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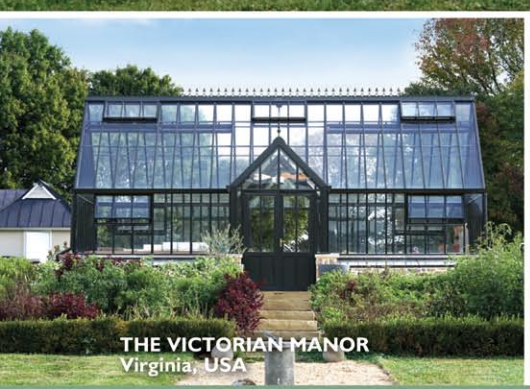

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The mission of the American Orchid Society is to promote and support the passion for orchids through education, conservation and research

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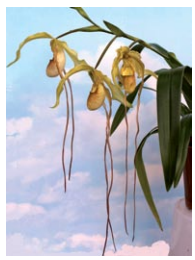
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Barkeria Triumph 'Teresa Patton' (Roberto Frias Solis × *lindleyana*). Robert Marsh and Dennis Szeszko present part 2 of their three-part series on *Barkeria* hybrids and believe this is their finest to date. Photograph by Robert Marsh.

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PRONUNCIATION GUIDE

Pronunciation of orchid names can be daunting for the novice and experienced grower alike. Presented below is a simplified pronunciation guide specific to the names found in this issue of *Orchids* magazine. An attempt has been made to represent each syllable using easily recognized sounds or words separated by hyphens and not standard phonetic symbols. Check out the Orchidist's Glossary on our website at https://www.aos.org/orchids/orchidists-glossary.aspx.

Aeranthes (air-AN-theez)
alba (AL-ba)
Angraecinae (an-gray-KEE-nee)
Angraecoid (an-GRAY-koyd)
Angraecum (an-GRAY-kum)
Angranthes (ang-RAN-theez)
Anoectochilus (an-ek-toh-KYE-luss)
anosmum (an-OS-mum)
arachnites (a-rak-NYE-teez)
augustifolia (aw-gus-tee-FOLE-ee-a)
aurantiaca (aw-ran-tee-AY-ka)
Barkeria (bar-KARE-ee-a)
barkeriola (bar-kare-ee-OH-la)
besseae (BESS-ee-eye)
brachycentros (brak-ee-SEN-tros)
Brassavola (bra-SAH-vol-a)
Brassokeria (bras-oh-KARE-ee-a)
brevifolia (breh-vee-FOLE-ee-a)
breviracema (breh-vee-RAY-see-ma)
Bulbophyllum (bulb-oh-FILL-lum)
carnea (KAR-nee-a)
Catasetinae (kat-a-SET-ih-nee)
Catasetum (kat-a-SEE-tum)
Cattleya (KAT-lee-a)
caudatum (kaw-DAY-tum)
Caulaelia (kaw-LAY-lee-a)
Caulaeliokeria (kaw-lay-lee-oh-KARE-ee-a)
chrysotoxum (kry-so-TOK-sum)
Coelogyne (technically see-loh-GYE-nee but usually heard as see-LOJ-ih-nee)
Cymbidium (sim-BID-ee-um)
Dendrobium (den-DROH-bee-um)
dorotheae (door-a-THEE-a)
Dyckia (DIK-ee-a)
ecuadorense (ek-wa-door-EN-see)
erichmichelii (air-ik-mye-KEL-ee-eye)
falcata (fal-KAY-ta)
formosanus (fore-mos-AY-nus)
fragrans (FRAY-granz)
Fredclarkeara (fred-clark-ARE-a)
fritzhalbingeriana (fritz-hal-bing-er-ee-AY-na)
Gongorinae (gon-GORE-ee-nee)
grandiflora (grand-ih-FLORE-a)
Guarianthe (gwar-ee-AN-thee)
Habenaria (hab-en-AIR-ee-a)
Haworthia (ha-WORTH-ee-a)
Jumanthes (joo-MAN-theez)
Jumellea (joo-MELL-a)
latifolia (lat-ee-FOLE-ee-a)
Lemurorchis (lee-mur-ORE-kiss)
Lepanthes (leh-PAN-theez)
lindenii (lin-DEN-ee-eye)
lindleyana (lind-lee-AY-na)
longifolium (lon-jee-FOLE-ee-um)
Lycaste (lye-KAS-tee)
mascula (MAS-kew-la)
moniliforme (mon-il-ee-FORE-mee)
naevosa (NEE-vo-sa)
Neofinetia (nee-oh-fin-AY-ee-a)
nobile (NOH-bill-ee)
nodosa (no-DOH-sa
obovata (oh-boh-VAY-ta)
Odontoglossum (oh-don-toh-GLOSS-um)
officinale (oh-fis-in-AY-lee)
Oncidium (on-SID-ee-um)
Orchis (ORE-kiss)
pearcei (PIERCE-ee or PIERCE-eye)
Phalaenopsis (fail-en-OP-sis)
Phragmipedium (frag-mih-PEED-ee-um)
planifolia (plan-ee-FOLE-ee-a)
Pleuorthallidinae (plur-oh-thal-ID-ee-nee)
ramose (ram-OH-sa)
Renandopsis (ren-and-OP-sis)
Renanthera (ren-AN-ther-a)
rhodochila (roh-doh-KYE-la)
rosea (ROZ-ee-a)
roxburghii (roks-BERG-ee-eye)
scandens (SKAN-denz)
schlimii (SHLIM-ee-eye)
schroederae (SHROH-der-ee)
shoemakeri (shoe-MAY-ker-eye)
skinneri (SKIN-ner-eye)
trianae (tree-AN-ee)
Trichoglottis (trik-oh-GLOT-tiss)
uniflora (yew-nih-FLORE-a)
Uropodium (yew-roh-PODE-ee-um)
uruapani (ur-a-PAN-ee)
usitana (yew-see-TAY-na)
Vanda (VAN-da)
Vanilla (van-IL-la)
wallisii (wall-ISS-ee-eye)
warszewiczianum (var-shuh-vitz-ee-AY-num)
whartoniana (war-tone-ee-AY-na)
Zygopetalinae (zye-goh-pet-a-LEE-nee)

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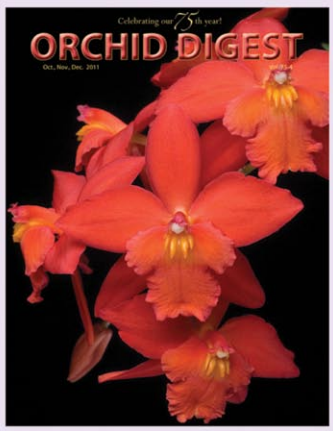

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NOW THAT THE holidays are behind us, we are coming into my favorite time of the year. Spring is in the air, and this is the season that many orchids will be blooming. Beginning now, we will see a bounty of flowers in a rainbow of colors. There will be something everyone will love. Spring is the season for phalaenopsis, cymbidiums, many dendrobiums, even some cattleyas and then some.

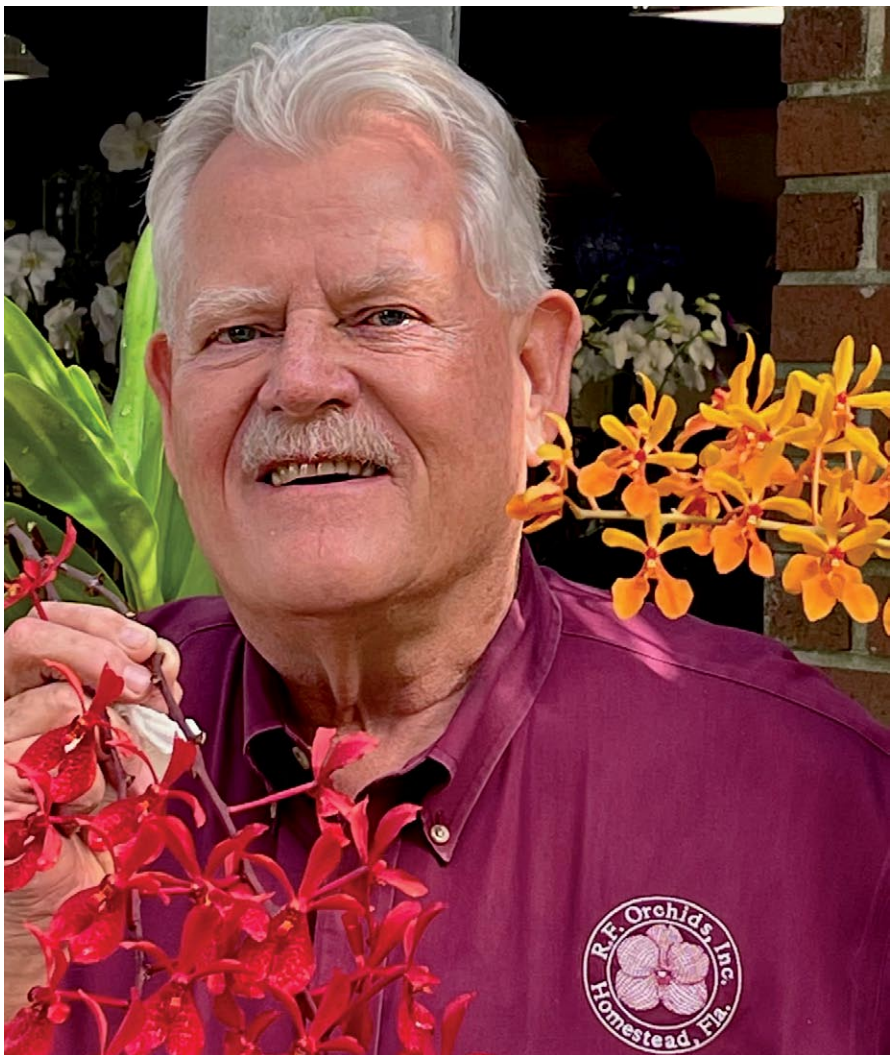
Without question, phalaenopsis will be the front-runners blooming this time of year. They are the most popular orchids in the world! With colors ranging from pristine white to the very darkest you can imagine in dramatic arching inflorescences; they will easily be the highlight in anyone's collection. There are millions of phalaenopsis sold every year and they come in so many varieties. You can only imagine, with Valentine's Day around the corner, how popular these beauties will be.

Another beautiful spring bloomer are the cymbidiums. These orchids produce an incredible number of color variations and patterns. The flowers are quite striking, often growing in arching and pendulous inflorescences that are so captivating. Formerly thought to be a cooler growing orchid, they are now very temperature tolerant, thanks to modern day hybridizing, and are perfect for this time of year.

Some dendrobiums such as *Dendrobium nobile* and *Dendrobium anosmum* and their hybrids, you will find, will be losing their leaves to prepare for the season ahead. They typically do well with a little more sunlight, less water and will produce some beautiful inflorescences in many beautiful colors and patterns. These dendrobiums are so easy to grow in warmer climates. You will definitely want some of these in your collection as well.

Spring blooming cattleyas include *Guarianthe skinneri*, *Guarianthe aurantiaca* and their hybrids, *Cattleya trianae* and *Cattleya schroederae* — all put on a magnificent show this time of year. So, whichever orchid it is that you like, you are bound to find something that blooms this time of year.

Over the last two years, we have seen how many folks have really taken to caring for their orchid collections as a result of staying at home. We have all seen how their efforts have paid off, growing so many award-winning orchids. It has been a pleasure, going to AOS-sanctioned judging events, and seeing magnificent specimens of orchids submitted by folks who dedicated themselves to their collections under the circumstances.



Bob Fuchs with *Renandopsis* Lion's Splendor (upper right) and *Renanthera* Kalsom 'Midas Touch' AM/AOS (lower left).

I have a very good feeling about 2022. The future looks bright, and I see how things are getting better. We have already seen a return to normal activities with judging centers holding face-to-face meetings and orchid societies hosting shows. As time goes on, we will be seeing even more events going on.

A major highlight for 2022 will be the American Orchid Society's spring Members' Meeting and Centennial Celebration. So much is being packed into this event to be held April 6–9, that it is something you certainly will not want to miss. I have shared much of the Centennial Celebration with you over the last few months because it is such an important meeting.

The number one thing you can do is register for the meeting. Registering will not only give you access to all the scheduled events for the meeting, but it will also give you preferred seating at the auction, a complimentary trip to Fairchild Tropical Botanical Gardens (including lunch), where you can visit the AOS library.

Please go to the AOS website, www.aos.org. There you will find more information about the spring Members' Meeting and the Centennial Celebration. You can also register for the meeting. The Centennial Celebration Gala, to be held at the Biltmore Hotel the evening of April 9, 2022, will be the event of the year. Tickets for the gala are available on the website as well. But hurry, tickets are running out quickly.

I really cannot say enough about this meeting and celebration. The American Orchid Society, one of the oldest and largest orchid societies in the world, set the standard for all orchid societies to follow.

Do not wait. Register today. — *Bob Fuchs, AOS President (email: bob@rforchids.com).*

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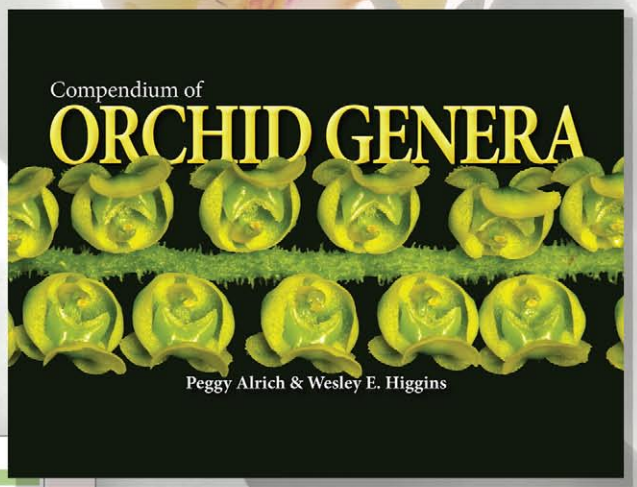
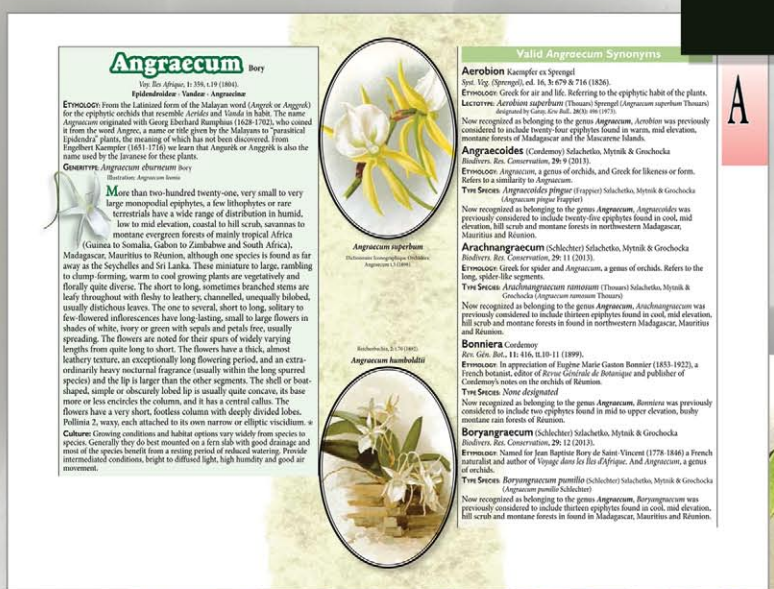
Presenting

The Compendium of Orchid Genera by Peggy Alrich and Wesley Higgins





More than 200 orchid genera are presented with the original orchid discoverer and date as well as the etymology and an easy to read description of growth habit. The book is illustrated with antique color plates, many from an original publication, all complete with citations. This book will be a welcome and beautiful addition to any orchid grower's library, a stunning work and artistic treasure.

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February: The Month of Friends and Lovers

By Thomas Mirenda

AS THE YEARS speed by, I have come to cherish friendships more than I used to as a free-spirited youth. I realize more and more how much we need each other to succeed, to make our way in the world and to help the causes we believe in. Paramount on my list of priorities is the preservation and conservation of our natural world, with a special emphasis on rare plants, especially orchids. I believe that the natural presence of orchids in any environment is a great indicator of its health, so any lover of biodiversity can use the presence of orchids in a natural area as a means to preserve entire ecosystems.

Thomas Mirenda

I have been having a love affair with orchids most of my life, and even though I believe they take unfair advantage of me, all the time, the love they bestow on me with their grace and beauty more than make up for their passive-aggressive manipulations of my life. While most of you are devoted to human partners or your pets (no judgment!), if you are reading this, you are likely under the thumb of your plant collection, and their constant set of needs, feeding, watering, nurturing, changing media, potting and mounting, learning complicated names and cultural requirements as well as protecting them from all the dangers that might threaten them in our terrifying but ultimately resplendent world.

Try as we might, we cannot survive without those relationships with our friends and lovers, be they human, plant or animal, so we must endeavor to find our way through their complexities and entanglements in our web of life. I feel genuine sorrow for those who do not have this magic in their lives. Ultimately such a life is a journey brimming with beauty and wonder that makes our existence richer and our souls more divine.

INTERDEPENDENCE Like kids . . . our 'chids rely on us for their sustenance, water, food, attention and love. Without our engagement, they are doomed the moment they leave Mother Nature's care. In the midwinter, in the Northern Hemisphere, where day lengths are short, and many plants are dormant, we must be sensitive to the amount of water we offer. Drenching and feeding deciduous plants such as catasetums, habenarias, barkerias and others from seasonally dry forests will simply give you heartbreak.

If you love them, you must read of the natural habitats and requirements of your 'chids to make sure you are not fussing too much over them and killing them with kindness. The toughest part of orchid care this month is holding back!

WHAT IS IN STORE The majority of epiphytes hold water and nutrients in their pseudobulbs to survive seasons of drought and low nutrition; this is true of cattleyas, oncidiums, dendrobiums, lycastes, cymbidiums, bulbophyllums and so many other orchids that survive well in cultivation. These pseudobulbs help sustain plants through times when conditions for growth are not at their optimum levels. It is part of the reason why these genera are so popular — they do not perish instantly with the slightest mistake, as might a more delicate orchid such as a *Lepanthes* species that need the purest water, and misty humidity at all times. Orchids with no, or greatly reduced, storage organs will need much more of your attention, or an automated system to supply them with that daily care every day.

BUTTERFLY (AND MOTH) KISSES Many of us met our first orchid at the supermarket or big box store, in the form of a moth orchid, or *Phalaenopsis*. This is a most glorious genus that has been embraced by hybridizers to become the most astounding and diverse of orchids. Often maligned by orchid purists, phalaenopsis are in many ways the saviors of the orchid industry with their ease of culture, long-lasting blooms and incredible palette of colors and patterns. For many, they have been the gateway drug to true orchid addiction, and I suspect many reading this found their way to orchids through these fabulous plants. By this month, flowering is just about at its peak. Hopefully all are well-staked and groomed and ready to display at your orchid club or just to be enjoyed as stellar house plants. Fifty years ago, they were still rarities — how lucky we are now to have such graceful beauty and exoticism so widely available to us.

REUNIONS As winter and spring progresses, so many orchids come into bloom in an incredible array of genera.

Trichoglottis rosea var. *breviracema* 'Quest' CCE/AOS exhibited by Quest Orchids, Inc. in February 2021 at the Orchid Society of Highlands County Show in Sebring, Florida carried an estimated 3,170 flowers and buds on 312 inflorescences on an impeccably grown 25-inch by 36-inch (63 cm by 91 cm) plant. Photograph by Beth Lamb.

Sometimes, a plant that bloomed gloriously last year might take a break in the current year, while others are dependable, consistent bloomers in season every year. These will always be my favorites. Even though I may work harder and gain a feeling of accomplishment when a rare or recalcitrant orchid blooms, it is the many old friends and lovers that return to me reliably offering their annual gift of grace and loveliness that will always win my heart. There is nothing quite so rewarding as seeing your 'chids grow and attain their ultimate potential.

— Tom Mirenda has been working professionally with orchids for over three decades and is the past chair of the AOS Conservation Committee. He is an AOS accredited judge in the Hawaii Center (email: biophiliak@gmail.com).

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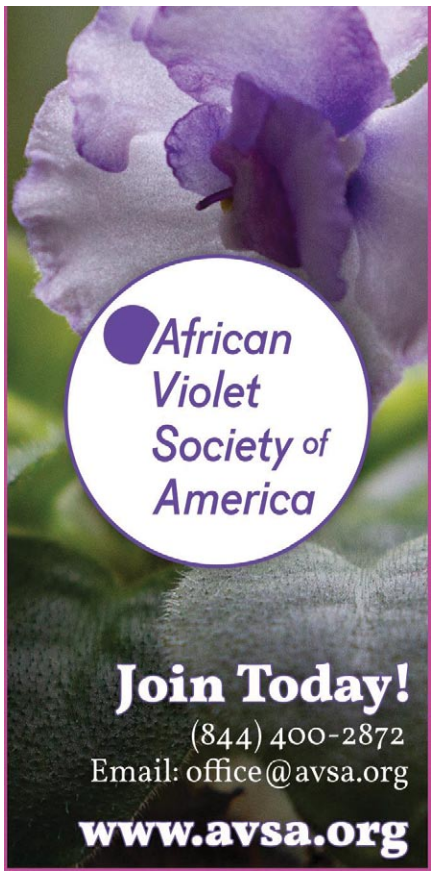

Webinars-Coming Attractions!




When	**February 15, 2022** 8:30pm EST Tuesday	**February 23, 2022** 8:30pm EST Wednesday	**March 16, 2022** 8:30pm EDT Wednesday	**March 22, 2022** 8:30pm EDT Tuesday
Topic	**A Guide to Modern LED Lighting** How to set up an indoor grow area	**Greenhouse Chat** (Orchid Q&A) *Send in your Questions!*	**The Story of Jewel Orchids** Glistening Gems of the Forest Floor	**Greenhouse Chat** (Orchid Q&A) *Send in your Questions!*
Presenter	**Kelly McCracken** Owner High Desert Orchids, Miniature Orchid Specialist	**Ron McHatton** Chief Education and Science Officer	**Nicholas Rust** Orchid hybridizer with a passion for terrestrials	**Ron McHatton** Chief Education and Science Officer

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CATTLEYA DIEBACK

QUESTION

Many of my cattleyas, along with other plants, have either died or show blackened pseudobulbs when new growths emerge. I grow uncovered so I am at the mercy of weather patterns that are both erratic and do not allow media to dry out well. I spray my orchids weekly during the rainy season with Physan and Thiomyl every six to eight weeks. What am I doing wrong and how can I prevent this?

ANSWER

I suspect this plant is staying too wet and the roots consequently are not in good shape. The photographs to the left are representative of a number of the diseases that plague such plants (from the top: rhizoctonia infection; early stages of rhizoctonia or fusarium infection before pseudobulbs begin to die showing compromised roots and the plant appears severely dehydrated; characteristic purple ring of a cattleya rhizome infected by fusarium, and brown rot or earwinia infection spreading up from the rhizome).

Because you cannot control the weather, you have to work with what you can control, and that is your potting medium. You need to make sure pots drain very rapidly and hold little water. This is the reason clay pots and expanded clay pellets (Alifor or equivalent) are so common among growers in Florida. Otherwise, the summer rains result in far too much water, roots rot and black rot, rhizoctonia and fusarium infections become chronic problems. Even in clay pots and clay pellets, growers often treat plants prophylactically with fungicide sprays during the rainy season.

Black rot, as its name implies, produces a jet black lesion that often starts in the leaf but rapidly progresses into the pseudobulb and then the rhizome and, if not treated immediately will result in the death of the plant. It is spread by splashing water and very infectious. Brown rot behaves similarly to black rot except the lesions are brown. Rhizoctonia root rot starts with the loss of roots but spreads quickly into the rhizome and from there, through the plant. All three of these get their start because the plants stay too wet. Fusarium infects the roots and causes them to shut down water absorption leading to what superficially looks like dehydration and growers often *increase* watering frequency which simply makes matters worse. Fusarium progresses up the roots and into the rhizome and over time effectively chokes the plant's vascular system. Infected plants often have a characteristic purple ring in the vascular layer of the rhizome visible when the rhizome is cut open. From the photograph, you have either early rhizoctonia or fusarium.

Using clean cutting tools, remove all infected roots and pseudobulbs. You can treat cut surfaces with a powdered fungicide or possibly cinnamon to help prevent reinfection but treatment with one or more good systemic fungicide such as Thiomyl, Pageant or Heritage is really critical. Plants should be sprayed and roots drenched at about two-week intervals over several months. Once infection is under control, you may want to consider a prophylactic treatment before the onset of the rainy season and once again in mid-summer.

ACCLIMATING PLANTS

QUESTION

Because winter is a good time to dream about spring orchid orders (when shipping weather is more favorable) how do I facilitate plants coming in the spring from the Southern Hemisphere, where they may be shutting down growth as the plant gets ready for fall? Is it necessary to adjust things such as timing a winter rest, fertilizing and watering?

ANSWER

Orchids from the Southern Hemisphere, either imported directly or

These questions were part of one or more recent monthly webinar Q&As and compiled by Larry Sexton for inclusion here. Each month, a Q&A webinar is held during the first two weeks of the month. To view recorded Greenhouse Chats (Q&A webinars) or register for a future one, see https://www. aos.org/orchids/webinars.aspx. Send questions to greenhousechat@aos.org — *Ron McHatton, AOS Chief Education and Science Officer.*

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purchased from an off-shore vendor at a show, will typically adjust to the Northern Hemisphere seasons over an 18- to 24-month period. This is a stressful period for the plant, and some do not make it.

The best approach is to respect the status of the plant. The worst thing you can do is to attempt to force a plant in active growth into dormancy or vice versa. If the plant is beginning to grow or produce roots and the season here would call for dormancy, give the plant its typical growing conditions and watch it for any signs that growth is shutting down. If the plant is entering dormancy (or completely dormant), the same guidance holds, leave the plant in that dormant state until it shows signs of emerging growth. Do not be surprised if the first out-of-season growth produced in your care is not the largest or strongest. Often these first growths mature early and are smaller. The next growth produced should be closer to normal season and by the third growth, the plant should be completely back in cycle.

You can improve the process by careful choice of the plants you purchase. For instance, bifoliate cattleyas are notoriously intolerant to repotting if new roots are not actively growing. Time your foreign purchases to a period in that hemisphere when roots should be just about to erupt and re-establishment goes very quickly.

In summary, the best advice is to take your cues from the plant. This is a delicate dance for your plant and requires you to use your best observational skills.

CATASETINAE CULTURE

QUESTION

I purchased this *Fredclarkeara* in August of 2021. The plant came in a plastic pot and the roots (tiny root nubs) were wrapped in coconut fiber. I thought Catasetinae should not be potted and watered until the roots are 3–5 inches (7.5–12.5 cm) long (per an AOS Fred Clarke webinar). As a result, I have not watered since then (it is mid-September at this writing) and now the pseudobulbs are shriveling, the growth is 11 inches (28 cm) long, and the longest roots are 1½ inches (3.8 cm) long. When do you suggest I water this plant? Should I divide it?

ANSWER

You are correct that under normal circumstances, repotting should wait until new roots are about 3 inches (7.5 cm) long before starting to water. Plants can be potted before this, as the critical step is withholding water. However, I think there are a couple of factors at play here. It appears from the photograph, that this growth is coming from one of the eyes along the pseudobulb and not from a basal eye. This suggests that there are no live eyes at the base of these pseudobulbs. This can happen if the division you purchased is a back-bulb division without a front lead. Secondly, the lack of vigorous root growth suggests your humidity may not have been high enough to provide sufficient moisture in the early root development. Wet potting medium can lead to rotting of the new growths in Catasetinae but high humidity is required to keep those young, exposed roots growing. This situation is similar to the treatment of *Dendrobium nobile* that require a cool, dry rest but may often have freshly initiated new growths.

