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ORCHIDS

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VOL. 91 NO. 1 JANUARY 2022



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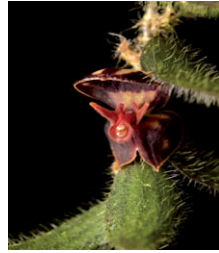
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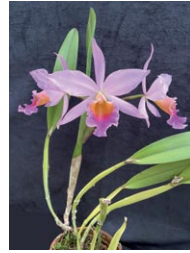
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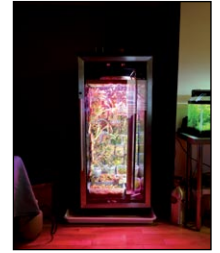
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FRONT COVER

Andinia hernandoi, photographed by Sebastian Vieira-Urbe is known only from its type locality, the pass between Urrao and El Carmen de Atrato, located at the ridge of the western Andes of Colombia, an iconic place because Carl Luer and Rodrigo Escobar visited it and then published several new species from there. The photograph was taken there the same day the species was discovered just a couple of years ago.

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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>.

Acianthera (ay-see-AN-ther-a)
Aerides (ay-air-EE-deez)
alagoensis (alr-ah-goh-EN-sis)
albiflora (al-bee-FLORE-a)
alphonsiana (al-fon-see-AY-na)
Andinia (an-DIN-ee-a)
Andreetaeana (an-dreet-ee-AY-na)
Anguloa (an-gyew-LOH-a)
appendiculata (ap-pen-dik-yew-LAY-ta)
averyanovii (ay-ver-ee-an-OV-ee-eye)
balsamea (bal-SA-may-a)
bicornis (bye-KORE-niss)
boxallii (boks-AL-ee-eye)
Brachionidium (brak-ee-oh-NEED-ee-um)
Brassavola (bra-SAH-vol-a)
Bulbophyllum (bulb-oh-FILL-um)
caesia (SEE-zee-a)
calodictyon (kal-oh-DIKT-ee-on)
Catasetinae (kat-a-SET-ih-nee)
Catasetum (kat-a-SEE-tum)
cernua (SER-new-a)
charlesworthii (charles-WORTH-ee-eye)
chrysoptera (kry-SOP-ter-a)
Clowesia (KLOWZ-ee-a)
cochleata (kok-lee-AY-ta)
cruenta (krew-EN-ta)
cucullata (kew-kew-LAY-ta)
Cycnoches (SIK-no-keez)
Cypripedium (sip-rih-PEED-ee-um)
delicatissima (del-ih-ka-TISS-sih-ma)
deppei (DEPP-ee)
digbyana (dig-bee-AY-na)
doucetteana (doo-set-AY-na)
dowiana (dow-ee-AY-na)
Dracula (DRACK-yew-la)
druryi (DRUR-ee-eye)
Dryadella (dry-a-DELL-a)
endsfeldzii (ends-FELD-zee-eye)
exul (EKS-ool)
fairrieanum (fair-ee-AY-num)
Fimbriatae (fim-bree-AY-tee)
guttulata (gut-yew-LAY-ta)
Habenaria (hab-ee-NARE-ee-a)
hernandoi (her-NAN-do-ee)
hirsutissimum (her-soo-TISS-ih-mum)
hoffmannseggii (hof-manz-EGG-ee-eye)
hookerae (HOOK-er-eye)
hookerianum (hook-er-ee-AY-num)
humile (HEW-mill-ee)
insigne (in-SIG-nee)
isopetala (eye-soh-PET-a-la)
italica (ih-TAL-ih-ka)
jenmanii (jen-MAN-ee-eye)
labiata (lab-ee-AY-ta)
Laelia (LAY-lee-a)
lehmanni (lay-MAN-nee)
Lepanthes (leh-PAN-theez)
Lepanthis (leh-pan-THOP-sis)

lilliputana (lil-lee-put-AY-na)
litoranea (lih-tor-a-NEE-a)
Lycaste (lye-KAS-tee)
macayensis (mak-ay-EN-sis)
macrophylla (mak-roh-FILL-a)
Masdevallia (mas-deh-VAHL-ee-a)
maxima (MAKS-ih-ma)
mendelii (men-DELL-ee-eye)
mineira (min-NAIR-a)
modesta (moh-DESS-ta)
Monophylla (mon-oh-FILL-a)
mordax (MORE-daks)
Mormodes (more-MOH-deez)
mossiae (MOSS-ee-eye)
Neocogniauxia (nee-oh-con-nee-OH-ee-a)
nikoleae (nee-koh-LAY-a)
nutans (NEW-tanz)
Odontoglossum (oh-don-toh-GLOSS-um)
Oncidium (on-SID-ee-um)
Orchis (ORE-kiss)
Paphiopedilum (paff-ee-oh-PED-ih-lum)
percivaliana (per-sih-vahl-ee-AY-na)
Phalaenopsis (fail-en-OP-sis)
Phloeophila (flee-OH-fill-a) (flee-oh-FILL-ee-a)
Pleurothallid (plur-oh-THAL-lid)
polypodium (pol-ee-PODE-ee-um)

polysema (pol-ee-SAY-ma)
Porroglossum (pore-roh-GLOSS-um)
Prosthechea (pros-THEK-ee-a)
pterocarpa (ter-oh-KARP-a)
quadricolor (kwad-RIH-kuhl-ur)
Restrepia (reh-STREP-ee-a)
rex (REKS)
rhodophylla (roe-doh-FILL-la)
Rhyncholaelia (rink-oh-LAY-lee-a)
Rhyncholaeliocattleya (rink-oh-lay-lee-oh-KAT-lee-a)
schilleriana (shill-er-ee-AY-na)
schroederiae (SHROH-der-ee)
skinneri (SKIN-ner-eye)
Sophronia (sof-ROHN-ee-a)
Sophronitis (sof-roh-NYE-tis)
Specklinia (spek-LIN-ee-a)
spicerianum (spy-ser-ee-AY-num)
Sudamerlycaste (soo-da-mer-lye-KAS-tee)
sukhakulii (soo-kah-KOO-lee-eye)
telipogoniflora (tel-lee-poh-gone-ih-FLORE-a)
 trianae (TREE-an-ee)
unguentum (un-GWEN-tum)
venulosum (ven-yew-LOH-sum)
venustum (ven-OOS-tum)
warscewiczii (var-shuh-VITZ-ee-eye)
xytriophora (zye-tree-OH-fore-a)

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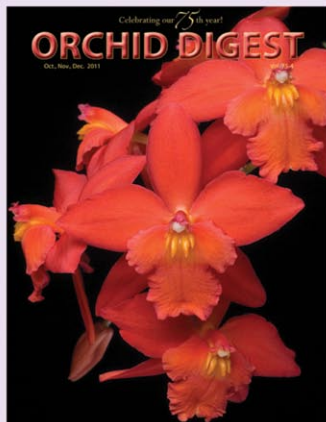
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PRESIDENT'S MESSAGE

HAPPY NEW YEAR, to my fellow orchid growers!

The year 2021 is behind us (what a relief) and we look forward to 2022 as it promises to be outstanding with many more shows for all to participate in and enjoy. I am confident it will be a banner year for shows and I only wish I could visit all the shows that will be happening around the country.

Just a few weeks ago, I had the pleasure of attending a magnificent orchid show at the Buffalo and Erie County Botanical Gardens. It was a wonderful experience and I was received warmly despite the snow that fell during my visit there. The snow was actually beautiful and I carried on, which was not bad for this Floridian who never sees snow.

The exhibits there were beautiful, and the plant quality was absolutely outstanding. The backdrop for this event was the glass conservatory designed by Lord and Burnham some 120 years ago. It was an amazing setting for a wonderful show. It could easily be considered as a host site for an AOS Members' Meeting.

As we embark on this New Year, I want to personally thank all the committee chairs and members for the incredible work they did last year in moving the AOS forward. AOS membership is growing as more and more people fall in love with this beautiful plant we enjoy!

Membership is limitless. Invite your friends and neighbors to join you at local society meetings and shows and encourage them to join the AOS. The American Orchid Society is *the* most prestigious orchid society in the world. One of the best parts of being a member of the AOS is our *Orchids* magazine. It is published monthly and is full of incredible articles, tips and tricks of growing orchids and breathtaking, professional photos of award-winning orchids that will leave you in awe.

Orchids magazine has won numerous awards and is, by far, the finest orchid publication. Ron McHatton and Jean Allen-Ikeson deserve our gratitude for the wonderful work they do to get us this sensational magazine.

Earlier this year, the AOS launched the Orchid Marketplace where AOS members can discover premier orchid vendors in their community offering great deals. As an added bonus, members who sign up or renew for two years will also receive coupons worth hundreds of dollars they can use with the Elite Partners in the Orchid Marketplace. It is a win-win for everyone. Everything you need to know

is on the website.

In just a few months we will be celebrating the 100th anniversary of the American Orchid Society at the beautiful Biltmore Hotel in Coral Gables, Florida the week of April 6–9, 2022, along with the AOS spring members' meeting. There will be many exciting things happening that week, so mark your calendar to join us.

You can find all the information for the centennial celebration on the AOS website, www.aos.org. I can assure you this will be one event you will not want to miss.

Wishing all of you a wonderful New Year full of good health, and of course, orchids.

Happy growing, everyone!

— Bob Fuchs, President (email: bob@rforchids.com).



Left to right: Cheryl Erins, Jean Allen-Ikeson, Bob Fuchs and Ed Cott

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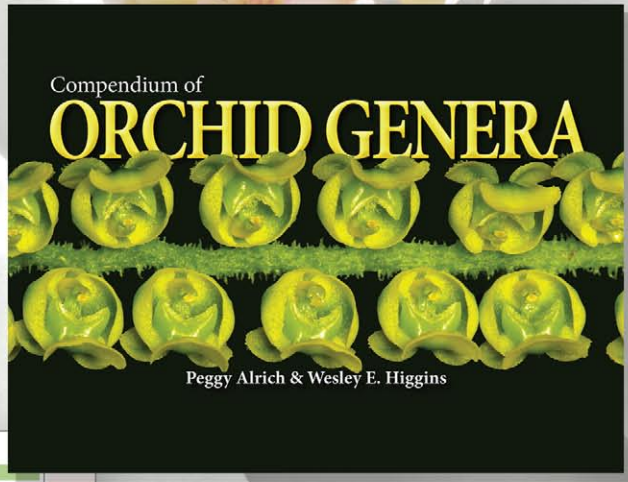
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Angraecum Bory
 (De Juss. *Ann. Bot.* 1: 39, t. 19 (1846).
Epidendroideae: Van der *Angroecium*)

ETYMOLOGY: From the Latinized form of the Malay word (*Angrak* or *Angrok*) for the epiphytic orchids that resemble *Ardisia* and *Yanda* in habit. The name *Angraecum* originated with Georg Eberhard Rumphius (1628-1702), who coined it from the word *Angrak*, a name or title given by the Sultans to "hereditary Epiphytic" plants, the meaning of which has not been discovered. From Engländer's *Kampher* (1651-1716) we learn that *Angrak* or *Angrok* is also the name used by the Javanese for figs plants.

GENETIVE: *Angraecum* *charentonii* Bory
 Illustration: *Angraecum* *sp.*

More than two-hundred twenty-one, very small to very large monopodial epiphytes, a few lithophytes or rare terrestrials have a wide range of distribution in humid, low to mid elevation, coastal to hill scrub, savanna to montane evergreen forests of mainly tropical Africa (Guinea to Somalia, Gabon to Zimbabwe and South Africa), Madagascar, Mauritius to Réunion, although one species is found as far away as the Seychelles and Sri Lanka. These miniature to large, rambling to clumpy-herbaceous, warm to cool growing plants are vegetatively and florally quite diverse. The short to long, sometimes branched stems are leafy throughout with fleshy to leathery, channeled, unequally bilobed, usually ditrichous leaves. The one to several, short to long, solitary to few-flowered inflorescences have long-lasting, small to large flowers in shades of white, ivory or green with sepals and petals free, usually spreading. The flowers are noted for their spurs of widely varying lengths from quite long to short. The flowers have a thick, almost leathery texture, an exceptionally long flowering period, and an extraordinarily heavy nocturnal fragrance (usually within the long spurred species) and the lip is larger than the other segments. The shell or boat-shaped, simple or obscurely lobed lip is usually quite concave, its base more or less encloses the column, and it has a central callus. The flowers have a very short, footless column with deeply divided lobes. Pollinia 2, waxy, each attached to its own narrow or elliptic viscidium, a *Culture* Growing conditions and habitat varies widely from species to species. Generally they do best mounted on a fern slab with good drainage and most of the species benefit from a cooling period of reduced watering. Pteridophyte intermedial conditions, bright to diffused light, high humidity and good air movement.

Valid Angraecum Synonyms

Aerobion Kamfer ex Sprengel
Syl. Veg. (Sprengel), ed. 16, 34: 279 & 716 (1836).
Ermoozon: Greek for air and life. Referring to the epiphytic habit of the plants.
Lacourrea: *Aerobion superbum* (Thouars) Sprengel (*Angraecum superbum* Thouars) designated by *Com. Bot.*, 36: 101 (1875).
 Now recognized as belonging to the genus *Angraecum*, *Aerobion* was previously considered to include twenty-five epiphytes found in warm, mid elevation, montane forests of Madagascar and the Mascarene Islands.

Angraecoides (Candolle) Schlachter, Mytnik & Goechko
Bull. Bot. Conservat., 29: 9 (2013).
Ermoozon: *Angraecum*, a genus of orchids, and Greek for likeness or form. Refers to a similarity to *Angraecum*.
Ten Sees: *Angraecoides piperis* (Trapp) Schlachter, Mytnik & Goechko (*Angraecum piperis* Frappet).
 Now recognized as belonging to the genus *Angraecum*, *Angraecoides* was previously considered to include twenty-five epiphytes found in cool, mid elevation, hill scrub and montane forests in northwestern Madagascar, Mauritius and Réunion.

Arachnangraecum (Schlechter) Schlachter, Mytnik & Goechko
Bull. Bot. Conservat., 29: 11 (2013).
Ermoozon: Greek for spider and *Angraecum*, a genus of orchids. Refers to the long, spider-like segments.
Ten Sees: *Arachnangraecum rimboutum* (Thouars) Schlachter, Mytnik & Goechko (*Angraecum rimboutum* Thouars).
 Now recognized as belonging to the genus *Angraecum*, *Arachnangraecum* was previously considered to include thirteen epiphytes found in cool, mid elevation, hill scrub and montane forests in found in northwestern Madagascar, Mauritius and Réunion.

Bonnieria Candolle
Jour. Gén. Bot., 13: 416, t. 10: 11 (1899).
Ermoozon: In appreciation of Eugène Marie Gaston Bonnier (1853-1922), a French botanist, editor of *Revue Générale de Botanique* and publisher of Candolle's notes on the orchids of Réunion.
Ten Sees: *Nove designat*
 Now recognized as belonging to the genus *Angraecum*, *Bonnieria* was previously considered to include two epiphytes found in mid to upper elevation, bushy montane rain forests of Réunion.

Boryanagraecum (Schlechter) Schlachter, Mytnik & Goechko
Bull. Bot. Conservat., 29: 12 (2013).
Ermoozon: Named for Jean Baptiste Bory de Saint-Vincent (1778-1846) a French naturalist and author of *Voyage dans les îles d'Afrique*. *And Angraecum*, a genus of orchids.
Ten Sees: *Boryanagraecum pumilio* (Schlechter) Schlachter, Mytnik & Goechko (*Angraecum pumilio* Schlechter).
 Now recognized as belonging to the genus *Angraecum*, *Boryanagraecum* was previously considered to include thirteen epiphytes found in cool, mid elevation, hill scrub and montane forests in found in Madagascar, Mauritius and Réunion.



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January: A Month for Biophilia

By Thomas Miranda

HAVE YOU EVER wondered why you are attracted to orchids? Or for that matter, plants in general? Why is it that we toil in gardens, that we pay more for property with a view or that we surround ourselves with natural beauty? The positive emotions we connect with nature cause us to seek its presence: taking a walk in the park, bringing plants indoors, preferring a window seat and overrepresenting natural environments in our lists of favorite places (and conversely, underrepresenting them in lists of unpleasant places) is the concept known as biophilia. Well, I know it to be an inherent part of being human. The presence of plants in our lives indicates environmental balance, sustenance and health. Indeed, we humans evolved to be a part of nature and despite the trappings of modernity, we still crave and depend on the presence of plants.



