St. Augustine Orchid Society NEWSLETTER
November 2017
Volume 12 Issue #11

Club News

November 7 SAOS Meeting

by Janis Croftt
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Welcome and Thanks. Bob Schimmel opened the meeting at 7:00 pm sharp with 67 attendees. Carolyn Smith introduced our two guests and two new members, Jan Lesnikoski and Lucinda Winn. Bob then thanked Dottie Sullivan for the peanut butter sweets and Jeanette Smith for organizing the refreshments and reminded all to drop a dollar in the basket while enjoying their treats. Bob next informed all that the Best of Show voting would occur between the Show Table discussion and the presentation as well as the end of the silent auction. He encouraged all to vote for their favorite orchid.

Club Business. The **January meeting date has been changed** to the second Wednesday (Jan. 10), to accommodate Ben Oliveros from Orchid Eros in Hawaii who will be stateside for the Tamiami show. Mark your calendar cause you do not want to miss this speaker!

Club librarian, Penny Halyburton brought in the current Orchids magazine and a great reference book, Four Seasons of Orchids by Greg Allikas and Ned Nash. Remember to email Penny (librian@staugorchidsociety.org) with your book/DVD your request and she will bring the item(s) to the next meeting. The library collection is listed on our SAOS website.

Dianne Batchelder informed all of the date and location of our Holiday Party which will start at 6:30 at the Memorial Lutheran Church on 3375 US 1 South, St. Aug 32086. She passed around a sign-up sheet for side dishes to accompany the turkey and ziti/meatballs that the club will provide. There will be an orchid auction after dinner. Several portable greenhouses will also be auctioned.

Our Membership Veep Linda Stewart delivered free raffle tickets to the 3 people with birthdays in November. She and Sue Bottom also announced a plan to have a Mentee/Mentor program to start up in the spring if there is enough interest. There was a sign-up sheet to determine interest from the membership as well as a suggestion box.

Sue Bottom presented the ballot of nominees for the Board as Bob Schimmel (President), Sue Bottom (Program Chair), Bill Gourley (Treasurer), Janis Croft (Secretary), Linda Stewart (Membership), Dianne Batchelder (Events), Susan Smith, Suzanne Susko and Tom Sullivan (Directors at Large). The membership voted unanimously in favor.

The only November show in Florida is the Ft. Pierce show on Nov. 11-12. Check SAOS website for details.

The Ace Repotting Clinic and Keiki Clubs are on winter hiatus.

Three raffle tickets will now be given to members who exhibit a Show Table plant for their first time.

The new hats ($15) and T-shirts ($20) were available at the sales table along with supplies. Email Sue (info@staugorchidsociety.org) if you need potting supplies and she will bring them to the next meeting for purchase.

Show Table Review. Courtney Hackney started the discussion by thanking Leslie Brickell for housing his orchids after Matthew destroyed his greenhouse. In addition to his verbal thanks, he showed a registration form for a new orchid which he created and named after Leslie. Then with Sue's Vanna-like assistance, he proceeded to go through the Show Table that had the most plants ever! He started by discussing the old clones. The first was the large white flowered Deesse cattleya that was first registered in 1946. When crossing this plant with another white flowered orchid, one can get a big pink flower up to 8" wide. Another oldie, C. Lucille Small, is a smaller plant that is known for its giant flowers also. Next, he showed Lc. Dinard 'Blue Heaven' that is an early coerulean cross from the 1960's. Sherrie Jenkins brought in a huge, spectacularly grown nodosa hybrid potted in a large basket loaded with unusually large flowers on an outstanding number of inflorescences. Many in the audience discussed the possible background of this plant, with many suggesting Bl. Morning Glory. There were more flowers on each inflorescence than would be expected, but with such a well-grown plant, who knows? An interesting plant, Lc. Eximia 'Sea God' was a coerulea

Continued on page 3

Club News

Upcoming Orchid Events

November

11-12 Fort Pierce Orchid Society Show
Fort Pierce Shrine Club
14 JOS Meeting, Prepping Orchids, 7 pm
Eric Cavin, JOS

December

5 SAOS Christmas Auction, 6:30 pm
We're meeting on our normal Tuesday night but at a different location!
Memorial Lutheran Church
3375 US 1 South, St. Aug 32086
10 JOS Christmas Auction, 5:30 pm
Orange Park Country Club
2525 Country Club Blvd, Orange Park

January 2018

6-7 Sarasota Orchid Society Show
Sarasota Municipal Auditorium
9 JOS Meeting, Jax Zoo Research, 7 pm
Houston Sneed
10 SAOS Meeting, 6:30 pm
Changed meeting date from the 1st Tuesday to the 2nd Wednesday to accommodate Ben
Ben Oliveros, Orchid Eros
Hawaiian Grown Orchids
12-14 Tamiami International Orchid Festival
Dade County Fair Expo Center
19-21 Fort Lauderdale Orchid Society Show
War Memorial Auditorium

