The Bulletin

EPIPHYLLUM SOCIETY OF AMERICA

FALL 2016 • VOL 72 · NO. 1

PHOTOGRAPH: Don Patterson

'DONORO'

Chiba Lovely Dawn Ex Nat.

Hybridizer Don Patterson Reg. #14661

The Bulletin

EPIPHYLLUM SOCIETY OF AMERICA

AUTUMN 2016 • VOLUME 72 NO. 1

PUBLICATION INFORMATION: *The Bulletin* is published quarterly in autumn, winter, spring and summer, by the Epiphyllum Society of America.

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SUBMISSION DEADLINES: 15th of Feb., May, Aug. and Nov.

DISPLAY ADVERTISING RATE: Contact Editor for rates

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SUBSCRIBERS receive for one year's dues, four issues of the quarterly Bulletin, a Roster of Members, a yearly Addendum to The Registry, and a discount of $15 off The Registry price.

ANNUAL DUES: For electronic world-wide delivery of *The Bulletin* $20. For postal delivery (with black & white pictures) $30 payable by check or money-order made out to the Epiphyllum Society of America, in US currency, drawn on a US bank. Mail payment to: ESA Membership, Geneva Coats 13674 Geranium St., Chino, CA 91710-5080 USA. All new Memberships or renewals due Jan 1. Annual Dues are applied to the following year if paid in between September 1 and Dec 31. Members may also pay online via our Square Market page: https://squareup.com/market/epiphyllum-society-of-america. Renewal receipts are not issued.

FOR INQUIRIES Send them to the ESA Address above or email them to genevacoats@aol.com.

ROSTER CHANGES or other membership issues send them to the Membership Secretary.

MEETINGS: Begin at 7:30 p.m., the first Tuesday of each month, (except January, December and US national holidays). Admission and parking are free. Refreshments are served. Members and guests attending their first meeting receive a free potted epi. Regular meetings are held in the Lecture Hall B, Arboretum of Los Angeles County, 301 North Baldwin Avenue, Arcadia, CA, USA. Take the Foothill Freeway (I-210) to the Baldwin Ave. exit, south. Follow the signs to the Arboretum. The December meeting is the Holiday Banquet. Paid dinner reservations are required.

BULLETIN STAFF

EDITOR: Keith Ballard 310-670-8148, epinut01@juno.com

ASST. EDITOR: Heather Sabin

LAYOUT: Robert Kuettle

SOCIETY OFFICERS AND DIRECTORS

COMMITTEES & CHAIRPERSONS

CSSA Affiliate Representative	Ken Hanke 818-239-6479
ESA Pentico Memorial Collection Curators	Ed Beardsley 626-358-9662, mebeard@altrionet.com Robert Kuettle 323-257-9630, rkuettle@roadrunner.com
ESA /Arboreutum Plant Display Coordinator	Ken Hanke 818-239-6479
Flower Show & Sale Committee Co-Chairs	Marrie Caldiero 626-705-6500, marriecaldiero@yahoo.com Geneva Coats 909-628-2271, genevacoats@aol.com Gail Grassl 562-596-9746
International Registrar	R.W. Kohlschreiber 310-833-6823, kohlpedro@gmail.com
Librarian	Jim Nones 818-284-1199, jjan21@hotmail.com
Program Chairperson	Jim Nones 818-284-1199, jjan21@hotmail.com
Refreshments Coordinator	Ken Hanke 818-239-6479
Registry of Hybrids & Species Editor	Robert Kuettle 323-257-9630, rkuettle@roadrunner.com
Registration Committee	R.W. Kohlschreiber 310-833-6823, kohlpedro@gmail.com Geneva Coats 909-628-2271, genevacoats@aol.com Robert Kuettle 323-257-9630, rkuettle@roadrunner.com Jerry Moreau 619-208-7654, jerrysdca@cox.net Jim Nones 818-284-1199, jjan21@hotmail.com
Research Committee Chair	R.W. Kohlschreiber 310-833-6823, kohlpedro@gmail.com
Volunteer Coordinator	Marrie Caldiero 626-705-6500, marriecaldiero@yahoo.com

EXECUTIVE BOARD MEETINGS are open to all. The Board currently meets monthly, on the last Tuesday of the month at 7:30 P.M. Meetings are held either in the Bamboo Room, Arboretum of Los Angeles County, 301 North Baldwin Avenue, Arcadia, CA; or via a teleconference call. Please contact one of the Board Members before attending.

FOUNDED MAY 5, 1940

The Bulletin
EPIPHYLLUM SOCIETY OF AMERICA

SUMMER 2016 • VOLUME 71 NO. 4

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'Daisy Paetz', 'Elvira Paetz', 'Olga Paetz'
Hybridizer: Helmut Paetzold

Autumn Culture Calendar

by Keith Ballard

Adapted from the "Culture Calendar for Autumn" Vol. 57, No.1 (Autumn 2001) by Raymond Eden

Light – protect plants from autumn's lower-angled sun. Damage from sun exposure due to the changing angles, can occur throughout autumn and even winter. Supplementary shade cloth or the equivalent may be necessary to augment shade protection presently in use. Protection from wind damage may also be a concern. Wind can wick a substantial amount of moisture from plants.

Water – prevent soil from drying out. As always, watering epies is a balancing act between too dry or too wet. Check your plants weekly for soil moisture levels. Depending on humidity levels in your microclimate, maintain a moderately humid condition for your plants. For more arid areas, mist the foliage and shade house area. For areas of high humidity, remember too much watering can cause root rot. Soil mixtures in these areas should contain additional amounts of sponge rock (Perlite) or pumice. However, with sufficient rain, watering may not be required for weeks at a time. Autumn/Winter watering in areas with wide variations of rain fall, such as Southern California, is especially challenging, as with lots of rain, one may not need to add additional water, or with little rain may need to water regularly.