Thomas Miranda

I have used the email biophiliak@gmail.com for over 20 years after reading about the concept in E.O. Wilson's book, *The Biophilia Hypothesis*. I felt it perfectly described who

I was then, and still am today. I believe it to be especially potent and true for us orchid people. Most of us can agree that being near water and plants has a profound effect on our moods and pleasure centers in our brains. We only feel safe and nurtured in such environs — so much so, that I believe it to be a basic human need. In this month of new beginnings, and for many of us, a barren outdoor landscape, we are all thankful for the healing grace of the orchids we cultivate over the winter. Beyond this, I believe we should recognize and spread our passion for them with our friends and cohorts. In a world bereft of plants, we would suffer in many ways, as plants provide sustenance for both body and soul, from the air we breathe and the spirit we personify.

STREAMS AND WATERFALLS Water is the key to life and all of us, both plant and animal, are completely dependent on its presence. It is another reason why we seek out plants. As sessile beings, they require the water to come to them and therefore, we have the comfort of knowing there is available water when we see

lush areas such as where I live in Hawaii. Although many plants experience drought or cold in winter months, they certainly have plenty of water during the growing season when they store moisture and nutrients in succulent pseudobulbs and underground root systems in preparation for the less favorable growing conditions we experience now in the Northern Hemisphere. Plants with fleshy canes and pseudobulbs have evolved these storage organs to survive lengthy inclement periods in their natural habitats. So, we must learn about the dormant periods of all our plants to properly accommodate their needs.

A DRIER SEASON So many orchids require reduced watering or even complete drought this month as that is what occurs in their natural habitats. To survive, many completely shut down their metabolism. Watering plants such as catasetums, cynoches, habenarias and deciduous dendrobiums while they are dormant will only lead to rotting media and fungal diseases. Even plants that require some water in the winter such as cattleyas, oncidiums and phalaenopsis seem to prefer drying out somewhat more thoroughly when daylengths are shorter and temperatures lower. Indeed, if plants are not actively growing, water less and they may be more likely to bloom when they are no longer putting their energy resources into foliage.

DANCING IN THE CLOUDS The tropical orchids that grow at higher elevations where their environment always has available water, tend to grow almost year-round. Many plants that do not have pseudobulbs fall in this category, and need watering almost all year, sometimes even more is needed as such plants suffer and languish in the warmer months at temperatures that stress them out. Pleurothallids such as masdevallias and draculas actually might need more water and food this month than they do the rest of the year. Take advantage of the cooler temperatures this month, adventitious towards rampant growth in these apseudobulbous plants, by actually watering and feeding them more. Do not make the mistake that cloud forest plants require a winter dormancy.

BREEZY BEAUTIES One thing often underestimated in winter is the need for



WES NEWTON

Bulbophyllum averyanovii 'Fuzzy White Dice' CBR/AOS — a fascinating, deciduous miniature species grown by Laura and Wes Newton. Plants flower when deciduous on an inflorescence that starts out erect and then as the buds form, turns sharply pendent creating the impression of a complex lure suspended in midair over the tiny pseudo-bulbs. Individual flowers, densely covered in white hairs are just under 1/6th inch (0.4 cm) in natural spread.

gentle air movement. Orchids, especially montane species, need this when they are growing too, but it is even more important for any dormant plants. Even in the driest conditions, greenhouses will have condensation that could cause issues for sleeping plants. Gentle air movement is like Mother Nature's caress and allows for humidity to circulate without becoming stagnant and causing rot. After all, we all need a caress from Mother Nature from time to time. I think that is exactly what biophilia really is, the natural world touching, interacting with, and loving us in return for our attention and stewardship.

— Tom Miranda 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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Topic	Miltoniopsis	Greenhouse Chat (Orchid Q&A) <i>Send in your Questions!</i>	A Guide to Modern LED Lighting How to set up an indoor grow area	Greenhouse Chat (Orchid Q&A) <i>Send in your Questions!</i>
Presenter	Mark Whelan Retired Professor	Ron McHatton Chief Education and Science Officer	Kelly McCracken Owner High Desert Orchids, Miniature Orchid Specialist	Ron McHatton Chief Education and Science Officer

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Setting up an Orchid Society Conservation Committee – Ideas and Tips

By Mark Sullivan

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TO SIMPLY HOPE that conservation will happen is not enough. This article provides a step-by-step outline on how to organize a conservation committee in your orchid society. At the end of the article, there are links to various orchid society conservation committees as examples of how they are handling aspects of promoting and accomplishing conservation.

STRUCTURE OF A COMMITTEE

1. The choice of chairperson often comes down to a person who is willing to do the work. A procedure should be set up to select a conservation chairperson. Is it by conservation committee members, the orchid society's board or membership as a whole?

2. The chairperson is in charge of the whole committee (coordination, public relations, fund management, managing applications for funds, etc.) A donation person is needed for soliciting donations, arranging for storage and care of donated plants, inventory and transfer of plants to and from sales or auctions. A person is needed to coordinate the sales booth, develop signage, setup and organization of volunteers to work sales booths.

3. Set up a mechanism to account for your conservation committee's funds. The easiest way to handle this would be an account within the orchid society's accounting system. It should be an account where funds not used in a given year get carried forward to future years.

4. Funding of approved conservation projects. Is this by approval of the conservation committee alone, the orchid society's board, or the society membership at large? Getting a vote from the entire society for applications that have been approved by the conservation committee is good advertising. It helps to get the entire society involved and aware of what is going on with the conservation committee. You may spark more participation from members in the long run.

5. The orchid society, or at a minimum the conservation committee, needs to be a registered nonprofit for donors to be able to deduct charitable contributions from taxes. In the United

States, 501(c)(3) is the tax designation for corporations, and any community chest, fund, or foundation, organized and operated exclusively for religious, charitable, scientific, testing for public safety, literary, or educational purposes, and it is this tax exempt status you should apply for. There are other types of exempt organizations so it may be worth the investment to discuss your organization with an attorney skilled in the matter.

RAISING FUNDS

1. Direct Cash Contributions

a) The New Hampshire Orchid Society (NHOS) uses a donation jar in conjunction with their orchid conservation display. They use a gallon-size (3.785 L), clear glass vase found at a Goodwill store. They tape a plastic lid on the vase with a slot in it so that a hand cannot reach in and take money out. You can also place such a jar at a membership or other staffed table for extra security. The jar should also be used at any conservation talk. They have collected quite a bit of money this way.

b) Consider having a way people can donate through a website or social media webpage either with Paypal or an address to which checks can be sent.

2. Selling Orchid Plants at Shows and Society Meetings

In general, it is good to get the donor to help by providing an inventory and sale prices. Prices can always be adjusted. The more you can spread the work around, the easier it will be for everyone. The ideal would be to get donors to transport plants to the point of sale with an inventory list and sale prices. For those plants not sold, the donor cares for them until the next sale. The donor would be given a letter of donation with the total amount sold from their donated plants.

a) Donated Plants Challenges

First challenge is simply obtaining enough plants. Second challenge is getting a variety of orchids for sale.

The Conservation Committee could become a dumping ground for orchids that did not sell. You need to assess whether plants are worth the time and effort.

The third challenge is storing plants before the show. If space and time are an issue, ask people to donate orchids at the beginning of a show or meeting. Taking donations before a sale requires space, care, and transportation. The further from a sale you take in orchid donations, the more time and care. Care and storing of plants can be spread around among conservation members or consider hiring a board-and-care greenhouse, although this would cut into funds generated for conservation projects.

The fourth challenge is to assess the health (including pests) of the plant before accepting for donation. It makes no sense in accepting a plant that will not sell and which you might throw away.

b) Selling donated Orchids

A good banner over your booth that advertises orchids for sale for conservation will be invaluable. The San Francisco Orchid Society (SFOS) has an excellent one.

Pricing can be done by an orchid conservation committee member or by the donor. Prices can always be adjusted later. The San Diego Orchid Society (SDOS) Conservation Committee preprints a number of sturdy plastic tags with amounts of \$2, 5, 7, 10, 12, 15, 20, etc. They remove the tags when the plant sells or at the end of the show for future reuse. Sadly, it is inevitable that you will occasionally get people who switch price tags or remove the tags, so it is helpful to have a knowledgeable person in the booth and maintain a master list of prices.

When pricing at an event where vendors pay for a booth: you should be mindful and price plants competitively with vendors at the beginning of the show. You do not want to undercut your society's supporting vendors. Doing so hurts your society and leaves a bad taste in the vendors' mouths.

The Conservation Committee can have its own booth at a show or if there are few plants to sell, they can be included in your membership sales area and designated for conservation on an inventory sheet.

An inventory of all conservation

plants should be kept. The easiest way is a separate inventory sheet by donor as this will allow for easier tally of donated amount. Each plant should have an individual identifying code on the inventory sheet and on the orchid plant so that they can be tracked. An inventory sheet is needed by the donor if they are planning to use the noncash charitable contribution as a tax deduction.

Conservation orchid plants should be advertised by special sales tags or with specially marked plant labels.

To divide or not divide? When a large specimen plant is donated, the SDOS Conservation Committee used to consider dividing it and selling divisions. Now they do not divide specimen plants. They aim to sell it quickly at a good price. Dividing is not worth the time and effort, often creates lots of leftovers, and it takes time for divisions to establish.

Organize orchid plants by type or ease of growing in your area. You want to match orchids to the skill level of the purchaser so that they can succeed and buy more.

Consider taking donations of other related orchid items such as books, Spanish moss, potting material, etc.

At the sales booth, it is better to have one person as the designated cashier.

Bring spare pens, markers, paper, and cash to make change. If you think you have the entire list, rethink it.

c) Determination of value

The value of a donation should be the fair-market value of the plant based on type, size, and health. The cleanest approach to determination of value is for the donor to own the plant until the time of sale and upon the sale, the cash is donated to the Conservation Committee. Handled this way, the fair value is easy to determine and the contribution is considered a charitable cash contribution. Charitable cash contributions are clear-cut and not likely to raise the scrutiny of the IRS.

If a donor leaves unsold plants to the conservation committee, these are considered to be in-kind (or non-cash) contributions and the donor is responsible for determination of value.

d) Disposition of unsold Plants

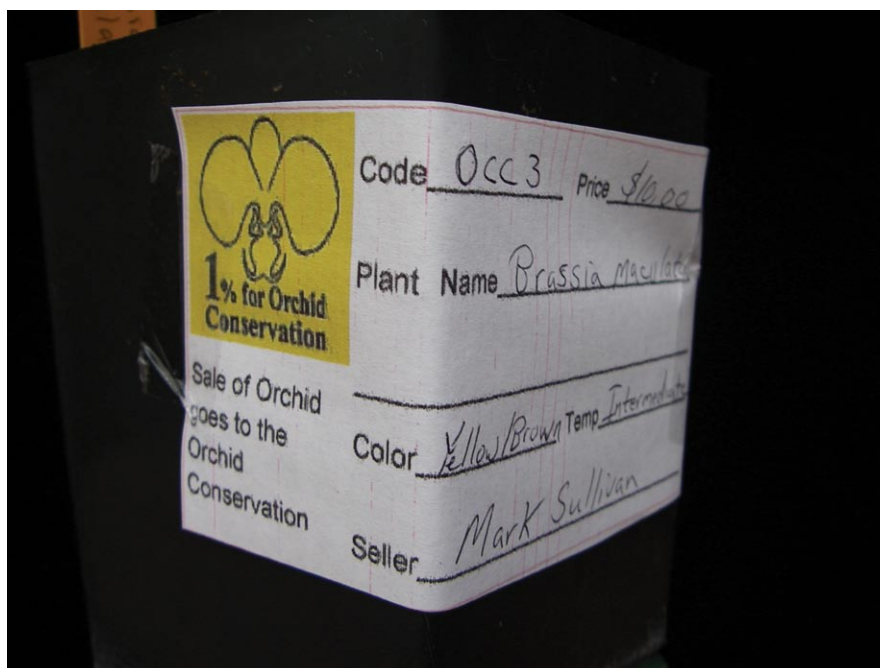
If the donor does not pick up unsold plants, the decision as to whether a particular plant should be kept or tossed should be made based on health of the plant, availability of space for boarding and care until the next sale opportunity, and likelihood of future sale.

Assuming that plants are healthy,



**San Francisco Orchid Society
Conservation Committee**

100% of proceeds go to orchid conservation
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[1] The San Francisco Orchid Society has prepared this oversized, colorful banner used to direct show visitors to their Conservation Committee's spot in the vendor area.

[2] Sample donor tag.

other solutions include giving them away to other members, especially new members, or to raffle them. This accomplishes two things: less work and spreads goodwill to the membership. Members who receive orchids may in the future be willing to donate orchids to conservation or join the conservation committee.

You should arrange for the distribution of unsold plants before the sale event.

CONSERVATION COMMITTEE GRANTS

Set up a webpage on your orchid society's website. It should list the requirements and have an explanation of the process

It is helpful to all involved to have an application form to be filled out for submission. This helps to make sure all necessary information is submitted. A systematic application process will make it easier to evaluate, compare, and discuss

projects among committee members projects. You can download a sample application form provided in .doc format and manipulate it for your own needs from other societies.

The criteria for application should be listed on your conservation committee webpage. This allows a person or organization to assess whether or not their project would be a good fit to start the application process. Possible criteria include but are not limited to: geographic limitation, time limitation, amount of the awarded grant, whether it is a one-time grant or can be ongoing, whether funds can be used as part of an overall project budget, institutional backing, research allowed, in-situ or ex-situ study allowed, references needed, letter(s) of recommendation, and education level. You should also consider what you will not fund. The SDOS Conservation Committee

does not fund the purchase of land. They also have a limit of \$2,500 for a grant proposal and that cannot be less than 10% of a project's overall budget.

Submission and Notification of Application Deadline

You may want a single, annual application deadline. An open-end application process will be more work for your conservation committee. A notification to applicants does two things. It puts the conservation committee on a deadline to get its work done and inquiry will be held to a minimum. The New Hampshire Conservation Committee has an open-end application process. The San Diego and SFOS Conservation Committees have specific dates.

Consider local projects that can be funded, can be provided nonmonetary funding (volunteers) or a combination of both.

The NHOS Conservation Committee has donated expertise, plants, and labor to a few local projects that have helped them provide publicity and make use of excess pots, plants and growing materials. They purchased some plants and materials from a local vendor for use in these projects. No direct money was given to the project

You should have a point person to whom the reviews are submitted and who can distribute the submissions. Do not forget to put contact information on your webpage! This person should make sure the overall application process is followed from review by committee, to scoring or grading, and with results submitted to the committee and the applicant. This person should be willing to answer questions throughout the year. The solicitation of applications for review can be advertised on internet orchid forums and on the Orchid Conservation Coalition website (www.orchidconservationcoalition.org) and newsletter. Prepare a short, brief statement of what you are asking for, where to find more information to submit a grant, and a contact email address.

Review and Approval of Application(s)

Applications should be reviewed singularly and not compared. Comparative review tends to set up the best of the bunch for approval, while in reality none may be worth funding. The grant application should be viewed as a work in progress, not a final document. Do not be afraid to ask for clarification, additional information, make alterations on a suggested budget, and fund some, none, or all of it, now, and in the future. Some good questions include: What

difference will this funding make? What would happen if a conservation project was not funded?

After discussion, open approval of an application can simply be done by a yes-or-no vote by the committee or you can use some sort of scoring scale where each committee member scores each application on a scale of 0—5 or 0—10. The scores are then added together for an application and divided by the number of reviewers to arrive at an average score. You can set a minimum score that an application must reach for funding or continue discussion on the top-scoring application(s) if merited.

Informing Applicant(s) of the Decision

It is important to inform all applicants of the decision on their application. It would be beneficial to inform rejected applicants as to why, so they can improve their applications in the future. Sometimes you just do not have enough money to fund all the projects submitted. I highly advise that you encourage conservation applicants to continue as the whole purpose of a conservation committee is to encourage conservation. Especially in the beginning, you may want to get feedback comments from applicants about the application procedure or an online survey can be conducted.

Funded Application(s)

You should have a written contract or agreement with the person or institution receiving the grant. You should specify that the granted money is to be used as outlined in the grant application. You will want to require a final report about the results of the project or research. If it is a long-term project, you will probably want periodic reports. If a project never gets off the ground, you will want your money back. These things should be spelled out in the contractual agreement. If you do not have a contract, consider the grant a “no-strings-attached” donation as it will not be legally enforceable.

Currency Exchange with International Funding of Grants

The Orchid Conservation Alliance (OCA) handles transfer fees and currency conversion on a case-by-case basis based on the question of who needs money more. The San Diego Orchid Society Conservation Committee pays wire transfer fees, although currency conversion occurs at the recipient's end and is paid by the recipient. This could be 4% or more of the amount converted.

Conservation Award History

It is a good idea to have a webpage listing your conservation awards that have been given out each year.

