

# Espinas y Flores

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

Vol. XIV, No. 6.

June, 1979

## June Meeting

Saturday, June 9th, 1979  
1:30 pm  
Casa del Prado, Room 101, Balboa Park

### *Succulent Smorgasbord*

The June program will consist of a series of "mini"-programs by members Betty Athy, Vangie Englert, Joan Flear, and John Myers. These brief slide shows will cover such diverse topics as Lithops, Baja California, and many other interesting surprises.

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## CACTUS-OF-THE-MONTH

### Pediocactus

Dr. Ronald E. Monroe

The genus Pediocactus (Plain's cactus) was proposed by Britton and Rose (in Britton and Brown, 1913) as a monotypic genus with P. simpsonii as the only species and this view point was unchanged in their 1937 monograph (Britton and Rose, 1937). Borg (1959) expanded the species by recognizing two varieties of P. simpsonii and Backeberg (1977) included one additional species (P. bradyi) in his 1966 Kakteenlexikon. Weniger (1974) included three species, but conceded that there were probably at least seven valid species. The classical studies on this genus is by Benson (1962a,b,c) who separated the genus into three sections (section pediocactus, section navajoa and section toumeya). It now appears that there are between 6-7 species proper to the genus.

Weniger (1974) describes the plants as either single or sparingly caespitose; flattened, spherical or cylindrical; and usually very small (up to 6 inches diameter and height in one species). The surface of the stems are covered with small but prominent, noncoalescent tubercles, spirally arranged. Areoles are small and entirely on the tips of the tubercles, sometimes with glands present. The spines are extremely variable. The flowers are bell- or funnel-shaped and quite variable in color in many of the species (whitish, yellowish, pale purple, pink, P. simpsonii, v. simpsonii; pink, P. knowltonii, and white, P. papyracanthus, just to mention a few).

The plants are found in areas where winters can be quite vigorous (eastern Washington, eastern Oregon, western Idaho, northeast Nevada, northern Arizona, northern New Mexico and parts of southern Colorado and Utah) at elevations of 1200-3400 m. Although it may sound like they have rather wide ranges, such is not the case. Only P. simpsonii and its varieties are widely distributed from Washington to Arizona and Colorado. The other species are extremely restricted in habitat and, therefore, endangered species.

Benson (1962c) indicated that the living species of Pediocactus are relics of a more variable group of plants which once occupied the intervening sites between the present areas of distribution. This, followed by a long evolutionary period in isolation, is indicated by: (1) the strong structural differentiation of the species, (2) their extremely disjunct distribution, together with lack of any special means of seed dispersal and (3) the physiological-ecological limitation of each species to a special underlying rock type or an unusual distinct pavement or an unusual soil type.

At any rate, they are extremely retiring, small cacti and are so well camouflaged in their natural habitat that there are places where it is more rewarding to hunt for them by feel than by sight!

The plants are not easy to grow by "beginners". They are relatively frost-hardy but should be kept on the dry side during the winter months. When the plants are growing they may be watered about once weekly, with only an occasional feeding with a low nitrogen fertilizer (remember, they are always small plants).

Propagation is possible, but difficult, from seed. Grafted plants can be induced to grow offsets and these plants either rooted or grafted. The plants should be grown in a hot but sun-filtered area (ca. 73% Saran<sup>®</sup> is advisable).

The usual pests can be controlled by Cygon .2E<sup>®</sup> as reported earlier for other species.

#### References Cited

- Benson, Lyman. 1962a. A revision and amplification of Pediocactus II. CSSA Journal 34:17-19.
- \_\_\_\_\_. 1962b. A revision and amplification of Pediocactus III. CSSA Journal 34:57-61.
- \_\_\_\_\_. 1962c. A revision and amplification of Pediocactus IV. CSSA Journal 34:163-168.
- Backeberg, Curt. 1977. Cactus Lexicon. Blanford Press, England.
- Borg, J. 1959. Cacti. Blanford Press, England.
- Britton and Brown. 1913. Illustrated Flowers, ed. 2; 2:570.
- Britton, N. L. and J. N. Rose. 1937. The cactaceae. Dover Publ., Inc., New York.
- Weniger, D. 1974. Cacti of the southwest. University of Texas Press, Austin.



