St. Augustine Orchid Society NEWSLETTER
September 2016
Volume 11 Issue #09

Club News

September 6 SAOS Meeting

by Sue Bottom
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Welcome and Thanks. President Bob Schimmel opened the meeting at 7:15 pm with 59 attendees. Bob thanked Jeannette Smith, Leslie Brickell, Dottie Sullivan and Elaine Hardy for the refreshments while reminding all to drop a dollar in the jar. We welcomed three new members, Chuck and Annalee McPhilomy and Eileen Giarrusso, who joined at the meeting, along with five guests. New member Linda Roberts joined SAOS using the new website PayPal button.

Our Membership Veep, Linda Stewart recognized our several September birthday people with a free raffle ticket.

The St. Augustine Orchid Society and one member in particular honored our returning past president Jack Higgins with a beautiful blooming cattleya. Welcome home Jack!

Club Business. The September 18 Keiki Club will focus on fall preparations for winter at Drake and Dianne Batchelder's home at 728 Loggers Way, St. Aug 32086.

The final Ace Repotting Clinic for the year will be on Saturday, October 1 at Ace Hardware on U.S. 1 from 9 am til 1 pm.

Email Sue Bottom (sbottom15@hotmail.com) if you need potting supplies, special quantities or different items and she will bring them to the next meeting for purchase.

SAOS Librarian Penny Halyburton brought in *Florida Orchid Growing* by Martin Motes which was immediately borrowed. While many orchid societies have closed their libraries, Penny has done a great job making the library vibrant, interesting and available to membership. Check out the club's library collection on the website and email (librarian@staugorchidsociety.org) your request, she will bring the item to the next meeting.

Our AOS Rep Suzanne Susko talked about some advantages of AOS membership, including some of the specialty webinars. On Thursday the 8th, there is a Greenhouse Chat webinar with Ron McHatton that is open to non-members too, just log onto AOS.org and follow the links. If you have an on-line AOS membership and wish to upgrade to a full membership so you get the monthly paper copy of the AOS magazine *Orchids*, call Gayle Brodie at 305-740-2010.

Orchid Events. The fall show season is beginning, check the calendar of events on the website for dates and locations.

Show Table Review. Crowd favorite Courtney Hackney said it must be Miltonia season judging by the examples on the Show Table. He talked about *Miltonia moreliana* with its incredible lip and color that is used in so many hybrids, though how can you improve the flower over what is found in nature? The Brazilian miltonias seem to grow best in baskets or on mounts, forming beautiful and large clumps that bloom in the early fall. The Miltassias and intergenerics in the same group all share the qualities of easy culture and lots of blooms from multiple growths.

There were several bifoliate cattleyas and we were cautioned to repot these only when new roots are beginning to form, even if it is blooming or about to flower. He talked about how C. bicolor is in the background of many hybrids and it imparts substance and petal width to its progeny. He introduced his most recently registered hybrid C. Terry Bottom (Fort Motte x Allen Condo) who apparently is going to hook up with C. Sue Bottom (Mrs. Mahler x Fort Motte).

A beautiful example of the Florida native *Epi. magnoliae* that recently fell out of an oak tree was discussed. This species can be found from North Carolina down into Mexico and it is very cold tolerant. If you have oak trees covered with resurrection fern and Spanish Moss in your yard, you may have the perfect niche for this Green Fly Orchid.

Courtney had an interesting story about the magnificent Blc. Cherry Suisse, a very successful hybrid. Gene Crocker of Carter and Holmes fame remade the cross using the

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Club News

Upcoming Orchid Events

September

13 JOS Meeting, Angraecums, 7 pm
Tom Kuligowski, The Angraecum Blog
17-18 Ridge Orchid Society Show
Lake Mirror Center, Lakeland
18 Keiki Club for Orchid Beginners, 1 pm
Get the 'chids Ready for Winter
Dianne and Drake Batchelder's Home
728 Old Loggers Way, St. Aug 32086

October

1 SAOS at Ace Hardware, 9 am til 1 pm
3050 US 1 S in St. Augustine
Repotting and Plant Clinic
4 SAOS Meeting, 7 pm
Dendrobiums
Roy Tokunaga, H & R Nurseries
8-9 Fort Pierce Orchid Society Show
Fort Pierce Shrine Club
11 JOS Meeting, TBA, 7 pm
Roy Tokunaga, H & R Nurseries
21-23 Orchtoberbest at EFG Orchids
4265 Marsh Road, Deland 32724
22-23 Gainesville Orchid Society Show
Kanapaha Botanical Garden
28-30 Delray Beach Orchid Society Show
Old School Square Gymnasium.

