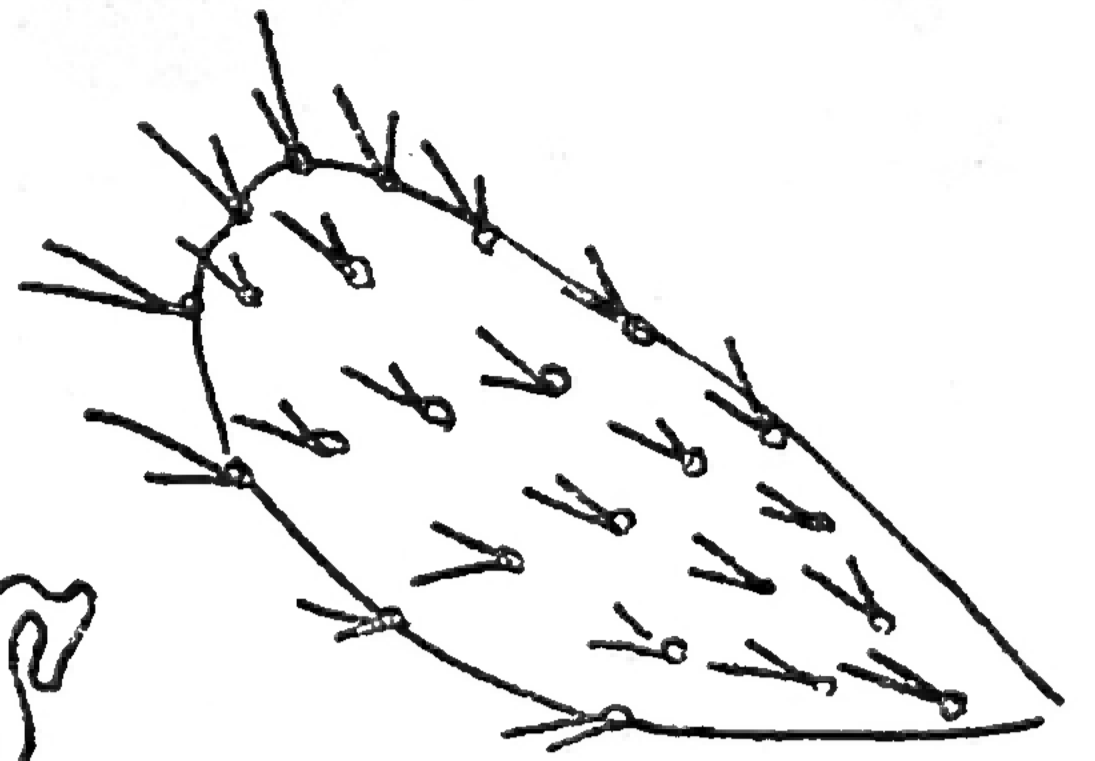


CACTOS

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SUCULENTOS



OFFICIAL PUBLICATION OF THE SAN DIEGO CACTUS AND SUCCULENT SOCIETY

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NATIONAL SOCIETY MEETS

Members are urged to attend the annual business meeting of the National Cactus and Succulent Society of America at the State and Coun-

ty Arboretum, 301 N. Baldwin Avenue Arcadia, California, Sept. 12.

Activities will open at 9:00 a.m. and close at 5:00 p.m. Those attending should take lunches, drinks and picnic spreads.

PROGRAM SCHEDULE

- 8:00 Bring in plants for exhibit.
- 9:00 Doors open to public
- 10:30 CCSA Pres. Don B. Skinner will extend Welcome
- 11:00 Speaker Dr. William L. Stewart, director of the Arboretum, "Plant Collecting in India & South Africa"
- 12:00 Lunch: own lunch & drink
- 2:00 Speaker Dr. Paul C. Hutchison, Univ. of Calif., "Cacti of Peru".
- 3:00 Annual Business Meeting, Nomination of Officers for 1966.
Plant drawing
- 5:00 Exhibits removed/Doors Close

Those attending the Arcadia program may wish to attend other gardens in the Los Angeles area such as Huntington Garden in San Marino, only a few miles from Arcadia, and the UCLA Botanical garden in West L. A.

