



The Atlanta Orchid Society Bulletin



Affiliated with the American Orchid Society, the Orchid Digest Corporation and the Mid-America Orchid Congress. 2001 Recipient of the American Orchid Society's Distinguished Affiliated Societies Service Award

Newsletter Editor: Danny Lentz

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September 2005

SEPTEMBER EVENTS

The Meeting:

**8:00 Monday, September 12 at Atlanta Botanical Garden
Alan Koch of Gold Country Orchids
“Growing Your Orchids to the Maximum”**

Alan Koch owns and operates Gold Country Orchids where he specializes in miniature and compact Cattleyas. Alan started growing orchids in 1969 with 3 Cymbidiums given to him by an aunt. While in college he became interested in other orchids and discovered many would grow outdoors in Southern California. He has moved five times as his orchid obsession has led to the need for more growing space. With the last move, he purchased 10 acres of land in Lincoln, California for his 300,000 orchids. He is recognized as an expert in the Brazilian Cattleya alliance and a trend setter in miniature Cattleya breeding. Alan has been published in the Orchid Digest and AOS magazines. He is an internationally known speaker. For the AOS he is an accredited judge, has been involved in the judging and research committees, and is a past chair of the Pacific Central Judging Center. Alan also served two terms on the Orchid Digest Board of Directors.

Alan will be bringing plants for sale. If you wish to place an order please submit it by Sept. 5. Orders of more than 5 plants will receive a 10% discount. No freight charge will apply to orders. A current price list can be obtained from Danny Lentz or by emailing Alan at gcorchids@aol.com. The company's web site is www.goldcountryorchids.com

Orchid Clinic: Before the meeting we will have someone available to answer questions on orchid growing from 7:15-7:45. If you bring a diseased or infested plant or leaf to ask questions about, please have it in a bag so that pests and fungal spores don't spread to other plants at the meeting.

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COLLECTOR'S ITEM

Phalaenopsis cornu-cervi (Breda) Bl. & Rehb.f.

Fail-eh-NOP-sis kor-new sir-vee

Tribe: Vandaeae

Subtribe: Sarcanthinae

Etymology: *Phalaenopsis* – Greek *phalaina*, moth; *opsis*, appearance – in allusion to the appearance of a flight of moths.
cornu-cervi – Latin for antler-shaped flower raceme

This is a widespread species found from northeast India, the Nicobar Islands, to Java and Borneo. It is found from sea level to about 800 meters and used to be found in colonies numbering several hundred individuals on a single tree. The species is distinctive in the genus as well as the section to which it belongs because of its fleshy, flattened inflorescence that resembles the antlers of a deer or moose. As with all species in Section *Polychilos*, flowering is sequential. Plants tend to produce periodic flushes of flowers and the inflorescences should not be removed as long as they are still green. Closely related species are *Phal. pantherina*, *Phal. borneensis*, and *Phal. mannii*.

Phalaenopsis cornu-cervi is adapted to drier conditions than most *Phalaenopsis* species and can be rather successfully grown mounted. It benefits from bright light.

Flower color is extremely variable with the brown bars ranging from sparse and spot-like to heavily marked flowers. *Phalaenopsis cornu-cervi* f. *sanguinea* is a nearly red flower resulting from the coalescing of the spots and bars. In this color form, the pattern is still visible and the yellow base color is visible as a thin yellow picotee. *Phalaenopsis cornu-cervi* f. *thalebanii* is an exceptional rich, deep, cinnamon brown without any noticeable markings or picotee. As the name implies, *Phalaenopsis cornu-cervi* f. *flava* is a clear, anthocyanin-free pure yellow flower. While it would be expected that this color form would sporadically occur throughout the species' range, it has been reported to date only from Sumatra.

Photos: (top) *Phal. cornu-cervi* grown by the Atlanta Botanical Garden, photo © Danny Lentz. (middle) *Phal. cornu-cervi* f. *fma. thalebanii*, photo by Scott B. Taylor. (bottom) *Phal. cornu-cervi* f. *fma. flava*, photo © Eric Hunt



Events Out and About

September

Saturday, 9/10. American Orchid Society monthly judging, Atlanta Judging Center, 2 pm, ABG basement workshop. If entering plants, please arrive before 1:30 pm to allow time for research and paperwork.

Monday, 9/12. Atlanta Orchid Society monthly meeting, ABG, Day Hall, 8 p.m. Speaker: Alan Koch of Gold Country Orchids will speak on "Growing Your Orchids to the Maximum".

Saturday, 9/24. Alabama Orchid Society orchid show, Birmingham Botanical Garden, Birmingham, Al. Contact: Sally Mickle (205)823-2810.

October

Saturday, 10/8. American Orchid Society monthly judging, Atlanta Judging Center, 2 pm, ABG basement workshop. If entering plants, please arrive before 1:30 pm to allow time for research and paperwork.

Monday, 10/10. Atlanta Orchid Society monthly meeting, ABG, Day Hall, 8 p.m. Speaker: Art Chadwick, Jr. of Chadwick and Son Orchids will speak on Cattleyas. www.chadwickorchids.com

Wednesday-Sunday, 10/12-16. AOS Fall Members Meeting, Sonoma County, CA. Website for registration forms: www.sonomaorchids.com. Contact: Kathy Rathbun, rathbun@sonic.net.

Friday-Sunday, 10/21-23. Mid America Orchid Congress, Fall Meeting and Show, Cincinnati, OH. Contact: Doug Hartong, 770-594-7334, catmando@mindspring.com. Website: <http://midamericanorchids.org>.

Saturday/Sunday, 10/29,30. Memphis Orchid Society orchid show, Memphis, TN. Contact: Charles Wilson, 662-429-2704.

November

Friday-Sunday, 11/11-13. Atlanta and South Metro Fall Show and Sale, ABG, Day Hall. Contact: David Mellard, 770-270-5758, DMellard@cdc.gov.

