St. Augustine Orchid Society NEWSLETTER
April 2022
Volume 17 Issue #4

Club News

April SAOS Meeting

by Karen Ford

Welcome and Thanks. President Tom Sullivan opened the meeting at 6:50 pm with 48 attendees. He then thanked Dottie Sullivan and Dianne Batchelder for bringing cupcakes and cookies and reminded members to "drop a dollar" to help defray the cost

Club Business. VP Linda Steward welcomed visitors and four new members: Sandra Harmon, Catherine Simmons, Maria Sands and Jeanne Moeller. Members with April birthdays were given a raffle ticket by Dianne. Linda also reminded members that their dues can be paid at the meeting or by PayPal on the SAOS website. She will be updating the e-mailing list after the meeting, so be sure to renew.

Picnic. Dianne announced the upcoming SAOS Picnic, scheduled for Sunday April 24 from 4-6pm at the picnic area behind the Memorial Lutheran Church. There will be an orchid swap/sale, so bring any divisions you are ready to part with. The club will provide hotdogs and hamburgers, and members are asked to bring a side dish or dessert to share and the beverage of their choice.

Orchid Shows in Florida this Month. Tom noted that there are several orchid shows this month in Savannah, Apopka, Vero Beach and Melbourne. Check the website for details.

Repotting Clinics. Tom announced that the next orchid repotting clinic will be held on May 7 from 10 am until 1 pm at the Southeast Branch of the St. Johns County Public Library, located on US1 South near SR 206. All are welcome to learn how to repot orchids, have them repotted by experts, or just observe and visit with club members. He also noted that supplies for growing orchids are available on the back table, and that you can also request them by email at info@staugorchidsociety.org.

Library. Howard announced that he brought two Cattleya books (including one written by Courtney Hackney) that are available to borrow from the SAOS library, as well as a DVD on potting orchids and the March issue of the Orchids Magazine.

SAOS Program. Courtney and Sue presented a very informative program describing many important factors that need to be considered when repotting an orchid plant. They began by reminding us that most of the orchids we grow are naturally epiphytic and adapted to life in trees. Their special adaptations include fleshy leaves, pseudobulbs, a waxy cuticle, and specialized roots that are surrounded by velamen, a sponge-like tissue that readily absorbs moisture and nutrients, facilitates gas exchange, and aids in attachment to surfaces. Some orchid roots, notably Phals and Vandas, are even photosynthetic, so it is very important to have good air circulation around roots.

In nature, orchid roots grow well in a thin layer of organic matter on tree surfaces, but they can extend 20-30 feet from the rest of the plant, sometimes even reaching into the organic mulch at the base of the tree. It is not uncommon for the roots of many plants to be 10-20 times greater in size than the leaves and bulbs! In addition, orchids are adapted to life in a nutrient-poor environment, so they grow very slowly.

Orchid cultivators frequently try to mimic nature by mounting plants directly on bark or rock, making sure they select a mount like cork that won't rot quickly. Another common choice is to place orchids on a plaque or in a clay basket and to water them at least daily. Although baskets made from coconut fiber are available, it is important to remove any plastic that is lining the basket, as it will inhibit good drainage, and note that the metal parts usually rust. Galvanized metal baskets were recommended for growing Stanhopeas and some Bulbophyllums.

Continued on page 3

Club News

Upcoming Orchid Events

April

6-9 AOS Centennial Celebration & Spring Mtg
Biltmore Hotel, Coral Gables
9-10 Deep South Orchid Society Show
Coastal Botanic Gardens, Savannah
9 FL North-Central Judging,1 pm
Clermont Garden Center
849 West Ave
12 JOS Meeting – Hands On Demo, 7 pm
Mounting and Potting Orchids
13 SAOS Virtual Show Table
Courtney Zooms into Cyberspace
Invitation Will be Sent by Email
15-17 Spring Intl Orchid Festival
Krull Smith Nursery
2800 West Ponkan Rd, Apopka 32712
16-17 Flamingo Gardens Orchid Society Show
Flamingo Gardens, Davie
23-24 Vero Beach Orchid Society Show
Riverside Park
24 SAOS Picnic and Orchid Sale, 4 to 6 pm
Memorial Lutheran Church
3375 US 1 South, St. Aug 32086
29-1 Platinum Coast Orchid Society Show
Kiwanis Island Park Gym and Annex