I would suggest this plant be potted and treated as you would other normally growing Catasetinae. Let it grow and get the biggest growth you possibly can. It will, at some point, naturally go dormant.

If you cannot pot the entire plant without burying the old growths, you may have to gently remove this growth from the pseudobulb that produced it, potting it normally. If that turns out to be the case, do not throw away those old growths. If there are no live basal eyes, there may well be dormant nodes on them and one or more of these could result in another new growth.

NOTE As of this writing (January-February) most Catasetinae should be well into winter dormancy, and have lost most, if not all, of their leaves. You may still be getting a few flowers from mormodes and winter-blooming clowesias. You should not be watering Catasetinae at this time in the winter. Watch plants closely for new growths to start from eyes around the base of your plants in the spring. Seasonal triggers such as increasing temperature, increasing daylength, and increases in humidity are the cues that initiate new

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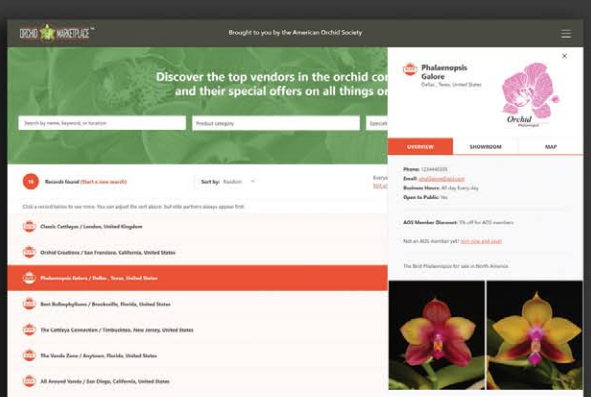

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COLLECTOR'S ITEM

Coelogyne usitana

Roeth. & O. Gruss 2001

By Corbin Beller

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COELOGYNE USITANA IS one of my favorite species. Described in 2001 by Jürgen Roeth and Olaf Gruss, *Coel. usitana* is a fairly new species as orchids go. Native to the Philippines near 2,600 feet (800 m), you can find this plant often growing on large horizontal branches as an epiphyte and sometimes as a lithophyte. This species has narrow pseudobulbs about ¾ inch (2 cm) in diameter and just over 3 inches (8 cm) or more tall. The single leaves are around 9½ inches long (24 cm) or more, narrow at the base and broadest near the middle (3½ inches [9 cm], gradually narrowing toward the tip. The foliage is quite luxurious and pleasing to look at with its arching habit. Inflorescences emerge from the developing new growth (synanthous); a trait shared by few species. Once the new growth has reached about an inch long (2.5 cm) and the leaf has started to emerge, you can expect the inflorescence to emerge along the leaf very soon if is not already visible. While the plant remains in flower, the newly developing pseudobulbs will not fully mature, which means that the previous year's roots and mature growths must support the entire needs of the plant. The developing growth does not even put out roots until after the inflorescence has faded. *Coelogyne usitana* has a pendent, sequentially flowered inflorescence that continues to produce buds until it just does not have the resources to support the inflorescence any longer.

The flowers of this species are, for me, visually arresting. The combination of colors is hardly seen in other orchids. The sepals and petals are a brilliant, glistening white to translucent green. The lip is a striking deep, maroon-brown color with high side lobes, and the exterior of the lip, starting at the base, is a carryover of the iridescent white color of the petals, becoming somewhat streaked toward the end of the lip. The column is often a burnt orange color that compliments the maroon lip quite well. The flower as a whole is a sight to see, capturing your visual attention with its awe-inspiring contrasting coloration. Not only are the blooms amazing to look at, but they also emit an amazing slightly sweet and lightly floral fragrance that is strongest in the early morning. This orchid is truly a sensory explosion! The flowers can be quite large, averaging around 2⅓ inches (6 cm) wide; the only downfall is that only one flower blooms at a time. The lip has toothed keels that follow into the throat, giving it the look of velvet.

I find *Coel. usitana* very easy to grow and bring to flower. I grow mine in small Orchiata bark that I water about once a week in the summer with rainwater and a few times a month in winter. In terms of coelogynes, this one fares well if a few waterings are missed but it will not tolerate fully dried out medium and, if allowed to remain dry for too long, it will drop its older leaves and the roots will begin to desiccate. Keep an eye on the bulbs: they will let you know when it has been without sufficient water for too long as they become wrinkled.

I would not recommend mounting this species unless you can keep the humidity high enough (consistently around 85 percent). *Coelogyne usitana* appears to be adaptable with regard to light level as long as it is bright but indirect or heavily dappled with no direct afternoon sun. Very early morning sun or very late afternoon direct sun may be beneficial — just be mindful that thin foliage burns easily. Although the species does not experience a winter rest, watering should be slightly less during the winter months due to the lower temperatures. The species is a warm grower, preferring temperatures in the mid-80s (>30 C) during the day and no less than 50 F (10 C) on winter nights. The species can be sensitive to overfertilization so light feedings (1/4-strength) are called for and plants grow and flower throughout the year so fertilization can continue year-round (weekly or biweekly during active growth periods and monthly otherwise). Keep in mind that the species does not have a rigidly defined growing period and new growth (and blooming) can be initiated at any time of year. The start of new growth in this species is solely determined by when the inflorescence fades and the flowered pseudobulb matures. Because the inflorescence can flower for up to a year, producing up to 20 or more flowers, you can go a year without flowering growths fully maturing, hardening off and producing new roots. Producing the strongest growth possible from the prior season is crucial to success.

This is a very rewarding orchid that is a must have in a collector's collection.

— Corbin started growing orchids around May of 2020. His focus is the genus Coelogyne*. Having found his passion; it was not long after that he became a member of the Nature Coast Orchid Society (Spring Hill, FL), shortly after filling a spot in their monthly newsletter and then the Society's second vice-president (email: corb.bell@gmail.com).*


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JAMES HARRIS

[1–2] *Coelogyne usitana* 'Vistamont' FCC-CCE/AOS grown by Cynthia Hill beautifully illustrates the long, pendent, sequentially flowered inflorescences of this species and the striking color contrast of the flowers. Photographs by Ramon de los Santos.

[3] This photograph of *Coel. usitana* 'Muggles' CHM/AOS illustrates the emergence of the inflorescence early on in the development of the new growth.

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Why Will It Not Bloom?

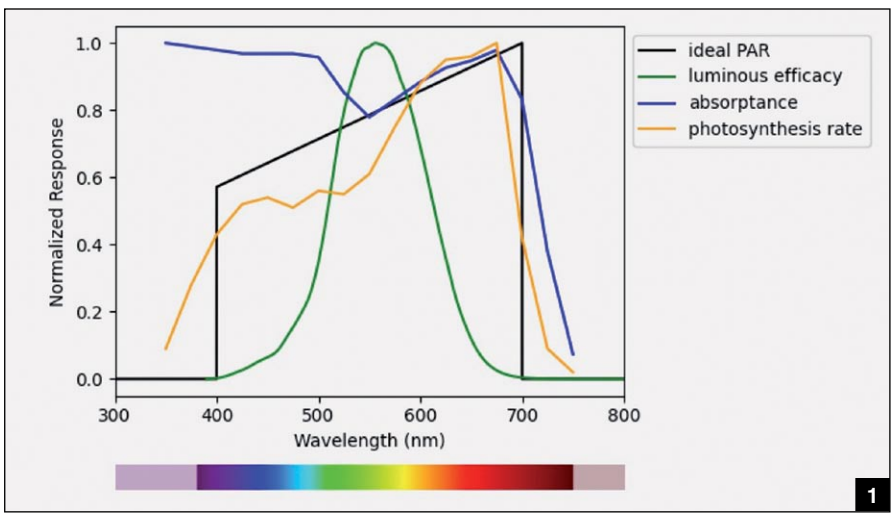
By Judywhite

ORCHIDS DO SEEM to have minds of their own sometimes. You can choose the right pots with the right potting materials, buy a good plant, water and fertilize it correctly, even repot it at the right time — and it still will not bloom. It is enough to drive anyone crazy, especially the frustrated beginner. There is really not much of a trick to get an orchid to grow. Many of them will grow cheerfully in the house for years, looking healthy and content, yet never sending up even a trace of a flower.

SO WHY ON EARTH WILL IT NOT BLOOM?

When an orchid plant flowers, it is usually because the combination of all its environmental surroundings are good enough to signal to the plant that this might be a good place to bring up the kids. The proper watering technique, for example, is of prime importance in keeping the plant alive in the first place; a good choice of pot and potting material helps keep the roots happy and well-aerated; humidity of 50% or more makes the plant sigh in relief. But even given all those good factors, the plant will not bloom if you have the pot in the wrong place. Of paramount importance when it comes to convincing an orchid to bloom is LIGHT. If there is not enough light shining on that pot, the plant is not going to bloom.

Hand in hand with enough light in getting an orchid to bloom is a DROP IN TEMPERATURE AT NIGHT. Most orchids in nature live where the difference between day temperatures and night temperatures can be as much as 40 F (22.2 C). Almost all of them feel a temperature drop of at least 10 F (5.6 C) between day and night; probably most of them are in the 20 F (11.1 C) drop range. So, if your plants remain at the same temperature around the clock year-round, they will not feel that drop they are accustomed to in nature, which means their natural rhythms will be disrupted, and no signals will be sent to make flowers. And as I have said before, an out-of-bloom cattleya is not exactly something I plan to keep as a centerpiece on the dining room table.



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So, if your plants are not blooming, more than likely they are not in the right place. They are 1) not getting enough light, or 2) not getting a drop in temperature at night. There are a few other minor reasons why the plant may not be blooming. For one, the plant may not be mature enough yet to flower; most orchids must be at least four years old, sometimes as old as 12, before being able to bloom. It also may have been set back a bit when moved from the seller's greenhouse and then put into your own, different conditions. It may just need some time, perhaps skipping a cycle and flowering next year. But more than likely, it is just not getting enough light. A greenhouse can yield 10 times the light from artificial sources. However, dirty glass can reduce light intensity by up to 60%.

SO WHAT'S ENOUGH LIGHT?

Understanding how much light is enough to get an orchid to bloom means understanding how plants use light. The range of light that we can see — the visible spectrum — runs sequentially from violet, blue, green, yellow, orange, red, in wavelengths that are measured in "nanometers" (nm), from about 400–700 nm. Green plants use the same range for photosynthesis, but they "see" (or absorb) a couple of peak areas of the spectrum. These peak areas are a large one at around 610–700 nm, which corresponds to the orange to red wavelengths, and a smaller peak around 400–510 nm, which is in the violet and blue wavelengths. The area in between 510 and 610 nm, most of which we perceive as green, is reflected from the plant rather than used in photosynthesis. This is why plants appear green to us.

Photosynthesis is not the only process for which plants use light, although it is the major one. For example, phototropism, which is the process that makes plants bend and grow toward the light, uses the violet and blue wavelengths. Growth of a plant is therefore at its maximum when the entire range of the visible spectrum is available. If a plant does not get the proper light to meet its photosynthetic needs, it has the amazing ability to make minor adjustments and extend its sensitivity up the spectrum level to better meet the actual conditions. The plants are the best clues to knowing if they are happy with the light they are getting. No light meter or other tool will be a better guide than actually looking at the leaves. Orchids in the proper amount of light to bloom will usually have leaves that appear a moderate to light green in color.

TOO LITTLE LIGHT

If the level of light available to the plant is lower than it needs, it will start

[1] Reprinted from 59(6): 598–608 (1990). It has been lightly edited and newly illustrated. Although written before the advent of LED lighting systems, the information presented is still useful. For detailed information regarding lighting with LED systems, see Kelly McCracken's five-part series July-November, 2021 and the articles by A'na Sa'tara *Growing with LED Lights: More than Footcandles and Lux — New Ways to Think About Indoor Orchid Growing* 88(11): 830–835 and *Growing with LED Lights: T5 HO LED Replacements for Fluorescent Grow Lights* 89(2):124–129.

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making adjustments using more light in the yellow portion of the spectrum, rather than just in the orange and red. The plant will change color as we see it, and it will look darker, more bluish, as more of the yellow is absorbed and less is reflected. Orchid plants with lush, dark-green leaves may look healthy, but they're not getting enough light to bloom. In lower light, the leaves also get duller, so less light will be reflected. Too little light will make the plant softer, with stunted foliage and elongated stems.

TOO MUCH LIGHT

If the light level is too high, which does not happen in most cases with growing orchids, especially in the house, the plant is more selective in its absorption range and starts to reject light at the edges of the useful range. In the layer of cells right below the epidermis, the plant produces certain pigments (flavonoids) that absorb ultraviolet radiation and release it as heat instead of transferring the energy to chlorophylls, which could be damaging. The leaves will also often become much glossier to help in reflecting light as well as firmer in texture in order to close down the surface of absorption. At its worst, too much light can cause the chlorophyll to bleach out and the leaves to yellow. If heat builds up too much, particularly in direct sunlight, the leaves can burn and blacken — a form of "sunburn." The leaf heats up too much, the manufacture of food decreases or even stops, the rate of food utilization starts to rise and at these alarming rates, the plant suffers.

MEASURING HORTICULTURAL LIGHT

Much has been written about measuring light for growing orchids; everything seems to be in terms of "footcandles' of light. A footcandle is a term of rather old-fashioned origins; it is the amount of light generated by a standard candle at a distance 1 foot (30 cm) from the flame. I do not know about you, but nobody I know grows orchids by candlelight. It is romantic but a tad impractical. Footcandles simply measure the intensity of light, the amount that actually falls on a surface, or its illumination. Footcandles do not measure the quality of light, nor its duration, and those are also horticulturally important. But footcandles do give a guide to the relative needs of different orchids, helping us gauge certain categories of light requirements. Basically, we lump orchids into three categories where light is concerned: high-light lovers (3,000 footcandles and above), moderate-light lovers (2,000–3,000 footcandles) and low-light lovers (1,000–2,000 footcandles). In the high-light category would be vandas (including the former ascocentrums), cymbidiums, thick-leaved oncidiums, and some dendrobiums; the moderate-light category would include cattleyas, oncidiums (including the former odontoglossums), angraecums and strap-leaved paphiopedilums; in the low-light category would be phalaenopsis, miltoniopsis, masdevallias and mottled-leaved paphiopedilums. Most orchids can step over the lines from one category into another; after all, they are arbitrary lines, and the amount of light that an orchid will actually accept is dependent on its entire environmental conditions, especially those of humidity and temperature. Most will accept higher light than you would expect; do not be afraid to experiment gently and gradually.

TERRY BOTTOM

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[1] Figure courtesy of Kelly McCracken depicting the solar spectrum (green curve), along with the ideal PAR spectrum (photosynthetically active radiation).

[2] Inside a very well-maintained hobby greenhouse. Clean walls go a long way to maximizing available winter light.

Intensity of light is measured in footcandles, using a photometer if we feel like spending $60 or so to buy one (or better still, get your local orchid society to buy one or two that everyone can share). We can also measure intensity of light by using the light meter in a camera, which actually measures the amount of light reflected from a surface (its luminance) rather than the light falling directly on it (its illumination). Another way to gauge relative intensity is the quality of the shadow cast by your hand: put your hand about 6 inches (15 cm) away and over the leaves of a plant and look at the shadow cast. A sharp-edged shadow means the light is very high; a soft-edged shadow is probably good for a medium- to low-light-loving orchid; and no shadow cast means the light is not strong enough for an orchid to flower.

Outside, in full sun on a bright summer day, the light illuminating a surface is about 10,000 footcandles. An overcast day is about 1,000 footcandles; the indoor light near a window is around 100 footcandles but can be as much as 5,000 footcandles if right up against it on a clear day at noon at standard time on June 21, which is when the amount of light falling on the Northern Hemisphere is greatest. The least amount of light falls on December 21 in the Northern Hemisphere.

MANIPULATING LIGHT

Light varies an incredible amount throughout the year in the Northern Hemisphere. Light also varies a great deal during the day; take several readings at different hours on a single day, and you will be amazed at the difference. It is high in the summer and low in the winter, often differing by a factor of 5–10 times as much. Many of our orchids, however, are used to climates from the tropics or subtropics, where the intensity of light varies with the season but certainly not as dramatically as it does here. Midwinter here means that the net solar radiation reaching the leaves of plants even in a greenhouse is much less than that needed for the maximum photosynthesis. And if the greenhouse glass is dirty or clouded, the loss of light can be an additional 60 percent. Indoors, even on a windowsill, plants are receiving perhaps 10 percent of the light they would get being outdoors or in a greenhouse. The position of the windowsill itself will make

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Smart phones have free light meter apps that are easy to use and can eliminate some of the guesswork out of growing orchids. Also never base decisions on a single measurement, by light meter or by shadow. Measurements should be made over several hours.

10,000+ foot-candles

Few orchids in cultivation will tolerate unbroken, full-sun exposure. Look for plants with terete or nearly terete foliage such as species and hybrids of *Papilionanthe* (terete vandas). The higher the light level the greater must be the air movement and humidity to keep the foliage from burning. Plants tolerate more light at cooler air temperatures for the same reason. All photographs by Greg Allikas.

3,000–5,000 foot-candles

Light levels about 3,000-5,000 foot-candles are suitable for many brassavolas, brassias, cattleyas, cymbidiums, some dendrobiums, epidendrums, true laelias, many oncidiums, some phragmipediums and vandas. As a general rule, orchids should be given as much light as possible without burning the foliage. Start at lower light levels and increase light slowly to avoid burning. Most orchids are quite adaptable so light ranges (as well as temperatures) should be viewed as approximations.

1,500–3,000 foot-candles

Light levels between about 1,500 and 3,000 foot-candles are suitable for some brassavolas, brassias, cattleyas (although yellow flowered hybrids need levels at the upper end of the range), some cymbidiums, some dendrobiums, some epidendrums, jewel orchids, masdevallias, miltonias and miltoniopsis, some oncidiums, especially those that prefer cooler conditions, most paphiopedilums and cooler growing cattleyas such as the former Sophronitis species and their hybrids. Experiment slowly with higher light.

500–1,500 foot-candles

Light levels between about 500 and 1,500 foot-candles are suitable for fewer orchids than bright shade or higher light levels however there are plants which will grow and flower well. These include many jewel orchids, some masdevallias and most draculas, some miltonias and miltoniopsis, some of the cooler growing oncidiums and virtually all phalaenopsis species and hybrids. As a general rule, flowering will be better at the higher end of this range.

Less than 500 foot-candles

Light levels below about 500 foot-candles are generally not suitable for flowering orchids. Plants may grow under these light levels (phalaenopsis will actually grow at levels down to 250 foot-candles or lower) but flowering will likely not happen. Plants that might be suitable for very shady conditions are some jewel orchids and some phalaenopsis. If plants grow but refuse to flower, light should be increased to 900–1,000 foot-candles or higher.

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a difference in the intensity and duration of light it receives during the day and throughout the year. By and large, south-facing windows work best for orchids, then east (which receives mostly morning sun), then west (though westerly windows can get excessively hot because they get much afternoon sun), then north. North windows are often condemned as poor for growing orchids, but that depends; some northerly windows face reflective walls or can be made more reflective or even more illuminated by adding artificial light. Most windows can be adapted nicely for growing orchids.

Only about one percent of the light received by the leaf of a plant on a sunny day actually gets used in photosynthesis. The rest is reflected, re-radiated or transformed into heat. When light is low, plants become more efficient in using what light does come their way, but there are still limits to this efficiency. We can help by recognizing the need for more light, keeping sunlight-transmitting glass clean, pushing plants closer to windows, by buying plants that best suit the light we are able to give (many hybrids have been bred for light adaptability), keeping plant leaves clean so they can maximize their light-absorption capacity, making the environment around the plants as light-reflective as possible (matte-white walls, aluminum foil, mirror tiles, Mylar lining), keeping plants well-spaced so that no leaves are blocked by leaves of other plants, adding artificial light (even in a greenhouse, especially for cloudy days) and increasing the amount of time the artificial lights are on to make up for what they lack in sunlight power.

THE TRICK OF DUPLICATING LIGHT

Footcandles measurements do not work as well when we are measuring artificial light. Actually, footcandles are rather inappropriate in measuring artificial light because artificial light varies greatly in light quality. There is much difference in the spectrum of light that the various types of bulbs emit; light meters can measure intensity of those artificial lights but give us no idea as to how much of that light can actually be used for photosynthesis. If you simply want to add more light to an environment that is already receiving natural sunlight, you do not have to be so concerned about the light quality, but if you want to grow orchids completely under lights, then it is very important. The best growth in completely artificial light is through a combination of light sources that complement each other to produce a spectrum closer to that of sunlight than any one of them does separately. And to make up what artificial light lacks in sun power you need to keep them on for 14–16 hours per day.

We do not use regular incandescent bulbs for growing orchids because they give off enormous amounts of heat and would have to be much too close to the plant to be useful, thereby burning the plant. Fluorescent tubes work much better. They cover a wide area, provide even illumination, give off relatively small amounts of heat compared to the amount of light they produce, are inexpensive and efficient. But most fluorescent tubes have been developed with the human eye in mind — the eye that sees best at 555 nm. All of them are deficient in some portion of the visible spectrum. The standard "cool-white" bulbs pander to the human eye, peaking at 550 nm. They are much higher in blue and green wavelengths and deficient in the photosynthetically important orange-red spectrum, which is what makes them "cool." When you take pictures of flowers or people under coolwhite bulbs, the result is sort of a greenish pallor. "Warm-white" fluorescents, on the other hand, are deficient in the blue portion of visible light, leaning more toward the yellow region. "Deluxe" warm whites and "deluxe' cool whites (if you can find them) have even more in the orange-red area. A good solution is mixing cool whites and warm whites for growing orchids, which seems to give enough of all the wavelengths to satisfy the plants.

Manufacturers of light bulbs have seen the growing market for bulbs that are horticulturally designed rather than designed for the human eye, which is where "grow light" types of bulbs comes into the picture. The fluorescent grow lights come in a wide variety of types (GroLux, Wide Spectrum, VitaLite, Agro-Lite, TruBloom, etc.), with spectral peaks in the areas needed in photosynthesis. GroLux, for example, has a moderate peak at 450 nm and a very high peak around 680, which matches closely the peak of chlorophyll synthesis. These grow lights can cost as much as 15 times as much as a regular cool-white fluorescent, and, as yet, there is not good evidence that proves they make orchids grow or bloom any better. It is still artificial light, deficient somewhere along the scheme of things. Many growers, however, swear by them. A definite plus to the grow lights is that the plants and flowers look more naturally colored underneath them, because the spectrum of light provided is more natural. The only real difference that has ever been pointed out to me with growlights is in spike length, particularly in phalaenopsis. Under the predominant blue of the cool whites, spike length seems shorter and slower, with short, stocky growth. When warm whites or grow lights are added, the spike habit seems to be more normal.

Regular cool-white bulbs are more efficient than the grow lights — that is, they give off more light per watt of electricity expended. It is tough to gauge efficiency this way, however, since there might be better energy conversion with the grow lights because not as much electrical energy is wasted in the colors of the spectrum not being used much by the plant.

Perhaps an even bigger consideration with fluorescent tubes is their life span. Fluorescents will last a long time before burning out; cool whites are rated at around 20,000 hours if run continuously. But for horticultural use, their useful life span is considerably less because we turn them on and off twice a day to allow darkness at night. Fluorescent tubes use a low-pressure, low-temperature mercury vapor to arch between heated cathodes at the ends of the lamps. Covering the cathodes is a salt that emits electrons, and every time the tube is turned on, some of the coating sputters off. That sputtered coating builds up as a black ring at the end of the lamp; when enough coating accumulates from the cathode, the tube dies. It is the continual on-off cycle, as well as the hours of use, that rob the tube of life. In the first 100 hours of use (6–7 days of orchid use), the output drops dramatically. Then, over time, the tube decays slowly, becoming less and less bright. It is usually recommended to replace fluorescent tubes every year, certainly more often than every two years. This is another reason why cool whites look more and more appealing; their low cost makes it easier to toss them out even when they still can light. To get an idea of the decline of the light output, measure the footcandles emitted over time and keep a dated record; this will help you get rid of old tubes more easily. Psychologically, expensive grow lights are much more difficult to throw away. I know I do so with a heavy heart. But throw them out — you are doing the orchids a favor.

Another very important factor with fluorescent tubes is where the light is best. Light is highest right in the middle of the tube, so put the higher-light plants in the middle. Light drops off dramatically at the ends and drops in an inverse ratio as the plant is moved away from the long narrow tube. Use a minimum of four 40-watt

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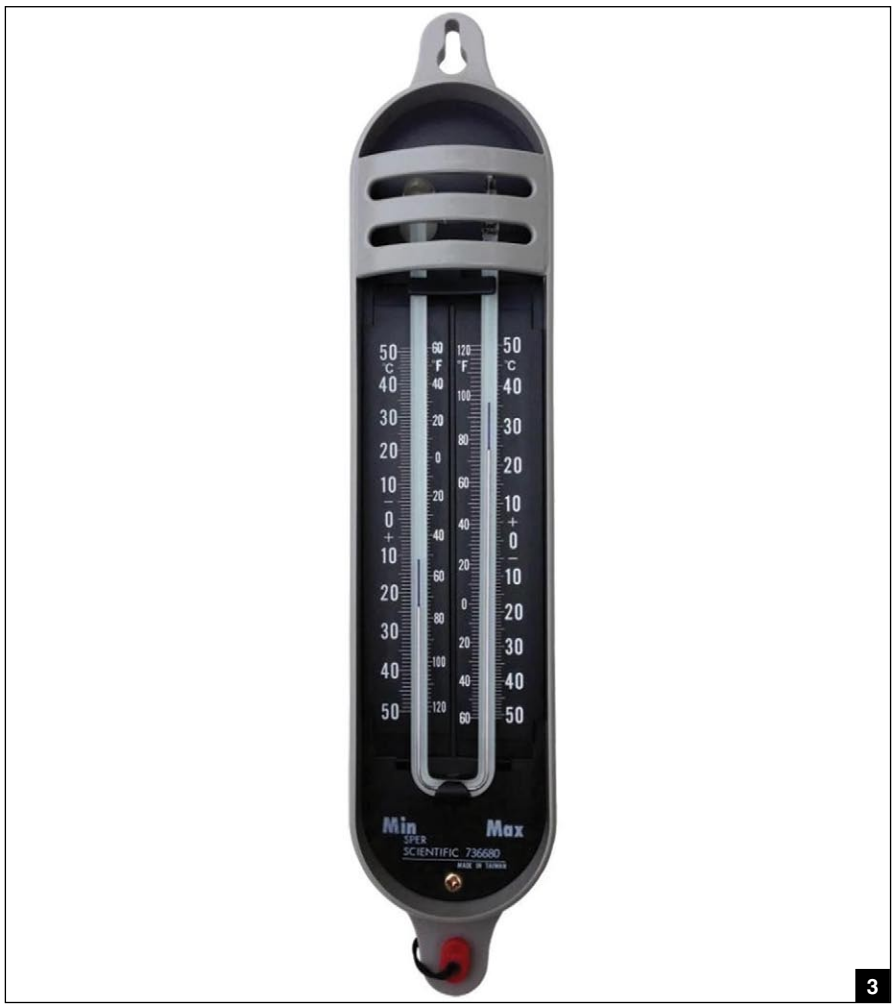
tubes, 6 inches (15 cm) apart, preferably at least 48 inches (122 cm) long (the 2-foot (60cm) tubes are virtually worthless). The closer to the tubes you place the tops of the plants, the higher the light. As a general rule the plants should be within 6 inches (15 cm) of the tubes, closer to get more light, especially at the ends where the light is worse.