November

1 SAOS Meeting, 7 pm
Bulbophyllums
John Budree, Orchid Hobbyist and Grower
5 Annual Slipper Orchid Symposium
Highland Manor, Apopka
8 JOS Meeting, Topic Blue Cattleyas, 7 pm
Courtney Hackney, Hackneau Art & Orchids

December

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

St. Augustine Orchid Society Organization

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same exact parents but progeny did not have the same 'glow' to Gene's great dismay.

For the overwaterers in the audience, Courtney suggested growing bulbophyllums. He talked about one that apparently fell out of its pot and was growing under one of his benches, thriving in the flooded conditions growing to about 3 feet long.

We had a short biology lesson about honeydew and ants. One of his spotted cattleyas failed to open last year because the honeydew exuded from the flower bud hardened and sealed the bud closed. This year, he has allowed ants free range in his growing area and they love to feed on the sugary sap which, once removed, allows the flowers to open. It was beautiful!

SAOS Program. Thanh Nguyen of Springwater Orchids prepared a special program for us, 12 small to medium species that are easy to grow and flower. The first was *Acacallis cyanea* from the zygopetalum subtribe. This plant has blue, fragrant, long lasting flowers. Native to Brazil, it gets flooded daily during the rainy season and then is much drier during the rest of the year. It likes shady conditions.

Aerangis fastuosa is an angraecoid orchid from Madagascar having 2 inch white flowers, large relative to the small plant size. These grow best mounted or in small pots, grown under phalaenopsis type conditions, moist and shady.

The Lady of the night, *Brassavola nodosa*, is a night fragrant Cattleya alliance plant found from Mexico to Argentina and because of its extremely large range, it tends to be highly variable. Grow it in bright indirect light with good air movement, mounted if possible.

Dendrobium bracteosum has beautiful, long lasting blooms. Keep it in a cool, dryish and bright during the winter and a little shadier and much wetter in summer.

Dendrochilum formosanum produces a slender flower spike with each new growth on which many tiny yellow flowers spiral along the entire length. Grow it like a phalaenopsis, in shady moist conditions.

Dimerandra stenopetala is an unusual Cattleya alliance species from Central and South America. It blooms sequentially from August through November with attractive lavender flowers. It tends to grow taller in lesser light.

Habenaria dentata has an unusual white flower this time of year, after which the aerial portions of the plant will die back and just the underground tuber will survive through the winter. Don't water until the new growth reemerges in the spring.

Haraella retrocalla is a warm growing miniature with tiny yellow flowers from late summer through fall. Its creeping growth habit makes it ideal for mounting.

Neofinetia falcata is a small, very cold tolerant vandaceous orchid from Japan. There are fanatical growers who enjoy the various colors and shapes of the flowers, leaves and roots.

Paphiopedilum spicerianum is an easy paph to grow that blooms well in shady conditions with ample humidity.

Phalaenopsis cornu-cervi is a sequential bloomer that reblooms from older spikes for several years producing red or yellow flowers. If grown too wet, it will produce keikis instead of flowers.

Stelis guianensis produces multiple sprays of minute flowers from a clumping growth. Grow it mounted in phal light with good air movement. Thanh had each of these species available for sale. Very enjoyable program!

Meeting Conclusion. Harry McElroy announced the Member's Choice Award as the Blc Cherry Suisse 'Jean Gilliland' AM/AOS grown to perfection by Suzanne Susko. The raffle table closed out the evening. Thanks to those that volunteered to stay and clean up the room.

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

Club News

August 14 Keiki Club

Photographing Your Orchids

About a dozen SAOS members met up at the Mark and Kathy Young's Garage Mahal to talk about photographing orchids using a point and shoot or phone camera. Terry Bottom opened the discussion talking about the camera exposure triangle.

- ISO is a measure of the light sensitivity of the sensor, in days gone by it was referred to as the film speed. Lower ISO settings will produce images that are sharp in high light situations while high ISO settings work in low light situations.
- Shutter speed is the length of time the sensor is exposed to light. Short shutter speeds will capture sharper images that can become blurry with long shutter speeds absent the use of a tripod.
- Aperture is the opening of the lens. The aperture controls the depth of field. Smaller openings will tend to increase the depth of field so foregrounds and backgrounds are distinct, while larger openings will tend to decrease the depth of field so the focal point of the image is sharp and the background blurred.

These three settings control the image you are trying to shoot. In order to simplify this for the beginning photographer, cameras offer a presetting called 'auto' that adjusts the three settings based on the light situation, Many times this might result in an acceptable or even good photograph, but the camera is choosing the focal point, not you. The first step in weaning yourself away from 'auto' setting is to turn off the flash. This will prevent washout of the image and force the camera to make different adjustments.

Next, try experimenting with some of the preprogrammed settings that come with your camera, like mode settings for backlighting, party, portrait, etc. You can get really daring and preset custom settings for known situations, like one for close ups, one for crowd shots and one for low light situations.

Terry worked with a few folks showing different buttons on their phones and cameras and how they might be used. Thanks to Mark and Kathy Young for hosting us during these hot summer months.