MINUTES OF THE AUGUST MEETING

- The meeting was brought to order by President David Mellard. Minutes from the last meeting were approved as written
- Danny Lentz brought in orchid magazines from around the world for attendees to peruse during the meeting.
- Sign up sheet available for side dishes for Roy Harrow's party/auction on 8/20/05. Bring your own meat for grilling.
- Alan Koch will be our next speaker. He has been in the orchid business in Sacramento, California for 15+ years. He is an expert on orchid culture. He has published articles in the Orchid Digest.
- The Alabama Orchid Society will be hosting their annual show on 9/24 and 9/25. Our society and South Metro Orchid Society will be participating. If you would like to send plants, contact Roy Harrow.
- Elaine Jacobson will chair the Nominating Committee. Other members of the committee are Roy Harrow, Reba Herzfeld, Margo Brinton, and Doug Hartong. The Nominating Committee will select officers for 2006, present its slate of officers to the membership at the October regular meeting, and a vote will be conducted during the November meeting. Officers for 2006 will be inducted at the December meeting.
- Remember to bring any plants and/or questions to the next orchid meeting beginning at 7:15 p.m. Thanks to Mark Reinke for his help in answering questions during the clinic at the August meeting.
- Our thanks to our orchid judges: Barbara Dampog, Danny Lentz, Bill Smith, Paul Thurner, Jeff Whitfield, Jeffrey Wolf.
- Our thanks to those who donated plants to the raffle table: Margo Brinton/Eldon Park (2), Rob Rinn and others.
- Our thanks to those who brought refreshments: Carolyn and Michael Dufano, Tamara George, Marianne Gilmore, Reba Herzfeld, Jeffrey Wolf and others.
- The meeting was adjourned.

Respectfully submitted, Sandy Phillips

Please visit our web site at
<http://www.atlantaorchidsociety.org>

The Atlanta Orchid Society web site contains recent newsletters and articles, cultural information for growing orchids in Atlanta, as well as a calendar of events and information about our annual shows.

Recent Blooms at the Atlanta Botanical Garden

These pictures were taken in August 2005.



Houlettia odoratissima



Odontoglossum (wyattianum x cirrhosum)

Report on Roy Harrow's August Auction

There were only 8 sellers but we still had 72 orchids as compared to 76 last year. But the quality and value was much improved. Last year the most expensive plant was \$18 and this year we had 13 plants above that price with the most expensive plant going for \$32. Last year we had 20 plants for \$3 or less and this year we only had 11 plants for \$6 or less. Last year's average sale price was \$8 and this year's was \$13. There were about 30 people in attendance and the food was terrific. We gave away over 60 non-orchid plants after the auction was over (including some that were priced for more than \$20 each at Pikes). About 6 people took advantage of the pool after the event was over to cool off and relax. \$29.80 was donated to the South Metro and \$149.40 to the Atlanta Orchid Society for their share of the net profits from the auction. A good time seems to have been had by all and many said they were looking forward to the event again next year.

I'd like to take this opportunity to thank all the people who brought plants. I'd also like to specifically thank Geni Smith and Reba Herzfeld, without whose help the event would not have been a success. - Roy Harrow

Newsletter Submissions

To submit material for the newsletter, or to sign up for the email version of the newsletter, please contact Danny Lentz. The deadline for submissions is the 20th of the previous month.

MAIL TO: Danny Lentz
1045 Wordsworth Dr.
Roswell, GA 30075

EMAIL: DBLGONGORA@BELLSOUTH.NET

Advertising

Advertising is now being accepted for our newsletter. The size and number of ads may be limited at the discretion of the editor. Advertising Rates per issue are: ¼ page \$10, ½ page \$20, full page \$40.

Join the Atlanta Orchid Society

Membership in the Atlanta Orchid Society is \$30 for individuals or \$45 for households. Yearly membership runs January 1-December 31. Anyone joining in the third quarter will get a 50% discount on the current year's membership. Anyone joining in the fourth quarter will purchase a membership for the following year. You can join at one of our monthly meetings, or contact the society's Treasurer (see page 2) for a membership application.

For directions to the Atlanta Botanical Garden, please visit their web site at www.atlantabotanicalgarden.org or contact one of our society's officers listed on page 2.

AUGUST 2005 EXHIBITION TABLE AWARDS

with notes by Ron McHatton



Potinara Susan Fender 'Cinnamon Stick'

CLASS 1: CATTLEYA ALLIANCE

Blue	<i>Potinara</i> Susan Fender 'Cinnamon Stick' AM/AOS	Collier/Reinke
Red	<i>Blc.</i> Lake Murray	Mellard/Marino
Red	<i>Lc.</i> Mini Purple fma. <i>coerulea</i> 'Blue Hawaii' AM/AOS	Hartong
White	<i>B. nodosa</i> x (<i>C. intermedia</i> var. <i>aquinii</i> x <i>Enc. cordigera</i>)	Dampog

(Blue) *Pot.* Susan Fender 'Cinnamon Stick', AM/AOS : This terrific art-shade *Cattleya* hybrid was registered by Carter & Holmes in 1992 and named for one of the owners of Fender's Floral, then in Apopka, Florida. This clone, awarded in 1994, is surprisingly the only one to receive an AOS award. The cross is quite vigorous considering its genetic background. Three species, *C. bicolor*, *L. tenebrosa*, and *C. dowiana* make up over 75% of the hybrid's background and *C. dowiana* alone accounts for over 60%. For mid-summer flowering art-shades this can't be beaten.

CLASS 2: CYMBIDIUM :

Blue	<i>Grammatophyllum scriptum</i> fma. <i>citrinum</i>	Collier/Reinke
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(Blue) *Grammatophyllum scriptum* fma. *citrinum* : The epithet "citrinum" refers to the green (or yellow-green) color of this form of the typically tiger-striped *Grammatophyllum scriptum* and is properly used as *forma* (fma.) rather than *variety* (var.). Don't worry if this is confusing.....it's been done wrong by just about everyone. If you can't grow Cymbidiums because your conditions are too warm, chances are you can grow these and the flowers are nearly as long lived. Plants should be given high light, ample light and abundant fertilizer while actively growing.

We grow this form here in Central Florida under about 5500 footcandles (50%) shade with day/night temperatures this time of the year averaging 95/75 and they simply love it!