More and more interest lately in the artificial light debate comes via the new "high-intensity-discharge" (HID) lamps. HID lamps include high-pressure sodium lamps and metal-halide ones. These are quartz tubes filled with mercury or sodium vapors under pressure and surrounded by an ultraviolet absorbent envelope coated with phosphorus. HID lamps are very efficient and give excellent spectral light, but they are very expensive (it is the special fixtures that drive up the cost). Over a long term of use, however, their low cost of running can offset the initial outlay. High-pressure sodium lamps, however, give off a yellowish, very unattractive light that makes the plants look sort of pinky-gray and awful. The plants do not seem to mind, though I do. Metal halides deteriorate much more rapidly than the sodiums; at burnout they have lost half their power, while sodiums have lost only 20 percent. These lamps are good choices for adding light to a window or greenhouse, because they can be positioned much farther away than can fluorescents, which must be within 6–8 inches (15–20 cm) to do the plants much good. Spike habit under HID lamps, especially the sodium vapor ones, is long and leggy, a consequence of the predominant red-orange light.

OTHER FLOWERING FACTORS

DAY LENGTH As we can see, light is vitally important in getting an orchid to bloom. But it is not the only thing that convinces flowers to emerge. Lots of times, daylength, temperature or the combination of both make a big difference, especially at the crucial time of year when the buds or spikes start to form. If the only time of year that you can get a temperature drop at night of at least 10 F (5.6 C) or more, if possible, is at the time when the buds want to form, you will probably get flowers. For many orchids, those that bloom between February and April, that time of year is in the fall, as daylength begins to get shorter and temperatures begin to drop naturally. Long days at this time can prevent, reduce, or delay flowering. If you grow in a greenhouse or on a windowsill, usually the daylength will shorten all by itself, but under lights or in an environment when lights shine into the growing area after the sun has set, daylength can be too long, sometimes to the detriment of flower bud initiation. If you grow under lights, make sure you cut down the hours of light as fall sets in, down from 16 hours to 13 or 14, even to 12. A good, under-lights schedule year-round might be 16 hours in summer, 14 hours in spring and fall, 12 hours in winter — gradually decreasing and increasing light by adjusting the timer over several weeks with each change. Remember under lights you can control when the seasons actually occur, if you want summer (and longer light periods) to occur in the cooler months of spring to help cut down the heat generated by the lights in real summer (when you could start dropping the daylength), then by all means do so. You can also control when the day occurs; if you would rather have the lights on late at night when you are home, then start the day later.



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[3] Minimum-Maximum thermometer.

TEMPERATURE Even with shortened daylength, it is crucial to make sure the temperature drops as well. The good effect brought on by the shortening day can be totally obliterated by high temperatures at night, marring or even eliminating the chances of bud initiation. Plants grown under uniform constant temperatures simply will not grow or flower as well as those grown under alternating night and day temperatures. For some orchids, particularly those that initiate buds at very low temperatures (cymbidiums, *Dendrobium nobile*, etc.), daylength has no real effect; it is the drop in temperature that causes flower formation. With cymbidiums and some other orchids, the amount of response to the low temperatures is also directly related to the amount of light available at that time. Low light in fall and winter can mean that cymbidiums do not form buds even if the temperature drops. How do you drop the temperature? If the windows are kept open, then night differentials usually happen fairly easily. When you grow under lights, there is also a drop simply because the heat from the light ballasts stops when the lights go off, which helps drop temperatures at least 5 F (2.8 C); an open window can do the rest. (Do not let cold air blow directly on the plants, however.) If the heat is on in

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The 2022 Spring Members Meeting will be held in conjunction with the AOS Centennial Celebration.

We are looking forward to welcoming all AOS Members and Friends to our first "in-person" meeting since 2019! Help us celebrate 100 years of Orchids in Coral Gables, Florida this April.

All manner of actvities are planned for the Members Meeting - orchid conservation speakers, a live auction, election of new officers and trustees, optional afternoon at the Fairchild Tropical Botanic Garden, and more!

To Commemorate our Centennial, a special Celebration Gala will be held on Saturday, April 9th at the historic Biltmore Hotel.

Your Registration fee includes:

- Goodie bag
- Exclusive Meet & Greet Reception - Wednesday, April 6th @ 5:00 PM
- Complimentary transportation to and from the Fairchild Tropical Botanic Garden (including admission to the Garden) Thursday afternoon, April 7th.
- Preferred seating at the auction
- Access to all lectures

American Orchid Society
Education. Conservation. Research.

Registration is only $100

Register at https://secure.aos.org/event/register

*Gala tickets sold separately

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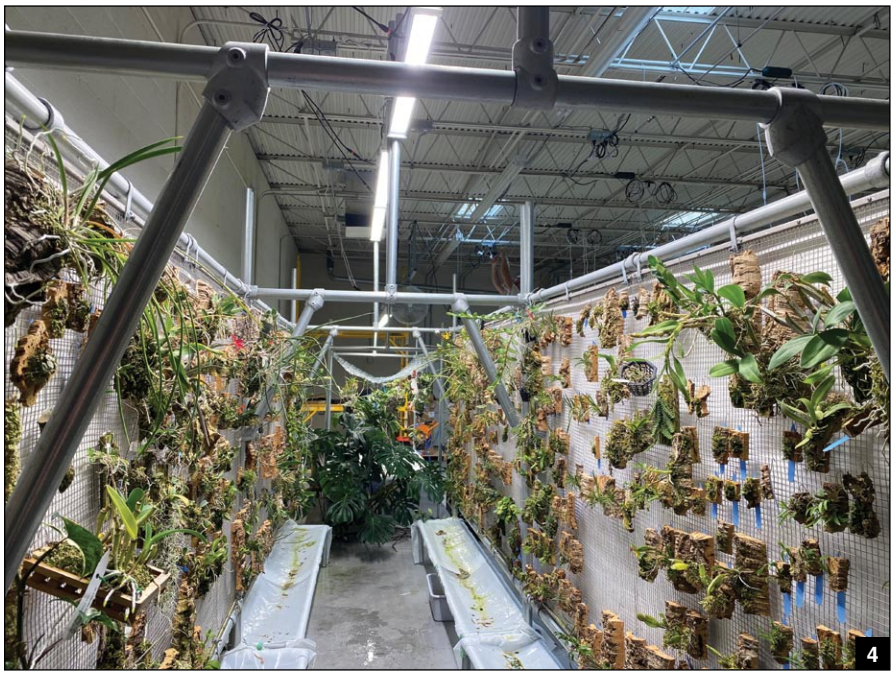
the house, dropping the temperature can be a bit trickier, but a thermostat with a setback thermometer can be the answer. Get used to making the house a bit cooler at night — add a blanket rather than turn up the heat.

As with light, we classify orchids into three basic groups according to the minimum winter night temperature they prefer, although again the lines can be blurred between the categories, orchids being the adaptable things they are. "Warm" growers (such as phalaenopsis) like winter nights to go no lower than 60 F (15.6 C), although they would prefer it closer to 65 F (18.3 C). "Intermediate" growers (cattleyas) are happiest with winter nights around 55–60 F (12.8–15.6 C). "Cool" growers (cymbidiums, former odontoglossums) do enjoy the cold, and can tolerate 50 F (10 C), even the high 40s F (>8 C) during those crucial weeks of bud initiation. As far as day temperatures go, most orchids cannot stand temperatures above 85 F (29.4 C), and a range between 60–80 F (15.6–26.7 C) is generally ideal, the same range that we humans tend to like as well. One of the most useful tools in growing orchids is a "maximum-minimum" thermometer. This will measure, on a daily basis (if you reset it every day), the highest and lowest temperatures reached that day in the growing environment. Do not second-guess the temperatures, as they are vital in bud set and good growth of the plants. Have at least one max-min thermometer and place several regular thermometers in various spots around the orchids. As with light, you would be surprised how much individual areas can vary. Near the floor or closest to the windows there can be decidedly marked differences, particularly in the extreme seasons. Once you know the areas a bit more thoroughly with respect to light and temperature, it is easier to choose which spot might be better for a particular orchid.

If you have ideas about air conditioning an area for orchids, be aware that air conditioning creates a very dry environment, robbing the air of crucial humidity. An evaporative cooler is far better for keeping air cool for orchids, while keeping it rich in vapor.

CREATING THE OPTIMAL ENVIRONMENT

Light and temperature are critical, so concentrate on them, but try to keep some other environmental factors in mind as well. Few things help make orchids feel like they are back in nature more than does good air movement, for the great outdoors is full of continual breezes. That means fans, and lots of them, running 24 hours a day all year long. Little "muffin" fans often sold for computers are great, as are variable-speed fans that oscillate, giving you the options to slow down or speed up air movement at different times of the year as needed. Ceiling fans also work well to create a good environment.


KELLY MCCRACKEN

[4] ngA portion of the totally indoor under-lights growing range maintained by Kelly McCracken, Desert Valley Orchids.

Air movement is a preventive medicine for lots of potential evils lurking around orchids. Stale, stagnant air breeds fungus and bacteria, encouraging rot, making potting mixes stay wet too long, causing leaves to stay too hot in high light, allowing the air to layer into hot high areas and cold lower regions instead of mixing freely and uniformly to promote even temperatures and humidity. Fresh moving air is vital to plants, also offering a continual source of carbon dioxide to use in photosynthesis. In the house, an open window, even if just a tiny bit in winter, can lend that extra "breath of fresh air" (just make sure it does not blow directly on the plants). Use fans to direct air where you want it.

It is a great temptation to fill up every little possible space in the house or greenhouse with pots of orchids (believe me, I know), but actually this does the orchids a disservice. Crowding not only reduces the amount of light they are able to receive, but it also dramatically cuts down air movement, which means an open invitation to fungal and bacterial attack. Fungus and bacteria can destroy leaves and roots, and they can also cause ugly spotting on those precious flowers you finally coaxed. Fungicides can be used to help save the unspotted flowers once fungus shows up, but what the spotting is really telling you is to increase the air movement. Fans should not blow directly on plants, but should be scattered around in sufficient quantity to create a good feeling in the growing area, a feeling of "buoyancy." It is a tough thing to describe; if the air is buoyant, you will know. If you are not sure it is buoyant, it is not. Add more air movement, and try to keep humidity around 50–60 percent, which can be measured with another useful tool, a hygrometer.

THAT DREADED SIGHT: BUD BLAST

Possibly the most maddening thing in the entire world is to get everything working right, and spikes and sheaths and buds actually appear and grow larger and larger, when all of a sudden, those precious buds wilt and shrink and fall on the floor in a sodden little heap. Bud blast. It has happened to all of us. Why on earth will it not flower?

When beginners ask this of experienced growers, they get lots of different answers, which makes the whole process even more maddening. Unfortunately, there are lots of reasons why buds fall off before flowering. You have to check the long list and see which one (or any combination) is the culprit. Bud blast can result from 1) extremes of temperature near the buds, 2) low humidity, 3) excessive fluctuations in humidity, 4) too much sunlight hitting the buds, 5) lack of water or watering with cold water, 6) water standing on the buds or in

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the sheaths (this is more bud blight than bud blast), 7) air conditioning, 8) heating vents blowing directly on buds, 9) bringing the plants back into the heated house from a summer outdoors, 10) genetic aberrancy; 11) smog or pollution, 12) gas leaks or inefficient burning of gas stoves or heaters, 13) ethylene and the list goes on. I am sure I could think of another baker's dozen if I strained my brain a bit. I am also convinced that there are phalaenopsis in my collection with an advanced sense of torture, waiting until their buds are nice and fat and just ready to open before kicking them all off the stem for no reason whatsoever.

Ethylene is a hormone produced in large amounts by certain types of fruit in gas form, and it has been shown that orchids are among the most susceptible flowers to even low levels of the stuff (3 parts per million). Ethylene can cause flowers to remain closed, make them age faster and fall off, blast the buds, make flowers distorted, prevent budding, shorten distances between nodes on inflorescences and all sorts of other awful things. High ethylene producers are apples, avocados, papayas, peaches, pears, plums, and passion fruit, so keep bowls of them away from orchids. Moderate ethylene producers are banana, fig, melon and tomato; avoid mixing them with orchids as well. Nonplant sources of ethylene are also fairly abundant; furnaces, stoves and engines with incomplete combustion; smoke from cigarettes, cigars and pipes; open fires; even fluorescent light ballast transformers.

OTHER FLOWERING TIPS

For additional urging of bud initiation, switch to a "blossom-booster" fertilizer formula at the time when buds will be starting to form — usually fall, when temperatures start to drop and daylength shortens. Blossom booster is a fertilizer that is lower in nitrogen (the first number) and higher in phosphorus and potassium, both of which are needed more for flowers. At the very least, cut back on a high-nitrogen formula at this crucial time. (Remember always to use quarter-strength when fertilizing, regardless of formulas.)

As flower spikes and sheaths and buds develop, try not to move the plant, watering it in place rather than shifting it around. It is also not necessary to have maximum light while buds develop, just enough to let the color develop. In fact, some orchids will develop different colored flowers depending upon the time of year it bloomed. Reddish flowers can bloom as yellow or orange in the heat of summer, then rebloom in the cool of winter as brilliant scarlet, an amazing testament to the power of horticultural temperature. After the flowers are open, they will last far longer if kept in lower light and cooler temperatures. The drop in light intensity at this point will not hurt the plant at all.

I CANNOT BELIEVE I BLOOMED THE WHOLE THING

What an amazingly wonderful feeling it is when you finally bloom a plant all by yourself. You have truly arrived in the orchid world. There is no turning back. Maybe our orchid plants still have minds of their own when it comes to blooming, but at least we are getting better at reading them. We have figured out how to take a pot and fill it with potting materials and an orchid, and water it and fertilize it and shine light on it and put it in the right place and even get it to bloom.

Acknowledgments

The writer thanks Joseph Van Acker of the North Jersey Orchid Society for his valuable insights on light.

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Is My Plant Good Enough for AOS Judging?

By Deb Bodei

THE QUESTION IS more common than one might imagine among orchid hobbyists. A potential exhibitor considers whether to bring a plant to an AOS judging or not, wondering if the flowering orchid measures up. It is not always easy to size up one's own plant and decide if it is within reasonable range of an award. Then to step into a room full of judges for the first time exhibiting without an idea of the process or what the judges might look for? That can be downright intimidating. In this article, I hope to remove that mystery for exhibitors and at the same time, highlight the role judges serve as we share information with exhibitors.

THE SECRET CODE [Hint: There is no secret code!] The first thing exhibitors should know is that no judges are judging their *decision* to bring a plant. All plants brought to a judging deserve a fair assessment and commentary from the judges even if their plant is not selected for an award that day. Judges love to share their knowledge about orchids with exhibitors and welcome the first-time (or novice) exhibitors with great fervor.

Education is the cornerstone of the judging program. It really does not matter if the candidate plant receives an award or not. In fact, all exhibitors should know that, on average, many of the plants at a given judging will be determined to be nonawardable for that flowering. Think for a moment. If most plants brought to a judging table left with an award, it would not be an incredibly special award, would it? Now that does not mean all the plants presented on a given day will never be awardable, it just means they did not measure up on that particular flowering.

In fact, if a judge comments that your plant has exciting potential it means they really do want to see it at the judging table on the next bloom. Sometimes one blooming may not exhibit its best due to environmental or cultural reasons, or it may simply not be a mature enough plant. A simple culture change for certain types of plants may make the difference. For example, something as simple as giving a little less light or a slightly lower temperature could lead to a bloom with deeper, darker color that shows the bloom's best side!

IDENTIFYING AN AOS JUDGING NEAR YOU The American Orchid Society (aos.org) includes a listing of all judging locations within the US, Puerto Rico and Canada. The Event Calendar (under the News and Events menu) makes it easy to look for both monthly judgings and shows by date.

If there are AOS judges participating in local society meetings and providing commentary for the plant show table, it often comes with a recommendation or encouragement for certain plants to be submitted at the next monthly judging. Judges will even offer to transport candidate plants they have recommended to the monthly judging if the exhibitor cannot make it. Of course, it is always better to bring your plant and attend the judging in person, since there is so much to learn. Exhibitors become better growers and more discerning buyers by attending orchid judgings on a regular basis. Many begin participating by offering to help clerk and some of those go on to apply to the program and become judges themselves!

Societies that host an Outreach Judging event through their local judging center are sometimes surprised by the amount of education that goes along with this kind of event. The judge leading the outreach will provide instructions prior to the actual judging of plants and talk about what judges look for in the candidate plants (see the webinar "What Judges Look For" on the AOS website). This often includes explanation of how a judging is conducted and provides anyone who may not have attended a judging before an idea of what will occur. The short education presentation is typically followed by the plant show table commentary, when judges will identify plants to be judged, select them from the table and begin the process of entering them as candidates before judging assessment and research begins.

RESEARCHING YOUR PLANT There are a few cursory checks that can help a plant owner with their decision to bring a plant for judging. These can help to determine if the plant is blooming better compared to other plants of the species or grex.

- It is important to confirm that the plant label is correct and to know the parents of the cross if it is a grex. It is also important to know the clonal name (the name in apostrophes, which cannot be altered) if the plant already has one, along with any prior AOS awards. This is essential information that needs to be filled out on the entry form.
- For species: Check for valid species on the free Kew World Checklist for Selected Plant Families (https://wcsp.science.kew.org).
- For hybrids: Find out if the grex is registered by searching the Royal Horticultural Society's website (https://apps.rhs.org.uk/horticulturaldatabase/orchidregister/orchidregister.asp). The RHS registry is available online free and will give you the plant's parentage.

In addition, an exclusive benefit for AOS members is access to the AOS awards database, OrchidPro. Check here for up-to-date information to help you assess your plant. There are tutorials available right on the home page of AOS (https://op.aos.org/) that show you how to search for your orchid. You can search for plants based on species or hybrid in a basic search, which helps narrow the results down for review.

Compare your plant with similar plants that have received awards. Read the descriptions in addition to looking at the photos. A description is meant to paint a picture in the reader's mind of a plant even if the photo was not present. Look at the measurements of the plant and find a ruler to check out the natural spread and the petal width of your plant. See the AOS webinar on aos.org called "Measuring for AOS Awards" and you will see exactly how judges assess for these ten points when judging a plant. Ask yourself what makes my plant special and what will the judges notice . . . the great form of the full flowers? The intense color of the lip? Something *should* inevitably "jump out" at you.

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Note that many hybrids do not receive awards unless they are seen as improvements on the parents or previous awards. If the cross being investigated has never been awarded before, it is sometimes helpful to do a general search on the genus to see what traits the latest awards have been for and get an idea of the form, color and number of flowers per stem that should be expected for plants with similar parentage.

ADDITIONAL CONSIDERATIONS If a species has never received an award, that can be exciting too. Be sure to search Kew to make sure the species indicated on the label is indeed a recognized species. In that case, your plant could receive an award that will also allow it to be the first benchmark award ever for that type of species. It will receive a special inspection by members of the AOS Species Identification Task Force (SITF) to verify it is the species named. Exhibitors find it exciting to be part of this process and search for botanical plants to exhibit for this purpose.

If the label only lists the parents and you are unable to find a grex name for those parents in the RHS Orchid Registry, then you may have an unnamed grex, which might give you the chance to name the cross! It is proper etiquette to check with the hybridizer to give them the opportunity to register the cross. Some may choose to name the plant after the first person who bloomed it. Others may have a cross name but just may not have gotten around to registering it yet or may be in the process of registering it. As the exhibitor of the orchid, you would still get to give the plant a clonal name, which will identify the characteristics of your plant as special.

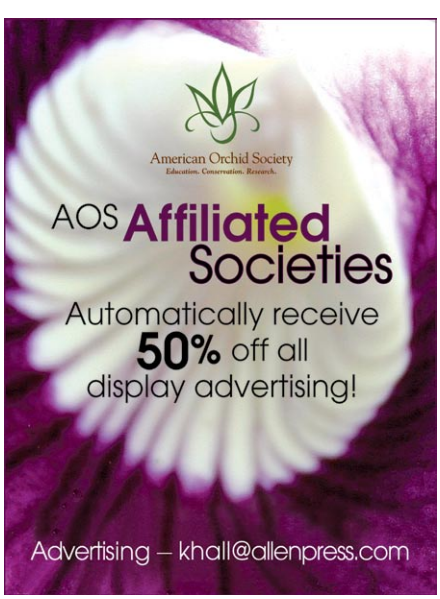
PREPARING FOR JUDGING DAY Finally, make sure your plant is presenting itself in its best light by preparing it in advance. Along with impeccable culture, your plant should be groomed, inspected for critters and staked so the blooms can be seen, are not crowded and face the judges. There is no rule that says the plant must be brought in a fancy pot or holder other than it might be a convenient way to carry it. The judges will only be judging the plant itself. Plants will be judged for their individual flowers. They will also be reviewed for their culture, which could garner the grower an award for excellent growing technique. Look for the AOS webinar on aos.org called "The Process of Judging" by Jean Allen-Ikeson for more details regarding what specific characteristics judges are looking for in plants for them to issue one of several types of awards. Scoresheets are available along with all judging forms in the Awards and Judging section of the AOS website to see which characteristics are judged and how the points are weighted for all the award types.

If you are an exhibitor reading this article and your interest has been piqued, come to a judging! Better yet, contact your judging centers' chair ahead of time to let them know you will be attending. There is sure to be a welcome when you arrive along with a little help to learn the ropes if it is your first judging. All AOS members and nonmembers should take advantage of this wonderful benefit of judging that the AOS brings to us.

See you all there!

Checking plants in for judging. Left to right: students Sandra Micucci and Alina Furtak and Terry Kennedy (accredited).

— Deb Bodei is an associate judge at the New Jersey location of the Northeast Judging Center. She and her husband Bill, who is also an active volunteer and Trustee for the AOS, now have three hobbyist greenhouses in their backyard housing cool, intermediate, and warm growing orchids consisting of a broad variety of genera. They have a dog named Vanda (email: dbodei@aos.org).



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1

ANGRAECUM GRANDIFLORUM

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Aeranthes by Wesley Higgins and Peggy Alrich

Eastern Africa and the Islands of the Western Indian Ocean

Aeranthes Lindl., Bot. Reg., 10: t. 817 (1824).

ETYMOLOGY From the Greek for air or mist (aer) and flower (anthos). Refers to the damp, delicate habitats where this genus usually grows.

GENERITYPE *Aeranthes grandiflora* Lindley

DESCRIPTION Some 44 species and two varieties of monopodial epiphytes mostly confined to Madagascar and the surrounding islands with two species occurring in Zimbabwe. Ranging in humid, low to upper elevation, deeply shady coastal to hill scrub, along river embankments to montane rainforests. A few species are found in seasonally dry, deciduous scrub.

Leafy plants have short stems or are stemless, each with several distichous, narrow, leathery leaves arranged in the shape of a fan. The wiry, hanging, simple or rarely branched, solitary to numerous-flowered inflorescence, borne from the stem base, will often reflower over long periods of time. The small to large, somewhat translucent flowers are either a brilliant green, yellow or green-white, and some of the species are fragrant. The lateral sepals are hinged to the column foot forming a chin-like projection, and the similar petals are smaller. The oblong to square, simple lip, attached to the column foot, tapers to a sharp point, and is set in front of the mouth of the usually short, club-shaped, cylindrical spur. The flowers have a short or fairly long rarely footless column. Pollinia two, each with its own, usually long stipe to its own narrow viscidium.

SYSTEMATICS *Aeranthes* and *Jumellea* are species-rich genera and occupy the same ecological niche as *Angraecum*. Phylogenetic analyses of relationships within subtribe Angraecinæ (Andriananjamanantsoa et al. 2016), revealed the Malagasy Angraecinæ (*Aeranthes*, *Jumellea* and *Lemurorchis*) were embedded within *Angraecum*, rendering it paraphyletic, while most of the genera in Angraecinæ were monophyletic (*Aeranthes*, *Jumellea* and most of the African genera) with the exception of *Angraecum*. The three genera diverged approximately at the same time, but *Angraecum* has more species. Looking at the morphological differentiation between the three genera, *Jumellea* and *Aeranthes* have distinctive characters that characterize them as clades, while *Angraecum* has variable characters specific to each subclade.

CULTURE It is best to grow these on a rough wooden slab, a hanging basket or potted with a free-draining medium mixture. Provide intermediate conditions, high humidity, shade and water freely during growth but keep slightly drier for a short period.

HYBRIDIZATION Species in *Aeranthes* do not have an extensive hybridization history. There are eight registered hybrids within *Aeranthes* with six AOS awards. *Angranthes* (*Aeranthes* × *Angraecum*) has 15 hybrids with 17 AOS awards. *Jumanthes* (*Aeranthes* × *Jumellea*) has only one hybrid with no awards.

Reference

Andriananjamanantsoa H.N., S. Engberg, E.E. Louis, Jr., and L. Brouillet. 2016. Diversification of *Angraecum* (Orchidaceæ, Vandeæ) in Madagascar: Revised Phylogeny Reveals Species Accumulation Through Time Rather than Rapid Radiation. *PLoS ONE* 11(9):e0163194.

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2

Aeranthes

ANTIQUE PLATES

3

[1] *Aeranthes grandiflora* as *Angraecum grandiflorum*, *Orchid Album*, 11: t.514 (1897).
[2] *Aeranthes grandiflora*, *Lindenia*, *Iconography of orchids*, 3: t.109 (1892).
[3] *Aeranthes grandiflora*, *Dictionaire Iconographique des Orchidées*, 1: t.1 (1900).
[4] *Aeranthes arachnites*, *Botanical Magazine*, 99: t.6034 (1873).
[5] *Aeranthes grandiflora*, *Botanical Register*, 10: t.817 (1824).
[6] *Aeranthes ramosa*, *Dictionaire Iconographique des Orchidées*, 1: t.2 (1902).
[7] *Aeranthes grandiflora* as *Aeranthes brachycentros*, *Gartenflora*, 40: 324 (1891).

