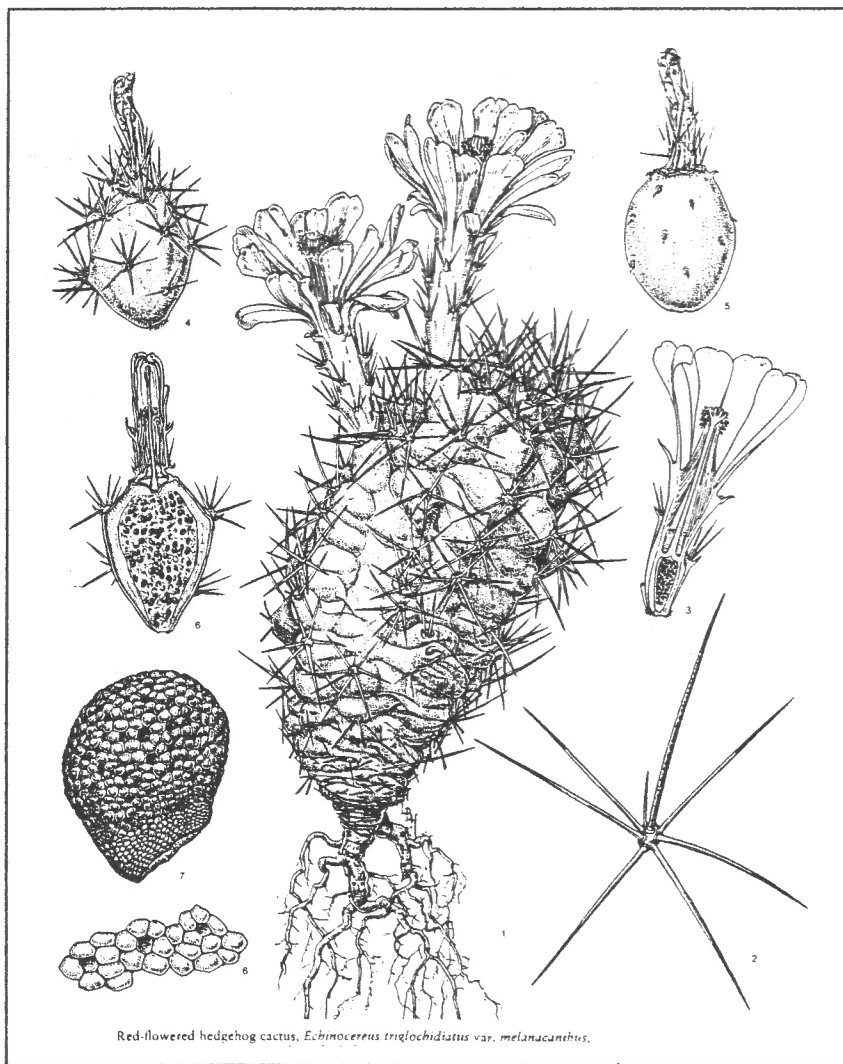
The genus *Echinocereus* is a middle-sized group of North American cacti much prized by collectors for their large, showy flowers that last for several days. The name means "spiny candle-like plant," or, if you prefer, "hedgehog cereus." The plants are characterized by (usually) multiple short, bristly or spiny stems, flowers that burst through the epidermis of the plant just above the areoles, green stigmas, and globose fruit that is spiny, the spines falling off when the fruit is ripe. There are exceptions to all these characteristics: a few species have small, near spineless single stems, or white stigmas, or flowers that emerge from areoles in the usual cactus fashion, and so on. Flower color covers a wide range, from green or brownish to red, purple, orange, yellow, two-toned, and even white. The plants' native habitat is from south central Mexico (Oaxaca) north to South Dakota, and from the California deserts east to central Texas. The actual number of species varies with the author consulted: Backeberg lists 91; Taylor has reduced this number to 44; Benson lists 39, of which 13 are native to the United States. The current Gerhard Koehres catalog (the German seed dealer) lists 215 species and varieties in its current catalog.

These plants fall into two broad groups: those that open their flowers and stay open for several days, such as *E. engelmannii*; and those that open in the morning and close in the evening for several days in succession; the "claret-cup" types, with red flowers, fall into this category.

Most of us have seen the native southern California species in habitat: *Echinocereus engelmannii*, with very large bright magenta flowers and long multicolored spines, in the low desert; and *E. triglochidiatus*, with smaller, bright red flowers, in the Mohave desert. Both Benson and Taylor assign numerous varieties to these two species.

Some echinocerei grow into clumps of hundreds of heads, but there are a few choice miniatures for the grower with limited space.

