

ESPINAS Y FLORES



**The Newsletter of the San Diego Cactus & Succulent Society Inc.
Affiliated with the Cactus & Succulent Society of America**

**Volume 38 Number 7
Saturday July 12th 2003 1:00 PM
Room 101 Casa Del Prado, Balboa Park**



Presidents Message

June 21, 2003

Happy Summer! It seems like a long time since I have written - so much has gone on in our Society. Our May meeting was lots of fun with over 80 members and guests in attendance. John Durham, a fairly new member and first time speaker, gave an interesting presentation on *Mammillaria*, illuminating some of the thrills and pitfalls of growing this vast genera. I enjoyed giving the talk on *Sansevieria* and sharing my fascination with this amazing group of plants. Thanks to all who helped out with plant identifications. It was a treat to have Chris Barnhill back with his latest pictures from Africa. Chris is a great photographer and very knowledgeable about the plants he presents - THANKS Chris for an excellent show.

The big event in the past two months was our June Show and Sale, and it was a huge success. The Show was beautifully staged with an amazing selection of plants. I was particularly pleased to see so many plants brought in by new members and those who have not shown before - I hesitate to call them 'novices,' as they did such a wonderful job of displaying their plants. Five trophies (other than the special 'Novice' trophies) were won by plants displayed by 'novices.' **CONGRATULATIONS**, and thanks to everyone who made the effort to bring in your plants and participating.

The whole weekend went as smooth as I can remember any Show going - thanks to all who showed up to pitch in wherever they were needed. I really appreciate those who showed up Friday morning and helped with the initial setup - though none of us had done it before - we figured it out! Thanks to those who were there late assisting Tom Knapik in getting the plants

arranged and ready for judging. Thanks to Susan Hopkins and her team of clerks who helped the judging go quick and smooth so the show could open early. Special thanks to Terry Parr, who brought his son and friends to help with the monster job of moving the sales tables in and out - GREAT JOB! We again experienced record sales thanks to our awesome cashiering team - Joe Kraatz, Michelle Heckathorn, Carol Jean Wolcott, Spencer Maze, Anthony McFarland, Tom Birt, Janice Byrne, Herb Stern, Mark Fryer, Paul Whitaker and all the others who pitched in. Thanks also to all our vendors - without your plants and pots, we would have no sales.

I would like to make a special acknowledgment to Tom DeMerritt, who, as usual, pitched in so much to make this show a success despite having just returned from a rigorous trip to Russia where he and Laura finalized the adoption of their second daughter - Congratulations! and many thanks.

So many gave so much of their time and energy to make this weekend a success: Lee Badger, Joey Betzler, Ken Blackford, Allen Clark, Michael Cullen, Bert Elder, Nancy Elder, Philip Favell, Elizabeth Glover, Judy Hanula, Marylyn Henderson, Dick Hulett, Don Hunt, Rudy Lime, Elibet Marshall, Juergen Menzel, Chris Miller, Jean O'Daniel, Bill O'Daniel, Collette Parr, George Plaisted, Rick Plant, Joe Quijada, Kay Quijada, Ed Steinmates, Tom Stiko, Betty Whitaker, and new member, Kirsten Wilkes. You are a great group of people to work with (my apologies to those I miss naming) and your efforts are greatly appreciated!

See you on July 12.

Pam Badger

F.Y.I.
For Your Information



Hello. I am a relatively new member and would like to advise interested members of SDC&SS about this subject. Some are likely already aware, but perhaps not. A friend of mine took the attached images of a colony of Dehesa Beargrass (*Nolina sp.*) east of El Cajon. We are both employees of the County Department of Public Works and diehard "Succolo" - and Cactophiles. Because of our job in Road Maintenance, we discover things like this once in a while. I don't know how endangered Dehesa Beargrass is, but I do know that it's habitat is. I also don't if and whether the Society can do anything about this colony, save collecting seeds for propagation. But I thought you might be interested.

Tom Davis
Jim Cronk
County of San Diego Department of Public Works
858-874-4059

The club recently lost a member and the husband of a member.