February

3 SAOS at Ace Hardware, 9 am til 1 pm
3050 US 1 S in St. Augustine
Repotting and Plant Clinic
3-4 Venice Area Orchid Society Show
Venice Community Center
6 SAOS Meeting, 6:30 pm
Native Orchids of Northeast US
Mark Rose, Orchid Hobbyist

9-11 South Carolina Orchid Society Show
Riverbanks Zoo&Botanical Garden
West Columbia, SC
10-11 Boca Raton Orchid Society Show
Safe Schools Institute
13 JOS Meeting, Encyclias, 7 pm
Marv Ragan, JOS
17-18 Port Saint Lucie Orchid Society Show
Port St. Lucie Community Center
23-25 Naples Orchid Society Show
Moorings Presbyterian Church
25 Keiki Club Get-Together, 1 pm
SAOS Exhibit at Jax OS, Janis
Janis Croft and Alan Winer's Home
8311 CR 208, St. Aug 32092

St. Augustine Orchid Society Organization

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Continued from page 1

cattleya clone named by the actor, Raymond Burr (aka Perry Mason), who grew a world-class collection of orchids on an island in Fiji.

Next Courtney moved to the intergeneric Oncidiums of which there were quite a few. He said they are easy to grow here and pointed out the Wild Cat, Jungle Monarch and Estralita 'Sweet Senorita'. Running out of time, Courtney quickly pointed out other orchids and advised all to come up and notice the media and mounting techniques on the numerous plants. Check out the photos of our show table examples at the end of the newsletter and on the SAOS website.

SAOS Program. Vern Bloch talked about the Encyclias, Epidendrums and Prostheceas genera. Vern is a retired Navy pilot who first became interested in orchids after leaving the service in 1987. He and his wife Helen became owners of the Palm Bay Orchid Range for 15 years and after selling the business, they continue growing and selling orchids on a small scale. He started his presentation by citing Carl Von Linnaeus who in 1754 first named orchids as Epidendrums descriptive of plants growing in trees. Not long after, it became apparent that there were many classes of orchids and Hooker eventually separated the Epidendrums (Epi.) and Encyclias (E.) into their own classification with a wide variety of appearances. Some have pseudobulbs and some are cane types. In 1838, a third class was identified, Prosthechea (Psh.), which currently has 114 species. There has been a lot of movement from one class to another in recent years so some nomenclature is confusing.

Generally, there are two types of Epidendrums, reedstem/cane types and the non-reedstem types. The reedstem group resemble dendrobiums and are easy to grow. They tolerate poor conditions and cultures but do prefer peat mixes if available. They are easy to propagate by keikis, stem cuttings planted in sphagnum, or just plain tearing the plant apart. The reedstem group like bright light and good air circulation with lots of water in growing season. They are hardy from freezing to 100 degrees and disease with the only pests being aphids and hard scale as issues. Their flowers are usually starry shaped, resupinate, flat and can range from tiny to quite large. A common example is Epi. Pacific Girl 'Primavera'.

The other type, non-reedstem, grow in similar culture as the others but like to have their roots dry between watering unless they are in bloom. They are summer bloomers with green, white or golden flowers that have a strong, sweet fragrance. They range from South Carolina to Central American and their flower size can range from 3" to 10". A common example is Epi. magnoliae which grows from southeast US to Mexico and Epidendrum pseudepidendrum which comes from Costa Rica and Panama where it is native to lowland rainforests. Vern advised not cutting the spikes on the latter after its very long lasting flowers die off because the plant will rebloom on the same spike.

Next, he discussed Encyclias currently including 365 species. Again, they grow from South Carolina to Central America and tend to grow on trees or shrubs making them excellent for mounting. They are, however, intolerant of poor growing conditions and tend to attract scale. Their name is derived from the Greek enkyklein that means, "lip encircles the column." Their fragrant and long lasting flowers are resupinate and can grow up to 4" in width. A commonly grown species is Encyclia cordigera that tolerates Florida's hot days. Encyclias like to grow in bright light. He showed a slide of Encyclia tampensis that was first found in Tampa Bay area in 1846.