One last consideration is to become aware of similar conservation groups and plant groups in your area. There may be opportunities to team up or learn of opportunities. This article was based on the cumulative experience of multiple people from SDOS, NHOS, OCA, SFOS and the Naples Orchid Society. Links to orchid society conservation committee webpages:

The Native Orchid Conference Fred Case Grant link to application form: <https://www.nativeorchidconference.org/fred-case-grant>

The New Hampshire Orchid Society Conservation Committee <https://www.nhorchids.org/page-1579475>

The San Diego Orchid Society Conservation Committee <https://www.sdorchids.com/ConsFunding.html>

The San Francisco Orchid Society Conservation Committee: <https://www.orchidsanfrancisco.org/conservation.html>

The Orchid Conservation Alliance: <https://orchidconservationalliance.org/>

Orchid Conservation Coalition: <https://www.orchidconservationcoalition.org/pr/bluestem.html>

— *Mark Sullivan has been involved in orchid conservation for decades. He is currently a member of the AOS Conservation Committee (marksullivan@orchidconservationcoalition.org).*

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QUESTIONS AND ANSWERS

LEAF LOSS



QUESTION

Why are these leaves turning from yellow to brown? The plant is mounted hanging in a light cart on the short end of T5s. This was growing well when I had it hanging in the windowsill.

ANSWER

Terete (or pencil-shaped) leaved brassavolas are adapted to need very bright light. I think what I see here is a classic stress response from being moved to a much lower light environment. The actual damage to the leaves is likely caused by a fungal or bacterial pathogen but you need to get to the root cause or it is a constant fight to control.

I suspect, in this case, that the plant is not getting enough light and maybe water, which causes the plant to become susceptible to any number of bacterial or fungal problems and shed leaves. The light intensity of linear or rectangular light fixtures is highest in the middle of the bulb and decreases (sometimes very dramatically) toward the end of the bulb and from the center out toward the sides. I suspect that hanging under the ends of your light fixtures is simply not providing sufficient light and I would first move the plant to the middle of the fixture and see what happens. Additional sources of stress could be a significant temperature change from the windowsill to your lighted growing area as well as the actual spectral mix of the light fixtures

(especially LED fixtures). Both issues could be contributing factors.

UNRULY ROOTS



QUESTION

How can I repot this plant with this long root growing out of the drainage slot in the pot?

ANSWER

I have this same type of problem in my greenhouse where the roots grow out the drainage holes and wrap around my wire benches. Some of my plants are so well rooted to the bench that I think we could have a hurricane and they would not move.

The simple answer here is to just trim the root, as the piece left attached will branch and send out more roots actually leading to a more sturdy root system. You should not be concerned with trimming roots during repotting. Better to trim the roots to fit comfortably in the new pot than to wind them around at the bottom of the pot where they will likely die anyway. If you want to save the root (which is also fine) simply enlarge the drainage slot enough to where you can slowly and gently pull the root through it as you remove the plant from the pot. And, do not worry if the root breaks in the process. Simple breaks will heal and the root will continue to function.

Some phalaenopsis growers routinely trim all the roots at potting time to the width of the palm of their hand and cymbidium growers think nothing of cutting at least a third of the root system back during repotting.

CATTLEYA NOT THRIVING



QUESTION

I received a blooming size plant of *Cattleya* Mrs Mahler 'Fred Tompkins' AM/AOS several years ago. It has never bloomed, new growths do not grow vigorously, and eventually the older leaves develop brown spots, turn yellow and drop off one at a time until only the stem is left and it will slowly shrivel up and become brown and woody. I have sprayed it with insecticidal soap, repotted it, and nothing helps. What is wrong?

ANSWER

There are several potential causes. Often, the most outward symptom of a virus infection is a plant that simply does not thrive and one can test for this fairly simply. Insufficient water and low humidity can also result in a plant that barely hangs on because it is just starving for water. Lastly, and actually quite commonly, the plant's root system is infected with fusarium. This is especially common in hot humid climates such as Florida. Fusarium does not kill the plant outright but interferes with the roots ability to absorb and transport water. Infected plants with sympodial growth habit such as cattleyas will produce new growth that starts out looking ok but as the fungus invades the newly developing rhizome and roots, the growth becomes starved for water and nutrients and will simply not thrive. Older growths slowly shrivel, lose their leaves and eventually become brown and woody. In monopodials such as vandas, the lower roots shrivel and the plant loses lower leaves. Infected plants will have a few uppermost roots that look ok but as the fungus advances up the stem, these roots will, in turn, shrivel up and more leaves will be lost. If not stopped, the infection

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.

QUESTIONS AND ANSWERS

will slowly kill the entire plant.

Infected plants can be treated with a good systemic fungicide such as Thiomyd or one of the newer products such as Pageant and Heritage. The advantage of Thiomyd is that it is readily available to the hobbyist, inexpensive and yet works well. Effective treatment involves applying the fungicide as a drench to the entire plant and repeating at two-week intervals for several months. Periodic applications, especially in advance of hot, wet periods, can be helpful to maintain control. When you repot a plant like this, take off everything that is leafless and as much of the infected root system as you can. As you rid the plant of the fungus, you will notice new growth with much more vigor and new roots that remain healthy over time.

OVERGROWN PLANT

QUESTION

How do I repot my large old bifoliate cattleya without damaging the plant?



Plastic pot slipped into larger plastic pot (red arrow) and the space around the inner pot filled with fresh potting medium to allow the plant to continue growing undisturbed.

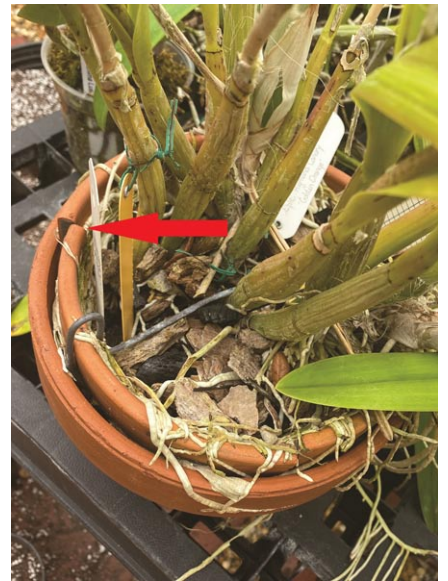
ANSWER

If your plant produces only one new lead at a time, you can annex a new pot directly in front of the lead and allow the plant to grow into the pot of new medium and then when proper repotting time comes, you can slip the plant out of both pots, trim off the older backbulbs and repot the whole thing into a new, appropriately sized pot causing minimal damage to the root system. This works

particularly well with bifoliate cattleyas that resent being repotted unless they are actively making new roots and that is often just before blooming.

If the plant makes multiple new growths in several different directions, you can actually slip the entire plant, pot an all, into a new pot that is just slightly bigger than the old one and allow the plant to continue growing with no disturbance. This works particularly well with plants in clay pots but it will also work for those in plastic. If the pot is clay, you can break the pot with a hammer before slipping it into the new pot and the existing root system will grow around the pot shards. If there is a gap between the old pot and new pot, it can be filled with additional potting mix. In this respect, it is similar to slipping plants grown in wooden baskets into larger baskets.

If you use plastic pots, cut out the bottom of the old pot and cut holes in the sides so allow for extra drainage and ventilation. By the time that the medium in the old pot breaks down, the plant will have grown into the new pot and away from that interior pot.



Clay pot slipped into larger clay pot. Note the inner clay pot has been broken to aid in drainage (red arrow).

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COLLECTOR'S ITEM

Cattleya (Sophronitis) cernua

(Lindl.) Lindl. 1838 (and its culture)

By Judith Rapacz-Hasler



SYNONYMS *Cattleya cernua* (Lindley) Beer 1854; *Cattleya cernua* (Lindl.) ined.; *Cattleya pterocarpa* (Lindl. & Paxton) Beer 1854; *Epidendrum humile* Vell. 1881; *Sophronia cernua* Lindl. 1827; *Sophronia modesta* Lindl. 1827; *Sophronia pterocarpa* (Lindl. & Paxton) Kuntze 1891; *Sophronitis cernua* var. *alagoensis* Gomes Ferreira 1998; *Sophronitis cernua* var. *albiflora* Cogn. 1907; *Sophronitis cernua* var. *endsfeldzii* Pabst 1971; *Sophronitis cernua* var. *litoranea* hort.; *Sophronitis cernua* var. *mineira* hort.; *Sophronitis hoffmannseggii* Rchb.f 1842; *Sophronitis isopetala* Hoffmanssegg 1842; *Sophronitis modesta* Lindley 1828 misspell; *Sophronitis nutans* Hoffmanssegg 1842; *Sophronitis pterocarpa* Lindl. & Paxt. 1853.

Cattleya cernua, also known as nodding sophronitis (Greek Sophros-chaste, modest, small), is a miniature-sized species that grows from southeastern Brazil to northeastern Argentina, but can be found as far inland as Bolivia and Paraguay. The former genus *Sophronitis* included nine species that have been moved to the genus *Cattleya*. They share as main characteristics the fact that the plants are small, the pseudobulbs grouped, the lip sessile and at the base of the column, small wings on the sides of the stigmatic cavity and a small column with eight pollinia. The color of the flowers is mostly red, but varieties can be yellow, salmon pink, coral, pink and red, whereas albas are rare. *Sophronia cernua* Lindl. 1827 was the type species of the genus *Sophronitis* until the genus was made synonymous with *Cattleya*.

Cattleya cernua grows epiphytically and occasionally lithophytically in a warm climate. Plants typically flower in the fall but may also sporadically flower in the spring. The densely clustered, subcylindrical or ovate pseudobulbs may bear two or three basal nodes and a single, apical, thickly coriaceous, broadly ovate or elliptic-ovate, obtuse or minutely apiculate leaf. Flowers are borne terminally and without a sheath. This species can be found in Espirito Santo south to Sao Paulo State by the sea on rocky slopes or trees, often so close to the sea that a light salt spray can reach it. They can be found in the mangrove hammocks by the sea and then, going inland to the coastal plain, high above the canopy in lowland trees at elevations of about 3,280 to 4,920 feet (1,000–1,500 m) in misty and humid conditions, but with full sun and a constant breeze, so they stay dry even though they are in rainforest conditions.

CULTURE *Cattleya cernua* requires



high humidity and is best cultivated on cork or tree fern, but with only moderate shade. Alternatively, they can be successfully grown in pots in a mixture of a large bark with charcoal and sphagnum moss (up to 60 percent). This species thrives in bright sunlight and plants are able to tolerate direct morning and evening sun; however, in the hot summer noon (especially on windowsills with southern orientation) plants should be protected from direct sunlight behind a sheer curtain (for example), placed on a table a short distance from the window or in the shade of other plants. Otherwise, plants may be subject to sunburn. Bright sunlight is one of the main prerequisites for flowering plants of this species, and if insufficient light is provided, plants simply do not bloom as new pseudobulbs grow underdeveloped and incapable of flowering. Under lights, plants benefit from a minimum of 10 hours of illumination throughout the year.

In the natural habitat, the relative humidity throughout the year is 75–90 percent. In this condition of high humidity, regular ventilation of the growing space is crucial because wet, stale air is an ideal medium for the mass reproduction of various fungal and bacterial diseases.

Watering this species depends on the overall temperature where it is kept — the higher the temperature, the more often it is necessary to water or mist. Plants growing on mounts should be watered daily in the morning, so that by evening the roots have dried out.

This species does not need a rest period for flowering or during the winter months. Failure to flower can be caused by insufficient light, overheating or the absence of a nighttime temperature drop to 59 F (15 C) or lower. Because plants

[1] *Cattleya cernua* 'KG's Candied Yam' HCC/AOS. Grown and photographed by Greg Allikas.

[2] A rare aureum form of *C. cernua*. 'Kanae' AM/AOS was grown by Peter T. Lin.

are susceptible to salt buildup, regular flushing with plain water is important, as is the need to water before fertilizer application. Fertilize frequently, using a good, water-soluble fertilizer, for example 8-8-7 (NPK) with trace elements. When in active growth, fertilize every week at ¼ the concentration recommended, and every other week when they are resting. Pot size is not critical with these species, but avoid using too small a pot. Repot plants every two years or whenever the medium begins to break down. Tree fern pots are ideal, but both clay and plastic pots will also work.

Growers of this species in Brazil recommend plunging the roots into a very humid medium, which permits the formation of a green layer of moss on the surface.

There are a number of intergeneric hybrids with *C. cernua* with the genera *Cattleya*, *Laelia*, *Epidendrum* and *Brassavola* among others. These crosses have resulted in plants of small size and relatively large flowers, especially for windowsill growers.

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— Judith Rapacz-Hasler is a member of the AOS editorial board, spending half the year on Florida's west coast and the remainder in Europe (email: jorapacz@wisc.edu).

After the Cull

Text by Sue Bottom/Photographs by Terry Bottom

CULLING YOUR ORCHID collection to remove the weak sisters is a difficult concept to adopt as your routine practice. It seems natural to want to nurture that ailing orchid back to health. You think you should pot up all those tired backbulbs to give them another chance. You wonder if you are a failure at orchid growing when a plant in your care declines. The sooner you can shed these feelings of kindheartedness and inadequacy, the sooner you can tailor your collection to include only the most vigorously growing and flowering plants.

This is the year I decided I wanted a virus-free cattleya collection. Little did I know how this would decimate my collection. About a third of the cattleyas with no obvious symptoms of virus tested positive for Cymbidium Mosaic Virus or Odontoglossum Ringspot Virus. With a few exceptions, they were discarded leaving large empty spaces on the greenhouse benches and a very depressed orchid grower. After a month of mourning and an emergency order of bifoliate seedlings from Fred Clarke, I realized I finally had the bench space to move all those seedlings I keep buying into 5-inch (12.5 cm) pots. It is such a pleasure to walk through the greenhouse and see nothing but vigorously growing plants.

Overcrowding is another problem best avoided. This is not to say that you should stop buying orchids; perish the thought! You can often find new niches that your orchids will just love to inhabit. Once you finally run out of real estate, you may have to eliminate an orchid for each one you bring home. Better that than trying to smush them all together so you do not have enough air movement, not to mention room for their flowers to display properly.

Be careful of Greeks bearing gifts, like when you get the phone call from an aging orchidist that their orchids are available free or for a nominal cost. Sometimes the orchidist may not have been able to properly care for their plants for a period of time before you receive the phone call. When I was in the height of my vanda obsession, I got that phone call and many new vandas came home with me. It has taken years for me to cull the diseased plants and those with unexplained poor growth. This year is the first that I can





walk through the vanda house and enjoy each and every plant I see. Of course, the pure water from the reverse osmosis system together with proper spacing have contributed mightily to the better growth and flowering.

It is important to learn from your mistakes, and to learn what pests and diseases can cause problems so you can do your best to prevent them from recurring. Scale or mealybug infestations can be treated fairly easily if caught early enough. You may have to repeat the chemical treatment and accept the damage that was caused, but the pests can be eliminated reasonably easily. Damage from many of the fungal pathogens is more insidious. Once the disease enters the plant, it can be carried through the vascular system and be difficult to eradicate, even after cutting away the damaged tissue. Once you become comfortable with diagnosing the various ills that may befall your plants, you should be able to administer first aid before the problem negatively impacts the overall health of the plant. Once the plant goes into decline, returning it to health can be a long, hard and sometimes unsuccessful battle.

You may think it is hard to throw out that struggling plant. What is really hard is to stroll through your growing area and see disease and poor growth. The pleasure in walking down the aisle and seeing plant after plant with new, luscious growth and fattening flower buds is beyond description. To make your growing area your little slice of heaven, specialize in growing only the healthiest and happiest plants. Kick back and smell the orchids!

— Sue Bottom started growing orchids in Houston in the mid-1990s after her husband Terry built her first greenhouse. They settled into St. Augustine, Florida, Sue with her orchids and Terry with his camera and are active in the St. Augustine Orchid Society, maintaining the Society's website and publishing its monthly newsletter. Sue is also a member of the AOS Editorial Board (email: sbottom15@gmail.com).

- [1] Do you really want to run a hospital ward for sick orchids?
- [2] Anticipation . . . waiting for your seedlings to bloom for the first time!
- [3] Can you really enjoy orchids sitting on an overcrowded bench? This cattleya had six flower spikes blooming every which way, but there was no pleasure in its presentation.
- [4] The vandas look better than ever this year — look at those roots.
- [5] *Aerides Punctinello* blooming with over 20 flower spikes, grown slightly shadier than most vandas.

Catasetinae Growing Tips

Text and photographs by Fred Clarke

Managing Dormancy

NOW THAT WINTER has really set in, your catasetums and cynoches will have matured their growths and, for the most part, finished flowering, but there are always a few late bloomers that should be on their way to dormancy soon. Mormodes will be finishing up their bloom season, and now it is time for many of the *Clowesia* species and hybrids to flower.