Grammatophyllum scriptum fma. *citrinum*

CLASS 3: DENDROBIUM

Blue	<i>Dendrobium victoria-reginae</i>	Lentz/Morgan
Red	<i>Dendrobium hercoglossum</i>	Dampog
White	<i>Dendrobium</i> Blue Foxtail	Brinton/Park

(Blue) *Dendrobium victoriae-reginae* : The Atlanta Orchid Society is so fortunate to have such a diverse range of species scattered throughout the collections of its members. Atlanta's elevation allows a remarkable spectrum of species to be grown. *Dendrobium victoriae-reginae* is endemic to several Philippine islands where it grows at high elevations (1300-2600 meters) in cool, moss forests with ample year round rainfall. The plants are best grown in cool to intermediate conditions in semi-shade and, while they can be allowed to dry between watering, should not be subjected to a dry rest period. There is no well-defined flowering period and plants will flower sporadically throughout the entire year.



Dendrobium victoria-reginae

Ed Boyett is planning a group trip to Thailand and Hong Kong early next year. The dates will be February 15 – 28, 2006. The trip will not focus heavily on orchids. If you would like more information you can contact Ed at esbalb@aol.com or 404-373-7693.



Oerstedella wallisii

CLASS 4: EPIDENDRUM

Blue	<i>Oerstedella wallisii</i>	Collier/Reinke
Red	<i>Prosthechea prismatocarpa</i>	Collier/Reinke
White	<i>Prosthechea radiata</i> 'Elise'	Geni Smith

(Blue) *Oerstedella wallisii* : This group of species was segregated from *Epidendrum* and are characterized by reed-stemmed growth habit and a covering of pronounced tubercles on the leaf sheaths that give the stems a sort of "cat's tongue" feel. In some species, these raised bumps are shed early in the development of the growth so that mature canes are smooth like epidendrums but even in these species they can be observed on young, newly developing growths. *Oerstedella wallisii* grows in Costa Rica on citrus trees and at lower elevations in Colombia as both a terrestrial as well as an epiphyte. Plants from Costa Rica have spotted lips while those of Colombian plants are striped (these plants are often called *O. pseudowallisii*). Plants are vigorous and adaptable and will respond well to bright intermediate conditions with good humidity and ample water during the growing period.

CLASS 5: ONCIDIUM ALLIANCE

Blue	<i>Milt. moreliana</i> 'Melinda Lane' AM/AOS	Collier/Reinke
Red	<i>Bllra.</i> Peggy Ruth Carpenter 'Morning Joy'	Rinn
White	<i>Odm.</i> Margarete Holm 'Alpine'	Rinn

(Blue) *Miltonia spectabilis* var. *moreliana* 'Melinda Lane', AM/AOS : It appears that there is a recent proposal to elevate this varietal form to species status under the name *Miltonia moreliana*. At first glance this appears to be a color form of *M. spectabilis*, and based on the discussion above should be a form rather than a variety. However, a careful inspection of this species shows that the differences are much more than color. This species flowers at a consistently different time, and the proportions of the flower segments are consistently different than those of *M. spectabilis*. The elevation was based on the fact that the two populations do not overlap statistically. It will be interesting to see what the genetic data has to say since the two freely interbreed.



Milt. moreliana 'Melinda Lane'



Paph. Lynleigh Koopowitz

CLASS 6: CYPRIPEDIUM ALLIANCE

Blue	<i>Paph.</i> Lynleigh Koopowitz	Rinn
Red	<i>Paph.</i> Armeni White	Wolf
White	<i>Paph.</i> Saint Swithin	Rinn

(Blue) *Paphiopedilum Lynleigh Koopowitz* : This is one of my all-time favorite parvisepalum hybrids! There's just something inherently attractive in the pastel colors of this flower and the delicate reticulation of the petals. The cross was registered in 1991 by Paphanatics and named after a member of Harold Koopowitz's family. The cross is *Paph. (delenatii x malipoense)* and the color is the result of an interplay between the green-blocking *Paph. delenatii* and the pink-blocking *Paph. malipoense*.

JOIN THE ORCHID DIGEST CORPORATION

Don't let the name fool you, the Orchid Digest is a non-profit membership-based organization dedicated to orchids. Designed to appeal to the mid-range to advanced grower nothing beats the *Orchid Digest*. For just \$32/year you get 4 issues of full-color, in-depth articles about orchids. The magazine is large format and the fourth issue of the year is always an extra-special issue devoted to a single genus. For membership application forms contact Fred Missbach (404-237-1694)

CLASS 7: PHALAEENOPSIS ALLIANCE

Blue	<i>Doritis pulcherrima</i> var. <i>champornensis</i> fma. <i>alba</i>	Rinn
Red	<i>Phal.</i> Brother Lawrence	Rinn
White	<i>Phal. bellina</i>	Lentz/Morgan

(Blue) *Doritis* (hort. syn. *Phalaenopsis*) *pulcherrima* var. *champornensis* fma. *alba* : Ok, where did that name come from? It is apparently generally accepted among taxonomists that *Doritis* should be sunk into *Phalaenopsis* as a section, the only real distinguishing factor being their terrestrial habit. The peloric form with petals resembling lips has been described as *variety champornensis* (note it's a physical feature not a color) and, since this plant is devoid of purple or red pigments it's *forma alba*. Confused enough? The last time I talked to Eric Christenson, he voiced the opinion that these plants, at least those with large flowers and good form, are actually hybrids between *D. pulcherrima* and *D. buyssoniana* but since RHS does not recognize (at least not yet that is!) *D. buyssoniana* as a distinct species, they're labeled *D. pulcherrima*.

*Doritis pulcherrima***CLASS 8: VANDACEOUS ALLIANCE**

Blue	<i>Aerangis verdickii</i>	Mellard/Marino
Red	<i>Paravanda</i> Mecca's Candy 'Sweet Tooth'	P. Smith
White	<i>Ascda.</i> Maui Beauty	Whitfield

(Blue) *Aerangis verdickii* : This *Aerangis* species is found from Rwanda to southern tropical Africa as an epiphyte or lithophyte in dry woodland and scrub. Many species of *Aerangis* are difficult to tell apart. *Aerangis verdickii* is characterized by its very thick, gray-green leaves and the two longitudinal ridges in the mouth of the lip. In many clones, the leaves are edged in red or pink. Like all *Aerangis*, plants grow best mounted on bark or logs. Plants grow well in fairly deep shade and high humidity in either an intermediate or warm greenhouse. *Aerangis* is distinguished from *Angraecum* by the presence of a pronounced rostellum in *Aerangis*.

