



Florida West Coast Orchid Society

Orchid News & Views

April 2009 Volume 7, No 4

Meeting Information

April 9, 2009

7:00 pm Educational Class

Jim Clarkson on Paphiopedilums

7:30 pm Featured Speaker: Jim Roberts

Some Encyclias to Love and Grow

- Auction Info Pg 4, 5, 7
- Meet our Speakers Pg 6
- Events Pg 6
- 6th in Jeff Dromm Series Pg 8
- Redlands Field Trip Pg 10
- Getting a Jump on Spring Pg 11
- Calciolous Paphs Pg 13
- Remember food!

www.fwcoss.org

On Pages 13-16, you will find an article about Calciolous Paphs with a very informative chart. We suggest you print these pages and put them in plastic jackets as it is a wonderful reference for future use. -Ed.

FWCOS
Orchid News & Views

Brenda Miller—Editor, Content and Advertising:
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The Florida West Coast Orchid Society (FWCOS)
Meets every 2nd Thursday of the month at Pinellas
County Extension.

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for Membership***

Membership—the term of membership shall be for
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From Our 1st Vice President

To Our Members,

It looks like the "Orchid" season is upon us. On Friday, the 13th of March, I attended the first of the three-day TBOS show at the beautiful Bahamian Center. The inside was filled with vendors displays which were superb. The entrance was set to welcome all that came through the doors.



Members were seated and ready to receive the admissions. They offered guests the opportunity to join their society with no high pressure, just letting us know that they would like to offer the opportunity to join and enjoy what they have to offer. I received a chance at an hourly raffle which I did not win. Upon entering I was greeted by some familiar faces of vendors, Jim Roberts, Betty and Don Burkam, Bill Byrd, Louis Del Favero, Paul and Trish Phelps, the gang from Featherstone, Sal from Ritter, Bill from Orchid Island, John and Lois Hicks, Nature on the Rocks sporting a new look booth, Ty from Orquido, Orchid Babies and EFG (who I have never had any contact with as for as a show). All vendors had good looking booths ready for us to purchase that orchid we had to have for our collections.

There were new phals, many den types that have to rest from fall to early spring or until buds appear on last years canes and some older ones, watering starts then.. They reward with an abundance of long lasting blooms in the spring.

While I was there on Friday, the number of Orchid enthusiasts was light and in talking with some of the vendors it may have been a sign of the economy. It will take a major effort by our club to make sure we have outstanding attendance. We will need the support of the orchid clubs in our area. I will support a reduced entrance fee for other club members and free to our own. If we support the other local societies then we can look for their support with our shows and auctions.

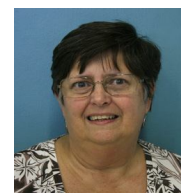
On Saturday I attended the TBOC auction at the botanical area of University of South Florida in Tampa. Jim and Emily Clarkson lent their vast knowledge and willingness to work with the many volunteers from TBOC. There was coffee and dan-ish for a competitive price at the entrance, an open registration table and a modest supply and book sale table. The seating was enough for all that attended and the display of orchids to be auc-tioned off was modest but effective. There was a lot of world class orchid types led by Jim and

Emily Clarkson, Doris Dukes and Bill Thoms who added his light hearted banter as auctioneer. His ex-tensive orchid knowledge added to the confidence of the buyers. He got the most out the buyers and none seemed to mind. I left at about the half way mark but I hope they raised the needed \$\$\$\$ for TBOC an-nual fund raiser. It was an enjoyable morning.

Bob Barrett

From Our Membership Chairman

Diane is on a short health sabbatical . She is looking forward to getting back to her tasks at hand as our Membership Chair-man. Let us all wish her a speedy recov-ery.



Diane Jones

We are happy to welcome new members, Dr Arta Rios and William Steele.



From Our Librarian

The FWCOS library is now at our house and is being listed on an excel program. When this is complete we will e-mail it to all members.

I will try to bring a few of the books to the meetings that go along with that month's topic so they can be checked out to members in good standing. If you wish to check out a book, let us know and we will bring it to the next meeting.

Please if you have 'any' books, could you please bring them to the next meeting so I can list them and they can be checked out.