The onset of dormancy is caused by several factors: the maturity of the pseudobulb, shortening day length, cooler day and night temperatures and a reduction of root zone moisture. The yellowing and dropping of leaves signal the beginning of dormancy. Now is the time to stop fertilizing and cut back on watering frequency, simulating the end of the wet season in nature. This change in culture will cause the pseudobulbs to harden off in preparation for the upcoming months of dormancy. When most leaves are yellowed and have fallen off, cease watering altogether. This marks the start of the dormant period.

Those of you in Florida and the southern states will have dormant plants now, and it is possible that some of you may start to see the first beginnings of new growth.

Some catasetums, cynoches, clowesias and most mormodes begin their flowering season at the end of the growing season, coinciding with the changing environmental conditions, and the onset of leaf yellowing or during dormancy. In these cases, it is natural for the inflorescences and blooms to begin while you are reducing irrigation frequency. Some plants do not even start to develop inflorescence until well after all water is stopped and the plant is totally leafless!

The gradual backing off watering frequency and an increasing longer dry interval is accepted by the plants without complaint — but of course there are always exceptions. If your plant pseudobulb shows signs of shriveling late in the dry season, usually one or two waterings will quickly plump it back up.

Not all plants lose all of their green leaves when dormant, and it is not uncommon for some to hold a few leaves well past the point when irrigation has stopped.

The onset of dormancy generally occurs naturally; however, when plants are cultivated in consistently warm growing



areas, such as in the home or under lights, dormancy sometimes needs to be encouraged. I have found that managing irrigation is one of the best tools to trigger dormancy. If you still have plants in with a full complement of green leaves, it is time (actually December would have been even better) to take a more aggressive approach. Allow the media to become dry, regardless of the number of green leaves. Let the medium stay dry for 4–5 days then water sparingly, about one or two ounces (30–60 ml) of water. The water may flow right through the medium, and that is okay. Allow the medium to dry and wait 5–6 days before following the same stingy irrigation procedure. Repeat this process, increasing the dry interval between watering. This will trigger dormancy in plants that are resisting the transition.

It is important to get your *Catasetinae* into the dormant stage now and provide them with an adequate rest period so that they will “wake up” early in the spring to a long growing season that will help them to develop big bulbs and lots of flowers!

I have been getting questions about indoor light levels during dormancy. It is best to keep the plants in nearly the same light levels as in the growing season: target 2,000–2,500 footcandles (comparable to light provided cattleyas). It is easy to download a footcandle reader app for your phone. If you are growing under lights, you do need to adjust the daylength throughout the year, as all *Catasetinae* experience seasonal changes in the daylight hours per day. This adjustment is important for all your orchids that come from areas where daylength changes during the year.

If you have had challenges overwintering your *Catasetinae* plants, due to excessive dehydration, perhaps caused by long periods of low humidity. Here is a solution being used successfully by some ingenious growers in locations with low winter humidity.

Set the pot in a jar of water, making a loose-fitting seal with the rim of the jar. The water should not touch the bottom of the pot and for best results it should be 2–3 inches (5–7.5 cm) below the bottom of the pot. The water reservoir will maintain high humidity around the roots, while the plant remains dry during dormancy. This innovative technique produces great results! We have had lots of positive feedback from growers using this method.

As my *Catasetinae* go to “sleep” for the winter I am reminded of the words of Shelley: “If winter comes, can spring be far behind?”



- [1] The first signs of approaching dormancy are usually evident in December.
- [2] These six plants illustrate the progression of *Catasetinae* into dormancy, from left to right: 1) leaf tip yellowing, 2) leaf yellowing, browning and abscission, 3) more yellow leaves, tip die back and leaf drop, 4) obvious missing leaves at base, 5) two leaves remaining, 6) leafless plant.
- [3] By January, most plants should be completely dormant.
- [4–5] At the onset of dormancy, pseudo-bulbs may shrivel a bit. One or two waterings usually plumps them back up.
- [6] Water reservoir used to maintain humidity around the roots of a dormant plant.

—Fred Clarke owns and operates *Sunset Valley Orchids*, which is dedicated to developing hybrids and producing select species for the orchid enthusiast. He has been growing orchids for over 42 years and hybridizing for 40 of those years. He is committed to the education of orchid hobbyists around the world in the culture of their plants. Fred is an

accredited American Orchid Society judge in the Pacific South judging region. His hybrids have received hundreds of quality awards for orchid enthusiasts from the American Orchid Society and other orchid societies worldwide (website: www.sunsetvalleyorchids.com, email: fred.clarke@att.net).

HOME REMEDIES

— Rather than expensive and potentially dangerous herbicides, spray full-strength vinegar to kill weeds between pavers and on greenhouse floors. (Do not spray on orchids.)

— Aspirin (just ¼ of one 325 mg tablet per gallon of water) helps protect plants from fungal and viral pathogens when used as a spray. More is NOT better. Do not exceed this amount.

— Homemade insecticide (mix in a 1 gallon [3.8 L] jug): 1 pint (0.5 L) rubbing alcohol, 1 pint (0.5 L) 409 spray cleaner, and 3 quarts (2.8 L) water. Apply as a spray.

— Isopropyl (rubbing) alcohol can be put into an empty spray bottle and used to treat scale, mealybugs, thrips, aphids, red spider mites and perhaps other pests. It works only while wet and must contact the insect.

— Neosporin has been reportedly used to treat orchid crown rot; remove rotted area of plant before treatment.

Call for Grants!

Each year, the AOS offers grants for work in education, conservation and research. It is that time of year!

EDUCATION

The AOS Education Committee will be accepting applications for education grants from November 1, 2021 through February 1, 2022. Applicants will be notified of status in May 2022.

Education grants support the development, implementation, maintenance or support for comprehensive educational programs and activities that embrace learners of any age level and promote passion for orchids through education. We are seeking applicants engaging in a wide range of projects.

Requirements include an article featuring the project submitted for publication in *Orchids* magazine following completion, and a webinar about the project to be used for educational purposes. Multiyear projects are funded on an annual basis upon submission of a report due by March 14 on work from the previous year.

Application forms are available with instructions on the AOS website at [aos.org](https://www.aos.org). Use the All About Orchids menu and click on Education Grant Program, or contact the AOS Education Committee directly at education_committee@aos.org for an application or to answer any questions regarding the grants. If the project is also suitable for conservation or research grants, those applications must be submitted separately to the respective committees.

Good luck! — *Phyllis S. Prestia, EdD, Chair, AOS Education Committee.*

CONSERVATION

All conservation-oriented projects, anywhere in the world, will be considered. An institutional affiliation is required for administration of international grants. We are seeking applicants engaging in a wide range of projects that study, protect or restore orchids and their natural habitats. Conservation grants are intended to encourage a more practical, applied, hands-on approach. We require all projects to be reported on annually, and that an article featuring your project be submitted for publication in *Orchids* magazine within six months of completion. Multiyear projects are funded on an annual basis after a required satisfactory progress report has been submitted by March 14 on work

from the previous year. Applications must be submitted on the application form, which is available with instructions on the AOS website at <https://www.aos.org/about-us/orchid-conservation/grant-application.aspx>. Your grant may be more suited for either a research or education grant, which are also available, but those applications must be submitted separately to their respective committees. Please contact the Conservation Committee at conservation_committee@aos.org with any questions in advance of the February 1, 2022 deadline. All applicants will be notified of their acceptance status by May 1, 2022.

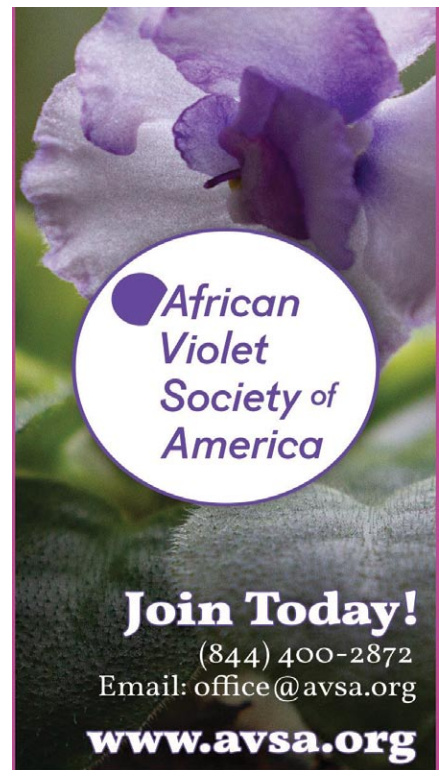
Good luck! — *Charles Wilson, Chair, AOS Conservation Committee.*

RESEARCH

All orchid research projects, anywhere in the world, will be considered. An institutional affiliation is required for administration of international grants. We are seeking applicants engaging in a wide range of research projects with a focus on orchids, such as anatomy, biogeography, conservation science, development, ecology, evolution, genetics, horticulture, morphology, physiology, propagation, systematics and so on. We require all projects to be reported on annually, and that an article featuring your project be submitted for publication in *Orchids* magazine within six months of completion. Multiyear projects are funded on an annual basis when a satisfactory progress report on work from the previous year is submitted by March 14. Applications must be submitted on the application form, which is available with instructions

on the AOS website at <https://www.aos.org/about-us/orchid-research/application-guidelines.aspx>. Your grant may be more suited for a conservation or education grant, which are also available, but applications for these must be submitted separately to their respective committees. Please contact the Research Committee at research_committee@aos.org with any questions in advance of the February 1, 2022 deadline. All applicants will be notified of their acceptance status by May 1, 2022.

Good luck! — *Robert J. Griesbach, PhD, Chair, AOS Research Committee.*



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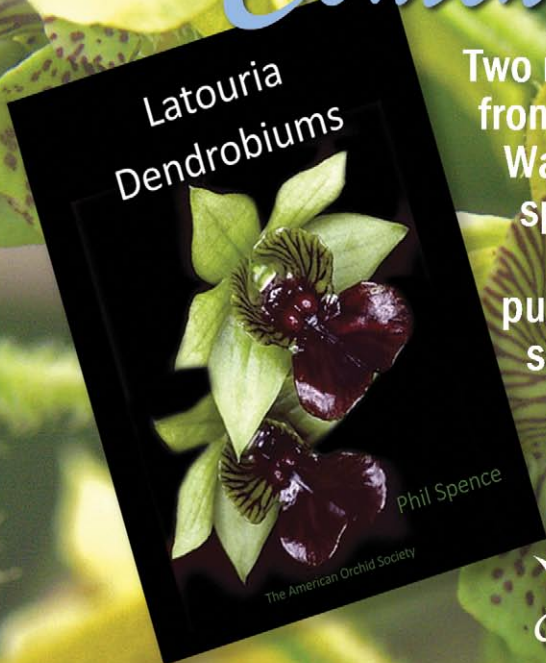


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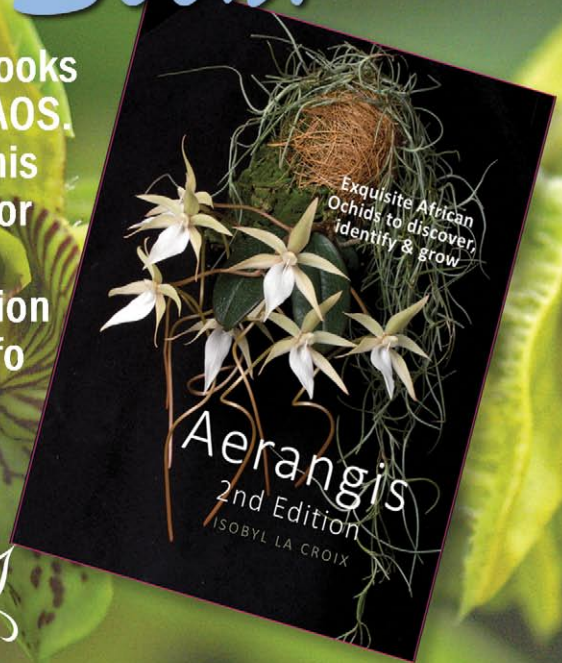
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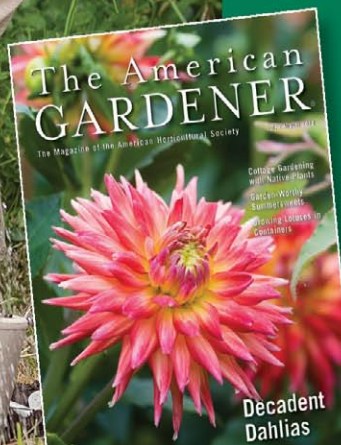
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Will the Real *Brassavola cucullata* Please Stand Up

BY THOMAS MIRENDA AND CLAUDE W. HAMILTON

Brassavolas are beloved plants in the world of orchid horticulture. Emitting fantastical nocturnal fragrances to attract their moth pollinators, most species are easily grown and bloomed in warm or intermediate conditions. These lowland members of the Cattleya Alliance (Laeliinae) are often grown into incredibly floriferous specimens, and used extensively in breeding to create novelty hybrids with unique and graceful characteristics when combined with more colorful cattleyas and laelias. I am always looking for new forms and unusual species to add to my collection.

This past summer, I had the honor and pleasure of hosting Claude and Philip Hamilton as well as Philip's spectacular spouse, Liz, here in our beautiful house in Pepeekeo on Hawaii Island (aka the Big Island). Because Claude is the owner of Hamlyn Orchids in Jamaica, I was hoping some species from his nursery could be imported at the time, and indeed, a list of wonderful species was forwarded. Among the treasures listed was a *Brassavola* species I was not (I thought) familiar with: *Brassavola appendiculata*, so of course, I ordered a couple.

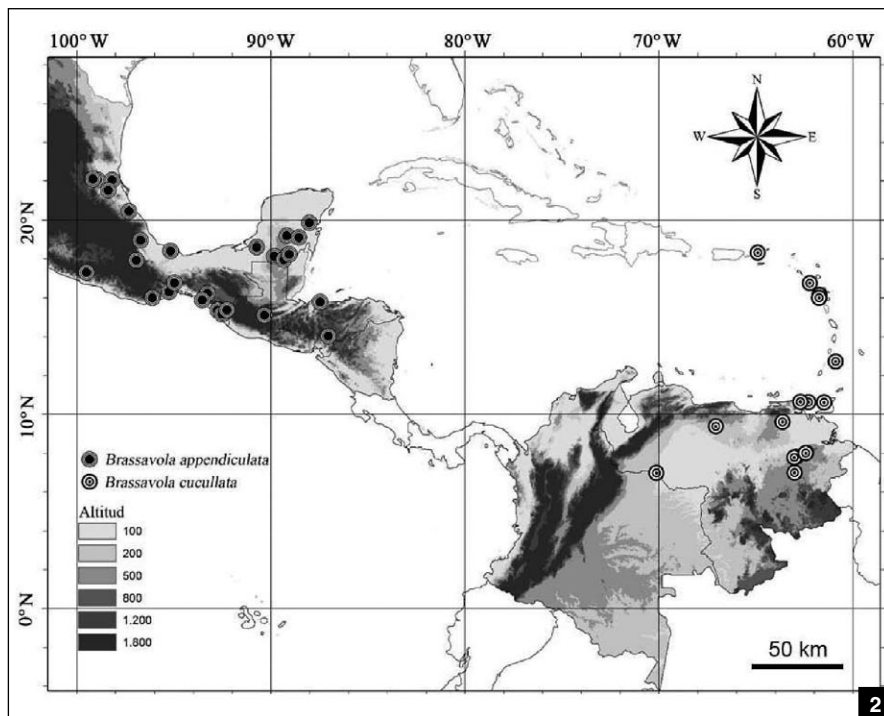
Upon arrival, Claude, being very well informed on the species he grows, looked at my brassavolas and concluded that the plants I had labeled as *Brassavola cucullata* were actually the aforementioned *B. appendiculata* and that I had most likely never even seen a plant of the true *B. cucullata* as there are so very few in cultivation. Although it was a bit disturbing to realize that the well-known and beloved plant with the pencil-thin, terete pseudobulbs and leaves was incorrectly labeled by virtually everyone for decades, I thought it important to understand the difference between the two species and indeed, explain those differences to everyone that might be growing these plants.

