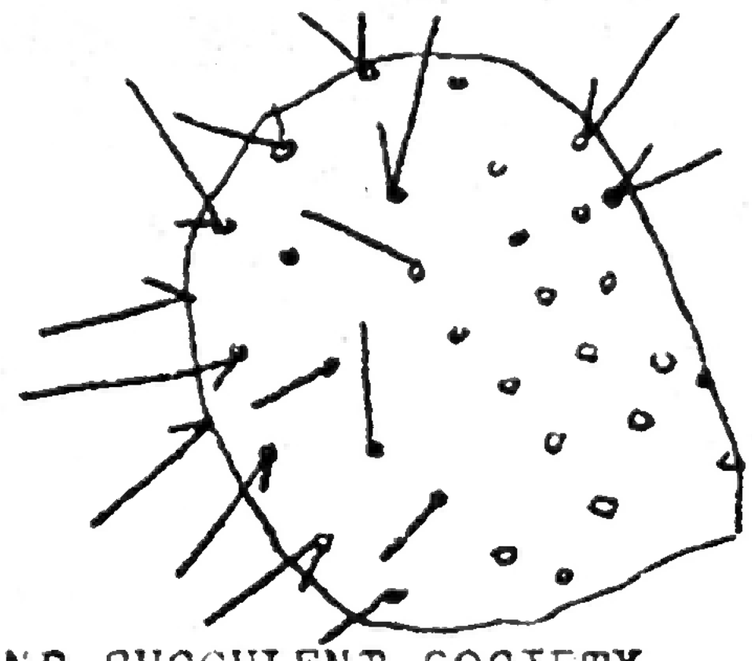
CACTOS Y SUCULENTAS



OFFICIAL PUBLICATION OF THE SAN DIEGO CACTUS AND SUCCULENT SOCIETY

February 1966 Vol. 2, No. 2

MYTH OF THE SPANISH LIGHTHOUSE DISPELLED

Note: from "Education Newsletter", February, 1966.

Around the turn of the century, the story goes, a tourist guide named Ruben took visitors to Point Loma to see what he called the "Old Spanish Lighthouse." Actually the lighthouse was in no way connected with the Spanish. It was built along with eight other west coast lighthouses in 1854 by the U. S. Government to serve a growing American shipping industry. The nearest the Spanish ever came to controlling the lighthouse was when one of the lighthouse keepers married a woman with a Spanish name.

The lighthouse has often been called the Cabrillo Lighthouse, but this, too, is a myth. In order to dispel this myth the National Park Service is constructing a new visitor's center. The center will consist of five structures. One building will house an auditorium, capable of seating 150 persons, and an exhibit hall. An observation building overlooking San Diego Bay will house an information booth, a gift store, and an enclosed observation room. The third building will contain the administration offices of the monument. Near the cluster of buildings, Cabrillo's statue will be relocated so that the visitor will no longer associate him with the lighthouse.

The new Cabrillo center will open about March 1 with excellent facilities for studying the California grey whale and learning the true story of Cabrillo.

S. Ward

FEBRUARY MEETING

San Diego Floral Building at 2:00 p.m., Saturday, Feb. 5.

Budget for 1966 will be discussed with hopes of approval.

Major part of program will include two botanical motion pictures of general interest.

Plant exchange as usual. If members have plants in bloom or exotic plants bring them to display for the Bragging Table. At last meeting, Mrs. Howe displayed a Kalanchoe tubliflora with golden flowers (the first time your editor has seen one in bloom).

Refreshments will be served at modest donation. Bring yourself and bring friends.

MARCH MEETING

Program on Euphorbias is tentatively scheduled.

LAST MEETING

Excellent display of Bromeliads and informational talk by Mrs. Cleoves Hardin.

MINUTES FOR MEETING OF JAN. 8, 1966

The meeting was called to order by William Nelson, president; the minutes were read and approved.

With the handing over of the gavel and keys, Doc Vaughan took the office as president. The new officers are Jack Ward, vice-president; Mrs. Ruth Cuzner, secretary, with Mrs. Shirley Ward acting as secretary until she recovers from illness; and Mrs. Helen Howe, treasurer.