Arthur Flechsig, husband of long time member Phyllis Flechsig passed away May 10th. Art was an aquanaut, who as part of the Sealab II project, traveled over 200 feet beneath the surface of the ocean in 1965. He attended UCLA, earning a Master's degree in Zoology, which allowed him to pursue his interest in fish. Art was 78. The club extends its condolences to Phyllis for her loss.

Long time member **Curt Hammel** passed away on June 18th. He was born in Offenburg, Germany in 1928. Curt was an eclectic collector of plants that were all over his Lemon Grove house. He did not discriminate against any plant. Curt was 75.

Herb Stern

EL CARDÓN

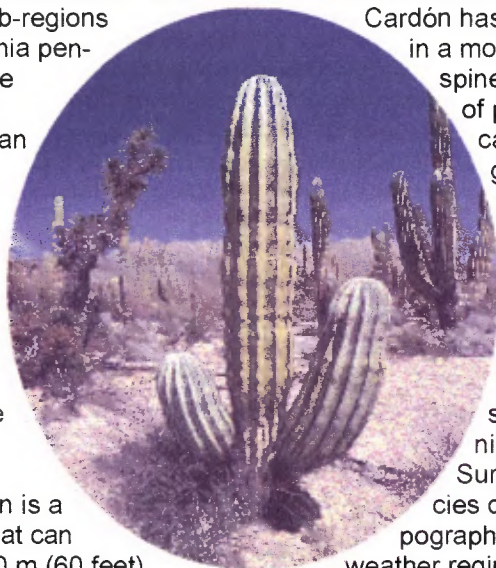
Jon P. Rebman
San Diego Natural History Museum
P.O. Box 121390
San Diego, California 92112-1390, USA

Introduction

The Cardón is one of the most characteristic, dominant, and impressive plant species of the Baja California landscape. Its massive size, commonness, and fascinating natural history make it a charismatic icon for many vegetation types in the region. This cactus species occurs in various Sonoran Desert sub-regions on the Baja California peninsula ranging in the north from the San Matias Pass and San Felipe areas of the state of Baja California to the southern tip of Baja California Sur. It can also be found on the coast of Sonora and on many islands in the Gulf of California.

The Cardón is a columnar cactus that can reach more than 20 m (60 feet) tall with a typical growth habit that exhibits many lateral branches ("arms") and a thick, cylindrical trunk up to 1.5 m (4-1/2 feet) wide. Like many other plant species with specialized adaptations for survival in arid environments, the Cardón is a stem succulent. This means that at least some tissues in the stem portion of a Cardón plant body are modified and capable of storing large amounts of water, making the stem appear fleshy, succulent, or swol-

len. Physiologically, the Cardón has the ability to use stored water reserves from its tissues and subsequently tolerate long periods of aridity. The stems are also ribbed and pleated like an accordion allowing them to expand and contract in girth depending upon the amount of stored water in their succulent tissues. Like many cacti, the Cardón has no leaves (except in a modified form as spines) but the function of photosynthesis is carried out in the green stems.



The Cardón is just one cactus species in a region of great plant diversity. The entire Baja California region, comprised of two states (Baja California and Baja California Sur), is rich in plant species due to its varied topography, geology, and weather regimes. These factors, in addition to the area's bio-geographic history, have resulted in a wide range of vegetation types that include coastal chaparral, coniferous forest, various desert communities, and tropical deciduous forest. The peninsula and its adjacent islands is estimated to have a flora that consists of more than 4000 plant taxa with a rate of endemism close to 30%. In respect to cactus diversity in this region, the Cactaceae are represented by 15 genera, 104

species, and 129 total taxa in the sub-families Cactoideae (11 genera, 71 species) and Opuntioideae (4 genera, 33 species). Of these, 71 species and 92 taxa are endemic to the region, which is a 68.3% endemism rate for species and 71.3% for total taxa. As for the geographical distribution of cactus diversity, each state in the Baja California region has 64 species, but the northern state of Baja California has 79 cactus taxa as compared with 76 taxa found in Baja California Sur (Rebman 2001).

