



EPI NEWS

the monthly newsletter of

SAN DIEGO EPIPHYLLUM SOCIETY, INC.

March 9, 1988
VOL.12, No.3

SPECIAL EDUCATIONAL ISSUE

This issue of Epi News is very different from most, due to contributions from two of our very respected members, George French and Eckhard Meier.

George's information is perfectly suited to the spring planting season and offers a rare glimpse at just what makes George's epis so exceptional.

While some members may not know Eckhard Meier personally, most area aware of his international reputation as an expert on epiphytic cactus and other plants, his writings have appeared in numerous publications in Europe and North America. Other members will remember his visit to our April 1986 meeting, at which he presented a slide program and was presented with Honorary Life Membership in SDES.

Ordainarily a semi-technical piece the length of the article on Epiphyllum chrysocardium would be serialized, however a derth of committe reports enables Epi News to print Herr Meier's articles complete in this issue.

Thanks to Eckhard Meier, George French and to the many others who make Epi News possible.

- Sean Minogue

FRENCH'S FORMULA MIXES FOR SUCCESS

One of the few factors a gardener can control completely is the mixture the plants are expected to grow in. Some mixtures work well for a variety of plants, and some plants grow well in a variety of mixes. Not Epis. In another in a series of articles about growing media for epis we hear this time from a man world famous for his success growing epis.

* * *

I have found a good epiphyllum mix given to me by a friend:
2 cu.ft. Nurseryman Azalea mix
2 cu.ft. Super Soil
2 cu.ft. orchid fir bark
 small 1/2 to 1/4 in.
6 cups Bone Meal
2 cups Super phosphate

Pour all of this mix on a 6' X 6' plastic sheet and mix well. Store in plastic trash can.

When ready to use, add 1 part mix and 1 part #3 Perlite. Keep mix slightly damp. You are then ready to repot.

When your newly potted plant begins to show signs of growth, add 1 tablespoon slow release fertilizer #25-5-5 per 6" pot. Your plant will take on a healthy waxy growth and will produce better blooms.

- George French

**SOME REMARKS ON
EPIPHYLLUM CHRYSOCARDIUM
by Eckhard Meier**

When I was in your country two years ago, I repeatedly saw Epiphyllum chrysocardium in various collections. This plant is perhaps better known as "Fern Cactus" due to its deeply incised stems very much resembling a fern, or as "Golden Heart Cactus", because of the many golden yellow filaments in the center of the flower which beautifully contrast the surrounding white petals. However complaints about its unwillingness to flower can be heard and many collectors keep it only because of its unique growing habit. This is a pity, since the flowers of E.chrysocardium are among the largest in the cactus family often measuring 12 inches across and more. They are very beautiful too, in Europe they appear between November and January, not rarely during the Christmas Season.

HISTORY

E. chrysocardium was found in the state of Chiapas, in southern Mexico by Tom McDougall, a famous collector and plantsman, in 1951. It flowered for the first time at the New York Botanical Garden the night of Jan.1st/2nd 1954 causing a considerable sensation among cactus fanciers around the world. The first description was made by Alexander, who classified it as an Epiphyllum. A little later the famous German cactologist Curt Backeberg reclassified it as a Marniera, a genus he had set up for Epiphyllum macropterum some

years before because of its bristly pericarpel, different from all other Epiphyllums. As E.chrysocardium has got bristles at its pericarpel too, he consequently re-named it as Marniera chrysocardium, a name widely spread since that time. Critical voices however, stated that bristles can also be found on other "typical" Epiphyllums such as E. crenatum (one of the ancestors of our epis due to its frequent use for hybridizing, especially in the 19th century), E.lepidocarpum, E.anguliger (one of the rick-rack cactuses) and others, so that the name "Marniera" was rejected by many (but not all) prominent scientists such as Myron Kimnach and Franz Buxbaum.

CLASSIFICATION "FRUITLESS"

When Alexander described this plant for the first time, a fruit was lacking. During the following years, attempts to set fruit were not successful. The study of fruit and seed is of such great importance that it generally must be included when describing or classifying any new species. But sometimes this has to be delayed when no fruit is available, as was the case here. Backeberg's opinion that this species was special could not be confirmed.

The difficulties to obtain fruit are manifold:

1st) E.chrysocardium is self-sterile (as are all the species of Epiphyllum) and thus can not be pollinated with its own pollen. If you have a second specimen of a different source it won't help
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to solve the problem, all plants in cultivation have proved to belong to one clone only, i.e. they are all offsprings of one and the same plant found in habitat only once in the past.