Temperature – guard against temperature extremes. Hot late summer temperatures can often extend into early autumn. Misting or supplemental watering may be required. Leave up any supplementary shade protection as needed until cooler weather arrives. Depending on your climate, frost can occur in some areas as early as October. Check weather reports for unseasonably cold conditions. Be prepared. Stock all your winterizing materials in advance.

Nutrition – fertilize once more before dormancy. Grower's opinions vary here. Some prefer a balanced fertilizer such as 10-10-10, others 0-10-10, still others their regular low nitrogen fertilizer, to be applied as a final feeding before the onset of cool weather. The goal here is to enhance next year's blooming. Once winter temperatures arrive, discontinue feeding. This will enable your plants to lapse into dormancy. Plants that continue to be fed and not allowed to remain dormant often will not bloom the following spring. Late autumn is not the time to encourage growth.

Grooming – there are a number of reasons to groom epies. The general procedure is Dick Kolschieber's rule, "remove any branch that offends you, up to 1/2 of the plant". However, there are actually a number of reasons to groom beyond just bad. looking branches. In addition to just looking bad, by the end of summer your plants may have "decided" which branches to retain for the following year and which branches to discard. Branches which appear to be dehydrating and turning yellow in comparison to the greener and more fully-hydrated ones, should be removed. In addition, areoles die. In general, they are good for just one bloom, including the buds that don't mature and just drop off. Thus, over time, most or all of the areoles on a given branch will die. And if all the areoles on all of the branches die, the plant stops blooming or growing new branches, and just sits there. Even a cutting with all dead areoles probably will not root. Such branches should come off, and one can start cutting as soon a blooming is definitely over. Often removing a branch or 2, will stimulate a plant to start growing new branches.

Breaking or snapping off unwanted growth eliminates the necessity for sterilization of shears between plants to curb the spread of viruses. Remember - burning your cutting tools dry with a torch is the only effectively known method to kill plant viruses!

A special note here, if a plant looks dehydrated all over, has sunken areas and isn't blooming or growing, you may need to dig it up to see if has a root problem.

Maintenance – autumn is an ideal time to do maintenance. If labels are becoming illegible, replace them; if the pot hanging wires are rusting, especially at the pot, replace them. If a trellis has broken parts, fix them; If the plants are escaping from the trellis, "stuff" them back in; etc…

Planting & Repotting – last chance until after next blooming season. Planting new cuttings under normal outdoor conditions can still be done until the onset of cold weather. Once winter arrives, newly planted cuttings should be done indoors or in a greenhouse. Repotting tired or unhealthy plants now will likely ensure that they will bloom the following spring. Withhold water after repotting for 10 days to 2 weeks, to ensure that damaged roots don't rot.

Pests – bait and fumigate. Misting your plants will often entice pests from dryer parts of your yard into your shade area, so remember to bait for snails and slugs. Watch for cabbage moth caterpillars. They can decimate a tender branch in a matter of hours. Scale can multiply quickly in the warm summer months. Spray with a moderate solution of Marathon in both these instances. Insecticidal soap can effectively be used in substitution for other stronger pesticides, especially on scale and aphids.

Fruit – protect "seed pods" from birds and rodents. Seed pods can ripen as early as September in warmer climates, and as late as the following spring in others. Do not harvest seed pods until you are certain of their ripeness! They often will have changed color to a bright to deep crimson or burgundy. The fruit should "give" when squeezed (but don't touch it with your bare hand) and usually has acquired a tropical or licorice fragrance. Protective coverings around the fruit made of wire mesh or paper often will dissuade pests from consuming your hard work.

Highlights of Recent Meetings

HIGHLIGHTS OF THE JULY 5th MEETING: The Program for this meeting was The 2016 Epi Flower Shows of the 3 Southern California Epiphyllum Societies: the ESA, SDES and SBES." This program was created and shown by Paul Richter, who had taken the pictures at the ESA and SBES. A Sample of the pictures, and of Paul, are included in this Bulletin.

HIGHLIGHTS OF THE AUG. 2nd MEETING: This evening's program was a discussion and demonstration on Staghorn Ferns, given by Mike Moody, President of the Los Angeles Chapter of the "International Fern Society." Mike started collecting in 1985.

Mike Moody

Mike said staghorns are an epiphyte and like growing conditions slightly more stringent than our epies, requiring 75% shade cloth and don't like a lot of sun after 11a.m. They don't like cold temperatures either, and in fact, and will die at 32 degrees F, or lower. Unlike our epies, staghorns will cling to a mounting surface, for example harmlessly clinging to a tree trunk, tree branch or a rock, etc. Plus they can grow to a very large size. They typically are mounted on boards and not in pots. There are 18 species that range from easy-to-grow to hard-to-grow. There are also a lot of varieties and hybrids, but the names are not well controlled. Staghorns are tropical plants native to the Philippines, Southeast Asia, Indonesia, Australia, Madagascar, Africa, and Southern America.

Mike then did a demonstration of effectually what we would consider a "repot," by removing a section of an older staghorn plant, and added it to a new board. But first a word of caution. Staghorns typically have two different types of fronds (leaves), a rather large, thin, flattish frond that forms what might be called the base of the plant, and long, narrow and typically forked fronds. See the enclosed picture of the newly transplanted fern. Where the long fronds come out of the flat leaves is called the "eye." Damage to the eye area will probably kill the plant.

Mike cut and sawed a roughly 8 inch in diameter circle around one of the "eyes" of the older plant and ripped, what would become, the new plant off the board. He then cleaned the old Sphagnum moss (aka peat moss) off the roots of the plant with his fingers. After that, he made a roughly 8 inch in diameter circle by 4 inch pile of fresh Sphagnum moss in the center of a new board and set the staghorn plant on the pile. The last act was to fasten the plant to the board with a number of ties of fishing line.

Mike said he generously waters his plants twice a week, making sure to get water to the fern's roots near the top of the mound of moss.