The Huntington Garden has the largest cactus garden in the U.S.

The UCLA desert garden covers approximately one acre with a mixture of cacti, agaves, aloes and euphorias, with many labeled. In addition, near the greenhouses, there are many crassulas and mesembryanthemums.

The remaining part of the garden at UCLA is a lush, shaded sub-tropical forest.

CLOUETTE DEPARTS

Mr. Burr Clouette, vice president and program chairman, departs from San Diego to take up residence in Georgia, Oct. 1.

Mr. Clouette will become an active partner in a nursery business with an old friend and fellow Amaryllis collector.

He wishes to sell his garden tools, miscellaneous household items, hi-fi records and part of his plant collection. Items may be seen at 3729 4th Ave., Apt. 3, San Diego.

MEETINGS

Information could not be secured on today's meeting. Alice Dobby will present a slide program for the members.

Mr. James Graceno from the Civic Center landscaping committee will outline a possible club contribution to the Civic Center.

NEXT MONTH

Mr. Don Skinner, National Society President, will present a program (possibly on soil mixtures?)

LAST MONTH

Mr. Joseph Johnson presented a display of cacti and succulents and conducted a plant sale.

Society meetings are held the first Saturday of each month in the Floral Building, Balboa Park.

KODAK OFFERS PROGRAM FILMS

Eastman Kodak Company AV offers free use of films and slides to garden clubs.

The films were made to show techniques of taking pictures of garden subjects, and, although they do not cover cacti and succulents, are of great value and interest to any floricultural organization or to any one who has an interest in photographing plant subjects.

"Garden Notebook", a 22-minute color film is inspirational rather than instructional. It includes time-lapse photography of blooming flowers.

"A Garden of Pictures" is a 35-minute program of 152 color slides with Sound-on-Tape and projectionist's script. There are photos from the New York International Flower Show and many famous botanical gardens, such as Missouri Botanical Gardens and Alamo Garden, San Antonio. The slides teach simple techniques for picturing flowers, both outdoors and indoors.

RHIPSALIS ESCAPES TO AFRICA, CEYLON

The only cacti which escaped the Americas prior to the coming of the Spanish were species of *Rhipsalis*. These are:

- Rhipsalis cassytha*: Ceylon, Tropical Africa, Tropical America
- Rhipsalis erythrocarpa*: Zanzibar
- Rhipsalis madagascariensis*: Malagasy (Madagascar)
- Rhipsalis prismatica*: Malagasy, Brazil.

How these cacti were carried to Africa and the Indian Ocean is unknown, but the generally accepted view is that trans-Atlantic migratory birds carried seeds in their feces or adhered to their feet.

VOLUNTEER WORK PARTY

There will be a work party from 8:00 a.m. to 11:30 a.m. in the Eul-boa Park Desert Garden, Saturday, Oct. 2. Bring hoes, hoses, nozzles.

BRITTON MORE NOTED FOR LEADERSHIP THAN FOR "THE CACTACEAE"

Nathaniel Lord Britton (1859-1934), co-author of "The Cactaceae" (four volumes, 1919-23) with J. N. Rose, was one of the most prominent botanists in American history.

He was the founder and leader of the so-called "New York school" (1895-) of botanists. The older Harvard school (1880-) followed European conservatism in taxonomic classification, reluctant to create new genera. In the parlance of the mid-twentieth century the Harvard school is known as the "lumpers" and the N. Y. school as the "splitters".

Britton earned a geology degree in mining engineering from Columbia University, N. Y. City. He became interested in botany from the time of his appointment as botanist and assistant geologist on the New Jersey Geological Survey.

Later he became a professor and head of the botany staff at Columbia. He helped to organize and develop the N. Y. Botanical Garden, and was its first director in 1896.

His contemporaries considered him to be brilliant, but, with a volatile temper, he made his share of enemies. He attracted a large number of bright students who have come to reject the conservatism of the Harvard school.

Britton's ideas formed the basis of the Rochester and the American Codes (superseded by the International Code), and many of his innovations found their way into the International Code.

He encouraged his associates and students to adopt different parts of the country for intensive study with the purpose of writing new manuals. He encouraged also the intensive study of existing families in order to revise and reclassify genera.