Two items of correspondence were reed--a card from Mr. Burr Clouette and a brochure from the Falcon Travel Service advertising colorful trips to the Orient.

Mrs. Edith Werner, librarian, was urged to be on the lookout for new books to add to the library. Mr. Jack Ward is to draw up a tentative budget for the coming year to be presented to the San Diego Cactus & Succulent Society for approval.

The meeting was turned over to Mrs. Cleoves Hardin, who presented a most interesting program on Bromeliads.

After the distribution of tickets for the plant drawing, the meeting was adjourned. Cookies, coffee and punch were served by Mrs. Ruth Nelson. Mrs. Kim Arnold volunteered to serve refreshments for February, Mrs. Greenwood and Mrs. Scott for March, and Doc Vaughan for May. A volunteer is needed for April.

Shirley Ward
Temporary Secretary

ADDRESSES OF OFFICERS

A full membership roster will not be printed until April. For the convenience of members who wish to contact officers and other members with responsibilities, addresses are below.

President: "Doc" R. V. Vaughan, 1041 Leroy St., San Diego, Calif. 92106, Telephone 223-7629

V. Pres., Editor of Newsletter, Fair Display Chairman: Jack W. Ward, 823 Halecrest Dr., Chula Vista, Calif. 92010, Telephone 420-5513

Secretary: Mrs. Ruth Cuzner, 1041 Leroy St., San Diego, Calif. 92106, Telephone 223-7629

Treasurer: Mrs. Helen Howe, 4767½ Lantana Dr., San Diego, Calif. 92105, Telephone 281-1158

Librarian: Mrs. Edith Werner, 2719 Wilson Ave., San Diego, Calif. 92104, Telephone 284-2673

Affilliate Director: Mrs. Shirley Ward, 823 Halecrest Dr., Chula Vista, Calif., 92010, Telephone 420-5513

A special note to Mrs. Ruth Cuzner, secretary, who has been very ill this past month at Scripps Memorial Hospital. Our thoughts are with her and we wish her a speedy recovery.

BUDGET TO BE CONSIDERED

Some months ago, it was suggested in these columns that we might save much valuable time for programs by establishing a budget for club approval at the beginning of the year, thus bypassing club approval for every little expenditure.

After discussion of this with Society president Doc Vaughan we feel that we should proceed with this project. Below, you will find a proposed budget for the year 1966. It will be open for discussion and debate at the next meeting of the Society. The Society may feel that too much has been appropriated in some areas and not enough in others. Also, some items may have been left out of the budget by oversight.

PROPOSED BUDGET, 1966

Income

Surplus Balance at end of 1965	$428.00
Expected Membership Dues for 1966	80.00
Miscellaneous Income(Plant Donations, etc.)	30.00
Fair Prize Awards (Four displays)	400.00 (Min.)
Total Cash & Income	$938.00

Expenses and Reserve

Professional Dues	$ 15.00
Rental of Floral Building	25.00
Fair Expenses	100.00
Programs for General Membership	100.00
Library (Books & Subscriptions)	120.00
Mailing Costs	55.00
Newsletter	60.00
Charity	50.00
Plant Procurement/Display Participation	100.00
Miscellaneous Expenses	10.00
Proposed Expenditures	$535.00
Contingency Reserve	$303.00
Total Expenditures & Reserve	$938.00

MEMBERSHIP DUES

Members who have not renewed memberships by March will be dropped from the Society mailing list. If it is not possible to come to meetings, membership dues may be mailed to Mrs. Helen Howe, 4767½ Lantana Dr., San Diego, Calif.

Many benefits are gained by membership. Plant exchanges, educational programs, occasional free distribution of plants, use of the professional library, and the monthly newsletter make the $1.00 yearly fee a bargain.

BROMELIADS

Note: The following information was taken from Mrs. Cleoves Hardin's discussion program at the January meeting, and from the new book added to the professional library, Bromeliads In Cultivation, by Bob and Catherine Wilson (Volume I).

There are anywhere from 1800 to 2000 species of Bromeliads presently recognized, with new species and varieties being discovered constantly. Most Bromeliads are epiphytes, commonly called "tank plants" because the leaf bases form cups to hold rain water.