September 18 Keiki Club

Getting the Orchids Ready for Winter

We'll be meeting at Dianne and Drake Batcheldlers home to talk about getting your orchids ready for winter. It may not feel like it, but winter is coming and it's time to start your fall preparations. Spend some quality time with your orchids to get them ready for their winter home. We'll talk about fall preparations and the minimum night time temperatures your plants can tolerate in winter. We'll also talk about those orchids that require special winter care, like the deciduous dendrobiums and the catasetinae.

Moderator: Mary Colee
Where: Dianne and Drake Batchelder's Home
728 Old Loggers Way, St. Aug 32086
When: Sunday, September 18, 1 to 3 pm

October Monthly SAOS Meeting

Dendrobiums, Roy Tokunaga of H&R Nurseries

Hold onto your hats, master grower and hybridizer Roy Tokunaga is coming to St. Augustine from Hawaii to talk to us about dendrobiums. Roy's talk will focus on some of the most commonly grown species and hybrids from 10 different sections of the genus. Lots of pictures and general culture information. You can preorder plants from Roy via email (greenthumb808@aol.com) or his website through September 27, just mention that the plants are to be delivered to the St. Aug Orchid Society. Orchids will be available on the sales and raffle tables. Friends and guests are always welcome.

Inspiration

Orchid Questions & Answers

by Sue Bottom, sbottom15@hotmail.com

Q1. I sent you these pics of the top and bottom of my phal leaves, and you suggested I test them for virus. It started with small yellow spots and the lab has confirmed that it is Cymbidium Mosaic Virus. I'm thinking of throwing away the plants showing severe symptoms of orchid virus. I think the virus was spread through spider mites. What shall I do with the rest, the good looking orchids?

A1. I'm sorry about your plants, those yellow rings are unlike any 'normal' phal disease I have seen. The first thing to do is make sure that you don't spread any disease from plant to plant, so wash your hands after touching plants, use a single edged razor or sterilized cutting tool to cut spikes or roots while repotting, etc. Here's a link to some sanitation guidelines. The CyMV doesn't usually cause color break so the decision to keep or throw away becomes a personal one. I don't like looking at plants that are obviously diseased so if I were in your shoes I would throw them away. Then just watch the others. Miticides containing the active ingredient abamectin are effective for mites.

Q2. What do you think is wrong with this orchid. The Agdia test for virus was negative.

A2. With the sunken spots, it looks more like a bacterial than a viral problem, probably bacterial brown spot from *Pseudomonas*, now called *Acidovorax*. That leaf is pretty severely damaged so you might as well remove it and consider spraying with a bactericide.

Q3. I have a *Miltonia spectabilis* with rot at the base of several of the pseudobulbs. I sprayed it with Physan and then drenched it with peroxide. Now I guess I had better remove the affected bulbs and further treat with Dithane and cinnamon, too. It has bloomed in July the previous two years so when it didn't bloom, I started examining it closely and found scale as well as this rot.

A3. I think you may have to put on your scrubs and break out the scalpel. That brown line working its way up the pseudobulb looks like black rot to me, caused by one of the water molds that thrives in wet conditions. You have to cut away all affected tissue. Where it is visible at the base of the pseudobulb it has likely already travelled up the pseudobulb and it will die within a matter of days. You have to cut back along the rhizome until you don't see any discolored tissue in either the base of the bulbs or the rhizome. Then, take whatever you have left and water blast it to remove all the papery sheaths and the scale hiding underneath the papery sheath. Then we'll see what you have left of the plant, whether to put in an empty clay pot and mist daily til you see new roots or a very small pot with a little sphagnum. Black rot is fast and deadly. Dryness and peroxide will help. Only the very expensive fungicides labelled for pythium and phytophthora really put a hurt on the water molds.

Growing in Lava Rock… Two Years Later

Courtney's Orchid Growing Tips from 2007

During the past 3 or 4 weeks I have had some time to spend in the greenhouse and time to review my orchid growing culture. It is often difficult to accurately assess whether cultural changes have really improved the growth of your orchids because too often all we remember is the problem plant or the night slugs that ate your prize buds just before they opened. One approach that I find useful is to examine my use of pesticides, fungicides, and fertilizers from year to year in light of my culture. The application of these products often reflects large-scale problems.

What I discovered is that I had drastically reduced my use of pesticides and fungicides. That does not mean that there have been no pests; juvenile crickets have occasionally chewed on new buds. There has also been an occasional rot here and there, but nothing widespread. The greatest surprise was how little soluble fertilizer I had used. The next question is whether my orchids have grown better or worse between years. The mantra among the best orchid growers is if orchids are provided with proper light, air circulation, good water, and nutrition there will be few pest and disease problems.