In 1905, he initiated and was the first editor of the serially published "North American Flora". (Continued on Page 9)

EDITORIAL: EDUCATIONAL PROGRAMS

Inasmuch as the primary purpose of our organization is, or should be, educational, we should take a serious look at the present status of general membership meetings.

We have not had a serious educational program for five months. This is in poor contrast to the Palomar CSS, which has an interesting lecture or slide program at almost every meeting.

Many members have voiced dissatisfaction at attending meetings only to discuss business, exchange plants and to sip coffee over small talk.

This in no way is a criticism of our presently elected officers but on the membership itself. Earlier this year, Mr. Clouette, our program chairman, requested that the membership appropriate money to solicit guest lecturers. The membership voted down the request.

Last year, I was a member of both Palomar and San Diego Societies. In spite of the fact that Palomar operates on a lower income than San Diego, I must admit that they do a much better job in fulfilling the primary function of their existence, education of members.

It is my own opinion that the San Diego Society will start declining unless something is done to correct the present meaningless drift of meetings of the general membership. All we have to do to fulfill the present vacuum is to appropriate the funds necessary to bring good educational programs to the members.

EDITORIAL: PLANT-SALE TABLE

The general quality of plants brought for exchange is sometimes very poor. In addition to having repeats of many of the most common succulents, very few plants are potted and almost none of them are labeled. A person cannot really be a serious collector unless he is interested in the proper identification of his plants.

At the last meeting, Mr. Nelson suggested that we experiment with a different approach to the plant table, a method used by the Los Angeles Society and other garden clubs, to upgrade collecting.

Essentially, it might work like this: the club would buy quality cacti and succulents, properly labeled, to supplement properly identified, quality plants brought by members. Tickets would be purchased by interested members with first call having first choice, etc.

No plants would be allowed on the sale table if they are too common, not properly labeled and not in containers. If members wish to bring common plants or prunings to give away these would be placed on a give-away table.

Mr. Joseph Johnson, of Johnson Nurseries, has informed Mr. Clouette that he would be willing to donate some free plants to get the plant table started.

Mr. Nelson's suggestion should be given a trial. The income might go far in supporting paid-lecture programs.

In order to keep the quality of plants from deteriorating, a sale-table committee should screen plants before they are allowed on the sale table.

A member who brings an acceptable plant should receive a ticket at discount or at half price.

CACTI USED AS NARCOTICS

The use of peyote, *Lophophora Williamsii*, as a hallucinatory drug is well known because of the wide publicity given to it and because its possession is prohibited by California state law.

Not so well known is that other cacti were used by the Indians to induce hallucinations during religious ceremonies. Three of these were *Epithelantha micromeris*, *Ariocarpus fissuratus*, and *Pelecyphora aselliformis*.

The primary hallucinagens found in cacti are the narcotic alkaloid agents: lophophorine, mescaline, and anhalonine.

It is possible that a considerable number of cacti may contain hallucinagens. But, let the experimenter beware. Hallucinagen agents are poisons, and can be fatal when consumed in excess.

Also, such cacti as *Machaerocereus gummosus* have poisonous flesh. Some of the cacti with reputedly poisonous flesh may actually be loaded with hallucinagens.

The flesh of some cacti contain glucosides and other chemicals which act as diuretics, laxatives, or heart stimulants.

Even though the flesh may have undesirable chemicals, it is safe to eat the fruit of any cactus which produces sweet fruit. The only side effects from eating a large quantity of cactus fruit might be of a diuretic nature.

BAJA GENERA

Interested in making a Baja Calif. collection? The following cacti genera are found in Baja. Asterisks indicate exclusive distribution in Baja:

**Bartschella*, *Bergerocactus*,
**Cochemia*, *Echinocactus*, *Echinocereus*, *Ferocactus*, *Lemaireocereus*,
Lophocereus, **Machaerocereus*, *Myrtillocactus*, *Mammillaria*, *Opuntia*,
Pachycereus, *Peniocereus*, *Wilcoxia*.