Thank You
Bret Ullery

The title of Jeff Dromm's March article should have read "Making Baby Orchids: "Part 5: Or-chid Capsule, Seed Cleaning and Harvesting".

From Our 2nd Vice President

To FWCOS Members

In the month of April, Florida West Coast Orchid Society members and a multitude of guests gather to participate in our Annual Orchid Auction. What an event! Some truly gorgeous plants and useful supplies are donated by members and businesses, all of which are sold at reasonable prices. Here's an opportunity to bid on fabulous plants. Our members are going through their orchid collections, looking for duplicates of their beloved plants and readying them for sale. Local vendors in Florida and even Hawaii find plants to support our society. Members look forward to the Auction as a way of not only thinning their collection but also to acquire plants which they may have never seen. Most bids open at \$5.00, and some quickly jump as specimen plants are brought forward to the auction line.

Lifelong orchid growers, Bill Nunez, Roy Finley and Jack Majewski will do the honors of serving as Auctioneers, trading off between each other when the action becomes hectic enough to warrant a quick glass of water! The FWCOS Treasurer and Recording Secretary record sales, scribbling frantically to keep up with the final bids, while the runner's race from podium to audience and back again, delivering plants! All of the auction attendees come away delighted with their purchases and exhausted. They are pleased at the close of day returning to their cars with arms full and faces lit.

We want to express our sincere and heartfelt gratitude to our members and those supporting vendors who regularly donate items to sell. The Annual Auction is our primary means of raising money to support the Society's functions throughout the year, and with many exciting events coming up, we want to be sure we can provide the best possible experiences to the orchid-growing community. If you support our efforts and would like to help us out you can join our Society or donate plants. Bring your donations to the meeting on April 9. We also need boxes to place the plants that have been sold. Please bring various sizes and have them flattened so we can accommodate a large number. I am grateful to work with a club that works well together and jump in to participate.

The vendors who have donated orchids for the auction {by print date} are on these two pages. Thank you all.

Cheryl Finke

Chairman Auction Committee

2nd Vice President FWCOS

727-420-7230



Cheryl Finke



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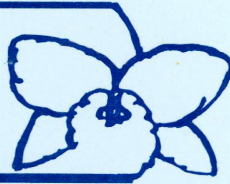


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Meetings and Events

April 2009

Apr 9, FWCOS: 7 pm Education Class; 7:30 pm Featured Speaker; Pinellas County Extension Center, 12520 Ulmerton Rd, Largo; Contact Cheryl Finke [cfinke@tampabay.rr.com]

Apr 11, 1:30 pm AOS Judging: Orlando, Harry P Leu Gardens, Palm Room, 1920 N Forest Ave, Orlando. Contact Marv Ragan 904-213-4560

Apr 16, 7:30 pm Tampa Bay Orchid Society: Speaker Avril Wick; Seminole Heights United Methodist Church at 6111 Central Avenue, Tampa.; Contact Dory Gallagher 813-907-7025.

Sat., Apr 18: FWCOS Annual Orchid Auction, 8:30 a m Preview; 9 am Auction Largo Cultural Center; Historic Feed Store, 105 Central Park Dr, Largo. Contact Cheryl Finke, at 727-420-7230

Apr 22, 7:30 pm AOS Judging, Tampa Garden Center, 2629 Bayshore Blvd, Tampa, Contact Ken Roberts 813-752-8719

Apr 28: TOC Annual Meeting 'Potting & Picnicing' USF Botanical Garden Contact Sue Barnum 813-281-2126

May 2009

May 15 - 17, 9 am - 5 pm: Redlands International Orchid Festival, Redland Fruit and Spice Park, 24801 SW 187th Ave, Homestead, FL 610-388- 1000; www.longwoodgardens.org

May 15 - 17, FWCOS Field Trip Leave 4:30 am: Redlands International Orchid Festival; Contact Corinne Arnold 727-447-2898 [See Page 15].