The Fern Society makes three sizes of mounting boards and sells both them and mounted ferns. Also, Mike had brought several mounted ferns for a very reasonable price, and he said he didn't want to take any of them home.

The newly mounted staghorn

HIGHLIGHTS OF THE SEP. 6th MEETING.

On Tuesday, September 6, 2016, approximately 50 people attended our Annual Silent Auction. This was the second year that we also had a potluck with the auction. Because we need several tables to display the auction items, plus several tables for the potluck items, plus several tables at which people can sit and eat and chat, the Bamboo room just wasn't going to be big enough. Happily, Ayres Hall was free that night, and the Arboretum let us use it. So, we had plenty of room to spread out and enjoy ourselves.

Several of our friends from the San Diego Epi Society made the drive to join us: Jerry Moreau, Velma and Ron Crain, Beth Jackson and Janice Wakefield.

The auction tables had a great variety of plant material, including roughly a dozen dragonfruit varieties, a half dozen cacti, a half dozen bromeliads, a dozen plumeria varieties, several books, a few miscellaneous items, and of course many epis. There were a few epi plants, about 38 rooted cuttings, and a whole bunch more unrooted cuttings as well. We had a good variety of newer hybrids available from Jim Nones, Richard Klug, Evelyn Shiraki and Darryl Miyamoto. There were a couple rooted 'Chiba Lovely Dawn', a couple rooted 'Spiced Takuan', and several Kiwis.

Some of the premium auction items

We had another great potluck as well, enjoying everything from Evelyn's Chinese Chicken Salad, to Jeff's Tater Tot casserole and Jorge's potato enchiladas. Marrie made Mexican Lasagna, and Jim brought empanadas. There was chili and roasted chicken and eggrolls, and all types of desserts: bread pudding, apple streudel, cookies, brownies, even dark chocolate-covered ginger! I'm already looking forward to next year!

Enjoying the potluck

Styles of Epi Gardens

by Keith Ballard

Styles of epi gardens are often determined by the configuration of the area in which they are located. Within the gardens, the pot locations can be: 1) just on the ground or platform 2) hanging or 3) trellised. You would be surprised by the many different ways the epi pot locations exist in the many different styles of epi gardens.

This article will illustrate only some of the different garden styles created by growers for their epi collections, including different approaches for the necessary sun protection for the epiphyllums hybrids and species. In some cases, the gardens are not just on a flat piece of ground. Some epi collectors have to deal with another situation, such as a hillside. Hopefully this article will give someone who is making or expanding their epi garden some helpful suggestions to use or adapt.

First Some Historic Gardens:

(Photo 1) shows the greenhouse, or epi garden, of possibly the most influential ESA hybridizer of the 20th century, Wressey Cocke (WC). He hybridized and registered, or had others register 628 of his epiphyllum hybrid originations. Wressey in his home greenhouse. He is surrounded by epi plants, some hanging, some sitting directly on the ground and some sitting on an elevated area behind a concrete block platform in front of him.

(1) Wressey Cocke (WC) in front of his greenhouse

(Photo 2) shows George French (FRE) standing in front of one of the sections of his epi growing shed. George was probably the second most influential ESA hybridizer of the 20th century. There were three sections in this growing shed, divided by a stair-stepped row of epies. The shed was open at the ends, part of the back and part of the roof were of wood lath (narrow strips

of wood were a common material at the time used as the base for a plaster wall before wall-board was invented) facing the sun. The rest of the epies themselves are hanging or sitting on a low platform(s) and some are trellised. In fact, the picture shows a trellised epi sitting on 2 concrete slabs. *(Photo 2)* was taken 03/24/2003. *(Photo 3)*, taken 11/17/2005, also shows George in front of a wider view of the shed.

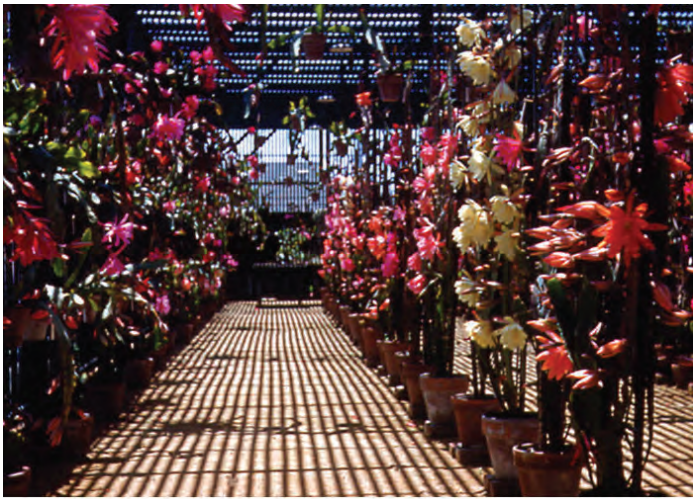
(2) George French in front of his epi shed left end

(3) George French in front of his epi shed

(Photo 4 & 5) show two rather surrealistic views of the Beahm Garden's (BHM) commercial green houses. These green houses are made of wood lath. The sun shining the open spaces between the laths makes the black-and-white pattern and is the sun protection. *(Photo 4)* clearly shows $3^{1}/_{4}$ inch pots sitting directly on the ground. I would guess that the larger pots are also on the ground. There are two people in this picture, just to the left of center; I would guess they are Sherman (on the left) and Shirley Beahm. I would also guess this picture taken well before my time, say late 1940's or early 50's. *(Photo 5)* shows another equally surrealistic view of a second Beam green house. I would assume the figure is Shirley Beahm because of the common hat between the two pictures.