OPUNTIA FRUIT USED AS FOOD

Many of the platy-*Opuntias* produce edible fruit. Some of it is very delicious, if one can get past the spines and/or glochids in the outer skin, and if one isn't bothered by the scattered seeds.

Opuntia robusta produces a large spiny, juicy fruit with purplish flesh which tastes much like cherry, but much sweeter. *Opuntia occidentalis* produces a spiny fruit with reddish-violet color, tasting somewhat plum-like.

Opuntia ficus-indica varieties produce fruit with no spines and few glochids, in colors ranging through purple, red, orange and yellow. It has a distinct flavor, but is rather seedy and is not as richly sweet as *robusta*.

Opuntia megacantha produces yellowish-white fruit, usually without spines or glochids, and it also has a distinctive flavor of its own.

Other *Opuntias* with very good fruit are *Opuntia streptacantha* and *Opuntia tuna*.

Many of these *Opuntia* fruits are sold commonly in the markets of old Mexico.

MISSION CACTUS IS REALLY TWO

Know what species comprised the original "Mission Cactus", brought to California by the Franciscans?

Actually, there were two species. *Opuntia ficus-indica* is the better known. It is almost spineless, and has different varieties which produce purple, red, orange, and yellow-colored fruits.

The second species was *Opuntia megacantha*; it ranges from few spines to spiny, and it has yellowish-white fruit. It hybridized freely with native species of *O. occidentalis* and *O. littoralis*.

Both species have been called "la tuna" in Mexico, and "Indian fig" in the United States and Europe. *O. ficus-indica* is most common.

EDITORIAL : LEGISLATION, BUDGET

When an organization reaches a certain size there are administrative and legislative problems to which many members are indifferent or passive. The result is that much important business does not get careful consideration or action.

Small organizations can function as a legislative body without many difficulties, but the larger an organization, the more confusing it is to carry out meaningful legislative decisions.

When most organizations reach such size they find it best to reorganize, placing the major legislative decisions in the hands of a legislative board or board of directors. The legislative board is elected by the members, and it meets prior to or separate from the general membership meetings.

The board of directors makes all the important decisions in regard to public displays, money expenditures, etc. The board makes a report of its decisions and actions at meetings of the general membership. General membership meetings are then devoted primarily to lecture or educational programs. Such a system has the following advantages:

1. It places the important decisions of the organization in the hands of members elected to be well informed.
2. It keeps guest lecturers from impatiently twiddling their thumbs while organization business is being conducted or indecisively debated; some of our guest lecturers have felt slighted and indignant at being kept waiting so long.
3. It places major emphasis of the general meeting on the lecture and on the educational program, where it should be; at the present time, the educational aspects of general meetings are too often lost sight of.

Short of creating a board of directors, there are immediate items which demand action. We have a large treasury reserve of around \$700. The best method to determine how this money may be put to best use would be to empower the president to form a budget committee to draft a budget to be approved by the members for the coming year.

In this manner, we can appropriate so much money for the library, for the programs, for the fair, etc. Once the budget is approved, the club need not concern itself about the approval of expenditures for every minor item, thus saving valuable meeting time for educational lectures and programs.

MEMBERS URGED TO WRITE ARTICLES

Have you made a collecting expedition, developed some secret cultural technique, or would like to contribute other items to the Society publication.

Give your copy to Jack Ward, or send it to 823 Halecrest Dr., Chula Vista, 92010, before the 20th of each month. If it is a short item please telephone 420-5513.

CACTUS CHEESE POPULAR FOOD

Know how cactus cheese (queso) is made? The juice is pressed from the ripe small fruit of *Opuntia Streptacantha*, and is then evaporated until it reaches a cheesy consistency.

It remains edible for months before it hardens or crystallizes. It is found commonly in the markets of Mexico.

A WORD ABOUT SEED CULTURE OF PLANTS

By Burr Clouette

Why not enjoy your plants to the fullest extent? A plant you raise from seed is truly yours. The satisfaction of watching a seed germinate and produce a plant are untold.

First, the little green or occasionally reddish or yellow green sprout; a miniature stem, or or two cotyledons or seed leaves, and a growing point; the meristem which continually renews itself and also produces all the various parts of the plant.