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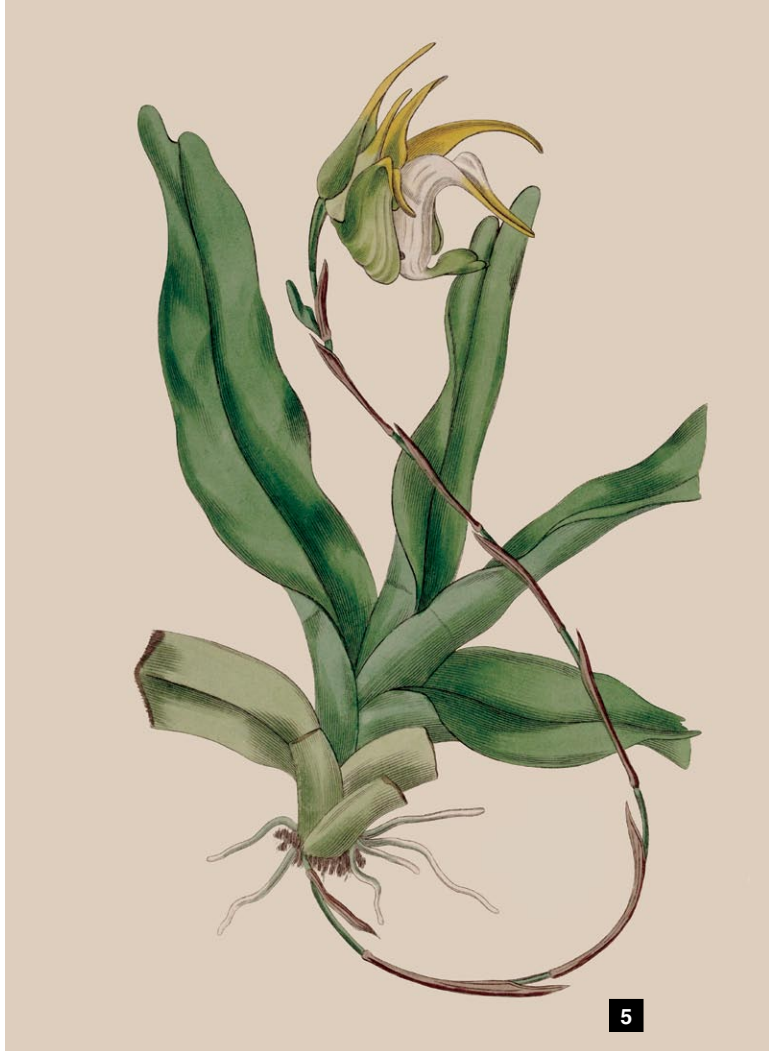

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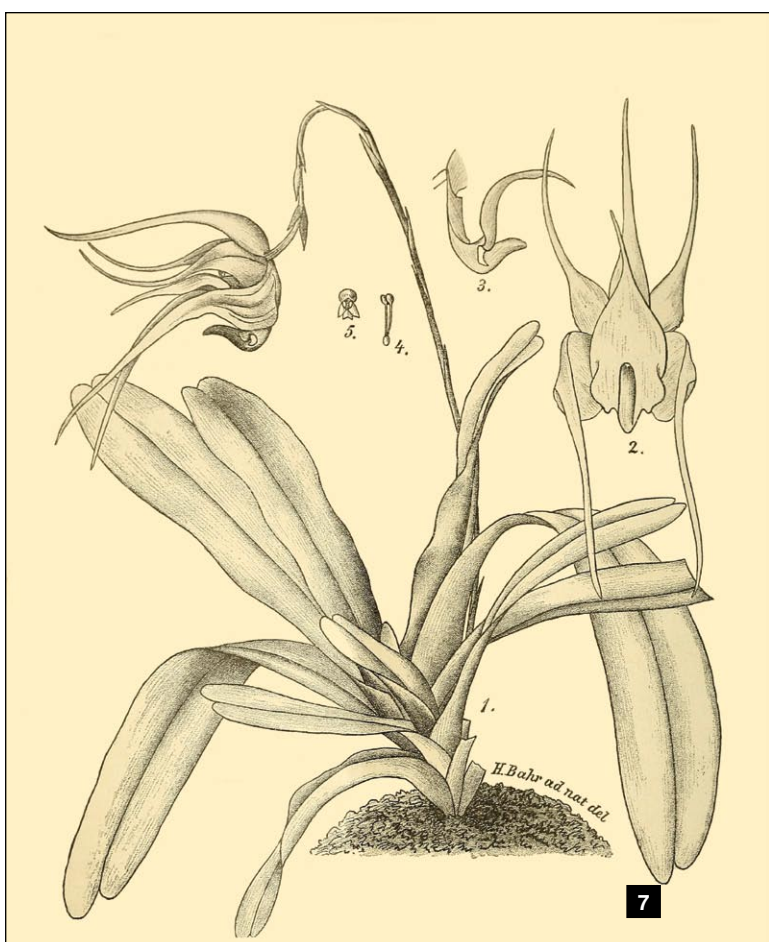

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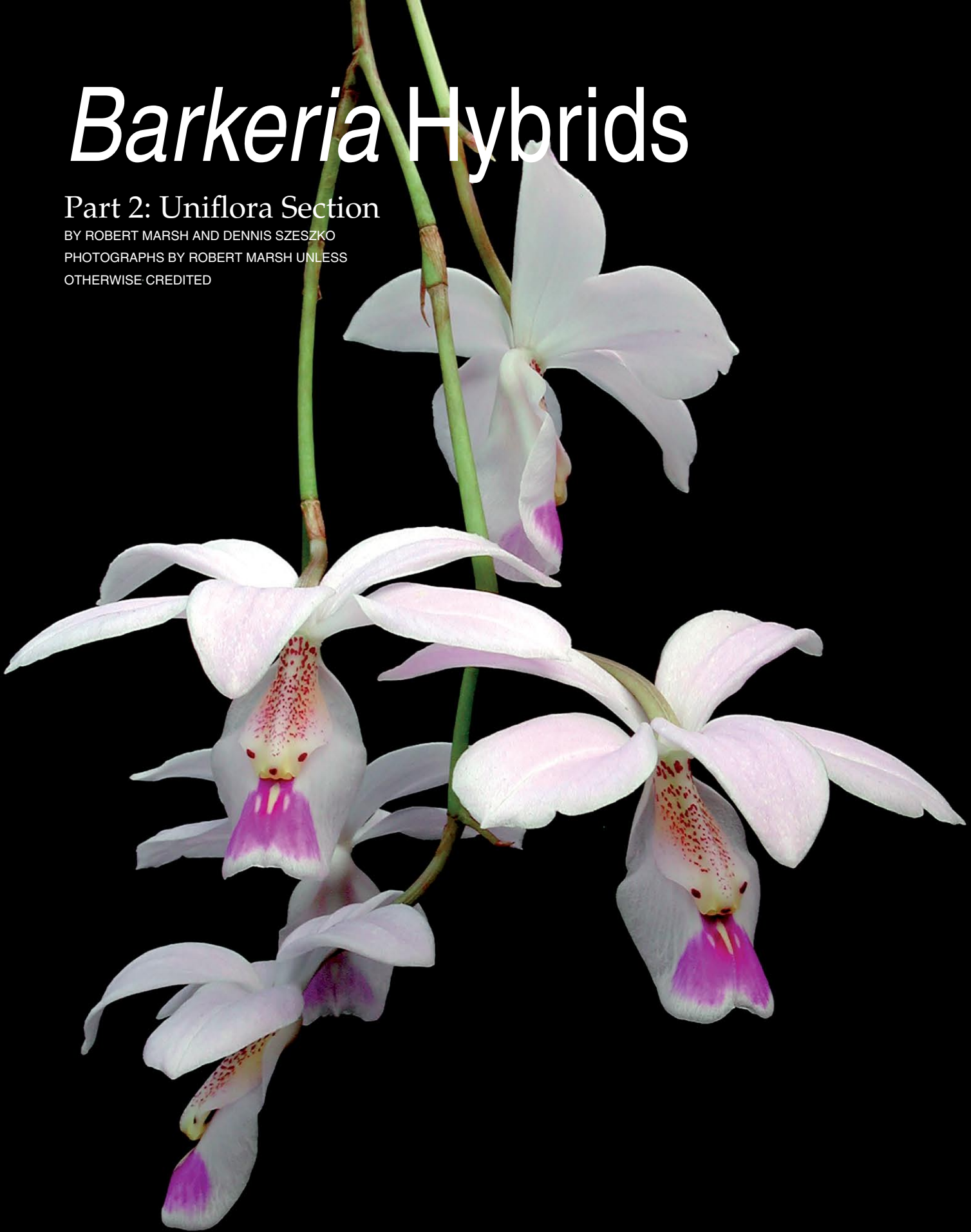
Barkeria Hybrids

Part 2: Uniflora Section

BY ROBERT MARSH AND DENNIS SZESZKO
PHOTOGRAPHS BY ROBERT MARSH UNLESS OTHERWISE CREDITED



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IN THE FIRST part of this series published in the November 2021 edition, we proposed formally establishing sections for the different clades within *Barkeria* and discussed the most noteworthy characteristics of the *Obovata* section and its hybrids. In the second part of our series on the genus, we shift our focus to a different clade: the *Uniflora* section. There are four (possibly five) species in this section: *Barkeria barkeriola*, *Barkeria dorotheae*, *Barkeria shoemakeri*, and *Barkeria uniflora* (Angulo et al. 2012), with the newly described *Barkeria uruapani* being the potential fifth (León-Peralta et al. 2021). They are a recent lineage of orchids whose speciation started during the Pliocene-Pleistocene transition around 2.5 million years ago (Angulo et al. 2012). At that juncture, the previously biogeographically separate continents of North and South America were connected via the Isthmus of Panama, and ocean currents that previously circulated unencumbered between the two continents were permanently obstructed (O'Dea et al. 2016). This geologic event caused dramatic shifts in climate which resulted in the adaptive radiation of *Barkeria* to fill new ecological niches with low competition from other epiphytic species. In other words, ancestral *Barkeria* species from higher elevations and accustomed to more rain and humidity, like those in the present-day *Scandens* section, speciated and diversified into the *Uniflora* (and *Obovata*) section species that became perfectly adapted to living in the hot, xeric lowlands of the inland basins and Pacific coastal plains of Mexico.

The genus' characteristic fast growth and deciduous leaves likely gave them an evolutionary head start in the race to colonize these new biomes. The ability of all *Barkeria* species to shed what is essentially metabolically low-cost tissue, their leaves, during aestivation is a critical adaptation for water conservation that allowed these plants to thrive in tropical dry forests. The second important consideration is their hyper-fast growth rate. Along the Pacific Coast, the rainy season only lasts from May to October, and so these organisms were obligated to compress all their growth and development into the few months of the year with rainfall. Another adaptation seen in the *Uniflora* section for life in these hot, dry tropical forests are thin, wiry roots that strike the perfect balance between sufficient surface area for moisture absorption and photosynthesis while limiting water loss from transpiration.


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Also, the leaf and stem surfaces of the plants in this section commonly have red stippling, which functions as a solar shade to keep the leaves from being scorched by the sun.

All members of the *Uniflora* section are caespitose in habit, have cane-like pseudobulbs and produce long-lasting flowers that remain in a pristine state for up to two months. Their flowers have wide, fleshy column wings, and the column in its natural position is tightly appressed to the labellum. A very curious characteristic of this section of *Barkeria* is a remontant blooming habit. Plants will produce an initial flush of flowers early in their bloom cycle, then approximately six weeks after the first flush senesces, but only if conditions are propitious, secondary flowering racemes will emerge at nodes along the length of the rachis. Undoubtedly, this is a tremendous reproductive advantage for plants adapted to growing in such a harsh, extreme habitat since it allows the plants an additional opportunity for pollination. Unfortunately, the plants in this section are challenging for growers with their exacting culture requirements and their ephemeral twig-epiphyte lifestyle. All *Barkeria* species are sensitive to overwatering, require copious ventilation around the roots, and are highly intolerant of organic potting media that retain moisture. *Barkeria* species from other sections may sulk if these preferences are ignored, but the species in the *Uniflora* section are much more finicky and will briskly succumb. In the wild, *Uniflora* section species are found growing on small branches of predominantly smooth-barked trees, and grow best on the periphery of the tree's

[1] *Barkeria uniflora* wild type, exhibiting the column and lip markings that evoke a serpent's head.
[2] *Barkeria uniflora* wild type, from Jalisco State, Mexico.
[3] *Barkeria uniflora* f. *alba*

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canopy where they are exposed to full sun throughout the day. Their roots have minimal branching and are extremely sensitive to being disturbed. Repotting should be avoided at all costs since plants will generally die back severely after being disturbed. The most maddening thing about cultivating this section of *Barkeria* is that the rhizome of the plants never branches so they cannot develop multiple leads. There is no such thing as a specimen plant of *Barkeria* from the *Uniflora* section.

The species in this section are strictly Mexican in origin. Their distribution centers around the state of Michoacán in the western part of the country, and they grow generally more northern than all the other species of the genus (MAS Orchids 2021).

Barkeria barkeriola — The distribution of this species encompasses the Pacific coastal plain of Mexico in the states of Sinaloa, Nayarit and Jalisco. *Barkeriola* is most commonly seen as a twig epiphyte on trees and scrub brush (rarely on rocks) in tropical deciduous forest in ravines and at the edges of creek valleys. Since these plants never grow more than 100 miles (161 km) from the Pacific Ocean, they consistently receive moisture from ocean breezes and are accustomed to humidity levels consistently above 75 percent, even in the dry season. Their proximity to the ocean means that diurnal temperatures are always quite comfortable.

Barkeria dorotheae — One of the rarest of all the *Barkeria* species, this taxon is a microendemic similar to *Barkeria whartoniana* or *Barkeria fritz-halbingeriana* in having an extremely restricted (relictual?) distribution. This species does not have a "range" in the true sense since its known distribution is limited to what is essentially a pinhead on a map. It grows at sea level on the border between the Mexican states of Jalisco and Colima. Vegetatively, the plant is similar to *uniflora* with the biggest differences being noted in the flowers. Most wild-type plants have a strongly reduplicate (saddle-shaped) lip and a dorsal sepal that is much shorter than the other tepals. The labellum does not display any kind of eye-catching ornamentation seen in the other species in the section since it lacks both the venation of *shoemakeri*, and the characteristic lip blotches seen in *barkeriola*, *uniflora* and *uruapani.*

Barkeria shoemakeri — This species arose about 1.8 million years ago at the same time that *dorotheae* split off from its ancestor (Angulo et al. 2012). Both of these species are the hottest-growing of the section so this dovetails with the prevailing trend for more modern species in the genus to radiate into hotter, low elevation habitat. *Barkeria shoemakeri* has a patchwork and discontiguous distribution in an arc along the Pacific coastline. The type locality in the Balsas Depression is one of the hottest places in Mexico with a mean annual temperature of 80–82 F (27–28 C) and is known colloquially as "El Infiernillo" (the little hell). Its leaves are the most succulent of all the *Barkeria* species, almost Crassulacean in their texture. This makes the species easy to identify when in active growth.

Barkeria uruapani — This species was proposed a few months ago from plants seen growing in Michoacán with atypical characteristics (León-Peralta et al. 2021). On first appearance they are quite similar to *uniflora*, but closer examination reveals them to be structurally closer to *barkeriola*. DNA sequencing will be able to reveal if this species is the progenitor of the entire *Uniflora* section, an exciting possibility, or if it is a hybrid species that spontaneously arose from introgression of *uniflora* genes into *barkeriola* or vice versa.

Barkeria uniflora — This species seems to require a highly particular ecological niche for its establishment with the correct balance of humidity, light, ventilation and specific porophyte host (mycorrhizal symbiote?) availability. When these conditions are just right, the species is rampant and plant populations in the thousands per hectare are possible. The plants are found in an altitudinal band between 3,000–3,600 feet (900–1,100 m) where they are subject to brutally hot days but surprisingly cool nights in areas with torrential monsoon rains every night during their brief growing season. The redoubt of this species is undoubtedly Southwestern Mexico since most specimens are known from inland basins in Michoacán, Guerrero and Mexico State in an area known as the Tierra Caliente.

For visual impact, none of the other *Barkeria* species can quite compare to the flowers of *uniflora*. The flower's elegant sepals and broad petals in bright pink-lavender create the perfect background for the white lip with its brazen magenta blotch. It is only on closer inspection that one sees amidst this beauty a serpent's head replete with eyes, open mouth, extended yellow tongue, and white fangs staring back. Nature has added broad wings to the flower's column to form the diamond-shaped head, created reptilian skin by stippling with dark brownish-purple, and even painted eyes and nostrils at the column tip. Scientists have yet to discover the reason for this mimicry,


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[4] *Barkeria barkeriola*
[5] *Barkeria dorotheae*
[6] *Barkeria shoemakeri*, coastal form.
[7] *Barkeria uruapani*

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yet natural selection would not have favored this pigmentation pattern unless it conferred a reproductive advantage. Luckily, these markings are reduced or missing in hybrids.

Uniflora is blessed with some of the largest flowers in the genus with blooms up to 3.3 inches (8.5 cm) in diameter. Although the specific epithet, *uniflora,* suggests that there is just one flower produced, specimens can exhibit remarkable vigor and produce inflorescences over a meter in length with 25–30 flowers on exceptional plants. By combining pulchritude with flower size, *uniflora* is the most obvious choice as a parent for breeding. If only the plant were not so intransigent and difficult to grow it would be a perfect species for orchid lovers. Luckily, that obstinacy is not transmitted to its hybrids as they are typically strong, vigorous plants.

To date, 10 primary intrageneric hybrids using *uniflora* as a parent have been registered. An additional 16 second- and third-generation hybrids containing *uniflora* genes are also in the RHS database. Only two intergeneric hybrids created with a *Uniflora* section parent have been registered. Both were made with *uniflora*: *Brassokeria* Derwood Black (*Brassavola nodosa* × *Bark*. *uniflora*) and *Caulaeliokeria* Marc-Christopher Storm (*Caulaelia* Star of Rio × *Bark*. *uniflora*). *Brassokeria* Derwood Black, bred by Allen Black, beckons the creation of more such intergeneric hybrids for growers impressed by the *Brassavola nodosa* form and white color gorgeously offset by the tell-tale magenta blotch on the lip, inherited from *uniflora*.

In 1978 Robert Marsh registered the first three intrageneric hybrids using *uniflora*: *Barkeria* Rosetta Marsh (*shoemakeri* × *uniflora*), Barkeria Marti Marsh (*uniflora* × *obovata*), and *Barkeria* Plano Pastel (*naevosa* × *uniflora*). Of these, only Rosetta Marsh proved to be fully fertile. This established a pattern that continued as additional crosses were made: some hybrids within the genus were fertile, others were not. We now know this property correlates with the clades or sections of the *Barkeria* genus that were identified by DNA sequencing (Angulo et al. 2012). Hybrids made by crossing species within the *Uniflora* section are fertile, whereas hybrids made by crossing a *Uniflora* section species with a species from the *Obovata* or *Scandens* sections are infertile or reluctantly set few seeds when used as the pod parent. As a result, backcrosses rather than sib crosses must be used to recover recessive traits. This limits considerably the range of hybrids that can be created. Nevertheless, several outstanding second-generation intersectional hybrids have been produced.


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[8] *Barkeria* Jim Balch 'Fiesta' (*scandens* × *uniflora*)

[9] *Barkeria* Roberto Frias Solis 'MAS Orchids' (Michoacan Gem × Libby Hodge)

Barkeria Jim Balch (*uniflora* × *scandens*) is the *uniflora* hybrid that has received the most AOS quality awards. This striking hybrid honors the man who in the 1980s introduced many orchid growers to the Mexican *Barkeria* species via his White Oak Orchids company. *Barkeria* Jim Balch has received one AM and two HCC awards from the AOS. It combines the form and lip blotch of *uniflora* with the intense fuchsia color of *scandens*, but typically the flowers are held at the end of inflorescences up to 3 feet (1 m) long.

To shorten the inflorescence, two successive backcrosses of Jim Balch with *uniflora* were made. These crosses first produced *Barkeria* Bertie Foxworthy and subsequently *Barkeria* Michoacán Gem. Both of these grexes had shorter inflorescences, but they also looked

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more and more like *uniflora* with paler sepals and petals. In an effort to recover the fuchsia color, another cross was made that infused new *scandens* genes, by pollinating Michoacán Gem with *Barkeria* Libby Hodge, which also brought *Barkeria lindleyana* and *Bark. whartoniana* genes into the mix. Among the handful of seedlings that resulted was one exceptional clone, *Barkeria* Roberto Frias Solis 'MAS Orchids'. Since this plant is compact, several flowering leads can be accommodated in a 3- or 4-inch (7.6–10.2-cm) pot owing to the fact that its pseudobulbs are only 6 inches (15 cm) high, and its inflorescences max out at 18 inches (45 cm). Notwithstanding the compact size of the plant, the flowers are relatively large at just over 2 inches (5.1 cm) wide and have overlapping segments. They are a pleasing medium magenta with a white spot in the center of the lip and a darker magenta blotch at its apex.

What *Barkeria* Roberto Frias Solis 'MAS Orchids' lacks, despite its charm and beauty, is fertility. Like most *uniflora* intersectional hybrids, it is pollen infertile and will only grudgingly produce a few viable seeds as a pod parent. In an attempt to rectify this, Roberto Frias Solis 'MAS Orchids' was crossed with *lindleyana*. Eureka! Of the half-dozen plants that resulted, all are seed fertile and at least one is also pollen fertile. In general appearance, the flowers are near dead ringers for Roberto Frias Solis 'MAS Orchids', but are improved in color, substance, and size at 2½ inches (6.4 cm) in width. This grex has been registered as *Barkeria* Triumph.

With the goal of introducing more color variation into the Jim Balch breeding line, Bertie Foxworthy was crossed with *Barkeria* Obosa Ivory (*naevosa* × *obovata*), an *Obovata* section grex carrying the dominant ivory trait of *obovata* and the scarlet-magenta lip markings of both parents. *Barkeria* Berries and Cream resulted from this cross, and some amazing cultivars were white with a waterfall of inky, red-purple spots on their lips. The best one, named 'Black Cherry' on account of the eye-catching nigrescent spotting, received an AM/AOS. Sadly, the mixing of genes from two distinct *Barkeria* clades resulted in infertility, which precluded any additional developments with this line of breeding.

After reaching a breeding dead-end, color variation was pursued in other ways. *Barkeria* Marti Marsh, which is ivory with a dark red-magenta lip blotch, was crossed with *uniflora* to produce an


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unnamed hybrid that has striking white flowers with good form and a gem-like, red-magenta lip blotch. Marti Marsh was also crossed with the *Scandens* section species *whartoniana* to increase fertility as well as achieve better form. As the oldest *Scandens* section species, *whartoniana* is a "skeleton key" that often can magically unlock fertility once breeding efforts run into a blind alley. Among the progeny was *Barkeria* Marsh Melody 'Holiday Rhapsody' HCC/AOS, a small plant with ivory flowers overlaid with blush and spotted with magenta on the lip and petals. Another ivory cultivar from this grex with better fertility was selected for crossing with a white, yellow-lipped *Barkeria* Oaxacan Showers, an *Obovata* section hybrid that has proven useful in expanding the color range in *Barkeria* hybrids. A medium-sized, pale-yellow cultivar with a spotted lip, *Barkeria* Oaxacan Melody 'Mayan Mystic', was selected from the progeny and crossed with a pale-yellow Oaxacan Showers cultivar with orange tones in the lip. The resultant *Barkeria* Sonata seedlings are blooming out peach or yellow with darker yellow lips randomly spotted with inky magenta. The flowers are up to 1.75 inches (4.4 cm) wide and have the darkest yellow sepals and petals yet achieved in *Barkeria* hybrids.

Most of the work with the *Uniflora* section focuses on breeding with *uniflora*, and deservedly so, but we would be remiss if we neglected to mention hybrids made with some of the sister species in the section. *Barkeria shoemakeri* has small but charming flowers that possess the desirable *uniflora* shape and also a white lip beautifully striped with intense magenta, a trait that can be passed on to hybrid progeny. In the early hybrid Rosetta Marsh (*shoemakeri* × *uniflora*) flower size was increased, but the striping was somewhat blurred. Increased size with defined striping was achieved with *Barkeria* Glyn Marsh (*shoemakeri* × *lindleyana*). But, this hybrid is intersectional and thus suffers from pollen infertility and a diminished ability to set a pod. To overcome this debility, awarded cultivars of Rosetta Marsh and Glyn Marsh were converted to tetraploidy prior to crossing them to produce *Barkeria* Mary Kay Krell. This grex produces consistently high-quality lavender to white flowers with well-delineated dark magenta stripes on blush to white lips.

When it comes to striping on lips, one additional grex should be mentioned: *Barkeria* Nan Baker. It is a combination of *shoemakeri*, *scandens* and *uniflora,* and boasts lips with both of the unmistakable calling cards of *Uniflora* section species. It inherits a purple-magenta blotch from *uniflora* and the prominent magenta striping from *shoemakeri*, sort of a "two for the price of one" hybrid. Nan Baker 'With Love' not only has attractive flowers with outstanding color but they are displayed on a compact plant with inflorescences ranging from 3–12 inches (8–30 cm) in length.

The *Uniflora* section species *barkeriola* and *dorotheae* have not been favored by breeders. The last hybrids with these species were registered in 2003. One of these was *uniflora* × *barkeriola*, a cross by Roland Schafflützel of Switzerland, which he registered as *Barkeria* Robert Marsh. Surprisingly, it seems that the *barkeriola* genes in the hybrid intensified the pigmentation of the blotch and substantially shrank the size of the plant


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[10] *Barkeria* Triumph 'Astrid Busatlic' (Roberto Frias Solis × *lindleyana*)

[11] *Barkeria* Berries and Cream 'Black Cherry' AM/AOS (Bertie Foxworthy × Obosa Ivory)

[12] Flat of first-bloom seedlings of *Barkeria* Marti Marsh (*uniflora* × *obovata*)

[13] *Barkeria* (Marti Marsh × *uniflora*)

[14] *Barkeria* Marsh Melody 'Holiday Rhapsody' HCC/AOS (Marti Marsh × *whartoniana*)

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without diminishing the size and full form of the *uniflora*-like flowers.

Seven primary hybrids using *dorotheae* have been registered. One of these was a cross with *uniflora* made by Schafflützel named *Barkeria* Eagle Eye. Another was *Barkeria* Dollnery (*skinneri* × *dorotheae*), registered by Kiyohiko Arai of Japan, and notable for being the only *dorotheae* hybrid that has registered second generation hybrids. Why more work has not been done with these species? Likely, it is the fact that *barkeriola* is a smaller *uniflora* look-alike and *dorotheae* suffers from having medium-lavender concolor flowers and a *Lupine*-like lip with fully deflexed lateral margins. Although no hybrids have been made with the newly described *uruapani*, it may hold great promise as its stunning flowers rival those of *uniflora* in size and quality.

Barkeria uniflora is undoubtedly the star attraction in its section and likely will remain so, despite its shortcomings. It is our hope that the fertile hybrid Triumph, which combines many desirable traits from *uniflora* with those of the *Scandens* section, will be a seminal grex for creation of even better hybrids. We will examine the *Scandens* section in more detail in part three of this series.

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— Robert Marsh, Ph.D., is a molecular biologist and former associate professor in the Department of Biological Sciences at the University of Texas at Dallas. He has more than 60 years of experience growing orchids and is the recipient of the AOS Botanical Trophy, formerly the Nax Trophy. Robert Marsh's work with the genus Barkeria has resulted in select species and a series of hybrids that have received AOS quality awards. Recently he partnered with Dennis Szeszko to establish MAS Orchids LLC and create the website MASorchids.com to provide information about Barkerias and commercialize the

[15] *Barkeria* Oaxacan Melody 'Mayan Mystic' (Marsh Melody × Oaxacan Showers)
[16] *Barkeria* Sonata 'Mayan Melody' (Oaxacan Melody × Oaxacan Showers)

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results of the breeding program (email: rmarsh@utdallas.edu).

—Dennis Szeszko had what many readers of this publication would consider a "dream job." He was employed by the Mexican government as a botanist and was lucky enough to spend five years doing field research looking for orchids in the wild. As part of his research objectives, Dennis completed a flora of all of the orchid species that grow in Mexico State, which became the basis for his book, La Orquideoflora Mexiquense. *The book was published in 2011 by the Mexican government as a large-format "coffee table" book to commemorate both the bicentennial of Mexico's independence from Spain and the centennial of the Mexican Revolution (email: dszeszko@gmail.com).*

[17] *Barkeria* Glyn Marsh 'Happiness' AM/AOS (*shoemakeri* × *lindleyana*)
[18] *Barkeria* Mary Kay Krell 'Tikal' (Glyn Marsh × Rosetta Marsh)
[19] *Barkeria* Mary Kay Krell 'Copan'
[20] *Barkeria* Mary Kay Krell 'Tulum'
[21] *Barkeria* (Eagle Eye × self), a *Barkeria dorotheae* hybrid. Grown and photographed by Roland Schafflützel.
[22] *Barkeria* Nan Baker 'With Love' (Nora Belle × *uniflora*)
[23] *Barkeria* Robert Marsh 'MAS Orchids' (*uniflora* × *barkeriola*)

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Phragmipedium Penelaus Veitch 1893

A Long-lost Hybrid, but Recently Remade

BY OLAF GRUSS/PHOTOGRAPHS BY OLAF GRUSS UNLESS OTHERWISE CREDITED

[1] *Phragmipedium* Penelaus. Photograph by Jean-Pierre Faust.
[2] *Phragmipedium* Calurum: painting (as *Cypripedium* Calurum) from *Illustrite Gartenzeitung*, t31 (1881), inset photograph of a living specimen.
[3] *Phragmipedium lindenii* as *Cypripedium lindenii, Lindenia*, pl. CCCXXI, 1891.
[4] Photograph of a living specimen of *Phrag. lindenii*.