May

1 JOS Picnic, 12 pm
1658 Holly Oaks Lake Rd. E.
Jax 33225
3 SAOS Meeting, 6:30 pm
Summertime and the Growin' Is Easy
Jim Roberts, Florida Suncoast Orchids
7 SAOS Repotting Clinic, 10 am til 1 pm
Southeast Branch Library
6670 US-1 N, 32086
7-8 Volusia County Orchid Society Show
Volusia County Fairgrounds
10 JOS Meeting – Picnic on 1st in Lieu of Mtg
11 SAOS Virtual Show Table
Courtney Zooms into Cyberspace
Invitation Will be Sent by Email
13-15 Tamiami International Orchid Festival
Dade County Fair Expo Center
13-15 Redland International Orchid Festival
Fruit and Spice Park
POSTPONED TIL OCT 7-9
14 FL North-Central Judging,1 pm
Clermont Garden Center
849 West Ave

June

4 SAOS Repotting Clinic, 10 am til 1 pm
Southeast Branch Library
6670 US-1 N, 32086
7 SAOS Meeting, 6:30 pm
Wild, Weird and Wonderful Orchids
Sue Bottom and Courtney Hackney
8 SAOS Virtual Show Table??, 7:00 pm

St. Augustine Orchid Society Organization

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Continued from page 1

Many orchid growers have very good success growing their plants in pots. The size of the pot depends on the type and size of orchid you're growing: Bulbophyllums and Cattleyas do well in shallow pots, while the more terrestrial orchids like Paphiopedilums, Cymbidiums, and Habenarias like tall pots. Clay pots breathe, but unless you purchase or create orchid pots by drilling slits in the sides, you will probably want to enlarge the bottom hole, so the pot drains well. Because roots need air for photosynthesis and respiration, growers often add a layer of Styrofoam peanuts to the bottom of clay pots. The clear plastic lets you see how the roots are growing, which can let you adjust your watering accordingly.

There are various potting mixes used to grow different types of orchids. The potting mix that works well for many of the orchids grown in our area contains sponge rock, charcoal, clay balls, and orchiata bark, with or without chopped sphagnum moss. Factors to consider include how much surface area the medium contains and how often you water your plants. Some materials can be deceptive; for example, lava rocks have numerous nooks and crevices to hold lots of water and can become saturated with salt. On the other hand, organic matter binds nutrients well, but can also decompose more readily, so you may need to repot more frequently. If you want to use pure cypress mulch, just make sure it is pure, otherwise it may decompose very rapidly and facilitate root rot. Sphagnum moss can be an excellent choice, as it is very acidic and inhibits bacteria and fungi that can cause rot, but you must be careful to purchase only New Zealand long-fibered AAA moss! Whatever potting mixtures you choose to use, just remember to pot all of the same types of plants in the same mix, so you can water appropriately.

To determine whether a plant needs to be repotted, consider the health of the roots and the texture of the potting mix. If it feels like soil, it's time to repot. Timing is also important: try to repot one week before the new roots begin to grow. Also note that it is not a good idea to water immediately before or after repotting and to use dry medium. Roots will inevitably be damaged during the process, and if they remain dry for between one day or one week, they will self-seal and inhibit bacterial and fungal growth. You can also brush or dust a bit of Banrot on any cut surfaces to retard disease. Spraying Dip 'N Grow hormone will encourage new root growth.

While repotting, remove any dead or diseased roots. To inhibit the spread of disease, it is important to sterilize repotting surfaces with bleach, possibly place plants directly on clean newspaper, and use only sterilized tools. You can sterilize pruning shears blades by torching them and/or soaking them for 10 minutes in concentrated TSP (trisodium phosphate). Sterilize old plastic pots with 10% bleach solution, and old clay pots by either baking them for 2 hours Don't forget to also clean your hands frequently, as they are a great surface for spreading disease from one plant to another.

When repotting, the rule of thumb is to select a pot that will allow 2 or 3 years of new growth, so note the internodal distance. After removing old medium and dead/diseased roots, position the plant in its new pot with the rhizome just above the level of the mix, then back fill with medium. Cattleyas should be repotted with 3-5 pseudobulbs together, placing the older bulbs nearer the back side of the pot to allow the plant to expand into the new medium. If a plant lacks a good root system, support the pseudobulbs with ties or clips, then slowing add medium bit by bit over several weeks as the new roots form. It's a good idea to keep newly repotted plants with damaged roots a little shadier while you wait for new roots to form. Also note that aerial roots are acclimated to growing in the air, but if placed in a pot with mix added a handful each week as roots start to branch, they will acclimate to the potting mix.