Finally, the Prosthechea class which was established early on and then lost. Vern said it has been recently reintroduced in 1998 with the advancement of DNA evaluations. This class has inconsistent characteristics. Some more consistent ones are flattened pseudobulbs, inflorescences with a spathe at base, and the lip is attached halfway down the column. The class is divided into two groups—non-resupinate and resupinate. The first group is also known as the cockleshell group with the upside down flowers looking like the actual shell. This group likes good drainage and prefers moderate temperatures but will tolerate extremes. They enjoy moderate diffuse light but can tolerate higher levels. A common example is the Prosthechea cochleata that is hardy down to 40 degrees. This plant can stay in bloom for an extended period. The other group, resupinate, grow similarly but their flowers have the lip at the bottom of the flower.

Meeting Conclusion. Harry McElroy announced the Member's Choice Award as the nodosa hybrid (Bl. Morning Glory?) grown by Sherrie Jenkins. Dianne and Susan closed out the meeting with the raffle. Thanks to all the helpful hands that stayed to reset the tables and chairs and clean up the room.

Sherrie Jenkins with her prized Bl. Morning Glory

Thanks to Watson Realty and Jeanette Smith for the use of their meeting space at 3505 US 1 South

Club News

Orchid Mentoring Program

We are trying to gauge the interest in developing an Orchid Mentoring Program for our new orchid growers. We envision continuing the Keiki Club get-togethers in the spring to provide short workshops about orchid growing basics. This additional mentoring program would pair up new orchid growers with more experienced orchid growers so the new growers would have someone to answer any questions, discuss whatever issue may be pertinent and provide hands-on help. Sound interesting? Let us know if you would be willing to serve as a mentor to one or two new orchid growers; and let us know if you would be interested in having an orchid mentor help you learn the ropes! If this program generates enough interest, we will begin formulating the how, when and where details. Tell us what you think... as a mentor, how you might be able to help, and as a mentee, what you would want to get out of it. Email Linda veep-membership@staugorchidsociety.org, she is waiting to hear from you!

Show 'em Where You Grow 'em

We are pulling together a program in 2018 showing how different St. Augustine Orchid Society members grow their orchids. Start snapping pictures and tell us some of your tricks! Email us at info@staugorchidsociety.org with your summer growing area pictures now, and if you have pics of the winter growing area, send them too!

American Orchid Society Corner

Webinars this Month:
November 8, 8:30-9:30 pm, Everyone Invited
Town Hall Meeting in Ecuador – George Hatfield

December 14, 8:30-9:30 pm, Everyone Invited
Greenhouse Chat Orchid, Q&A - Ron McHatton

Photos of Latest AOS Awards

Nov. Orchids Magazine: request free issue!
Blue Nanta Orchid Roots User Group
A Novice's Adventure in Hybridizing
Dendrobium section *Spatulata* hybrids
Further demystifying Fûkiran (*Neofinetia falcata*)
For the Novice: Fusarium in Phalaenopsis

Keiki Club on Holiday Hiatus

The days are getting shorter and cooler and your orchids are thinking about taking a winter nap. Make sure they are protected in the event of cold winter weather and then focus on enjoying this glorious thing we call life. Enjoy your friends and family during the holiday months. We will start talking about orchids again in the new year. Until then, enjoy every moment!

December 5 Monthly SAOS Meeting

Christmas Orchid Auction

We're looking forward to our Christmas party and auction where we get to kick back, have fun and spread holiday cheer with our orchid buddies. Hope to see you there!
- Our annual Christmas orchid auction is scheduled for our normal first Tuesday meeting night, December 5.
- We'll meet at the Memorial Lutheran Church (where we held our picnic). Drive around to the back of the church and park, close to the doors to the dining hall.
- We'll start our social hour at 6:30 pm. This will give us a chance to exchange holiday cheer before we hit the vittles.
- Bring your beverage of choice. The club will provide the low octane sodas, water, iced tea and coffee, but if you enjoy a cuppa with your meal, feel free!
- One thing that hasn't changed is all the good food. Dianne is planning roasted turkey breast with gravy and ziti & meatballs as the main dishes.
- Bring a dish to round out the meal. Salads, potato and pasta side dishes, vegetable side dishes and desserts have been big favorites in years gone by.
- We'll finish up the evening with an orchid auction where you can bid on a nice variety of different types of orchids.