Bromeliads die when they bloom, as do agaves, with few exceptions. But, prior to blooming, most species put out multiple offsets which continue to live after the parent plant dies. These may be taken from the parent plant before it blooms or left to form clumps.

Extra special care must be taken with some of the epiphytes because they feed primarily through the leaves rather than the roots. Potting mediums must be aerated and well drained, such as those afforded by fir and redwood bark. Care must be taken to keep the cups filled with water, and special caution must be observed with fertilizers and insecticides to prevent leaf burns. Epiphytes, for the most part, require shade or filtered sun to prevent leaf burns. The general rule is that if the plant is variegated or has shiny leaf texture, it must have shade.

Most cacti and succulent collectors will be interested primarily in the hardy, full-sun, terrestials. Most of the terrestials have hard leaves and upright tubular shapes, bearing a close resemblance to agaves, or have fleshy leaves resembling both the agaves and the aloes.

The terrestials do not have cup leaves to hold water. They function much in the same manner as agaves and aloes. Roots should be planted or potted in a mixture of coarse gravel and sharp sand with the addition of a small amount of leaf mold or loam. They should be watered regularly but kept on the dry side. Genera which includes full sun species of Bromeliads are:

Abromeitiella

Small genus; species grow in large clumps on rocks in rather dry areas.

Aechmea

Large genus of large terrestial types. Most species have edible fruit, such as Ananas comosus (pineapple).

Brocchinia

Small genus with a few giant species growing 15-20 feet. Flowers are insignificant.

Bromelia

Genus with many large size plants having sharp, often hooked, spines on leaf margins; "heart" of plant turns a brilliant scarlet during the blooming period; many stand freezing, and survive well in outdoor cacti gardens of Southern California.

Cryptanthus

Small genus with bright colored leaves in full sun. Some species have leaves which turn purplish when ready to bloom.

Dyckia

Large genus; most species forming large clumps; all species have spiny; fleshy leaves; good for outdoor cactus gardens.

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BROMELIADS (continued from previous page)

Puya

Small genus; most species hardy in Southern California cactus gardens.

Hectia

Small genus of cold resistant plants able to survive under dry conditions; somewhat resembling agaves.

Sun, rather than cold, appears to be the greatest enemy of the epiphytic varieties here in Southern California. However, any extended freeze down to 26 degrees will destroy the tender leaf species. If you have water freeze in the tanks of the plants, wash it out before the sun has a chance to thaw the plants.

The terrestials are generally hardy, and can take freezing temperatures without special precautions, if the plants are not overwatered during the colder part of the year. An important point to remember is that all terrestials are not full sun plants. Some require protection from mid-day sun, and others almost shade.

Bromeliads requiring shade make excellent house plants. They are not harmed by dry house temperatures so long as the tanks are kept filled, and, in addition, the warm house temperature promotes growth when they are kept well fed with a weak solution of soluble fertilizer once a month.

The epiphytic Bromeliads thrive under eucalyptus trees and under other types of trees where most plants refuse to grow, so long as they are kept well watered and fed. If epiphytes are placed in trees where bird droppings are collected in the tanks, no additional fertilizer is needed, but frequent watering should be exercised to prevent too high a concentration of fertilizer salts.

In Southern California, Bromeliads are comparatively free from diseases and pests. The biggest problem is a form of minute scale, which may be controlled with malathion, but be certain that the plants are washed well after application.

Watering of epiphytic Bromeliads is best done by a light spray which helps clean the leaves of accumulated dust. Allowing the water to overflow the cups helps wash out too heavy concentrations of salts mosquito larvae, and insecticides.

Bromeliads are easily attached to pieces of tree fern bark, cholla wood, or dead heart of palm tree trunks for suspension from patio overhangs or trees. Avoid using copper wire or wire which may rust because this may burn or start rot in the plant. It would be better to secure the plants with string which will not cut. After the roots have taken hold, the string may be removed. Older plants may not put out new anchor roots, requiring that they be potted.