Taxonomy

The scientific name of the Cardón is *Pachycereus pringlei* and it is classified in the tribe Pachycereeae, subfamily Cactoideae, family Cactaceae. The generic name refers to the lower portion of the stem or trunk that resembles an elephant's leg: *pachy*, "stout trunked," and *cereus*, "columnar cactus." The specific epithet refers to Cyrus Guernsey Pringle, an American botanist who collected plants extensively in the Pacific states of U.S.A. and Mexico between 1880 and 1909. The Cardón looks similar to the Saguaro (*Carnegiea gigantea*) of Arizona and Sonora, but differs in flower morphology, a more massive in habit with more "arms" (lateral branches extending from the central stem), and typically the arms diverge from the trunk or central stem of the cactus in a lower position. Throughout its range of distribution, this species has various common names including Elephant Cactus, Sagüera, Sagueso, and Sahuaso (Dimmitt 2000). However, in Baja California it is usually called Cardón Pelón, or more frequently, Cardón.

In Anderson's (2001) classification of the genus *Pachycereus*, 12

species are recognized. But, due to a lack of good phylogenetic data before the publication of Anderson's book, the genus was not well understood and its taxonomy was still quite controversial. For example, many taxonomists do not recognize that the genus *Lophocereus* should be placed into *Pachycereus*. In respect to the Baja California region, the taxonomic lumping of these genera would mean that the Senita or Garambullo (*L. schottii*) with two local varieties and two forms, plus *L. gatesii* are recognized in the genus *Pachycereus*. However, in the most recent taxonomic treatment of the genus *Pachycereus*, Arias (2002) used both molecular and morphological methods and recognizes only 5 species in the genus, plus the genus *Lophocereus* is still maintained. In my personal opinion, I prefer the taxonomic treatment by Arias (2002) because it is much more detailed and better justifies the generic boundaries of the genus *Pachycereus*. In the cape region of the peninsula, Cardón Barbón (*P. pecten-aboriginum*), a species almost always classified in *Pachycereus*, can be found as a common component in the more tropical vegetation communities.

Reproductive Biology

The Cardón has white flowers that are usually present from late March through early June. The flowers open around sunset and remain open past dawn into the next morning. At night, nectar-feeding bats and moths pollinate the flowers, and during the day birds and bees visit them. All of these species can be good pollinators, although since the flowers are open all night long and produce a lot of pollen and nectar, a co-evolution with

Continued on page 7

An Opuntia Story

by SDC&SS Member

Brunhilde Scheffler

March 2003

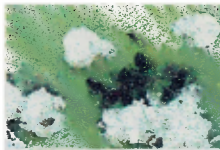
What is the *Opuntia*? The *Opuntia* is a cactus which has some commercial value.

The *Opuntia* is an immigrant just like I am. It conquered perhaps more countries than I did, but I sympathize with the *Opuntia* family's trial and tribulations.

My fascination with cacti and succulents started long ago. When I immigrated to Canada I carried (smuggled) a small prickly specimen - not an *Opuntia* - in my handbag, and in a cold wintry Canada on my windowsill it thanked me for my love and care with a beautiful red flower, while snowflakes danced at the window.

With the *Opuntia* I became acquainted in a sort of painful way. We motored along "the dream street of the world" from Canada to California, where in the southern part I saw yellow flowers on green hedges. I needed to take a closer look, not knowing what it was at that time- and tried to pick them. "Ouch", that hurt. My fingertips were full of tiny spines that I could not shake off. They held on fast and for a long time. *Opuntias* are mean plants. Fingertips are very sensitive.

As early as 1788, a type of prickly pear, the *Opuntia monacantha*, traveled with human passengers to what is now Sydney, Australia.



Ants tending cochineal

English convicts collected in Rio de Janeiro the cacti with the cochineal scale insects which feed on it and yield when crushed a red-purple dye that was supposed to be the basis of a dye industry.

When I read this in the Natural History magazine, I thought, "WOW", the English convicts must have had some biological lessons, while they were incarcerated, to know about the properties of these insects.

The dye industry never took off in Australia - but the *Opuntia* flourished relentlessly with more important species - over vast cultivated areas. By 1925 some 94000 square miles of Queensland and South Wales were covered with *Opuntias*.