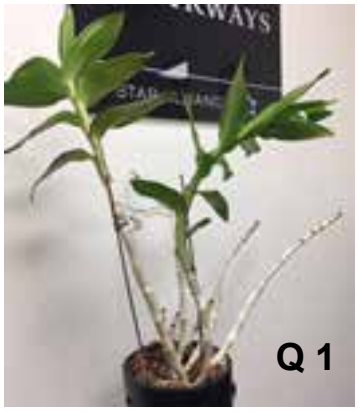
When: Tuesday, December 5, 6:30 til 9 pm
Where: Memorial Lutheran Church
3375 US 1 South, St. Aug 32086

Inspiration

Orchid Questions & Answers

by Sue Bottom,
sbottom15@gmail.com

Q1. This guy is about 8 years old and 2 feet tall not including the pot. Every year the canes get bigger, so I assume he's happy enough. Last year's cane didn't bloom, so over winter he was moved to a different window and the new cane developed this absurd lean. I recently moved him to my office under an LED grow light and he started a spike. I'm trying to train it upward with a packing peanut, but I think it's a lost cause and a horizontal spray will look a little ridiculous. Stability is fine, I put a rock in the pot years ago and he essentially mounted himself to it. When I repot, I repot him and the rock. I wish the older cane (with leaves) would spike, as it is straight.



A1. That is not so crooked! You can try to train the canes to be more upward but you'll have to get longer stakes, then tie at the bottom and up about 4 inches from when they start to lean away from vertical. Don't try to make them vertical all in one step, but bring it in say half an inch every other day or more to gradually make it align with the plant stake. The spike will grow toward the light, if the light is coming in horizontally, the spike will grow horizontally to reach for more light. Don't be surprised if that older cane spikes, dendrobiums are some of the few orchids that will rebloom from an older growth. The more light it gets, the more blooms you'll get!

Carrie sent another pic after she staked the dendrobium and told us "It's working! I can't believe how well it's straightened out!"

Q2. I am from the UK and as you can see from the photo have a problem with a stem which starts discoloring just below the firming flower buds. This has happened before and results in it spreading until there's no alternative but to cut it off. I am guilty of possibly not watering often enough. Any thoughts as to the cause and what I can do to prevent it happening in the future?

A2. When I have had that on my phals, it turned out to be Fusarium. I figured it out from the Hark Orchideen site. You'll need to drench with one of the heavy duty fungicides labelled for Fusarium, perhaps something like Heritage containing the active ingredient Azoxystrobin. You'll have to see what might be available in the UK.

Q3. Keith Davis shared this story: I have this very fine C. bicolor brasiliensis 'Chocolate' that I got from Gene Crocker in 2003 as an unbloomed seedling in a 3" pot. It is a large plant now in a 12" clay bulb pan with 18 growths and two tall leads and 8 buds on each stem.

I noticed an old leafless bulb that was dehydrated and broken over, but not completely detached. I cut it off and was about to toss it when I noticed the 4 keikis and small roots. If you notice carefully, there are 7 nodes, #6 and 7 are very close to the top and separated by about 1/2 inch, the 7th being the joint where the old sheath emerged. Keikis formed on nodes 1, 2, 4, and 7. I am thinking that the stress of the bulb being almost severed stimulated hormones to force the keikis to sprout.

I wanted an extra division of this plant. Knowing how difficult it is to successfully divide C. bicolor, I was going to wait until a growth went over the side and do one of my no stress over-the-pot divisions. Now, it appears that 4 keikis might well be the next divisions.

I will place the entire bulb on top of a tray of live Spanish moss and put a tuft of sphagnum moss over the roots of each keiki to help them stay hydrated and elongate enough to later remove each and pot them up.

A3. Keith sure can grow cattleyas!

Nursing Orchids Back to Health

Courtney's Orchid Growing Tips

Experienced hobbyists have learned a lesson over the years that many newer hobbyists do not like to hear. If an orchid wants to die, do not spend a lot of time trying to save it. This is often a hard lesson for new growers who just spent what seemed like a large amount of money for a gorgeous orchid plant in flower or for some unusual species that a speaker was selling. The fact is that once an orchid plant starts "toward the light" it is hard to stop it. Also, growers with many plants want to remove that potential carrier of disease from the growing area as well as spend their limited time on other orchids that are growing well.

There are times, however, when you just are not willing to let an orchid die. It might be a very rare and hard-to-find orchid, or it might be the first orchid you purchased. Just about everyone has "nostalgic" orchids in their collection. While difficult, orchids headed toward that great mulch pile in the sky can often be brought back. Here are some of the tricks of the trade.

Before reading this, remember that orchids do not have immune systems like animals. Treating orchids requires that you understand and take advantage of the mechanisms that orchids use to fight disease and pests. Instead of moving disease fighting cells to the infection like we do, orchids instead separate healthy cells from unhealthy cells by building walls between healthy and unhealthy tissues. Infection of a plant has an entry point every time. This fact can be as important in treating an orchid as the diagnosis.

The first step is coming up with a diagnosis. If you can see where the problem started, there is an excellent chance that the plant can be saved. Often, the tip of a leaf or a new growth turns black indicating where the rot has started. If there is healthy tissue on the rhizome or at the base of the leaf the orchid can generally be saved.