The smallest of all is the tiny *E. viridiflorus* v. *davisii*. A mature plant may be only half an inch across. As the name suggests, its flowers are green. *E. palmeri* is a charmer: fat tuberous roots pull it into the soil when it is dry; it has few ribs, short spines, and large purple flowers. *E. pulchellus* is a little green globe with very short spines and large purple flowers; it seldom branches. A third is the better-known *E. knippelianus*,



Red-flowered hedgehog cactus, *Echinocereus triglochidiatus* var. *melanacanthus*.



with a soft, nearly spineless body (except for a few long bristles) and pink flowers.

Travelers in Arizona may see any of several species of *Echinocereus*. They include varieties of *E. triglochidiatus*; *E. fendleri*, with its few spiny stems and large magenta flowers; *E. fasciculatus*, also with large magenta flowers but with larger and more numerous stems; and several varieties of the above-mentioned *E. engelmannii*, including the yellow-spined var. *nicholii* in Organ Pipe Cactus National Monument; and the "Arizona rainbow cactus," *E. rigidissimus*. Travel to New Mexico or southern Texas and you will see still more kinds, too many to mention here.

*Echinocereus* are reasonably easy to grow. They need very strong light, and, as always, very good drainage. Larger kinds may be grown out in the garden. They do get pests; use of a systemic insecticide twice a year is advisable. Propagation may be from seed--a huge assortment is available--or from cuttings. A cool winter rest is good for them, and will encourage profuse flowering the following spring. Some may shrivel or shrink down into the soil, but don't worry; when watering begins again they will pop right up ready to greet you with their wonderful flowers.

#### LITERATURE CONSULTED

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- Pilbeam, J. 1992. The five yellow-flowered *Echinocereus*. *The Cactus File*, vol. 1, no. 7, p. 10-12.
- Taylor, N. P. 1985. *The Genus Echinocereus*. Timber Press: Portland, Oregon.
- Taylor, N. P. 1988. Supplementary notes on Mexican *Echinocereus* (1). *Bradleya* 6, p. 65-84.

Please remember to bring any *Echinocereus* or *Gasteria* from your collection to the meeting



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### BRAG PLANT WINNERS

Judged by Carl Volkers

#### SUCCULENTS

First: Don Patterson  
for *Othonna herrei*  
Second: Don Patterson  
for *Haworthia magnifica*  
Third: John Barkley  
for *Aeonium schwartzkopf*  
crest

#### CACTI

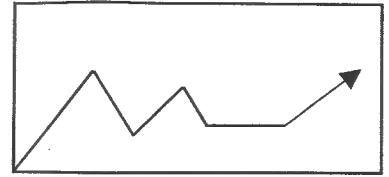
First: Phyllis Flechsig  
for *Rhipsalis* sp.  
Second: Don Patterson  
for *Gymnocalycium bruchii*  
Third: Pam Badger  
for *Lobivia wrightiana*

# WHAT'S THE STATUS?

Topic # 5:

by Joey Betzler

Change is coming to the Baja Garden at the Wild Animal Park!

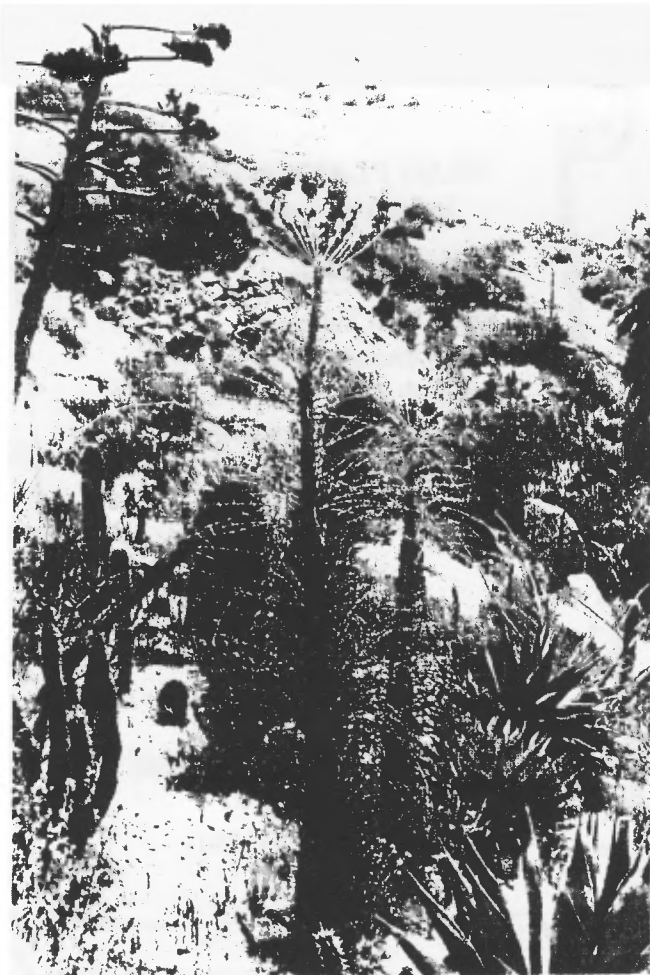


A UNIQUE NEW EXHIBIT WILL OPEN SOON adjacent to the lower boundary of the Baja Collection and we need your help to make way for this event. Please read on for a little history of the garden, the plants that live there, and how you can help.