2nd) E.chrysocardium flowers in winter when other possible pollinators are resting and thus not in bloom. If a Selenicereus (Queen of the Night) were used as a pollen parent and should turn out to be fertile (which I have not yet been able to try out), the forthcoming fruit and its seeds morphologically would always turn out to be typically "chrysocardium-like" and could, without reservation, be used for further studies. (However, off-spring would be hybrids with characteristics of both parents.)

3rd) Due to the very long receptacle of E.chrysocardium flowers, it is hardly feasible to use short-tubed species or hybrids as pollen parents. This is because the pollen of such plants is normally unable to grow through the long style to the ovules situated inside the ovary to complete fertilization. Most of our epis as well as Heliocereus speciosus (Sun Cactus) and other related species seem unfit for our purpose, whereas true species of the genera Epiphyllum, Selenicereus or Hylocereus and the more long-tubed epis seem to be more appropriate, which after all, can be seen as a further complication, not to mention the different bloom seasons as outlined above.

4th) E.chrysocardium is a shy

flowerer when not cultivated properly (see below). As a result flowers have not often been seen in cultivation.

After having learned to flower E.chrysocardium regularly, I tried everything to get fruit, but for a long time the efforts were in vain. I had already made experiments, freezing the pollen of various species to have at hand for off-season bloomers. These experiments were successful in a few cases, but never when using E.chrysocardium as a seed parent ("mother"). On the other hand I once succeeded in putting the once frozen pollen of E.chrysocardium onto the stigmas of an unknown epi (similar to "Moonlight Sonata") thus getting a fruit with viable seeds resulting in a few nice flowering hybrids with E.chrysocardium as "father". I have selected two of them so far and called them "Hunsruck Charm" and "Hunsruck Cup" (Simmern, the West German town where I live, is situated in the Hunsruck Mountains, hence the names of the hybrids.) Some readers may perhaps remember the former flower for I introduced it to a greater audience in my slide show held at the Casa del Prado on April 9th, 1986. Its extra-large flowers are of a nice rich lavender fading to light lavender and almost white at the edge, whereas the sister seedlings' bloom is very similar to the well-known variety "Punch Bowl".

In 1982 there was an unexpected late flower of E.chrysocardium open in May when several epis were in bloom, too. This was a great
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chance to have "fresh" pollen of a suitable epi at hand to obtain the long awaited fruit and to harvest (as a by-product, so to say) viable seeds to raise some interesting seedlings, which might perhaps show some interesting features inherited from their mother, such as huge, long-tubed and off-season flowers or deeply incised stems, thus showing a different and more attractive growth habit compared with other epis. From the epis then in bloom I chose "Malcho's Beauty" as a pollen parent because it had the deepest color and a tube slightly longer than that of the others. At the same time I used E.chrysocardium as a "father" too, putting its pollen onto various epis such as "Discovery", "Flammenspiel" (a Haage cross), "King Midas", "Nayada" and, again, onto "Malcho's Beauty" (this time though, it was the other way around). All went well except for the last cross. Whereas the cross E.chrysocardium ("mother") x "Malcho's Beauty" ("father") was successful and resulted in the long waited for fruit with viable seeds, the reverse cross was the only failure.

FRUIT DECIDES GENUS

The fruit of E.chrysocardium was a little sensation. From the beginning onwards, that is to say long before it was ripe, it was quite exceptional from other Epiphyllum species because of the long bristly spines completely covering it. When ripe after 11 months, it was almost 3 inches long and 2 1/3 inches wide and green in color, very much resembling

that of a Cryptocereus anthonyanus (another of the rick-rack cactuses, but more related to Selenicereus than to Epiphyllum). The grayish pulp was sweet and edible, the seeds were black and relatively big.

With the additional description of the fruit and seeds in the German Cactus Journal ("Kakteen und andere Sukkulente" vol.34, No.12, 1983) the "old" question of whether our chrysocardium was an Epiphyllum or a Marniera could finally be settled. Due to the detailed study of the pollen and the seeds done by Prof. Wilhelm Barthlott, then professor of botany at Berlin University, now curator of Bonn Botanical Gardens, we can be quite sure today that it is a typical Epiphyllum which only differs from the other members of its family in that the pericarp of the fruit is densely covered with bristles. The morphology of flower, pollen and seeds is much the same as with the other Epiphyllums. To base a new genus on only one different characteristic is not advisable.

