



Espinas y Flores

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

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June 1981

June Meeting

Saturday, June 13, 1981

1:30 pm

Casa del Prado, Room 101, Balboa Park

Program to be Announced
by Bruce Bayer

Bruce Bayer is associated with the Karoo Botanic Garden in the Republic of South Africa, and he will be our guest speaker in June. Bruce is recognized as one of the leading authorities on the genus Haworthia. His program will not be a repeat of the CSSA Convention Seminar that he has just completed and it should prove to be very enjoyable and educational to us all.

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JUNE SUCCULENT OF THE MONTH

PACHYPODIUM

--family APOCYNACEAE

ADENIUM

The spiny Pachypodium and its spineless relative the Adenium are both native to southern Africa and Madagascar. Plumeria and Oleander are also related to these interesting succulent plants.

ADENIUM

This genus consists of from six to eighteen species and varieties depending on what book you are reading at the time.

The 'Desert Rose' is indeed well named. Perhaps the most striking feature of these plants is their large, red, pink, or white flowers. The two inch plus, tube shaped flowers appear on the bare branches in great profusion from May to July. Then the glossy, green leaves appear on the plant.

The large caudex can have grey, green or light brown bark and reach a height of nine feet. Under cultivation it is best to trim the branches during the dormant period from November through March. The milky sap is high in toxalbumin and very poisonous, so care should be taken when cutting the plant.

Very loose, well drained, rich soil is necessary as the caudex will rot out if kept in a wet heavy medium. Water well when leaves are on the plant and use less water during the dormant period.

PACHYPODIUM

This genus consists of 26 species and varieties. Twenty are from Madagascar and six from southern Africa. Some species grow to thirty feet in height and others are fat, broad caudiciform shapes three to six feet tall and equally broad. Each species has a totally different personality and eye appeal.

Once established these plants are not difficult to grow. Most species seem to prefer a low, wide pot but the tree like types do better in a deeper container. Pachypodiums are almost totally grown in a warm greenhouse. If you live in a frost free area P.geayi, P.lamerei, and P.lealii saundersii become magnificent when planted in the ground. All species require a rich, well drained soil.

The main period of growth in San Diego is August through January. The various species usually bear white, pink, or yellow flowers from February through June and then have a short dormant period from July to August. P.namaquanum and P.brevicaule especially resent too much water during this time.

For more information read;

Succulents of Southern Africa by B. Barkhuizen

Lexicon of Succulent Plants by H. Jacobson

Cactus & Succulent Journal (U.S.) many articles

Key to the Succulent Apocynaceae

Cactus & Succulent Journal (U.S.) Vol. XLVI, p.160. 1974

Cactus-of-the-Month

Astrophytum Lemaire

Frank C. Thrombly

Astrophytum (äs-trō-fī'-tūm)
Group Echinocactus

June's Cactus-of-the-Month was first described by Lemaire in 1839. The first species he described was Astrophytum myriostigma and this became the type species by Britton & Rose for their publication, "The Cactaceae".

Astrophytum is derived from the Greek, meaning star-like shape. The plants have very prominent ribs with white specks radiating from the epidermis. They are mostly spherical in shape, although with age, two species become elongated or tall-columnar. The flowers are approximately 2 inches in diameter and are yellow with a redish center. They are borne at the top of the plant and are short funnel form. The fruit is globular and the seeds are dark brown, relatively soft and shiny.

When Lemaire described the first plant it had white "specks" or "flakes" over the entire body - hence, the name Astrophytum myriostigma. "Myrio" is a Greek prefix meaning numberless or countless. Stigma means marks or punctures. We therefore have a star-like plant with countless white marks over its body. These white marks can be found on all the species within this genus. They are also very diverse in habit, from species without spines to plants with "soft" spines to one species with stiff spines. Further, the rib count can change within the type species from 3 to 8, with 5 ribs in the majority of cases. Backeberg lists six species with nine varieties and four sub-varieties.

The distribution of these plants range from Texas, in the Rio Grande Valley, to the Central Highlands in Mexico. The summer season has the majority of the rainfall with the winter being the dry period.