Often, a juvenile form is produced first. This may be similar or in some case very different from the mature plant. As the plant matures it becomes more and more like the parent, or, if a hybrid, it may be different from both parents, or it may be visibly very like one of the parents, or a combination of characteristics from both parents. If a hybrid is not sterile, its seedlings will segregate out plants like both parents and like itself, and possibly new combinations of characteristics.

All of these things add to the pleasure of producing your own plants from seed. Also, you usually have several plants to work with. You can try various soil mixes, watering programs and light intensity. In fact, there are endless experiments you can engage in in trying to find the best culture for a given plant if you have several of them. Eventually, you can end up with some superb specimen plants.

Or, if you are not an experimenter, you can share your seedlings with friends. Possibly, you can trade some for rare or interesting plants you covet but cannot otherwise obtain.

I have done both of these things while in Salinas, where I grew succulent and cacti on an extensive scale. There, I had a greenhouse and large lot in which to garden. Several of the local nurserymen were glad to handle my surplus seedlings and, in turn, I obtained numerous plants from their private collections. In particular, I did a large amount of trading with Bob Flores, who ran a large cactus and succulent nursery in Salinas, and who also collected in Mexico.

Some cactus and many succulents have small seed, some others large, and many succulents have very fine seed. For this reason, and because you don't know what you are planting, it is not a good idea to plant mixed seed. Some are buried and others not even covered. Fine seed should merely be sprinkled on the surface of a loose medium and pressed down. Larger seed is best covered to its own depth or deeper.

In any event, use a good loose sterile mix that will drain well. It should not be too fertile, as you can always water with a weak solution of fertilizer as the seedlings develop. Too-rich mix may burn the roots of the seedlings and is more likely to become infested with mold and damping-off fungus.

Sow seed thinly, and avoid crowding and some of the work of transplanting. By sowing thinly, you also avoid loss from fungus, and loss due to having to transplant small, too-crowded seedlings. You don't have to plant the whole packet of seed. Just plant enough to furnish the number of plants you need. Save the rest for you may lose the first planting. When you have all the plants you need, coming along, give the seeds to a friend.

Sterile medium for planting seeds are washed-sand, vermiculite, and chopped sphagnum. These are not only sterile but non-fertile too. Complete weak fertilizer solutions have to be used with them soon after germination, or seedlings starve to death. I do not care for vermiculite as a seed bed as it breaks down and becomes compact and slimy. (Continued on Page 7)

(SEED CULTURE—CLOUETTE) Continued from Page 6

One of my most rewarding experiences with plants was growing a couple of flats of hybrid Echeverrias. I hybridized the seed too. At the time, I had some fifty species of Echeverrias and many hybrids. While they were in bloom I went around daily with a little camel's hair paint brush and daubed pollen from one plant to another.

I planted the seeds in rows in flats, keeping it separate as to seed parent. I got a great variety of plants. Two of these hybrids I have distributed to various members of our club. One is that vigorous bright red-flowered E. affinis hybrid. Mine is in bloom now. The other is that tall shrubby sand-paper-textured-leaf one. It also has red blossoms but blooms in early winter. Another is a setosa hybrid with paler-colored bloom than Doris Taylor, I gave to someone when I moved last year.

The rest of this batch of hybrids were left in Salinas with Robert Flores or with the Yeagers who sell Epiphyllums, Tuberous Begonias and Cactus and Succulents on Highway #1, south of Big Sur.

One of the Yeagers' was a very slow growing golden-leaved rosette. It was a very beautiful little thing, only about 2" in diameter, although over two years old when I parted with it. It was on the order of E. agavoides but an almost transparent golden color only very slightly tinted green. I have often wondered if it survived. Some others were even slower growing and were only less than an inch in diameter when two years old. Most of these hybrids, Bob Flores lost in a freeze the winter after I left.

Watching these hybrids grow and develop into worthwhile plants was an experience I thoroughly enjoyed. I recommend it to every plant lover.

HYBRIDIZATION TECHNIQUES

(The following article is based on J. Borg, Cacti.)

A great amount of hybridization has been done in selective areas of cacti genera such as in the epiphyllums, but many genera have been almost completely neglected. If you are interested in doing some experimentation of your own, use the following procedure.