With the exception of a small collection of vandaceous orchids, new pseudobulbs on cattleyas are larger this year, with more flowers and roots. Phalaenopsis not only survived in the 100 degree heat this summer, but they also produced several new leaves simultaneously. There has been the occasional orchid that "bit the dust", but, generally, this has been a great growing year. WHY?

If you want to become a good grower you must keep records so you can determine what worked and what has not worked. Most significant for me has been the fact that very cold conditions, below 50 F, in late spring did not result is widespread rots in phalaenopsis. Similarly, in day after day of searing summer's heat, there have been very few bacterial or fungal rots. In the 25 years I have grown phals, this has never happened before.

Several years ago, a number of growers in the International Phalaenopsis Alliance had the elemental content of their phal leaves tested. What surprised me was the amazing variability among growers and the surprising concentration of some micronutrients. The take-home lesson for many phal growers was that these orchids could grow under high nutrient conditions without any significant cultural problems. What was not said was that many commercial growers whose orchids were tested used almost constant antifungal and antibacterial treatments to prevent rots.

My suspicion was that many growers did not provide a balanced nutrition which left their orchids susceptible to rots once the protection of constant fungicides was removed. It was extremely frustrating to purchase magnificent phals that would develop just about every rot known within a couple of weeks in my greenhouse. Meanwhile, phals right next to these new phals grew just fine. If I repotted the new phal and kept it alive long enough to grow new leaves it would often thrive under the same conditions that previously led to rots. Even so, I still thought I had more rot problems than average.

Thus, my cultural goal for many years has been to find the perfect nutrition for optimal growth and disease resistance using the water available to me. Unless you use RO water or rain water, water varies greatly with respect to both the quantity of dissolved elements and the proportion of one to another. The dissolved minerals often affect the growth of orchids and may even limit whether your fertilizer is available to your orchids. Within any area, growers have figured out what fertilizer works best given the water available. Even the most accomplished grower must change their culture if they move to a different water supply. Those that grow orchids well with few problems have found the perfect mix of water and nutrition.

Several years ago I decided that the key to finding the right balance of nutrients was to eliminate changes in nutrient availability and pH brought on by decomposing media. So, as I began to repot my orchids each was placed in lava rock. Lava rock, while inert, retains a surprisingly large amount of water and will even accumulate a little salt, but the medium does not change as it degrades or accumulates nutrients. Flushing pots thoroughly once a month produces the same environment for roots no matter how long the orchid is in the pot. The lack of an organic matrix to hold nutrients eliminated possible salt buildup, but required regular nutrition since very little is retained by the lava rock. The use of 13-13-13 Nutricote has worked well to provide the constant feeding required in lava rock, despite the tendency for the grey pellets to fall to the bottom of the pot. Apparently, enough of the pellets are retained in the rock to allow great growth.

Once a week, if I have time, a very weak fertilizer solution of Jacks 12-2-15 RO is applied (1/16 teaspoon/gal). This fertilizer is specially formulated for rainwater and contains high levels of calcium and magnesium required for proper plant growth. This solution is sprayed on plant leaves after plants have been watered. The nutrient level is very low but supplies the extra calcium and magnesium I think orchids need. This weak solution has a pH of 6.5, which is similar to the pH of rainwater here on the coast.

Soluble high nitrogen fertilizers must be used with caution as they can produce very low pH levels in RO or rainwater; levels low enough to kill orchid roots. For instance, delivery of 100 ppm of N, a feeding rate used by many commercial growers, (1/2 teaspoon/gal) will produce a pH of 3.93 that will damage roots. The manufacturer recommends using a buffer to raise the pH, but this is more than most hobbyists can manage. Thus, I rely on Nutricote to deliver the key nutrients of nitrogen, phosphorus, and potassium.

As noted earlier, the only orchids that have not responded to this change in culture have been vandas in open baskets. I interpret this as evidence that my weak solution of high nitrogen fertilizer does not deliver enough of this key nutrient. Despite attempts to place Nutricote in bags above the vandas, they are clearly not growing as well as they have in the past; no doubt due to a nutrient limitation. Vandas in lava rock have grown extremely well, again indicating that nutrient limitations are a problem for my vandas growing in baskets.

Growing Cattleyas, What Can Go Wrong

Part 2 – Pests and Diseases

by Sue Bottom, sbottom15@hotmail.com

Despite your best efforts to provide the best environmental conditions for your orchids, there are some pests and diseases that can wreak havoc with your cattleyas. The good news with cattleya pests is that there are chemicals that can kill the invader, the bad news is that pest can cause quite a bit of damage before you are aware of their presence. With diseases, it is a little different. There are chemicals that can prevent different diseases from occurring, but very few chemicals that can cure a disease once your plant is infected.

Problems with Pests. Scale is public enemy number one of your cattleyas, the one pest that every cattleya grower must learn to recognize and control because they can weaken your plant to the point of death. Thrips are public enemy number two. While they won't kill your plant, they can ruin the flowers you've waiting so long for. Mites are less of a problem for cattleyas, except for those thin leaved varieties.