Astrophytum should be an interesting genus to study. One could collect 30 or more plants, all different in appearance, that represent the six species. They would not require a large area, and cultivation is not difficult. An "open" compost, frequently watered in the summer, with a sunny location and a winter dry or rest period, should reward one with well grown plants. In planting they should not be planted too deep so that the soil covers the stem or base; this will encourage rot. In general, they are resistant to adverse conditions of soil and climate.

References Used:

- Backeberg, Curt 1977 Cactus Lexicon - Blandford Press, England
Britton & Rose 1937 The Cactaceae - Dover Publication, NYC

SOME HEALING HERBS

Barbara Anderson

I. CULTIVATED HERBS

BASIL - Ocimum basilicum - an annual plant generally used in the kitchen for flavoring, easily cultivated.

PROPERTIES: Antispasmodic, appetizer, carmative, galactagogue and stomachic.

USES: Said to draw poison from bites of wasps or hornets when placed on bite. Grind leaves with olive oil and drop in ear to alleviate earache. Beaten egg, mix with powdered leaves are applied to chest and back for colds or pneumonia. Boil whole plant as tea for weak stomach or lack of appetite. A pinch when eaten and followed by a small glass of water acts as an emmenagogue. For diarrhea or menstrual pains, make a decoction from leaves, add a little sugar and nutmeg, drink warm.

CHILE - (Red) Capsicum frutescens longus - widely cultivated perennial used primarily in the kitchen.

PROPERTIES: Appetizer, digestive, stimulant, irritant, poultices.

USES: For rheumatism, split one chile open and soak in warm vinegar for 24 hrs.. Soak cloth in solution and apply to affected area of body. Keep compress wet until pain departs. An infusion is said to help stomach and bowel pains or 2 capsules full taken every hour at the onset of a cold is thought to be helpful (brings on sweats, keep warm).

INFUSION: $\frac{1}{2}$ to 1 tsp. ground pepper per cup of boiling water. Take warm, 1 Tbs. at a time.

DILL - Anethum graveolens - easily grown perennial, used for flavor.

PROPERTIES: Antispasmodic, calmative, diuretic, carminative.

USES: Tea - upset stomach (also made with white wine). Decoction of seed for insomnia, gas pains, appetite stimulant,

INFUSION: Steep 2 tsps. seeds in 1 c. water 10-15 mins. Take $\frac{1}{2}$ c. at a time, as needed.

GARLIC - Allium sativum - a perennial plant commonly used in the kitchen, the bulb being the medicinal part.

PROPERTIES: Anthelmintic, antispasmodic, carminative, expectorant, febrifuge, verifuge.

USES: One crushed button pressed against gum lessons toothache, excellent vermifuge for animals; a poultice from mashed plants applied 3 times per day for snake bite, scorpion, hornetbites. As an expectorant for bronchitis, and very good for any digestive problems.

JUICE: Take $\frac{1}{2}$ tsp. thinned with water 2 or 3 times per day.

COLD EXTRACT: Soak several cloves in $\frac{1}{2}$ c. water for 6 to 8 hrs.

CLOVES: For coughs, take grated mixed with honey,

TINCTURE: Let stand $\frac{1}{2}$ lb. peeled cloves in 1 qt. brandy for 14 days at 85° in a bottle with air tight lid. Shake several times a day. Strain when the time is up to get tincture that will last about one yr. Take 5 to 25 drops several times a day, as needed.

MINT - YERBABUENO - Mentha peperita, L. - perennial plant grown in damp areas around the yard, or near streams, in the wild.

PROPERTIES: Anodyne, antispasmodic, carmative, cholagogue, and tonic.

USES: Tea or oil can be taken for nervousness, insomnia, cramps, coughs, migraine, poor digestion, heart burn, nausea, abdominal pains, headaches, vomiting due to nerves. Chew leaves for same as above. For diarrhea and neuralgia or indigestion. Try adding cinnamon, cloves, and nutmeg to tea, strain and take hot.

INFUSION: 2 or 3 tsp. leaves in 1 c. water.

SAGE - Salvia officinalis - a shrubby perennial plant with lovely purple-blue flowers which cut nicely for a fragrant bouquet.

PROPERTIES: Antihydrotic, antispasmodic, astringent.

USES: Sage tea reduced perspiration about two hrs. after drinking. Also drink tea for nervous conditions, trembling, depression, and vertigo. As a gargle for sore throat, laryngitis, and tonsillitis. Crush leaves for insect bites.