Ione C. Hubner

It was with great sadness that we learned last month of the death of one of our long-time members and a former officer, Ione Hubner. Ione was a former President (1971), Vice-President, Secretary, and a Director of our organization. In addition, she served during her years with the Society as Committee Chairwoman for the Del Mar Fair, the annual Open House, and the Plant Exchange Table. Ione was a quiet woman, well-liked by all, and was always there when there was work to be done. She will be missed by her many friends and acquaintances throughout the Society.

Succulent-of-the-Month

"FRUITS & VEGETABLES\*"

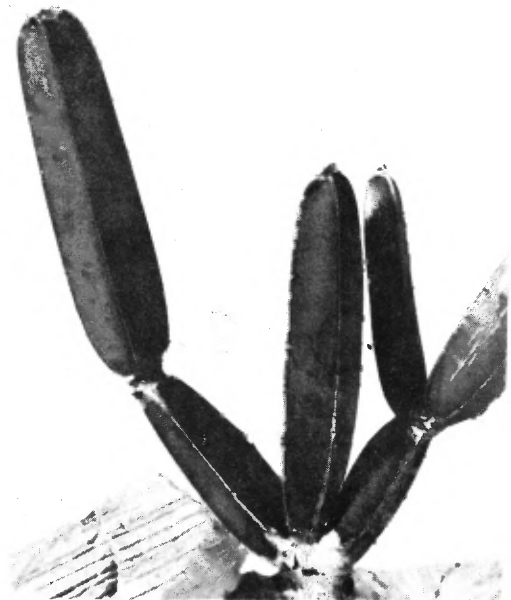
BY Rick Latimer

The succulents for the month of June are not actually fruits and vegetables, but succulents that are related at least fairly close to certain edible necessities. We will do the fruits first. For example, the Bromeliad family (Monocotyledon) contains a few succulent members, all of which are terrestrial (as opposed to most species which are epiphytic).

From Bolivia and Argentina comes the genus Abromeitiella with such species as A. brevifolia and A. chlorantha. The Dyckias, with such species as D. sulphurea and D. fosteriana, are from Brazil. From Mexico come the attractive grey (but vicious) Hectias. Some of the Dyckias are mistaken for Aloes, but the Agave like spines, white striations on the bottom of the leaves, and the flowers betray their true affinity. The "fruit" member of this family is, of course, the pineapple=Ananas comosus.

Most of the rest of the succulents of this month are Dicotyledons and also caudiciform plants. Rowley defines a caudiciform plant as one possessing a tough, stout, cork-covered storage trunk from which spring slender, green assimilating branches, usually of annual duration only. It should be pointed out that not every plant with a swollen stem is a caudiciform; Cyphostemma jut-tae is a stem succulent. As Newton says, the true caudex is a food (not a water) storage organ, from which springs the annual shoot, the part responsible for the manufacture of the needed food. This shoot is neither succulent nor xerophytic (e. g. Cissus tuberosus). A large store of food is necessary for the rapid growth of the green shoot at the start of the growing period. The succulent plant has no need to store food, since the chlorophyll containing tissue is permanently above ground. Tuberous plants may be called geophytes. Nonetheless, succulent growers often grow tuberous plants, such as Ipomoea holubii, with no normally-above-ground succulent growth. A less scientific (but more generally acceptable) definition of a succulent plant is any xerophytic plant that a succulent collector wishes to grow.

The grape family (Vitaceae) has its essential edible member (Vitis vinifera). The genus Cissus has numerous vining plants, many not at all succulent. C. tuberosus from Mexico does have tubers, from which vines shoot out around May 1. Several Cissus species with quadrangular climbing stems are native to the Horn of Africa region, such as C. quadrangularis, C. quinquad-rangularis, and C. hamaderohensis. Originally contained in Cissus, but recently separated due to the fact that the plants differ not only in habit, but also flower structure and position of the inflorescence, is the genus Cyphostemma. Both genera appear to be Summer growers. Most SDCSS members are familiar with Joan Johnson's



*Dyckia* 'Naked Lady'

Cyphostemma which won the 3rd best succulent award last year. Most Cyphostemma species seem to come from South West Africa. Frank Horwood has suggested that C. bainesii, seitziana, and uter might be best considered as members of one polymorphic species.