J. Ward

QUAIL PARK PLANTS

California Garden magazine of June-July, 1962, lists the following Cacti and Succulents as a partial list of those planted at Quail Park, Encinitas:

Cacti

Cereus jamacaru
Cereus peruvianus
Cereus peruvianus var. monstrosus
Cereus validus
Lemaireocereus beneckei
Lemaireocereus marginata
Myrtillocactus geometrizans
Myrtillocactus cochal
Cephalocereus leucocephalus
Pachycereus pringlei
Pachycereus chrysomalus
Trichocereus spachianus
Opuntia elongata
Opuntia robusta
Consolea rubescens
Bergerocactus emoryii

Agave

Agave attenuata
Agave atrovirens
Agave angustifulia
Agave victoriae-reginae
Manfreda maculosa
Gasterias

Bromeliaceae

Bromelia fastuosa
Puya alpestris
Dyckia sulphurea

Mesembryanthema

Drosanthemum speciosum
Glottiphyllum linguiforme

Crassulaceae

Crassula portulacea
Crassula multicava
Cotyledon orbiculata
Cotyledon orbiculata var. rotundifolia
Aeonium haworthi
Aeonium arboreum
Aeonium arboreum var. atropurporea
Sedum stahli
Sedum altissimum
Kalanchoe beharensis

Liliaceae

Aloe bainesi
Aloe humilis var. echinata
Aloe dyckiana
Aloe speciosa
Aloe arborescens
Aloe plicatilis
Aloe ferox
Aloe candelabrum
Aloe distans
Aloe eru
Aloe vera
Aloe saponaria
Aloe striata
Aloe succotrina
Aloe cameroni
Aloe spinosissima
Dracaena draco
Samuela carnerosana

Miscellaneous

Kleinia repens
Portulacaria afra

Euphorbias

Euphorbia ingens
Euphorbia cooperi
Euphorbia grandidens
Euphorbia coerulescens
Euphorbia pseudocactus
Euphorbia mammillaria
Euphorbia canariensis

Palms & Yuccas

Arecastrum romanzoffianum
Archontophoenix cunninghamiana
Butia capitata
Erythea edulis
Erythea armata
Phoenix roebeleni
Howea forsteriana
Washingtonia filifera
Yucca schidigera
Yucca whipplei

OPUNTIA CLASSIFICATION

(continued from last issue)

Basically, the confusion in classification of the Opuntieae stems from the conflict between the lumpers and the splitters. Most American authorities of note accept the classification of Britton and Rose, with the revisions of Marshall and Bock, as the proper system. A few Europeans, mostly in Britain, and the noted Maltese authority, the late Dr. Borg, tend to follow the conservative American pattern.

It is ironic that, fifty years ago, Britton and Rose were considered to be in the vanguard of the splitters. Today, their Opuntia classification is considered to be too conservative by the German-Swiss-French school of botanists. Curt Backeberg is considered to be the foremost splitter today, but he has no large support outside central Europe. Actually, there is no such thing as a "European System". The so-called "American System" that of Britton & Rose and Marshall & Bock, has the general acceptance of perhaps 80 percent of U. S. botanists. A comparison of the "American System" with a hypothetical "European System" shows how wide a gulf exists in botanical circles.

EUROPEAN Opuntieae:

Spatulate-leaved:
1. Pereskiopsis
2. Quiabentia

Awl-leaved Cylindropuntias:
3. Pterocactus
4. Tacinga
5. Cylindropuntia (N. Am.)
6. Marenopuntia (N. Am.)
7. Corynopuntia (N. Am.)
8. Austrocylindropuntia (S. Am.)
9. Tephrocactus (S. Am.)

Awl-leaved Platyopuntias:
10. Consolea (N. Am.)
11. Brasiliopuntia (S. Am.)
12. Opuntia (Platyopuntia)(S.A.N.A.)
13. Nopalea (N. Am.)

Note: N. Am. includes Mexico, West Indies, Cent. Am., & U. S.; S. Am. includes Panama, S. Am. and Galapagos.

AMERICAN Opuntieae:

1. Pereskiopsis
2. Quiabentia
3. Pterocactus
4. Nopalea
5. Tacinga
6. Opuntia
7. Consolea
8. Grusonia

Note: The original #7 of Marshall and Bock, Maihueniopsis, is now generally rejected by most American and European authorities.