PREPARATION: Use leaves before flowering.

INFUSION: Steep 1 tsp. leaves in $\frac{1}{2}$ c. water for 30 min. Take 1 c. per day, Tbs. at a time.

II WILD HERBS

ANIL DEL MUERTO - GOLDEN CROWNBEARD - Verbesina encilisides - A greenish-gray leaved annual herb with bright yellow flowers common along the highways.

PROPERTIES: Astringent, demulcent, anodyne.

USES: For stomach trouble pulverize leaves and take with a little water or make tea from plant; to the tea add cinnamon, cloves and a little soda for diarrhea. Crush the plant with salt for swellings and insect bites. In the treatment of cancer or sores, the plant including flowers is ground fine and put through a sieve; Oil is applied to such disorders which are then sprinkled with powder.

APACHE PLUME-PONIL - Fallugia paradoxa - Abundant locally and well known by feathery carpels which look like Indian war bennets. Its most popular use is to steep its leaves in water until soft, wash hair in the infusion to promote growth. A decoction of boiled roots are used as a rinse following a shampoo to prevent hair from falling. In order to dissipate a cough that hangs on, Ponil roots that are dug in Sept. are boiled, and add a little sugar. Drink a large glass of warm liquid upon rising and another before retiring, and a small glass before meals.

LEMITA - LITTLELEAF SUMAC - Ancardiacea-Rus trilobata N. - Used widely by Indians in basket weaving. The berries are enjoyed by man and birds. A decoction of roots are useful as a rinse after shampoo for hair growth. A hot tea made from fruits is said to relieve sore throats.

MALVA DEL CAMPO - Malva parvifloral. Mallow Fam. - low growing perennial found along roadsides and open fields.

PROPERTIES: Astringent, demulcent, emollient.

USES: Demulcent tea good for coughs, hoarsness, bronchitis, and emphasema. Externally used decoction to wash wounds and rashes. Poultice for headaches.

PREPARATION: Use fresh plant only.

INFUSION: Add 1-2 tsp. herb to $\frac{1}{2}$ c. water. Let stand 8 hrs., then warm to luke-warm. (Do not use boiling hot water with this herb.) Make a poultice of the herb to soothe irritations and inflammations. Also mash leaves, add salt, and vinegar to make poultice. Place on temples for headache. An infusion or decoction is taken for fever, excellent for pneumonia.

NOPAL-PRICKLY PEAR CACTUS - Opuntia - Here's one we're all familiar with and of course it grows abundantly in the Southwest. We've eaten it in many ways and enjoyed its delightful flavor. But how about trying it to cure your ills? Try roasting a cactus pad until hot, split it open and use it as a poultice for cuts, boils, and insect bites. To relieve swelling of mumps bind to throat while warm. Several uses for rheumatism are said to be miraculous. Gather young lobes before they develop spines, boil and fry them, then apply to affected joints.

MORMON TEA - CANUTILLO DEL CAMPO - Ephedra torreyana A. - a broom-like shrub widely used by the early pioneer Mormons in their travels, hence its name. PROPERTIES: Diuretic, febrifuge, tonic, although used mostly as a pleasant beverage.

USES: The decoction used as a remedy for kidney and bladder problems, kidney pain, fever, syphilis, mucous discharges, fever blisters and the early settlers considered it a blood purifier.

PREPARATION: A handful of the herb - leaves, twigs, to a qt. of boiling water; steep 10 min. or more and drink hot.. As a diuretic allow to cool out of doors overnight, then drink a glassful each morning.

CREASOTE - HEDIONDILLA - Larrea glutinosa - one of the loveliest and most adaptable desert shrubs. Imparts a distinctive aroma throughout the desert, especially after a rain. A much used plant by the American Indians for making pottery and arrowheads; the sap was used like glue and for waterproofing. Medically a decoction (nasty tasting) is used for the treatment of cancer, and a remedy against internal chill. An infusion of leaves and twigs is applied to wounds and bruises. The remedy against kidney trouble is a decoction of dry or green leaves taken with a little sugar. The dry ground leaves are sprinkled in shoes for guarding against rheumatism of the feet. And a leaf decoction used as a deodorant wash.