May 26, 11 a m Tampa Orchid Club Installation Party Contact: Sue Barnum 813-281-2126

Our Guest Speaker

Jim Roberts - Owner/Hybridizer It was in the college days of 1979 that Jim first encountered orchids while going in for a routine physical exam at a doctor's office. While there, he noticed a large Cattleya orchid on his desk and asked the fateful question: "What kind of flower is that?" To which the physician laughingly replied, "You do NOT want to know!" As a collegiate, Jim liked nothing better than an intriguing mystery. A short story by the doctor about an all-consuming hobby ensued and within two days Jim had two orchids of my own. The rest is history.



Jim will bring lots of orchids for sale . He is bringing orchids to sell, supplying orchids for our raffle, donating orchids for our auction and perhaps a few new hybrids that have never been offered to the public. Let's show our appreciation to him!

[Ed., Jim is an experienced grower with a resume that reflects years of experience. He's very knowledgeable in his field. You will enjoy this meeting. Don't miss it.]

Our Educational Speaker

Jim Clarkson is a major resource for our society on a wide variety of topics and genera and he's helping out again. Jim is an accredited AOS judge and grows a wide variety of orchids with many AOS awards. This month he's going to show us the basics (at least!) of Paph culture. [Jim and Emily Clarkson are valued members of FWCOS. They are always willing to be of assistance and dependable counsel.



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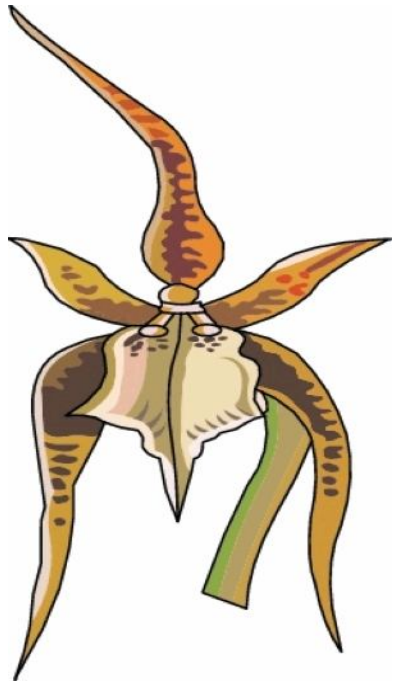
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Orchid Biology From One Hobbyist's Perspective

Making Baby Orchids By Jeffrey Dromm

Part Six: Orchid Seed Culture Media and Transfer Cabinets



Jeff Dromm

As discussed in part one of "Making Baby Orchids" scientists and orchid growers had known for a long time that orchid seeds could be successfully cultured by the introduction of mycorrhizal fungi to seeds by sprinkling those seeds on the roots of host orchids containing the fungi. It was not till second decade of the twentieth century that laboratory techniques utilizing culture media were developed for orchid seed culture.

We owe most of these contributions to Lewis Knudson, a professor of botany at Cornell University. Taking the procedures he developed for corn and legume culture and the research of two other scientists, Bernard and Burgeff, he correctly postulated that it was the presence of sugar **in vitro** (Latin for within the glass), that caused orchid seeds to germinate. *In vitro* techniques are performed in a controlled environment outside of a living organism. His experiments demonstrated that a solution of sugar, various metallic salts and water would allow the seeds to germinate and grow while solutions with only sugar and water germinated seeds that failed to survive.

In 1919 Knudsen successfully produced seedlings from *Cattleya mossiae* seeds. Though the initial reaction from scientists and the orchid community was one of skepticism this was soon followed by the theory that such techniques would not produce orchids capable of flowering. In 1922 Knudsen put an end to any doubts about his techniques by flowering a *Laelia* hybrid that had been cultured from seed. This breakthrough in orchid culture began what is known today as the **asymbiotic** propagation of orchids.

Present orchid culture utilizes a myriad of different solutions mixed with **Agar**, (a chemical compound derived from seaweed, most specifically red algae, that when dissolved in water forms a gelatinous mass). Mixing agar with a nutrient solution results in a nutrient or culture media, that is viscous and in many cases gelatin like and thus is a setting agent. When dried and packaged the media can be stored and reconstituted with water at any time. This effectively offers the desired media pre-packaged, eliminating the expense of buying numerous chemicals and correctly mixing them. The agar not only makes the nutrient media easier to use, it retards the spread of bacteria and fungus in a contaminated container. Such contamination would spread more rapidly through a watery media. The slower spread of contamination allows the possibility of saving orchid seedlings by sterilization and reintroduction into new sterile media.