As you can imagine, not all orchids are the same! Dendrobiums, with their small internodal distance, should often be repotted very carefully in pots the same size as the original pot after removing and replacing old medium. Bifoliate Cattleyas only root during one time of the year and it is easy to kill them if they are repotted at the wrong time of year. You can position a new pot adjacent to the mother plant or place the potted plant into a larger pot.

Good luck! And don't forget, if you want to learn hands-on from experts, come to the repotting clinic at the Southeast branch of the St. Johns County Public Library the first Saturday of the month.

Show Table Review. We will continue conducting our Courtney Hackney led Virtual Show Table via Zoom. The next one will be at 7 pm on April 13, which is the 2nd Wednesday of the month. Watch for an email invitation. Each month's Virtual Show Table is recorded and posted on our website.

Courtney described several blooming plants including a beautiful Crème de Menth Phalenopsis with green margins on white sepals that was grown in Pro-Mix, a multifloral Paphiopedilum with deeply-colored sepals, and a Cattleya with a large dose of aurantiaca in its background and multiple orange flowers.

Meeting Conclusion. The evening concluded with the raffle table. Thanks to all the helpful hands that stayed to clean the room and store the tables and chairs.

2022 Membership Roster

We will be updating our membership roster, newsletter distribution list and the name badge box this month. If you haven't had a chance to rejoin, dues are $20 for an individual and $30 for a family. You can mail your membership check to SAOS c/o Linda Stewart, 1812 Diana Drive, Palatka 32177. If you prefer to renew your membership online, you can use the PayPal link on our website. Don't let this be your last newsletter!

Repotting Clinic - Southeast Branch Library

Our move to the Southeast Branch Library has been a great success. We are available to talk with you, answer questions and help you repot orchids. Bring any plants you would like to talk about or just stop by to chat about orchids.

American Orchid Society Corner

Webinars
April 5, 8:30 pm, AOS Members Only
LED Lights – Kelly McCracken
April 19, 8:30 pm, Everyone Invited
Greenhouse Chat Orchid, Q&A - Ron McHatton

Orchids Magazine this Month
First Class Certificates in 2021
Special Awards for 2020
Blackened Leaf Tips – Sue Bottom

Photos of Latest AOS Awards

April 24 Picnic and Orchid Swap

Our annual SAOS picnic and orchid sale/swap is scheduled for April 24h. We will be grilling hamburgers and hot dogs for all. Feel free to bring a side dish and adult beverage, and join the fun. Please let Events Veep Dianne Batchelder know if you plan on attending (954-560-6470, ladydi9907@aol.com) to ensure we have enough food for all.

Bring any extra plants or goodies you would like to swap with other members. If you do not have plants to barter with, cash works too! We may have some silent auction plants too!

Where: Memorial Lutheran Church
3375 US 1 South, St. Aug 32086
When: April 24, 4 to 6 pm

May 3 Monthly Meeting

Summertime and the Growin' is Easy
Jim Roberts, Florida SunCoast Orchids

Jim will show us lots of pictures showing different ways to grow orchids outside in the summer, even if you're not always home over the summer. Hopefully it will inspire you to find new growing areas for your orchids.

We'll have plants available on the sales and raffle tables. Friends and guests are always welcome.

When: Tuesday May 3, 6:30 til 9 pm
Where: Memorial Lutheran Church
3375 US 1 South, St. Aug 32086

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Pry. Orchidom Green Glade 'Shungetsu' AM /AOS

Orchid Questions & Answers

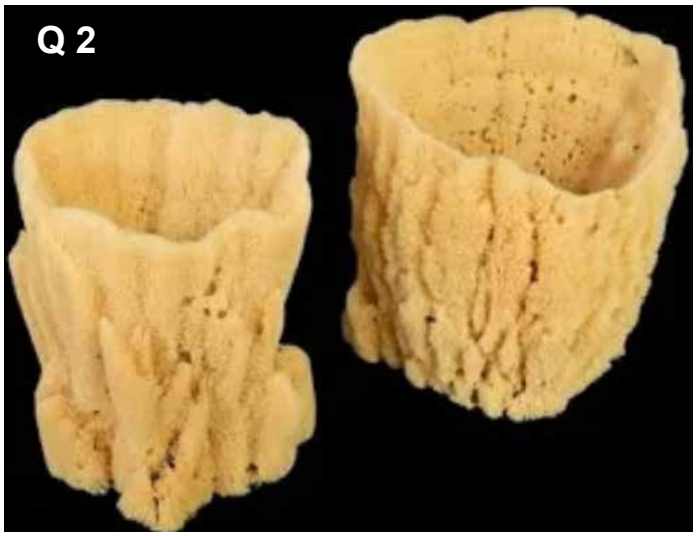
by Sue Bottom, sbottom15@gmail.com

Q1. I suspect a crown rot and not a bud. What would you advise? They have now been put closer to the fan so the centers dry out quicker. They were on the ground underneath my orchids and I think it stayed too damp.

