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The Bulletin

Epiphyllum Society of America

Founded May 5, 1940

International Registration Authority — Hylocereeae Cultivar Group

'Captain America'

Hybridizer: Gary Branfellner, ESA Registration: # 14747

Parentage: 'America Sweetheart' x 'Shimmer'

Photograph: Jim Nones

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FOR INQUIRIES: Send an email to genevacoats@aol.com. **ROSTER CHANGES** or other membership issues: send them to the Membership Secretary.
MEETINGS: Begin at 7:30 p.m., on 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 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: Linda Sinkovic
LAYOUT & DESIGN: Charleen Ballard Rice

The Board currently meets monthly, on the last Tuesday of the month at 7:30 P.M. in the Lecture Hall B, 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.

Special Notice!

Word has been received that Dick Kohlschreiber has passed. Memorials will follow.

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by Keith Ballard

Highlights of the February 4th 2020 Meeting: This was an unusual meeting as it was a memorial for President Robert Kuettle and longtime member Shirley Marneus. Jim Nones had worked very hard to decorate the meeting room with memorabilia for both Robert and Shirley.

Robert had been Vice President of the ESA from 9/2013 to 8/2015 and President from 8/2015 to 12/2019. He once told me that he was introduced to epiphyllums when he (Robert) was 18 years old by Galen Pittman.

Robert hybridized a large number of new epiphyllum hybrids. In addition to his presidential duties Robert donated quite a bit of his free time to various activities for the ESA. For example he spent a lot of time at ESA's epi garden at the L.A. County Arboretum, he did the artistic layout of the ESA's news letter, **The Bulletin,** and he oversaw the annual May Flower Show.

Jim had invited a large number of relatives and friends of Robert's to the meeting. There were 3 brothers in the Kuettle family, Robert was the youngest and next was Randy. Randy wrote Robert's eulogy and spoke at the meeting. He did relate some parts of the eulogy but he also gave us some insight on how he and the oldest brother kept the "baby of the family" (Robert) in line as they saw it.

Randy Kuettle

Robert Kuettle Eulogy, February 4th 2020

Thank you for the honor to speak before Epiphyllum Society. A few weeks ago, this event was not on your schedules. You had plans, commitments, priorities, and responsibilities. Yet, everything has come to a screeching halt. Something significant has taken place. Your being here is evidence that Robert's life touched you in significant ways. It really makes it obvious that what really counts most in life is relationships. Loving and being loved is Important to relationships. I know everyone loved Robert: those in the Epiphyllum Society, all of his co-workers, family, and friends. His achievements and contributions to the Epiphyllum Society will always be a benchmark for a high level service and standards. One's volunteer service is always a high virtue because it comes from the heart. My brother timelessly poured into the Society and the Kuettle family is grateful for this distinct recognition.

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Robert's Eulogy and Recent Meetings

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The Story of Robert. Robert Bernard Kuettle was born to Herman and Armel Kuettle April 26th 1960 and passed January 25th, 2020. Robert was the youngest of three boys. We receive our gifts from our parents, who were also gifted. He was my baby brother. His kind and thought domineering way was always a part of who he was from a child. He was really smart academically in school. I was jealous of Robert and my older brother Danny. They both excelled in school. As the middle son I was struggling. Why did I not receive the same smarts? Robert had it all, maybe my share? My mother use to tell me why can't you be like your brothers? I just came to the conclusion I could not compete with the two brains. I called it a "pass-over." I have lots of fond memories of Robert. On vacation I remember we used to travel by car and he would start to sing, "bees wax business, what kind do you like?" I'm not sure where he got this phrase but over the hours traveling in the car it became very irritating. Robert was a great artist in more than one way. He played the clarinet in the Montclair High School band where he made the number one chair. He painted, made ceramics, and drew with chalk. One of his first jobs was with Oley's Hardware. He worked in the advertisement department using his art skills. There was no graphic arts software or computers to draw with, he simply drew pictures of the items that were copied to the sales advertisement ads. I remember my mother showing me an ad one day with Robert's drawing of a chain saw. She was so proud. When I asked Robbie about it he was very humble. That's who he was very humble about his gifts and accomplishments. After high school Robert received his Art degree from L.A. City College. Through his career as a graphic artist, he was very accomplished.