Brassavola appendiculata versus *Brassavola cucullata*

In her 2020 publication, *Systematics of the Neotropical Genus Brassavola*



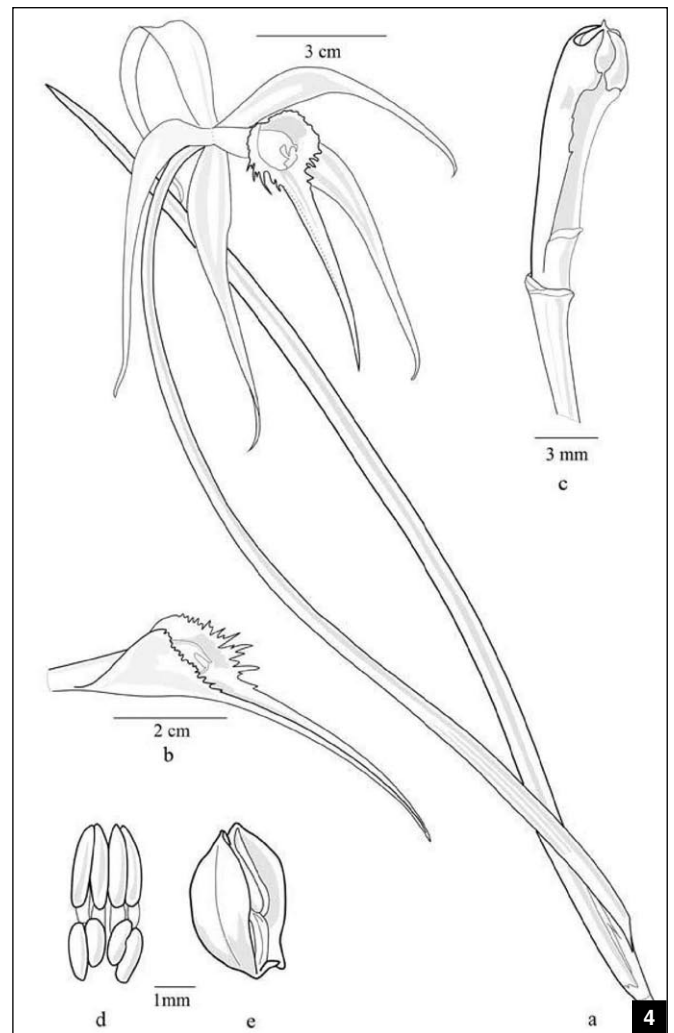
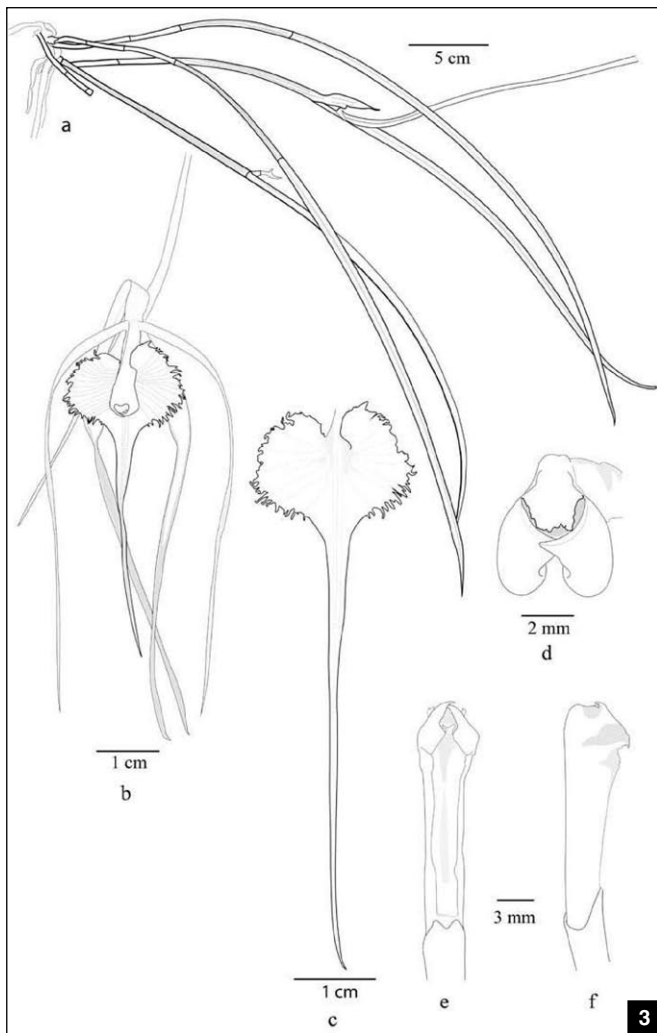
1 CLAUDE W. HAMILTON



2

(*Orchidaceae*), Dr. Eliana Noguera-Savelli makes a logical case for the distinction. Although superficially similar, there are some significant intrinsic and extrinsic factors that clearly separate the two

species. For example, although they share a similarly shaped labellum, the characteristic long, acuminate central lobe of *B. appendiculata* is considerably longer than that of *B. cucullata*. There is



also the fact that *B. appendiculata* has 12 pollinia, whereas all the other species in *Brassavola* (including *B. cucullata*) have only eight. The blooming seasons are quite different and, at best, only marginally overlap: *B. appendiculata* is in peak flower from May to August and *B. cucullata* instead blooms from September to May. Finally, the two species are clearly geographically isolated. *Brassavola appendiculata* is a Mesoamerican species distributed from northern Mexico to Nicaragua and the true *B. cucullata* is restricted to the Lesser Antilles, Caribbean islands such as Guadalupe, Grenada, Monserrat and the US Virgin Islands, extending into northern Colombia and Venezuela — but not Panama. There it is found growing between sea level and 330 feet (0–100 m), in coastal vegetation, mangroves and on rocks by the sea. The disparate geographic distributions and marginal overlap of blooming seasons as well as the floral characteristics make a compelling case about their respective identities. *Brassavola cucullata* is all but unknown in cultivation and all the hybrids made with what was formerly known as *B. cucullata* are actually hybrids of *B. appendiculata*. Because, at this point, there are no registered hybrids of the true *B. cucullata*, correcting the hybrid registry has been a relatively easy task. Only the name of the parent had to change and not the names of the hybrids themselves. Although name changes such as these are sometimes bitterly regarded by many, especially plant breeders who now need to change some of their labels, I, for one, welcome a correction like this. I would not want to be called by the wrong name nor have all my progeny credited to another entity in perpetuity, would you? We should welcome such adjustments

- [1] The true *B. cucullata* (right) compared to *B. appendiculata* (left).
 [2] The geographical distribution of the two species. *Brassavola appendiculata* is a Central American species (solid circles) while the true *B. cucullata* is found in northern South America and the Lesser Antilles (open circles).
 [3] *Brassavola appendiculata* A. Rich. & H. G. Galeotti. **a.** Plant habit; **b.** Flower; **c.** Lip; **d.** Column, frontal view; **e.** Column, ventral view; **f.** Column, side view. Illustration based on *Cetzal 32* (CICY).
 [4] *Brassavola cucullata* (L.) R. Br. **a.** Plant habit; **b.** Lip detail; **c.** Column detail; **d.** Pollinia; **e.** Anther. Illustration based on the drawing of the holotype in the original publication.

to our knowledge for the sake of better understanding. And besides, I now have another species of *Brassavola* to collect and enjoy. I cannot wait to get the real *B. cucullata* one day when it becomes more widely available.

Reference

Noguera-Savelli, E. 2020. Sistemática del Género Neotropical *Brassavola* (Orchidaceae). *Caldasia* 42(2): 188–219. <https://dx.doi.org/10.15446/caldasia.v42n2.68125>, accessed November 22, 2021.

— Thomas Mirenda (email: biophiliak@gmail.com); Claude W. Hamilton (email: hamlynorchids@aol.com).



Maxillaria Deppii.

Lycaste by Wesley Higgins and Peggy Alrich

A Mexico to Central South American Genus



LYCASTE

THIS GENUS WAS originally described by Lindley in *Edwards's Botanical Register*, 29(Misc.):14 (1843).

ETYMOLOGY A fanciful name, and according to Lindley (1843), *Lycaste* was a beautiful woman. This Greek name could have originated from an anagram of the Greek for beautiful, Calista or Calistus. Thirty-six sympodial epiphytes, lithophytes or terrestrial species and 13 natural hybrids are found in low to upper elevation, shady hill leaf litter scrub, along river embankments, rocky limestone crevices and savannas often in full sunlight of montane forest margins from central Mexico to western Peru, Venezuela and a few areas in central Brazil (western Bahia and Mato Grosso).

These plants have clustered, thick to stout, ovoid pseudobulbs, each with a few large, pleated, deciduous, veined and pseudo-petiolate leaves. Foliage is shed during winter or at the onset of new growth (only in the yellow-flowered

Lycaste). The several solitary-flowered inflorescences, borne from the base of the pseudobulb, have unusually large, waxy, triangular and long-lasting flowers and are enchantingly fragrant or smell like old soap. The petals, often a different color from the wide-spreading sepals, arch over the trilobed lip. The lip midlobe of some species is fringed and in other species the lip is entire and fingerlike. The side lobes usually enfold the long, slightly curved, winged or wingless column. The flowers have a slender, slightly curved, narrowly winged, short-footed column. Pollinia four, in two pairs, waxy, deeply grooved, attached to a ribbon-like stipe, viscidium ovate to shield-shaped.

Phylogenetic studies by Ryan et al. (2000) showed that *Lycaste* sensu Dressler was not monophyletic. *Lycaste* sect. *Fimbriatæ* formed a clade with *Anguloa*. There were three possible nomenclatural solutions to create monophyletic genera:

1. Include all *Lycaste* and *Anguloa* in

a single genus.

2. Transfer species in *Lycaste* sect. *Fimbriatæ* into *Anguloa*.

3. Create a new genus for *Lycaste* sect. *Fimbriatæ*.

This third option was most compatible since it would require the least number of taxonomic transfers. However, the authors were uncertain of the monophyly of such a genus at that time. Then, in 2002, most of the species *Lycaste* section *Fimbriatæ* were transferred to the genus *Sudamerlycaste*.

CULTURE These plants need a well-drained mixture and to be watered freely when in active growth but need a dry rest period. Provide intermediate conditions, moderate humidity and almost full sun to partial shade.

Reference

Ryan, A., W.M. Whitten, M.A.T. Johnson, and M.W. Chase. 2000. A Phylogenetic Assessment of *Lycaste* and *Anguloa* (Orchidaceae: Maxillarieae). *Lindleyana*, 15(1): 33-45.



Lycaste chrysoptera. Morr.

2



LYCASTE MARY GRATRIX.

3

Gartenflora 1890.

Taf. 1321.



LYCASTE SCHILLERIANA RCHB.FIL. f. LEHMANNI.

Verlag von PAUL PARTY in Berlin.

4

Lycaste

ANTIQUÉ PLATES

- [1] *Lycaste deppei*, *Botanical Cabinet*, 17: t.1612-22 (1830).
- [2] *Lycaste cruenta* as *Lycaste chrysoptera*, *Annales de la Royale d'Agriculture et de Botanique de Gand*, 5: t.232 (1849).
- [3] *Lycaste Mary Gratrix* (*macrophylla* × *virginalis*), *Flora and Sylva*, 2: t.123 (1904).
- [4] *Lycaste schilleriana* as *Lycaste schilleriana* var. *lehmanni*, *Gartenflora*, 39: t.1321 (1890).
- [5] *Lycaste cruenta* as *Lycaste balsamea*, *Portefeuille Horticulteurs*, 1: pg.130 (1847).
- [6] *Lycaste xytriophora*, *Refugium Botanicum*, 2(1): t.131 (1864).
- [7] *Lycaste virginalis* as *Lycaste skinneri* var. *delicatissima*, *Revue d'Horticulture Belge et Étrangère*, 15: pg.73 (1889).
- [8] *Lycaste virginalis* as *Lycaste skinneri* var. *alba*, *Illustration Horticole*, 27: t.405 (1880).



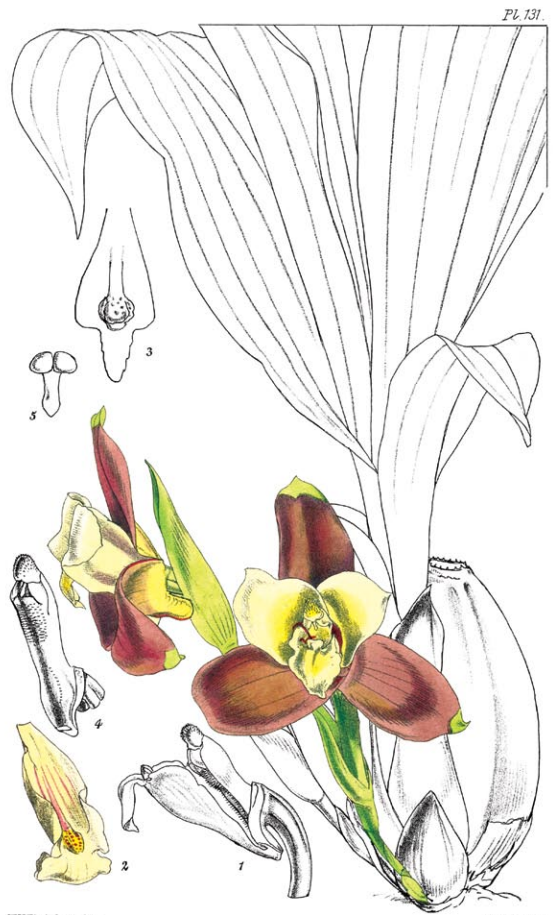
LYCASTE BALSAMEA.

L. Goussier pinx.

Goussier del.

Delatt. sculp.

5



Pl. 131

W.H. Fitch del. et lith.

Hanhart imp.

Lycaste xytriophora Lindl., *Rech. Fil.*

6

REVUE DE L'HORTICULTURE BELGE ET ETRANGERE



7

LYCASTE SKINNERI DELICATISSIMA



L'ILLUSTRATION HORTICOLE

8

LYCASTE SKINNERI, LINDL. VAR. ALBA

Photograph of the Week

The Best of the Best

BY GREG ALLIKAS

ELEVEN YEARS AGO we began posting a “photo of the week” to the AOS website. Since then, 14,500 orchid photographs have been submitted, as of November 30, 2021, to a group on the photo sharing website Flickr. The quality and diversity of flowers is astounding. Each week, one is chosen for our website. It is the beauty and complexity of orchids that inspires us to grow them and travel to the far reaches of the globe to photograph them. Some of the contributors have been with us since the beginning, some for a few years and a few have begun sharing images with us just recently. Thanks to all of them for sharing their vision. Through photographers’ regular submissions to The Orchid Photo of the Week pool we are able to publish this feature for AOS members.

If you have photographs that capture the beauty of orchids or know someone who does, follow the link on the AOS homepage for complete instructions for submitting photos. AOS membership is not required and Flickr accounts are free.

— Greg Allikas, past Editorial Board Chair

Prosthechea cochleata

Photograph by Sabine Furtwaengler

I got this plant from my orchid friend Helmut, because he became terminally ill with cancer and could no longer look after the plant. It flowered for me on his birthday one year after his death. It was as if a gentle greeting was being sent from him through the orchid. I took the photograph manually with a Nikon D3100 and an 18–55mm lens.





Orchis italica

Photograph by Joost Riksen

I grow this species in my cold greenhouse, together with a selection of other Mediterranean orchids. They are winter-growing species that experience a dry summer rest and careful watering during the winter growing season. I keep them in a mineral mixture, with pumice, sand, gravel and a little potting soil.



LEFT
Restrepia guttulata
Photograph by Michael Bull

This *Restrepia* is grown in a greenhouse containing a mixed orchid collection in Wolverhampton, England. The image was taken with the Nikon Z6 and Sigma F2.8 105mm Macro Lens. It was focus-stacked using 30 images and processed with Zerene Stacker using black velvet for the background and LED lighting.

BELOW
Masdevallia caesia
Photograph by Raoul Cere

This is a *Masdevallia* species that I have been growing in a cold greenhouse since 2014. Cold greenhouse cultivation of this species requires very high humidity and regular watering throughout the year.





ABOVE RIGHT
Dendrobium polysema
Photograph by Petr Beránek

I photographed this orchid in the Botanic Garden Teplice (Czech Republic), where I was curator in 2016–2020.

BELOW LEFT
Cattleya Walkerinter 'Franzl'
SM(H)/DOG
Photograph by Emmi Mattes

I try to take photographs in my greenhouse at the same time in the morning so I have enough brightness without direct sunlight. I use black cotton velvet for the background no additional lighting.





Bulbophyllum venulosum
Photograph by
Motohiro Sunouchi

This is an orchid species from Borneo with miniature-sized flowers. The photograph was taken with a Nikon Z7 and a Tamron macro lens in my greenhouse and went through a color-managed development process to finish it.



First Ladies and their Cattleyas

Florence Harding (1921–1923)

TEXT AND PHOTOGRAPHS, UNLESS
CREDITED OTHERWISE, BY
ARTHUR E. CHADWICK



CATTLEYA FLORENCE HARDING honors the wife of the 29th President of the United States, Warren Harding, who served from 1921 until his death in 1923. Like her predecessor, Edith Bolling Wilson, Mrs. Harding did not have a namesake orchid during her while her husband was honored four times. Within a short two-year window, we find Royal Horticultural Society registrations for *Cattleya* Warren G. Harding (1920), *Oncidium* President Harding (Sanders) and *Oncidium* President Harding (Armstrong and Brown) in 1921, and *Paphiopedilum* President Harding (1920).