A1. That is the emerging flower bud. If the bud is rotting, I would suspect dew/condensation settled in the fan and rotted the bulb. If that's the case, you can remove it and pour some fresh hydrogen peroxide into the fan, draining away the water after 15 minutes or so. If the bud is not rotting, rejoice, cause that is a beautiful multifloral paph!

Q2. Can vase sponges be used as an orchid pot? Do they require desalination prior to use?

A2. Did you get those sponges from Tarpon Springs? They are harvested from salt water, and then processed which involves a lot of rinsing. I just tested one of mine by running some water through it and it wasn't particularly salty. I'd soak it good before using it, changing the water a few times. I wonder how long it will last without breaking down, let me know!



Q3. I purchased this antelope type dendrobium that was originally mounted upside down on a board. Is this a dendrobium that goes dormant? I can't seem to make it happy

A3. The spatulata type dendrobiums grow pretty much like cattleyas. If you took it off its mount and put it in a pot, you probably compromised the root system, which basically doesn't like to be disturbed. They grow well in pots, usually pots much smaller than you think they need because the canes grow so closely together. A good dendrobium potting mix is one with not too much organic material because organic material breaks down after a couple years, and then it must be replaced with fresh material, so you disturb those roots again. Keep it a little drier during the winter season until new roots are ready to grow in the spring, and then think about putting it into a smaller pot with a coarse potting mix.

Orchid Pests in Small Collections

by Dr. Courtney Hackney

There are five general types of pests that cause problems for orchid growers, scales, thrips, mites, snails, and slugs. In nature, these pests seldom kill orchids. However, without natural predators and in crowded conditions, greenhouse or windowsill culture provides the ideal environment for diseases and pests to spread from plant to plant. While many hobbyists and a few commercial growers have attempted to use natural controls, e.g., ladybugs, few if any report control. Thus, pesticides are a part of just about every orchid grower's routine. What is the most effective control? What is the safest product?

The answers are not simple, but there are some guidelines. First, remember that every product is potentially dangerous if used improperly and/or without proper precautions. Products on the market have been tested for safety under very specific conditions and on specific types of plants. My opinion is that just about every product I have used has damaged my orchids if only to a small degree. Thus, application of a pesticide should not occur unless there is a problem.

Hobbyists with a small collection may never need to use any highly toxic product. A hose can be used to generate a fine jet of water that jets insects from under leaves or rhizomes. It works especially well for scale, which are a serious pest for many types of orchids. For cattleyas, this can be done every time the plant is repotted even if no scale is noted. Be sure to clean below the rhizome as well and remove any dead tissues attached to rhizomes or pseudobulbs as scales love to hide in such places. If scales are noted on a cattleya that does not need repotting, this can also be done while the orchid is in the pot. There is the risk that scales hiding below the rhizome will miss the treatment. The process of using fine jets of water works well on just about all types of orchids. Care must be exercised on thin leaved orchids or if there are new leaves. Some windowsill growers find this method is all they need and treat each new plant before adding it to their collection.

Other hobbyists add a spray of light or ultra oil after jet cleaning their plants. This is a relatively safe product for you and your plant and leaves a beautiful sheen on leaves and bulbs. It is sold under a variety of trade names such as sun oil or ultra-light oil. The label must specify that this

Scale hides under papery sheaths and in leaf axils of cattleyas.

product can be used year round. It works by coating the pest and clogging its ability to get oxygen and is effective against both insects and mites. Avoid placing orchids sprayed with light oil in direct, bright sunshine until the oil has dried. Unless your orchids are packed too tightly into a small space, or you have no time to devote to regular pest control, this should be all that is required to maintain your collection.

Some hobbyists have reported success with insecticidal soap that is available in ready-to-spray bottles. This product has not worked well for me. Also, I seem to have an allergic response to this and many soap products. The lesson here is to treat all products as if they were toxic, just in case they later turn out to be.