Reflecting over the last few days my brother's life is a story, his story. His story has a beginning and end. It was full of adventure, struggles, love, and loss. The loss of Robert and any person always sets off something in all of us. Why is that? That's because we have eternity in our hearts. Ecclesiastes: 3:11, "He has made everything beautiful in its time, Also He has put eternity in their hearts.

We won't begin to understand our lives until we understand the story we find ourselves in. When you were born you were born into and epic story also, God's story. This story has been going on for quite some time. It's a story, of beauty, intimacy, and adventure. It's a story of loss and redemption. It's found in a created world of the spiritual realms and the physical realm. It's in a world where terrible things happen and wonderful things happen also. It's a world of good agents, evil, love agents of hate, light against darkness, and order agents of chaos. There are times of great struggle to identify who belongs to which side. It's a world where the battle ultimately go's to God. God prevails!

So how does your story unfold. Robert's story, came to play in this grand story that seems much greater than us? I know Robert was not a very spiritual person and maybe you're not either. However, when our stories end here on earth I know heaven awaits those who accept Jesus as Savior. The gospel of Jesus is an invitation to restore intimacy between God and all of us. Concluding a relationship with God and His Son Jesus is the most important relationship you could ever have. My hope and prayer is for all to come to the truth of a God that loves us and accept His provision of forgiveness through Jesus Christ to receive eternal life!"

Shirley Marneus

Shirley Marneus Shirley was an artist, and using her artistic talents in competing in the floral arrangements sections of the Annual Show, she won quite a few ribbons. In fact, She won a ESA special award in floral arrangements in 2007, which was the first time she had won an award. She was also a performing-artist .

Shirley Marneus, who founded Theater Arts at the California (Institute of Technology (TACIT) and directed stage productions at Caltech for more than 20 years, died on January 13. She was 84.

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Highlights of Recent Meetings

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Brian Brophy, director of TACIT since 2008, said, "Shirley's devotion to theater at Caltech inspired so many of us. Her commitment to making live theater and her passion for classical theater, Shakespeare, musicals, and so much more lives on in generations of "Techers" {Cal Tech).

Marneus, who received a Bachelor's degree from San Jose State University in 1959 and a Master's degree from the State University of Iowa in 1962, went on to work for the Pasadena Playhouse and NBC's Jack Benny Show before joining Caltech as an assistant in the Public Affairs Room (now part of the campus library) in 1970.

She directed her first theatrical show at the Institute—Kiss Me Kate—in 1974 at the request of a group of students. According to a biographical sketch Marneus wrote in 2001, "they learned that I had a degree in Directing, that I had been at the studios, and that I had left NBC, and asked me to help."

In the years that followed, Marneus helped produce many more plays, ultimately creating TACIT in the mid-1980s to provide students a formal theater program that had "a didactic purpose as well as an entertainment purpose: to familiarize people with essentially 3,000 years of theatrical literature," she wrote.

Describing her as "the soul of the theatrical program" at Caltech, Jose Helu (BS '79) said, "There was a warmth in everything she said and did, which extended to the cast and crew, inspiring them also to be the best people they could be [and] to do the best job they could do."

Bruce McLaughlin (BS '77), who worked with Marneus on more than 20 shows, recalled her ability to coax strong performances from often inexperienced actors with encouragement and enthusiasm.

"She could hear the same stupid joke through 50 rehearsals and six performances, and still react with a natural laugh as if it was the first time she had ever heard it. That level of audience interaction with the actors is a magic potion, bestowing confidence and energy, bringing out performances that top those of professional actors," he said.

Although Marneus retired from Caltech in 2007, many former students and cast members describe how her influence on their lives remains strong even today.

Highlights of the March 3, 2020 Meeting. The program for this meeting was a video presentation of one by Linda Sinkovic entitled " Hybrids – Recent & New From California Hybridizers. It was a beautiful, but long, presentation with 192 slides,. 24 samples from that presentation are included in this Bulletin, identified by flower name and photographer. However, be aware that the photographer may not be the originator. The pictures can be found on pages 27-29

One of Shirley's Winning Non Traditional Arrangements

Gumbii Garcia receiving Gumbi doll from Maria Schmidt

The Annual ESA Christmas Dinner

By Keith Balllard

The 2019 Annual ESA Christmas Dinner was held December 8th at the same restaurant we have used for years. And that was a bit of a surprise because we were told last year that the land had been sold. And, with the local building boom, the restaurant would soon be demolished for to make room for something else. I guess that could still happen.