If you notice yellow, chlorotic spotting on the upper surfaces of the leaves, always look at the leaf underside.

These are the leaf undersides. During their crawler stage, juvenile scale move around the leaf scouting out their new home.

Scale and Mealybugs. While scale and mealybugs are different creatures, the damage they cause and their treatment are the same. There are different types of *scale*, but the kind that typically infests cattleyas is boisduval scale, that forms white masses. Scale can appear on leaves, leaf axils, pseudobulbs, rhizomes and sometimes roots. Mealybugs appear to be white cottony masses that can occur on any part of the plant from the roots to the flowers, though they tend to seek out the youngest, most tender growth.

If there are only a few scale or mealybugs, use a Q tip dipped in isopropyl alcohol to physically remove the pests, or put the alcohol in a spray bottle and spray all visible pests and hiding places. For more severe infestations, use repeat applications of a contact pesticide or one of the home made remedies made with isopropyl alcohol, water and soap. Be sure to spray all plant surfaces and pest hiding places. Drenches, in which the insecticide is poured through the potting mix, are easier to apply than contact pesticides and probably more effective with the added benefit of lowering your potential exposure to chemicals. You can use one of the products containing the active ingredient imidacloprid (Tree and Shrub, Merit) or dinotefuran (Safari) and the orchid will move the chemical through the roots into the leaves and kill the pests from the inside out.

Scale hide under the papery sheath encasing the pseudobulb and can quickly become an infestation causing necrosis.

If you really want to eliminate scale from your cattleyas, invest in one of the insect growth regulators, like Distance. The active ingredient Pyriproxyfen won't affect the mature scale, but will prevent the juvenile scale from maturing into adults so the young can't grow into breeders. If you have an active scale infestation, you'll have to combine the insect growth regulator with one of the chemicals that will kill the adult scale to get the scale under control. Then a semiannual application should be sufficient to prevent scale from ever being a problem in your growing area.

Flowers may be deformed, exhibiting stippling, browned edges and water soaked spots. Sometimes damage from thrips mimics the color break caused by Odontoglossum Ringspot Virus.

Thrips. Thrips are very small sucking insects that feed on the most tender parts of your orchids, the flowers, flower buds and root tips. Rather than seeing the pest, you notice the damage caused to buds and flowers, which is occasionally mistaken for viral color break. Managing thrips is difficult because they are very small and easy to overlook; they are mobile spending part of their life cycle in the soil; prefer to feed on flower parts where systemic insecticides do not reach them; live on a wide variety of host plants; reproduce rapidly in warm greenhouses;

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may be present in multiple life cycles from egg to adult; and are resistant to a number of insecticides. Sanitation is very important, remove spent flower and vegetative material that can contain eggs and larval material to sealed containers. If infested, spray the buds and flowers every 3 or 4 days with a rotation of chemicals that might include the active ingredients acephate (Orthene), abamectin (Avid), spinosad (Conserve) and pyridalyl (Overture).

Mites. Mites don't tend to feed on those cattleyas with hard, waxy leaves, but some of the thinner leaved cattleyas are susceptible to them. The most common type is the two spotted red spider mite (*Tetranychidae*) that causes a chlorotic spot or stipple at each feeding site as chloroplasts are sucked out along with the plant sap. Leaves eventually develop a mottled or stippled appearance with webbing under the leaf in severe infestations. Mites proliferate during warm, dry conditions. Mites are not insects, they are members of the spider or arachnid family, so most insecticides will not affect mites. To treat for mites, spray upper and lower leaf surfaces with one of the home cure mixtures containing isopropyl alcohol and soap or with a miticide containing the active ingredient abamectin (Avid), pyridaben (Sanmite) or bifenazate (Floramite) following label instructions and being particularly careful to contact all the undersides of the leaves. During warm weather, new generations mature every 6 days so repeat applications will be required.

Large Chewing Pests. There are many creatures that gnaw on roots and leave large holes in leaves and flowers, though the culprit may not always be obvious. You may find you have to scout your growing area at night with a flashlight or set baits to identify the invader. Some of the common bad actors include:

Roach? Snail? Rodent? The larger the hole, the larger the creature. You'll have to bait or scout your plants at night to identify the culprit in your growing area.

- Slugs and Snails – These nocturnal mollusks eat root tips, flower buds and flowers and leaves and may leave behind a slime trail as evidence of their presence. You can bait pots with a slice of apple or potato, a lettuce leaf or a shallow tray cup of beer and if you see slugs or snails in the morning, you'll know what is causing the problem. Baits containing the relatively nontoxic iron phosphate (such as Sluggo) can be used. The toxic bait containing metaldehyde (such as Deadline) is an alternative although the active ingredient is both attractive and deadly to dogs and cats so it must be used with great caution. Caffeine may also be used for snail and slug control. First Rays recommends using left over coffee in a 50/50 mix with water. The tiny bush snail, *Zonitoides arboreus,* can cause extensive damage to root systems and is not particularly attracted to the snail baits, so liquid metaldehyde or caffeine can be sprayed as a contact killer.