WILD ELDERBERRY - FLOR DE SAUZ - Sambucus canadensis - a shrub-tree grown in the higher elevations mostly. Noticable dark blue clusters of berries catch your attention from June-Nov. while driving along the roads in the Cloudcroft area and Big Bend. It has been used for many years in the making of wine and jelly. Several hundred remedies were found in Egyptian tombs.

PROPERTIES: Cathartic, diaphoretic, diuretic, purgative, stimulant. MUST BE COOKED: POISONOUS RAW.

USES: A tea made from roots acts as a diuretic. Root-bark tea for headaches, mucous congestion, and to promote labor in childbirth.

INFUSION: Of leaves, bark and flowers, serve as a wash for skin problems and inflammations. Boiled berry juice mixed with a cream base is a good salve for burns. Dried berries can be made into tea useful for diarrhea and cholera. Dried flowers were considered excellent for colds, bronchitis, and inflammations of the throat, and also sudorificand febrifuge. Elder flowers steeped in buttermilk were esteemed as a complexion clarifier. The wood was used for a number of things, including flutes by the Indians.

PREPARATION: Infusion: use 1 tsp. plant parts to 1 c. water.

CAMOMILE - MANZANILLA - Matricaria chamomilla - while this herb does not grow locally, it is readily available and inexpensive. It is one of the most delicious beverages as well as a multi-purpose healing herb. In fact, it would take pages to list all the uses.

PROPERTIES: Anodyne, antispasmodic, calmative, carminative, diaphoretic, tonic.

USES: Valuable in many nervous conditions, insomnia, neuralgia, lumbago, rheumatism and rashes. Keep a mouthful for toothache, relieve symptoms of a cold, asthma, stomach problems, fever, sitz bath for hemorrhoids, footbath for sweaty feet or hands, and a wash for wounds.

PREPARATIONS: Use 2 tsps. dried flowers with ½ c. boiling water (also comes in tea bags). Bath additive - 1 lb. flowers with 5 qts. cold water. Bring to a boil, then steep covered for 10 min. Strain and add to bathwater.

REFERENCES:

HEALING HERBS OF THE UPPER RIO GRANDE --- LSM Curtin

THE HERB BOOK --- John Lust

WILDFLOWERS OF THE GUADALUPE MOUNTAINS AND THE SAND DUNE COUNTRY TEXAS
WILDFLOWERS OF THE DAVIS MOUNTAINS AND THE MARATHON BASIN, TEXAS --- Barton H.
Warnock

HERB COLLECTOR'S MANUAL AND MARKETING GUIDE --- J. Kelly

NEW MEXICO MAGAZINE Jan. 1978 Vol 56 No. 1

GLOSSARY OF MEDICINAL EFFECTS

ANODYNE: An agent to relieve or sooth pain.

ANTHELMINTIC: Agent for expelling intestinal worms.

ANTISPASMODIC: An agent that relieves or checks spasms or cramps.

ANTIHYDROTIC: Agent which reduces or suppresses perspiration.

ANTISEPTIC: Agent for destroying or inhibiting pathogenic or putrefactive bacteria.

ASTRINGENT: An agent that contracts organic tissue, reducing secretions or discharges.

CARMINATIVE: An agent for expelling gas from the intestines.

CHOLAGOGUE: Agent to increase flow of bile into the intestines.

DEMULCENT: A substance that soothes irritated tissue, particularly mucous membrane.

DECOCTION: Extraction of mineral salts and bitter principles of plants by adding approx. ½ oz. plant parts to 1 c. cold water, bring to boil for 3 or 4 min.; let steep, covered 2 or 3 min. (hard materials 10 min. or more). 1 to 4 cups daily dosage.

DIAPHORETIC OR SUDORIFIC: An agent that promotes perspiration.

INFUSIONS: Beverage made like tea --- pouring boiling water over plants (usually green parts or flowers) and steeping to extract active ingredients, usually ½ to 1 oz. of plant to 1 pt. water, for about 10 min., covered. Strain to serve, honey or sugar may be added for flavor. Usually used hot. 1 to 4 c. daily dose.

POWDER: Grind dried plant parts with a mortar and pestle. May be added to liquids, capsules or sprinkled on foods (usual dose is the amount you can pick up on the tip of a knife).