Geneva had made the table decorations. They were tiny pots planted with succulents for all to take home.

Robert was not feeling well and was not there, and had not selected anyone for the Alice Buchanan Award. At that point I don't think any of us suspected just how close to the end Robert was.

Geneva gave the after dinner announcements.

We then had the gift exchange, which included a special gift of a Gumbi doll to Board member Gumbii Garcia by member Maria Schmidt. Apparently the Gumbi doll had been in Maria' extended family for some time. The picture of the exchange can be found on page 22.

The gift exchange was the conclusion of the evening, and apparently a good time was had by all.

ESA 2019 Christmas Dinner Pic. 1

ESA 2019 Christmas Dinner Pic. 2

Rudi Dorsch Robert Kuettle

Keith Ballard and Robert Kuettle

Culture Calendar for Late Winter/Early Spring

by Keith Ballard

Normally, the Culture Calendar describes a pretty much routine activity and timing. However, since just after Robert and Shirley passed, **NOTHING HAS BEEN NORMAL**. I do not consider wearing a face mask "normal", or to hear strong suggestions to stay in my house as much as possible "normal", or spend three quarters of an hour in line waiting in line to get into Costco "normal". And it certainly is not normal hearing daily about the growing number of people sickened and killed by a deadly pandemic.

If you do not know what "pandemic" means, "it means a disease prevalent over a whole country or over the whole world". In reality pandemics are not that rare. Historically there have been 17 recorded. The first recorded pandemic was in Athens, Greece in 430 B.C. There may have be others earlier, but that data is now lost to history. Pandemics have happened somewhere in the world about once a generation since 1492 A.D.

And, I am sure every one of you has had your life disrupted and changed by this pandemic, I just hope none of you has some tragic news to tell us. But our epies are not effected by this pandemic. So we need to keep treating them the same as normal, at least for the most critical issues.

Watering Even in the middle of this pandemic, watering is the most important issue for epies. Epiphyllum roots should not be allowed to be soaking wet or completely dry, for any length of time. Watering should be "business as usual" at this time

Pests Mainly snails and slugs are the issue here, because of the damage they do. It is really maddening on the evening before a show,to find small holes in a flower which might have been a winner. It is a good practice – and not really a big effort – to spread snail bait around the epies' pot and/or around the place where the legs are fastened to a platform. Controlling the snail and slug population in an epi garden is really important.

Keep the Garden Weed Free The guidance here has been "eliminate the weeds while they are small, and it will prevent having to do something heroic like repot the plant". Well with my hard drive crash, trying to learn how to use the replacement computer programs and doing my taxes, the weeds, behind the stepped wall, were ignored .On top of all of this are all the life changes due to the pandemic. The weeds have really gotten out of hand. **There is a very clear message here, don't ignore the weeds in the epi garden**.

Repotting With repotting we finally have some choice:to repot or not to repot, or when to start repotting. I normally repot at 5 year intervals, and do the repotting of the given plant shortly after it has finished booming at its 5th year. I also will repot any epi that "looks" bad at any time. This year will all that is going on, I probably will be late in most cases.

Are Our Epies a Rainforest or a Jungle Cactus?

When people ask what is an epiphyllum, many of us answer a "Rainforest Cactus". But are they not also a Jungle cactus?, and if not why not.

The difference is that the words "rainforest" and "jungle" describe a different growth pattern for a given area.

A **jungle** is an area that's densely overgrown with trees and tangled vegetation, usually in a warm place with high rainfall. The ground are thick with vines, shrubbery, and tons and tons of insects, making it super difficult to make your way through one. The term "jungle" however, is a descriptive term, not a scientific one it doesn't actually refer to a specific ecosystem.

But the word **"rainforest"** does. A rainforest**,** like a jungle, is filled with thick vegetation but unlike a jungle, it has a layer of tall trees, called a canopy, that blocks out most of the sunlight. This canopy prevents light from reaching the ground, inhibiting the growth of plants on the forest floor. So while jungles have a lot of stuff happening below your feet rainforests don't. Most of the action is happening in the trees above.