The extensive research and use of nutrient culture media has allowed the development of various formulations geared to optimize germination and growth in various orchid species.

Last month's article looked at the preparation and sterilization of seed for placement in flasks/containers with media. In order to prevent the recontamination of the seed and the possibility of culturing bacteria, molds and fungi it is imperative that the media and the container where the seeds will reside be sterilized prior to the introduction of the orchid seeds. Sterilization of the media vessels is most often done using heat. Simply boiling the solution will not kill all potential infectious agents. Boiling only raises the temperature to 212 degrees Fahrenheit. To eliminate potential spores the temperature must be raised to 230 degrees F and held there for 15 minutes. In the laboratory this sterilization is accomplished using an **autoclave**, (a pressurized device used to heat aqueous solutions above their boiling point at higher-than-normal pressures to achieve sterilization). This is done by raising the pressure in a container to 14 to 15 PSI above the atmospheric pressure by introduction of heat. Autoclaves are expensive and beyond the budgets of most home orchid growers. Fortunately the same results can be accomplished using a pressure cooker or canner.

The procedure for the utilization of the culture media begins with the preparation of the media by dissolving the ingredients in water. Because agar based nutrient media does not readily and completely dissolve in distilled water, at room temperature, the media is placed in the appropriate amount of boiling water and stirred till it is dissolved. The media is then apportioned out to the culturing containers. Only an inch or two of media is required for each container. The containers are then loosely capped and the cap covered with aluminum foil. They are then placed in a pressure cooker containing several inches of water and the pressure cooker is sealed and heat applied. When the container reaches a pressure of 15lbs PSI it is held at that pressure for approximately 15 minutes. It should be noted, that the caps on the media containers are loosely screwed on to avoid a possible explosion or fracture of the container as a result of the heat and pressure. The aluminum foil allows the tightening of the containers after sterilization without possibly contaminating the cap. Upon completion of the required time, the heat is removed and the pressure cooker allowed to cool to room temperature. [The](#) pressure cooker is then

opened and the aluminum covered lids are tightened. The sealed sterile containers are now ready to accept the orchid seeds or they can be stored for use at a later time.

Because sources of contaminating agents are present almost everywhere including the air it is an absolute requirement that any transfer of the seed to a container be done in a sterile environment. A failure to follow sterile procedures during the transfer of seeds significantly increases the likelihood of contamination of the containers contents and the demise of the germinated seeds. In a laboratory setting the transfer is accomplished in specialized workstation called a **Laminar air flow transfer hood**, (a bench type cabinet where a continuous flow of air through a HEPA filter passes horizontally or vertically across a work surface (see figure one). The transfer cabinet has a covered top and sides. The air inside the cabinet is at a positive pressure. The pressure is higher than the air outside the cabinet therefore significantly decreasing the chance of contamination from outside particulate matter. By minimizing contamination from the air, attention can be directed to disinfecting the cabinets inside walls, transfer instruments, the sealed media jars and your hands. Laminar flow hoods are expensive for home use and are not required for successful transfer of orchid seeds. A successful alternative to flow hoods are still air boxes or cabinets among them "Glove Boxes". These are available commercially, but are still cost prohibitive. Fortunately acceptable substitutes can be made at home for relatively little money. In fact a medium sized fish tank laid on its side can be used quite successfully. Even a cardboard box will work.

In next months article I'll address examples of homemade transfer cabinets, there sterilization and the procedures required for the successful transfer of the orchid seeds to the sterile culture media.