Most fast acting diseases are caused by bacteria. If bacteria have penetrated to new growths or reached the center of a phal or vanda, it is often too late, but it can be worth a try if it is a very special plant. My first tactic is to remove all of the black or dead tissue, which requires removal of the plant from the pot. Totally wash all media from roots. I use a small jet from a hose to wash the orchid. Next, I spray the entire plant with household hydrogen peroxide. Then, place the plant on a newspaper in a spare room where there is plenty of air movement and little humidity. The main point is to kill the bacteria and stop the infection.

Check the plant each morning and night before bed for any soft or watery spots and remove any you find followed by spraying the new wound with hydrogen peroxide. Your plant should remain dry and will look desiccated. Avoid the temptation to mist. If after a week, no new rot spots have appeared and the orchid is green, you have a chance to save it. Put the plant at the bottom of a new clay pot and set it in a shady part of the greenhouse. At this point, I will move it out when I water because I do not want the plant to get wet until I see signs of growth. When new roots or leaves appear, water it. Once roots begin to attach to the pot, gently place a small quantity of media in the pot and leave it alone until it is clear that the orchid has resumed growing. Next move it back to the proper light level. If caught early, an orchid with rot can be saved.

Note: Dr. Courtney Hackney wrote a monthly column of his orchid growing tips for about 20 years; we are reprinting some you might have missed, this one from November 2011.

A Tale of Two Epis

Courtesy of Ned Nash, AOS

Reprinted with Permission

Epidendrum pseudepidendrum 'Rudolph' CHM/AOS, Photo by James Osen.

Once upon a time, all orchids were classified as *Epidendrum*. Linnaeus established the genus as part of his binomial system in 1753, and so few orchids were known at the time that it seemed to make sense that all orchids should be included in this broadly defined group. Consequently, as more orchids were discovered, it became clear that they needed to be reclassified into more genera to accommodate the many differences in their morphology. However, and especially until the last few decades, *Epidendrum* has remained a classical catch-all genus with broadly defined characteristics.

As more and more sophisticated taxonomic work is possible, more and more genera seem to emerge from what were once familiarly known as *Epidendrum. Prosthechea, Barkeria, Encyclia* and *Psychilis* are a few of the better known of the more modern interpretations of this widespread New World group.

Today, what are most properly called "epis" are the reed-stemmed plants with the lip adnate (attached) to the column. These are generally robust plants, well exemplified by the commonly seen and brightly colored *Epidendrum* ibaguense complex, which are such popular garden subjects where frost does not often threaten. There are some dull and prosaic plants in this group, as well as a few that are exotically distinct and different. Thereupon hangs our tale.

Cultural Needs *Epidendrum pseudepidendrum* and *Epidendrum ilense* are two species worth growing in greenhouses and tropical gardens. Both are characteristic of the genus, growing to 3 feet or occasionally more, with attractive foliage on reedlike canes and slightly drooping inflorescences of several to many blooms. Both will also branch off old spikes, so do not be too quick to remove the withered spikes. And both will do well under generalized cultural conditions prescribed for cattleyas - bright light (as for other cattleya types, indicated by strong, upright foliage and a medium-green color) with drying between waterings (this will vary according to pot size, mix, climatic regime and growing area).

These plants are remarkably tolerant in their potting mix needs, as well. They will succeed in just about anything that drains well, from medium- or fine-grade fir bark, to tree fern, to mixtures incorporating such materials as charcoal, peat, perlite or coir (coconut fiber).

Fertilizer should be appropriate to the mix used. If grown in a bark-based mix, the nitrogen will need to be a higher ratio (often 30-10-10 or similar), while in other mixes it is appropriate to apply a balanced fertilizer. The only cultural drawback seems to be a propensity to foliar spotting. Their foliage is a bit on the soft side, and so seems to be more susceptible to leaf spotting that may be caused by cold-water injury to the leaves, with subsequent necrosis, according to Jim Rose of Cal-Orchid, Inc. He notes that observant growers have less spotting on their plants than careless ones, so keeping water off the foliage may be an answer.

Owing to their height and light requirements, neither of these two species can really be considered satisfactory for windowsill culture, nor easy under most light set-ups. They are both more appropriate to greenhouse conditions or to tropical shade gardens, where they will often acclimatize in the landscape, making an attractive addition in or out of bloom. In the garden, they require shade from the hottest sun of the day, while in the greenhouse, they can be grown under the same conditions as cattleyas and similar types. Their main season of bloom tends to be late summer into autumn, though it is extended well into the autumn months by the repeat-blooming characteristic.

Epidendrum ilense 'Magnifico' AM/ AOS, photo by Marcus Valentin

Epidendrum pseudepidendrum, with its nodding spikes of fleshy apple-green blooms offset by a brilliant orange lip, has been a favorite for many years. Originating in Costa Rica and Panama, today's populations are seed-grown, but only occasionally.