Rainforests are Earth's longest-surviving ecosystems, with some areas have lasted in their present form for 70 million years

Tropical and/or **temperate rainforests** can be found on every continent besides Antarctica.

Tropical rainforests sit between the Tropic of Cancer and the Tropic of Capricorn, and they are hot and super humid; the temperatures fall between 70°F and 80°F year-round, with an average humidity of 77% to 88% and 80 to 400 inches of rain per year.

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Rainforest or a Jungle Cactus

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Temperate rainforests, on the other hand, are found in mostly coastal, mountainous areas; they get their rain when the moist, hot air that comes off of the coast gets trapped by the nearby mountains. The temperatures in temperate rainforests are usually between 50°F and 70°F, and they receive between 60 to 200 inches of rain per year. You'll find these in places like the Pacific Northwest, Chile, the United Kingdom, Japan, New Zealand, and southern Australia.

These descriptions, though, don't quite illustrate how important these areas are to the Earth's well-being. So here are some facts to take with you, and some context for today's current events:

o Rainforests cover only 6% of the world's surface but account for more than half of the world's plants and animal species. A 4-square-mile patch can contain as many as 1,500 flowering plants, 750 species of trees, 400 species of birds, and 150 species of butterflies. The Amazon rainforest itself is home to around 40,000 plant species, nearly 1,300 bird species, 3,000 types of fish, 427 species of animals, and 2.5 million different insects.

o A new plant or animal species is found in the rainforest approximately every 2 days.

o Since it's so damp and hot on a rainforest floor, things decompose super quickly down there; a leaf that might take a year to decompose in another environment will break down in only 6 weeks.

o Rainforests produce 20% of the earth's oxygen, and they store a huge amount of carbon dioxide. They also absorb lot of solar radiation, helping to stabilize temperatures around the world.

o Since 1947, the amount of the earth's rainforests have been reduced by half. Approximately 100 acres are cleared per MINUTE for agricultural or industrial development.

o Rainforests are so densely packed with vegetation that a drop of rain falling from the top layer can take 10 minutes to reach the forest floor.

o Lions are called the "King of the Jungle," but they're not actually found in the jungle, they live in savannas and grasslands.

Snails of Los Angeles County

Editor's note: Reprint from ESA Bulletin Vol. 52 Number 1, Autumn 1996 of a presentation by Joe Cocke (Wressey Cocke's son), written by Raymond Eden. KCB

Ever feel the fight to control snails is a loosing battle? There's a reason, and Joe Cocke shared it with us at the August 1996 general meeting. It has to do with the curious sex lives of these gastropods. They are hermaphroditic, meaning each one has both male and female reproductive organs. They are not self-fertile. They must mate, but after mating, they both lay eggs! No wonder we can't keep up.

While the affable Mr. Cocke's talk probably didn't win too many converts to the "Snails Make Good Pets Club," it was reassuring to learn that of the fifty species of land snails in Los Angeles County, only two are serious pests. The rest are harmless, eating only decaying vegetable matter.

The brown garden snail *(identifiable by its' brown shell with longitudinal and variable black striping)* is the most common offender.

