



Espinas y Flores

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

Volume XXIV, Number 6

June 10, 1989

JUNE MEETING

Saturday June 10, 1989

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DEADLINE FOR THE JULY ISSUE ----- June 24

Thanks Mary



COME TO ANNUAL SDC&SS PICNIC!

Day: June 10, 1989

Time: 10:30 to 11:00 am - Eat at 12:00 NOON TILL -----

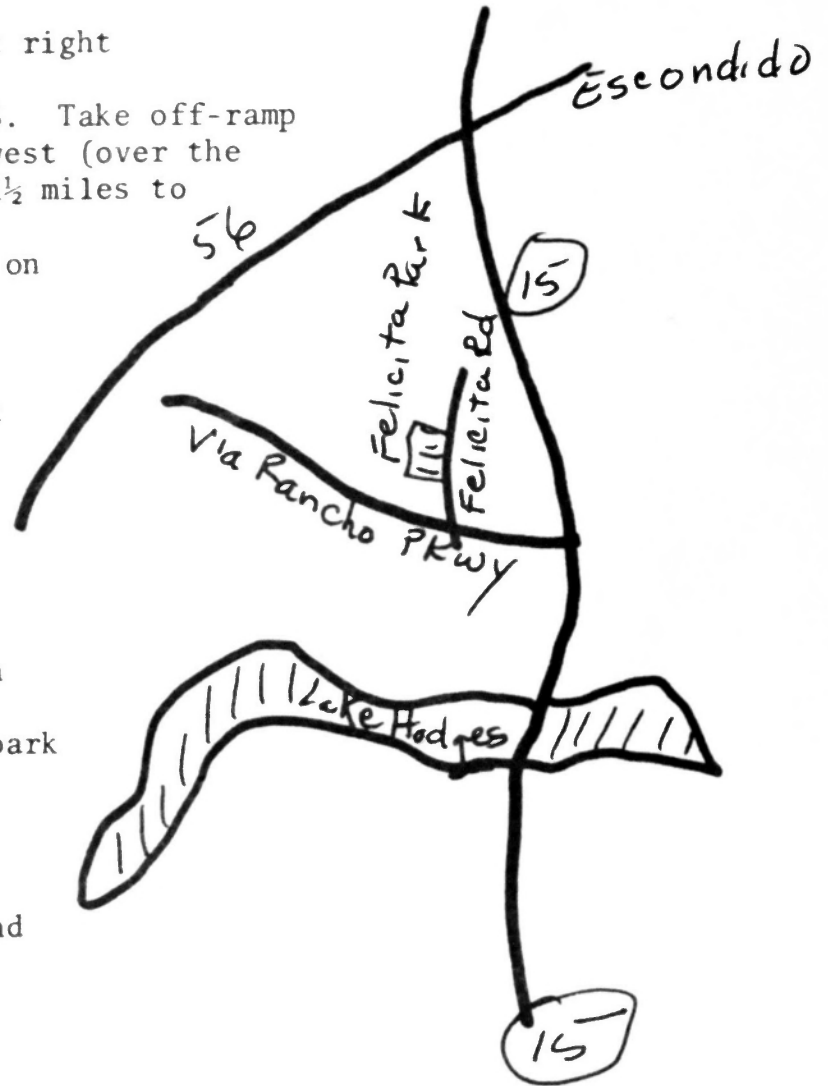
Place: Felicita Park - Map at right

From San Diego - North on I-15. Take off-ramp at Via Rancho Parkway and go west (over the highway I-15) Approximately 1½ miles to Felicita Road. Turn RIGHT. Go ½ mile to entrance of park on the LEFT. From the North - turn off Via Rancho Parkway. Area #4 will have the San Diego Cactus and Succulent sign in view.

NOTE: There will be "Door" Prizes and an Auction. Auctioneer - ?

Please Bring - A pot luck dish enough for eight (8). Your favorite beach chair (or use park benches) Casual clothes and a good appetite

Plan for a day of good food and fun.