A cross that is occasionally seen at shows is *Epicattleya*

Continued on page 9

Continued from page 8

René Marqués (x C. Claesiana). Looking much like a slightly larger, improved epidendrum, Epc. René Marqués makes an impressive showing on plants that may reach more than 4 feet tall. This hybrid also demonstrates one of the drawbacks of epidendrum breeding: the exceeding dominance of the epidendrum parent. When one begins to research into some of the more obscure breeding lines, such as we have here, the byways traversed by adventurous breeders are nothing short of amazing.

One of the true pioneers of intergeneric breeding, after, of course. W.W.G Moir, has to be Joseph Rumrill. He has been no less active with *Epi. pseudepidendrum* than with other unusual types, and one of his most intriguing hybrids is *Epileptovola* Hyperion (x Lptv. Rumrill Snow [Leptotes bicolor x Brassavola nodosa]). Not unexpectedly, another of the few well known hybrids is *Brassoepidendrum* Pseudosa (x B. nodosa). Rather like a good soft drink, everything seems to go better with B. nodosa. One cannot ignore *Epidendrum* Plastic Doll (x ilense), which was registered in 1989.

Epidendrum ilense is one of the most recently discovered and described members of this genus, having been found by Calaway Dodson, PhD, in a section of recently cleared forest in Ecuador in May 1976. It was subsequently distributed by the Marie Selby Botanical Gardens in Sarasota, Florida. Sadly, when Dodson went back to the locale, he found that the several plants he had collected from fallen trees were all that remained of the population. On a happier note, and though Dodson's early attempts met with failure, *Epi. ilense* has proven to be relatively easy to propagate from both tissue culture and from seed, so now there is a stable supply of nursery-raised seedlings in a case not dissimilar to that of *Paphiopedilum delenatii.*

The typically nodding spikes borne over light green, rather softly foliaged canes bear distinctive blooms with a most unforgettable fringed lip. As with *Epi. pseudepidendrum*, the spikes have a habit of reblooming. And also as with the previously discussed species, *Epi. ilense* seems to be dominant in its breeding characteristics. Both because of its fairly recent discovery, and because it seems to be one of those orchids that is best left alone (because it is more handsome than its hybrids), relatively few hybrids have been registered with *Epi. ilense* as a parent.

For students of orchids who love anecdotes and history, odd and unusual plants and hybrids, there are probably no better examples of truly good orchids than these two species. Worth the little bit of extra effort to search out and grow well, these plants and their hybrids will reward the diligent hobbyist with foliar and floral beauty, as well as a wealth of stories with which to amaze the less-informed..

This article first appeared in ORCHIDS, November 1997 and has been updated to reflect current taxonomy.

Orchid Hygiene

by Sue Bottom, sbottom15@gmail.com

We are often lectured on how important good sanitation is to prevent the occurrence and spread of disease in our growing area. There are rots that spread by splashing water, fungal spores dispersed on air currents and viral particles that can be exchanged between plants via plant sap. You do your best to keep the growing area, supplies and tools as clean as possible and yet you continue to find problem plants. There are so many different ways of spreading contaminants. See how you answer these questions; perhaps there are some other hygienic practices to incorporate into your growing regimen.

Horizontal Surfaces. You might have a table or bench near your growing area that you use for staging or grooming your orchids. It is so easy to contaminate this surface by casually placing potentially contaminated materials on it as you putter around your growing area. Make it a habit to disinfect the surface regularly and keep newspaper handy to use as a temporary tablecloth and barrier to cross contamination.

- Do you collect spent blooms and place them on the table prior to discarding them or do you place them directly in a sealed container?
- Do you ever put your used cutting shears or razor blades on the table while you are in the process of repotting a plant?
- When you are getting plants ready for an exhibit or the show table, do you remove the wire products and place them on your working bench?

Cutting Tools. You use your cutting tools to carve up your plants during repotting, snip off spent inflorescences and remove diseased tissue. It is critically important that these tools not convey disease from plant to plant. Razor blades should be used once and discarded directly into a sharps

Continued on page 10

Continued from page 9

container (unless you heat sterilize them between uses). Cutting tools should be sterilized between plants, and sometimes between cuts.

There are plenty of opinions on how best to prevent disease and virus spreading via shears, knives, and other cutting tools. Common chemical sterilant recommendations include solutions of quaternary ammonium compounds (Physan, Consan, Green-Shield, pool algaecide, etc.), trisodium phosphate, Lysol, isopropyl alcohol, peroxide products (ZeroTol, Sanidate, etc.), but studies comparing these materials at their recommended rates and contact times indicate they do not deactivate all virus particles.

