

Donated to the San Diego
Cactus & Succulent Society by
Perlso S. Lewis (Founding Member)

Espinas y Flores

BULLETIN OF THE SAN DIEGO CACTUS AND SUCCULENT SOCIETY
Affiliate of the Cactus and Succulent Society of America, Inc.

Volume XX, Number 10

October 12, 1985

OCTOBER MEETING

Saturday October 12, 1985

Casa Del Prado, Room 101, Balboa Park

1:30 PM

PROGRAM

PROPAGATION BY SEED

A panel of experts led by Jim Dice will discuss how they raise cactus and succulents from seeds. This is an opportunity for the layman to learn and to ask questions concerning this seldom talked about phase of our hobby. On the panel will be Phyllis Flechsig, David Grigsby, Martin Mooney and Lee Phelps.

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| IN THIS ISSUE | Page |
|-------------------------------------------------|-------|
| News News News. | 2 |
| Caudiciform Succulents by Dorothy Dunn. | 3 |
| Acanthocalycium by Phyllis Flechsig. | 7 |
| More News. | Inset |

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DEADLINE FOR THE NOVEMBER ISSUE - - - - - OCTOBER 26 - - - - -Thanks Mary

Welcome to New Members -

• Those who are bringing refreshments are:

Donald & Carolyn Schulman - Encinitas = Diane Crowley - Helen Brinkley - Wayne Zaranka
Richard & Sallie Tenwolde - Carlsbad = Dorothy Larberg - Frances Johnson - Alberta Widen
= Beverly Kirkegaard - Susan Barker

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Bragging Plant Winners for September are:

1st Place Dorothy Dunn for her Mam. Camptotricha 'Madame Marnier'
2nd Place Bud Aubuchon for his Aloe Ramosissima
3rd Place Joan Johnson for her Conophytum Uvaeformae

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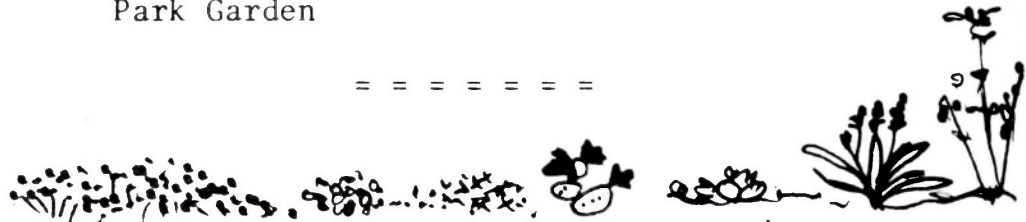
From the Library

• The city and John Pasek wish to thank
Tony D'Attilio, Madelene Lee, Dorothy Dunn,
Lee Phelps and Gary Stromburg
For their donation of plants to the Balboa
Park Garden

Thanks to George Jennings for donating
"The Guide to Healthy
VI Cacti
V2 Succulents
"The Complete Plant Doctor."

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Nellie Kennett for a gift of \$50 to be
added to the library fund in memory of
Troy Shipman. Thanks



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PLANT SALES

For Sale: complete set of EXCELSA including Taxonomic Series No. 1 & 2; Aloes of Tropical Africa and Madagascar (Reynolds); Agaves of continental North America (Gentry); Stapeliads in Cultivation (Lamb). Contact M. Monroe after 7:00 PM 461-8444.

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EXOTICA? YOU BET!

Sean Minogue's first-ever one day plant sale is Saturday, October 19, 1985
10am to 5pm (please no early arrivals) 808 Ethel Place, National City 475-4478
You will find a wide selection of cacti and succulents. All plants are in radiant
good health. Also some bromeliads and epis will be offered.

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Del Cover is selling his collection--Many rare pachypodiums, adeniums, burseras etc.
Also some cacti. Please phone days - 270-7739 Evenings - 452-3527

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SHOW SCHEDULE FOR OCTOBER

Oct. 19 & 20 San Diego Orchid Fall "mini" Show Sat: 12-5:00pm Sun: 10am-4:30pm
Nov 2 & 3 San Diego Tropical Fish Aquarium Show Sat:12-7pm Sun: 9am -4pm
Nov 23 & 24 Sumi-e Painting & Ikebana Show Sat & Sun: 11:am - 4:30 pm
Dec. 6,7, & 8 San Diego Floral Christmas Show Fri:Sat: 11am - 9:00
and Boutique Sun: 11:00am - 4:00pm

CAUDICIFORM SUCCULENTS

Dorothy Dunn

Caudiciform plants are among the most outlandish of all Nature's inventions. Like avocados and anchovies, they are generally an acquired taste. Their beauty is unconventional, with much the same appeal as a Picasso or Dali painting, and they are grown primarily by collectors for their grotesque but strangely attractive forms.