(4) Inside one of the Beahm greenhouses

(5) Inside a second Beahm greenhouse



(6) An aisle at Fort & O'Barr's "Country Garden"

Next is an aisle in Fort and O'Barr's (FOB) commercial greenhouse "Country Garden" of the early 1950's, as seen in *(Photo 6)*. Here, the trellised epies sit right on the ground, in big clay pots no less. A lath house provides the required sun screening, and this green house was made of real lath with perfect spacing. Well, that was the 1950's. Fort and O'Barr's home was at the back and was connected directly to the green house. The house had a window through which one could see into green house interior. Due to a city ordinance problem this green house was never allowed to open to the public.

(7) A sales aisle at Hurst Nursery

(8) A private area at Hurst Nursery, with Ethel Hurst

A couple of areas in Hurst Nursery are shown next in *(Photos 7 and 8)*. The garden was actually divided into two parts, a sales area and a private area. A sales aisle is shown in *(Photo 7)*. There were raised benches with compartments along both sides of the pathways. The rooted cuttings for sale in alphabetical order were in the lower compartments, which were about waist high. I don't remember what the mature and blooming epies sitting on the higher level were for. If they were for sale, we didn't buy any, because at the time we could not afford them. These pictures were taken in the mid-1980s. *(Photo 8)* shows Ethel Hurst (HST) in a private area, surrounded by hanging and blooming epies. It's a little subtle, but the fence between the sales and private areas does show here. On the right, one can see the back of one of the display benches. You can also see larger epi plants sitting on the higher part of the display bench. Overhead the sun protection is provided by shade cloth.

More Recent and Mostly Still Existing Gardens.

When the Ballard's (K&PB) epi collection was threatened by a large falling branch of a Chinese Elm tree, for the second time, we decided it had to go. But it was also the epies sun protection, so some sort of a replacement would be necessary. We checked with the Los Angeles Planning Department to find how big a legal shade structure we could build in the back yard and the answer was one measuring 10 foot square in the middle of the yard. So we decided to do something else that would be relatively easy to remove if necessary.

The garden was to go in our backyard. Its description is as follows: The area in question is 22 feet wide. Starting at the back wall of the house, and going toward the back fence, there is two foot planter and then a 16 foot concrete and brick patio. Next is a 13.5 foot dirt area that ends in a four stepped concrete block wall, 44 inches high on the right and 67 inches high on the left. Beyond the wall is about four feet of flat space, which is stepped up to approximately match the steps in the wall. At each step of the wall, the area behind the wall on each side is bordered by a low concrete block wall, creating four dirt rectangles. And then, the last area is about a 45 degree slope that ends at the back fence. *(Photo 9)* shows the part of the garden from near the back of the dirt area and near the foot of the stepped concrete block wall.

(9) Piece of the Ballard's garden

First the shade cloth cover was fabricated. Its design is based upon the clothes drying lines that were in everyone's backyard before clothes dryers became common, two T-shaped poles with wires between. Here, the back poles support 4 by 4 inch wood beams as the top of the "T". This beam runs all the way across the garden, and the front support is actually the back of the house. One can actually see a green vertical support pole and a very short piece of the wood beam above it in *(Photo 9)*. The shade cloth cover and its support wires can also be seen in that picture. The shade cloth's six foot wide strips have been sewn into one giant piece. The wires along the free edges of the cover are actually chains to provide anchor points to keep the shade cloth from sliding around in the wind on the wires alone. Note that without any structure in the yard, the shade cover meets the legal requirement, and if desired, the shade cloth and wires are easily removed.

In the lower dirt area there are eight platforms of 2 by 4 inch rot preventative treated wood that mostly measure 99 by 32 inches. The platforms have support legs to lift them off the ground for snail protection. About the time the first platform was built, there was some talk in the ESA, that snails and slugs would not cross a copper strip. It was never proven. In addition, I would be setting mature plants on these elevated platforms, a few of which might have slugs hiding in the pots. If copper strips on the legs worked, I was trapping the hidden slugs on a platform with a lot of epies to eat. I opted then, and still do, for sprinkling snail bait on the ground and on the platform around where the legs connect.

With time the collection grew, more space was required, and the top of the concrete block wall and the area behind it were pressed into use. two more platforms were added, one on the very right and one on the very left. Both have a structure to support both shade cloth and hanging plants. The left part of the wall area is higher and it was felt that blooms on epies sitting on the left platform would be hard to see, so it has mostly hanging plants and a few basket plants which have no trellis. As one can see, from *(Photo 9)*, the right platform has all six inch pots sitting on the platform, along with the hanging plants. At the very left of *(Photo 9)*, one can see just a corner of one of the lower platforms and an example of a trellised plant.

Next is Don Burnett's (DB) garden. *(Photo 10)* shows a sample of the garden that includes the rather substantial shade protection covering. This structure is supported by two existing structures, a concrete block wall and the garage. The hybrids and species shown in the picture are certainly healthy-looking. *(Photo 11)* shows Don Burnett's stepped bench of mainly cactus

In the earlier years of the ESA a number of the members lived fairly close to the LA County Arboretum and Botanic Garden, and the many their home lots were large enough to have a number of trees. Some of these members hung their epies in their trees, which provided both support and sun protection. A current member Paul Richter (PR) is still doing just that *(Photo 12)*. The reader may remember Paul's May 3rd presentation on his garden, and the article in the Summer Bulletin, about his epies, fruit trees and Monarch butterflies.

(10) A sample of Don Burnett epi garden

(11) Don Burnett's stepped Bench of mainly cactus

(12) Paul Richter's epies in a tree

In Memoriam

In Memory of Betty Berg

(R to L) Betty Berg, Bob Berg and R.C Lasater

We recently received the following handwritten letter:

"Gentlemen:

I just thought I'd let you know that Betty Berg (My mother-in-law) passed away in 2012.

She used to live at 71 West Arthur Ave., Arcadia. CA. We keep getting mail for her, and you should stop sending it."