*Aerangis verdickii***CLASS 9: MISCELLANEOUS OTHER GENERA**

Blue	<i>Bulbophyllum echinolabium</i>	Brinton/Park
Red	<i>Stanhopea saccata</i>	Walkosky
White	<i>Cycnoches</i> Jean E. Monnier	Collier/Reinke
Blue	<i>Platanthera ciliaris</i>	Collier/Reinke
Red	<i>Habenaria rhodocheila</i>	Dufano
White	<i>Platanthera ciliaris</i>	Mellard/Marino

(Blue) *Bulbophyllum echinolabium* : This species has one of the largest flowers in the genus *Bulbophyllum* with some clones reaching over 40cm in vertical natural spread. The species is from Borneo and Sulawesi and grows well under conditions afforded for most other *Bulbophyllum* species; warm, humid, fairly shady, and with ample water. The species name means "spiny lip" and most likely refers to the spike-like extension of the lip midlobe and the short spines that adorn the main portion of the lip. As an additional note, some clones of this species have a distinctly feline urine fragrance in bright light.

*Platanthera ciliaris*

(Blue) *Platanthera ciliaris* : It's terrific to see these native species on our show tables. *Platanthera ciliaris* is a widespread species found throughout the northeast, mid-Atlantic, the deep south and as far west as eastern Texas. The species is rather hardy and inhabits a wide range of habitats from bogs and wet meadows to forests and even well-drained slopes. Colonies of these plants appear equally at home in full sun or partial shade. This species is closely related to *Platanthera cristata* and the two are most readily distinguished from the length of the nectary. In *P. ciliaris* the spur is much longer than the ovary while in *P. cristata* the spur is about half the length of the ovary.

*Bulbophyllum echinolabium*

Notes from Leo Schordje's Talk About Phragmipedium Culture

by David Mellard, Danny Lentz, and Leo Schordje

At the August meeting of the Atlanta Orchid Society, Leo Schordje gave a detailed presentation about Phragmipedium species along with some advice about culture. We've tried to capture the highlights of his advice concerning culture.

- Phragmipediums and especially the narrow-leaves species, should be grown in bright light, similar to Cattleya. Narrow "sedge like" leaved Phrags will tolerate up to Vanda bright conditions if allowed to adapt to it over time. Growing in bright light, at least Cattleya bright, will produce robust, healthy plants that flower well. Avoid growing Phrags in low light conditions. They will persist, but flower poorly and infrequently. Under low light conditions new growths will tend to climb, reaching for light. While low light conditions are acceptable for many Paphs, this is not good for Phrags. Leo said to think of Phrags as "aquatic Cattleyas" when considering how to treat them.

- Unlike Paphs, which like to dry out between watering, Phrags prefer constant moisture and lots of water. Leo grows his Phrags with the pot sitting in a tray with an inch or so of standing water. When watering Phrags in a tray, water profusely to flush the water from the tray. This method mimics their preferred habitat in nature, which is often next to streams and in the water spray of waterfalls. If you are not able to stand the Phrags in a tray of water, then water your Phrags daily. If you can not water your Phrags daily, use a water retentive mix such as New Zealand or Chilean sphagnum. Phrags are ideally adapted for various styles of hydroponic culture.

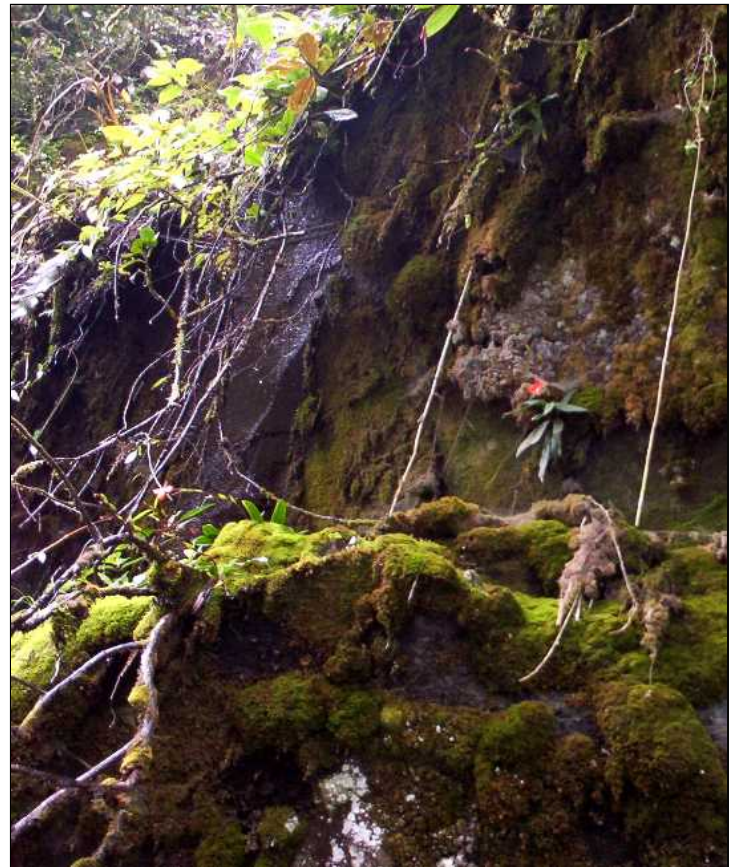
- Generally, for all Phrags, black or brown leaf tip die back means "not enough water". The old saw that black leaf tips means too much salt in the water is not true for Phrags. Leaf tip die back means you should WATER MORE OFTEN. These plants really do come from VERY wet environments, they really do love water. See the photo taken by Mikie Emerson of a Phrag besseae in the wild in Ecuador. Note the water seeping down the cliff face. Lots of moss and algae. This is clearly a very wet location, and the Phrag is in a spot where sun does hit it from the left in this photo.