Geneva Coats and Robert Kuettle

'I Dream of Jeanne' photo by Don Burnett

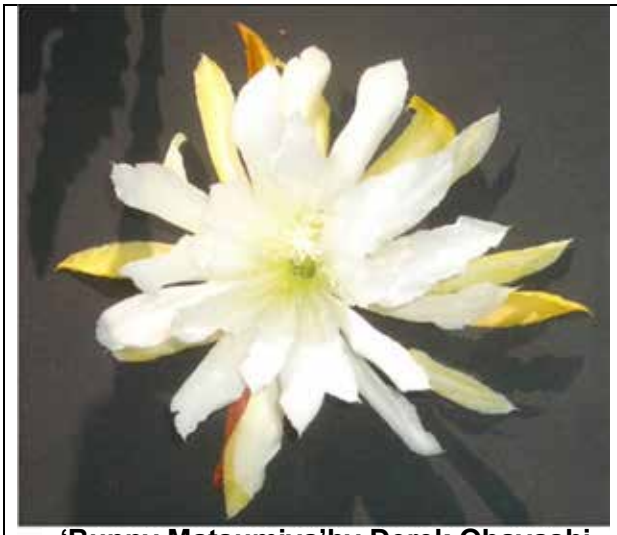
'The Red Shadow' by Don Burnett

'Love Potion' by Don Burnett

'Alan Obayashi' by Derek Obayashi

'Lycorias' by Don Burnett

Seedling Cross 35-1 by Don Burnett



‘Bunny Matsumiya’by Derek Obayashi

‘Flying Silk’ photo by Don Patterson

‘Linda Sinkovic’ by Derek Obayashi

‘Mark Sumpter’ by Derek Obayashi

‘Mandy Knaras’ by Derek Obayashi

‘Mouseketeer’ by Don Patterson

'Arizona Sunrise' photo by Keith Ballard

'Astronaut' by Keith Ballard

'Autumn Frost' by Keith Ballard

'Awesome' by Keith Ballard

'Bacchus' by Keith Ballard

'Amber Queen' by Keith Ballard

'Argus' by Keith Ballard

'Absolute Treasure' by Keith Ballard

'Acapulco Sunset" by Keith Ballard

'Afro Desia' by Keith Ballard

'Ambrosia' Cluster by Keith Ballard

'Anton Gunther' by Keith Ballard

Epiphyllum Insect Pests

by Keith Ballard

As plants go, epiphyllums have relatively few insect pests, but the common ones we do have can be quite devastating. This article is the second of a series on pests.

Snails and Slugs I have often said that "Epies are the world's finest snail food". Unchecked, snails have been known to devour a whole epi plant. It really is a bad feeling to find a snail or slug has eaten a hole in a potential winning epi bloom the evening before an Annual Show.

The brown garden snail, article Snails of Los Angeles County identified in previous Bulletin Vol. 65 No. 1) is the biggest offender in Southern California, but slugs are a close second. It is my observation that snail and slugs are much less active during winter's cold, but watch out during warm periods.

Control: There are a number of approaches to control. The most "green" approach is to water first, including the surrounding area. Then later in the evening, use a well placed foot for snails and, pick the slugs off the plants with a *Kleenex,* crushing them in the process. Evelyn Shiraki has been known to prowl her epi collection with a squirt gun loaded with ammonia, and squirt any slugs. It kill them instantly, the plants don't seem to mind as any drippings become fertilizer. The various commercial baits are fine, but the safest for pets and birds is the meal form. I think that Metro Corp's:*Thats-It Dry Snail Bait* is best, but it's fairly expensive and available in both meal and granular form.

Hanging a epi reduces access to the plant for these pests. There are stories that copper bands on the legs of a plant platform or pedestal will stop snails and slugs. I don't know if this is true or not.

Scale Insects In the world there are about 8,000 scale insect species. These insects are of the order Hemiptera, generally classified as the Superfamily Coddoidea. Some scale insects are toxic to epies. For example, a Florida red scale attack combined with an excessively rainy year destroyed my epi collection in 2004.

Most scale insects are parasites on plants, feeding on sap drawn directly from the plant's vascular system and, *over time,* can do a lot of damage. Scale insects vary dramatically in their appearance from very small organisms (1-2 mm) that occur under wax covers (some look like tiny oyster shells), to shiny pearl-like objects (about 5 mm), to creatures covered with mealy wax. Adult female scales are almost always immobile and permanently attached to the plant they have parasitized. They secrete a waxy coating for defense; this coating causes them to resemble reptilian scales or fish scales, hence the name.

Scale insects have a three-stage life history: egg, larva (or nymph), and adult. Eggs are laid by females, with the eggs usually retained in the body and under the outer "scale" covering when the female dies. These hatch into the mobile nymphs, called crawlers. The crawlers are the active stage that can move around on and between plants. After finding a suitable place for feeding, the crawler will settle and begin feeding, and transform into the next nymphal stage. At this point the female begins to form the hard protective "scale" covering. The covering enlarges as the insect grows. Nymphs often have a light yellowish scale, which darkens to tan or brown as the insect matures. Males of soft scales do not form the hard coating or scale, but are small winged creatures whose primary, if not sole, role is to mate and die.