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SOME OLD HYBRIDS are known today only by name or from small notes in old horticultural journals. For example, in the *Gardeners' Chronicle* ser. 3, v. 13: 80; 1893, Chairman H.J. Veitch wrote in the report of the Orchid Committee meeting on a previously unknown hybrid: "*Cypripedium* Penelaus (*C. caudatum* Lindenii × *C. calurum*). A remarkably fine and distinct hybrid, the color of the flowers deeper than in *C. calurum*, but possessing much of its character, the petals being, however, much longer (about 6 inches), also twisted; the younger flower was a deep rosy-pink, the older one paler, the habit vigorous."

Phragmipedium Penelaus, remade by Jean-Pierre Faust, shows three beautiful, open flowers and one bud on one inflorescence. The flower color is quite pale and does not show a pink hue that was present in the original breeding by H.J. Veitch. The petals, however, are more than 11 inches (30 cm).

Phragmipedium Penelaus is a beautiful hybrid that was originally raised in the establishment of Messrs. James Veitch & Sons and flowered for the first time in 1893. It was obtained by crossing *Phragmipedium* Calurum (*longifolium* × *Sedenii*) with *Phragmipedium lindenii*. On the other hand, the parent, *Phrag.* Calurum flowered 10 years earlier and was obtained by crossing *Phragmipedium longifolium* × *Phragmipedium* Sedenii. This hybrid is similar in shape and color to its pollen parent, *Phrag*. Sedenii. Over the years, this lovely hybrid was bred to several species and hybrids and produced 15 first-generation offspring, among them a cross with *Phragmipedium besseae* that produced the award-winning *Phragmipedium* Flying Fortress.

Phragmipedium Sedenii flowered in 1873 and was obtained by crossing *Phrag. longifolium* × *Phragmipedium schlimii*. Its shape was rather intermediate between its parent species; however, its color is closer to *Phrag. schlimii*. *Phragmipedium* Sedenii has ivory sepals and petals, darker at the margins and apex, and a rose pouch. It was crossed with many species and hybrids and produced over 38 first-generation offspring, many of them awarded.

For many years *Phrag. lindenii*, was not even considered in the registration of hybrids, but was usually regarded as *Phragmipedium caudatum*. In recent years, however, the assessment by the Orchid Registrar at the Royal Horticultural Society has included *Phrag. lindenii* as a species in its own right.

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Phragmipedium lindenii is unlike its nearest ancestors, *Phrag. caudatum* and *Phragmipedium wallisii*, without a pouch. This strange orchid flowered for the first time in 1850 in Europe in the collection of Mr. Pescatore. It was discovered by Mr. Linden in 1843 in the territory of the Chiguara Indians in Columbia, growing in small thickets of *Weinmannia*, *Eugenia* and especially among high ferns (*Gleichenia*) at an altitude of about 5,500 feet (1675 m) above sea level.

A mutation in the distant past has changed the symmetry of the flower. Instead of producing two long petals and a pouch, *Phrag. lindenii* produces three long petals. It also produces three anthers, one for each petal, compared to the two anthers of all other *Phragmipedium* species. This is a particularly lucky mutation, because the third anther grows into the stigma (the female part) of the flower, automatically ensuring self-pollination. As this species was lacking a pouch, it was not even considered to be a lady's slipper, and it was assumed to be unrelated to *Cypripedium caudatum*. It was described by Lindley as *Uropodium lindenii* Lindley in Orchidaceae *Lindenianae*:28. It was not until 1975 that *Uropodium lindenii* was finally transferred to the genus *Phragmipedium* by Dressler and Williams.

Remarkably, all hybrids to date with the pouchless species *Phrag. lindenii* develop a fully formed pouch, as is the case with the *Phrag*. Penelaus, as well as *Phragmipedium* Macrochilum, a cross with *Phrag. longifolium*; *Phragmipedium* Coon Creek, a cross with *Phragmipedium pearcei* (syn. *Phragmipedium ecuadorense*), and *Phragmipedium* Pandora's Box, a cross with *Phragmipedium warszewiczianum*. The lack of the pouch may be due to mutations of one or multiple genes and likely a recessive trait.

Jean-Pierre Faust from Canada has continued to use *Phrag. lindenii* in crosses of several species and hybrids. The crossing partner of *Phrag. lindenii* was *Phrag*. Calurum, a backcross of *Phrag.* Sedenii with *Phrag. longifolium*. Since these two hybrids are very similar, the plants are often incorrectly labeled in culture, and the true *Phrag*. Calurum is often sold in the trade as *Phrag*. Sedenii or their hybrids. Either one should remake these hybrids or at least compare them with old pictorial representations to be certain.

Results of breeding with *Phrag. lindenii* from the 19th and 20th centuries (Table 1) also showed flowers with fully formed pouches.

Second parent	Hybrid Name	Registrant	Year
caudatum	Mauricianum	Lemoinier	1902
ecuadorense (syn. *pearcei*)	Coon Creek	W. Goldner	2018
longifolium	Macrochilum	Veitch	1891
sargentianum	Louis Gaucher	Faust	2007
warscewiczianum (syn. *wallisii*)	Pandora's Box	Orchids Ltd. (Quené)	2011
Beauport	Amélie Lussier	Lussier	2019
Conchiferum	Clonius	Veitch	1893
Calurum	Penelaus	Veitch	1893
Eric Young	Faust's Harmony	Faust	2014

Table 1. Results of breeding with *Phrag. lindenii* from the 19th and 20th centuries

These hybrids are rarely found in orchid collections or in the trade because the seed capsules have a limited seed count. Like all other hybrids of the genus, they are cultivated in bright and temperate conditions and are not demanding.

ACKNOWLEDGMENT

I thank Judith Rapacz-Hasler for helpful suggestions and translation of the article from German to English.

—Olaf Gruss is internationally recognized for his work with paphiopedilums,

[5] *Phragmipedium longifolium*
[6] *Phragmipedium* Sedenii courtesy of Marcel Lecouffle.
[7] *Phragmipedium schlimii*
[8] *Phragmipedium* Macrochilum
[9] *Phragmipedium* Coon's Creek
[10] *Phragmipedium* Pandora's Box

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phragmipediums and phalaenopsis. He has written books about the genus Phalaenopsis *and the albino forms of the genus* Paphiopedilum*, as well as a booklet about the genus* Phragmipedium*. He has been a member of the editorial board of the journal of the German Orchid Society,* Die Orchidee*. Gruss resides in Germany and lectures throughout Europe, Japan, Taiwan, China, and the U.S. In der Au 48, 83224 Grassau, Germany (email: a-o.gruss@t-online.de).*

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Orchids in Beverages

Herbal Tea Anyone?

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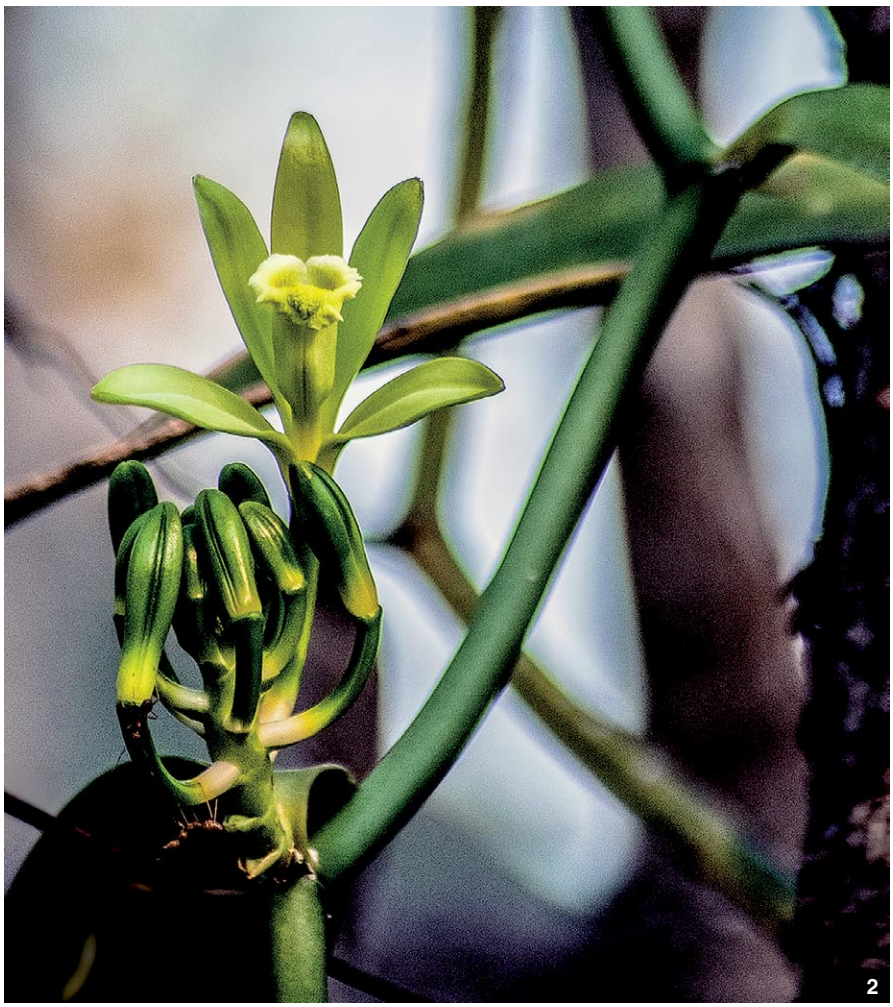
TEA IS A drink prepared by adding boiling water to the dried leaves of *Camellia sinensis*. The term is also applied to hot drinks prepared with flowers, leaves or fruit of other plants (chrysanthemum, chamomile, hyssop, lavender, lime, rose or hibiscus). For such herb drinks, the precise term is "tisane." Tea is drunk for enjoyment, to quench thirst and to cleanse the palate. When drinking tea, nearly everyone ignores the extensive literature on its alleged medicinal value. This is not the case with orchid tisanes.

The history of orchids in beverage, similar to that of tea, is colored by tales of greed, lust, sex, bloodshed and piracy, balanced by instances of ingenuity, love, generosity, and compassion.

When Cortez dispatched his Aztec loot to Spain in 1520 it included vanilla (Nahuatl, *tlilxochitl*; Spanish *vainilla*), the strongly aromatic, cured capsules of the orchid, *Vanilla planifolia*. Spaniards did not appreciate the beverage, and one was reputed to have remarked "better thrown to the hogs than presented to man." However, with the clever addition of sugar and milk, vanilla became the favorite of Elizabeth I in England and Madame de Pompadour in France. Then, following the suggestion of the Queen's apothecary, Hugh Morgan, vanilla was added to various items of her food and drink. Today, vanilla is an indispensable ingredient in confectionery and a valuable addition in drinks, ice cream, yogurt, condiments, food, medicine and cosmetics. Vanilla gained a reputation as aphrodisiac when Casanova added vanilla to wine, and de Sade combined it with Spanish fly. In old movies, a gift of vanilla-flavored chocolate and red roses to a lady possibly suggested a salacious intent.

Fragrance of vanilla resides in the sticky contents of dark-brown, cured vanilla "beans" (capsules). Vanillin is the main aromatic compound but numerous volatile constituents contribute to the distinctive flavor of Bourbon vanilla. The additional presence of piperonal and diacetyl gives Tahitian vanilla its fruity flavor, smelling of cherry, prunes, licorice and wine. None of the compounds possess an aphrodisiac effect.

SALEP The misconstrued notion that some orchids are aphrodisiacs arose from the *Theory of Signatures*, an ancient Greek belief that the appearance of a plant or its parts revealed its medicinal usage. Paired tubers of terrestrial Mediterranean orchids (Gr. *orchis*, testicle) were thus believed to exert potent aphrodisiac effects. Not only that, if the husband consumed the larger, fat tuber, his wife would produce a son, whereas if the woman ate the shriveled tuber she would beget a girl. These fantastic claims of classical Greek and Roman authors, principally Theophrastus, Dioscorides and Pliny the Elder, perpetuated by Ibn Sina (better known as Avicenna) during the Middle Ages, were revived by the scholars of the Renaissance. Salep, the drink prepared from the powdered orchid tubers, was also believed to provide a huge amount of nourishment in the smallest bulk: a basin of salep with a slice of bread in the morning was reckoned to be sufficient half-day nourishment for a



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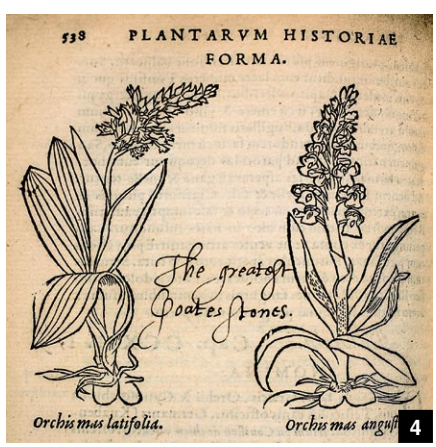

[1] *Dendrobium officinale* 'Wade's Orchids' CHM/AOS grown by Wade Hollenbach. Photograph by Geoffrey Gould.
[2] *Vanilla planifolia.*
[3] Vanilla beans (cured *Vanilla* capsules).
[4] *Orchis latifolia* and *Orchis mascula* (as *Orchis mas latifolia* and *Orchis augustifolia*). From: H. Fuchs, *De Historia Stirpum* (1551) p. 538.

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chimney sweep. To protect sailors from famine at sea, salep was to be included in a ship's provision at all times. Salep was considered to be a useful gruel when one suffered from diarrhea; in Turkey, it was the old folk remedy for diarrhea in infants. John Lindley reported that it has a soothing effect when applied to skin.

The taste of salep is bland. It consists mainly of glucomannan, starch and mucilage. Glucomannan slows the melting of ice cream. In modern Turkey and Crete, Kahramanmaras ice cream makes use of salep as a stabilizer. This ice cream is so hard, one needs a knife and fork to eat a slab of the ice cream. Turkey used to export large quantities of salep but Turkish indigenous orchids are now so seriously endangered, and salep export is now prohibited.

FAHAM In her maiden novel *Indiana*, the popular 19th century French novelist, George Sand describes one of the pleasures of Île Bourbon (Réunion Island) as "enjoying the aromatic infusion of faham," a traditional, local drink of the island. It was prepared from leaves of *Jumellea fragrans* (syn. *Angraecum fragrans*), a monopodial epiphyte that grew on the high slopes of Reunion "in the midst of almost inaccessible forests" and in Mauritius. Nevertheless, in the mid-1860s, an enterprising French firm imported faham to Paris, predicting that it was destined to become a household word. It was not intended for faham to replace Chinese tea, only to offer one that did not promote wakefulness. The additional attraction was that when a box of faham was opened a powerful perfume would be emitted, which lingered in the room for a considerable period. Faham leaves were used to flavor homemade rum, the "rum faham."

Faham did not take off. The difficulty of obtaining a constant and sufficient supply to recompense for the labor involved made the item too expensive. One needed to use 0.04 ounce (1 g) of leaves to prepare a cup of warm beverage. Boxes contained sufficient leaves for 50 or 105 cups, the latter costing 5 francs (Jackson 1866).

Plants are small, stems 24 inches (60 cm) long, ⅛-inch (3–4 mm) in diameter, sometimes branching, bearing 5–12 flat leaves, 3.1–4.7 × 0.6–0.63 inches (8–12 × 1.4–1.6 cm) that are fragrant when dry. *Jumellea fragrans* is still rare in nature. Its habitats in low montane forest are much disturbed. They are subject to predation by long-tail macaques in Mauritius.

SHIHU An esteemed orchid expert

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[5] *Jumellea fragrans* (as *Angraecum fragrans*) from *Curtis Botanical Magazine* vol 117, t. 7,161 (1891)

[6] *Jumellea* cf. *fragrans* 'Irene' CHM/AOS grown by Al and Irene Messina. *Jumellea fragrans* and *Jumellea rossii* are very similar in both floral and vegetative characters. Much confusion exists regarding these two species but it is now understood that the foliage of true *Jumellea fragrans* has a light herbal fragrance and the distinctly vanilla-like fragrance belongs to *Jumellea rossii*. Photograph by Maurice Garvey.

[7] Shihu (desiccated dendrobium pseudobulbs) and other herbs on sale in bulk at a wholesale market in Guangzhou, China.

[8] *Dendrobium nobile*

[9] Chrysotoxum Tea (dried flowers *Dendrobium chrysotoxum*) prepared for sale. Inset photograph of living flowers.

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once told me that he enjoyed a daily drink of "shihu" prepared from desiccated stems of *Dendrobium*. Shihu tisane is slightly sweet and sour. He believes it imparts vigor, improves eyesight and promotes longevity. Shihu is a popular item in Traditional Chinese Medicine (TCM) being sold in herbal outlets and dried goods emporia. It is listed among the nontoxic herbs. In the seminal Chinese pharmacopoeia *Shen Nong Bencao Jing* from the First Century (Han Dynasty), only two miniature, saxicolous (living in association with rocks) *Dendrobium* species were described as shihu: *Dendrobium officinale* and *Dendrobium moniliforme*. Tang Dynasty (618–907) pharmacopoeia included *Dendrobium nobile* and several nonlithophytic species. Presently, over 30 *Dendrobium* species confined to section Dendrobium are accepted as shihu. Pricing of individual species differs by over tenfold, the most expensive being shihu prepared with the two original species. In 2016, over 17,300 acres (7000 ha) of shihu were under cultivation in China. Plants were also being restored to nature, on trees and rock cliffs.

DENDROBIUM CHRYSOTOXUM FLORAL TISANE Recently following reports of anticancer properties of erianin, chrysotoxine and two polysaccharides present in *Dendrobium chrysotoxum*, flowers of this beautiful, golden *Dendrobium* are being sold for preparation of a tisane. However, the research was conducted on the stems and leaves of the orchid and not on the flowers. Chrysotoxin tisane is unlikely to exert any health benefit.

ANOECTOCHILUS TISANE *Anoectochilus formosanus* and *Anoectochilus roxburghii* are succulent, leafy jewel orchids, which are cultivated for their beautiful foliage. Plants are similar in appearance and both species contain kinsenoside, which has varied pharmacological properties. Entire plants of *Anoectochilus* are employed in TCM to relieve fever, pain, numbness, coughing and vomiting of blood, snake bites, diabetes, bladder and kidney infections and "to soothe the liver." It was possibly the last usage that promoted Taiwanese researchers to focus and demonstrate that aqueous extracts of *Anct. formosanus* protected the liver of mice against damage by carbon tetrachloride, the toxic, volatile dry-cleaning agent. *Anoectochilus formosanus* extract (AFE) lowered blood sugar and lipids, improved endurance, prevented osteoporosis, and promoted fetal lung maturation. In the early 21st century, commercial cultivation was undertaken in Fujian Province and in Taiwan. It was reported that 2.2 lbs. (1 kg) of fresh Anoectochilus cost US $100 in 2008. The public began purchasing the plants to grow their own herbal gardens.


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When I visited Xiamen a few years ago, on request, I was served chicken soup that contained dried *Anoectochilus*. It did not taste herbal. The friend in Xiamen told me that he had formerly consumed large amounts of *Anoectochilus* but it did not lower his elevated liver enzymes. Dried *Anoectochilus* was being sold for the preparation of tisane but when I inquired at traditional apothecaries in Taiwan, I was told that it was not sold as medicine.

For oral ingestion, most Chinese herbs are prepared by decoction. However, these are not tisanes because the volume is large and they are not consumed beyond the duration of therapy.

— Dr. Teoh Eng Soon, 17 Oriole Crescent, Singapore 288610 (email: teohengsoon.singapore@gmail.com).

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[10] *Anoectochilus*, rehydrated from an anoectochilus tea preparation.

[11] *Anoectochilus formosanus* typical form. Inset photograph of *Anoectochilus roxburghii* by Edwin Boyett.

[12] *Anoectochilus formosanus* with different leaf form, a common phenomenon with jewel orchids in general.

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From Costume to Clay

My Journey as a Designer and Nishi Bachi Artist

BY CAROL HELEN BEULE/PHOTOGRAPHS BY CAROL BEULE UNLESS OTHERWISE CREDITED.

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I LOVE THE sad emotional music in Puccini's "Madama Butterfly." I must have just broken up with some boyfriend back when I was 20, because I decided to design the costumes for "Butterfly" in the style of the Japanese Uiyko-e printmakers of the 18th and 19th centuries, as I listened to that music over and over again. In doing so, I won a national costume design contest along the way. Having always had an affinity for Asian art and the cultures of the Far East, I have no idea where it has come from, except that my oldest and dearest friend is a Chinese-American costume designer who told me many years later that I had bowed to her when we were first introduced. I just remember the night as being very cold and I did not want to move much, so I simply nodded.

Thirty years later, I had been growing orchids for several years when I bought a house in Southern California and stopped going on location all over the world for films or fun. It was then that I learned to despise green and especially black plastic pots for orchids. Clay was ok, but I wanted something more decorative, something that would fit into my house when the plants were brought inside to enjoy.

Becoming a maker of pots for *Vanda* (*Neofinetia*) *falcata* and Asian cymbidiums started with my desire to NOT have 35 different-sized cache pots sitting in a cupboard taking up space, to hide the plastic pots I hated. So, I decided to make pots out of ceramic materials for whatever orchid I wanted to grow, and it became obvious I needed to learn a new craft. The plan was to make items that I would be happy to bring inside when the plants were in bloom.

I soon learned that not all orchids would grow well in ceramic pots, despite any holes put into them, though phalaenopsis, zygopetalums, lycastes, cymbidiums and some encyclias do very well. When Satomi Kasahara (Davis) of Seed Engei began selling bareroot *Vanda falcata*, it changed my life. The flowers' overpowering fragrance changed my orchid preferences. Not only was the size perfect for a small growing space, but the scent was overpoweringly seductive. Before then, I had bought orchids that had scent as a primary inducer to purchase.

I soon became a part of the "Neo. Group" that exists in Southern California and we started the American Fukiran Society New Year's Day in 2012 after a lunch party. Norito Hasegawa, Michelle Dobard (Anderson), Satomi Kasahara (Davis), Peter T. Lin and I sat eating chocolate chip cookies in Peter's living


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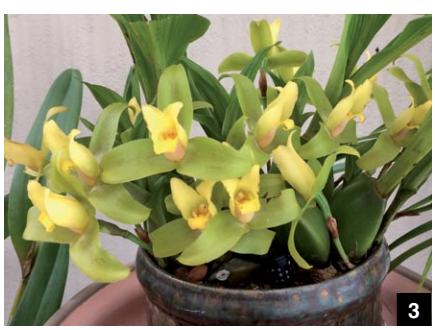
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[1] *Vanda falcata* 'Dong-I'. Photograph courtesy of Wendy Fisher.

[2] Sketch of the chorus from Madam Butterfly. Designed by the author when 20 years old.

[3] *Lycaste Corrimal* 'Dene' AM/AOS. Grown in a tall pot with holes near the bottom sides and on the bottom. The plant loves moisture, so the pot is perfect.

[4] How the author now uses the original ceramic pots. Most large falcatas are put into these pots as they need to have their roots quickly dried. They are wrapped in coconut coir fiber.

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room and devised a plan that was modeled after the society in Japan, the Japan Fukiran Society (JFS).

The plan was to have a meeting every July (prime flowering season) and get together with fellow Neo-lovers. I know . . . these plants are now vandas, but they did not used to be, and to those who have grown them for many years, they will always be neofinetias or Fukiran, the Japanese name for them.

Suitable pots and learning how to make a beautiful "moss mound" were necessary for displaying these plants. The plant, pot and moss mound were the components to be judged at any gathering, and the need to learn was fast. I soon realized that I did not like most of the pots that were affordable to me. Those that were from the middle of the 19th century or older and cost over $1,000 or more were the ones liked! By then, having been making pots with holes in them for phalaenopsis and other orchids, the decision to try and teach myself to make pots for falcatas was easy. Thirteen years later, I make custom pots for all types of small plants and do custom orders.

As a costume designer, I spent almost 50 years researching periods and ethnicities, and simply transferred that historical practice to the study of Asian pottery and art, while working a full-time job. The first pots made were very roughly hand-built, and the very first had its leg fall off! I glued it back on and loved it anyway. I still have it because the emotion I feel for any music I listened to is somehow transferred into the clay when I make something. The pots have become old friends. The second pot was used in the first annual Fukiran Society of America judging at Cal-Orchids in 2012 later that year, thanks to Jim and Lauris Rose who were our hosts. The group has met for over 10 years every July to laugh, learn, buy and show our plants and pots in the Japanese fashion and meet new people who love these plants. It is important to know that the pot is as important as the plant in this world of obsessive niche orchid growers. A properly made moss mound is ranked third when displaying Fukiran.

The Fukiran Society of America has five fully accredited AOS judges in our core group now, and several associate or student judges have been added. Visiting AOS judges, and fellow Neo-addicts fly in, as do distant orchid nursery owners, to sell plants. The differences in judging the plants in both groups is fully understood and appreciated. All the classic design

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ROBERT HESSE


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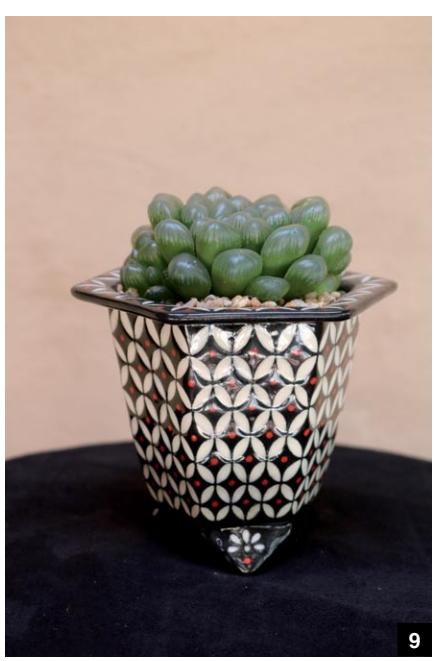
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DONNA BALLARD


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[5] *Vanda falcata* 'Shunkyuden'. Awarded as 'Daddio' HCC/AOS.

[6] *Vanda Kaori* 'Nauti Mei Mei' HCC/AOS (*falcata* x Cherry Blossom) grown by Deborah Bodei.

[7] Some of the antique pots the author first fell in love with. She now owns these examples from Japanese master makers.

[8] *Dyckia brevifolia* grown and photographed by Randall Robinson. An example of the use of these pots for plants other than orchids.

[9] Another example, *Haworthia cooperi*, also grown and photographed by Randall Robinson.

[10] *Vanda falcata* 'Manjusage' grown and photographed by Ken Cameron.

[11] Design based on scenes from the book "The Tales of Genji", an 11th Century "novel" by Murasaki Shikibu. There is a beautiful pink-flowered Fukiran named after her as a result. Pot commissioned by an Australian grower.

[12] *Vanda falcata* 'Tenke Fukurin' grown and photographed by Guy Gottschalk.

[13] Pot made for a falcata grower who also raises decorative shrimp.

[14] This pot was made to an Australian grower's color specifications.

[15] The author was simply asked for a blue bird and a pink flower by a nursery owner and grower.

[16] Custom size and design made in 2021 for a U.S. grower in the newest Chinese-sourced clay.