USES FOR POLLEN

As an old epi-fancier you can imagine that I have always had in mind too, to obtain viable seeds of E.chrysocardium and the various reverse crosses, because there are some interesting features such as its large, long-tubed and off-season flowers as well as its unique growing habit, which would greatly enrich the spectrum of epis already available. All the seeds
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turned out to be viable and the tiny seedlings came up very well. Then however, a fungus destroyed all those where E.chrysocardium had served as the "mother". It was those very seedlings on which I had set my special hopes for achieving the above-mentioned aims. The other seedlings, where our plant had been the pollen parent "father" kept growing well, with the only exceptions of the cross "Nayada" x E.chrysocardium, which soon began to turn yellow, then died a little later. Living in a cold climate part of the world, we always have space problems in winter, since we have to move all our plants in before the frost begins. Thus I could only raise few of each cross, which is a pity indeed. I picked out the strongest seedlings only and threw away the tiny ones, knowing well that they might have turned out to be the ones with the most unique characteristics. I grafted some of them on to Hylocereus undatus to speedup growth and all have bloomed at least once already. Some of those left on their own roots started to bloom last year.

RESULTS NOT AS HOPED

So far my hopes for these offspring have not come true. This refers to all the crosses where E.chrysocardium was used as the pollen parent (including the attempt with frozen pollen that resulted in "Hunsruck Charm" and "Hunsruck Cup"). Not one of these seedlings any stems reminding one of its "father". They are just ordinary epi branches, completely lacking deep incisions. The blooming season

is in spring as with most of the other orchid cacti. The extra long tube of the "father" can't be found and the flower size is not exceptional. The only resemblance is found in some seedlings' cup formed flowers.

Nevertheless some seedlings have beautifully colored flowers worth admiring ranging from silvery white to different shades of yellow ("Discovery" x E.chrysocardium), from white over fiery orange to dark red with more or less bluish sheens at the edges of the petals ("Flammenspiel" x E.chrysocardium) and from dark lavender over light lavender to almost white ("unknown garden form" x E.chrysocardium) and the hope of even more variation in color with first time blooms this year.

FOR THE FUTURE

I am convinced that some of the more sought-after characteristics of E.chrysocardium may turn out in the second generation of seedlings (F2- generation) when bred among each other, which is very important. As this has to be done at a greater scale than can be done over here, I have begun (and will continue) to send cuttings of my F1-hybrids to friends in California and I would greatly appreciate any efforts aimed at achieving new garden forms combining the good characteristics of our "Golden Heart" with those already present in our dear epis. The first step into this direction has been done and it
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should turn out to be quite promising to continue with our efforts.

NOTES ON CULTIVATION

Epiphyllum chrysocardium is unique and rewarding, I have been cultivating this species since 1970 and every year around Christmas the flowers can be greatly admired. I have tried out different methods of cultivation in the past and maybe I can give good advice to those who haven't seen flowers up to now.

It is very important to keep it in a rather small container due to its weak rooting system, characteristic to so many epiphytes. When repotting is necessary because the plant has become too voluminous, use a container not more than one or two sizes bigger. Do not fill the whole pot with mix but leave a rim of about 2 inches at the top thus allowing room to put several layers of cow manure onto the compost every successive spring as an alternative to frequent repotting, which is always accompanied by a certain amount of root disturbance, which many epis do not like at all.

You can keep E.chrysocardium as a hanging basket or tied to stakes or to a trellis, which I would recommend because the plant seems to grow more happily with the long stems supported in this way.

The most important thing however is to keep two resting periods in the course of a year. We all know that our epis (as well as all the other cacti) will only flower when

there is a resting period of at least 6 weeks (better more!) prior to the blooming season. E. chrysocardium blooms in winter and the development from bud to flower takes quite a while (in Central Europe at least 2 months, greatly depending on the temperatures in fall and early winter), the all important first resting period should last from the beginning of August to mid-September, during which watering must be reduced drastically and fertilizing ceased altogether. As with epis in winter the compost should become almost dry, not bone-dry which results in root damage, bud drop and worse. From mid-September onwards (often later) tiny green buds can be seen and from then on watering and mild fertilizing should begin again. After flowering a second resting period should be granted, the forming and the developing of the huge flowers have taken away a lot of vigor to be regained now. This second resting period begins a little later for E. chrysocardium than it does for our epis and lasts until March or April. With the beginning of the warm season water and fertilizer must be amply provided, since it is now that the plants grow and get the strength necessary to bloom in the following winter.