Side-by-side studies of 16 disinfectants resulted in the recommendation of only three, 2% Virkon S, 10% Clorox regular bleach solution (0.5% sodium hypochlorite) and 20% nonfat dry milk (Li et al.). Perhaps if the tests had been conducted at higher concentrations or if the contact time had been greater than 10 minutes, some of the other commonly used disinfectants would have rated higher. Of the three recommended chemical disinfectants, I have only tried the bleach solution and found it is terribly corrosive on tools, rusting them in a day. To be safe, buy one of the torches with a self-igniting trigger used to solder copper pipes. The torch is not kind to the cutting tools either, but it is ready to use right away after disinfection and in fact, the hot cutting tool can be used to help cauterize plant wounds.

Reusing Pots. Some growers only use new, clean pots. If you choose to reuse your pots and baskets, they should be sterilized. First, you remove all the roots, debris and other organic material from the pot. Plastic pots can be sterilized by dropping them into a 10% bleach solution for an hour or more. Clay pots are porous and can absorb pathogens so they have to be heat sterilized by baking at 400F for an hour or two. Wooden baskets and other products are permeable like clay, but unlike clay are not amenable to heat treatment. You can clean them and soak them in a disinfecting solution, but this may not remove all pathogens. Consider them to be single use products, and replace them with metal or plastic products than can be sterilized between uses.

- Do you reuse shards from broken pots for drainage in the bottom of the pot? Do you sterilize these shards first?
- How about those bamboo stakes? Rhizome clips? Butterfly clips? Twist ties? Wire hangers? - Do your discard them or sterilize them prior to reuse?
- Do you store your sterilized pots in a clean area? Or do you stack them under your plant benches where irrigation water from the plants above drip on them?

Plant Trays. If you grow or transport plants in flats or carry trays, you should recognize they can potentially become contaminated and a source of infection for the next plant placed in that tray, just like your reused pots. The trays should be cleaned of organic matter and then disinfected using a 10% bleach solution. Another precaution would be to place a piece of newspaper on the tray before adding plants you are transporting.

Repotting. This is the big one; the one that everyone focuses on. You are using sharp cutting instruments to carve up your plants for repotting and opening wound after wound on the plant as you prepare it for its new home. Plant sap can be transferred onto working surfaces, cutting tools and most troublesome, your hands. There are a myriad of ways that you can swap spit between the plant you are repotting and the next one to be repotted.

- You bring your plant over to the potting area and place it on a horizontal surface, and then proceed to remove the rhizome clips, plant stakes, pot hangers, etc. Have you laid out some newspaper to put the potentially contaminated plant and do-dads on?
- Then you separate the plant from the pot. Do you have to use a knife to separate roots from the pot? Do you sterilize the knife like you would your cutting shears?
- Do you discard spent potting media or use it in your garden? Or do you try to separate organic from inert materials so you can reuse it? If you chose door number 2, did you take steps to remove accumulated salts and kill pathogens through heat sterilization?
- When you cut the plant to prepare it for its new home, are you sure the shears were sterilized?
- When you have a diseased plant, do you keep cutting until you find clean tissue? Do you sterilize the shears between cuts?
- Do you water blast the papery sheaths off the plant? Do you place the wet plant on your newspaper so all of a sudden that newspaper is not much of a barrier anymore?

Hands. Then you pot up your division using sterile pots and wire products, and insert your plant tag and you are ready for the next one. But wait, during each step of the repotting process your hands might have become contaminated from fungal or bacterial spores or virus particles. Do you wash

Continued on page 11

Continued from page 10

your hands with hot soapy water between plants? Do you use one of the foaming ethyl alcohol-based hand sanitizer to eliminate bacterial and fungal spores? Unless you dip your hands in a 10% bleach solution (and risk chemical burns), you will not deactivate viral particles. This leaves wearing latex gloves during the repotting process and changing them after each plant is finished. I have to confess that I have not crossed the bridge to changing latex gloves with each plant, although I wonder if this might be the reason I still am finding virused plants in my greenhouse, often within a year of repotting them. Perhaps I need to rethink this aspect of my culture.

Dead Heading. Those beautiful flowers all ultimately die and you want to remove them. Of course, they can have fungal spores, or thrips can lay their eggs in them or they can contain viral particles that can be spread during the removal process. Do you walk through your growing area removing spent inflorescences? They should be placed in a sealed container like a coffee can immediately after removal from the plant. If you use shears, sterilize them after each cut. Of course, this cut is then an open wound for pathogens to enter the plant. If you wait until the flower is ready to separate from the plant naturally, it can be separated with a gentle tug and then placed directly into the coffee can without letting the plant sap touch your skin.