Side view of a laminar flow hood

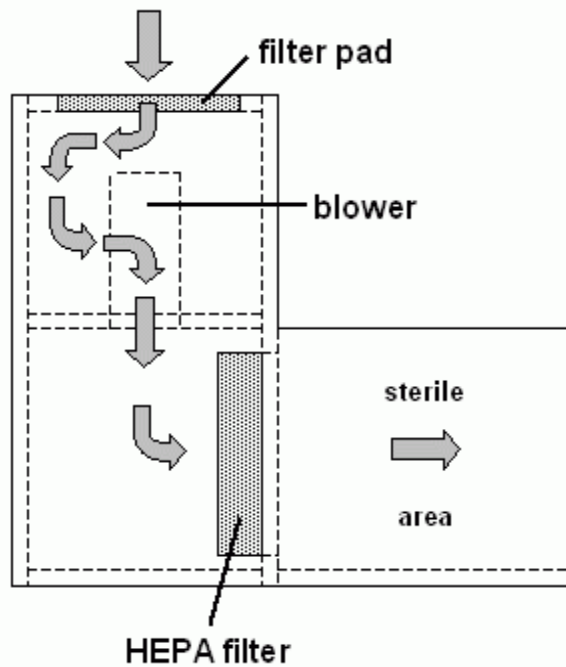


Figure One.

Courtesy of Lotte & Thomas

The FWCOS Library is now at Bret Ullery's house and is being listed on an excel program. When this is complete, it will be emailed to all members.

He will try to bring a few of the books to the meeting that relate with the month's topic so they can be checked out to members in good standing.

Please, if you have any FWCOS books, please bring them to the next meeting so they can be available for the membership.

Thank you.

Bret Ullery

Have you ever thought about joining the American Orchid Society? Their mission statement reads, "The mission of the American Orchid Society is to promote and support the passion for orchids through education, conservation and research." One of the benefits is the "Orchids" magazine which they call the Bulletin of the American Orchid Society. AOS has a facility on the east coast and hold events there. Another benefit is the website where AOS offers lots of knowledge for orchid growers including culture sheets for instructions on most species..

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Redlands International Orchid Festival

Homestead, Florida

FWCOS is chartering a bus

\$50 includes \$7 Entrance Fee, \$5 Coupon. Water & Snacks

No money refunded after April 20

FRIDAY, MAY 15, 2009

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March – Getting a Jump on Spring

Ron McHatton - Director of Education

~Reprinted with permission from the American Orchid Society

Depending on where you live, March may be more spring than winter but this month is definitely one of those where you get both. However, there are things that you can be doing to get the jump on spring. This is the time that many plants should be repotted. Candidates are those plants that are actively beginning to produce new roots and new growth. Orchids are pretty resistant to most plant pests but they aren't immune. This is the time to take advantage of those occasional warm days and treat your plants that have been inside all winter for pests that came in with them. By now, the hitchhikers will have made their presence known and it's also the time when you should be looking for the presence of the first aphid crops. These insects lay eggs in the fall when the temperatures drop and the eggs winter over waiting for the weather to warm. You can go from no visible aphids to a healthy, thriving colony in a matter of days this time of the year, especially on those juicy, tender flower spikes and buds.



Mites, thrips and whiteflies are the other creatures to be on the lookout for now. This has been a drier than normal winter in many parts of the country and mites and thrips thrive under these conditions. Spider mites are relatively easy to spot since these pests spin webs much like spiders. The other mites, effectively microscopic, damage the surface of orchid leaves allowing them to desiccate. The effect has been described as a "silvering" of the leaf surface but perhaps the easiest way to visualize the change is that your orchid leaves will take on a dull appearance. When left untreated, mites rapidly increase in number causing more and more pronounced damage and can even cause the death of the infested plant. I recently saw a number of cattleyas with dark black, hard lesions on the leaves and under the pseudobulb sheaths. The owner had been trying to treat what was perceived as a fungal problem with no success. These lesions weren't fungal but rather the evidence of an advanced mite infestation. In fact, on close inspection, the grooves along the pseudobulbs were filled with tiny white crystal-like deposits that, under a microscope turned out to be the old exoskeletons of mites cast off during molting. Mites are not insects and do not respond to insecticides designed to control regular insects. Make sure that you are using a product that specifically states for the control of mites. Otherwise it's a waste of your time and money and only serves to annoy the mites.