The former Florence Kling De Wolfe worked for many years with Warren Harding at his newspaper, the *Marion Star* in central Ohio and campaigned vigorously on his behalf for his many political offices. As First Lady, Mrs. Harding played an active role by helping to select cabinet members, write speeches and give personal tours of the White House. She also took an interest in social issues of the day and worked tirelessly to protect her husband's image. She displayed so many flowers throughout 1600 Pennsylvania Avenue that major renovations to the supporting greenhouses were required.

Cattleya Florence Harding is a recent effort, but it took a team of skilled orchidists to bring it to fruition. The cross was originated by famed breeder, Andy Easton, of New Horizon Orchids in Salinas, California, who sold the flasks to cattleya aficionado, Ben Oliveros, of Orchids Eros. The seedlings were raised to near maturity on the Big Island of Hawaii then were sent to our nursery in Virginia to be finished off.

As the seedlings bloomed, we photographed them and set them aside for the First Lady project. It is unusual to find such simple lineage as most of today's hybrids are complex and up to a dozen generations long. We were specifically looking for flowers that could have actually appeared during the timeframe of the Harding administration.

We were delighted to see the flowers open as they were various shades of yellow, peach, and burgundy and exhibited some early breeding traits. Nearly all the blooms have vibrantly colored lips and a sweet fragrance. Their blooming season is July to January.

The lineage contains only three species — *Cattleya dowiana*, *Cattleya mendelii* and the newly discovered, as of 1906, *Cattleya jenmanii*.

Cattleya jenmanii was quite rare in the early 1900s with only a handful of



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closely guarded specimens to work with. The species was found in a remote part of Venezuela and was initially thought to be a variety of *Cattleya labiata* because the flowers were similar and can bloom at the same time.

Experts, in fact, still have a difficult time differentiating between the two species because *C. jenmanii* is relatively nondescript with little unique about the petals, sepals, or lip. There is no distinctive fall-forward shape to the petals as those of *Cattleya mossiae* or cutesy curled sepals as those of *Cattleya schroederae*. There is no stripe down the lip as in *Cattleya maxima* or a signature orange disk in the throat like *Cattleya eldorado*. It could be said that *C. jenmanii* can be identified by its lack of individual traits.

The two species, *labiata* and *jenmanii*, come from neighboring countries — Brazil

[1] *Cattleya* Florence Harding 'Peachy'. Mrs. Harding did not have a namesake orchid so we retroactively named one. The breeding is in keeping with the plants available during the 1920s.

[2] Florence Mabel Kling Harding (1860–1924) was the wife of Warren G. Harding and First Lady of the United States from 1921 to 1923. Aiming to become a concert pianist, she began studies at the Cincinnati Conservatory of Music. Photograph courtesy of Alamy.

and Venezuela — and this geographic difference is sometimes used to differentiate between the two orchids. In addition, while their blooming times can overlap, *C. labiata* was the fall-blooming work horse of the 1930s cut flower era with varieties that opened in September,

October and November, while the season of *C. jenmanii* is more closely aligned with November.

Cattleya jenmanii was first discovered by Westerners in 1906 and, thus, escaped the mad rush of primary hybridizing that occurred in the late 1800s. Breeders scrambled to make every combination they could as newly found species were pulled from the jungles. The classic *dowiana* primaries such as *Cattleya* Empress Frederick (\times *mossiae*) 1888, *Cattleya* Fabia (\times *labiata*) 1894 and *Cattleya* Hardyana (\times *warszewiczii*) 1896 were all made before *C. jenmanii* was known to exist. By the time pollen from *C. jenmanii* was available, breeders had already moved on from the primaries and were focused on second, third and even fourth generation plants.

In those days, it could take a decade between generations for the tiny orchid seeds to sprout, mature, bloom, and get repollinated given the rough and tumble growing conditions. Orchids were relatively new, and horticulturalists were still trying to figure out how to effectively grow these exotic plants. The old timers could remember the ill-conceived high heat “stove houses” used to propagate orchids, which, in most cases, caused their rapid demise. Seed sowing entailed ripe capsules being shaken over damp beds of moss and the “success rate” was more accurately described as the “mortality rate.” It was not until 1924 that reliable orchid seed sowing techniques were developed.

Cattleya Florence Harding was bred by Andy Easton, who was originally from New Zealand and made a name for himself in the U.S. with cattleyas and cymbidiums.

Mr. Easton began his long and illustrious career at age 13 with a win at the horse races that gave him the seed money to start an orchid business. He invested in stock plants and purchased a modest greenhouse from a retiring florist. After earning a botany degree, he moved to America for a Masters in Botany.

In no time, he was managing 60 greenhouses for a firm that specialized in roses with four acres (6.4 ha) set aside for cattleyas and cymbidiums. Along the way, he became an American Orchid Society judge.

After a short stint as General Manager of Dos Pueblos Orchids growing cymbidiums, he returned to New Zealand and founded Geyserland Orchids where the emphasis was on breeding heat-tolerant cymbidiums and odontoglossoms (now oncidiums and their intergenerics).



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For most of the 2000s, he ran New Horizon Orchids in California and now resides in Colombia with his wife who is native to that country.

One of the parents used to make *Cattleya* Florence Harding is the primary hybrid, *C. Ned Nash* (*jenmanii* \times *dowiana*) from 2010, which was also bred by Andy Easton. Given the grand potential of the offspring, it is hard to believe that this hybrid was not made earlier. The resulting flowers are richly colored shades of lavender and quite fragrant.

Easton named it after his friend and fellow grower, Ned Nash, who has been a familiar name in the orchid world for nearly half a century starting with Dos Pueblos Orchid Company and Santa Barbara Orchid Estate in the mid-1970s.

[3] *Cattleya* Florence Harding ‘Burgundy’.

The flowers of *C. Florence Harding* (Ned Nash \times Octave Doin) vary from yellow to peach to burgundy. All have a sweet fragrance and bloom between July and January.

[4] *Cattleya* Octave Doin. Originally bred in 1899, this primary hybrid yields intensely colored offspring with a sweet fragrance. It can be found in the lineage of hundreds of today’s cattleyas.

But it was his steady rise at Armacost & Royston, which later merged with Stewart Orchids, that put him on the map. He served as President of Stewart’s from 1987 to 1995.

Here, he oversaw hundreds of cattleya

MICHEL BART

crosses and clones that Stewarts sold all over the world. Their annual color catalog was eagerly anticipated and was filled with both new hybrids and remakes. The 75th Diamond Jubilee catalog of 1990 featured two pages of big purples headlined by *Cattleya* Susan Holguin, *Cattleya* Irene Holguin and *Rhyncholaeliocattleya* Bryce Canyon, plus a full page of big reds, whites, semialbas, yellows and greens. No other commercial grower offered the breadth that Stewart's did.

From here, Mr. Nash went to work for the American Orchid Society as Director of Education and Conservation following his career-long involvement with the organization as a judge, committee chair, and trustee. His numerous books including *A Pocket Guide to Orchids*, *The World's Most Beautiful Orchids* and *Four Seasons of Orchids* line the shelves of hobbyists everywhere. He credits his love of orchids to his mentors, Leo and Irene Holguin and Ernest Hetherington.

The other parent used to make *Cattleya* Florence Harding is *C. Octave Doin* (*mendelii* × *dowiana*) from 1899. It was one of hundreds of registered hybrids created by the commercial firm Charles Maron & Fils of Brunoy, France. This primary combines the spring blooming, generally pale lavender, *C. mendelii* from Venezuela with the prized summer yellow, *C. dowiana* from Costa Rica and Colombia.

Lavenders are known to intensify when bred with *C. dowiana*, so many of the Octave Doin and Ned Nash specimens are very dark purple. In addition, some degree of yellow veining and sweet fragrance usually comes through.

Although *C. Octave Doin* has not been in circulation for over a century, there have been some recent remakes. The primary hybrid honors fellow French grower and hobbyist, Octave Doin (1848–1919), who founded Editions Doin, which specialized in books and periodicals about the sciences and nature. *Le Dictionnaire des Orchidees Hybride* and *Les Orchidees Manuel de L'Amateur* were both edited by Doin in 1893. At one time, he was president of the Orchid Committee at the National Society of French Horticulture.

Mr. Doin lived the high life in Chateau de Semont — a sprawling three story estate with eight chimneys in suburban Dourdan, not far from Moran's nursery in Brunoy. He kept an accomplished gardener, Sadarnac, and exhibited at major flower shows.

Doin and Moran spent a lot of time together — trading plants and making



NED NASH



crosses. About a dozen hybrids are registered to Doin including several primaries honoring family members, *C. Gaston Doin* (*tenebrosa* × *rex*) in 1902 and *Cattleya* Madame Jeanne Doin (*quadricolor* × *dowiana*) in 1911. Maron thought so much of his friend that he honored him with a namesake in 1899 — *C. Octave Doin* (*mendelii* × *dowiana*) which went on to directly parent over a hundred new hybrids and was ultimately in the lineage of thousands of future plants.

At the turn-of-the-century, a primary hybrid blooming for the first time was a reason to throw a party and *C. Octave Doin* was no exception. The spring- to summer-blooming seedlings varied from lavender to semialba and boasted various

[5] *Cattleya* Ned Nash is a recent primary hybrid made by Andy Easton that combines *Cattleya dowiana* and *Cattleya jenmanii*.

[6] *Cattleya* Ned Nash honors long time orchidist, Ned Nash (left), who credits Irene (center) and Leo Holguin (right), and Ernest Hetherington (between the Holguins) with his passion for orchids. Photograph courtesy of Ned Nash.

intensities of gold veining in the lips. The intense *dowiana* fragrance carried through and Octave was pleased with his namesake.

Octave also loved his stately Chateau de Semont and twice attempted to name an orchid after it. The first try was in 1902 when he combined *C. dowiana* with *C.*

warscewiczii and submitted the name, *C. Semontiana*. Record keeping and information sharing was rudimentary back then and, unfortunately for Octave, those two species had already been registered as *Cattleya Hardyana* six years earlier.

Another decade went by before he tried again. This time he combined *C. Hardyana* with *Cattleya trianae* and resubmitted the name, *C. Semontiana*. Sadly, prominent collector Norman C. Cookson of Wylam, Northumberland, England had named that combination after himself in 1906. Following two setbacks, poor Octave abandoned his quest to honor his chateau.

Charles Maron (1852–1926) was an exceptionally active breeder and one of the first orchid seed sowers in Europe. His crosses still reverberate in the horticulture world today. The primaries — *Cattleya Leda* (1900) (*perivaliana* × *dowiana*), *Rhyncholaeliocattleya Empress of Russia* (*Rhyncholaelia digbyana* × *C. mendelii*) 1900, *Rhyncholaeliocattleya Mrs. J. Leemann* (*Rl. digbyana* × *C. dowiana*) 1902 and *Cattleya Triumphans* (*rex* × *dowiana*) 1904 speak to the very core of the cattleyas and are still actively sought out by enthusiasts despite their high prices. As of 2022, the going rate for a blooming size *C. Triumphans* is \$500.

First and foremost, Maron named his crosses after wealthy clients including captains, duchesses, empresses, generals, madams, mademoiselles, mistresses, monsieurs, presidents and queens. Family members, friends, and neighbors were represented and there were a few outliers such as local hero and romantic playwright, Victor Hugo. No doubt it was a challenge to think of hundreds of hybrid names.

Cattleya Florence Harding is a lovely addition to the First Lady collection that spans 19 consecutive administrations (1914 through today). Although the hybrid was only named recently, the rich lineage dates back more than a century and contains fascinating stories of the players involved. The entire collection of orchids resides at the Smithsonian Gardens in Washington, D.C. where the blooming plants are paired with actual dresses worn by the First Ladies.

Acknowledgment

Special thanks to Robert Guichard — Secretary of the Societe Francais d'Orchidophile.

— Arthur E. Chadwick is a coauthor



Arthur E. Chadwick of *The Classic Cattleyas*, now in its second printing, that describes the large-flowered species that make up today's hybrids. He is president of Chadwick & Son Orchids, which operates 11 greenhouses in Powhatan County, two retail stores in Richmond, Virginia and boards over 13,000 orchids for local clients (email art@chadwickorchids.com; Website www.chadwickorchids.com).



[7] *Cattleya dowiana* has a long and storied history in cattleya hybridizing as breeders hoped to impart the color, veined lip or fragrance in the offspring. The species appears in both parents of *C. Florence Harding*.

[8] Most varieties of *Cattleya mendelii* are pale lavender. This species was widely used in the early days of breeding that included *C. Octave Doin* (× *dowiana*) in 1899.

[9] Octave Doin lived in the swanky Chateau de Semont in Dourdan, France and not far from his friend and commercial grower, Charles Maron.

[10] Amateur breeder Octave Doin made a number of important hybrids including his son's namesake, *Cattleya Gaston Doin* (*tenebrosa* × *rex*) from 1902. Shown is A.A. Chadwick's remake.

FIRST LADIES AND THEIR CATTLEYAS

- 1914–1921 Edith Bolling Wilson
– *Orchids* 86(9):678–683
- 1929–1933 Mrs. Herbert Hoover
– *Orchids* 82(8):478-479.
- 1933–1945 Eleanor Roosevelt
– *Orchids* 82(11):664-667.
- 1945–1953 Bess Truman
– *Orchids* 83(2):98-103.
- 1953–1961 Mamie Eisenhower
– *Orchids* 83(5):294-297.
- 1961–1963 Jacqueline Kennedy
– *Orchids* 83(8):488-493.
- 1963–1969 Lady Bird Johnson
– *Orchids* 81(8):498-500.
- 1969–1974 Patricia Nixon
– *Orchids* 83(11):674-679.
- 1974–1977 Betty Ford
– *Orchids* 84(2):98-103.
- 1977–1981 Rosalynn Carter
– *Orchids* 84(5):292-297.
- 1981–1989 Nancy Reagan
– *Orchids* 84(8):478-483.
- 1989–1993 Barbara Bush
– *Orchids* 84(11):674-679.
- 1993–2001 Hillary Rodham Clinton
– *Orchids* 85(3):210-217.
- 2001–2009 Laura Bush
– *Orchids* 85(9):684-689.
- 2009–2017 Michelle Obama
Orchids 86(5):360-365.
- 2017–2021 Melania Trump
– *Orchids* 88(7):516–520.
- 2021–Present Dr. Jill Biden
– *Orchids* 90(5):358–361.

Who Were These Guys: Part 16

Joseph Dalton Hooker (1817–1911)

BY DAVID ROSENFELD, MD

IF YOU WERE asked to name the greatest scientific minds of the 19th and 20th centuries you would almost certainly say Charles Robert Darwin (Rosenfeld 2019) and Albert Einstein. A harder question would be “Who was the most prominent botanist of the 19th century?” Being an orchid fancier, I would like to say the answer was either John Lindley (1799–1865) (Rosenfeld 2018b) or Heinrich Gustav Reichenbach (1823–1889) (Rosenfeld 2018a). After reading this article, I think you will conclude that it was Joseph Dalton Hooker. Lindley and Reichenbach were predominately taxonomists of orchids, and to a lesser extent of other plant genera, and whose travels were limited to Europe. During Hooker’s long and exciting life of 95 years he traveled the world widely, including a journey to the Antarctic as a young man, which was a life-changing experience for the scientist. He was just as interested in mosses and lichens as he was in trees and flowering plants. Hooker had a special friendship with his contemporary Charles Darwin (1809–1882). His life was also intimately intertwined with the Royal Botanic Garden at Kew in London.

Joseph Dalton Hooker was destined to be a botanist. His father William Jackson Hooker (1785–1865) only had a grammar school education but was fascinated by plants and became a self-educated botanist. Three years after the birth of Joseph in 1817, William was appointed to a newly created chair of botany at Glasgow University. At a young age Joseph became immersed in natural history and botany shared by his father and associates. William realized that Joseph, aged 13, had the desire to “become a zealous botanist.” William said of his 15-year old son that he was “content and happy at home and studying Orchideae most zealously.” Joseph completed an MD degree at Glasgow University and with the efforts of his father was appointed assistant surgeon and botanist on the 4-year voyage (1839–1843) to the Antarctic on the ships HMS Erebus and HMS Terror



captained by James Scott Ross. The main goal of the expedition was to locate the magnetic South Pole. Joseph Hooker’s charge was to explore and collect plants “however sterile and uninviting the place

Joseph Dalton Hooker in middle age by George Richmond.

may appear." Hooker collected specimens from many islands near Antarctica and from the numerous ports of call, especially Hobart in Tasmania. This epic excursion was a life altering experience for Joseph Hooker as it was for Charles Darwin during his 5-year voyage around the world on the HMS Beagle from 1831–1836. Although there was no success in finding the magnetic South Pole, they were the first to see the volcanically active Mt. Erebus, which is near the current United States military base at McMurdo Sound.