Generally, your collection should be checked at least twice a year to be sure pests have not gained a foothold. Light oil can be applied as often as you like to maintain beautiful leaves. Inside homes in the winter, low humidity can lead to water loss and/or mite infestation and light oil helps with both of these conditions. While there are dozens of pesticides and miticides on the market, there are very few that I will use on my orchids because I believe that orchids are potentially damaged by all pest control products. Thus, I try not to use any. There are two types that are used when pests are found. For large collections, hand treating each plant is not possible and this is when and where these more toxic products are appropriate. Even so, special plants or those recovering from a rot are protected from any pesticide effects and cleaned with a water jet and sprayed with oil as noted above.

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 April 2007.

Reflections on Potting Orchids

by Andy Easton, reprinted with permission

Whole books have been written on the subject of potting orchids, which inevitably provokes vigorous discussion whenever orchid enthusiasts gather. Variances of opinion and technique can coexist harmoniously and what is right in one set of circumstances may very well be completely wrong in a differing situation. Emphasizing that these broad comments essentially reflect my own experience with orchids, I hope that readers will feel comfortable taking from this article that which they find useful and forgetting suggestions that they know have little relevance in their own growing environment.

When to Repot. For many beginning growers, knowing when to repot can be quite traumatic. Here are some suggestions to make the process easier. Some media have a much shorter pot life than others and the situation is further complicated by water quality and the fertilizing regime. For example, good New Zealand sphagnum moss lightly fertilized with superior water will maintain its qualities tor 12 to 18 months. Lower-grade Chilean or Chinese moss, heavily fertilized with water containing excessive levels of dissolved salts will have seriously broken down within six months. Artificial media like Rockwool may be affected by the buildup of salts, which is something of a management problem, but the basic material is everlasting.

Genera like Paphiopedilum and Phragmipedium, many members of the Odontoglossum Alliance and Phalaenopsis thrive on regular repotting and mix freshening. Timing is still important, however. Never repot plants, if you can avoid it, in the six-week period leading into the shortest day of the year and shy away from hot summer weather, too. At both extremes, orchids will be shocked and recover slowly from repotting at the wrong time.

Most genera, among them Cattleva, Cymbidium and Dendrobium, will often flush in growth right after the flowering season and repotting can be tailored to this sequence. In the case of Cymbidium and temperate Dendrobium, the growth cycle is closely linked to monsoon rains in their native habitat. Cattleyas and their relatives are usually repotted when they have new growths at or beyond the pot rim when it is easy to see the new roots developing. Do not rush this process; if you damage very short incipient roots they will wither, whereas longer roots can branch and regain momentum quickly.

Enthusiasts should always look for media that will give them the longest normal time interval between pottings for the genera they grow. Most successful media for Cattleya, Cymbidium and Dendrobium should have a two-year life when used in larger pot sizes.

A maxim for young plants that is widely-accepted is to pot regularly. It is important that juvenile plants never lose their momentum and the early spring and autumn periods are typically when they are handled and moved to larger pots in fresh potting mix.

Juvenile plants should be repotted regularly so they never lose their growing momentum.

How to Repot. If you read orchid books from 50 years ago, potting was indeed a laborious process. However, that did not stop the students in Professor White's book American Orchid Culture lining up in their best garb to participate in the exercise. In the days of osmunda and little, if any, fertilizing, the potting ritual was detailed and slow. However, no one paid any attention to virus prevention. Consequently, whole collections of mature plants that had been previously divided on several occasions became largely infected. Virus is an increasing problem today and good potting techniques are vital in preventing its spread. Among these are using sterilized tools for making cuts and, when repotting, putting down a stack of newspapers and then removing a sheet each time an orchid is repotted.

I enjoy the spectacle of rows of neatly potted plants placed on benches, but I am fairly certain that the roughly potted plants that emerge from the potting machines at orchid factories in Holland grow at least as well or better than any of my efforts. Consequently, I am forced to accept that the actual mechanics of the potting process are probably unimportant for hybrids of mainstream genera. Some general rules do, however, apply. When dividing, always handle plants dry, if possible, seal cut surfaces and never incorporate dead mushy root material into the new container. Experienced growers will often construct roots from twist-ties which they curl tightly around the rhizome rather than leave dead roots in place. For sympodial orchids, such as Cattleya and Dendrobium, pot divisions small enough so they will reach the pot margin in two growth cycles or less. With plants that are particularly overgrown and will be shocked when they are divided, it is often advisable to pot allowing space for only one growth cycle and then pot up or "slip pot" when they have reestablished themselves with an active root mass. Be sure that this slipped plant is in a medium that is either coarser or no finer than the new mix to protect against having the rootball of the plant potted up stay soggy and wet while the more porous surrounding medium is relatively dry.