Thrips, on the other hand, can be seen with the naked eye and their damage is entirely different. These insects fly and can enter your collection in fairly large numbers through open windows or through greenhouse vents and multiply rapidly under dry conditions ruin newly opening flowers. Thrips suck the sap from the surface cells of the flowers, especially along the edges of the parts, causing the damaged surface to become brown and papery. The effect is misshapen flowers with dry, papery edges. If you see this on your flowers you should be looking for thrips. They are often easier to see if you tap the flowers on a sheet of white paper. Look for tiny, cylindrical insects that move rapidly. On vandas (and perhaps other orchids with exposed roots), thrips cause dry, brown rings round the roots, the result of their feeding on the root covering and if you know what to look for, they can't be missed.

In warm, dry parts of the country whiteflies can be a problem on phalaenopsis and orchids with thin leaves and you should start watching for them now. Those in more northern climes aren't immune, whitefly just appear later in the season. You can't miss whiteflies. These tiny white insects resemble moths more than flies and when disturbed fly short distances. They are in discriminant with regard to the plants they feed on; any leaves with a good supply of sap will do. In addition, they can be carried on the wind and can look like tiny white bits of ash if present in high enough numbers. They can be controlled with the usual insecticidal soaps, alcohol mixtures and general pesticides rated for houseplants or ornamental. They are attracted to yellow and some control can be had with adhesive yellow cards sold in agricultural supply stores.

March Bloom Table



BLC Ocean Drive

Displayed by Jim and Emily Clarkson

Pot Hawaiiin Charisma 'Hilo
Beauty'

Displayed by Marty Robinson



Dendrobium Oriental Smile 'Fantasy'

Displayed by Cheryl Finke



Supplementing Calcicolous Paphs
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A very common question is "I've heard Paphs like lime, do I need to add it to my pots or mix?" Like so many 'simple' questions, there is no one simple answer.

People often tend to look at Paphs as a homogeneous group of plants, but the fact of the matter is they come from a vast range of habitats, and it is difficult to make generalities as to culture. In the case of Paphs, many grow on or in close proximity to calcareous rock, but at least an equal number do not, and many of these would actually do poorly with a higher pH and calcium/magnesium supplement, so it is important first to know which Paphs tend to have a calcareous substrate in nature. How strongly calcicolous a Paph may be can be inferred to a certain degree from the nature of its relationship with the calcareous rock. Some may be found with their roots in direct contact. Others may grow in accumulated detritus or soils derived from the erosion of the rock, and others, while growing in leaf litter or humus, may still be greatly influenced if they are growing in cracks or crevasses in the calcareous rock, especially those growing below the summit on steep slopes and cliffs, with the water washing down over the stone and into the litter or humus. Plants growing in rapidly accumulating leaf litter on a level forest floor may not be significantly affected by an underlayment of limestone far below. Others are only occasionally associated with limestone (such as *Paph. lowii*, which is typically epiphytic), and in culture we do not treat these as calcicolous. We have not determined whether the requirements are for increased calcium and magnesium, or simply the higher pH that results, or all of these factors, but do believe from experience that for the strongly calcicolous species dolomitic limestone supplementation is needed for the long term health of the plant. A few species are also associated with serpentine, which is a basic silicate of magnesium, iron, aluminum, nickel, zinc, and manganese, and a more basic pH is also a consideration for these species.

Secondly, whether to supplement or not depends on the nature of your water and fertilizer. If you already are dealing with high pH hard water, further supplementation would probably be counterproductive. The nature of your potting medium also comes into play. We have always preferred at least a part of the mix to be fir bark for the mixed Paph collection, providing a somewhat acidic base. We feel the ideal situation for the mixed Paph collection is to water with a pure water source supplemented with balanced fertilizer program containing about 40 ppm calcium and 20 to 30 ppm magnesium and a pH in the 6.2 to 6.6 range. This will satisfy the needs of the noncalcicolous Paphs (note there are a few species that will need to have even lower calcium levels, but these are less common). For the calcareous species you would then add, preferably as a top dress to the pot, either crushed oyster shell, pelletized Dolomitic limestone, or Dolomitic limestone chunks. Finer grades of Dolomitic lime or micronized dolomitic limestone are useful for quick corrections, but must be reapplied frequently if not followed by an appropriate supplement. We also prefer to top dress rather than incorporate it into the mix so that we can see when the supply has been depleted and reapply.