Watering Practices. We assume our water does not contain any contaminants, and this may be true as long as you are not using surface water from a backyard pond as your raw water source. Even if the water is pure at its source, there are many places where pathogens can be introduced into the irrigation system.

- If you are collecting rainwater, are you assuming that it is pure? Or are you adding small amounts of disinfectants to kill any pathogens that may have been washed in from the roof surface and taken up residence in your holding tank?
- Have you ever taken a Q-tip or toothbrush and rubbed it on the inside of your irrigation system to see if a biofilm deposit has built up on the inside of your hoses or PVC piping? You might be surprised at what you find, particularly if you test the part of the system conveying water after fertilizer has been added to it, downstream of a Dosatron or venturi siphon.
- When you are done watering, do you drop your hose down to the ground? Or do you hang the nozzle up so it will not come into contact with pathogens that may be present in the soil?
- Do your store pots or carry trays under your plant benches? Or are they kept in a clean area where they will not be contaminated from water dripping out of pots?
- Do you ever hydrate your vanda roots by dunking them in a bucket of water? One plant after another so any pathogens present on one can be transferred to the rest?

Good Intentions. Sometimes you can create a problem while trying to solve a different problem.
- Do you cut yellowing leaves with a sterile tool? You get one point for the sterile tool, but you have also just created an open wound through which pathogens can enter the plant. If you wait for the plant to form its corky barrier at the abscission zone, the leaf can be removed with a gentle tug. Of course, a diseased leaf should be removed from the plant sooner rather than later, and you can dust it with a fungicide or cinnamon to form an artificial barrier.
- Do you ever dunk plants in a Sevin solution to get ants or cockroaches out of the plants? Do you think the fungal spores in the first pot might be transferred to the second pot?
- Do you ever use a toothbrush dipped in isopropyl alcohol to remove scale from a plant? Do you sterilize it first?

Virus Testing. When you are virus testing, you are trying to determine if the plant tissue contains virus particles, so your sanitary precautions should be in overdrive. Do not casually allow contaminated fluids to contact your fingers or horizontal surfaces where they can infect other plants.
- When you cut the leaf tissue of the plant you suspect is virused with a razor, do you drop the contaminated blade directly into a spent sharps container or do you lay it down on the bench while you continue with the test procedure?
- When you place the sample in the mesh bag, are you wearing single use gloves or do you get plant sap on your fingers?
- After your testing is completed, do you discard the mesh bag directly into a closed container or do you lay it down on the table while you consider your next step?

Good sanitation practices are more than just keeping your growing area clean and weed free. If all your plants were healthy and free of bacterial, fungal and viral pathogens, there would be no need to flame your shears or follow these hygiene protocols because there would be no contamination to transfer between plants. However, we all get colds from time to time and know germ organisms are ubiquitous in the environment. When cultural conditions are favorable for their growth, plant infections can and do occur. As a matter of prudence, assume that each plant is potentially contaminated and take steps to prevent cross contamination during your orchid labors. You would rather be known as Dr. Joseph Lister than Typhoid Mary.

Orchid Adventures
Steve Arthur Orchids

On a recent trip to South Carolina, we stopped in to see Steve Arthur's nursery. He has several interconnected greenhouses filled with beautiful and unusual orchids in all stages of growth, from recently deflasked seedlings to mongo plants growing out of their pots. He has a sophisticated laboratory set-up for propagating orchid seeds, look at the flask of ghost orchids in the bottom right pic. We will be making a return trip soon because Steve is gathering orchids for our Christmas auction this year. We should have a great variety of orchids to bid on!

SHOW TABLE

Grower Tom & Dottie Sullivan
Colm. Jungle Monarch 'Pacific Pride'

Grower Sue Bottom
Habenaria Regnieri

Grower Harry & Celia McElroy
Phrag. Praying Mantis

Grower Jan Lesnikoski
Mtssa. Estrelita 'Sweet Senorita'

Grower Courtney Hackney
Bc. Deesse 'Perfection' HCC/AOS

Grower John Van Brocklin
Masdevallia calura

Grower Celia McElroy
Den. Nano Chip

Show Table

Grower Lourdes Guell
Lc. Dinard 'Blue Heaven' AM/AOS

Grower Sherrie Jenkins
Bl. Morning Glory

Grower Courtney Hackney
Blc. George King 'Serendipity' AM/AOS

Grower Harry & Celia McElroy
Lc. C. G. Roebling 'Sentinel'

Grower Penny Halyburton & Michael Rourke
Vanda NOID 'Copper'

Grower Sue Bottom
Chysis Maritza Bielecki