If you have not had the luck up to now to admire the beautiful and impressive flowers, try to cultivate E. chrysocardium according to the schedule outlined above. There may be a certain shift in time due to the different climate in Southern California, but in
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principle the alternate changes between growing and resting periods twice in the course of as year is, in my opinion, very important as it is the case with our Schlumbergeras or "Zygos", the cultivation of which is much the same.

So have a try and above all, make sure your specimen is able to rest in summer and winter. Cover the plants or move them to a special location where they will receive controlled amounts of water. This little extra care will certainly pay well for the huge and fragrant flowers are truly gorgeous even though they will last for only one night. The first few can be expected on specimens of about 3 to 4 feet in length and will increase in number each year.

They are among the largest flowers not only within the Cactaceae but also within the whole plant kingdom. As an extra-bonus for your care they'll appear off-season when almost nothing else is in bloom.

With the best wishes to the Society and its members

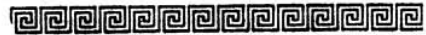
Eckhard Meier
Simmern, West Germany

SDES MARCH MEETING

The March General Meeting of the San Diego Epiphyllum Society will be held in Rm. 101 of the Casa del Prado in Balboa Park on March 9th at 7:30pm.

As we go to press, no program has been announced.

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Deadline for April
is March 21, 1988



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SAN DIEGO, CA
PERMIT NO. 2646

S D E S
P.O. BOX 126127
SAN DIEGO, CA 92112-6127

EPI NEWS IS PUBLISHED BY SAN DIEGO EPIPHYLLUM SOCIETY, INC.

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Membership in SDES is \$3.00
per person or organization,
domestic. International rates
\$12.00.

All membership inquiries
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San Diego Epiphyllum Society

18TH ANNUAL

FLOWER SHOW

MAY 8, 1988 (MOTHER'S DAY)

11:00 A.M. TO 5:00 P.M.

CASA DEL PRADO/BALBOA PARK ROOM 101 (MAJORCA)

CUTTINGS - 10:00 to end

年幼 年番 元昔 有勢

"Oriental Odyssey"

SHOW RULES

This Flower Show is open to anyone with an interest in Epiphyllums (either hybrids, species, or other "epiphytic shade loving cacti"). All entries should have entry cards and exhibitors are responsible for placing their entry cards with their entries. Awards must remain with the exhibits and other entries until the close of the Show. Show hours must be followed. The San Diego Epiphyllum Society will exercise due caution guarding exhibits, however it cannot assume responsibility for loss of property. Entries are judged against perfection. The judges' decisions are final. The Show Chairman will make all final decisions, except in matters of judging.

AWARDS

William & Ruth Nelson Trophy - This trophy is named in honor of the first President and the first First Lady of this Society. The trophy is awarded to the best plant of the Show. Eligible plants may be either species or hybrids of or between the following genera of the cactus family: Selenicereus, Hylocereus, Heliocereus, Aporocactus, Epiphyllum, Disocactus, Rhipsalis, Rhipsalidopsis, Schlumbergera, or other closely related genera. Plants must have been grown by the exhibitor for at least the last six months. A gift of Richard G. Latimer Jr.

Dr. Jacob W. and Miriam Troxell Trophy - This trophy is in memory of two of the founding members of this Society. This trophy is given to the best exhibit that is to this year's show theme. This trophy is a gift of the Society.

Buddy Hurst Trophy - This trophy is in honor of the late commercial grower of epiphyllums of the Los Angeles area. This trophy is awarded to the best registered hybrid flower in the Show. To be eligible, the flower must have been registered with the ESA in the last seven years and been hybridized or grown from seed and exhibited by the originator. This trophy is a gift of Ernest W. Angus.

CSSA Trophy - The Cactus and Succulent Society of America Trophy is a gift of that Society annually upon request by affiliate Societies and is awarded to the best educational display. There must be at least two entries for this trophy to be awarded. This is the only trophy in the Show that the winner may keep permanently. The San Diego Epiphyllum Society is currently the largest CSSA affiliate.

Eva Clover Trophy - This trophy is in memory of this founding SDES member and is awarded to the best flower on the Society's display table devoted to members with few flowers. Eligible flowers must be labeled with the exhibitor's name. This trophy is a gift of the Society.

Walter & Penny Bunker Trophy - This trophy is named in honor of these founding members and is awarded to the best flower arrangement in the Show. An eligible arrangement must include flowers from plants that are eligible for the Nelson Trophy and may include other plant material and flower arrangement props. This trophy is a gift of this Society.