Scales have short life cycles, but may have many generations per year. In a winter protected warm greenhouse or indoors the life cycle may be accelerated. Though typically a month or more is required for completion of a generation. It is the overlapping of generations that creates the biggest scale management problem. All control methods are at their greatest effectiveness against the crawlers. By the time the scales have formed the soft waxy and later hardened cover (the scale), it's too late to easily kill those adults with chemicals. Also be aware, the large dry brown scales are already dead. These "shells" may be full of eggs which will spill out when the shell is ruptured.

Control: Scale rarely forms on a healthy epi with good air circulation. Try to avoid having touching overlapping branches or other places where there is little or no air circulation. Do not crowd plants together so that their branches overlap and touch. The back of a branch or other places where there may be little or no circulation should be carefully watched. It is also my observation that a stressed epi is more susceptible to an attack of scale than is a healthy one. In fact, scale is one indicator of a stressed plant. A non-touching separation of epi plants has another benefit, as it makes it difficult for the crawlers to infect nearby plants. Crawlers cannot fly.

Methods to remove scale varies with the size of your collection, but remember that because of the short reproduction cycle of scale, any removal

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Insect Pests

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method must be repeated at 1 to 5 weeks intervals. As a special note, remember to treat the sides of the branches.

For a small collection, or a few infected plants, you can use ordinary rubbing alcohol on a *Kleenex* (or the like). Rub the infected branch with the wet *Kleenex* and the scale will drop off, and the plants don't seem to mind. You may have to pick the already dead large hardened scale shell(s) with a fingernail, but rub the now cleaned area(s) with the alcohol to kill any eggs that might be there. If the branches are thorny you probably will want to spray them. Again for a small collection, one can spray 50/50 mixture of alcohol and water. Some growers have reported some success with horticulture soaps, which smothers the scale.

For larger collections spraying is probably in order. Here an insecticide may be used, but not all insecticides are safe for epies. They also may be toxic to humans and pets. I know that *Malathion is* safe for epies. At 1 tablespoon per gallon of water, it can be used to water an epi or as a root dip for killing mealy bugs or for spraying for scale. However, with any insecticide in order to deal with the scales' waxy coating, add a tablespoon per gallon of *Ivory dishwashing soap* to the spray mixture. Any dead shells will still have to be scrapped off with a fingernail.

To me, a better suggestion was recently made by ESA ex-president R.C. Lasater of using *Orange oil,* which is also used to kill termites. I bought and used some *Orange oil* at the label dilution of 2 oz/gallon of water. It does kill the scale without adding the soap. But, like the insecticides the dead scale does not fall off. As with the others sprays, the large dead shells still have to be dealt with by hand. However, an additional benefit of *Orange oil* is it is nontoxic and biodegradable and is available on line or sometimes at your favorite nursery..

Staghorn Ferns

By Keith Ballard

Tony Yanko gave me a piece of a staghorn fern and I put it in my epi garden. It turns out that staghorns are an epiphyte and quite at home with the epi light and watering. A picture is of this cultivar is included in this **Bulletin**. The 2 kinds of leaves are quite apparent from the picture. (*The following material is directly off the internet and credited to Dr. T Ombrello of the UCC Biology Department.) KCB*

Common names: Staghorn fern, Elk's horn fern, Antelope ear

Scientific name: Platycerium species

Explanation of scientific name:

Platycerium - the Greek word for broad-horn

The 17 species of Staghorn ferns represent one of the most unusual groups of ferns. The leaves of many of the members of the Staghorn genus (Platycerium) are antler-like in appearance rather than like a typical fern's foliage. Once seen, it becomes apparent why the common names and the scientific name for this group are most appropriate.

Staghorns have just about a worldwide natural distribution. For example, Platycerium bifurcatum comes from Eastern Australia, New Guinea, and New Caledonia; Platycerium andinum is native to Peru and Bolivia; Platycerium alcicorne is found in Madagascar; and Platycerium grande originates from Australia, Singapore, and the Philippines. While mostly tropical, a few species can tolerate cold weather. Platycerium bifurcatum, the most common species imported into this country, can tolerate temperatures as low as 15°F.

Besides their unusual shape, Staghorns occupy an uncommon habitat. They do not grow rooted into the ground, they are instead epiphytes - they "grow upon others". Commonly found on trunks of trees or in the crotches of limbs, Staghorns use these plants for support, but are not parasites and do not draw any nutrition from their hosts. For nutrition and moisture, the Staghorns rely on leaves falling from above to decay into humus, and frequent rainfall. They are perfectly adapted to their habitat since they thrive on a loose, light, humus soil, that is well drained and never remains water saturated for any significant length of time.