Continued on page 9

Continued from page 8

Many enthusiastic growers criticize commercial producers of blooming orchid plants for the media in which they are sold. This is unfair for a number of reasons, not least of which is that the wider public in many cases will throw the orchids away after the flowers have faded. Some of these commercial orchid-potting media may not suit the typical hobbyist but those with the slightest green thumb should be able to manage to keep the plants alive for the duration of their initial flowering and often much longer.

One golden rule ignored by legions of enthusiasts is to have all plants of the same genus and pot size in the same potting mix. This does not mean that every plant purchase, even those sneaked in by subterfuge, must be immediately repotted if they are in full bloom, but you should have a transition area in your growing facility where new plants reside. It makes sense from a disease prevention perspective too, because giving new arrivals a few weeks in quarantine can help avoid introducing pests and diseases into your collection. But then, when the blooms are spent, or when you have given new arrivals the thrice over, pot them in the same pot type and mix as their benchmates: plastic with plastic, clay with clay and 6-inch pots with 6-inch pots. It is also recommended that you resist the temptation to cram smaller pots into the spaces between their much larger companions, unless you are an experienced and painstaking grower.

Potting Media. Again, there is no perfect mix for any or all genera of orchids. Maybe the closest are the wires or mix-less baskets we see in the tropics on which epiphytes like Vanda and its cousins are often grown and thrive. But with the fresh-air medium, growers are forced to make the daily commitment of watering and feeding necessary for optimal results, a process many enthusiasts are unable or do not wish to make.

Many orchid references say orchids do not grow in garden soil, but do not tell anyone about the Spathoglottis growing wild in Hawaii or indeed the various terrestrials like Phaius and Arundina that thrive in sandy soil. In truth, I'm sure it would be possible to grow lovely Phalaenopsis in the same soil, in pots, providing it had been sterilized and great attention was paid to the watering process. Of course, this is an extreme case, but what usually happens is that we seek a medium that provides the qualities necessary for the orchids we grow, at an acceptable price, with a reasonably long useful life. The orchid-growing hobby should not normally involve taking the most difficult options - something to which the orchid growers of yesteryear seemed oblivious. Maybe most of them had gardeners to do the tedious work.

You need not justify your choice of medium; the results will either have your fellow growers envious or smugly smiling. Around the world, fir bark and other barks are still widely utilized. In Europe, the change from peat to inorganic mixes is widespread, yet at Floricultura, ever the leaders, finely milled sphagnum from New Zealand is still the highest percentage substrate in the medium used for plantlets just removed from flasks. Inert materials like Aliflor (artificial) and Scoria (natural) are popular in some parts of the world and ignored in others. Many phalaenopsis in Japan are still finished in sphagnum moss, not least because this gives the grower or florist an opportunity to make up multiple plant pots with ease, whereas, in the United States, coconut fiber has rapidly become the preferred medium for many growers because of its ready availability, competitive pricing and longevity.

If you are not growing phalaenopsis on tree-fern slabs or cork mounts, current cultural knowledge encourages growers to plant them in clear pots so the roots can contribute their photosynthetic output to increased growth and flower quality. Commercial growers have been quick to see the benefits of this process and in just a few years, clear pots have become the norm for growing pot-plant phalaenopsis.

There will always be someone hyping a new container, new growing media or new fertilizers. Given a short test of time, most of these new wonder materials will disappear into oblivion. With the exception of Rockwool (and even it was once head to head with Oasis as the preferred inorganic potting medium), there have been few fundamental changes in media in the past several decades. Osmunda has gone, except for the flat-earth types, but bark, moss and tree-fern fiber are, have been and will likely continue to be used. That's not to say we cannot come up with a better growing medium and growers are ever innovative — but do not hold your breath waiting for the next phenomenon.

General Guidelines. By all means, make testing and experimentation part of your orchid hobby but start somewhere and work forward in a systematic manner. Change one variable at a time and be patient. Many media grow good plants for six to nine months, but it is in the last few months of the life of a medium that the flaws rapidly appear. Be aware of the dynamic between what additives you blend into your potting mix and what you apply as fertilizer. Understand too, that few, if any, orchids have ever died from too little fertilizer or too little water but countless millions have perished from the reverse.