- Cockroaches and Crickets – Roaches and crickets can take up residence in the bottom of your orchid pot where they hide and eat orchid roots. A midnight tour with a flashlight may be necessary to confirm the identity of your pest, or you can dunk the pot in a bucket containing water and liquid Sevin for several minutes and see what comes out of the pot. Baits containing granular ortho-boric acid (such as Niban) are easy to use, low toxicity formulations for controlling carpenter ants, roaches, ants, crickets, mole crickets, snails, slugs, earwigs and silverfish.

Problems with Diseases. Cattleyas are susceptible to diseases caused by the water molds, bacterial organisms, bulb, root and stem fungal rots, leaf spotting fungi, flower blights and virus.

Black Rot. The fast moving Black Rot is caused by the water molds *Pythium ultimum* and *Phytophthora cactorum* (fungal-like parasites called oomycetes). The infection often starts in the roots and spreads upward to the base of the pseudobulb which turns a creamy yellow that eventually turns black or brown, softens and the bulb rots. Often the leaf falls from the plant with a slight jarring. The disease spreads rapidly and unless the diseased tissue is removed, the plant will not survive. If you find Black Rot, act quickly to cut away infected tissue and then treat with hydrogen peroxide or better yet one of the specialty expensive chemicals containing metalaxyl (Subdue), fosetyl aluminum (Aliette) or etridazole (Truban, Banrot).

Black Rot. You can see the Black Rot moved up the pseudobulbs into the leaves, the diseased tissue must be excised quickly, before it spreads to the healthy pseudobulbs and kills the plant.

Calcium deficiency is sometimes mistaken for Black Rot. When the new growths develop without benefit of sufficient calcium, the tender tissue that forms is more susceptible to rot. Sufficient calcium must be supplied to your plants during the growing season because the plant cannot move

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calcium from older leaves to the newly forming leaves, it must be supplied to the plant in proportion to the growth rate of the plant. Consider using a CalMag fertilizer or using calcium supplements, particularly when plants are growing rapidly and need extra calcium the most.

The organisms causing Black Rot require water to proliferate so disease occurrence is more prevalent in the South during the hot humid summer months. You can apply precautionary drenches to your plants after repotting and monthly during the summer to protect them from the disease. Try to avoiding repotting during these dangerous humid time periods so as not to create open wounds that are entry points for the pathogen while it is the most active. Unfortunately, these danger months are the same months your bifoliates send out new roots, and if they require repotting you must do it right before the new roots form. If you must repot during the danger months, drench with a protective fungicide after repotting and keep the newly repotted plants dry for a week or two to let the wounds dry out while the roots grow into the mix seeking water.

Bacterial Brown Spot. Bacterial brown spot is a relatively slow moving bacterial infection caused by *Acidovorax* (syn. *Pseudomonas*). The infection enters through the stomata or wounds on older plants and usually affects older leaves. It appears as sunken black spots that are clearly delimited. It advances slowly and is rarely fatal. More extensive damage can occur on younger plants. If the damage is severe enough, remove infected tissue using a sterile instrument, spray bactericides containing copper compounds on infected and adjacent plants following label instructions, or apply the home remedy of hydrogen peroxide.

. Bacterial Brown Spot. On older cattleyas, bacterial brown spot may be unsightly but it is a slowly moving bacterial infection that is rarely fatal to the plant.

Bulb, Stem and Root Rots. Rhizoctonia solani and *Fusarium spp. (moniliforme and oxysporum)* infections arise from fungal pathogens in the potting media that cause rots. These fungal infections develop much more slowly than a bacterial infection would, but both will slowly kill your plant if the pathogens are unchecked. Both diseases are mostly avoidable with proper cultural practices. *Rhizoctonia* populations can increase in a degraded organic potting mix to the point that signs of the infection are obvious on the aerial portion of the plant. The oldest pseudobulbs start turning brown and wrinkled and the roots rot. The fungus moves slowly in the rhizome toward the front of the plant and as each pseudobulb is affected, the associated roots die, the bulb browns and becomes dried and husky. The best prevention for *Rhizoctonia* is to repot your cattleya before the mix degrades.

Fusarium enters the water conducting tissue of the plant and as spores germinate, the growing fungus plugs the xylem. The cattleya starts to look wrinkled and dehydrated because water cannot be moved from the roots upward through the plant. Slowly the plant weakens, becomes leathery, graying in color and ultimately it dies. If you cut through the rhizome of a *Fusarium* infected cattleya, you will see a diagnostic purple band on the outer ring of the rhizome. Using a sterile tool with each cut, remove the older infected tissue until you reach a clean section of the rhizome. Diligent attention to good sanitary practices can prevent *Fusarium* from spreading through your collection. Always use sterile cutting tools when repotting and removing flowers

Fusarium Wilt. The fungal pathogen plugs the water transmitting tissue in the plant so it dehydrates, becomes leathery and wilty with a grayish cast and ultimately dies.