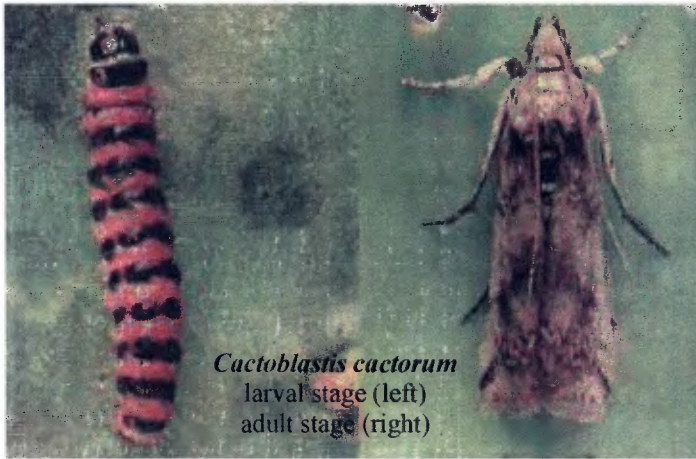
The Commonwealth Prickly Pear Board in the beginning very carefully controlled the imports, so that no other insect but the cochineal (*Dactylopius coccus*) accompanied the plants.

But now the rangers needed the land for other imports, cattle and sheep.

At that time working with the entomologists of the U.S, Mexico and Argentina to find a biological control with other insects that would naturally feed on the pesky cacti. A South American moth, *Cactoblastis cactorum* was shipped from Argentina to Australia and by March of 1927 more than 10 million eggs of these moths were placed on the plants. The voracious larvae by 1930 had cleared vast tracts in eastern Australia of the dense prickly pears.

cern, because there is one species with only a few plants, the edible Semaphore cacti (*Opuntia corallicola*). Also of concern is, if the moth can survive in colder climate and cannot be stopped before it reaches the *Opuntia* riches of the southwestern U.S., where the *Opuntias* are an essential and appreciated part of our landscape.

In Mexico 80 species of the *Opuntia* support a cochineal dye industry and they are a source of edible prickly pear fruit. The moth may al-



This moth was later brought to the Caribbean island of Nevis to control *Opuntias*, the same in Montserrat and Antigua. The moth now had spread on its own and developed its own taste. It was also found in Cuba. It was found in Florida where it was found feeding on *Opuntias*. Researchers questioned how this can happen. Infested ornamental Cacti from the Dominican Republic were intercepted in the Port of Miami. It was suggested that natural dispersal occurred, the moths simply island hopped from Cuba. In Florida it attacked other *Opuntia* species, which was of con-

ready be there, and botanists are doing research for a biological control.

On San Salvador Island in the Bahamas prickly pears are a major food of rock iguanas. The plants are under attack by the moth. It is feared that the iguana population will severely suffer indirectly. And in the Galapagos Islands I saw the large iguanas feeding on these tree *Opuntias*, which grow there in masses.

So, who are we, to try to control or "correct" Nature?

bats is inferred (Fleming et al. 1994).

The fruits are fleshy when ripe with either a red or white pulp on the inside. Various terrestrial mammals, bats, and birds serve as dispersal agents for the seeds.

One of the most unique characteristics of the sexual system of Cardón is trioecy. In this type of breeding system different cactus plants can have three different sexual conditions: individuals with staminate (male) flowers, individuals with pistillate (female) flowers, and individuals with perfect (bisexual) flowers. All three of these sexual conditions can occur in different individuals in the same population. In fact, some Cardón individuals have even been found to exhibit neuter flowers that lack both pollen and seeds. The evolution of the trioecious type of breeding system in the plant world is not yet fully understood.