Betty Berg was a long-term member and volunteer for the ESA. The first time I find her listed among our members is in the 1977 ESA Roster. From September 1983 to August 1997, she was the Membership Secretary. She was very conscientious about this job. If you went past your renewal date, the Bulletins stopped coming until you renewed. But she did a number of other things also. She wrote a large number of wonderful responses for letters to the ESA. She helped her husband Bob with the extraordinary 50th year celebration issue of The Bulletin, Vol. 45, Issue 6 (July-Aug. 1990). Her titles after that are Fellowship Chair (1997–1999) and Hospitality Chair (1999-2004). So what we can find in the Bulletin record is 17 years of Betty volunteering for the ESA. I would suspect that in the years that she is not found in the various Bulletins, she was also volunteering, and the real span was at least from 1983 to 2004 or 21 years. That was real dedication.

In Memory of R.C. Lasater

R.C. Lasater passed away at the age of 84 on July 19, 2016. R.C. was born on December 5, 1931 in Riverside, California; he was a graduate of Riverside Poly High School class of 1949. In Sept. of 1949 he enlisted in the Army where he had a number of assignments. In 1950, he was sent to Korea as a rifleman. R.C. was the recipient of the Combat Infantry Badge, two Purple Hearts, and the Bronze Star for valor. R.C. rotated from Korea back to the United States in May of 1951, and had other stateside military assignments till he was discharged from the Army in October 1952. After the Army, he worked as a construction and iron worker, and went to school to become a physical therapist. He graduated from Children's Hospital School of Physical Therapy in November 1959. He was employed at the Long Beach Veteran's Hospital for three years. He started working at Riverside General Hospital in 1963 as the supervising physical therapist retiring in May of 1994.

RC enjoyed many activities. He was very proud and honored to have served as president of the Riverside YMCA. RC was also involved in YMCA Camp Lackey and the YMCA Indian Guide program. RC was a longtime member of the Kiwanis club of Uptown Riverside. RC first became licensed as an amateur ham radio operator in 1989, as N6WGO and has been a member of the Riverside radio amateur club since that time. R.C. and his wife Nancy, enjoyed traveling by automobile. They drove across the United States four different times and visited every state in the union. They also traveled a great deal by automobile in Canada.

R.C Lasater

R.C. and his wife especially enjoyed the hobby of growing epiphyllums, and they were long-term members and volunteers for the ESA. He is listed in the Bulletin 71 times, starting in 1955 for a winning flower at the Annual Show. In fact, a number of the listings over the years of R.C. and Nancy are for winning flowers and/or displays. Early on, R.C.'s leadership talents were recognized. In 1978, he was Program Chairman. Other positions followed: Director, Vice President, etc. and he served as ESA President from September 1980 to August 1983 ESA President. After 1983 the listings of wins at the Annual Show continued. In 2015, he surprised all of us by showing up to compete in the show. He is also shown in the picture in this Bulletin of Betty and Bob Berg.

(This Memoriam is from Don Lasater, R.C.'s son)

Notes on the life of the late Helmut Paetzold.

Helmut Paetzold was born in the East Berlin-Weissensee area in 1931. Until his retirement, he was a successful musician. He was a singer and drummer in the famous dance hall "Klaechen's Ballhaus." There Helmet met his endearing love, Gitti.

Even as a child he was inspired by nature and willingly helped in a neighbor's nursery.

There he saw an Epicactus for the first time; the red flowered 'Ackermannii Hybridus'.

In the 1950s Helmut started a cactus collection including several epies.

Helmut Paetzold holding his ESA Founder's Award

In 1974 he attempted his first crosses, which were quite successful. Then he began to hybridize these plants in earnest.

His first cross had a pink flower which he wanted to name Rosalie. A portion of his family name was added, and the hybrid was named 'Rosalie Paetz'.

The parents of many of his hybrids were crosses made by Walther Haage and Curt Knebel. He hybridized these with patience and expertise.

Over the years the "Paetz" family grew to over 250 members, all registered by the Epiphyllum Society of America. Many of his varieties have their own characteristics that identify them as "Paetz hybrids." Helmut was very critical of his creations if they didn't meet his specifications. Some of his criteria were: compact growth, multicolored flowers and free-flowering tendencies.

He also experimented with species plants such as Disocactus macranthus, Disocactus quezaltecus and Selenicereus anthonianus. These led the way to new flower forms, fragrance and colors, some flowers lasting up to 5 days.

Helmut Paetzold with Dr. Rudi Dorsch

Helmut Paetzold was one of the most successful hybridizers in Europe, perhaps even in the world.

In 2006 he was awarded the ESA Founder's Award.

Helmut was a happy man in life and was always ready to listen to what someone had to say.

We have lost a man who did magnificent work, but above all we have lost a lovable person.

(Rudolf Hessing Herick)

Some of Helmut Paetzold's Hybrids

'Agatha Paetz'

'Alexandra Paetz'

'Alice Paetz'

'Carmen Paetz'

'Astrid Paetz'

'Clair Paetz'

'Atreus Paetz'

'Cora Paetz'

'Daisy Paetz'

'Dolly Paetz'

'David Paetz'

'Doreen Paetz'

'Dietmar Paetz'

'Doris Paetz'

'Dr. Gottfried Gutte'

'Elmira Paetz'

'Dr. Rudi Dorsch'

'Elvira Paetz'

'Eleonore Paetz'

'Emilio Paetz'

'Gilla Paetz'

'Helmi Paetz'

'Hannalore Paetz'

'Isolde Paetz'

'Harry Paetz'

'Jan Paetz'

'Kai Paetz'

'Leonardo Paetz'

'Karolin Paetz'

'Lisa Paetz'

'Lena Paetz'

'Locke Paetz'

'Lotti Paetz'

'Marlene Paetz'

'Lou Paetz'

'Olga Paetz'

'Mariola Paetz'

'Pamela Paetz'

'Patricia Paetz'

'Puppi Paetz'

'Paula Paetz'

'Ramona Paetz'

'Peter Schåfer'

'Rolf Paetz'

'Rudolph Paetz'

'Veronika Paetz'

'Tina Paetz'

'Viola Paetz'

'Tom Paetz'

'Viviane Paetz'

'Wilma Paetz'

'Wolfgang Wilborn'

'Yellow Paetz'

A Rather Humorous Discussion on Plant Hormones

(From: Shmoop.com/plant-biology/plant hormones)

Just a little more on plant hormones.KCB

Teenagers aren't the only ones with raging hormones. Plants are full of hormones too, but luckily for them they don't get pimples. In plants, hormones are responsible for all sorts of things, like helping the plants sense light, forming lateral roots, and triggering flower development and germination, just to name a few. If a plant had a Facebook account, it might write updates like "OMG my axillary branches are shooting up so fast" or "just tricked a bee into pseudo-copulating with my flower, lol."