- Leo uses RO water and fertilizes his Phrags at 125 ppm nitrogen at every watering. Leo uses MSU - RO fertilizer at 1/2 tablespoon per gallon. This yields a 750 ppm total dissolved solids solution with 125 ppm available nitrogen. In email discussions with Leo, he added that there are many brands of fertilizer that can be made to work. Leo feels that the MSU formulation

produced by Green Care is ideal. Peter's Professional for Plug-Trays with high nitrogen, low phosphorous and added calcium & magnesium and micronutrients is an excellent formulation similar to the MSU formula. He adds that the key is to avoid the old practice of using high phosphorous fertilizers. The high phosphorous formulations will damage your plants.

- Phrags should be repotted when they begin forming new root buds. The timing is just as one would do for Cattleya. Phrags will tolerate "out of season" repotting, but the set back is minimized if you follow the plant's cues and repot when new root buds are visible.

- Because Phrags should be grown constantly wet, organic mixes such as bark or sphagnum break down quickly. Pots need to be repotted every 9 to 12 months. This is very important to growing healthy Phrags.



Phrag. besseae in situ. Photographed by Mikie Emerson during her recent trip to Ecuador.

- Leo uses a mix based on fir bark because that's what's available for him locally. This mix is 60% fir bark, 20% perlite, 20% charcoal, and a handful of vermiculite (1 to 5%). Leo also said you can use sphagnum moss fines to substitute for vermiculite. Leo mentioned that coconut husk chips might be an acceptable substitute for bark. Leo uses fine fir bark for pots up to 4 or 5 inches and then switches to medium fir bark for larger pots. He also uses sphagnum sometimes.

- *Phrag fischeri* and *Phrag kovachii* prefer a slightly basic mix so oyster shells or horticultural grade dolomite should be top dressed or blended in to the mix to increase the pH to near 7 or slightly above 7. Other Phrags do not seem to have a marked pH preference and so acidic mixes (pH in the 5 and 6 range) are acceptable. One exception is *Phrag exstaminodium*, which prefers very acidic conditions. (DM comment: oyster shell can also be added to the mix for lime-stone loving Paphs.)

- For *Phrag besseae* and any other *Phrag* that produces a long, extended rhizome, Leo showed how to use a wire hook (often inserted from a hole in the bottom of the pot) to grab the lead rhizome and pull it down so that it is in contact with the mix. The lead rhizome will then put roots down into the mix. This method is very important to get healthy roots to establish. It may also be helpful to grow these plants in bonsai trays or bulb pans to help contain the new growths.

- Leo is a moderate lumpner when it comes to the number of *Phrag* species and believes that many of the species that we read about are just ecological variants of a particular, widespread species. He thinks there are around 20 good species of Phrags. He gave many examples during his talk.

- Leo showed photos of plants with markedly different foliage characteristics (e.g., large, medium, and small leaves) but the same flower. These differences have been used by some taxonomists to name species or varieties. However, the flowers are the same or nearly the same and so other taxonomists consider them to be the same species.

- The petal length of *Phrag caudatum* is affected by the relative humidity. Low humidity will cause shorter petals. The Panamanian form of *caudatum* is also known as *Phrag warszewiczii*. It has a darker colored flower and shorter (smaller) foliage.



(left) *Phrag. caudatum*. (right) *Phrag. lindenii*

- *Phrag lindenii* is a small plant and is often a little easier to grow than *Phrag caudatum*. *Phrag lindenii*, *boissierianum* & *exstaminodium* tend to self pollinate, if your plant is small and too weak to support seed pods, remove the flowers & flower stems when they wilt, to avoid having pods develop and sap the strength of the plant.

- *Phrag klotzscheanum*, which comes from Argentina, is difficult to grow. Many plants sold as this species are actually *Phrag pearcei*. True *Phrag klotzeanum* has dark "horns" that extend out from both sides of the staminode, very similar to the horns visible on the staminode of *P. caudatum*.

- *Phrag schlimii* has a floral fragrance at certain times of the day. They get black leaf tips very easily, but otherwise seem to be a hardy species in cultivation. *P. schlimii* is one of the cooler growing species.



Phrag. schlimii

RECENT ACTIVITIES OF THE ATLANTA JUDGING CENTER

The following awards were granted at the July session of the AOS Atlanta Judging Center. They are provisional awards pending official publication in the *Awards Quarterly*. Certificates of Horticultural Merit and Certificates of Botanical Recognition are also provisional pending identification by an AOS certified taxonomist prior to publication of the award.



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Paphiopedilum godefroyae var. leucochilum 'Tejas' **AM 85 pts.**

Natural Spread: 9.0cm H x 7.2cm V

Two impressive flowers on two inflorescences; dorsal sepal creamy yellow with heavy dark burgundy blotches radiating basally; synsepal cream spotted dark burgundy; petals cream with numerous dark burgundy spots; pouch cream peppered burgundy on interior; column and staminode cream finely spotted burgundy; substance firm; texture waxy.

Exhibitor: Ken Avant

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Paphiopedilum parishii 'Ramona Lee', HCC 76pts.

Natural Spread: 11.0cm H x 13.0cm V

Seven flowers and one bud well-presented on one inflorescence; dorsal sepal and synsepal cream with citron venation; twisted petals citron heavily overlaid chestnut brown distally, spotted chestnut brown on basal third; pouch moss green with light chestnut brown overlay; staminode cream, citron centrally; substance firm; texture glossy. Exhibitor: Fred Missbach



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Paphiopedilum Temptation 'Wayne'

HCC 79 pts (kolopakingii x philippinense)

Natural Spread: 8.7cm H x 21.5cm V

Nine flowers and five buds on two inflorescences; dorsal sepal and synsepal ivory lightly brushed pink between longitudinal burgundy stripes; pleasingly twisted petals chartreuse with raised burgundy spots basally, striped light burgundy on proximal two-thirds; pouch chartreuse heavily veined burgundy on interior creating mottled pattern on exterior; column and staminode chartreuse with dense burgundy cilia laterally; substance firm; texture matte, staminode waxy.

Exhibitor: Ann Ivey



Phalaenopsis violacea 'Tejas', AM 82 pts.