You will often hear conflicting views on addition of calcareous materials, but if you explore them they are usually formed based on improper or inappropriate use. On one internet forum recently one person posted that her *Paph. delenatii* did poorly until she added limestone, and another posted that he saw a bunch of *delenatii* plants that were covered in limestone and doing very poorly at a nursery. Well, even though a *parvisepalum*, *Paph. delenatii* is not a calcareous associated Paph. The first person who saw improvement may have been watering with extremely acid irrigation water, or very low calcium or magnesium levels, and in these cases of poor culture it may have given a boost. In the second case, I'll bet the plants were in poor shape before the lime was added, and it is very unlikely that the lime helped them, except to a faster demise.

One note on making bark mixes slightly alkaline, they will tend to break down quite a bit faster.

See chart which follows.

Paph Species Substrate Chart

Species	calcicolous	Substrate Habit	Measured Substrate pH	Habitat Substrate Comments
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Subgenus *Parvisepalum*

<i>armeniacum</i>	Yes	Lithophytic, "humus/detritus epi- phyte"	7.48 – 7.86	North facing steep limestone slopes
<i>delenatii</i>	No	"humus/detritus Epiphyte"	"acidic"	South or southeastern facing mossy crevasses in steep granite cliffs.

malipoense	Yes	"humus/detritus Epiphyte"	7.47	North facing near vertical karst limestone cliffs and steep hills in thin soil and leaf liner
micranthum	Yes	"humus/detritus Epiphyte"	6.99 – 7.05	North facing near the summit of steep karst limestone ridges, in crevasses in thin soil, mosses and leaf litter.
dmersonii	Yes	"humus/detritus Epiphyte", lithophytic		Crevasses in northeast facing limestone cliffs, in clay, sand, calcareous soil and humus, or on limestone rocks.

Subgenus Brachypetalum

bellatulum	No	"humus/detritus Epiphyte"		Cracks and crevasses of limestone outcrops in thin layer of leaf mold and moss
concolor	Yes	"humus/detritus Epiphyte", lithophytic	7.2 – 8.0	In cacks and crevasses of limestone rock in light humus
godefroyae	Yes	"humus/detritus Epiphyte", lithophytic		In hollows and crevasses in limestone filled with humus and leaf litter
niveum	Yes	"humus/detritus		Fissures in vertical limestone where humus has gathered.

Subgenus Paphiopetalum

Section Coryopetalum

Philippinense	Yes	"humus epiphyte", lithophytic		Open situations on limestone cliffs, hills and outcrops, piles of limestone rubble
Randsii	No	"humus epiphyte" Epiphyte"		Decaying leaves at the base of trees possibly also epiphytically
Sanderianum	Yes	"humus/detritus epiphyte", lithophytic		Vertical northeast east facing limestone cliffs
Kolopakingii		"humus/detritus Epiphyte", lithophytic		In moss on rocks
Stonei	Yes	lithophytic		On sheer limestone cliffs
Adductum		"humus epiphyte"		
Glanduliferum	Yes	"humus epiphyte" Epiphyte"		Roots in surface humus and soil derived from weathered limestone, rarely epiphytic
Withelminae	Yes	"humus epiphyte", lithophytic		Grassy hillsides in clay soil over limestone or on limestone rubble
rothschildianum	No	Epiphyte", lithophytic		Ledges on steep slopes of ultra basic (serpentine) rock
Supardii	Yes	"humus/detritus epiphyte"		On limestone rocks in leaf mold filled hollows
haynaldianum	Rarely	"humus/detritus Epiphyte", lithophytic rarely epiphytic		In humus amongst rocks on serpentine cliffs, occasionally an epiphyte – Fowlie On granite goulders and limestone hills

Section Paphiopedilum

Section Pardalopetalum

lowii	Rarely	Epiphyte", rarely epiphytic		On tree branches and trunks, or in moss or humus filled hollows of rock, especially limestone
parishii	no	Epiphyte"		On moss covered branches
dianthum	Yes	"humus/detritus Epiphyte", lithophyte		North facing small cliffs and rocks, limestone bluffs