Another "fruit" family contains two genera (most members not succulent)-the Moraceae or fig family. Dorstenias have an inflorescence that is a flattened disk rather than a hollow pear-shaped sphere as in the genus Ficus. The edible fig is Ficus carica. Dr. Phelps's F. palmeri from Baja was the best succulent at our show in 1977. The Dorstenia inflorescence is not called a cyathia (as with Euphorbias), but rather a hypanthodium, containing ray-like bracts around the edges and male and female flowers in the middle. The whole effect looks like a modern sculptor's vision of the sun. Dorstenia species also generally occur in the Horn of Africa region. Two outstanding species are D. gigas and D. gypsophila=foetida. Tom Hamecher got his D. hildebrandtii from Lavranos looking originally like a raisin, but it quickly turned into a miniature tree with TLC.

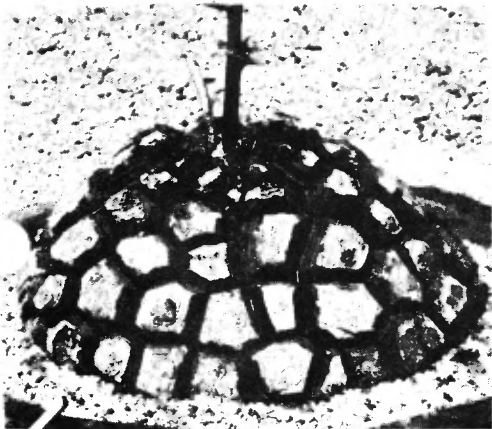


*Dorstenia hildebrandtii*

Adenias are related to the passion fruit=Passiflora edulis. However, plants like A. digitata are quite poisonous. This plant is native to the Transvaal, whereas A. globosa, with scented red flowers, comes from Tanzania.

A family closely related to the Passifloraceae is of course the Cucurbitaceae. The only thing I need add to my Nov. '78 article is that Corallocarpus species do have stem succulence. Otherwise members may bring in plants such as Ibervillea that were not brought in before.

Caudiciforms are referred to in England as TCP or turnips, carrots, and parsnips. So we enter the category of the "vegetables" with the yams and potatoes. What we call the yam and what we call the sweet potato are different cultivars of Ipomoea batatas. No succulent collector grows it in his collection, but perhaps they could consider it or I. tuberosa, the Wood Rose. Madelyn Lee once surprised us with her I. (=Merremia=Turbinia)-holubi. It was a round brown tuber with a purple morning glory flower on top. This genus is in the Convolvulaceae or Morning Glory family. The potato itself belongs in a completely different family-the Solanaceae. This family is peculiar in that it has many edible members, but also many poisonous-from the Tomato, Chili Pepper, Eggplant, Petunia, Jimsonweed, Tobacco, Nightshade, and Henbane.



The true Yam is not a Dicotyledon, but is a Monocotyledon. The Dioscoreaceae has the distinction of being named along with the Euphorbiaceae and the Asclepidaceae after Physicians of the Classical Age. Dioscorea batatas is an important food crop in Africa. Succulent growers prize the "Tortoiseshells"-D. elephantipes from Africa or D. macrostachya from Mexico.

Having gone this far, it is difficult to stop. It is tempting to include more plants, such as the Asparagus Ferns, but these plants are not xerophytic as far as I know. But having stopped here we still have the problem of appreciating how all of the above plants are related to or unrelated to one another. So next month we will include a "family tree" of the flowering plants.

REFERENCES:

Frank Horwood, CSSA Journal, (46:5), "Some Notes on the Genus Dorstenia".

6), "Succulent Safari to Africa" and part two of Ibid.