A caudex (plural caudices) is probably most simply defined as a massive, swollen food and water storage organ, and this is its primary purpose. This storage organ may be all root, all stem, or root below ground and stem above. In "domesticated" plants it is generally located above ground (usually purposely staged this way by the proud owner), although plants in habitat are often found with their caudices at least partially, and sometimes completely, below soil level. Caudiciforms are not to be confused with stem succulents, such as most cacti and Euphorbias, in which the stems are green and serve as the main photosynthetic (food-making) and water storage organs of the plants. Caudiciform plants store food in these structures but they rarely manufacture it there.

All caudex plants produce leaves, but are deciduous during some portion of the year. A feature common to these plants is the need for alternate growing and resting seasons. This cycle is annual in cultivation, although in habitat the dormant periods may last longer and are determined to a large extent by the erratic intervals between rains.

Caudiciform plants are not necessarily related, even though they may look very much alike, particularly when leafless. According to Gordon Rowley "The caudiciform habit has evolved in varying degrees in many families of flowering plants, and is not typical of any one". By evolutionary coincidence these plants have adopted the same general "body plan" in order to cope with the unrelenting pressures of their extreme and demanding environments. Rowley goes on to say "This distinctive life form is characterized by a division of labor between the short-lived aerial photosynthesizing organs - thin leaves, shoots, or flowering stems (inflorescences) - and the perennial, non-photosynthesizing organ at or below ground level". (Rowley's definition of PHOTOSYNTHESIS: "the manufacture of plant food (carbohydrate) from carbon dioxide and water in the presence of light and the green pigment chlorophyll. Oxygen is given off".)

Because caudiciforms can occur in many diverse and unrelated plant families, they also have a very wide geographical distribution, from Arabia through Kenya, to Somalia, Burma, Peninsular India, Africa, Madagascar, Mexico, Baja California, and Texas. In hardiness they run the complete range from tropical and tender (Adenium, Bombax ellipticum, etc.) to the most cold-resistant and northerly of all succulents, Sedum rosea, which is practically an alpine. "Caudiciformity" seems to be a peculiarity limited almost entirely to members of succulent plant families other than cacti; however, it could possibly be extended to include genera of cacti such as Lophophora, Pterocactus, Peniocereus, and Wilcoxia, which have large, tuberous tap-roots.

When they are growing and producing leaves and flowers caudex plants require regular and even generous watering. They may shrink somewhat during their rest period because during this time they are living off stored food and water, and they may start to rot if over-watered while dormant. They need a very porous, but fairly rich, soil mix that drains easily, and most require some warmth during the winter months.

Much controversy exists among authorities as to just exactly what qualifies a plant as a caudiciform. It is very difficult to know just where to draw the line since the transition from "stem" to "caudiciform" succulents is a very gradual one. Because the group is so large and varied, this article will cover only those plants most generally accepted as caudiciform.

One of the most overwhelmingly obvious of these is Adansonia digitata, the "Baobab", "Bottle Tree", or "Cream of Tartar" tree of Africa and Madagascar. This genus consists of 6 or 7 species belonging to the Bombacaceae family; A. digitata is the best-known. These are the largest succulent plants and the largest caudiciforms known. Some of the oldest plants in the wild are thought to be about 2,000 years old. It is not unusual for the trunk circumference of a mature specimen to exceed 75 feet. The trunk is composed of very soft spongy wood, and the tree produces very spectacular white flowers which are unpleasantly scented. The trees are distributed sporadically over a distance of approximately 5,000 miles from Senegal to Eritrea, Abyssinia, and south through Mozambique into the northern Transvaal in South Africa. They occur mainly in regions of extreme aridity, although those in southern Africa inhabit an area which receives between 10 and 20 inches of rain per year.