While Joseph Hooker was abroad, his father William was appointed director of the Royal Botanic Gardens, Kew. Upon Joseph Hooker's return, he worked at Kew in the herbarium. The most important task was the writing and publication of the multivolume *Flora Antarctica*, the first appearing in 1844. During his interlude in England (1843–1847) Joseph Hooker made his most important and lasting friendship, that of Charles Darwin. Over almost 40 years, until Darwin's death in 1882, they were either frequently in personal contact or in active correspondence. When Hooker was abroad exploring, Darwin would send, what one would call, interrogative communications asking Hooker to answer questions he posed about the region of the natural world Hooker was visiting.

Joseph Hooker's introduction to orchids in the wild occurred during his 3-year visit to India from 1848 to 1850. Hooker had a burning desire "to get to the tropics . . . so convinced am I that it will give me the lift I want in acquiring a knowledge of exotic botany." His travels were centered on northeast India in the regions of Sikkim and Assam. The first two years were mostly in the Himalayas where he explored mountainous regions up to 17,000 feet (5,190 m). It was here that he collected a vast number of new *Rhododendron* species. During his last year, he explored the most northeast region of India and especially the Khasia hills, where at an elevation of 4,000 feet (1,220 m) orchids were found in profusion. Just within 10 miles (16 km) of their base in Churra, Hooker collected about 2,000 flowering plants and innumerable ferns, mosses, lichen and fungi.

It is fascinating to compare Hooker's plant collecting style to that of the prototypical orchid hunter of the 19th century, Benedict Roezl (Rosenfeld 2016). Roezl was not a botanist. He often traveled alone in the jungle looking for new desirable species for his patron Henry Frederick Conrad Sander. He stripped vast numbers of orchids from



- [1] *Gomesa hookeri* 'Laurie Ann' CBM/AOS grown by Joseph Colombo. Photograph from the AOS award archives.
- [2] *Cymbidium hookerianum* 'Stirling' AM/AOS grown by Ed Dumaguin. Photograph by Curtis Gean.
- [3] Walter Hood Fitch's painting of *Dendrobium hookerianum* from *Curtis's Botanical Magazine* 1873.
- [4] *Paphiopedilum hookerae* 'Fajen's Orchids NJL' AM/AOS grown by Bill Fajen, Fajen's Orchids.

their native habitat and shipped them back to England for sale by Sander. Often a shipment might contain upwards of 2 million orchids, many of which would not survive the voyage across the oceans.

Joseph Hooker was the antithesis of Roezl. He was a botanist, not simply a plant hunter. He would collect individual new species and their seeds. Hooker was an excellent artist and would sketch a drawing of the plant as well as save a dried specimen for his herbarium. There would also be meticulous descriptions in his notebooks of the environment where the plant was found including elevation, temperature, light, etc. He was dismayed by the indiscriminate destruction of habitat by orchid collectors: "for miles it sometimes looks as if a gale had strewn the road with rotten branches and Orchideae (sic)." Hooker's expeditions were anything but solitary. Hooker wrote, "mustered 56 persons. These consisted of myself and one personal servant. . . . My tent and equipment, instruments, bed, box of clothes, books and papers required a man for each. Seven more carried my papers for drying plants and other scientific stores. . . . There were, besides three Lepcha lads to climb trees . . . and the party was completed by 14 Bhutan coolies laden with food." Hooker finally succumbed to orchidmania when he collected "360 panicles of *Vanda coerulea*, each composed of from 6 to 21 broad pale blue tessellated flowers." Other orchids of note collected in India included *Dendrobium hookerianum* and *Cymbidium hookerianum*.

When Joseph Hooker returned to England in 1851, he was only 34 years old and had much more than half his life ahead of him. Hooker died at age 95 in 1911. During the next 25 years he continued to travel, visiting the Middle East in 1860 where his principal discovery was the cedars of Lebanon and in 1871, to Morocco and the Atlas Mountains. In 1877 he accepted an invitation from the famous American botanist Asa Gray to join Gray on a journey to the western United States from the Rocky Mountains to coastal California. On these adventures he continued to take meticulous notes of his observations and send plant specimens for the Kew herbarium back to England. Just on the American trip alone, he sent home over 1,000 dried specimens for the herbarium. Hooker was most fascinated by California redwoods, which he described as "the vegetable wonders of the world."

I would be remiss if I did not include

a short discussion of the intimate and long-lasting relationships of William and Joseph Hooker with the Royal Botanic Gardens, Kew in Southwest London. Kew Gardens was the result of a merger of two royal estates in 1772. In 1840 the gardens were formally adopted as a royal botanic garden due to the efforts of the Royal Horticultural Society. William Hooker served as the first director from 1840 until his death in 1865. He was succeeded by Joseph, who served as director from 1865 to 1885. The father and son enlarged the gardens and saw to the construction of large Victorian style glasshouses to grow, propagate and display exotic plants. It was through their efforts that Kew herbarium was established, now the world's largest housing over 7 million dried specimens.

Hooker's writings were prodigious. A complete list was published in 1912 in the *Kew Bulletin* and filled more than 16 pages. Although he was not a devotee of only orchids, he described 1,300 species of orchids in his monumental tome *Flora Of The British Isles*. A vast number of new orchid species were also described in the *Botanical Magazine* during his long editorship. He also studied and wrote about the orchids of Sri Lanka.

Joseph Hooker's greatest contribution to the science of botany was as the primary proponent of the discipline of plant geography. A plant geographer studies the distribution of the world's vegetation at the levels of families, genera, and species. It is crucial to know the geographic range of plants to identify and classify them. Hooker followed in the footsteps of the early 19th century botanist Alexander von Humboldt, the founder of plant geography. During the mid-19th century Darwin and Hooker had somewhat different conceptions about plant geography especially on how plants became distributed around the globe. Thankfully near the time of Darwin's death in 1882 they mostly reconciled their differing views. Hooker received a Royal Medal from the Royal Geographical Society in 1883 "for his eminent services to scientific geography."

Joseph Hooker lived a long and productive life of 95 years. The orchids species named for him include: *Mormodes hookeri*, *Oncidium hookeri*, *Paphiopedilum hookerae*, *Pleione hookeriana* and *Vanda hookeriana*.

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KAY CLARK

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- _. 2018b. Who Were These Guys: Part 5. John Lindley (1799–1865). *Orchids* 87(6):438–441.
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David Rosenfeld, MD

— David Rosenfeld, MD has been growing orchids with his wife Joan for more than 40 years. David is a retired professor of pediatric radiology at the Rutgers Medical School.

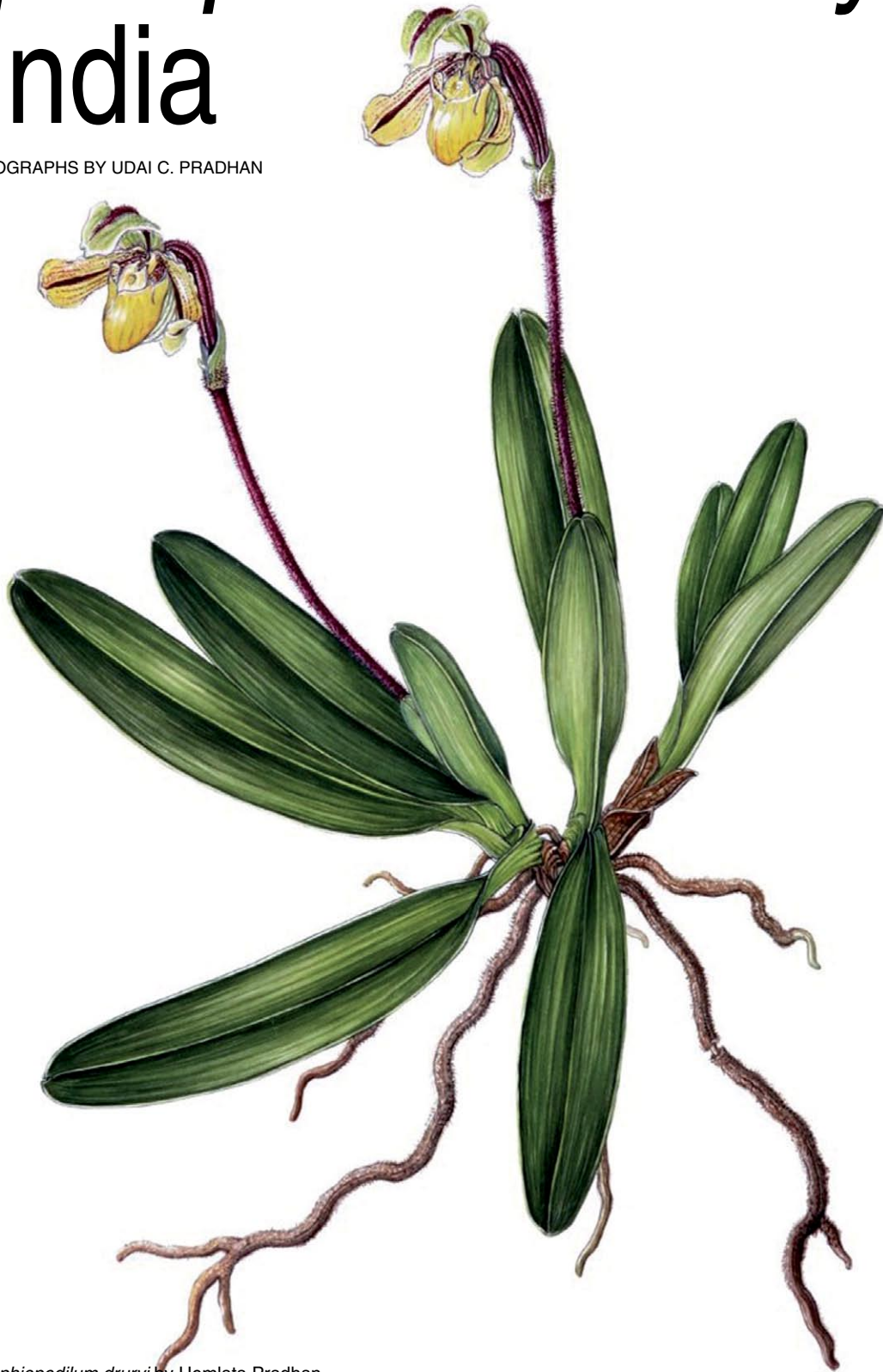
They have over 100 AOS awards and are most proud of their 29 cultural awards. David has written 22 articles for *Orchids* and last wrote about Carl Ludwig Blume in the August issue, 90(8): 611–613. (email: orchiddoc@comcast.net).

POSTSCRIPT

I was very saddened to learn of the sudden and recent death of the Swiss orchidist Rudolf Jenny. Jenny was a wonderful source of information for many of my 22 articles in *Orchids*. His library contained the most complete collection of orchid materials in the world. I would send him an email query and within 24 hours, I would receive copious attachments highlighting the topic I was writing about. The orchid world has lost a very special person.

Paphiopedilum druryi in India

TEXT AND PHOTOGRAPHS BY UDAI C. PRADHAN



[1] Painting of *Paphiopedilum druryi* by Hemlata Pradhan.

[2] *Paphiopedilum druryi* in flower.

[3] Distribution map of *Paphiopedilum druryi* made by Hemlata Pradhan; edited by Dr. Pankaj Sahani, Kadoorie Farm and Botanic Garden (KFBG) Corporation, Hong Kong.

A BRIEF HISTORY of *Paphiopedilum druryi*, its cultivation and influence in hybridization, offers a wide interest in furthering the primary hybrids of *Paph. druryi* that first began to appear in 1886. Out of the total of 40 primary hybrids, 11 primary hybrids are from late 1800s, 19 are from the 1900s and 10 are after 2000. Nine Indian species and two primary hybrids with Thai species, *Paphiopedilum exul* and *Paphiopedilum sukhakulii*, were of great interest to us in India. Jawaharlal Nehru Tropical Botanic Garden and Research Institute (JNTBGRI), Thiruvananthapuram, Kerala came up with its first Indian primary hybrid, *Paphiopedilum* M.S. Valliathan (*exul* ×) (2006). In Kalimpong, West Bengal, we remade them as an experiment, *Paphiopedilum* Dallemagnei (1900) (*hirsutissimum* ×) and *Paphiopedilum* Sukhadru (× *sukhakulii*) (1988). We have also recently added a new hybrid of our own, *Paphiopedilum* Sage Agastya's Druryi (× *venustum*).

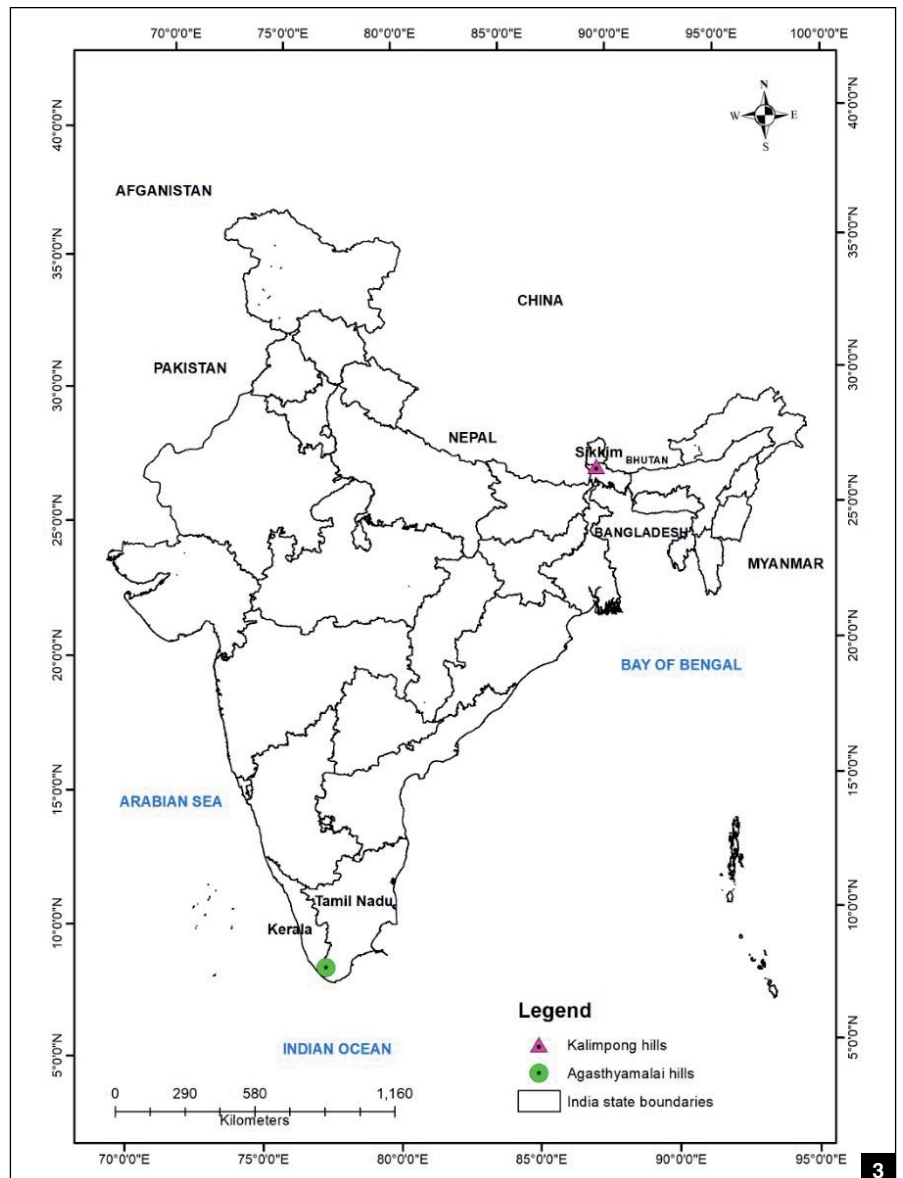
Paphiopedilum druryi, one of the most charming Indian *Paphiopedilum* species, is the only species in the genus that is found in South India. It was first discovered by Mrs. J.A. Brown (a botanist who had been active in sending plants to Kew from India) in 1865, then was described in 1870 by Colonel Richard Henry Beddome and named *Cypripedium druryi*. The name, however, has been incorrectly credited to Colonel Heber Drury as the discoverer when he had actually only acquired the specimen of this plant from Mrs. Brown. After its introduction to the plant world in the 1800s, it was so widely collected from the wild as well as destroyed in forest fires that the population of the species began to decline in its natural habitat. In 1972, it was rediscovered by Verghese and Jo Mammen, a husband and wife duo from Kenya (1974), in the Agasthyamalai Hills in Kerala, South India. They wrote an insightful and detailed article about their successful expedition titled "*Rediscovering Paphiopedilum druryi* in South India."