You can protect your plants from these fungal rots by a preventative drench program, although you will have to use some of the very pricey specialty fungicides. Any infected tissue must be removed and the plant treated with one of the progressively more expensive chemical drenches with the active ingredients chlorothalonil (Daconil), pyraclostrobin (Pageant, Empress), azosystrobinor (Heritage) and fludioxonil (Medallion), among others.

Fungal Leaf Spotting. Fungal leaf spotting fungi can threaten the health of young seedlings, but they are rarely fatal to mature plants. There are many species of *Cercospora* that can cause leaf spotting. Some cause blotchy spots that are circular to irregular in shape and turn a purplish black, becoming sunken with age. Others form tiny spots on leaf undersides while the upper part of the leaf turns a light yellowish green. If there is extensive damage, the leaf may drop or it can be removed.

Anthracnose, caused by *Colletotrichum* and *Glomerella* species, starts at the tip of the leaf and slowly moves downward forming concentric rings or bands. You may see brown dots in the discolored tissue, the fungal fruiting bodies. Remove the damaged tissue to about an inch below the discoloration to remove the spores from your growing

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area. There are a number of fungicides tht are effective at controlling this fungal spotting, including those with the active ingredient chlorothalonil (Daconil), pyraclostrobin (Pageant, Empress) and azosystrobinor (Heritage), among others.

Botrytis. Botrytis cinerea is a fungus that causes very small, black or light brown spots on the flowers. If conditions are moist, the spots may enlarge and form a gray fungal growth that covers the entire flower. It is the same fungus that causes gray mold on strawberries This fungus is common in the environment and cannot be eradicated. Remove infected flowers since these are reservoirs of infection. The potential for Infection may be minimized through careful sanitation, increased air circulation, reduced humidity and warmer night temperatures (above the mid 60's). You can spray with a protectant fungicide containing the active ingredient chlorothalonil (Daconil), pyraclostrobin (Pageant, Empress) and fludioxonil (Medallion) among others, or the home remedy of baking soda at 2 tsp/gal.

Problems with Virus. Virus can express itself in chlorotic and necrotic spots, streaks, lines and rings in the leaves. Flowers may show necrotic spots and streaks as well as color break, often resulting in an unhealthy, ugly looking plant. The virus, if present, is present in all parts of the plant. There is no treatment for a virused plant. Destroy the plant to prevent it from infecting other plants. If the plant is valuable, isolate it completely from other plants and follow strict precautions to prevent infecting other plants.

When you first start growing orchids, you suspect that any problem you notice on your plants is caused by some nasty pest or disease. Your knee jerk reaction is to find a magic potion that will make the problem go away. With pests, quick diagnosis and response is important and you have to know which household cure or chemical will dispatch which pest. Disease problems are a little different. Sometimes you have to resort to the heavy artillery to eliminate a pathogen from your growing area. But once it's gone, always think about what you might have done differently to prevent that disease from getting established in the first place. If you can eliminate the cultural conditions that allowed the problem to manifest itself, you'll greatly reduce the need for reactive spraying. You'll learn to anticipate time periods when potential disease pressure is high, when a protective spray could pay big dividends in preventing the disease from infecting your plants. As you cultural practices improve, your plants become stronger and more capable of withstanding stresses. Your powers of observation will likewise improve, so you'll notice small problems before they can become big problems. In the end, you'll have more time to admire your plants and smell the cattleyas!

Is Stalite Killing Your Orchids?

By Harry McElroy

The accusation that stalite, used as a potting media, leads to the death of our orchids is often heard at orchid society meetings. For a long time the reason why anyone would blame the stalite was a mystery to me.

Stalite is formed when slate aggregate is heated in a rotary kiln to over 2000°F and the heated slate expands or pops much like popcorn. The resulting material is a porous lightweight material which is actually a form of ceramic. It holds 30 percent of its weight in water, never breaks down, is completely inert and does not affect the pH or acidity around the roots in any way. After the heat of the rotary kiln, it is as sterile as anything you could pot in. It seems like it would be a perfect potting material. I used it for many years without problems but suddenly without warning I began to have problems with root loss. So maybe it is or maybe it is not a good potting material.