Subgenus Paphiopedilum

Section Cochlopetalum

Glaucophyllum	Yes	lithophyte	8	Steep limestone cliffs dripping with water
lieianum	Yes	lithophyte		On the roots of trees growing on limestone
primulinum	Yes	"humus Epiphyte" lithophyte		Humus on limestone hills On corraline limestone facing the sea
Victoria-mariae	No	lithophyte	4.5	Steep wet cliffs of andesite lava
Victoria-reginae	Yes	lithophyte		Limestone cliff faces with mosses

Subgenus Paphiopedilum

Section Paphiopedilum

hirsutissimum	Yes	lithophyte	8	Vertical to near vertical, north to east facing limestone cliffs
charlesworthii	Yes	lithophyte		On limestone hills and cliffs, roots clinging to rocks
insigne	Yes	"humus Epiphyte" lithophyte		Dolomitic limestone outcrops near waterfalls
barbigerum	No	lithophyte	4.5	North facing cliff at the foot of a karst limestone mountain
exul	Yes	lithophyte		Attached by its roots to steep limestone cliffs or in pockets filled with humus
henryanum	No	"humus Epiphyte"		North facing steep slopes and cliffs
gratrixianum	No	"humus Epiphyte"		Vertical riolite bluffs
villosum	No	Epiphyte lithophyte		Grows in large clumps on branches and trunks of trees, rarely lithophytically
tigrinum	No	"humus/detritus Epiphyte"		North facing rocky slopes on steep volcanic mountains
druryi	No	"terrestrial"		Steep south east or south west facing rocky slopes... on weathered rock and poor soils
spicerianum	Yes	"humus/detritus Epiphyte", lithophyte		On limestone outcrops and cliffs
Fairieanum	Yes	"humus/detritus epiphyte"		Steep cliffs, outcrops of crystalline limestone, rocks in oak forest, limestone gravels
appletonianum	no	"humus Epiphyte"		Deep leaf litter, mossy boulders in sandstone mountains
bullenianum	no	"humus Epiphyte"		Moss, deep leaf litter, mangrove roots

Subgenus Paphiopedilum

Section Barbara

hookerae	sometimes	"humus Epiphyte"		Deep leaf litter and crevasses in weathered sandstone hills. Also limestone
sangii	no	"humus Epiphyte"		
masterianum	no	"humus Epiphyte"		Leaf litter on steep slopes
papuanum	no	"humus Epiphyte"		Among granite rocks in loam
bouganvilleanum	no	"humus Epiphyte"		At base of granite outcrop
violascens	no	"humus Epiphyte"		Found growing in varying conditions, from ultrabasic "soils" to acidic volcanic "soils"
wentworthianum	no	"humus Epiphyte"		Light fibrous compost, deep leaf litter
tonsum	no	"humus Epiphyte"		Deep humus
argus	no	"humus Epiphyte"		Thick mosses and deep leaf litter
barbatum	no	"humus Epiphyte"		Leaf litter
collosum	no	"humus Epiphyte"		Leaf litter and mossy rocks
hennisianum	possibly	"humus Epiphyte"		Deep leaf litter and humus
fowliei	possibly	"humus Epiphyte"		Leaf old and detritus on limestone rock
lawrenceanum	no	"humus Epiphyte"		Deep leaf litter, less commonly mossy limestone rock
dayanum	no	"humus Epiphyte"		Leaf litter, serpentine outcrops
Ciliolare	no	"humus Epiphyte"		Forest slopes
Superbiens	unlikely	"humus Epiphyte"		Steep podsolised ridges
Acmodontum	no	"humus Epiphyte"		
Javanicum	no	"humus Epiphyte"		Leaf litter among boulders and on banks, leaf litter in cracks between boulders
Schoseri	no	"humus/detritus ephyte", lithophyte		Leafy mold and debris, humus filled rock crevasses, moss covered rocks
Urbanianum	no	"humus Epiphyte"		Deep leaf litter and humus among rocks
Purpuratum	no	"humus Epiphyte"		Steep rocky slopes, moss covered banks near streams, deep leaf litter
Sukhakulii	no	"humus Epiphyte"		Sandy, humus rich loam
Wardii	no	"humus Epiphyte", lithophyte		On rocks and earth banks
venustum	no	"humus Epiphyte"		Cliff ledges above streams, humus rich gullies, steep loamy cliffs, moss covered tree branches

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