Natural Spread: 5.2cm H x 6.3cm V

Two flowers on one inflorescence with two buds on two additional inflorescences; sepals and petals white uniformly saturated deep magenta, tipped green; lip white, side lobes blushed yellow and tipped magenta, midlobe deep amethyst; column and anther cap magenta; substance hard; texture satiny; pleasant clove fragrance. Exhibitor: Ken Avant



Phalaenopsis bellina 'Tejas' AM 80 pts.

Natural Spread: 5.6cm H x 5.9cm V

Three flat flowers and six buds on two pendulous inflorescences beautifully displayed against immaculate fan-shaped foliage measuring to 14-cm wide x 24-cm long; flowers cream darkening to chartreuse marginally, amethyst basally; lip yellow basally, dark amethyst apically; anther cap white; substance extremely rigid; texture waxy. Exhibitor: Ken Avant



Stanhopea Assidensis 'Twice as Nice'

AM 80 pts. (tigrina x wardii)

Natural Spread: 12.0cm H x 11.4cm V

Three flowers on one pendent inflorescence; sepals and petals cream heavily blotched oxblood red, heavier proximally; lip cream with eye spot and interior of mesochile deep red, translucent side wings and epichile evenly speckled red, hypochile waxy yellow; column moss green, anther cap white; substance firm; texture waxy.

Exhibitor: Mikie Emerson



Phragmipedium Sergeant Eric 'Top Sergeant'

AM 83 pts. (Eric Young x sargentianum)

Natural Spread: 14.0cm H x 9.0cm V

Four flowers and two buds on two 86-cm inflorescences; dorsal sepal green heavily tessellated orange-red; synsepal green lightly tessellated orange-red; petals light green suffused dark orange-red on distal two-thirds; pouch yellow overlaid dark orange-red externally, heavily spotted dark orange-red internally; staminode yellow with fine orange-red cilia; substance firm; texture matte.

Exhibitor: Barron's Greenhouse

The Angraecoid Orchids of Africa and Madagascar by David Mellard

Geography

Madagascar and Africa have a shared geological history, once being a part of the ancient, southern, super-continent Gondwanaland. As this landmass broke apart starting around 160 million years ago, Madagascar along with India and parts of Asia carried away their own parts of the Gondwanan plant life as they drifted away from Africa. Plant life on Madagascar and its nearby islands (i.e., Comoros, Seychelles, and Mascarenes) has since evolved in isolation creating a unique, botanical wonderland.

This ancient geological connection between Africa and Madagascar can be seen in the Angraecoid orchids, which being similar to the Asian *Vanda* belong to the tribe Vandaeae. Although the term is not widely used, the Angraecoid alliance can be considered vandaceous. You'll notice that when you enter plants for judging at the society's monthly meeting, genera in the Angraecoid and *Vanda* alliances are entered in the same class, Class 8. Nevertheless, the differences between the two alliances are easily recognized because of the flowers. The most notable difference is the long spur that is found in many Angraecoids.

Darwin's Story

Many of you are familiar with Darwin's prediction after seeing the exceedingly long spur of *Angraecum sesquipedale*. Realizing that the spur contained nectar to attract insects, Darwin predicted in 1862 that a moth with a 10 to 12 inch proboscis (i.e., tongue) would be found some day. At the time, this prediction seemed outlandish and like his views on evolution, Darwin received considerable criticism for this prediction. Some scientists, however, were so sure of its existence, they began looking for this unbelievable moth. In 1903, long after Darwin died, scientists discovered a giant hawk moth, aptly named *Xanthopan morgani praedicta*, with a proboscis that measured more than nine inches. It wasn't until much later, though, that flash photography actually captured the moth approaching and inserting the proboscis into the flower of *A. sesquipedale*.

Darwin's studies on evolution made him realize the co-evolutionary advantage that a flower would possess

from producing longer spurs and restricting nectar reward to only species that could accomplish cross fertilization. Only those pollinators with the appropriate size proboscis could reap a reward and at the same time effect transfer of their pollinia to the stigmatic surface of the same species. Thus, many species in the Angraecoid alliance evolved to limit feeding to hawk moths with an ever longer proboscis. The nectar reward given to hawk moths aided their survival to reproductive age, resulting in reciprocal evolution of plant and pollinator.



Angraecum sesquipedale

Floral Traits of Angraecoids

The most obvious floral trait of Angraecoid orchids is a well-developed spur, or nectary. Other orchids also have spurs, for example, *Habenaria* and *Ascocentrum*, but the spur on most Angraecoid orchids are strikingly long, being at least as long as the width of the flower and sometimes much longer. Genera in the Angraecoid alliance have these characteristics in common:

- evergreen, often fleshy leaves usually having unequally bilobed tips,
- predominantly epiphytic, but occasionally lithophytic or terrestrial,
- no pseudobulb,
- monopodial growth,
- usually white, waxy, star-shaped flowers, but sometimes greenish-white, green, pinkish white, brownish white, brown or yellowish, and
- a conspicuous lip and spur.

Most flowers lack odor during the day, being intoxicatingly scented at night to attract pollinators. The combination of white or light colored flowers along with nighttime scent serves to attract nighttime pollinators, usually moths.

The most common genera available from nurseries are *Angraecum*, *Aeranthes*, *Aerangis*, and *Jumellea*, although lesser genera are sometimes seen, such as, *Sobennikoffia*, *Neobathiea*, *Cryptopus*, *Oeonia*, *Oeoniella*, *Chamaeangis*, and *Beclardia*. The major genera are found in Africa and Madagascar and a few nearby islands. Interestingly, very few of the Angraecoid species are found in both Africa and Madagascar, an indication of the large expanse of time since separation of the land masses. Strangely, though,

one species is found in Africa and Sri Lanka, a large island off the southern coast of India. This occurrence in two distant land masses harkens back to the shared plant life of distant Gondwanaland.