Like all other ferns, the Staghorns produce no flowers, fruits, or seeds. They reproduce themselves primarily by spores, which are single-celled reproductive units that are produced on the undersides of leaves. These spores are released and carried by the wind. Some fall on a suitable location, perhaps hundreds of feet above the ground in a tree, and begin the next generation of Staghorns that will ultimately grow into mature plants. Staghorns also can

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Staghorn Ferns

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reproduce by means of “pups”. Mature plants produce small but intact plantlets (pups) that can detach from the parent plant, and fall to take root somewhere below, often on the same tree.

Unlike other ferns, most staghorns have 2 kinds of leaves or fronds. One of these is the sterile leaf, which is shield or dish shaped. It is called sterile because it does not produce spores. Each sterile leaf, as it grows, clasps the support on which it is found. . Initially green, they turn brown and become parchment-like with age. Besides holding the plant in place, the spaces between the layers of sterile leaves accumulate water and dead decaying vegetation, supplying moisture and humus to the plant.

The other leaf type is the fertile leaf. It is erect or spreading and mostly antler-forked. It remains green at maturity, to carry on photosynthesis to provide nutrition for the plant. It is called fertile because it produces spores, found mostly at or towards the ends of the antlers. The white, dust-like material that is visible on the leaves is actually hair projecting from the leaf surface. These star-shaped (stellate) hairs are thought to inhibit moisture loss from the leaf surface.

Staghorns make hardy and long-lived houseplants, as long as one recognizes their natural requirements and duplicates them as best as possible. They thrive if attached to a plaque along with some humus. They should be watered frequently, letting them dry slightly between waterings. They enjoy very bright light but not full sun. While individual staghorns have been known to reach several hundred pounds in weight, the indoor gardener should not worry about this.

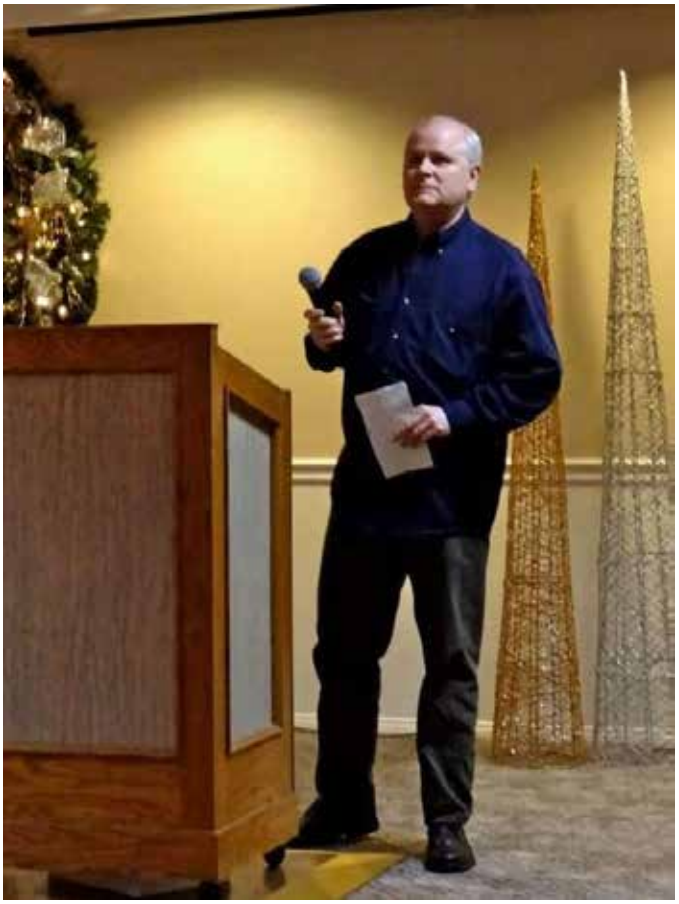
Staghorn Fern

Robert Kuettle

Three Kuettle brothers (Robert is the youngest)

Robert judging along with others including Galen

Robert in the garden



Robert at the Holiday party

Robert Kuettle