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elements are present in an award winner. The plant is well grown, balanced and has unblemished, often variegated foliage and sometimes flowers, much like a CCM or CCE in the AOS system. The big difference is that flowers are not necessarily present!

The plant is positioned in a symmetrical sphagnum moss mound, in a pot of similar beauty, as in the manner of the Japanese system. The three are balanced to make the perfect winner. Winners are not always big, but they are always beautiful and only sometimes expensive. Think of the Japanese presentation and growing of this species as a cross between Ikebana and bonsai growing translated into orchids.

I soon realized that I knew very little about the history of pots in Japan and recognized the need to personally see the antique pots. Seeing what they thought of mine was important to know how to move on from the first pots I had made. Feedback was needed. The possibility came at Satomi Kasahara's wedding in 2016. Kiyoshige Negi was also a guest and spoke excellent English, so the next year, I asked him if I could visit Japan and the JFS under his wing. That was May of 2017. The next year, I asked Peter T. Lin to join us.

The trip was mind blowing. Negi-san arranged for me to visit not only the oldest, third-generational Fukiran pot making business in Japan, but also one other private maker of pots. He also arranged for me to visit several Fukiran nurseries that were the size of nurseries here in the United States, but contained nothing but endemic Japanese plants. Finally, there was the Japan Fukiran Society meeting in a fabulous hotel in his hometown of Hamamatsu. To this day, that hotel has the best breakfast bar I have ever experienced in Japan, including any Tokyo hotel I ever stayed in.

The plants I saw and the pots they were presented in was life altering. Some plants exhibited had been grown by the same grower for over 30 years, or they had been willed from one grower to another as members grew older and retired from growing. But then the pots were my main focus, and I learned. I saw decoratively painted pots from the 18th century or earlier, pots made in China that had found their way to Japan and pots made by masters of the art in Japan in a high-fired Chinese clay that is difficult to source. And then the classic antique Japanese pots. In the large ballroom of the hotel, I forgot completely that I was the only female


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[17] The character of "Green Grass Woman" in the mini-series North & South III. Typical colors used in Cheyenne Indian clothing and beads and an example of the research done in preparation for costume design.

[18] Quick #2 sketch from the "Comedia" sequence of Conquistator. Hot Springs, Arkansas, 1976.

[19] *Vanda falcata* 'Shutenno' won 2nd place at the 2012 American Fukiran Society (AFS) Meeting at Cal-Orchids. This was the author's 2nd pot made.

[20] *Vanda falcata* 'Jyunihitoe' won 3rd place in 2016 at the American Fukiran Society gathering at Cal-Orchids. Flowers are not necessary to place in the top five.

[21] The author has visited an exhibit of flowering bonsai every year when visiting Ueno Park in May. The exhibit gives an indication of the prominence Japanese growers show to all forms of plants.

[22] Japanese Fukiran nurseries can be very large.

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Just some of the winners at the Japanese Fukiran Society meeting in 2019. Attention to every detail is paramount. The meticulously wrapped boxes placed next to each entry are to support the plant name card. Photograph by Claire Wolfington.

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[23] *Vanda falcata* 'Kunkujaku' won second place at the 2018 AFS meeting for Kiyoshige Negi in a custom pot designed by the author.

[24] One of the winners from the 2017 JFS show in Hamamatsu, Japan.

[25] Another of the winners from Hamamatsu.

[26] One of the best of the best in 2017. Higher awards are given colorful platforms for display.

[27] Decorative antique blue and white porcelain pot.

[28] Colorful pot whose origin is attributed to a Chinese pot maker.

[29] Zisha purple sand clay pot, made by an early Japanese master.

[30] Classic Japanese-made pot in the collection of a Fukiran seller from Hamamatsu, Japan.

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participant not selling plants or pots, a "Gaijin" at that, or that I did not speak Japanese except for yes, no and hello! I can now say "You are welcome!"

The organizers arranged for me to be able to display five pots and to ask for feedback in Japanese Kanji characters. In the unique Japanese fashion, any criticisms were gently conveyed, and I returned with renewed ideas and enthusiasm for making pots. Only then did it dawn on me that a kiln was needed for personal use at the house and a website was finally in the works. Retirement came the next year and things moved quickly from there.

The pot, pictured here, has been made for the AOS Centennial Auction this coming April.

Acknowledgments

I thank the following, alphabetical order, for their help and advice: Scott Barrie, Deborah Bodei, Ken Cameron, Michelle Dobard (Anderson), Jason Fischer, Wendy Fisher, Craig Malcolm Gibbon, Norito Hasegawa, Satomi Kasahara (Davis), Alan Kenwood, Junichi Kishi, Scott Laskowski, Jennifer Leitzke, Peter T. Lin, Hiroshige Matsuoka, Duane McDowell, Tom Mirenda, Kiyoshige Negi, Takeshi Otsuka, Phyllis Prestia, Randall Robinson, Hideki Shimizu, Stephen D. Ward and Claire Wolfington.

— Carol Helen Beule is an award-winning costume designer who retired after a 45+ year career and moved on to making pots for Vanda falcata*, Asian cymbidiums and other small plants. She both makes what she likes and takes on commissions. She travels to Japan whenever possible to do more research and learn about what they call their Fukiran, our* V. falcata*, and is a fully accredited AOS judge in the Pacific South region. All pottery is handmade, not on a wheel but in a process known as "hand built" or by molds (website: firsthousefurnishings.com; email: cbeule@sbcglobal.net).*

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EILEEN HECTOR

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[31] The author and friends in Japan at the celebration and awards dinner on Saturday evening. Front row, left to right: Kiyoshige Negi, Carol Helen Beule, Tazuko Taga; back row, left to right: Peter T. Lin, Masayuki Taga, Michael Westergren and Jason Fisher.

[32] The pot designed by the author donated to the American Orchid Society for its auction Saturday April 9, 2022 at the Centennial Gala Celebration.

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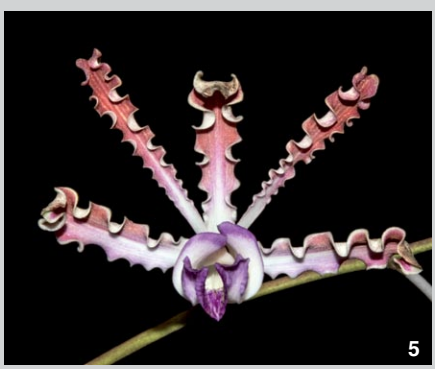
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[1] *Phalaenopsis* Forever Young (Purple Gem 'B#1' x *deliciosa* 'Bryon Kelly Rinke') AQ/AOS Exhibitor: Max Thompson and Bryon Rinke; Photographer: Bryon Rinke. Great Plains Judging

[2] *Cattleya* Walnut Valley Circle 'Timbucktoo' AM/AOS (Circle of Life x *mossiae*) 81 pts. Exhibitor: Sarah Pratt; Photographer: Bryon K Rinke. Great Plains Judging

[3] *Cattleya violacea* 'Corona' AM/AOS 80 pts. Exhibitor: Ben Oliveros and Orchid Eros; Photographer: Glen Barfield. Hawaii Judging

[4] *Cattleya aclandiae* (Coerulea) 'SRV' HCC/AOS 77 pts. Exhibitor: Ben Oliveros and Orchid Eros; Photographer: Glen Barfield. Hawaii Judging

[5] *Myrmecophila brysiana* 'Winfield' AM/AOS 83 pts. Exhibitor: Max C. Thompson; Photographer: Bryon Rinke. Great Plains Judging

[6] *Cattleya* Leonard Gines 'Portlandia' HCC/AOS (*itambana* x *liliputana*) 77 pts. Exhibitor: Ben Oliveros and Orchid Eros; Photographer: Glen Barfield. Hawaii Judging

[7] *Cattleya* Rhythm and Blues 'Mike Zito' AM/AOS (Leoloddiglossa x *tigrina*) 82 pts. Exhibitor: Ben Oliveros and Orchid Eros; Photographer: Glen Barfield. Hawaii Judging

[8] *Phalaenopsis* Walnut Valley Purple Pixie 'M & B' HCC/AOS (Purple Gem x Pixie Star) 79 pts. Exhibitor: Max Thompson and Bryon Rinke; Photographer: Bryon Rinke. Great Plains Judging

[9] *Systeloglossum panamense* 'Bryon Rinke' CHM/AOS 82 pts. Exhibitor: Bryon K. Rinke; Photographer: Bryon Rinke. Great Plains Judging

[10] *Vanda denisoniana* 'Timbucktoo' HCC/AOS 77 pts. Exhibitor: Sarah Pratt; Photographer: Bryon K Rinke. Great Plains Judging

[11] *Dracula woolwardiae* 'M & B' AM/AOS 81 pts. Exhibitor: Max Thompson and Bryon Rinke; Photographer: Bryon Rinke. Great Plains Judging

[12] *Bulbophyllum echinolabium* 'Well Hung' AM/AOS 81 pts. Exhibitor: Jungle Mist Orchids; Photographer: Glen Barfield. Hawaii Judging

[13] *Paphiopedilum* Petula's Flare 'Slipper Zone Coloratum Succeeds' AM/AOS (Magical Contrasts x Petula's Flame) 83 pts. Exhibitor: Lehua Orchids; Photographer: Glen Barfield. Hawaii Judging

[14] *Paphiopedilum* Superbly Wood 'Slipper Zone Pink Dominance' AM/AOS (Superb Fred x Delightfully Wood) 84 pts. Exhibitor: Lehua Orchids; Photographer: Glen Barfield. Hawaii Judging

[15] *Cattleya* Pacavia 'Popolo' CCM/AOS (*purpurata* x *tenebrosa*) 80 pts. Exhibitor: Ben Oliveros and Orchid Eros; Photographer: Glen Barfield. Hawaii Judging

[16] *Paphiopedilum* Oriental Allure 'Slipper Zone White Maud' HCC/AOS (Oriental Green x Egret's Jewel) 79 pts. Exhibitor: Lehua Orchids; Photographer: Glen Barfield. Hawaii Judging

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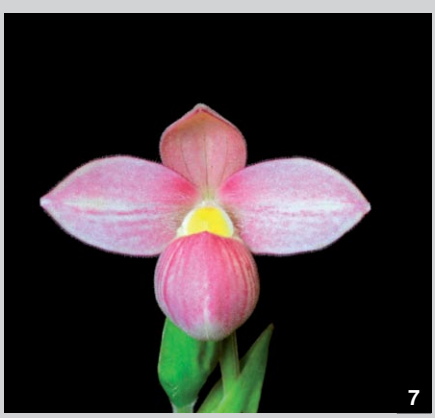
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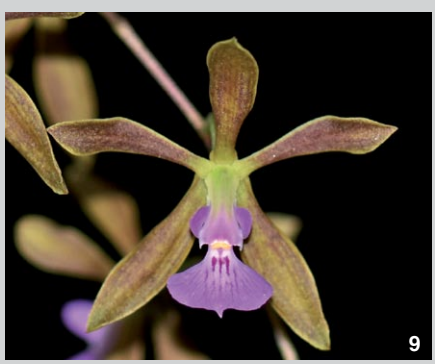
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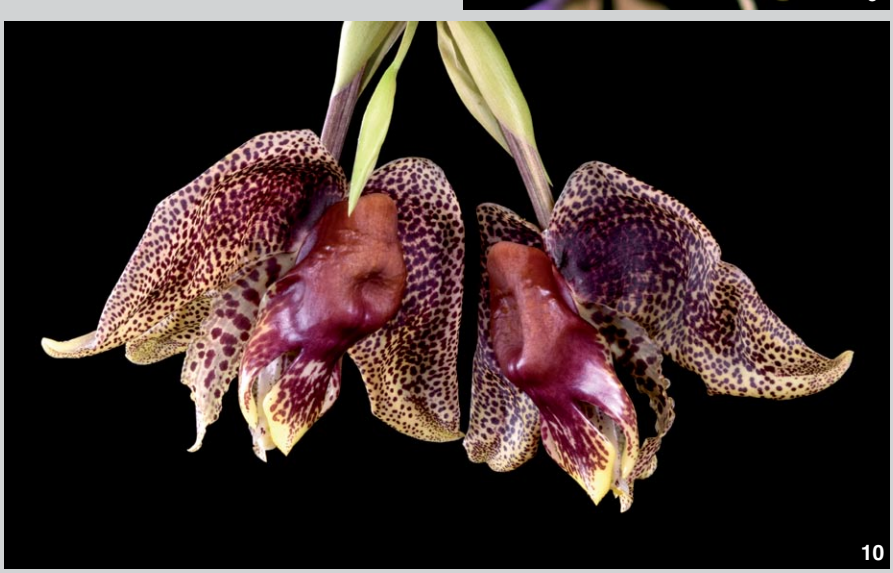
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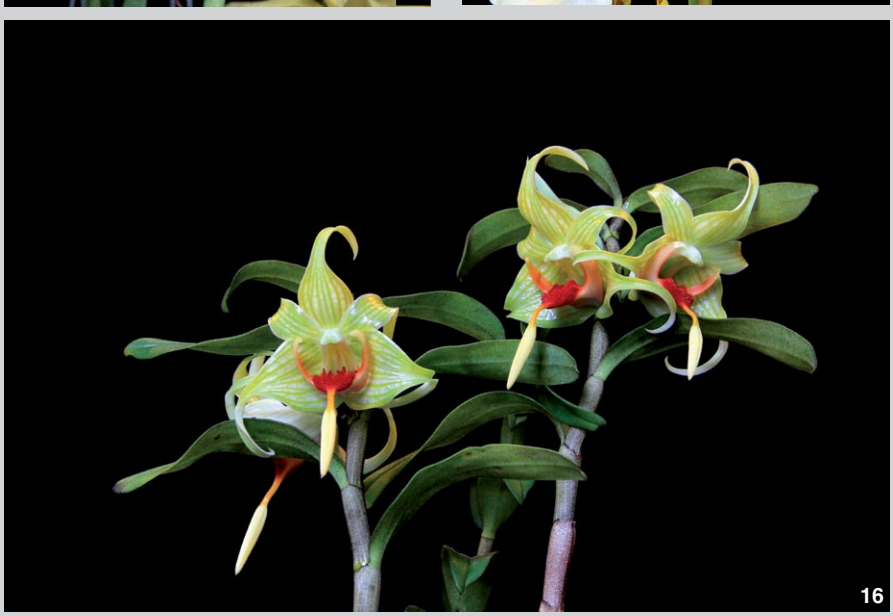

[1] *Cattleya dowiana* var. *aurea* 'You Are My Sunshine' FCC/AOS 92 pts. Exhibitor: Ben Oliveros and Orchid Eros; Photographer: Glen Barfield. Hawaii Judging

[2] *Jumellea hyalina* 'OrchidFix Sapphire Seashells ' CBR/AOS. Exhibitor: The OrchidFix Nursery, Inc.; Photographer: Glen Barfield. Hawaii Judging

[3] *Cattleya tigrina* (Alba) 'Mirtha Isabel' HCC/AOS 78 pts. Exhibitor: Ben Oliveros and Orchid Eros; Photographer: Glen Barfield. Hawaii Judging

[4] *Aerides houlletiana* 'Dude' HCC/AOS 76 pts. Exhibitor: Mary Mancini; Photographer: Wilton Guillory. Shreveport Judging

[5] *Rhyncholaeliocattleya* Lestat 'Gabriel Amaru' AM/AOS (Raven Rock x *Cattleya bicolor*) 83 pts. Exhibitor: Ben Oliveros and Orchid Eros; Photographer: Glen Barfield. Hawaii Judging

[6] *Paphiopedilum* Clifton Booth 'Gussy' AM/AOS (*primulinum* var. *primulinum* x Saint Swithin) 82 pts. Exhibitor: Dr. Julio David Rios; Photographer: Marinés Torres. Puerto Rico Judging

[7] *Phragmipedium* Ely's Colombian Pride 'Elizabeth Grace' HCC/AOS (*andreettae* x *schlimii*) 79 pts. Exhibitor: Eron Borne; Photographer: Wilton Guillory. Shreveport Judging

[8] *Cattlianthe* Sagarik Wax 'Shogun Hawaii' AM/AOS (*Cattleya* Summerland Girl x Chocolate Drop) 86 pts. Exhibitor: Shogun Hawaii- Matthias Seelis; Photographer: Glen Barfield. Hawaii Judging

[9] *Encyclia bipapularis* 'Julio David' AM/AOS 81 pts. Exhibitor: Dr. Julio David Rios; Photographer: Marinés Torres. Puerto Rico Judging

[10] *Coryhopea* Red Martian 'Shogun Hawaii' AM/AOS (*Stanhopea martiana* x *Coryanthes macrantha*) 80 pts. Exhibitor: Shogun Hawaii- Matthias Seelis; Photographer: Glen Barfield. Hawaii Judging

[11] *Dendrobium* Asian Youth Games Singapore 09 'Gustavo' HCC/AOS (Malayan Orange x *sutiknoi*) 79 pts. Exhibitor: Dr. Julio David Rios; Photographer: Marinés Torres. Puerto Rico Judging

[12] *Phalaenopsis sumatrana* var. *zebrina* 'Benin' HCC/AOS 76 pts. Exhibitor: Mary Mancini; Photographer: Wilton Guillory. Shreveport Judging

[13] *Vanda* William Bachschmidt 'Garrett's Gold Star' AM/AOS (Crownfox Keylime x *tessellata*) 83 pts. Exhibitor: Sharon and David Garrett; Photographer: Wes Newton. Florida North-Central Judging

[14] *Prosthechea* Exotic's Leprechaun 'Julia Katherine' HCC/AOS (*cochleata* x Green Hornet) 77 pts. Exhibitor: Eron Borne; Photographer: Wilton Guillory. Shreveport Judging

[15] *Miltonia* Golden Jaguar 'Julia Katherine' HCC/AOS (Goodale Moir x *clowesii*) 79 pts. Exhibitor: Eron Borne; Photographer: Wilton Guillory. Shreveport Judging

[16] *Dendrobium tobaense* 'Louisiana' HCC/AOS 75 pts. Exhibitor: Alan Taylor; Photographer: Wilton Guillory. Shreveport Judging

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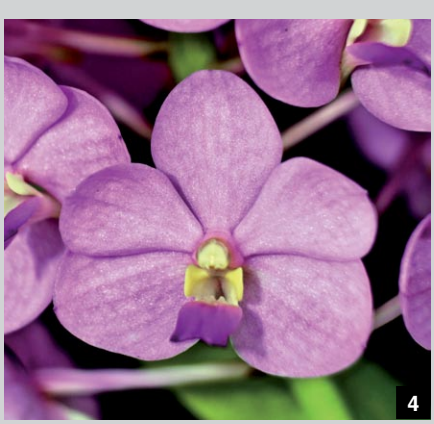
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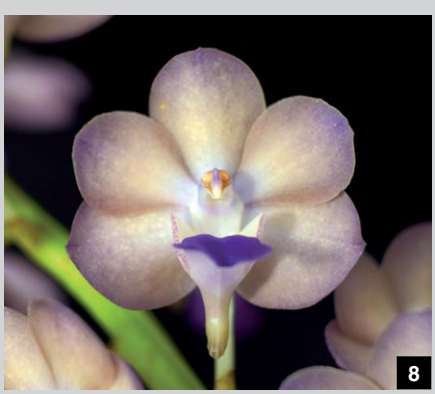
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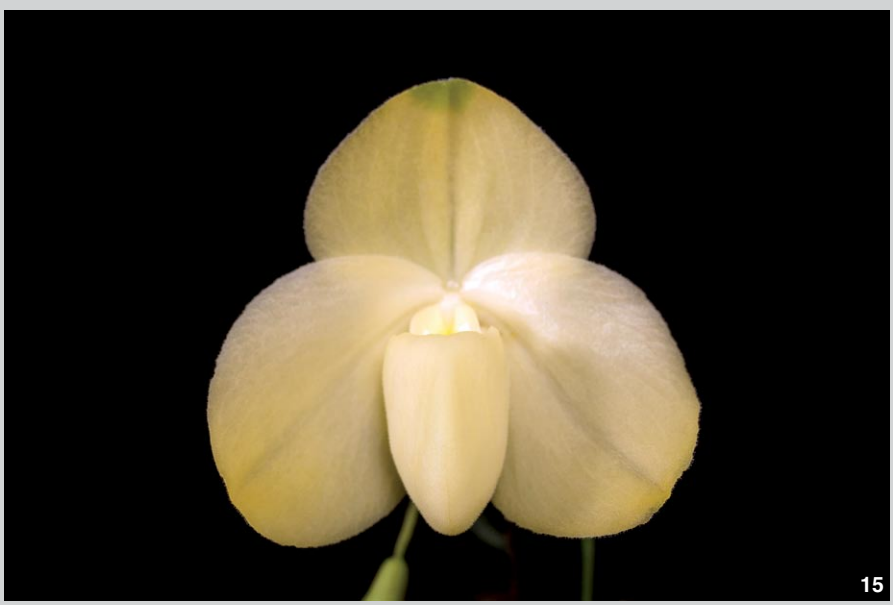
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[1] *Aerides lawrenceae* 'Robert Bailey' AM/AOS 86 pts. Exhibitor: David Genovese; Photographer: Wes Newton. Florida North-Central Judging

[2] *Vanda* Greg Scott 'Wine Festival' AM/AOS (*merrillii* x *tessellata*) 82 pts. Exhibitor: Naoki Kawamura; Photographer: Wes Newton. Florida North-Central Judging

[3] *Papilionanda* Naoki Kawamura 'Martin's Gift' AM/AOS (Arjuna x *Vanda cristata*) 81 pts. Exhibitor: Naoki Kawamura; Photographer: Wes Newton. Florida North-Central Judging

[4] *Vandachostylis* Banjong Pearl 'Garrett's Pink Pearl' HCC/AOS (Seng x *Vanda* Memoria Choo Laikeun) 78 pts. Exhibitor: Sharon and David Garrett; Photographer: Wes Newton. Florida North-Central Judging

[5] *Vandachostylis* Kedah Bella 'Crystelle' AM/AOS (*Vanda vietnamica* x *Rhynchostylis coelestis*) 83 pts. Exhibitor: Krull-Smith; Photographer: Wes Newton. Florida North-Central Judging

[6] *Catasetum* Diana's Dots 'Corinne's Burgundy Tiger' HCC/AOS (Orchidglade x *tigrinum*) 79 pts. Exhibitor: Corinne Arnold; Photographer: Wes Newton. Florida North-Central Judging

[7] R*hynchostylis coelestis* 'Krull's Mammoth' HCC/AOS 78 pts. Exhibitor: Krull-Smith; Photographer: Kay Clark. Florida North-Central Judging

[8] *Perreiraara* Cutie Pie 'Habitat's Mauvelous' AM/AOS (*Aerides lawrenceae* x *Vandachostylis* Ladda Gold) 83 pts. Exhibitor: Sharon and David Garrett; Photographer: Wes Newton. Florida North-Central Judging

[9] *Rhynchostylis coelestis* 'Little James Krull' AM/AOS 82 pts. Exhibitor: Krull-Smith; Photographer: Kay Clark. Florida North-Central Judging

[10] *Dendrobium lasianthera* 'Crystelle' AM/AOS 87 pts. Exhibitor: Krull-Smith; Photographer: Wes Newton. Florida North-Central Judging

[11] *Encyclia* Memoria Joyce Reinke 'Springwater' HCC/AOS (Orchid Jungle x *dichroma*) 78 pts. Exhibitor: Springwater Orchids and Thanh Nguyen; Photographer: Kay Clark. Florida North-Central Judging

[12] *Vandachostylis* Garrett's Blue on Blue 'Lavender Cutie' AM/AOS (Stephanie Blue Angel x *Vanda coerulea*) 83 pts. Exhibitor: Sharon and David Garrett; Photographer: Wes Newton. Florida North-Central Judging

[13] *Vanda tessellata* 'Naoki Kawamura' AM/AOS 86 pts. Exhibitor: Naoki Kawamura; Photographer: Wes Newton. Florida North-Central Judging

[14] *Bulbophyllum* Tree Frog 'Jim Krull' AM/AOS (*macrobulbum* x *bicolor*) 85 pts. Exhibitor: Krull-Smith; Photographer: Kay Clark. Florida North-Central Judging

[15] *Paphiopedilum wenshanense* 'Fajen's Spotless' AM/AOS 85 pts. Exhibitor: Fajen's Orchids; Photographer: Kay Clark. Florida North-Central Judging

[16] *Phalaenopsis bellina* 'Krull's Evelyn' AM/AOS 85 pts. Exhibitor: Krull-Smith; Photographer: Kay Clark. Florida North-Central Judging

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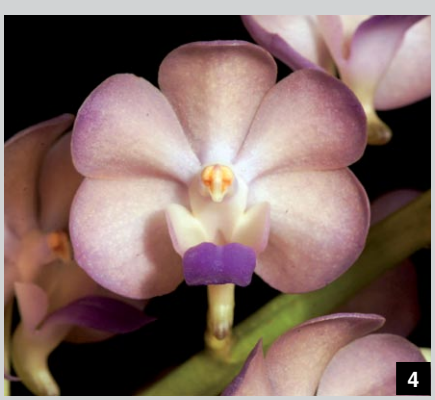
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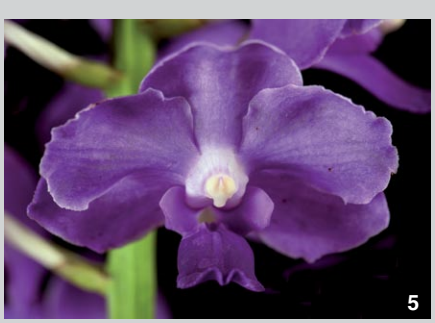
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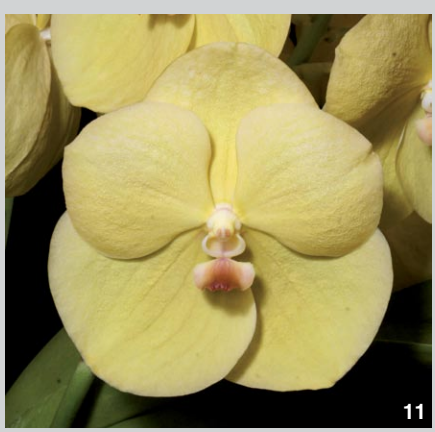
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[1] *Brassocattleya* Sea Mist 'Springwater' AM/AOS (*Brassavola nodosa* x *Cattleya luteola*) 80 pts. Exhibitor: Springwater Orchids and Thanh Nguyen; Photographer: Kay Clark. Florida North-Central Judging

[2] *Paphiopedilum* Avalon Delight 'Wing-Dreams Deux ' HCC/AOS (Nike's Sunny Delight x Avalon Mist) 78 pts. Exhibitor: Julio and Eileen Hector; Photographer: Kay Clark. Florida North-Central Judging

[3] *Habenaria* Raingreen's Ice Bird 'Winter Haven ' AM/AOS (*medusa* x Tracey) 82 pts. Exhibitor: Keith and Dina Emig - Winter Haven Orchid Nursery; Photographer: Kay Clark. Florida North-Central Judging

[4] *Perreiraara* Cutie Pie 'Garrett's Lil' Darlin'' AM/AOS (*Aerides lawrenceae* x *Vandachostylis* Ladda Gold) 81 pts. Exhibitor: Sharon and David Garrett; Photographer: Beth Lamb. Florida North-Central Judging

[5] *Perreiraara* LeBeau Blue 'Chad's Wonderful Blue' AM/AOS (*Aerides lawrenceae* x *Vandachostylis* Sasicha) 80 pts. Exhibitor: Charles Whetstone; Photographer: Kay Clark. Florida North-Central Judging