At the other end of the scale, Anacampseros alstonii may very possibly be the smallest of all caudiciform plants, a mature and relatively ancient specimen fitting very comfortably into a two-and-one-half inch pot. This is a moderately large genus of very small plants, belonging to the Portulacaceae family and, except for one species (A. australiana, from southern Australia) native to Africa.

In between these two extremes there are many sizes and shapes of caudex plants, including the monotypic Pachycormus discolor of central and southern Baja California. This is one of Baja's "Elephant Trees" - so called because of its gnarled, grotesque branches and swollen subterranean caudex. The descriptive Mexican name "Torote Blanco" means "big white bull". P. discolor belongs to the Anacardiaceae, or Cashew, family, which also includes the sumacs.

Although some 40 tree-like species of Bursera are known, only a few of these show any characteristics of stem succulence, and one of these is B. microphylla, Baja's other "Elephant Tree". Like its counterpart P. discolor, B. microphylla has soft, spongy wood and contains a milky, pungent sap. All parts of the plant are very aromatic. These trees have been known since about 1760 on the dry plains and hillsides of Sonora and Baja California, and in the 1930's a huge grove of about 1,000 trees was discovered in San Diego County. Although Burseras sometimes reach a height of 30 feet, 8 to 12 is more normal. The Indians had many uses for the sap, bark, and branches of this plant. The specific name "microphylla" means "little leaf".

Idria columnaris ("Cirio" or "Boojum Tree") is native to Baja California and to a very restricted region in Sonora, mainland Mexico. It is another monotypic genus, although many authorities now refer it to Fouquieria, to which it is closely related. This is without a doubt the most distinctive and bizarre plant in Baja (possibly on the face of the earth!). It is also the tallest - at least one specimen over 76 feet in height has been recorded. The classic description of a mature tree usually runs the gamut from "shaggy upside-down parsnip" to "inverted carrot" to "telegraph pole", but after observing thousands of Idrias in habitat, I could add quite a few more! Idrias come in all sizes and shapes imaginable (all weird), and very few are as tame as a telegraph pole!

The Fouquierias are small trees and shrubs native to arid regions of Mexico, Baja California, and the southwestern United States. The genus currently consists of 11 recognized species, most of them having very restricted distribution. While F. splendens ("ocotillo") is the most wide-ranging and well-known species, it cannot be classed as a caudiciform. Others in the genus, such as F. fasciculata and F. purpusii, exhibit a much greater degree of "caudiciformity".

Calibanus hookeri is another monotypic genus from Mexico, belonging to the Agavaceae family. The genus was named for Caliban, the ugly monster in Shakespeare's "The Tempest", and the native name is "sacamecate". Grass-like tufts of leaves are produced from an immense caudex (there are reports of plants as big as a Volkswagon in the wild); each of these tufts is monocarpic, dying after it flowers. The leaves contain a soap-like substance which the natives used for scouring dishes. Propagation is from seed - the seedlings grow rapidly, and in the ground produce a very satisfactory caudex with several tufts of leaves in a relatively short time.

The genus Beaucarnea consists of only a few species, all from Mexico, and also belonging to the Agavaceae. These are succulent trees resembling Nolinas, and many authorities now consider them to be synonymous with Nolinas. Although often called "Bottle Palms" or "Pony Tail Palms", these plants aren't palms at all; they are more closely related to the stiff, spiky Yuccas and Agaves.

Jatrophas are distantly related to Euphorbias and may come from Mexico, Baja California, Central America, Africa, Madagascar, or Texas. Although there are about 150 species known (mostly tropical shrubs), only about one-quarter of these qualify as caudiciforms. The most familiar of these are probably J. podagrica and J. cathartica (berlandieri).

Dioscoreas and Testudinarias are now generally accepted as being synonymous, and belong to the Yam family. Although there are over 600 species native to Africa and Mexico, only about four of these are of serious interest to the succulent collector. Even small plants of D. macrostachya, D. elephantipes, and D. sylvatica produce a distinctive spherical caudex which, as it enlarges and ages, develops corky polygonal warts. This thick corky brown bark is built up in many layers over a long period of time. In nature the caudex may eventually attain a diameter of over 40 inches, and the plants sometimes survive well over 100 years. The caudex reportedly manufactures a precursor of cortisone.