While this is not an article about fertilizing, I realize with each year how little we really know about nutrition of the major genera of orchids - or maybe how little I know. However, I tend more and more to the philosophy of some experts that a 3-1-2 ratio (N-P-K or nitrogen-phosphate-potash) is probably closest to that of nature and that growing orchid plants will perform well if this regime is followed. More research is needed on flower induction preconditions for the major genera but in North America such research is becoming more popular and we have an interesting decade ahead. Some exciting research activity into orchid growing media probably will unfold over the next few years.

Note: Andy has been a professional orchid grower and hybridizer since 1973, operating New Horizon Orchids. This article appeared in the American Orchid Society Orchids magazine, in February 2002 (Vol. 71:2, pp.130-133).

Leaf Yellowing

by Sue Bottom

Orchid leaves should be a pleasing green color. When you see leaves yellowing, you wonder what went wrong and what chemicals you should spray on them. Many times the leaf yellowing is caused by cultural conditions rather than a disease or pest problem. When the leaf yellows in the absence of black and brown blotching or other colorations, you should first suspect environmental conditions as the causative agent.

Springtime Leaf Yellowing. The springtime brings more direct sunlight and more hours of sunlight as well as warmer temperatures, all causing the growth rate of our orchids to ramp up. Cattleyas start forming new growths and phals grow new leaves. If you see one of the leaves on a cattleya back bulb yellowing or one of the lower leaves on a phal yellowing, it might just be natural senescence, time for that leaf to pass. The leaf will be a clear yellow, gradually losing color as nutrients are reabsorbed into the plant to be translocated to the new growths. Don't be in any hurry to remove the leaf. Let the plant reabsorb all the minerals and when the abscission layer forms, the leaf can be removed with a gentle tug.

It is not unusual for a phal to lose one of its bottom leaves in the spring, gradually yellowing until it can be removed with a gentle tug.

If an inordinate number of leaves start yellowing in the spring, the plant may be sacrificing older growths to obtain the building blocks for new growths. If the plant is robbing Peter to pay Paul, you have to ask yourself whether you provided enough nutrition to your plants in the previous months. One often overlooked nutrient is magnesium, an essential plant nutrient that is the center of the chlorophyll molecule, and of course, chlorophyll is what makes your orchids green. Our water tends to be magnesium deficient and many fertilizers contain no magnesium. I have read recommendations to apply Epsom salts (magnesium sulfate) on a monthly basis in megadoses of 1 tablespoon per gallon. Of course, your plants don't just grow one day a month and most of that high dosage of magnesium will be flushed through the pot. Better to apply a more dilute amount more frequently. If you are fertilizing with a 20-10-20 or 20-20-20 fertilizer, you can add the Epsom salts to your fertilizer solution in an amount equal to the amount of fertilizer you apply. A Cal-Mag fertilizer like Peters Excel 15-5-15 also contains 5% calcium and 2% magnesium. This formulation is good for pure water sources like rainwater or RO water, while the acidic formulations like 20-20-20 are best for our alkaline well water. In either case, apply a dilute solution of fertilizer containing magnesium to all your plants regularly, or top dress with a timed release fertilizer that contains magnesium.

Degraded Mix Leaf Yellowing. Organic matter in mixes degrades over time, breaking down, becoming compressed and ultimately smothering the orchid roots. When this happens, you may notice the leaves of the older, more deeply potted pseudobulbs of cattleyas start yellowing. It is a gradual process occurring over a period of weeks to months. If you stick your finger deep into the pot and the mix feels like dirt, you know it is time to put this plant on your repotting bench. Once you cut away the old, tired growths and repot in fresh mix, the plant will regenerate its root system and grow new green leaves. You can also have root loss from overwatering, although this would suggest your potting medium may have been too water retentive for your plant and watering habits. As you continue growing a variety of different orchids, you will learn which potting mixes work best under your growing conditions.

Root loss from a degraded potting mix can cause once healthy roots to rot, resulting in the yellowing of leaves and pseudobulbs.

Cool Weather Leaf Yellowing. Some plants are not tolerant of cooler temperatures so if they are chilled beyond their comfort zone, they will yellow and their leaves drop. The phalaenopsis type dendrobiums are notorious for this if nighttime temps drop below 55 to 60F or so. The big two tone vandas with lots of sanderianum in the background are likewise sensitive to cold. If the temperatures drop below the mid 50's, the bottom leaves will yellow and drop, creating the 'palm tree' appearance. Know the temperature tolerance of the orchids you grow so they can overwinter without stress. Keeping plants too dry in the wintertime can also cause leaf yellowing. My schombocatts get plenty of sun and water while summering in the shadehouse, but when they are moved into the greenhouse in winter,

Continued on page 11

Continued from page 10

they are watered much less frequently. They let me know they are unhappy by yellowing and dropping leaves. I suspect the plants are shedding the leaves as a survival mechanism.