Britton and Rose rejected Brasiliopuntia, Corynopuntia, Cylindropuntia, Platyopuntia, Tephrocactus, Consolea and Maihueniopsis. Marshall and Bock, in their revision of Br. & R., reconstituted Consolea and Maihueniopsis, but the latter has now been rejected by most American authorities. Grusonia has also been rejected by most American and European authorities in recent years.

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OPUNTIA CLASSIFICATION (continued from previous page)

Actually, the European system has much to commend it, perhaps not entirely from the point of view of flower classification but from an ease of identification view. Anyone who has tried to find his way through any large Opuntia classification does not know whether the name "Opuntia" signifies cylindropuntia or platyopuntia, whether one is talking about a North American species or South American species.

Looking at the European system in more detail, we find it much easier to place an Opuntia with its near relatives. Anyone who has familiarity with the system would immediately recognize our cylindrical Opuntias with sheathed spines as Cylindropuntia; our low growing clavates without sheathed spines as Corynopuntia; tall growing S. Am. cylindropuntias without sheathed spines as Austrocylindropuntia; the low growing clavates in S. Am. as the Tephrocactus. The other cylindrical genera, Pterocactus, Tacinga and Marenopuntia are so rare as to constitute no real problem.

Taking a look at the flat-padded Opuntias we find the classification easier by a four-way division rather than the two-way American division. Consolea and Brasilopuntia are platyopuntias with round distinct trunks, the pads growing laterally. Consolea as have continuous, unjointed, usually densely spiny stems and all joints are thick and flat. Only flat joints spread laterally from the trunk. Brasiliopuntia is distinguished from Consolea by external appearance by less spiny joints and other habits of thin flat joints spreading laterally from the erect, unjointed trunk.

Opuntia (Platyopuntia) and Nopalea are the platyopuntias which have no trunks or which develop trunks from joint behind the joint. They are distinguished from each other by the flower: in Nopalea, the flower does not spread open, only the stamens protrude. The genus Opuntia, under the European system is still a large genus, including many N. Am. and S. Am. species.

One might reason that it is so simple to refer to the Opuntia tribe as simply "Opuntia" without complicating the picture by adding a dozen additional names. In this case, one can have his cake and eat it too. One can subdivide the tribe into many genera and still correctly refer to the collective genera as "Opuntias".

To my limited knowledge, the only noted American botanist who accepts the European system is W. Hubert Earle of the Desert Botanical Garden, Papago Park, Phoenix, Arizona. In his book, The Cacti of the Southwest (A copy is in the Society library.) you may examine the European system at first hand.

What is the future of the European system? At the present time, the British are carrying out extensive translations of German botanical publications relevant to the Cacti. When these publications become widely spread and read in Britain and the U. S., it most certainly will popularize the European system and create more confusion for the novice, who may wonder if he has an Opuntia a Corynopuntia, or a Grusonia.

J. Ward

TAPIOCA

(Manihot Esculens)
by Mr. Frank Mousseau

Perhaps the most remarkable of the Euphorbiaceae is the Tapioca bush, native to the Amazon basin, now widespread throughout the tropical regions of the world, known variously as "Tapioca," "Manioc," "Cassava," all of which names are of tropical American Indian origin. The tuberous roots, which resemble sweet potatoes, form a carbohydrate food staple for millions, although the tuber contains prussic acid, a deadly poison, in the form of potassium cyanide (hydrocyanic acid), and may not be eaten without careful processing to destroy the poisonous principle.

In preparing the roots for food, the women of the jungle tribes of the Amazon peel the tubers, thus getting rid of the greater part of the poison, which is next to the skin. They grate the peeled tubers and cram the soggy pulp into a diagonally woven tube which is longitudinally compressed to its widest diameter. They then draw the tube, by weights, into a long, narrow shape, exerting a tremendous pressure upon the contents. The poisonous sap escapes through the interstices of the weave and the meal is dumped out, almost dry. What little of the poison is left is destroyed by cooking the meal into flat, tortilla-like cakes.