Hybridization

The region near El Rosario, Baja California, is a transition zone between two major vegetation types. This area is the southernmost limit of the Mediterranean-type climate and the California Floristic Province, and the northwest-most distribution of the Sonoran Desert on the Baja California peninsula. In this region, there is a mixing of plant species from both floristic provinces providing the opportunity for species that normally do not occur together to grow sympatrically and hybridize. One example of this situation is

with the Cardón (*Pachycereus pringlei*), a Sonoran Desert species, and the Velvet Cactus (*Bergerocactus emoryi*), from the California Floristic Province. As a result, a naturally occurring, intergeneric hybrid (*×Pacherocactus orcuttii*) has been discovered here. Originally, this rare hybrid was thought to be a new species and was described in the genus



Cereus by Katherine Brandegee (1900), but later, it was transferred to the genus *Pachycereus* by Britton and Rose (1909). Subsequently, Reid Moran (1962) determined that it was of hybrid origin and designated it with the bigeneric name *×Pachyrocereus*. However, recent changes in the rules of the International Code of Botanical Nomenclature have resulted in recognizing an

altered combination of the bigeneric name so the new hybrid genus is now *×Pacherocactus* (Rowley 1982).

It should be noted that another naturally occurring, intergeneric hybrid cactus has also been found in this region of the Baja California peninsula. The second hybrid is named *×Myrtgerocactus lindsayi* and it is a hybrid between *Myrtillocactus cochal* and *Bergerocactus emoryi*. The most comprehensive research on both of these hybrids, their morphology and affinities to other cereoid cactus species in the region was conducted by Lyle McGill (1977). A mitotic chromosome number for *×Pacherocactus orcuttii* was determined to be a tetraploid ($2n = 4x = 44$) and helps to substantiate that this is a hybrid between two

tetraploid parent taxa (*Pachycereus pringlei* and *Bergerocactus emoryi*).

Uses

Various indigenous peoples of the Sonoran Desert region used the Cardón fruits and seeds as an important food source (Hodgson 2001). The seeds were also ground into a pinole (finely ground flour) and a juice was made by pouring water through the ground fruits (Moran 1998). The fleshy stem portions of this cactus are used by ranchers on wounds for its apparent pain killing, disinfectant, and other healing properties and the dried, woody ribs from inside of the stem are used to make fishing spears, poles, fences, corrals, house walls, and rafters (Roberts 1989).

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PROGRAM

The July program will be from **Petra Crist** and will be about a trip she took last year to **Namibia and the Richtersveld**. She is a serious grower and lover of succulent plants and grows some of the most amazing plants you have ever seen. I had the good fortune of perusing some of her slides and can tell you she approaches photography in the same manner as she grows her show plants that is to say they are really nice. Don't miss this beauty of a program! Kelly

Combined Cactus & Succulent of the Month



"Since 1996, when Jon Reberman became Curator of Botany at the San Diego Natural History Museum, he has concentrated on building research ties between the museum and scientific institutions in Baja California and Baja California Sur."

Jon returns to present a combined cactus & succulent of the month program about the magnificent flora of the Baja California peninsula.

Cholla is no jolla as far as she's concerned

By Jean Gillette

Reprinted from the North County Times with permission by the author

"The desert is full of wonderful plants, including sand verbena, chuparosa and the *cholla*," the article read. All I had to hear was the word "*cholla*" and suddenly my ankles began to sting.

The writer almost had me going with her word pictures of the blooming flora out east of us at this time of year. But there isn't a flower fabulous enough to get me to *hike* out there, now that I am reminded what is waiting for me.

In or out of bloom, I have always known the charming *cholla* cactus by its nickname, "jumping cactus." Left up to me, its nickname would have been the "merciless stabbing cactus." And I don't doubt it has several close cousins growing nearby, just waiting for me to stroll by or, heaven forbid, stumble.

I spent many a childhood vacation in Tucson, Ariz., where I believe all *cholla* begin their lives. Apparently they, like many Arizonans, have drifted west and settled in California.

But in my childhood, while my brother was out shooting at rabbits, those of us of more peaceful nature were desperately trying to entertain ourselves in the middle of a sea of cactus, sage and sand. When my parents insisted I quit reading and go outside, the only option was to walk around.

No matter how close to the middle of the path you stayed, no matter how

thick the socks or how high the boots, somehow you never made it back without catching the spines of a *cholla* in your foot. One dedicated desert naturalist fondly described its long needles as "the sharpest of all the cactus needles." No kidding. Not only does it hurt like the devil, but when one hits your leg, you may fleetingly think you have been bitten by a rattlesnake. The overall effect is utterly unnerving.