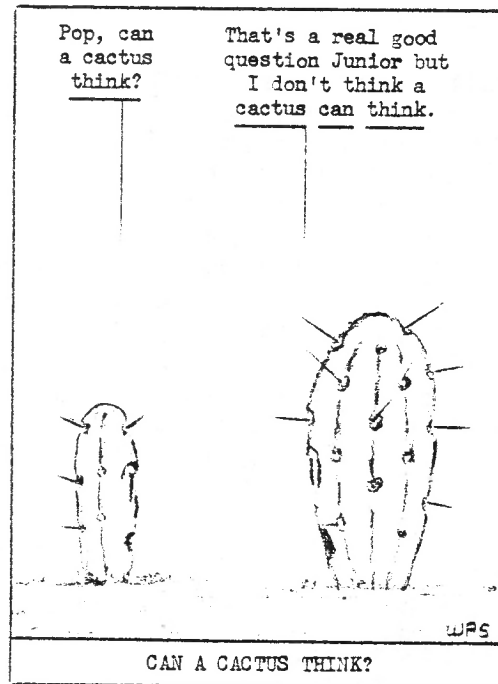
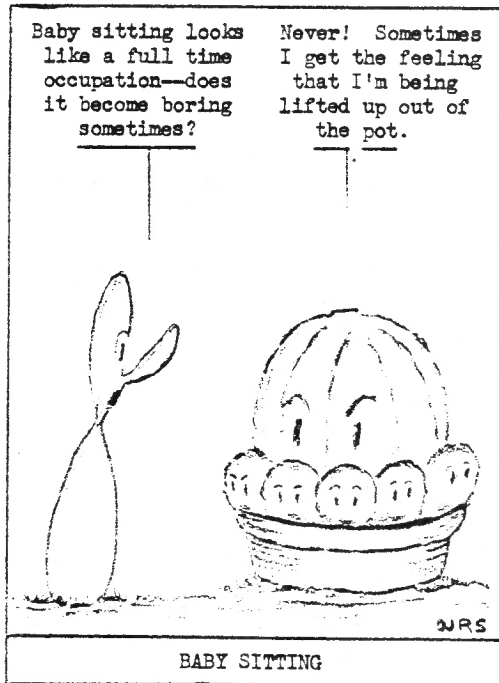
Clive Innes, The Complete Handbook of Cacti & Succulents.

Margaret J. Martin & Peter R. Chapman, Succulents and Their Cultivation.



14th Annual CSSA Show

The Cactus and Succulent Society of America will hold its 14th annual show, "The Golden Years of Cacti: 1929-1979", on June 29, 30 and July 1, 1979 at the Los Angeles State and County Arboretum, 301 North Baldwin Avenue, Arcadia, California. Along with the show, there will be plant sales and a free plant drawing. A complete listing of classifications and awards, as well as rules and judging explanations, will be posted at the June meeting.



## Pests of Succulent Plants

### Part IV. Scale Insects

Dr. Ronald E. Monroe

Although scale insects on cacti are not considered by some as being prevalent in the United States (Mann, 1969), they can suddenly appear as a pest insect on nearly any species of cactus, and they can be particularly troublesome in greenhouses (Metcalf et al., 1951).

Systematics—There appears to be only one species of scale insect associated with cacti, Diplacaspis echinocacti (Homoptera:Coccidae); =Diaspis echinocacti of the older literature.

Plant damage—Scale insects are seldom considered as severe pests of the cacti. However, they have been found causing considerable damage to plants in habitat (Opuntia lindheimeri, Cylindropuntia imbricata and C. echinocarpa, Nopalea cochenillifera and several species of Cereus, Rhipsalis and Pilocereus; Mann, 1969). Their feeding habits often leave small, round chlorotic spots on the epidermis of the plant and, therefore, render such a plant practically useless for show purposes. Plants that are heavily infested are noticeably weakened and often succumb to secondary invasion (fungus rot), while small plants fail to grow properly. D. echinocacti attacks only the cacti and the other succulent plants appear to be free from scale insects.