The Adeniums, belonging to the Apocynaceae (Oleander) family, are probably the most conventionally beautiful of the caudiciforms, with a bulbous but shapely base, dark green leaves, and some of the showiest flowers outside of the Cactaceae. The flowers range from intense red through pink to white and boast such exotic common names as "Desert Rose", "Mock Azalea", or "Impala Lily". There is either one widespread and variable species or a few separate species, depending on which authority you choose to believe, and the genus spans Africa from the southwest through Kenya to Arabia. Adeniums are very frost-tender, and their milky sap is very poisonous.

Ibervilleas belong to the Cucurbitaceae (Cucumber) family, and there are only three species, coming from the southwestern United States, Mexico, and Baja California. This is a grotesque lump of a plant with a ridiculously flimsy vine which grows rampantly over everything around it, and tiny yellow flowers. You will often find them classified as Maximowiczias.

Bombax ellipticum is a monotypic genus, belonging to the Bombacaceae, and native to Mexico. The flowers, which are large and spectacular, are often likened to a "shaving brush". The plants grow rapidly from seed and soon form a miniature swollen caudex topped with tropical-looking green leaves.

Other interesting plants usually considered as caudiciforms, and much too numerous to discuss here include the Pachypodiums, Cyphostemmas, Fockeas, Kedrotis, Brachystelmas, Trichodiademas, many Euphorbias, some Pelargoniums, and some Cotyledons, Senecios, Othonnas, and Sedums.

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- | | |
|-----------------------------------------------------------------|-----------------------------------------------------------------------|
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| Jacobsen, H. | Lexicon of Succulent Plants |
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| Wiggins, Ira, and Shreve, Forrest: | Vegetation and Flora of the Sonoran Desert |

CACTUS OF THE MONTH

Acanthocalycium

by Phyllis Flechsig

Most alphabetical lists of cacti begin with Acanthocalycium, yet few people are well acquainted with the genus. It is a small group of only about 12 species, all native to Argentina. The plants are small barrels, round to elongated; most have low ribs and strong spines, funnel-shaped flowers in white, pink, red, or yellow; and a woolly ring inside the base of the flower. However, the feature that distinguishes them from similar plants such as Echinopsis or Lobivia is the spiny buds; as the flower opens, we see that the scales on ovary and tube are tipped with spines--hence the name Acanthocalycium, which translates to "spiny calyx."

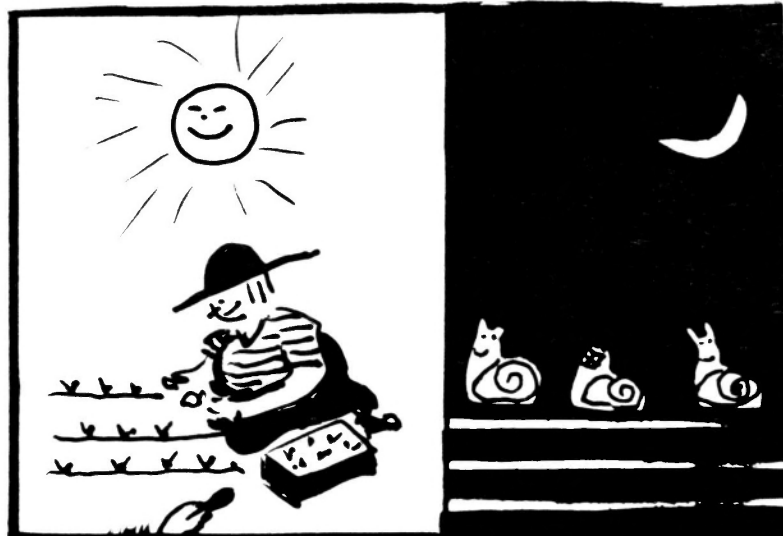
These are attractive plants that deserve to be better known. At present, not very many kinds appear to be in cultivation; the best known is A. glaucum, with a greyish body and yellow flowers. The showy A. violaceum, with a large lilac flower, is sometimes seen in collections. Other interesting species worth looking for are A. chionanthum, A. klimpelianum, and A. thionanthum. The first two have white flowers, while the third has yellow flowers.

Propagation is generally from seed, as plants (except for A. glaucum) are hard to get, and they do not usually produce offsets.

Cultivation is easy--give plenty of light and water in summer, but leave the plants fairly dry in winter.