## BAJA HILL HISTORY

About eight years ago I joined Frank Thrombly, Tom Parks, Bob Herbst and Al Resnick as a volunteer in the Baja Garden, at the Zoological Society of San Diego's Wild Animal Park. Frank, a life member of SDCSS, talked me into coming out and lending a hand. I had a flexible work schedule and could come out during the week. What a fantastic place to be able to volunteer, there were huge Cardóns, Boojums and Barrel cacti! I immediately adopted the 'Baja Hill', as the cactus and succulent garden that I always wanted.

These plants are from Baja California, Mexico. Most of the specimens are from the central desert region of Baja California. Especially areas from Cataviña to Bahía de los Angeles.



This is a photo of the 'Baja Hill' at the Wild Animal Park

This collection is the largest of its kind outside of Baja. About five acres of the Hill are carefully planted, with some more areas waiting to be developed. A new area was planted out about six years ago – an Old World Succulent garden. This newest garden is the gateway to the upper volunteer gardens at the Park, the Baja Hill is in the middle and the Native Plant Garden is at the end.

In 1979 Jim Gibbons, then Horticulturist at the park, decided to incorporate a garden of Baja plants at the Park. This happened after an inspirational trip with his friends to Mexico. Jim obtained the proper permits in 1980.

Now, all plants from Mexico are protected and collecting any plant in Mexico is prohibited. At the border, inspectors will confiscate any plants that come in.

The California Conservation Corps laid out paths across the hill, some chaparral was removed, but the majority was left in its natural state. In the autumn of 1980 to the spring of 1985 about 20 collecting trips took place. About 2,000 plants from these trips were reestablished on the Baja Hill. Some members of SDCSS went along on these trips and helped establish many of these plants. The climate on the 'Hill' is perfect for the plants and thanks to this location the garden has grown into an outstanding replica of the central desert in Baja.

## PLANTS ON THE HILL

Of the collected specimens in the garden, the most unique, and key plants, are the Boojum trees (*Fouquieria columnaris*): They are specially adapted to survive during periods of drought. Native people from Baja refer to these plants as the Cirio. Cirio is Spanish for candle, which the tall mature plants resemble in shape. There are around 200 of these trees in the garden; they range in height is from 6 to 25 feet. Related to our Ocotillos in the Anza-Borrego desert, they resemble upside down carrots with a thick trunk tapering to a thin apex. The flowers appear as a white crown at the top of the trees, soon after rains.

Other notable plants that form the foundation of the collection are the Cardón (*Pachycereus pringlei*), Coastal Agave (*Agave shawii*), the old man cactus of Baja (*Lophocereus schottii*) and Barrel Cactus or Biznaga (*Ferocactus acanthodes*). The tallest cacti in the Baja Garden are not Saguaro, but the Cardón. These large columnar cacti actually grow over twice as fast as Arizona's Saguaros and form stouter bodies. When you see the plants at the garden you may notice that as they get taller the heavy spination changes. At the

top of the tall stems the spines disappear. Lately these giants have started to flower and produce seed. They grow quite well at the Park, thanks to the unique climate in the Hill.

The Coastal Agave, *Agave shawii* also does quite well at the park and seedling plants from SDCSS member Phyllis Flechsig are flowering size already, after about 10 years. These dark green plants form a rosette that may have a diameter of up to 6 feet. At the garden many plants will form clumps that are armed with spines on the tips of the leaves and sharp teeth along the edges of the leaves. *Lophocereus schottii* is a relatively spineless cactus until the stems mature. The mature stems start forming special gray to white spines. From this special area the pale pink flowers are borne. These plants can get quite massive, though the stems do not attain the girth of the Cardón.