And in case you are tempted to accuse me of being a coastal wimp, let me remind you of the two winters and a thousand summers I spent living in Palm Springs.

I was there long enough to find a handful of things that are actually charming about the desert. I love the bats that eat the giant beetles. I love the sunrises and I love the balmy nights. I even loved hiking in the mountains, which I did only when the snow was at least 3 feet deep and I needed snowshoes. That was the perfect solution to *cholla* attacks.

For now, you may have my parking place and ray spot in the sand. I have spent enough time evading the wily, spiteful, prolific, ankle loving *cholla* spines.

Henceforth, I expect I **will** limit my viewing of the desert to the pages of *Arizona Sunset* or the panorama from a sidewalk cafe in Palm Springs.

Jean Gillette is a freelance writer avoiding sharp plants in La Costa.

Upcoming Events

2003

July 5-6 CSSA Show & Sale, Huntington Botanical Gardens, 1151 Oxford Rd, San Marino CA.

July 5 CSSA Annual Meeting 5pm Huntington Botanical Gardens, adjacent to CSSA Annual Show.

July 19 through July 27 Henry Shaw Cactus Society Annual Show and Sale. Missouri Botanical Garden in the Orthwein Floral Display Hall. Open on July 19 from noon to 5pm. July 20–27 open from 9am to 5pm. More info from Bob Harris e-mail: bobharris@accessus.net or Mike and Vickie Hellman e-mail: cactus1803@yahoo.com

July 26–27 NORCAL 10th Anniversary Show and Sale. The Show in the Auditorium of the Hall of Flowers, and the Sale in the Gallery. Open to the public from 9am to 5pm both Saturday and Sunday. Hourly raffle. Potting/culture demonstrations each day. Banquet program to be provided by Out of Africa, with Rare Plant Auction. At the Saturday evening Banquet, their own in-house Chef will satisfy anyone hungry after the all-day plant gazing/grazing. More details from Paul Long at cactusflat@juno.com

August 16–18 17th Annual Intercity Cactus and Succulent Show and Sale Los Angeles County Arboretum, 301 N. Baldwin Ave. Arcadia CA 9am to 5pm Information from Tom Glavich 626-798-2430 tglavich@aol.com, Gene Oster at 818-998-9306 or Harry Fletcher 310-538-4078. This annual show is believed to be the largest and finest cactus and succulent show in the world.

August 30 Twentieth Succulent Plants Symposium, Huntington Botanical Gardens, 1151 Oxford Rd, San Marino CA. Info: 626-405-2160 or 2277

August 31 CSSA Board Meeting, Huntington Botanical Gardens, 1151 Oxford Rd., San Marino CA.

September 12–14 Kansas City C&SS Show and Sale Jacob L. Loose Park Garden Center at 52nd and Warnall, Kansas City MO. More details from Judy Pigue 816-353-8200 or e-mail her at jjcactus2142@msn.com

September 13–14 Houston C&SS Show and Sale Houston Arboretum and Nature Center, 4501 Woodway, Houston TX. Contact Hank Andresen 713-436-1734 or e-mail him at hand1609@hotmail.com

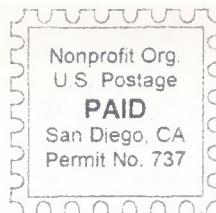
September 20-21 The Cactus & Succulent Society of the Monterey Bay Area will hold their semi-annual show & sale in the courtyard of Jardines Restaurant, 115 Third St., San Juan Bautista. For more information call Ruth Pantry at (831) 758-6645 or e-mail pantry@montereybay.com

September 28 Long Beach C&SS Annual Auction at Dominguez Adobe, 18127 S. Alameda St., Compton (Dominguez Hills) CA

September 29–30 4th Arizona Highlands Garden Conference, Payson, Arizona. Organized by the local Master Gardeners, this conference is especially for those who grow their plants at the higher altitudes of northern Arizona from 3500 foot upwards including areas which receive snow every winter. **Mary Irish** is the keynote speaker on **Hardy Agaves**. Details from Christopher Jones 928-425-7179 or e-mail him at ckjones@ag.arizona.edu

October 11–12 Orange County C&SS Show and Sale, Fullerton Arboretum

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