POULTICE: Bruise or crush the medicinal parts of plant to a pulpy mass and heat. If using dried plants, moisten the materials by mixing with a hot, soft, adhesive substance such as flour or cornmeal. Moist heat is the object. Apply directly to skin or between cloths to affected area. After application, wash skin thoroughly.

FEBRIFUGE: An agent to eliminate fever.

A special thanks should be given to the El Paso Cactus and Rock Club and to Barbara Anderson for allowing us to reprint this article Some Healing Herbs.

THE JULY MINI-SHOW EVENT

The Judge/Group for the show are:

Shirley Berry	(First Group - new members,
Joan Johnson	(members who have not shown
Beverly Kirkegaard	(plants and those who have not
John Pasek	(won blue ribbons in the past.
Madelyn Lee	(Second Group - for those who
Lee Phelps	(have won blue ribbons in
	(previous SDC&SS shows.

All members are encourage to participate for this can truly be an educational program. Dr. Leroy Phelps will head a discussion of why the winning plants were chosen. He will then "field" questions from the floor as to why some of our plants did not win.

Remember, it only requires one plant of either a cactus or succulent to enter. Bring a plant, have fun, and compete for a prize.

All of this will be followed by the annual special - the plant auction. What a day!

Special Announcements

San Diego Botanical Garden Foundation Show Schedule in Balboa Park(Casa del Prado), San Diego, California, 92101.

June 14	Sowest Hemerocallis Show Patio A	Sun: 12-5:00 pm
June 20 & 21	San Diego Fuchsia & Shade Plant Show	Sat: 12-5:00 pm Sun: 10-5:00 pm
June 27 & 28	San Miguel Begonia Show	- - - -
July 5	San Diego Dahlia Specimen Show	Sun: 1-5:00 pm

Pests of Succulent Plants

Part XVII. Miscellaneous diseases.

Dr. Ronald E. Monroe

Usually, a disease condition found in an organism can be associated with some etiologic agent such as a fungus, bacterium, virus, etc. Sometimes there is a disease-like situation occurring, but an etiologic agent has never been associated with the symptoms. Too, there have been numerous microscopic organisms found in association with plants and animals that appear to be symbiots pure and simple (either commensals or mutuals) that are necessary for the survival of both organisms. Because of "gray" areas, several other "disease conditions" that do exist are considered here for expediency only.

Viruses -- Hans Molisch (1885) was one of the first workers to even report on the presence of proteinaceous spindles in the stems of Epiphyllum sp. Later, Rozenzopf (1951) was able to transmit these spindles from plants containing them to spindle-free plants and Amelunxen (1957) suggested that the characteristic cigar or spindle-shaped structures associated with Opuntia sp. were of virus origin. Chessin (1963) showed conclusively that a virus does occur in Opuntia monacantha f. variegata, but did not assign any disease conditions associated with the cactus-virus relationship. The virus could be transmitted from plant to plant, mechanically, and it was noted that the virus appeared to be associated with nursery-grown stock. To date, the virus has not been found in plants in habitat. However, these discoveries are important in that it shows that succulents can harbor viruses and it is possible that disease symptoms have never been associated with a virus, or a virus may be a primary etiologic agent that stresses a plant which later succumbs to a fungus or bacterium disease and the latter is assigned as the etiologic agent of disease/death. It is also important to remember that there are numerous viruses that cause devastating diseases in plants of agricultural importance.

Corky scab -- This disease (Pirone, 1970) is described as irregular rusty or corky spots on stems of many species of cacti (Opuntia, Lobivia, Echinopsis, Rebutia, etc.). These spots may thickly cover older stems to the extent that it appears as a "solid involvement" with only young growth being free of them. Too, this disease may cover, and destroy, whole stems. Often encountered is the situation whereby the disease destroys the meristematic growth center of the plant and causes stunting and eventual death. Attacks often hinder growth or reduce flower production. The cells of the epidermis dry, and the epidermis breaks open and curls so that the corky overgrowth may be seen from below. Although, no etiologic agent is now known, the disease may be prevented by increasing the

light and decreasing the humidity (caution should be exercised in giving Andean cacti too much light as rebutias, sulcorebutias, etc. do burn in direct sun). Also of interest is the fact that new growth from a diseased parent may produce offsets which appear to be disease-free; however, if these offsets are removed and then rooted, they usually come down with the disease themselves indicating that some etiologic agent is present and that it is systemic in nature.