There are many species in the garden, and several thousand specimens that form this vast Baja Collection; mostly cactus and succulents, with trees, shrubs and palms. Here is a list of some of the plants: *Acacia farnesiana*, *Agave cerulata*, *A. deserti*, *A. shawii*, *A. shawii* ssp. *goldmaniana*, *Ambrosia* sp., *Asclepias subulata*, *Bergerocactus emoryi*, *Bursera hindsiana*, *B. microphylla*, *Cochemia pondii*, *C. poselgeri*, *Dudleya albiflora*, *D. pulvernata*, *D. variegata*, *Echinocereus engelmannii*, *E. maritimus*, *E. pacificus*, *Encelia farinosa*, *Erythea armata*, *E. brandegeei*, *Euphorbia misera*, *E. xanthii*, *Ferocactus acanthodes*, *F. chrysacanthus*, *F. diguetii*, *F. gracilis*, *F. peninsulae*, *F. schwarzii*, *F. viridiescens*, *Ficus palmeri*, *Fouquieria columanris*, *F. diguetii*, *F. splendens*, *Ibrevillea sonora*, *Jatropha cinerea*, *J. cunata*, *Lophocereus schottii*, *Mammillaria dawsonii*, *M. dioica*, *Myrtillocactus cochal*, *Nolina parryi*, *Opuntia basilaris*, *O. catavensis*, *O. cholla*, *O. invicta*, *O. molesta*, *O. ramosissima*, *O. tesajo*, *Pachycereus × orcuttii* (a natural hybrid), *Pachycereus pecten-aboriginum*, *P. pringelii*, *Pachycormus discolor*, *Pedilanthus macrocarpus*, *Peniocereus johnstonii*, *Prosopis glandulosa*, *Stenocereus aruca*, *S. gumosus*, *S. thurberi*, *Quercus agrifolia*, *Sarcostemma* sp., *Simmondsia chinensis*, *Tillandsia recurvata*, *Washingtonia filifera*, *W. robusta*, *Yucca schidigera*, *Y. valida*, *Yucca whipplei*, *Y. whipplei* var. *eremica*.

#### MAKE IT YOUR GARDEN

The Old World Succulent garden consists of plants from Africa, Arabia and beyond and it is the gateway to the Baja Hill. Just down from this entrance is the beginning of the newest exhibit at the Park, Condor Ridge. Though the entrance is not directly connected to the gardens, more people will visit our area when they see the vistas from the large arroyo that runs through the Baja garden. The North American ani-



Silhouettes of Boojums and *Lophocereus schottii* on the 'Hill'

mals that will be on exhibit like; Condors and Big Horn Sheep have something in common with some of the plants on the Hill, they are threatened or endangered. I have been fighting for some of the plants in the garden. Many were moved from areas that would be within the exhibits to locations on the Hill. I have pictures of 20 foot Boojums flying through the garden being suspended by a crane. With all of the plant moving and construction the garden needs a hand by people that are interested in this, the largest, collection of Baja plants.

The most important contribution to the Baja Hill comes in the form of volunteers. Our past volunteers, in addition to those listed in the beginning of this article have been: Ron Austin, Rudy Lime, Carl McLeod and Alex Murphy. Both San Diego and the Palomar Cactus and Succulent Societies have a long history of supporting the garden and now we need more help. Partly to get ready for the opening of Condor Ridge, and partly to work on some continuing projects.

If you have skills with irrigation, construction, plant care or propagation, or just feel moved to help, please call. Currently the driving force behind the garden is Chris Miller and John Stanley with help from Paul Steward and Stan Yalof.

Who knows, when you come out and help you may find that this is the cactus and succulent garden that YOU always wanted!

Call me at 858-569-8510 today, and I will be happy to meet you at the garden.

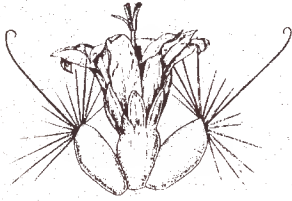
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Name this succulent to **Genus and species**. This photo was sent in by Sandy Frost. It is of a plant at the Wild Animal Park's Old World Succulent Garden.

This plant along with others forms the gateway to the Baja California Succulent and Cactus Garden.

The '**Baja Hill**' was put together in the 1970's by SDCSS members as well as staff at the Wild Animal Park. Today this collection is the largest outside planting, of these plants outside of their natural habitat in Baja California Mexico. Read more on Pg. 10.

The SAN DIEGO CACTUS AND SUCCULENT SOCIETY, INC. is open to all persons interested in growing cacti and other succulent plants. Meetings are held the second Saturday of each month (except June, Sept. and Dec.) at 1:00 PM in room 101, Casa del Prado, Balboa Park. Executive Board meetings are open to all members; call any officer or director for the time and location. Annual dues are \$15.00 per single member per year, \$5.00 for each additional (associate) member within the same household. Single copies of *Espinas y Flores* are \$2.00 per copy sent within the USA; foreign subscriptions are \$30.00. Affiliated with the CACTUS AND SUCCULENT SOCIETY OF AMERICA, INC. SDCSS Web Page available soon please stay tuned for address.