SHOW SCHEDULE FOR JUNE AND JULY

June 3 & 4	San Diego Cactus & Succulent Show	Sat: 1pm-5:00pm	Sun: 10am-5:00pm
June 11	Southwest Hemerocallis Society 15th Show		Sun: Noon-5:00pm
June 24 & 25	San Diego Fuchsia & Shade Plant Show	Sat: 12pm-5:00pm	Sun: 10am-5:00pm
July 2	San Diego Dahlia Society Specimen Show		Sun: 1pm-4:30pm
July 9	Convair Garden Club 38th Summer Show		Sun: 1pm-4:30pm
July 22 & 23	San Diego Co. Orchid Soc. 4th Summer Show	Sat: 12pm-4:30pm	Sun: 10am-4:30pm
July 29 & 30	San Diego Gesneriad 13th Annual Show	Sat: 12pm-5:00pm	Sun: 10am-4:00pm
July 15, 16	San Diego Bromeliad Soc - 15th Annual Show	Sat 1-4:30pm	Sun 11-4:30pm

Pests of Succulent Plants

Part XV. Fungi.

Dr. Ronald E. Monroe

The most devastating pests of cacti and other succulents could easily be attributed to the numerous plant diseases that attack them. All too often, seedlings or large prize-worthy plants are completely destroyed leaving one with a helpless feeling of complete defeat. Of the many diseases known, the fungi are foremost as they are the most commonly encountered in succulent plants in cultivation.

Systematics -- Fungi (Mycophyta) are plants that lack chlorophyll, are saprophytic or parasitic and cannot manufacture their own food via photosynthesis. The main body of the fungi is called a hyphae which produces a whitish, root-like structure known as mycelia. The mycelia penetrate the substrate and secrete enzymes which can digest proteins, carbohydrates and fats, and the fungus later utilizes these nutrients for its own growth. Reproduction may be by either asexual or sexual means or both, and in many cases dispersal is accomplished by wind-carried, aerial spores. The Mycophyta is divided into the following classes: Phycomycetes (black molds, downy mildews and white rusts), Ascomycetes (leaf curls, powdery mildews, etc.) and Basidiomycetes (numerous parasitic forms on plants). The fungi that attack succulent plants have been extensively reviewed (Wescott, 1950; Durbin et al., 1956; Streets, 1969 and Pirone, 1970), and some of the more common ones found are as follows:

- Damping-off fungi which attack seedlings and kill the tissues of stems and roots near the ground level (species of Pythium, Pellicularia, Fusarium and Botrytis).
- Anthrachnose appears as circular, depressed dark-colored spots up to one inch in diameter, bordered by a raised ring. The spots may run together (Glomerella cingulata in Agave, Mycosphaerella opuntiae in Cereus, Gloesporium cactorum in Mammillaria, etc.)
- Leaf spot causes characteristically-zoned light grayish-brown spots, reaching one inch or more in diameter. On them in concentric rings are large numbers of small black fruiting bodies, in which are formed the light brown spores (Coniothyrium concentricum and C. agaves in Agave).
- Root rot a fungus which causes the roots to rot and is particularly common in California (Pythium ultimum in Aloe).
- Wilt causes a brown spotting and wilting which begins at the base and extends upward (Pythium debaryanum).
- Fusarium wilt believed to affect Cereus and is a soft, black rot which begins at the tips and spreads downward (Fusarium oxysporum).

- Stem rot a very rapid rot which begins with well-defined yellow lesions that later become dark brown; entire plants collapse and die within 2-4 days. The fungus enters older plants through the stomata or wounds; it may penetrate the epidermis per se in younger plants (Helminthosporium cactivorum).
- Pad decay gaining entry through wounds, the spores, yellow in mass, cause stem and branch decay (Aspergillus alliaceus).
- Slimy collar rot causes a black, slimy, soft collar rot at the base of the plant; particularly a problem in sp. of Cereus (Phytophthora cactorum).
- Soft rot or gray mold causes slimy disintegration of tissue, and the whole upper surface gradually rots and collapses (Botrytis cinerea).
- Euphorbia stem rot causes dark-colored rotted areas which are soft and usually kills infected branches (Coniothyrium euphorbiae).
- Dry rot causes a dry rot in Carnegiea gigantea (Poria carnegieae).
- Leaf spot causes drying of infected leaf area with tiny, dark fruiting bodies (Sphaerodothis pringleri in Yucca).
- Leaf blight causes large, dry leaf spots with conspicuous pinhead-sized black fruiting bodies (Kellermannia anomala).