[6] *Phalaenopsis* Mituo King Bellina 'Frank's Utopia' HCC/AOS (LD's Bear King x LD Bellina Eagle) 79 pts. Exhibitor: Krull-Smith; Photographer: Kay Clark. Florida North-Central Judging

[7] *Catasetum* Harlequin Lilly 'Corinne's Burgundy Thrills' AM/AOS (Susan Fuchs x Dentigrianum) 80 pts. Exhibitor: Corinne Arnold; Photographer: Kay Clark. Florida North-Central Judging

[8] *Catasetum* Maria Bautista 'Corinne's Mooncatcher' AM/AOS (Louise Clarke x *tenebrosum*) 83 pts. Exhibitor: Corinne Arnold; Photographer: Beth Lamb. Florida North-Central Judging

[9] *Phalaenopsis* Yaphon in Mirror 'Bredren' HCC/AOS (LD's Bear King x Kingfisher's Dragon Wing) 78 pts. Exhibitor: Bredren Orchids and Phillip Hamilton; Photographer: Beth Lamb. Florida North-Central Judging

[10] *Vandachostylis* Christine Joan 'Krull-Smith' AM/AOS (Mishima Lime x *Vanda vietnamica*) 85 pts. Exhibitor: Krull-Smith; Photographer: Beth Lamb. Florida North-Central Judging

[11] *Vanda* Renu Gold 'David Garrett' AM/AOS (Pranerm Prai x Nopporn Gold) 82 pts. Exhibitor: Krull-Smith; Photographer: Beth Lamb. Florida North-Central Judging

[12] *Phalaenopsis violacea* 'Bredren's Delicata' HCC/AOS 79 pts. Exhibitor: Bredren Orchids and Phillip Hamilton; Photographer: Beth Lamb. Florida North-Central Judging

[13] *Phalaenopsis* Krull's Hayseed 'Crystelle' AM/AOS (Pylo's Eagle Passion x *bellina*) 86 pts. Exhibitor: Krull-Smith; Photographer: Beth Lamb. Florida North-Central Judging

[14] *Vandachostylis* Laem Sing 'Garrett's Green Goddess' AM/AOS (*Vanda denisoniana* x *Rhynchostylis coelestis*) 83 pts. Exhibitor: Sharon and David Garrett; Photographer: Beth Lamb. Florida North-Central Judging

[15] *Catasetum* Memoria Dorothy Wells 'Corinne Can't Stop Now' AM/AOS (Chuck Taylor x Dentigrianum) 82 pts. Exhibitor: Corinne Arnold; Photographer: Beth Lamb. Florida North-Central Judging

[16] *Catasetum lucis* 'Lucy's Dream' HCC/AOS 77 pts. Exhibitor: Vicki Fisher; Photographer: Kay Clark. Florida North-Central Judging

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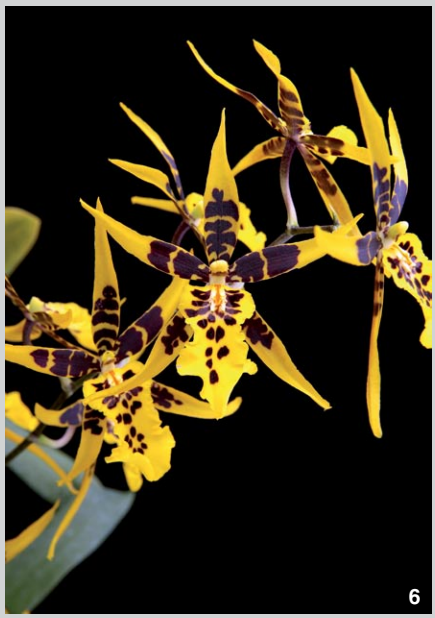
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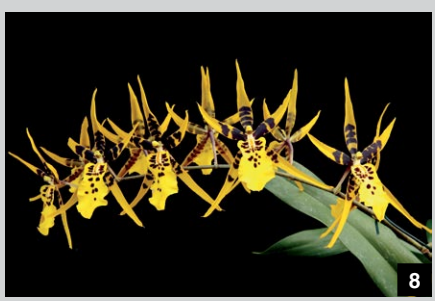
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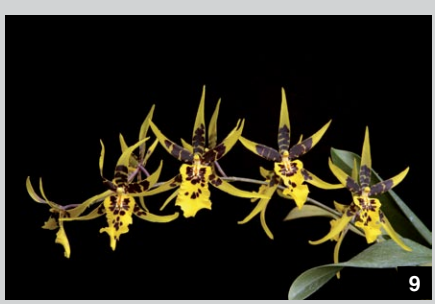
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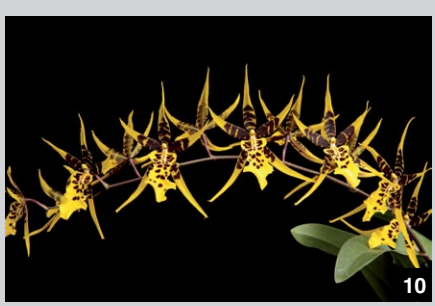
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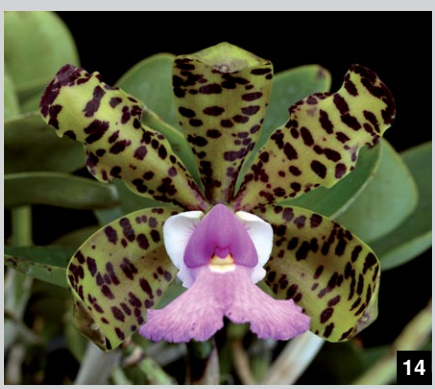
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[1] *Cattlianthe* Gigi Andrae Louis 'Memoria Jo Westbury' AM/AOS (Chocolate Drop x *Guarianthe skinneri*) 84 pts. Exhibitor: Naoki Kawamura; Photographer: Kay Clark. Florida North-Central Judging

[2] *Bulbophyllum* Lindsey Paris 'Graceland' AM/AOS (Grace Thoms x Manchind) 86 pts. Exhibitor: Bill Thoms; Photographer: Kay Clark. Florida North-Central Judging

[3] *Bulbophyllum* Dottie August 'A-doribil Whisper' HCC/AOS (Louis Sander x *hirundinis*) 77 pts. Exhibitor: Bill Thoms; Photographer: Kay Clark. Florida North-Central Judging

[4] *Bulbophyllum* Lindsey Paris 'Bill's Gift' AM/AOS (Grace Thoms x Manchind) 82 pts. Exhibitor: Bill Thoms; Photographer: Kay Clark. Florida North-Central Judging

[5] *Bulbophyllum* Eileen's Fairy Tails 'Wing-Dreams Chapter Two' AM/AOS (A-doribil Collin x *echinolabium*) 82 pts. Exhibitor: Julio and Eileen Hector; Photographer: Kay Clark. Florida North-Central Judging

[6] *Brassidomesa* Golden Stars 'Pure Gold' AM/AOS (*Gomesa echinata* x *Brassidium* Shooting Star) 80 pts. Exhibitor: Gold Country Orchids/Alan Koch; Photographer: Ramon de los Santos. California Sierra Nevada Judging

[7] *Brassidomesa* Golden Stars 'Quincy' AM/AOS (*Gomesa echinata* x *Brassidium* Shooting Star) 82 pts. Exhibitor: Gold Country Orchids/Alan Koch; Photographer: Ramon de los Santos. California Sierra Nevada Judging

[8] *Brassidomesa* Golden Stars 'Sierra Buttes' AM/AOS (*Gomesa echinata* x *Brassidium* Shooting Star) 80 pts. Exhibitor: Gold Country Orchids/Alan Koch; Photographer: Ramon de los Santos. California Sierra Nevada Judging

[9] *Brassidomesa* Golden Stars '24K' AM/AOS (*Gomesa echinata* x *Brassidium* Shooting Star) 84 pts. Exhibitor: Gold Country Orchids/Alan Koch; Photographer: Ramon de los Santos. California Sierra Nevada Judging

[10] *Brassidomesa* Golden Stars 'Auburn' AM/AOS (*Gomesa echinata* x *Brassidium* Shooting Star) 84 pts. Exhibitor: Gold Country Orchids/Alan Koch; Photographer: Ramon de los Santos. California Sierra Nevada Judging

[11] *Brassidomesa* Golden Stars (*Gomesa echinata* 'Gold Country 4N' x *Brassidium* Shooting Star 'Sandwolf') AQ/AOS. Exhibitor: Gold Country Orchids/Alan Koch; Photographer: Ramon de los Santos. California Sierra Nevada Judging

[12] *Aerangis luteoalba* var. *rhodosticta* 'Sierra City' HCC/AOS 79 pts. Exhibitor: Gold Country Orchids/Alan Koch; Photographer: Ramon de los Santos. California Sierra Nevada Judging

[13] *Dendrobium cuthbertsonii* 'Full Moon' AM/AOS 82 pts. Exhibitor: Golden Gate Orchids; Photographer: Ramon de los Santos. California Sierra Nevada Judging

[14] *Cattleya aclandiae* (Coerulea) 'Long-shot' HCC/AOS 77 pts. Exhibitor: Gold Country Orchids/Alan Koch; Photographer: Ramon de los Santos. California Sierra Nevada Judging

[15] *Paphiopedilum* Ford Hutchcraft 'Riesling' HCC/AOS (Golden-Prem x *primulinum*) 79 pts. Exhibitor: Dave Sorokowsky; Photographer: Ramon de los Santos. California Sierra Nevada Judging

[16] *Paphiopedilum* Blushing Fred 'Feeling Great' AM/AOS (Blushing Petula x President Fred) 81 pts. Exhibitor: Fred Capriccio; Photographer: Ramon de los Santos. California Sierra Nevada Judging

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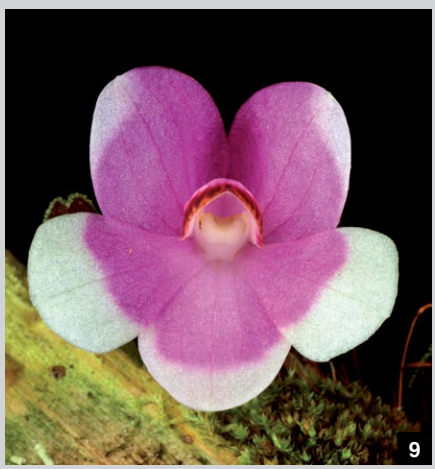
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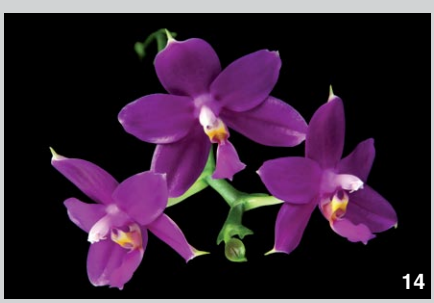
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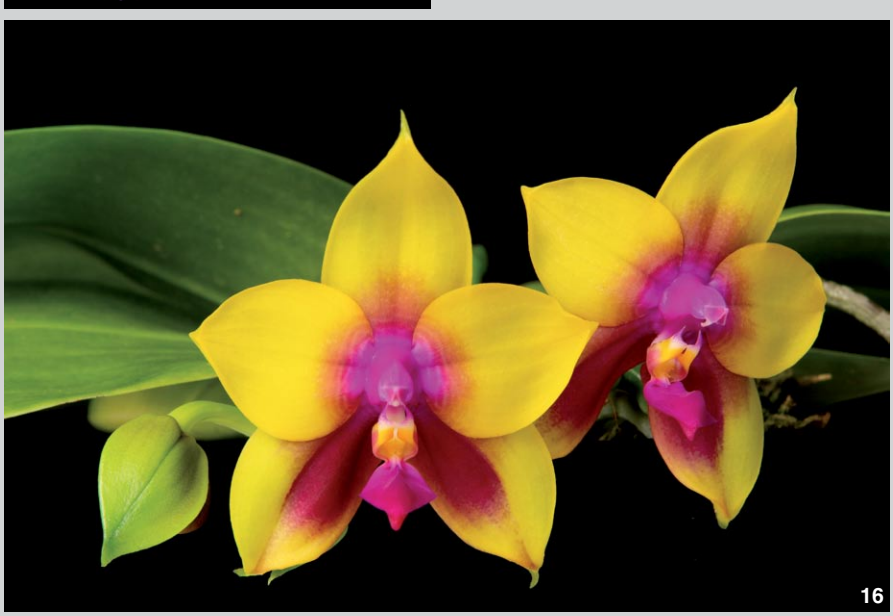
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[1] *Paphiopedilum* Hawaiian Moonlight 'Slipper Zone Glowing All Over' AM/AOS (White Promise x Hawaiian Moon) 80 pts. Exhibitor: Lehua Orchids; Photographer: Ramon de los Santos. California Sierra Nevada Judging

[2] *Paphiopedilum* French Delight 'Slipper Zone Kiss' AM/AOS (French Jewel x Venus Knight) 80 pts. Exhibitor: Lehua Orchids; Photographer: Ramon de los Santos. California Sierra Nevada Judging

[3] *Dendrobium prasinum* 'Genevieve' AM/AOS 84 pts. Exhibitor: Golden Gate Orchids; Photographer: Ramon de los Santos. California Sierra Nevada Judging

[4] *Paphiopedilum* Spring Romance 'Auxerrois' AM/AOS (Spring Moonbeam x Oriental Wolf) 84 pts. Exhibitor: Dave Sorokowsky; Photographer: Ramon de los Santos. California Sierra Nevada Judging

[5] *Dendrobium hekouense* 'Chandra P' CCM-AM/AOS 82-81pts. Exhibitor: Douglas Kubo; Photographer: Ramon de los Santos. California Sierra Nevada Judging

[6] *Paphiopedilum* Pisgah Goldilocks 'Blue Ridge' AM/AOS (Wayne Booth x *moquetteanum*) 81 pts. Exhibitor: Mike Mims; Photographer: Jeremy Losaw. Carolinas Judging

[7] *Phragmipedium* Lutz Röllke 'Josie' AM/AOS (*besseae* x *boissierianum*) 80 pts. Exhibitor: Graham Ramsey; Photographer: Jeremy Losaw. Carolinas Judging

[8] *Dendrobium cuthbertsonii* 'Genevieve' AM/AOS 88 pts. Exhibitor: Golden Gate Orchids; Photographer: Ramon de los Santos. California Sierra Nevada Judging

[9] *Dendrobium cuthbertsonii* 'Pink Halo' AM/AOS 86 pts. Exhibitor: Golden Gate Orchids; Photographer: Ramon de los Santos. California Sierra Nevada Judging

[10] *Phalaenopsis* Yaphon Love Song 'Blue Ridge Pearl' AM/AOS (Mituo Golden Tiger x Yaphon Lover) 83 pts. Exhibitor: Mike Mims; Photographer: Jeremy Losaw. Carolinas Judging

[11] *Phalaenopsis* KS Happy Eagle 'Joy' AM/AOS (Dragon Tree Eagle x Nobby's Fox) 84 pts. Exhibitor: Mike Mims; Photographer: Jeremy Losaw. Carolinas Judging

[12] *Bulbophyllum* JM Guilloty 'Tome' AM/AOS (*annandalei* x *frostii*) 84 pts. Exhibitor: Graham Ramsey; Photographer: Jeremy Losaw. Carolinas Judging

[13] *Rhyncattleanthe* Brenda Ruedy 'Bliss' HCC/AOS (Lovely Elaine x Al Thanhauser) 76 pts. Exhibitor: Brenda Ruedy; Photographer: Ramon de los Santos. California Sierra Nevada Judging

[14] *Phalaenopsis* Fintje Kunriawati 'Pendragon' HCC/AOS (*pulchra* x *violacea*) 78 pts. Exhibitor: Bryan Goddard; Photographer: Jeremy Losaw. Carolinas Judging

[15] *Specklinia montezumae* 'Orkiddoc' CCM/AOS 83 pts. Exhibitor: Larry Sexton; Photographer: Nile Dusdieker. Chicago Judging

[16] *Phalaenopsis* LD's Bear Queen 'Topaz' AM/AOS (*bellina* x Dragon Tree Eagle) 82 pts. Exhibitor: Mike Mims; Photographer: Jeremy Losaw. Carolinas Judging

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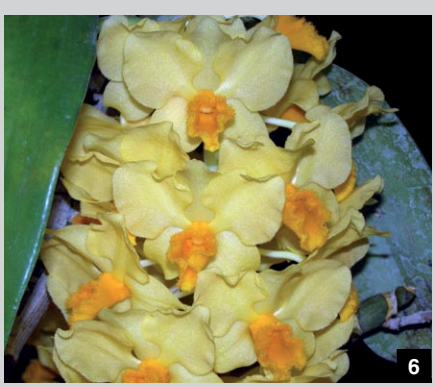
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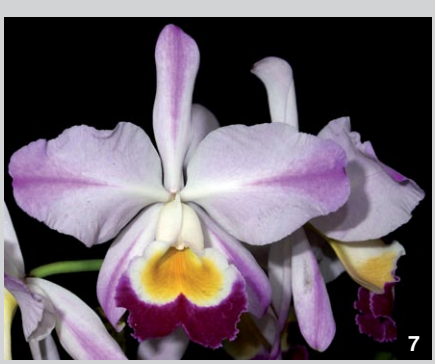
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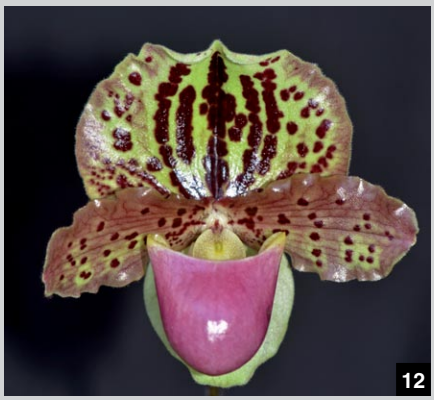
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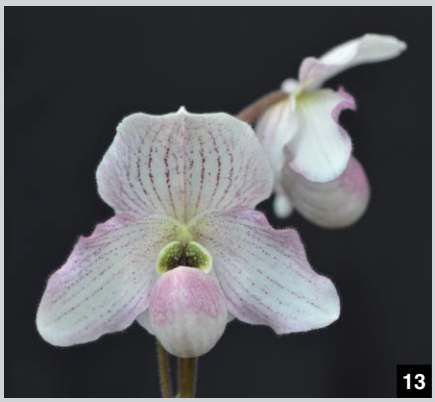
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[1] *Phalaenopsis* Blue Ridge Summer 'Marley' AM/AOS (Blue Ridge Dragon x *bellina*) 80 pts. Exhibitor: Mike Mims; Photographer: Jeremy Losaw. Carolinas Judging

[2] *Phalaenopsis* Zheng Min Sputtering 'Pendragon' AM/AOS (LD's Bear Queen x Zheng Min Neon) 81 pts. Exhibitor: Bryan Goddard; Photographer: Jeremy Losaw. Carolinas Judging

[3] *Phalaenopsis* Luedde-violacea 'Pendragon' AM/AOS (*lueddemanniana* x *violacea*) 82 pts. Exhibitor: Bryan Goddard; Photographer: Jeremy Losaw. Carolinas Judging

[4] *Vandachostylis* Crownfox Rainbow 'Midnight Delight' AM/AOS (Precious x *Vanda* Fuchs Flame) 82 pts. Exhibitor: R.F. Orchids, Inc.; Photographer: Jeremy Losaw. Carolinas Judging

[5] *Cattleya tigrina* 'Kathleen III' AM/AOS 84 pts. Exhibitor: William Rogerson; Photographer: Anne Kotowski. Chicago Judging

[6] *Dendrobium* Cream Cascade 'Cheryl's Gift' HCC/AOS (*densiflorum* x *thyrsiflorum*) 78 pts. Exhibitor: Cheryl Erins; Photographer: Nile Dusdieker. Chicago Judging

[7] *Cattleya wallisii* (Semi-Alba Flamea) 'Fairy' AM/AOS 88 pts. Exhibitor: William Rogerson; Photographer: Nile Dusdieker. Chicago Judging

[8] *Vanda* William Bachschmidt 'Crownfox' AM/AOS (Crownfox Keylime x *tessellata*) 83 pts. Exhibitor: R.F. Orchids, Inc.; Photographer: Jeremy Losaw. Carolinas Judging

[9] *Vanda* Mary Takahashi 'Crownfox Magic' AM/AOS (Suksamran Gold x *tessellata*) 81 pts. Exhibitor: R.F. Orchids, Inc.; Photographer: Jeremy Losaw. Carolinas Judging

[10] *Vanda* Norman Dolder 'Crownfox' AM/AOS (Doctor Anek x Scott Thompson) 83 pts. Exhibitor: R.F. Orchids, Inc.; Photographer: Jeremy Losaw. Carolinas Judging

[11] *Vanda* Dariel Gonzalez 'Crownfox Guinea Fowl' AM/AOS (Judy Cook x *tessellata*) 84 pts. Exhibitor: R.F. Orchids, Inc.; Photographer: Jeremy Losaw. Carolinas Judging

[12] *Paphiopedilum* King Goldemar 'Deerwood' AM/AOS (Doll's Kobold x Little By Little) 80 pts. Exhibitor: Ross Hella; Photographer: Anne Kotowski. Chicago Judging

[13] *Paphiopedilum* Tawan 'Sheila Marie' AM/AOS (*thaianum* x *fairrieanum*) 84 pts. Exhibitor: Duane McDowell; Photographer: Anne Kotowski. Chicago Judging

[14] *Encyclia andrichii* 'Purple Raze' CBR/AOS. Exhibitor: Steve Gonzalez; Photographer: Nile Dusdieker. Chicago Judging

[15] *Cattleya maxima* 'Natural World' AM/AOS 81 pts. Exhibitor: William Rogerson; Photographer: Nile Dusdieker. Chicago Judging

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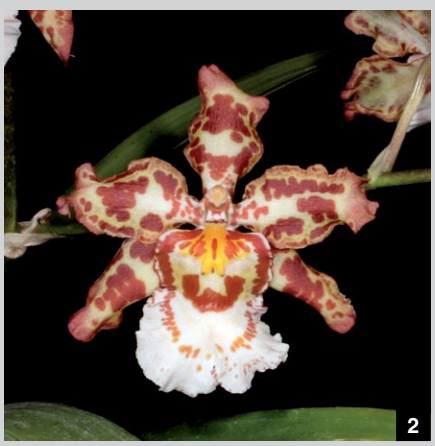
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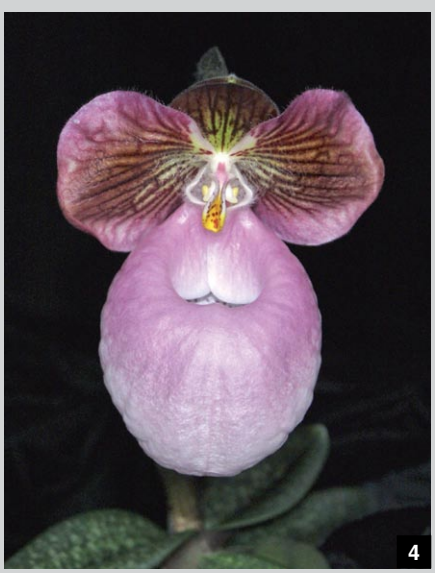
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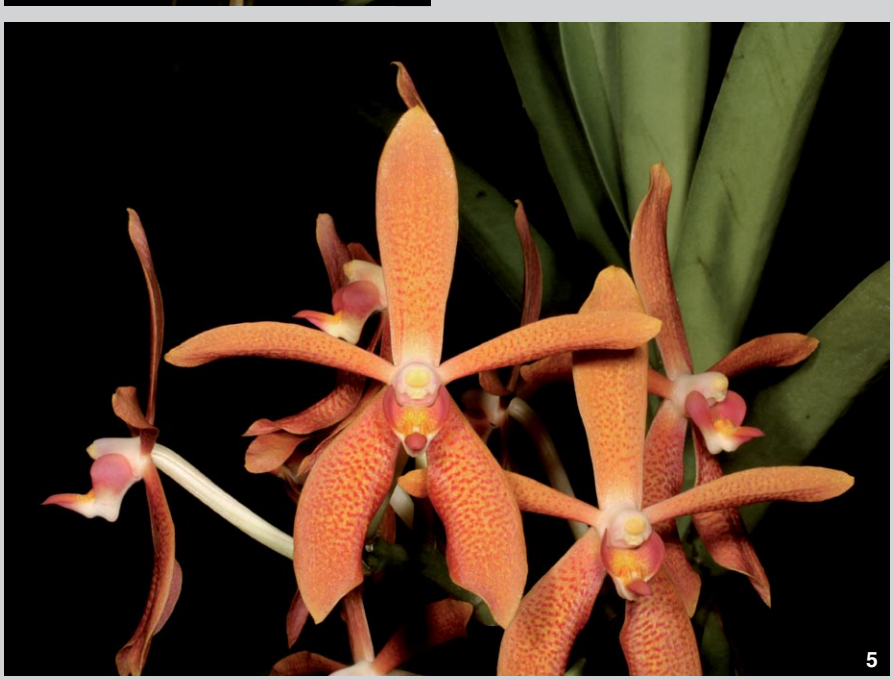
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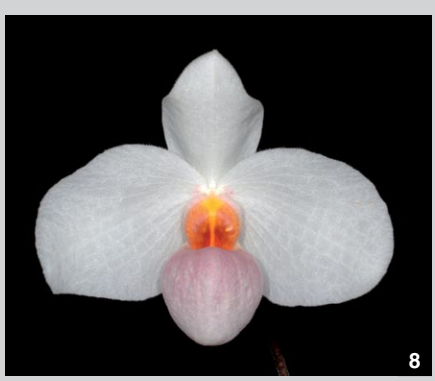
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[1] *Paphiopedilum godefroyae* 'Debbie' AM/AOS 86 pts. Exhibitor: James Vlasic; Photographer: Nile Dusdieker. Chicago Judging

[2] *Oncostele* Eye Candy 'Penny Candy' HCC/AOS (Catatante x *Oncidium* Barossa Delight) 79 pts. Exhibitor: Mei Ling Clemens; Photographer: Lynn O'Shaughnessy. Great Lakes Judging

[3] *Habenaria* Raingreen's Ice Bird 'Susan' HCC/AOS (*medusa* x Tracey) 79 pts. Exhibitor: Susan Tompkins; Photographer: Bryon K Rinke. Great Plains Judging

[4] *Paphiopedilum micranthum* 'Windsong' AM/AOS 82 pts. Exhibitor: William Rogerson; Photographer: Nile Dusdieker. Chicago Judging

[5] *Oderara* Orange Scorpion 'Littlefrog Cinnamon Kiss' HCC/AOS (*Teohara* Taylor x *Paraphalaenopsis* Boediardjo) 79 pts. Exhibitor: Littlefrog Farm; Photographer: Lynn O'Shaughnessy. Great Lakes Judging

[6] *Prosthechea cochleata* 'Quintopus' HCC/AOS 79 pts. Exhibitor: Roger Miller; Photographer: Richard Noel. Cincinnati Judging

[7] *Paphiopedilum godefroyae* 'Honoli'i Princess' AM/AOS 84 pts. Exhibitor: Sandra Dixon; Photographer: Lynn O'Shaughnessy. Great Lakes Judging

[8] *Paphiopedilum* Burki 'Littlefrog Caroline' AM/AOS (*emersonii* x Armeni White) 83 pts. Exhibitor: Littlefrog Farm; Photographer: Lynn O'Shaughnessy. Great Lakes Judging

[9] *Catasetum* Dark Odyssey 'Littlefrog Blood Pool' AM/AOS (Karen Armstrong x Darkness) 83 pts. Exhibitor: Littlefrog Farm; Photographer: Lynn O'Shaughnessy. Great Lakes Judging