At a more sophisticated level, the villagers pack the peeled, ground tubers into a canvas tube, about 8 inches in diameter and about 8 feet in length. The top of the tube is tied to a tree branch, a bar is thrust through a large grommet in the bottom and the tube is twisted until the meal is wrung out nearly dry.

At a manufacturing level all the above processes are accomplished by machinery which peels, presses, heats and granulates the raw product. Commercial tapioca is prepared by this method.

The juice squeezed from the raw pulp is boiled down to a thick, black syrup. During this process, the potassium cyanide, unstable at ordinary cooking temperatures, decomposed into harmless nitrogen which escapes into the air, and into elemental carbon and potassium. This black syrup is known as "Casarip," or "Cassareep." It formed the original base for Worcestershire Sauce and other meat sauces. These sauces are now prepared with soy sauce and synthetic substitutes for original Casarip. The Casarip, however, is widely used as a cooking sauce and tenderizer. Meat placed in a solution of this sauce will become tender overnight, no matter how tough, and will gain an excellent flavor. The meat and sauce will last indefinitely if heated two or three times a week. In the absence of refrigeration this is one of the most satisfactory and effective methods known of preserving meat in the tropics.

The meal, also, prepared by the women of the jungle tribes by mastication, is fermented and mixed with water. This is the "Paiwari" of the Amazon jungle. Even moderate ceremonial use of this beverage results in one of the better-type hangovers. Overindulgence usually results in extreme weakness and exhaustion for several days, the victim unable to care for himself. Continued use may result in a severe cough, general debility, and frequently death. Since the use of Paiwari is deeply rooted in tribal customs, the Brasilian authorities are understandably reluctant, as a matter of policy, to take necessary steps to eradicate its use.

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TAPIOCA (continued from previous page)

How the Indians came to discover the secret of eating tapioca without a 100 per cent casualty rate is a mystery to botanists. An anthropologist, however, acquainted with the nature of the animistic beliefs of the Amazon natives, might make an educated guess as follows: there is a lesser-known, rare member of the same species, "Sweet Cassava," which has a nonpoisonous tuber. Wandering tribes, acquainted with the use of Sweet Cassava, may have come across a grove of Tapioca bushes. Members of the tribe ate of the tubers and died. Believing as they did, it would seem that they came to the conclusion that evil principle, by various maltreatments of the tubers, such as pounding, squeezing, burning, could then make it possible to eat the tubers without harm.

Tapioca resembles its cousin Poinsettia in size, growth pattern, growth rate, leaf pattern, culture, and propagation techniques, to such a degree that it seems simpler to discuss the differences rather than the similarities.

The Tapioca leaf is smaller, has a better shape than Poinsettia. A small Tapioca seedling makes a very handsome palm-like fish garden plant, both in its green and variegated forms. It accepts indoor life more readily than poinsettia. The adult Tapioca seeds readily and most of the seeds sprout quickly. At all stages it will do better with overhead protection from loss of heat by radiation, but a large four-year-old adult ten-foot-high specimen has grown through the top of a lath house at Lion's Nurser, on Broadway, near "H" Street, in Chula Vista. Your reporter's specimen grew about seven feet in six months, then, exposed to the winds sweeping up Mission Valley, dropped its leaves and outer branches in December. The central trunk, about five feet high and about 3/4 inch diameter at the base, is still green and should last through the winter.

EDITOR'S NOTE: It may be of interest to the reader that over 80 species of Manioc have been identified but only about one half dozen species are widely cultivated and collected for food. Manioc forms a staple food in Latin America, Africa, and South East Asia for as many as 300 million people. Very few people in the U. S. have had any more contact with Manioc other than through an occasional Tapioca pudding.

One species of Manihot is native to Baja California, Manihot chlorostica, which is found in southern Baja, in Sinaloa and Sonora, and in the Santa Catalina Mountains of Arizona. Two other species, M. isoloba and M. angustiloba grow in canyons in the Sonoran Desert south of the Arizona border.

Since most of the Euphorbiaceae have poisonous starchy sap, there is a possibility that other genera of this family could be used for food if the poison were removed through processing, but I would not want to be the first to take a bite.

Mr. Mousseau has indicated that he will try to bring a number of seedlings to future meetings. J. W.