Recently, a strain of Fusarium oxysporum which is fairly resistant to many fungicides entered England from Malta and has caused considerable mortality in greenhouse-grown plants. Apparently, sporulation occurs in high temperature and humidity (at night) and enters the open stomata of the plants (Donald, 1979).

Plant damage -- In some cases plants are merely disfigured, decreasing their eye-appeal and, surely, killing their chances of ever being a show plant. Unfortunately, however, the usual end result is death of the infected plant. Once the fungus gains entry, the excellent growing substrate of the succulent's interior (darkness, moisture, nutrients) causes rapid growth and reproduction to the extent that the fungal disease rapidly spreads throughout the plant and often kills it within a few days (many plants are reduced to an interior mush with an exterior epidermal skeleton).

Biology -- The biology of a fungus differs depending upon the class being discussed. In some cases, their biology is complicated and involves both sexual and asexual reproduction. In some cases the spores are dependent upon some insect or nematode carrying them from plant to plant (thus, they are disease vectors) while other fungal spores gain entry only after plant attack by mealy bugs, sciara fly larvae, etc.

Control -- The very best control against any of the fungal diseases is a healthy plant that is somewhat hard grown. That is, not too much water, the right type of porous soil which allows for good drainage and absence of mealy bugs and sciara fly larvae. In some cases, a plant that has stem rot can be

salvaged by scraping out the infected area with a knife and then packing the wound with Captan® or Thiram®. Too, a plant with root rot or lower stem rot can often be saved by topping and grafting. Naturally, these two methods decrease the plant's chances at a show, but it does save valuable genetic material for the serious collector. One of the very few systemic fungicides, Benomyl® or Benlate® might be used as a prophylactic measure by spraying the plants during wet, humid winters, and preventative sprays of Kethane® has been used successfully in seedling flats (Durbin et al., 1956). Regardless, one important thing to not do is to become a mechanical vector by spreading the disease from plant to plant -- always destroy infected plants that you are not able to save and wash the pot in a solution of Chlorox® and water. Damp-off is best prevented by watering seedlings with Natriphene® or Consan 20®.

References

- Donald, John D. 1979. A new strain of Fusarium oxysporum in England. Personal communication.
- Durbin, R.D., Lily H. Davis and Kenneth F. Baker. 1956. A Helminthosporium stem rot of cacti. Cactus and Succ. J. (America) XXVIII: 46-49.
- Pirone, Pascal P. 1970. Diseases and Pests of Ornamental Plants. The Ronald Press Co., New York. 546 pp.
- Streets, Robert B., Sr. 1969. Diseases of Cultivated Plants of the Southwest. The University of Arizona Press, Tucson, Arizona. 390 pp.
- Westcott, Cynthia. 1950. Plant disease handbook. D. van Nostrand Co., Inc., New York. 746 pp.

Conservation Notes

The Republic of South Africa has submitted proposals to the Convention on International Trade in Endangered Species of Wild Fauna and Flora to transfer Pachypodium namaquanum from appendix II to appendix I. Technically, this means a transfer from threatened to endangered status (see: Endangered Species Tech. Bull. V: 14; 1980). If such a proposal is agreed to, a person wishing to import either plants or seed will need an import permit from the U.S. Fish and Wildlife Service, a USDA plant import permit and an export permit from the country of origin.

Reprinted from October 1980 issue of E y F.

Quiz Corner

Machaerocereus eruca (Brandeggee) Britton et Rose



Questions: 1. Who first named this species? 2. Who placed this species under Machaerocereus eruca? 3. Why was it named Machaerocereus eruca? 4. This species has at least two common names. What are they? 5. Give a general description of this species. 6. What is the origin of this species? 7. How should this cactus be cultivated? 8. The many stems serve as sand retainers. How could this benefit the surrounding area? 9. What desert fox burrows holes among the prostrate stems?