Several books have been published providing detailed information about the alliance. In 1986, Fred Hillerman and Arthur Holst published "An Introduction to the Cultivated Angraecoid Orchids of Madagascar". This book is out of print and so is only occasionally available through used book sources, such as Amazon.com. Isobyl and Eric La Croix's book, "African Orchids in the Wild and in Cultivation" was published in 1996 and is still available. Both books cover the Angraecoid Alliance very well for their respective geographical areas. Joyce Stewart, who published a taxonomic revision to the Angraecoid alliance, authored the book, "Orchids of Kenya," which has sections that describe the various genera in the alliance. Ms. Stewart also has a 3-part series about the Angraecoid alliance in the 1984 AOS Bulletin (July, August, and September).

Pronunciation

While most people in the United States say ann-gray-koyd, Fred Hillerman declared this to be the preferred pronunciation: ann-GRY-koyd or ann-GREE-koyd. This will take some getting used to.

Cultivation

It's difficult to give one set of cultural advice because Angraecoid orchids come from mountainous, coastal, and open forested habitat. Thus, certain species prefer cool, intermediate, or warm temperatures as epiphytes, lithophytes, or terrestrials. Some prefer shady conditions while others prefer bright light. With this in mind, I'll venture to give some general rules for most species that are commonly found in the US trade so you'll sometimes need to make adjustments depending on the species.

Light requirements

When deciding what degree of light to provide a particular species, consider humidity and air movement first. In general, plants grown in higher humidity and increased air movement can tolerate higher light levels. Many *Angraecum* and *Jumellea* species prefer higher light levels (e.g., *Cattleya* levels) while many *Aerangis* species prefer lower light levels (e.g., *Phalaenopsis* levels). Often, the plant will show you whether or not it prefers brighter or lower light levels by the color of its leaves and its ability to flower. Leaves that are dark green probably indicate a need for brighter light while leaves that are yellow-green indicate that lower light levels are needed. A plant that is growing well but not flowering probably needs a change in light levels.

Usually, this means going from lower to brighter light levels.

I remember an *Angraecum leonis* that Bob Grzesik gave me several years ago because he could not get the plant to bloom growing it indoors near a window. I placed the plant about two inches from a fluorescent light where it got 1000 footcandles for 12 hours daily. Along with daily misting and frequent fertilizing, the plant flowered in 6 months. When the plant was moved into the greenhouse months later and placed in *Cattleya* light conditions (2,000 to 3,000 footcandles), the plant's robustness improved and the leaves turned a brighter grass green. I'm now watching it to determine if it is actually getting too much light.



Angraecum leonis

Temperature

Several species in the alliance are mountain dwellers and like many *Masdevallia* require cool nighttime temperatures in the summer. These plants can probably be grown in a basement under fluorescent lights but most likely will do poorly in a greenhouse or outside during Atlanta's warm summer nights. Joyce Stewart suggests that it might be possible to grow the cool growing Angraecoids if the humidity remains high and air circulation is increased. I've seen this accomplished with cool-growing *Nepenthes* that were grown in a Florida greenhouse that was long and narrow with constant air movement. Maybe fortunately, cool-growing Angraecoid orchids are seldom available from US nurseries.

As for the intermediate and warm growing Angraecoids, most will do well in Atlanta, especially if humidity is maintained and air circulation is increased. I've found this to be the case as Angraecoid orchids in my greenhouse do very well, partly because the humidity never drops below 80% and the 4 industrial fans make the leaves move gently in the breeze. If anything, I need to work on lowering the humidity to 70%, at least for a portion of the day, in order to promote

(continued on next page)

absorption and transpiration of water through the plant and out the stomates. This "pump" is responsible for bringing nutrients into the plant and is stopped or significantly reduced at extremely high humidity levels.

Fred Hillerman pointed out that a 10 F drop in temperature at night is critical to flowering many orchids in the Angraecoid alliance. This means that during winter, we should ensure that Angraecoid orchids (and other orchids for that matter) undergo a significant rise in temperature. That is, we should not try to grow our orchids with a daytime temperature of 50 F. Fred had this to say about temperature:

"With the judicious use of microclimates, it is possible to reduce the three temperature ranges to two, and if absolutely necessary, even one. Warm and intermediate ranges can very well be combined by raising the winter nighttime temperature slightly, from 55 or 58 F to 60 F. In summer, intermediate range plants will in no way suffer from temperatures of 95 F provided proper humidity (i.e., greater than 50%) and air movement are given. Cool-growing plants can be grouped with warm and intermediate plants if 1) some sort of cooling system is provided in the summer; 2) if the plants are kept outside in the spring, summer, and into the fall; or 3) if the plants are placed low in the greenhouse in order to take advantage of cooler microclimates."

Fred's advice about keeping plants outside in the summer probably doesn't apply to Atlanta.

Humidity

In Madagascar, high humidity prevails throughout the year in most habitats. Humidity in Madagascar's lowland areas along the east coast, which receives the highest rainfall, is 90 to 95% in the morning, decreasing to 65 to 80% by noon. In the highlands, humidity is typically 62% during the cool, dry season, and 85% during the warm, rainy season. It should be noted that these readings were taken in Madagascar's cities and so the humidity in the nearby forests are probably even higher.

The humidity that you can provide your plants is also a factor in deciding how to pot them. If you can control humidity so that it can be maintained above 70 or 80%, many Angraecoid orchids (and particularly Aerangis) will do better mounted. If you

are unable to provide consistently high humidity, potting the Angraecoid orchids is probably a better option.

When growing plants under lights, it is difficult to control humidity and so mounted orchids (at least for me) do poorly. One thing I noticed while growing under lights is that when I misted orchids consistently, root production improved. The advantage of growing in a greenhouse is that high humidity is easier to achieve, thus allowing mounted orchids to do very well. More on this later.

Ventilation

Ventilation is very important for Angraecoid orchids. Air movement 1) prevents stagnation of moisture around the orchid roots, 2) reduces leaf temperature in summer, and 3) increases oxygen, hydrogen, and carbon uptake. In their native habitat, air movement is constant around orchids. The reduced air movement at ground level and the lower trunk of trees is one reason that some orchids are found only in the upper branches where they receive constant air movement.

Potting media

As we all know, there are more media formulas for growing orchids than there are orchid growers. Most orchid growers have several formulas that are used, depending on the genera. Let's look at the habitat of different genera and species in the Angraecoid alliance to see how we might decide what mixes to use.