Biology—Scale insects may be divided by some into two large groups: those having a distinct, hard, separable shell or scale over their delicate bodies (the armored scales) and those in which the hard shell is not separable from the body (the tortoise scales and soft scales); D. echinocacti is an armored scale. Reproduction usually takes place by means of eggs but some species are ovoviviparous. In cases where eggs are oviposited, the eggs are protected beneath the scale of the mother insect until they hatch. After hatching, the young crawl from beneath the scale and actively move about for a short term before they insert their thread-like mouth parts into the epidermis of the plant and begin feeding by sucking the sap. After feeding for a short time, they moult and lose their legs and antennae; the cast skin is incorporated into the scale which now forms over the body of the insect (composed of fine threads of wax exuded from the body wall of the insect). Female scale insects moult twice and always remain under the scale. The males, after the second moult, have a more elongated body and, after a third and fourth moult, assume the adult form. In this stage they are very minute, two-winged, yellowish insects, with antennae, eyes, legs, and a prominent long appendage projecting from the tip of the abdomen; they are non-feeders. They seek female scale insects and shortly after mating, oviposition begins.

Control—Scale insects can be difficult to control because of their protective scale. However, the new systemic insecticides are truly effective and Cygon .2E is particularly useful. Cacti with but a few scales can be cleaned up by "hand picking". It is important to control this pest at once because once the young "crawlers" begin to disperse, they can infest other plants in the collection turning a local infestation into a rather general, serious one.

## References Cited

- Mann, John. 1969. Cactus-feeding insects and mites. Smithsonian Institution Press, Washington, D. C., 158 pp.
- Metcalf, C. L., W. P. Flint, and R. L. Metcalf. 1951. Destructive and useful insects. Their habits and control. McGraw-Hill Book Co., Inc., New York. 1071 pp.



Life Member: "Doc" Vaughan

by Perlso Lewis

Reuben V. "Doc" Vaughan is a charter member of the San Diego Cactus and Succulent Society and served as the Society's fifth president (1966-1968).

Doc holds degrees in geology, mining engineering, and chemistry. He has been an assayer and a pharmacist, establishing the first drug store chain in southern California. He lived on Catalina Island for 40 years, taking such prominent friends and neighbors as Mr. William Wrigley fishing. His first visit to San Diego was in 1915, to see the Fair. He drove from Los Angeles to San Diego, an almost unheard of undertaking in those days due to the lack of paved roads and bridges.

From 1954 to 1963 Doc broadcast a science program over radio station KFI in Los Angeles. Later, he had a Sunday evening program over radio KFMB until 1966. He has written and published two autobiographies, *Catalina Diary* and *Print of My Remembrance*.

On May 15th Doc Vaughan observed his 93rd birthday. I would like to take this opportunity, on behalf of the Society, to send along our belated birthday thoughts and best wishes for many more to come.



## Green Thumb Shows

The San Diego Wild Animal Park will host the following Green Thumb Shows in the coming weeks:

- June 9-10: American Begonia Society and Fern Society  
July 14-15: Rare and Unusual Plants



One good rule to keep in practice  
Do not back into a cactus,  
Or you will find, my dearest friend  
That you will get it in the end !!

— Anon. (contributed by Perlso Lewis)



NOTES & NEWS

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

May Andrews, Helen Hegyi, Herb Hewitt, Audrey Johnson, Beverly Kirkegaard, Sylvia Kramer, Ed Miller, Ruth Nelson, Verna Pasek, and Suzanne Taylor.

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Librarian Betty Athy reports this recent addition to our library:

*The Agaves of Baja California — Gentry*

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May's V.I.P. Table was a most artistic display of dish gardens by Katherine MacDonald. June's exhibit will be a surprise, as it was unknown to the editor as this issue went to the printers.

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We welcome this month the following new members:

George and Helen (Nan) Kelsch, San Diego  
Estelle Viertel, La Mesa  
Mike and Rose Ann Goodson, Wichita KS  
Central Kansas C & S Study Group (exchange)  
Sacramento Cactus & Succulent Society

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Please Note: your editor has moved! Please address all future communications to:

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or phone 278-0326.

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Deadline for the July issue is June 26th.

San Diego Cactus & Succulent Society

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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 \$6.00 per family. Single copies of *Espinas y Flores* are 50¢.

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