The evaporative cooling system in my greenhouse may give us the answer. Water flows over cooling pads and evaporates into the airflow from the exhaust fan. As the water evaporates it leaves behind the minerals in the water from the water reservoir. Every 5 to 6 months, the mineral load in the reservoir gets so high that it begins to clog the distribution holes along the ½ inch pipe and if not addressed, it will clog the pipe completely. It is necessary drain and flush the system every two to three months and scrape out the barrel used as reservoir once a year. Here is the important lesson from the cooling system: **The water is so toxic that it kills the grass where I drain it.**

The same thing happens inside the pots. Each time we water some minerals from our water in addition to fertilizer is left behind to collect on our potting material. It will accumulate at either a slow rate or very quickly depending on how much we flush when we water. Stalite lasted a long time before I had problems because I do flush or let water flow through the pot for a while each time I water. It will last only a short time without problems if you do not flush because the minerals forming on the stalite will make it look like concrete. All inorganic potting material, not just stalite, will eventually collect minerals from water but it may be that stalite has just the right porosity to be less forgiving.

The idea that it lasts a long time before plants require repotting is not necessarily wrong. It took years for me to have a problem because I flush often – but eventually I had a problem despite my leaching habits.

Is it a good or bad potting material? That depends in part on your watering habits. It may be a good material if you leach thoroughly to eliminate the mineral buildup, and this is a good habit to have no matter what potting material you use.

Banjong Orchids

We enjoy taking side trips to local nurseries when we're down at the Redland Festival and this year we decided to go to Banjong to look at their fabulously well grown vandas. They also have the most interesting pots for growing orchids. They have clay vanda pots of various heights and shapes that are perfect for growing vandas in a pool lanai, with really attractive presentation. There are many other pots of various depths and widths with different designs. It is a dangerous place to visit if you have a pot fetish. Your wallet will be a lot lighter on the way out, as you lug your new clay beauties to the car.

Show Table

Grower Nicky Makruski
Bulb. Jersey

Grower Sue Bottom
Ctsm. pileatum

Grower Yvonne & Bob Schimmel
V. Jairak Classy

Grower Tom & Dottie Sullivan
Aspasia lunata 'The Orchidman'

Grower Courtney Hackney
Lc. Linda Curle

Grower Sue Bottom
Cyc. Swan Cascade

Grower Suzanne Susko
Blc. Lemon Drop

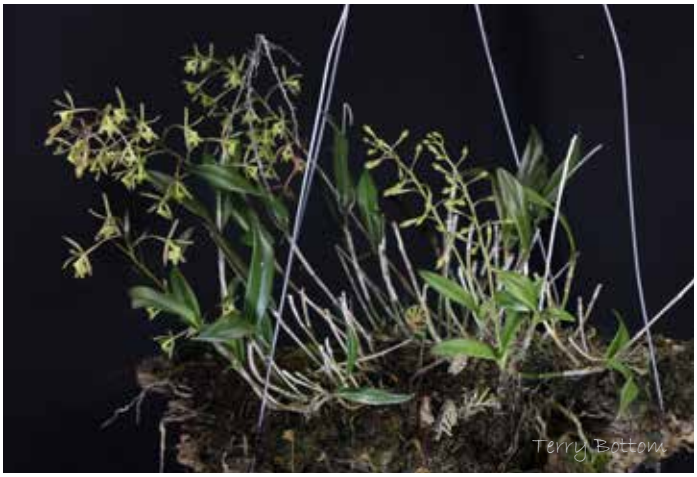
Show Table

Grower Sue Bottom
Blc. Malworth x Slc. Sixpence

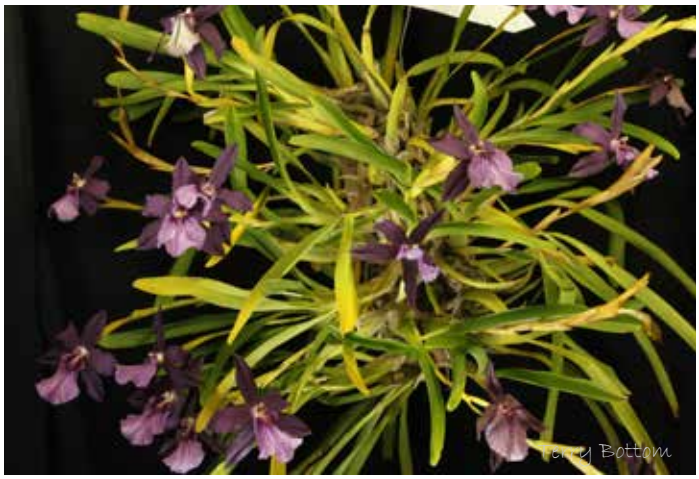
Grower Suzanne Susko
Blc. Cherry Suisse 'Jean Gilliland' AM/AOS

Grower Tom & Dottie Sullivan
Mtssa. Estrelita 'Sweet Senorita'

Grower Yvonne & Bob Schimmel
Milt. spectabilis x Milt. Seminole Sand



Grower Nicky Makruski
Epi. magnoliae



Grower Tom & Dottie Sullivan
Milt. Gene Gadilhe