Literature consulted:

- Backeberg, Curt. Cactus Lexicon. Blandford Press, 1977.
Donald, J. D. "Acanthocalycium Back. & Knuth," Ashingtonia, vol. 1, no. 10, Jan. 1975.
Riha, J., and R. Subik. The Illustrated Encyclopedia of Cacti & Other Succulents. Octopus Books, 1981.



ABOUT TROY SHIPMAN

Charter member Troy Shipman was over one hundred years of age when he died.

Troy was born in Tiger Town, Texas on January 16, 1885 and died on August 21, 1985. He had 8 children, 22 grand children, 43 great grand children and 15 great great grand children.

Until about 10 years ago, Troy was very active in our club. Even in his late 80's he assisted us in our show at the Del Mar Fair. He had over 100 species of cacti. He also was one of the oldest recipients of social security.

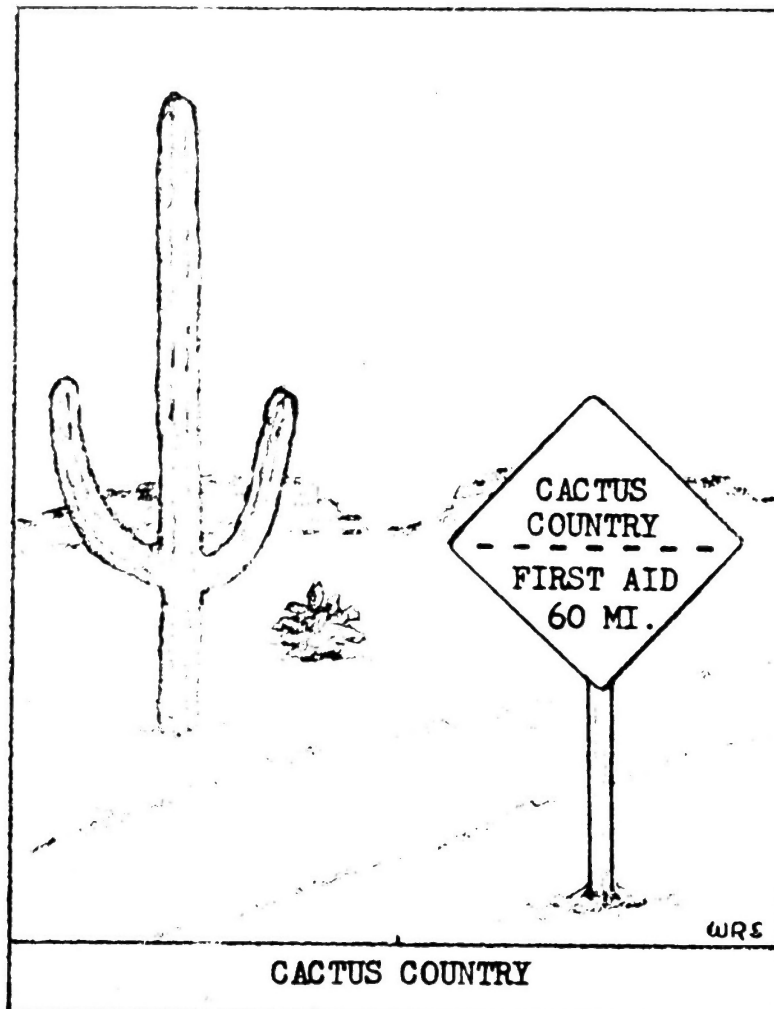
FROM Perlso Lewis

I recently read that if a plant is deficient in nitrogen, unflavored gelatine is great. To one envelope of Knox add one (1) cup of very hot tap water to dissolve. Slowly add three (3) cups of cold water to make a quart of liquid. Once a month use this mixture as part of your normal watering pattern and you can get amazing results.

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This may be a good time to think about the special gift plant exchange at the December meeting. More in the next issue.

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The San Diego Cactus & Succulent Society is open to all persons interested in growing cacti, other succulents and exotic plants. Meetings are held the second Saturday of each month at 1:30 pm in Room 101, Casa del Prado, Balboa Park. Board of Directors meetings are held after the general meetings. Annual dues are \$8.00 per single member per year, \$2.00 for each additional member of a household within a family. Single copies of Espinas y Flores are 60 cents.

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