However, plants don't have Facebook, so they rely on hormones to be their messengers. Hormones are signaling molecules that are produced in small amounts and sent to other parts of the plant's body, like tiny messengers running around.

Why should anyone care about plant hormones? Plant hormones are really important in creating the green world around us, and providing the fruits we eat and other plant products we enjoy on a daily basis. Many things about plant hormones are still unknown, so it is a great field for a budding plant biologist (no pun intended…well actually it was, sorry).

Here we will discuss five types of plant hormones:

- **Auxin**
- **Cytokinins**
- **Gibberellins**
- **Abscisic Acid**
- **Ethylene**

Scientists were interested in how plants respond to light; if plants don't have eyes, how do they sense where light is and which way they should grow? It is a common observation that plants grow toward light, but for a long time no one knew why.

One of the first people to experiment with this concept was Charles Darwin, who along with his son, Francis, was interested in figuring out how plants respond to stimuli (in this case, light). They noticed that coleoptiles, which are sheaths that protect grass stems as they germinate, bend toward light. They tried covering the coleoptile with foil and found that when covered, the coleoptile didn't bend. When uncovered, it bent again! From this the Darwins concluded that the tip of the grass coleoptile senses light.

Even though it doesn't seem very exciting now, in the 1800s this was just as scandalous as Lady Gaga's meat dress. The idea that plants could do something as brilliant as respond to their

environment was shocking in an age when Man was exerting control on all things, wild!

Later work by another scientist, Frits Went, determined that the signal responsible for bending toward light was a mobile chemical, and Went went ahead and gave it the name auxin. These days, auxin is sometimes referred to by its chemical name, indoleacetic acid (IAA).

Auxin

Auxin does a couple different things in a plant, but its main role is to work with another type of hormone (cytokinins) to stimulate elongation of stems. If auxin is helping cells elongate, it is likely found in a place where a lot of new cells are forming. Where would that be? The shoot apical meristem, of course! The shoot apical meristem is a major source of auxin, but not the only one. Developing seeds also produce auxin, which leads to fruit development. When fruits such as tomatoes are grown inside greenhouses where there are no insect pollinators, synthetic auxins are used to help fruits develop normally.

Another commercial use of auxin is in the vegetative propagation of plants from cuttings. Instead of planting seeds, people can grow some plants by just cutting a leaf or stem; spraying the detached leaf or stem with auxin induces root production, and a whole new plant is formed.

Cytokinins

Auxin helps cells elongate, but it doesn't work alone. Auxin's partner in crime is a class of hormones called cytokinins. Cytokinins promote cell division (cytokinesis) and are produced in roots, embryos and fruits, or wherever there is actively growing tissue. However, cytokinins need auxin to induce cell division. The ratio of cytokinins to auxin determines where cells will develop. If cytokinin levels increase, shoots form; if auxins increase, roots form. By themselves, cytokinins don't cause any new tissues to form. Cytokinins do a couple other things too: they help delay aging in plants by increasing the amount of new protein that is made and decreasing the amount of old protein that is demolished. Because of this, cytokinins are sprayed in flower shops to keep leaves green and cut flowers fresh.

Gibberellins

Gibberellins are most important in stems, fruits and seeds. In stems, they work with auxin to cause stem elongation. Gibberellins and auxin also work in concert when fruit is developing. In fact, green seedless grapes are usually sprayed with gibberellins to make them bigger. Maybe that's what Snooki (a Chilean-American reality television personality) sprays on her hair, too.

Seeds have the problem of not knowing when conditions are right for germination; after all, they don't come with calendars and thermometers. Lucky for the seeds though, they do have lots of gibberellins, which are released after seeds take up water (perhaps after a heavy spring rain). After gibberellins are released, the outer layer of the endosperm releases digestive enzymes that break down nutrients in the endosperm. These nutrients feed the embryo as it germinates and grows into a seedling.

Abscisic Acid

It looks like a scary name, but abscisic comes from the word abscise, meaning to cut off or to fall away. On a plant, both leaves and fruits fall off, and abscisic acid (ABA), got its name because scientists originally thought that ABA caused leaves and fruits to fall off. It turned out later that other hormones (see ethylene, below) are mainly responsible for abscission, but the name stuck.

ABA does do some important things, even though it doesn't do what it's named for. ABA slows growth, and is the main player in seed dormancy. Since plants can't exactly nurse their young and sing them lullabies like humans can, seeds have to be a bit more independent than a lot of animal babies. In fact, seeds are so good at taking care of themselves, they don't even start growing until conditions are right (temperatures are warm, or there is a lot of rain, or they get free tickets to Disneyland). The abscisic acid in a seed keeps it dormant (sleeping, basically). Certain things, such as water, light, or even prolonged cold temperatures, cause the ABA to break down and cue germination of the seed.

ABA has another important role in plants: drought tolerance. When water gets scarce and leaves start wilting, ABA production is cranked up in the roots. ABA moves up the plant to the leaves. As it accumulates in the leaves, ABA causes stomata to close, preventing more water loss. When water is plentiful again, the ABA breaks down and stomata reopen.