After deciding on the two parents, find a flower still in bud, just before it blooms; slit longitudinally on one side, and cut and remove all the stamens with their unexpanded anthers. These may be removed with surgical scissors or picked off with tweezers.

Next, following the same procedure with the other parent plant, insert the anthers of the first plant in the second and the anthers of the second plant in the first, being careful to place them on or around the stigma.

The flowers, thus pollinated, are closed up and tied to prevent them from blooming, and enclosed in a bag of tissue paper or cheese cloth, to prevent any possible access of other pollen.

To modify the dryness of the stigma, moisten it with a camel's hair brush dipped in water in which a few drops of honey have been dissolved immediately before use. Tie the petals rather tightly over the bunch of stamens, placed on or around the stigma, to reduce evaporation.

If two species are not blooming at the same time, the stamens of one may be carefully removed, placed in oil paper, and kept cool for a few days. However, they lose their potency after a few days.

NEMATODES (CON'T)

If you do not have nematodes, do not bring foreign soil into your yard. Take all potted plants out of their containers and carefully inspect the roots before transplanting. If in doubt, cut off the roots and reroot the plant. This may sound drastic and cruel, but the plant may benefit much more in the long run. Clean and fumigate all pots before reusing.

Also, do not put potato peelings, carrot peelings, beet peelings, or the remains of any root vegetable in your soil or compost pile. This is an almost sure way of introducing nematodes into your soil. Nematodes cause the knots on potatoes, split root tips on carrots, etc.

If you already have nematodes in a well established yard, you have almost insurmountable problems. You cannot uproot all your plants to treat the soil chemically. You can't chemically treat the soil around established plants without damaging or killing them. If you try heavy flooding with cacti and succulents, you may lose the plants to rot.

What can you do? You might work heavy concentrations of granular sugar and leaf mold into your soil. Periodically soak dry soil with a one per cent sugar solution. It is uncertain whether sugar dehydrates the worms or supports microorganisms which attack and kill them. However, sugar attracts ants which must be treated with chlordane.

TRAP AND HOST PLANTS

Trap plants are also effective checks in established gardens, if you plant enough of them. The two most effective are marigolds and asparagus. The roots give off glycosides which poison the nematodes in the soil. Planting borders and spot beds of these two plants may upset the appearance of your cactus and succulent garden but they effectively check the increase of the nematode population.

Plants which are relatively resistant to attack and in which the nematodes find it difficult or impossible to reproduce are corn, onion, strawberry, gladiolus, nasturtium, iris, lily, tulip and narcissus. By using these plants in the garden you may also check the increase of the nematode population.

Host plants, those in which nematodes thrive and reproduce prolifically, are leguminosae (acacia, genista, wistaria, alfalfa, beans, peas, clover), solanaceae (datura, cayenne and bell pepper, potato, tomato, tobacco, solanum jasmine, petunia, egg plant), cucurbitaceae (cucumbers, melons, gourds), roses, snap-dragon, pansy, and cacti.

CHEMICAL TREATMENT

The most effective chemicals are soil fumigants which contain dichloropropene, ethylene dibromide, dibromochloropropane, chloropicrin, or sodium H-methyl dithiocarbamate. When fumigants are used, all plants must be removed from the soil, the soil must be well-tilled, and the treated soil must be left dormant for at least two weeks before replanting. These chemicals should never be applied within 30 inches of growing plants, or under the drip area of trees and spreading shrubs. Great care must be taken because the chemicals are also very poisonous to humans and pets. J. Ward

N. L. BRITTON (Continued from Page 2)
projected to occupy 34 volumes; it is still far from complete.

He was author or co-author of the following works: "Flora of Bermuda" (1918); "An Illustrated Flora of the Northern States and Canada" (three volumes with A. Brown, 1921); "The Bahama Flora" (with G.

F. Millspaugh, 1920): "The Cactaceae" (four volumes with J. N. Rose, 1919-1923). J. N. Rose did most of the collecting and herbarium work, but the most important part of the taxonomic work was done by Britton. Britton is given the credit and blame for the many new genera of cacti created.