[10] *Maxthompsonara* Bryon Rinke 'Walnut Valley' AM/AOS (*Galabstia* Green Tyger x *Batemannia colleyi*) 83 pts. Exhibitor: Max Thompson and Bryon Rinke; Photographer: Bryon K Rinke. Great Plains Judging

[11] *Waironara* Tango Fire 'Nothing Ventured' AM/AOS (*Perreiraara* Bangkok Sunset x *Renanthera storiei*) 85 pts. Exhibitor: Susan Tompkins; Photographer: Bryon K Rinke. Great Plains Judging

[12] *Cattleya violacea* (Striata) 'Fantasia' AM/AOS 86 pts. Exhibitor: Ben Oliveros and Orchid Eros; Photographer: Glen Barfield. Hawaii Judging

[13] *Rhyncattleanthe* Love Triangle 'Doris' AM/AOS (*Rhyncholaeliocattleya* San Damiano (1) x *Cattlianthe* Chocolate Drop) 83 pts. Exhibitor: Max Thompson and Bryon Rinke; Photographer: Bryon K Rinke. Great Plains Judging

[14] *Phalaenopsis* Walnut Valley Purple Pixie 'B & M' AM/AOS (Purple Gem x Pixie Star) 83 pts. Exhibitor: Max Thompson and Bryon Rinke; Photographer: Bryon Rinke. Great Plains Judging

[15] *Pleurothallis perryi* 'Bryon Rinke' JC/AOS. Exhibitor: Bryon K. Rinke; Photographer: Bryon K Rinke. Great Plains Judging

[16] *Gomesa colorata* 'JoJo's Firecracker' CCM/AOS 83 pts. Exhibitor: Bryon K. Rinke; Photographer: Bryon Rinke. Great Plains Judging

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FEBRUARY 2022

4–6—Susquehanna Orchid Society's "For the Love of Orchids," Milton and Catherine Hershey Conservatory at Hershey Gardens, 170 Hotel Road, Hershey, PA; Contact: Lorna Deibert, 717-825-7827; lornadeibert@aol.com

5–6—Greater Cleveland Orchid Show at Orchid Fest, Cleveland Botanical Garden, 11030 East Blvd, Cleveland, OH; Contact: Marc Pollack and Susan Dunlap, 216-218-0366 or 440-479-4344; slcdunlap@roadrunner.com or marcpollack@sbcglobal.net

5–6—Orchid Growers Guild's "Orchid Quest," Olbrich Botanical Gardens, 3330 Atwood Ave, Madison, WI; Contact: Terri Jozwiak, 608-592-7906; lodijoz@charter.net CANCELED

5–6—*Venice Area Orchid Society Sale, Venice Community Center, 326 S Nokomis Ave, Venice, FL; Contact: Carol Wood & Judy Loeffler, 941-497-4995; showchair@vaos.org

11-13—Asociacion Orquideologica de Escazu "Festival de Orquideas de Escazu 2022," Villa Deportiva de Escazu, Escazu, San Jose, Costa Rica; Contact: Gabriel Antich Artavia, 506-8874-5558; aoescazu@gmail.com

12—Diablo View Orchid Society's "Valentine Orchid Show and Sale," First Lutheran Church, 4800 Concord Blvd, Concord, CA; Contact: Eileen Jackson, 707-853-3963; eileen.jackson@att.net CANCELED

12–13—Boca Raton Orchid Society's "In Love With…Orchids," Safe Schools Institute, 1790 NW Spanish River Blvd, Boca Raton, FL; Contact: Kathy Kersey, 954-802-3575; kathykbros@gmail.com

12–13—Port St. Lucie Orchid Society's "Orchid Village," Port St. Lucie Botanical Gardens, 2410 SE Westmoreland Blvd, Port St. Lucie, FL; Contact: Andrea Heitfeld, 772-528-1955; tazzette55@gmail.com

12-13—Illinois Orchid Society "Living Gems," Chicago Botanic Garden, 1000 Lake Cook Rd, Glencoe, IL; Contact: David Kirk, 847-563-0212; david.kirk.a@gmail.com

18-20—Deep Cut Orchid Society Show, Dearborn Market, 2170 State Route 35, Holmdel, NJ; Contact: Helen Kroh, 732-241-2483; krohsnest68@gmail.com CANCELED

19–20—*Batavia Orchid Society Show, DuPage County Fairgrounds, 2015 Manchester Rd, Wheaton, IL; Contact: Larry Sexton, 630-406-8460; orkiddoc@aol.com CANCELED

19-21—2022 National Capital Orchid Society Show and Sale, Homestead Gardens, 743 West Central Avenue, Davidson, MD; Contact: Gary Smith, 410-349-7112; orchid.impaired@gmail.com

25-27—Naples Orchid Society Show, Naples Botanical Garden, 4820 Bayshore Dr, Naples, FL; Contact: Jim Rawson, 425-894-6565; jenoswar@aol.com

25-27—San Francisco Orchid Society's "69th Annual Pacific Orchid Exposition – Orchid Masquerade," Hall of Flowers at Golden Gate Park, 1199 9th Ave, San Francisco, CA; Contact: Cori Majewski, 864-663-6035; info@orchidsanfrancisco.org

25-27—The St. Croix Orchid Society's "A Crucian Orchid Jubilee!," Great Hall, St. George Village Botanical Garden, 127 Estate St. George, Frederiksted, VI; Contact: Susan Kraeger, 340-332-5845; stcroixorchidsociety@yahoo.com

26–27—Greater Lansing Orchid Society Orchid Show, Michigan State University Plant and Soil Sciences Bldg, 1066 Bogue St, E Lansing, MI; Contact: Ioana Sonea, 517-614-9120; ioanamsonea@gmail.com

26-27—Amherst Orchid Society Show, Smith Vocational and Agricultural High School, 80 Locust St, Northampton, MA; Contact: Marc Gray, 802-346-7926 (landline) or 802-258-8406 (cell); bulbophyllum@myfairpoint.net CANCELED

MARCH 2022

4–5—Englewood Area Orchid Society's "Orchids to the Rescue," Tringali Gym, 3460 N Access Rd, Englewood, FL; Contact: Mary Anne DiGrazia, 941-697-9237; tommaryanne@centurylink.net

4–6—Central Vancouver Island Orchid Society's "Spring Treasures," Nanaimo North Town Center, 4750 Rutherford Road, Nanaimo, BC, V9T 4K6, Canada; Contact: Darlene Rathwell, 250-802-3960; islandar11@live.com

4–6—Virginia Orchid Society Show, Lewis Ginter Botanical Garden, 1800 Lakeside Ave, Henrico, VA; Contact: Donna Poland, 757-846-0981; in2gifted@gmail.com

4-6—Martin County Orchid Society's "Orchid Safari," Martin County Fairgrounds, Bldg. G, 2616 SE Dixie Hwy, Stuart, FL; Contact: Nancy Speedy, 772-485-5310; aspeedy@bellsouth.net

4–6—Orchid Society of the Ozark's "11th Annual Orchids in the Garden," Botanical Garden of the Ozarks, 4703 N Crossover Road, Fayetteville, AR; Contact: Stephen Marak, 479-841-4275; samarak@cox.net

5-6—Greater Akron Orchid Society Spring Show, Dayton Nursery, 3459 Cleveland-Massillon Rd, Norton, OH; Contact: Barbara Ford, 330-644-3168; baf67427@sbcglobal.net

5-6—Mount Baker Orchid Society Show, Christianson's Nursery, 15806 Best Road, Mount Vernon, WA; Contact: Harvey Brenneise, 909-786-6419; harvey.brenneise@gmail.com

5–6—Tampa Bay Orchid Society's "Orchids by the Bay," Tampa Scottish Rite, 5500 Memorial Hwy, Tampa, FL; Contact: Pat Solakian, 203-214-7042; psolakian@gmail.com

5-6—Wisconsin Orchid Society's "A Blooming Joy," Milaeger's, 4838 Douglas Ave, Racine, WI; Contact: Richard Odders and Bil Nelson, 262-632-3008 and 414-467-6642; odders2445@gmail.com and qorchids@att.net

5–6—Tucson Orchid Society's "Fiesta De Las Flores," Mesquite Valley Growers, 8005 E Broadway Blvd, Tucson, AZ; Contact: Wes Addison, 520-305-6150; wesadd@cwa-cpa.com

10-13—Asociación Costarricense de Orquideología "Exposición National de Orquídeas 2022," Jardin Botanico Lankester, 5 km (3,7 millas) al este de Cartago, carretera a Paraiso, distrito: Dulce Nombre, Cartago, Costa Rica; Contact: Marie Celeste Merazzo Rivera, 506-8380-5292; celmera@gmail.com

19–20—Nature Coast Orchid Society Spring Show 2022, VFW Post 8681, 18940 Drayton Street, Spring Hill, FL; Contact: Steve Mattana, 218-556-1895; stevemattana123@gmail.com

19-20—Jacksonville Orchid Show 2022, Mandarin Garden Club, 2892 Loretto Rd, Jacksonville, FL; Contact: Lorraine Conover, 561-302-6010; lorrainesorchids@gmail.com

19-20—Orchid Society of Western Pennsylvania's "The Joy of Orchids," Crowne Plaza Hotel, 164 Fort Couch Road, Pittsburgh, PA; Contact: Sheila Nathanson, 412-576-1704; msnsan@gmail.com

19-20—*South Bay Orchid Society Spring Show and Sale, Palos Verdes Art Center, 5504 Crestridge Road, Rancho Palos Verdes, CA; Contact: Arthur Hazboun, 310-995-1592;

19-20—*Denver Orchid Society Show "Orchid Renaissance," Denver Botanic Gardens, 1007 York Street, Denver, CO; Contact: Marion Allen, 303-987-3005; orkdlvr@comcast.net CANCELED

19-20—Nutmeg State Orchid Society's "Come See Our Bloomers," West Hartford Meeting and Conference Center, 50 South Main Street, West Hartford, CT; Contact: Sandy Myhalik, 860-677-0504; myhalik@comcast.net

19-20—Springfield Orchid Society Show, Springfield Greene Co Botanical Center, 2400 South Scenic, Springfield, MO; Contact: Nathan Bell, 660-888-0225; nbell@cofo.edu

25–27—Calcasieu Orchid Society's "ORCHIDS Go To The Movies – Cinematic Spectacles," Historic City Hall, 1001 Ryan Street, Lake Charles, LA; Contact: R. Keith Joiner, 318-614-3516; kjoiner2000@yahoo.com

25-27—Gulf Coast Orchid Alliance "Galaxy of Orchids," North Collier Regional Park, 15000 Livingston Rd, Naples, FL; Contact: Jim Longwell, 239-340-5520; jlongwell1@comcast.net

25-27—Mobile Area Orchid Society 44th Show, Bellingrath Gardens and Home, 12401 Bellingrath Road, Theodore, AL; Contact: Joseph Paine, 251-209-1008; joe6w@aol.com

25–27—New Hampshire Orchid Society's "A Bounty of Orchids," The Event Center at the Courtyard Marriott, 2200 Southwood Drive, Nashua, NH; Contact: Brenda Campbell, 603-540-8195; Bbcampbell139@comcast.net

26–27—The Central Pennsylvania Orchid

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Society's 55th Annual Orchid Show, Penn State University, Ag Arena, University Park, PA; Contact: Wade Hollenbach, 570-837-9157; wadeh@ptd.net

26-27—Orchid Society of Highlands County's "Pete's Magical Orchid Show," Agri-Civic Center, 4509 George Blvd, Sebring, FL; Contact: Susie Whitehead, 863-381-0522; susan_whitehead@hotmail.com 954-913-1628; ajtorresp@gmail.com

26–27—Michigan Orchid Society's Show and Sale, United Plumber Union Hall, 555 Horace Brown Dr, Madison Heights, MI; Contact: Joe Peterson, 248-528-1453; jandjandabbey@aol.com

26–27—Sonoma County Orchid Society's Orchid Expo and Sale, Santa Rosa Veteran's Building, 1351 Maple Avenue, Santa Rosa, CA; Contact: Karen Wofford, 707-975-4299; kwofford@sonic.net

APRIL 2022

2–3—Desert Valley Orchid Society Show, Berridge Nursery, 4647 E Camelback Rd, Phoenix, AZ; Contact: Karla Velesco, 602-410-6514; desertvalleyorchid@gmail.com

9–10—Spokane Orchid Society Show and Sale, Spokane Community College Student Lair, 1810 N Greene St, Spokane, WA; Contact: Jim Pearce, 509-299-5152; jpearce821@gmail.com

16–17—Flamingo Gardens Orchid Society Show, Flamingo Gardens, 3750 S Flamingo Road, Davie, FL; Contact: Antonio Torres, 954-913-1628; ajtorresp@gmail.com

23–24—West Shore Orchid Society Spring Show, Strongsville Recreation Center, 18100 Royalton Rd, Strongsville, OH; Contact: Chester Kieliszek, 330-467-3731; kieliszekc@aol.com

23–24—Treasure Valley Orchid Society Show and Sale, Hilton Garden Inn, 7699 W Spectrum, Boise, ID; Contact: Carolyn Watts, 208-841-0264; daintree@earthlink.net

23–24—Vero Beach Orchid Society Annual Show "Orchid Rainbow," Riverside Park, 3001 Riverside Park Drive, Vero Beach, FL; Contact: Carolyn Greene, 321-506-3909; vbosnewsletter@hotmail.com

23–24—Central Indiana Orchid Society Show, Garfield Park Conservatory, 2505 Conservatory Drive, Indianapolis, IN; Contact: Foster Flint, 317-601-2649; flintlowell@hotmail.com

23-24—Southern Tier Orchid Society's "Orchids at the Museum," Roberson Museum, 30 Front St, Binghamton, NY; Contact: Carol Bayles, 607-275-9090; cjb5@cornell.edu

29-1—Platinum Coast Orchid Society Show "A Rainbow of Orchids," Kiwanis Island Park Gymnasium, 951 Kiwanis Island Park Road, Merritt Island, FL; Contact: Laura Blackmon, 321-745-9046; leblackmon@bledsoe.net

30-1—Kansas Orchid Society's Spring 2022 Show and Sale (Hosting SWROGA), The Wichita Gardens, 701 Amidon St, Wichita, KS; Contact: Sarah Pratt, 316-655-0572; svcsjp@gmail.com

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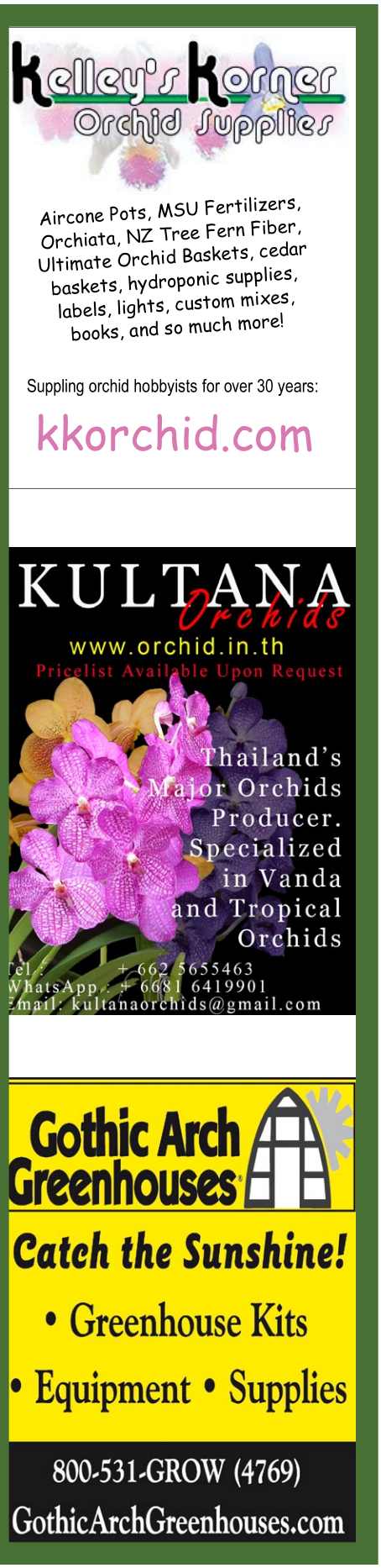
IX International Conference on Orchid Conservation "Soroa 2022"

NEW DATES

THE SOROA BOTANICAL and Orchid Garden and the University of Artemisa IX International Conference on Orchid Conservation "Soroa -2022," has been postponed from February 2022 to NOVEMBER 2022 with exact dates to be determined soon.

This second postponement has become necessary due to damage caused by a recent tropical weather system as well as the COVID-19 pandemic situation in Cuba. Vaccinations are underway in Cuba but February will be too soon to safely hold the Conference.



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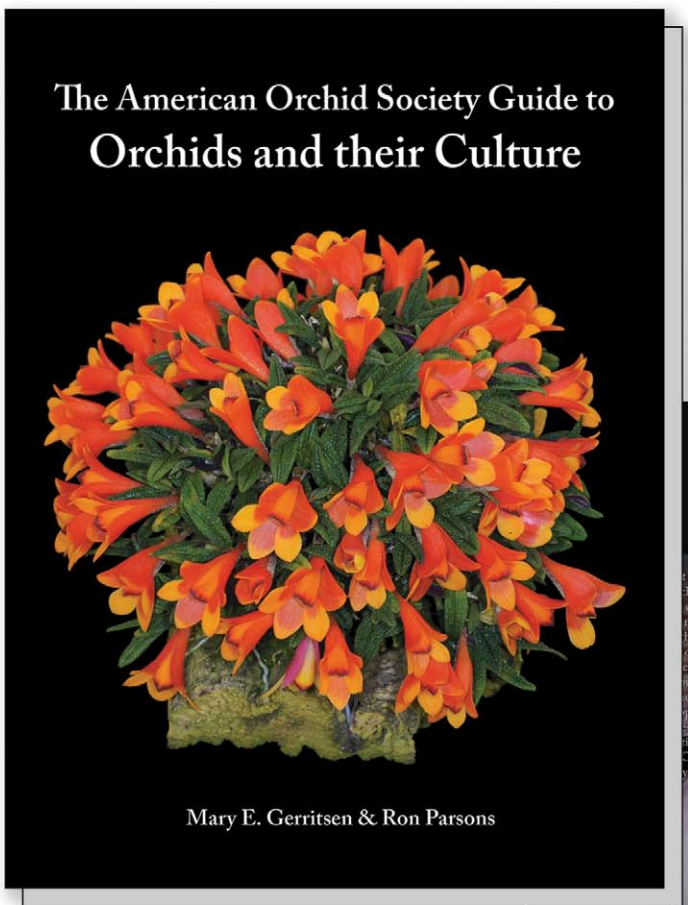

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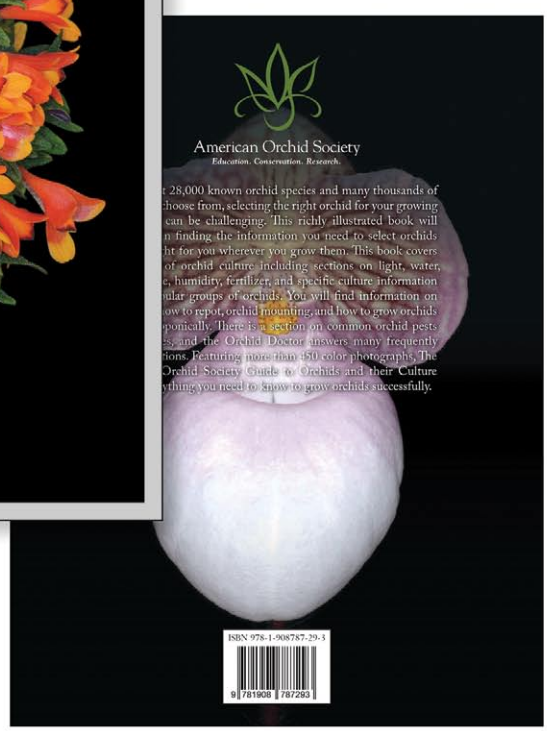

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AD INDEX

Submission of articles for *ORCHIDS* magazine

The AOS welcomes the submission of manuscripts for publication in *Orchids* magazine from members and non-members alike. Articles should be about orchids or related topics and cultural articles are always especially welcome. These can run the gamut from major feature-length articles on such topics as growing under lights, windowsills and thorough discussions of a species, genus or habitat to shorter, focused articles on a single species or hybrid to run under the Collector's Item banner. The AOS follows the World Checklist of Selected Plant Families with respect to species nomenclature and the Royal Horticultural Society Orchid Hybrid Register for questions of hybrid nomenclature. The AOS style guide and usage guides can be downloaded from http://www.aos.org/about-us/article-submissions/style-guide-for-aos-publications.aspx

Articles as well as inquiries regarding suitability of proposed articles should be sent to jean.ikeson@gmail.com or the editor at rmchatton@aos.org.

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Habenaria Flamingo ‘Judy’ AM/AOS

Expect the unexpected

By Leon Glicenstein

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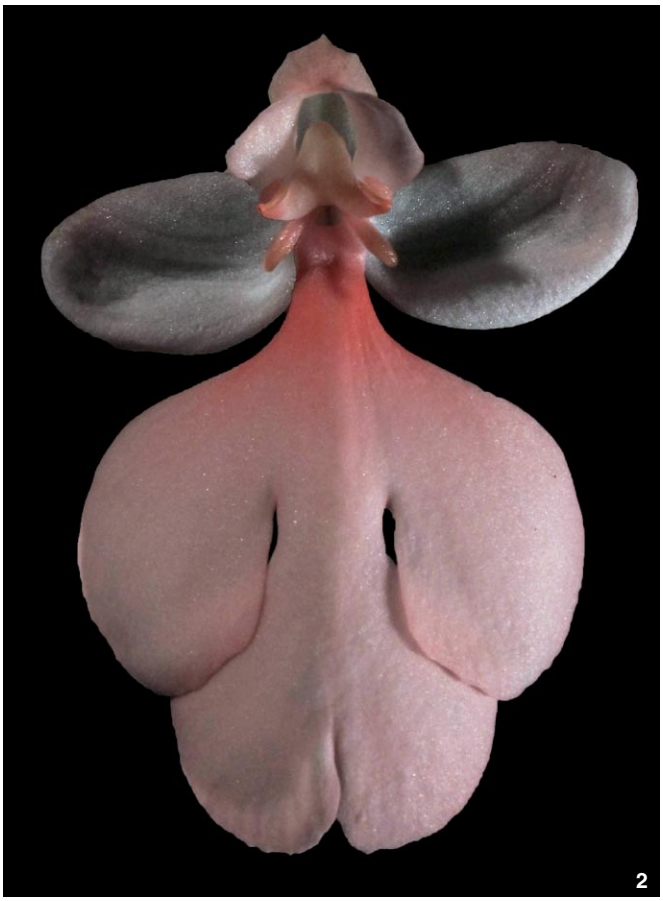
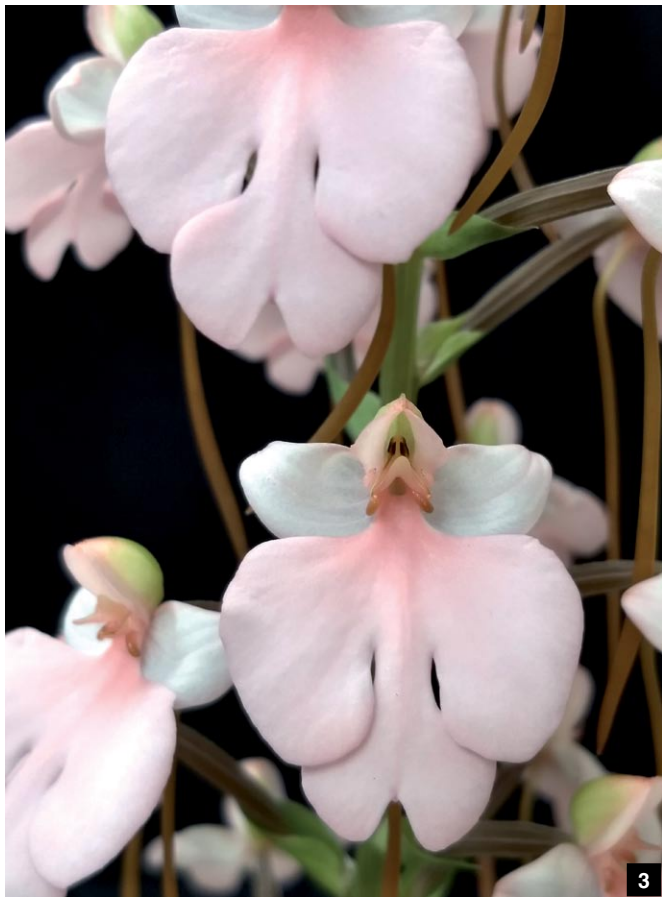




IN 2008, ERICH Michael, of Hoosier Orchids, registered his hybrid of *Habenaria* (*erichmicheli* × *carnea*) as *Habenaria* Flamingo. Because we only had three seedlings, it was never released. As it had nice pink-lipped flowers, in 2017 I decided to remake the hybrid, and obtained about 20 plants. Although most of them flowered in 2019, a few waited. One of the late-blooming seedlings looked sort of strange and flowered in 2020 (one of the good things that happened that year), and it was indeed different. All of the plants, except this single seedling, had similar flowers, with some variation in intensity of pink saturation or in the amount of reflexing of the lateral sepals; however, the strange one had flowers that were very distinct: intense color, some crimping around the lip, fuller flower, and heavier texture with more substance than usual. The leaves were also thicker to the touch when compared with its sister seedlings and much larger. I decided to put a clonal name on it so that I could keep track of the plant, and the one I chose was and the one I usually use, 'Judy', for my partner of close to 50 years. Although I have no proof (I have not done any chromosome counts), I suspect that this clone is a natural polyploid. It was very unexpected, but very welcome.

Until 2021, the only plant that had been awarded as *Hab*. Flamingo was the fantastically grown plant, awarded as *Hab*. Flamingo 'Rubenesque', belonging to Sarah Hurdel; receiving an AM/AOS in 2013, and a CCM/AOS in 2017. The only problem with that, is that this plant is really *Habenaria* Regnieri (*rhodocheila* × *carnea*). Subsequently, Edgar Stehli of Windswept in Time, an orchid company in Ohio, received an AM/AOS for one of its plants of true *Hab*. Flamingo in August, 2021 and gave it the clonal epithet 'Windswept'.

In October, 2021 I took my strange *Hab*. Flamingo to the National Capitol Judging Center and it received an AM/AOS.

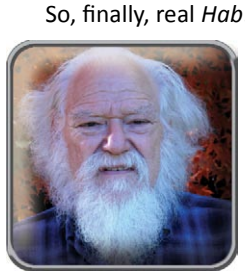
[1] *Habenaria* Flamingo 'Judy' AM/AOS grown and photographed by the author; the first of the true *Habenaria* Flamingo plants to be awarded.

[2] Typical flowers of *Habenaria* Flamingo photographed by the author.

[3] *Habenaria* Flamingo 'Windswept' AM/AOS grown and photographed by Edgar Stehli; a sister seedling to 'Judy' AM/AOS.

This plant is a sister seedling to Edgar's awarded *Hab*. Flamingo 'Windswept' AM/AOS.

So, finally, real *Hab*. Flamingo plants are being awarded.



Leon Glicenstein

— Leon Glicenstein, PhD, is an international lecturer who speaks to orchid and plant societies. He has grown orchids for more than 55 years and was a breeder of novel orchid hybrids for the former Hoosier Orchid Company, especially in the Gongorinae, Zygopetalinae, Pleurothallidinae, angraecoids, jewel and painted-leaf orchids; Orlando Avenue, State College, Pennsylvania 16803 (glicenstein33@msn.com).

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