Ethylene

Where would we be without ethylene? We would have many unripe fruits, for starters. And without ripe fruits we would have no strawberry milkshakes, pineapple-mango smoothies, or Fruit Ninja. Ethylene helps fruits ripen by making them softer, through the breakdown components of the cell walls, and sweeter, through the conversion of starches to sugars. Unlike the other plant hormones, ethylene is actually a gas and is distributed through the air, not through the plant body.

One of the coolest things about ethylene is that it is released in a positive feedback loop: a little bit of ethylene causes more to be released, which causes even more to be released, and so on. A benefit of this fact is that you can take an unripe fruit (a pear, plum, or peach, for example) and put it in a paper bag with riper fruit (bananas work well for this) and ethylene will accumulate, making the unripe fruit soft and sweet.

Worldwide, billions of dollars of produce spoils every year before it is eaten. Thanks a lot, ethylene.

organicgardening.about.com/od/compost/a/LeafMold.htm.

Study of Mix Compositions

by Keith Ballard

The Continuing Story…

The reader might remember from the last Bulletin, that the ongoing part of this study is concerning the impact on epi flowering of using some different ingredients in planting mix. This report is actually in two parts. The first is some results of last years' repotting of some mature plants with 'Kellogg Shade Mix' (KG) and second, seeing some early results of Part 1, repotting using a number of different ingredients as repotting mix.

Part 1. The table below was intended to show the blooming impact with the use of KG in repotting a sample of mature plants. For the sample plants below I have blooming data for before repotting in 2015, and the blooming results this year.

PLANT NAME	# OF BLOOMS In 2015	# OF BLOOMS In 2016
'Bound for Glory'	**2**	**0**
'Easy To Love'	**2**	**0**
'Ferris Wheel'	**7**	**0**
'Jallsco Grace'	**0**	**8**
'King Midas'	**2**	**1**
'Professor Ebert'	**3**	**1**
'Romantic Night'	**5**	**5**
'Souzan'	**5**	**0**
'Vanilla SUnset'	**2**	**2**

The data trend here seems to indicate that, the mix may be too acidic for most epies to bloom well, but causes great growth. But for the results to be valid, only one variable, namely the substitution of the KC mix, should change. But, the uncontrollable variable of the weather also appeared to have changed with cycles of hot and cold. A change from normal was indicated by the fact that the number of flowers at the May Annual Show was about ½ normal, and many other kinds of plants "acted like they didn't know" what season it was. In fact this change from normal was noted as early as the Volunteers' Outing on Oct 25, 2015 when the owner/operator Jim Haddad of the Storrier-Stearns Japanese Gardens told me the quoted statement. Thus, the above table has, at best, suspect validity.

Part 2. Even before general flowering, which was late this year, I had decided to try some different mixes. I tried to start with KG, but luckily I found that Home Depot had stopped carrying the big bags (1.5 cubic foot) of the KG Shade Mix and I could not find another close source. So I bought just a small bag just to try some different KG mixes and I only tried two mixes on a small number of repots.

When I went for fresh repotting supplies I found that leaf mold had returned to the marketplace and I dropped coir for use in repotting and now use leaf mold as part of all mixes.

Then, early in the 2016 flowering season, I had the feeling that with the use of KG mix and KG's organic fertilizer, the plants were more inclined to grow a lot rather than bloom. This had been verified by Part 1 above. The list of contents of the "LGM Potting Soil" and the "KG Shade Mix" subtitled "For Acid Loving Plants" includes much of the same materials. These include Canadian sphagnum peat moss, ground bark, composted or recycled wood or forest products and processed feather meal. The LGM potting mix is effectually organic, but not certified like the KG products. The big difference is the composition of the fertilizers. Many of the chemical fertilizers are just that, chemicals. The KG "All Purpose Fertilizer" contains many of the same ingredients as the "KG Shade Mix" plus processed Poultry meal, from which the N-P-K compounds and values come from, plus Dehydrated Poultry Manure, which is known to have a high nitrogen content.

I eventually decided to try a number of repot mix variations for this years' repotting. The mixes are:

Mix-1: 2 Parts LGM, 2 parts coir, 2 parts Perlite(large), 1 part bark, chemical fertilizer

Mix-2: 2 parts KG, 2 parts coir, 2 parts Perlite(large), 1 part bark, KG fertilizer

Mix-3: 2 parts KG, 2 parts Leaf Mold, 2 parts Perlite(large), 1 part bark, KG fertilizer

Mix-4: 2 parts LGM, 2 parts Leaf Mold, 2 parts Perlite(large), 1 part bark, chemical fertilizer

Mix-5: 3 parts LGM, 2 parts Leaf Mold, 2.25 parts Perlite(large), 1 part bark, chemical fertilizer

Mix-6: 2 parts LGM, 1 part Leaf Mold, 1.25 parts Perlite(large), 1 part bark, chemical fertilizer

Mix-1 is the standard mix I had been using up to late April 2016. Mixes-2&3 were a comparison to find the better choice of the two. Mix-4 was the first attempt to reduce the acidity when I suspected the flower reduction of Mixes-2&3. Mix-5 was to further cut the acidity of Mix-4 and Mix-6 was to further cut the acidity of Mix-5.

It's a "shoot-out" folks, let the best mix win!! We may know next year!