Glassiness -- This disease is evidenced by dark green translucent spots (Pirone, 1970), and slight pressure on one of these crushes the epidermis, and the tissue beneath rapidly turns black (this is somewhat similar to another condition in which potted plants are grown so close that the long spines of one will penetrate the epidermis of another, and a grotesque black spot(s) will ensue). Severe attacks may kill the stems above the spots. Mild attacks cause the development of corky layers or spots which cut off the diseased tissue. At this time, bacteria or fungi often enter and cause stem decay. A direct cause of this disease has never been found. Control is reported to be the same as for corky scab.

Bud fall -- This disease is best called a physiological disease, and it is not only associated with abortion of flower buds but of developing fruits as well. The disease may be also associated with stunted growth of the plant. Usually, this disease may be attributed to cultural conditions:

- a. lack of proper nourishment
- b. excess of nitrogenous plant foods
- c. soil that is too dry for too long a period during a normally active period of the plant's life.
- d. watering the plant (or misting) with very cold water

References cited

- Amelunxen, F. 1957. Die virus-eiweisspindeln der kakteen. Naturw. 14:239.
- Chessin, M. 1963. Cacti, too, have viruses. Cactus and Succ. J. Amer. 35:26-29.
- Molisch, H. 1885. Ueber merkwurdig geformte protein kdrper in den Zweigen von Epiphyllum. Ber. Dtsch. Bot. Ges. 3:195.
- Pirone, Pascal F. 1970. Diseases and Pests of Ornamental Plants. The Ronald Press Co., New York. 546 pp.
- Rozenzopf, E. 1951. Sind eiweisspindeln virus-einschluss kdrper? Phytion 3:95.

News of Interest

If available, the Plant-of-the-Month (this month Astrophytum, Adenium and Pachypodium) plus other plant taxa, will be for sale at each meeting at the "Plant Sales" table.

John Pasek reports that 2 3/4" & 3 3/4" pots are available at the "Plant Sales" table for members who wish to donate plants to the Club for the Annual Show on August 29-30.

We welcome this month the following new members:

Jameson Pare, Valley Center
James & Diane Stolze, El Cajon
Stanley & Ruby Winters, La Mesa
Henry & Virginia Kordela, Poway
Richard & Jennie Wisely, La Mesa
Michael & Beatrix Liner, Oceanside

A reminder that the following members have signed up to provide refreshments for the June meeting:

Barbara Jolly, Ramona Huftill, Marianne Thrombley, Evelyn Chatham, Rose D'Attilio, Roxanne Rayburn, Helen Bowen, Ann Willey, Florence Sakely, Sarah Jervey, Bob Taylor and Joan Fleen.

Winners of the "Bragging Plant" competition for May were:

1st: Notocactus pauciareolatus - Martin Mooney
1st: Coryphantha vivipara v. alversonii - Ron Monroe
2nd: Rebutia krainsiana - Joan Johnson
3rd: Euphorbia platyclada -- Ramona Huftill

We are proud to announce that Russel Evans has donated the Lydia Evans Memorial Cup for "Best Euphorbia in Show" to be presented each year at the San Diego Cactus and Succulent Society's Annual Show.

A special thanks goes to Perlso Lewis for her plant donations at the "Plant Sales" table.

Deadline for the July issue is June 25

San Diego Cactus & Succulent Society

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Martin Mooney, Lee Phelps & Phyllis Flechsig

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Conservation: Dr. Ronald Monroe

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Succulents - Madelyn Lee and Dr. Leroy Phelps

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Bragging Table - Shirley Berry

V.I.P. (Very Important Plants) Table - Sandra Buck

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Library: Elizabeth Athy, Ruth Nelson and Caroline Miller

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Open House: Martin Mooney

Plant Exchange Table: John Roth

Plants & Supplies Table: John Pasek and Gerald and Eleanor Dice

Programs: Frank Thrombly

Publication:

Reception: Rose D'Attilio and Perlso Lewis

Regalement: Nancy Roth

Representatives:

Balboa Park Desert Garden - John Pasek

Quail Botanical Garden - Audrey Johnson

S. D. Botanical Garden Foundation -

S. D. Floral Association - Verna Pasek

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 \$7.00 per family. Single copies of Espinas y Flores are 60¢.

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