This phalaenopsis type dendrobium will lose leaves if exposed to temperatures much below 55 to 60oF.

Some of the nobile and seminobile dendrobiums often called soft caned dendrobiums as well as the callista section which produces grape-like clusters in the spring seem to thrive on the stress of a coolish dryish winter. Their leaves yellow and drop during the winter and then they burst into glorious bloom in the spring. These orchids grew and evolved in an environment requiring this adaptation, and the blooms are better after being kept cool and dry than if they were kept warm and well-watered over the winter.

Temperature Extremes. Exposure to temperature extremes, freezing to near freezing temperatures as well as excessive heat, can cause severe leaf damage. In direct sun, orchids absorb light with its associated heat so that leaf temperatures can be much warmer than the air temperature. Sunburn is essentially a thermal effect. For cattleyas, leaf temperatures of 110°F for a few hours can cause sunburn. Shading, air movement and misting pots and under benches can help prevent plants from overheating. Freezing temperatures kill plant tissues just like burning does. The leaves can become black and sunken overnight. Severely damaged leaves should be removed to prevent secondary infections from spreading. The remaining plant material can be sprayed with a bactericide like copper or fresh hydrogen peroxide. Of course, copper should be avoided on dendrobiums and many thin leaved orchids due to its toxicity.

Fungal/Bacterial Infections. When you start seeing yellow, brown and black blotching and streaking along with yellow discoloration on your leaf, it is time to start worrying. At best, you might have had an exposure to cold or too much sun, or you may have to battle a bacterial or fungal infection. In general, bacterial infections are very fast moving, happening in a matter of hours to days, while fungal infections proceed slowly over a period of days to weeks. You will often have to sanitize the plant, which involves removing severely damaged tissue, and then apply protective chemicals to prevent the spores from spreading.

Black and brown splotches together with yellow discoloration, in the absence of recent temperature extremes, suggest a disease.

Scale. Sucking insects like scale can create chlorotic leaf spotting as they feed on plant tissues, injecting a toxic enzyme, which causes cell death. Every cattleya grower has to be on the lookout for scale, particularly the white Boisduval scale. Mature males are cottony white masses while the mature females lay their eggs under whitish circular shields. The crawlers are the nymph state that emerge from under the shield looking for their new home. When you see chlorotic spotting, check leaf undersurfaces for the presence of scale. Scale must be dealt with quickly, using water jetting, isopropyl alcohol or stronger chemicals.

Chlorotic spotting on upper leaf surfaces should make you look at the undersurfaces, to see whether scale has infested your plant.

Leaves will yellow as they reach the end of their natural life, and the plant will recover whatever minerals it can from the leaf. If you see widespread leaf yellowing in the spring when plants enter their growth spurt, you have to ask yourself if they are cannibalizing themselves because they are nutrient deficient. Degraded mixes and rotting roots can also cause leaf yellowing. Black and brown blotching suggest the presence of some pest or disease requiring your intervention. The longer you grow orchids, the more adept you will become at reading your orchid leaves.

Jacksonville Orchid Society Show

It was a beautiful spring weekend with blue skies and everyone smiling at the Jacksonville show. Many of our favorite vendors were there and they brought truckloads of orchids in bloom. The displays indoors were delightful, and the AOS judges were busy giving out ribbons and awards to everyone who participated. The JOS volunteers were plentiful, helpful and cheerful. It was a great job organizing and staging the event, and a good time was had by all!

SHOW TABLE

Grower Steve Dorsey
Pot. Carmen Cortes

Grower Bonnie Armstrong
Odm. wyattianum

Grower Courtney Hackney
C. Brabantiae 4N

Grower Allen Black
C. Catherine Patterson

Grower Sue Bottom
Asctm.curvifolium

Grower Leslie Brickell
Tolu. Jairak Rainbow 'Soft Berry'

Grower Janis Croft
Lpt. bicolor

SHOW TABLE

Grower Steve Dorsey
Cym. Enzan Sarah 'Albion'

Grower Suzanne Susko
C. intermedia var. orlata AM/AOS

Grower Leslie Brickell
Gastrochilus calceolaris

Grower Sue Bottom
Den. Love Memory 'Fit'

Grower Shelia Nathanson
Bl. Morning Glory 'Alan Davidson'

Grower Sue Broussard
Blc. Ranger Six 'A-OK' FCC/AOS