2015 Registrations part 2

Hybridizer Key	
HP	Helmut Paetzold
DP	Don Patterson
MP	Mark Piette
PR	Paul Richter
SHI	Evelyn Shiraki
STEGNER	Fred Stegner
WATTS	Harold Watts
WW	Wolfgang Wilborne

'Spider Castle' - DP

'Elvira Paetz' - HP

'Lotte Lenya' - MP

'DonOro' - DP

'Canyon Sunset' - PR

'George P. Burdell' - PR

'Turbo' - SHI

'Splash' - PR

'Auld Lang Syne' - STEGNER

'Breeze' - SHI

'Fredericka' - STEGNER

'White Chocolate' - STEGNER

'Wowi's Grossrenediger' - WW

'Sea Nymph' - WATTS

'Wowi's Hochvogel' - WW

'Wowi's Granatspitze' - WW

'Wowi's Hoechstein' - WW

'Wowi's Liskamm' - WW

'Wowi's Mt. Everest' - WW

'Wowi's Maedelegabel' - WW

'Wowi's Nebelhorn' - WW

'Wowi's Monte Moro' - WW

'Wowi's Parrotspitze' - WW

'Wowi's Peitlerkofel' - WW

'Wowi's Pilatus' - WW

'Wowi's Penegal' - WW

'Wowi's Pizol' - WW

'Wowi's Pfaender' - WW

'Wowi's Pleschnitzzinken' - WW

'Wowi's Saentis' - WW

'Wowi's Stockhorn' - WW

'Wowi's Soparis' - WW

'Wowi's Surettahorn' - WW

A Letter to the ESA

Hi there Geneva,

I enjoyed browsing the minutes from the winter meeting. For the record, my husband and I have long been epiphyllum fanciers. I grew up in the Bay Area, and my father had a large Padre epiphyllum on his front porch that was his pride and joy. It would often have 100 buds on it at a time. People would often stop their cars and come up to the house to ask him what it was and he was always happy to give them a cutting. Then my husband and I lived for a number of years in San Diego where a whole world of epis opened up with the San Diego Epiphyllum Society and the many epi enthusiasts in the area (not to mention the greenhouses at the San Diego Zoo and Wild Animal Park). We turned my father on to quite a number of other varieties and had quite a collection ourselves on the small apartment balcony we had as newlyweds.

30 years later we now live outside of Seattle, where raising epiphyllums pretty much requires a greenhouse to make it through the frosty winters. We are on the threshold of buying our first good sized greenhouse so I have been collecting cuttings to re-establish our collection. We obtained a "NO ID" eipiphyllum that we finally got to bloom (looks like 'Wendy') so that kicked off this latest wave of "acquisitive lust" we have for epiphyllums. Few people know what they are up here and if you are lucky enough to find a plant, it's rarely identified as to what the name of the hybrid is, so we are sticking to fully identified plants from now on.

So I am busy tending my little cutting collection in hopes that by the time I retire in a few years, we'll have a nice space in which to enjoy a good book and a cup of coffee surrounded by mature epiphyllums that give us so much pleasure.

Thanks again for your help. I hope to make it to a meeting someday so perhaps we'll eventually meet in person.

Best wishes,
Glenda Brown
Ravensdale, Washington

YOU ARE INVITED!

ESA's Annual End-of-Year Meeting and Holiday Gathering

Date: Sunday, December 18, 2016
Time: 12:00 noon until 4 pm
Place: Coco's Bakery and Restaurant
Oak Tree Room
1150 West Colorado Boulevard
Arcadia, CA 91006

Just south of the 210 Freeway, exit Michillinda. It's at the corner of Michillinda and Colorado Blvd

Members and their guests will enjoy a special buffet dinner which includes:

Fully loaded salad bar
Prime Rib
Dijon Chicken
Baked Salmon
Mashed Potatoes
Rice Pilaf
Mixed vegetables
Fresh baked bread
Beverage bar
Dessert bar
Option to purchase beer or wine

Members will enjoy a discount price of $30
You may also bring a guest for the same price.

There will be an optional $10 gift exchange. Gifts should be horticulture-related.

RSVP to Geneva
909-438-8242

Payment in full in advance is appreciated, or a $10 per person deposit will hold your reservation.
The balance may be paid at the door.

Don't delay. Make your reservation today! Mail your check to:

Geneva Coats
ESA Treasurer
13674 Geranium St.
Chino, CA 91710-5080

For your convenience, you may also make your reservation using a credit card via our Square Market store:
https://squareup.com/store/epiphyllum-society-of-america/

Calendar *of* Events

October 2016

ESA BOARD MEETING **Tue, Oct 25, 7:30 pm**
Location: Arboretum of LA County, Bamboo Room or conference call at 7PM.

November 2016

ESA GENERAL MEETING **Tue, Nov 1, 7:30 pm**
Program: Frank McDonough, The Arboretum Botanical Information Consultant: "Cactus Diseases and Pests"
Refreshments: Members with last name starting with St thru Th the Nov. meeting is your turn to bring snacks, help serve and clean up.
Location: Arboretum of LA County, Bamboo Room.

Pentico Work Party **Sat, Nov 5, 9:00 am**
Location: Arboretum of LA County, Contact: Ken Hanke 818-239-6479

ESA BOARD MEETING **Tue, Nov 29, 7:30 pm**
Location: Arboretum of LA County, Bamboo Room.

December 2016

ESA Christmas Luncheon **Sun, Dec 18, 12:00 Noon**
Location: CoCo's Bakery and Restaurant, Oak Tree Room
1150 West Colorado Boulevard
Arcadia, CA 91006

January 2017
No General Meeting

ESA BOARD MEETING **Tue, Jan 31, 7:30 pm**
Location: Arboretum of LA County, Bamboo Room or conference call at 7PM.

February 2017

ESA GENERAL MEETING **Tue, Feb 7, 7:30 pm**
Program: TBD
Refreshments: Members with last name starting with V thru Ba the Feb meeting is your turn to bring snacks, help serve and clean up.
Location: Arboretum of LA County, Bamboo Room.

Refreshments Schedule

To find when it is your turn to bring refreshments for an ESA meeting, look for your last name initial in the column to the left. The meeting date to the right is when you have the privilege of providing food, serving and cleaning up. Please, note that name listing is often completely revised for each Bulletin.

LAST INITIAL	MEETING DATE
St-Th	Tue, Nov 1, 2016
V-Ba	Tue, Feb 7, 2017
Bd-Cr	Tue, Mar 7 2017
D-Ha	Tue, Apr 4, 2017
He-Ku	Tue, May 2, 2017