Epiphytic Angraecoid orchids are often found growing in the crotch of trees or on the trunk itself, while others grow in the upper tree canopy on smaller limbs and branches. And so, like many epiphytic orchids, these orchids prefer a very well-drained mix.

The ability to provide constant, high humidity is probably a determining factor in deciding how to pot epiphytic Angraecoid orchids. If humidity can be maintained at high levels, tying the plant to a mount along with a small amount of absorbent material (e.g., long-fibered sphagnum moss or a few washed coconut husk chips) is acceptable and sometimes even preferred. Even with high humidity, though, plants that are mounted appreciate daily misting. The advantage of high humidity is that plants can survive brief periods with little watering, especially during dormancy or semi-dormancy. Many Aerangis species prefer to be mounted and have a much lovelier floral display as the flowers are nicely presented on a downward arching spike.

Many species of Angraecum, however, prefer to be potted, particularly the larger species,



Jumellea arborescens

such as, *A. sesquipedale* and *A. eburneum*. Like other potted epiphytes, the roots prefer to grow in a loose, open mix that drains well. Nevertheless, these species can be grown mounted if watered regularly.

While we are all familiar with mixes composed of bark, sponge rock (large perlite), and charcoal, I've recently have been trying other ingredients by replacing the bark with washed coconut husk chips and adding expanded clay pellets (e.g., Aliflor and Hydroton) in addition to perlite. I like using coconut husk chips (CHC) because they absorb water easily, especially compared to bark. A warning, though, about CHC - they need 3 or 4 washings over as many days to leach out salt. Because of the added moisture holding capacity of CHC, I now use a large percentage of sponge rock and clay pellets to increase air space around the roots.

Fred Hillerman recommended this mix for epiphytic species that do well in a fine mix: seedling grade, fine fir bark (6 1/2 parts); coarse perlite (3 parts); redwood wool (1/2 part). Fred advised, "This mix should be modified to suit the grower's climatic and growing conditions or personal whim."

The importance of air space around the roots needs to be emphasized. It is the combination of fresh oxygen, carbon, and hydrogen along with fertilizer salts at the roots that promote healthy growth. My general impression is that a variety of inert and organic materials can be used as long as water flushes through the resulting mix very easily.

Some species in the Angraecoid alliance, such as *Angraecum sororium*, *Angraecum magdalene*, and *Angraecum protensum*, are terrestrial or semi-terrestrial.

Fred Hillerman recommends this mix for terrestrials: fine fir bark (5 parts), perlite (3 parts), chopped sphagnum moss (1 part), redwood fiber (1/2 part), and bone meal (small amount). As you can see, this is still a very open mix.

In closing this topic out, if you have a mix that works well for your other epiphytic orchids, it will most likely do well for the Angraecoid orchids. Over the years, I've come to realize that it's no so important to copy someone else's mix but rather to use ingredients that provide a lot of air circulation at the roots while maintaining some moisture and nutrients at the roots.

The importance of changing the mix before it degrades, reduces oxygen, and lowers pH is the key to maintaining healthy roots. For my conditions of consistently high humidity, daily misting, and 1 to 2 watering per week, repotting every two years is necessary. This is one reason I have switched from bark to CHC and increased the proportion of perlite and expanded clay so that the roots do well if repotting is delayed.

Fertilizing rates

In addition to selecting the right fertilizer, we learned from Jan Szyren with Michigan State University that orchids should be fertilized frequently. We've all heard the adage: weakly weekly. During her talk, Jan advised us to fertilized at 125 ppm nitrogen at every watering and periodically flushing the salts out of the orchid mix every 4th or 5th watering.

I have been following this advice, diluting the MSU RO fertilizer (a nitrate-based fertilizer) to 125 to 200 ppm nitrogen. I have been rewarded with healthier plants that bloom more frequently. More information about this topic can be found at the AtOS website in the previously mentioned articles.

Water Quality

I have much to say about water quality that's specific to growing orchids in Atlanta. Because this is an involved topic, I'll just mention a few highlights and refer you to the articles posted on the society's website about Atlanta's water quality.

Most water in the Atlanta area has low alkalinity, which means it is low in calcium, magnesium, and micronutrients and has little ability to resist pH changes to the orchid mix. Therefore, we should use a basic fertilizer (i.e., a fertilizer that uses nitrate as a nitrogen source) rather than the commonly available acidic fertilizer (i.e., a fertilizer that uses ammonium or urea or both as a nitrogen source). In addition, we should choose a fertilizer that is supplemented with extra calcium and magnesium as well as micronutrients (e.g. boron, iron, manganese, zinc, copper, and molybdenum).

Without these supplements or some other source built into the mix or added separately, orchids in Atlanta will struggle to grow well. For example, if you are unable to grow Paphs, I suspect the reason is a deficiency in calcium, magnesium, and some micronutrients in the fertilizer you are using.

Another important factor is the pH of orchid mix over time. When using acidic fertilizers with Atlanta's low alkalinity water, the pH of the orchid mix will drop over time, increasing the solubility of certain micronutrients, such as iron or manganese, to the point that they could be toxic to orchids.

More information about the importance of selecting a fertilizer based on water quality can be found in the "Newsletters and Articles" section of the Atlanta Orchid Society website, www.atlantaorchidsociety.org. Bill Argo has written several technical articles about this topic. Using Dr. Argo's article, I've written articles geared to Atlanta's water quality.

This article will be continued in next month's newsletter.

Second Quarter Ribbon Judging Results

Name	Apr	May	Jun	Qtr 2
Collier / Reinke	22	30	22	74
Missbach	25			25
Lentz / Morgan	13	9	2	24
Brannon		5	11	16
Harrow	9		4	13
Hallberg		1	10	11
Wolf			11	11
Gilmore		3	5	8
Dampog	7			7
Mellard / Marino	7			7
Walkosky		6		6
Brinton / Park	2	3		5
Emerson		5		5
Groves		5		5
Rinn			5	5
Whitfield	5			5
Hartong	1		3	4
Jacobson	1	3		4
Grzesik			3	3
Smith, Geni		1		1

***Maxillaria imbricata***

Plant grown by the Atlanta Botanical Garden