Answers: 1. (Brandeggee) under Cereus eruca. 2. Britton and Rose. 3. Machairos is Greek meaning dagger or dagger-like. Cereus is Latin meaning waxy. Eruca is Latin meaning caterpillar. The central spines are dagger-like. When this

cactus was first discovered, it was recorded as giving the appearance of being an oversized 'crawling' caterpillar. 4. Chirinola and creeping devil cactus. 5. a. The stem (12 ribbed, 1 to 3 meters in length and 4 to 8 cm. in diameter) is prostrate on the ground with the summit (tip) ascending. To quote Barthlott, "it can grow indefinitely in length, with the rearmost part gradually dieing off". In addition, it will grow right over any obstruction in its way. b. The areoles have dagger-like central spines 3 to 4 cm. in length. c. The funnel-shaped flowers are 'whitish' with a pleasant scent. 6. Lower California (Baja California, Mexico). 7. Machaerocereus eruca should be grown in a dry, warm location and in full sunlight. 8. Erosion is checked to aid in additional accumulation. 9. Vulpes macrotis devius.

Reference:

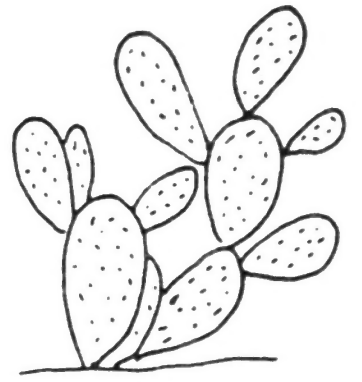
Backeberg, C. Cactus Lexicon. 1976. Page 250. England.

Barthlott, W. Cacti. 1979. Pages 191-192. England.

Britton, N.L. and Rose, J.N. The Cactaceae. 1963. Vol II. Pages 114-116. New York.

Reprinted from February 1981 issue of E y¹F

NEWS NEWS



MAY BRAGGING TABLE WINNERS

1st Place.....Joe Williams for his GRAPTOPETALUM AMETHYSTINUM

2nd Place.....Mitch Bahr for his ECHINOCEREUS WEBSTERIANUS

3rd Place.....Dorothy Dunn for her BORZICACTUS ICOSAGONUS

WELCOME TO NEW MEMBER

Patricia and Laura Lussier - San Diego



E.M.

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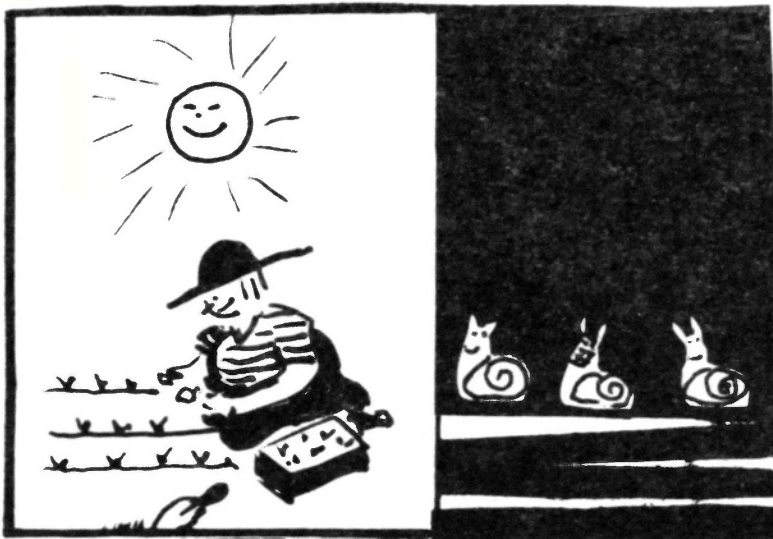
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The San Diego Cactus & Succulent Society is open to all persons interested in growing cacti or other succulent and exotic plants. Meetings are held the second Saturday of each month at 1:30 p.m. in Room 101, Casa del Prado, Balboa Park. Board of Directors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

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