While we were conducting our own research on *Paph. druryi* for this article, we came across a note about the location of the plant that had been typed on a typewriter by the late Birendra Nath Ghosh (1885–1983) and clipped onto the last page of *Kew Bulletin* 25(3).

People knew Mr. Ghosh in horticultural circles for his well-known nursery, G. Ghosh and Co., which was located beneath the cascading Victoria Falls in Darjeeling. For six decades, he received and responded to plant lovers from all



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over the world, which included scientists, horticulturists, Lords, Ministers and people from virtually all walks of life. In the early 1980s, just before his demise, my wife and I had bought a collection of plant books and bulletins from his personal library and the note that we have previously mentioned had been stapled onto the *Kew Bulletin* that came with this collection.

HABIT AND HABITAT *Paphiopedilum druryi* grows in the extreme southern ranges of the Western Ghats in completely isolated habitats at an altitude of 4,500–5,000 feet (1,220–1,524 m) on sandy loam soil in partial shade provided by small trees, grasses and other plants. The rhizomes are woody and can sometimes grow over 35 inches (89 cm) in length but they do not penetrate deeply into the soil, sometimes even remaining exposed out of the soil. In older plants, there are several shoots arising through branching of these rhizomes. Multiplication of plants occurs through drying and decaying of the rhizome at certain parts, which later divides and develop into new shoots. Each matured plant also has three suckers or more and flowers are usually borne on the oldest one. New suckers emerge from the basal part of the youngest sucker after completion of the opening of flowers.

The plants are erect, about 10 inches (25 cm) tall with five to six elongated, oval, leathery leaves. Flowers are yellow to chartreuse with a distinctive curved forward position of dorsal sepal and with petals that have maroon-brown streaks running through the midrib towards its apex. The stems are long, erect, 7 to 9 inches (18–23 cm) tall and densely covered in purple hairs. They bear up to five to seven leaves that grow up to 10–12 inches (25–30 cm) in length and 1.5–2 inches (3.8–5 cm) wide and are of lighter green color with darker green venations.

APPEARANCE OF PAPH. DRURYI IN HYBRIDIZING The history of breeding *Paphiopedilum* hybrids reached its zenith in the 19th century, but unfortunately was hindered by World War I. The outbreak of World War II brought with it great destruction including that of plant conservatories and greenhouses, along with large collections of precious plants that were being burned down and ruthlessly destroyed. This led many botanists, plant lovers and hybridizers from Denmark, France, Great Britain and Germany to look for ways to salvage their precious collections, so they sent their plants to the United States, their closest ally during the War. This measure towards

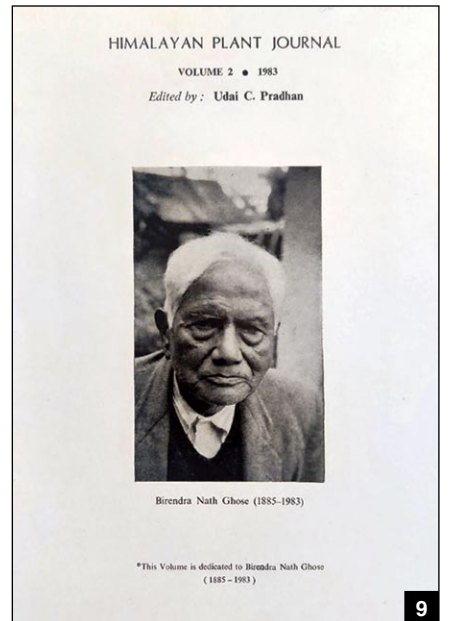
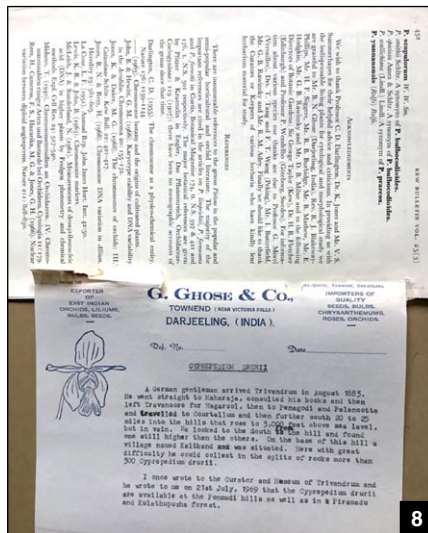
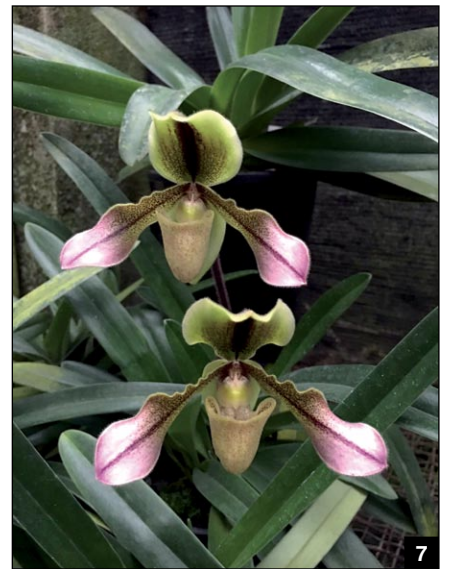


preservation worked well and many of the awarded breeding lines were not just saved, but the American growers went a step further and created a line of more specific breeding called the American Hybrid where they also used most of the *Paphiopedilum* species from Indo-Himalayas and other Asian countries, including *Paph druryi*.

PRIMARY HYBRIDS OF PAPH. DRURYI *Paphiopedilum druryi* has an Indian charm of its own and a brief history. Its cultivation and influence in the hybridization of *Paphiopedilum* orchids opens a wide interest in furthering the primary hybrids of *Paph. druryi*. Out of the total of 40 primary hybrids created since 1886, nine are indigenous to India and the Himalayas and two are primary hybrids with Thai species, *Paph exul* and *Paph. sukhakulii*. The list is as follows:

- *Paphiopedilum Gordonii*, 1902 (*boxalli* × *druryi*).
- *Paphiopedilum* E. Rogerson, 1902 (*charlesworthii* × *druryi*)
- *Paphiopedilum* Westpoint Beauty, 1914 (*druryi* × *fairrianum*)
- *Paphiopedilum* Dallemagnei, 1900 (*druryi* × *hirsutissimum*)
- *Paphiopedilum* Aeson, 1892 (*druryi* × *insigne*)
- *Paphiopedilum* Buchanianum, 1890 (*druryi* × *spicerianum*)
- *Paphiopedilum* Winnianum, 1886 (*druryi* × *villosum*)
- *Paphiopedilum* Roch Jolibois, 2001 (*wardii* × *druryi*)
- *Paphiopedilum* Sage Agastya's Druryi, 2021 (*venustum* × *druryi*)
- *Paphiopedilum* M. S. Valliathan, 2006 (*exul* × *druryi*)
- *Paphiopedilum* Sukhadru, 1988 (*druryi* × *sukhakuli*)

In 2006, K. Suresh and C. Sathish Kumar of Jawaharlal Nehru Tropical Botanic Garden and Research Institute (JNTBGRI) created a stunning hybrid between *Paph. exul* × *Paph. druryi* and named it *Paphiopedilum* M.S. Valiathan to honor the veteran scientist and eminent cardiologist M.S. Valiathan who had also been instrumental in launching the Orchid Breeding Programme at JNTBGRI during his tenure as Executive Vice President, Kerala Council for Science Technology and Environmental (KSCSTE). It was the first of the genus registered in India. It is a vigorous hybrid and the flowers last for up to a month. It has white dorsal sepal with black spots and a large synsepal acquired from the male parent *Paph. exul* and a golden yellow color with median brown bands derived from the female parent *Paph druryi*.



DRURYI VENTURES IN THE HIMALAYAS In the 1990s, we were gifted two clones of *Paph. druryi* by our friends in Southern India for selling and to raise new hybrids. At home, we repotted them in normal compost comprised of leaf mold, gravel, perlite and charcoal. After a period of three years, we noticed healthy leaf and root formation and we divided these plants, some of which we experimented with by transplanting onto our nursery wall while keeping the rest in pots. The plants on the wall were the first to bloom in 2003, proving that this species was hardy and had the capacity to acclimatize itself to different physical conditions. We took the opportunity to self them. The seed pods that formed were healthy so we made embryo cultures out of them. From these cultures we raised seedlings, some of which were transplanted to the nursery walls, and the rest were once again planted in the regular mixtures in pots. Apparently, the ones transplanted

- [4] A mother plant of *Paphiopedilum druryi* at the author's nursery in Kalimpong.
- [5] Dividing and repotting of *Paphiopedilum druryi*.
- [6] Seedlings of *Paphiopedilum druryi* on our nursery wall.
- [7] *Paphiopedilum* Dallemagnei.
- [8] The note typed by Mr. Birendra Nath Ghose regarding *Paphiopedilum druryi* (Pradhan 1983).
- [9] Mr. Birendra Nath Ghose (1885–1983).

on the walls were stable but it took a few years for the new shoots to develop. We observed that the ones in pots had more normal growth.

RESURRECTING OLDER HYBRIDS WITH PAPH. DRURYI Meanwhile, our keen interest lay in resurrecting some of

the older *Paph. druryi* hybrids as well as creating and introducing some of our own. Using the flowers of *Paph. druryi* that we had raised, we began experimenting in April, 2011. *Paphiopedilum Dallemagnei*, was a cross that was originated and registered by Dallemagne in 1900 with its seed parent as *Paph. druryi* and pollen parent as *Paphiopedilum hirsutissimum*. We were successful in recreating this hybrid, and out of the few plants that flowered, two clones were particularly spectacular. The plants were semi-erect to erect with dark glossy green on the upper side of the leaves and dull green underneath, much like in *Paph. hirsutissimum*. The scape was 10.6 inches (27 cm) and hirsute. Pedicels were dark purple brown. The dorsal sepal is almost orbicular, with a prominent, dark midvein like that of *Paph. druryi*. The lateral petals are light green overlaid with pinkish-purple, dark brown spots and a large dark brown midvein. The lip is beige in color with purplish-brown spotted reticulation. The synsepal is light yellow-green in color.

Paphiopedilum Sukhadru is a cross registered by Mr. and Mrs. K. Smelts in 1988. The seed parent was *Paph. druryi* and pollen parent was *Paph. sukhakulii*. The breeder was unknown. We remade this cross again in 2003, which produced a vigorous plant with lovely variegated foliage and erect flowers with balanced sepals, petals and labellum of green, bronze and speckled maroon. The upper side of the leaves are green, mottled with deeper green. The lower side is light yellow-green. The plant is nearly erect like *Paph. druryi*. The dorsal sepal is white with prominent green veins and a broad, dark brown median vein. The lateral petals are green or yellow bronze overlaid with dark brown spots and large reddish-brown midvein. The lip is pinkish-purple in color with purplish-brown spotted reticulation. The synsepal is light cream in color with green venation.

Paphiopedilum Sage Agasthya's Druryi: We recently created and registered a new hybrid between *Paph druryi* and *Paphiopedilum venustum*, which we named *Paph. Sage Agasthya's Druryi* to revere the great Indian Sage for science and literature, Agastya. He was a scholar and author of much Vedic literature. He was well versed in the field of natural medicines, and history states that he had a garden where he grew all kinds of plants including those that were of high medicinal value. *Paphiopedilum druryi* was also found in his garden.

The plant is compact, semi-erect,



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leaves are broad, mottled dark green with a purplish tinge on the surface while underneath it is dark purplish-red. Flowers are 4 inches (10-cm) wide × 3.5 inches (8.8 cm) tall, overall greenish-brown in color. Inflorescence borne on stem 27 cm long and ovary is 7.5 cm long with brownish-purple hair. The dorsal sepal is pale white splashed with lemon yellow, the midvein is prominent brown and other veins are dark apple green. The synsepal is broad, pale white yellow with dark, apple green veins. The labellum is warm brown with faint reticulations of brown and yellow green. The staminode is pale yellow green with a faint reticulation of green-

[10] *Paphiopedilum* Sukhadru 'Green Dragon'.

[11] *Paphiopedilum* Sukhadru 'Bronze'.

[12] *Paphiopedilum* Sage Agastya's Druryi.

[13] *Paphiopedilum venustum* growing in the author's nursery.

ish brown. Petals are pale pinkish-brown with an underlay of yellow green and a dark brownish-purple mid vein. Base of petals is covered in dark brownish-purple spots and hairs.

Today, *Paph. druryi* has been listed as critically endangered in the Red List data by the International Union for Con-

servation of Nature and Natural Resources (IUCN), thus preventing illegal international trading of the plant. It has also been protected by India's Wild Life Protection Act. In Southern India, home of *Paph. druryi*, researchers at the Jawaharlal Nehru Tropical Botanic Garden and Research Institute (JNTBGRI) at Thiruvananthapuram, Kerala have been carrying out seed culture by taking seeds of *Paph. druryi* from the Agastyamala Hills and growing them in artificial conditions with the intention to conserve them as well as to reintroduce them into the plant's natural habitat.

Acknowledgments

We thank Jawaharlal Nehru Tropical Botanic Garden and Research Institute (JNTBGRI), Thiruvananthapuram, Kerala, India for the first meeting of Indian Subcontinent Regional Orchid Specialist Group of IUCN, The World Conservation Union, SSC, April 13–17, 2000 to discuss endangered species of orchids, particularly *Paph. druryi* and *Aenhenrya rotundifolia*, and other aspects of Orchid cultivation. We also thank Julian Shaw, Registrar for International Orchid Registration, Royal Horticultural Society, U.K., and Dr. Pankaj Sahani, Kadoorie Farm and Botanic Garden (KFBG) Corporation, Hong Kong.

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— Udai graduated from Allahabad Agriculture Institute in 1972 with Gold Medal. He did his post-graduate training (1971–1972) on Orchids from Royal



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Botanic Gardens, Kew, England. He learned meristem tissue culture from Professor Georges Morel at Versailles, France and internship with H. Wichmann Orchideen at Celle, Germany. For the last 50 years he has been breeding and registering orchid hybrids. Pradhan is interested in biology, conservation and cultivation of orchids and nominated as a member of IUCN Orchid Specialist Group from 1984. He

chaired the Indian Subcontinent Regional Orchid Specialist Group from 1999–2012 and is a life Member of American Orchid Society and the Orchid Society of India (email: ucpradhan@hotmail.com).

Growing Orchids in

BY ALFONSO DOUCETTE

ORCHIDS HAVE BEEN cultivated by people for centuries, if not millennia. Who was first is not known for sure. Cymbidiums are a strong contender for the first cultivated orchid species. They were probably first grown in China between 200–300 CE in the palaces and gardens of nobles during the Wei and Chin dynasties (Hew 2001). *Vanilla planifolia*, which was used in the production of chocolate by the indigenous people of Mexico, is another contender. The exact time when it was first cultivated in Mexico is unknown. Estimates for the earliest cultivation of vanilla range from hundreds to thousands of years ago (Lubinsky et al. 2008).

Vanilla does, however, appear to represent the first tropical orchid cultivated in greenhouses in a temperate climate. Vanilla plants first arrived in England after cuttings of plants gathered in Campeche, Mexico arrived in 1739 (Reinikka 1995). The arrival of vanilla is interesting for our story because it represents the first time tropical orchids moved out of the garden and into closed structures that were meant to modify climate. These giant glass chambers were constructed to meet the needs of growing orchids and other tropical plants in temperate areas, which is what many of us are trying to do with our own plants.

The miniaturization of greenhouses made growing plants indoors in Victorian England accessible to people that did not have the space or finances to maintain a full-sized greenhouse. These miniature greenhouses, called Glazed Cases or Wardian Cases, were popularized by Nathaniel Ward's publication of *The Growth of Plants in Closely Glazed Cases* (1842). Glazed cases were meant to address challenges posed by pollution, lighting and moisture that made cultivating plants in industrialized parts of Victorian England difficult. There was still a key element missing that would allow this technology to be useful for cultivating all types of plants — cooling.

It was not until the 1950s that a case was developed specifically for plants that



had the ability to control temperature. The first “Walk-in Chamber” was developed by Percival Scientific in collaboration with researchers from the Iowa State University. The researchers contracted Percival for the development of a climate-controlled environment for growing plants. Percival's business at the time was focused on building coolers for butchers, so adapting this technology for plants was not a heavy lift. This collaboration would ultimately lead to the company's expansion into the market for producing scientific equipment (Percival Scientific, Inc. 2016).

Thus, with the development of Percival's Walk-in Chamber, the 1950s saw the potential for people to start growing orchids in climate-controlled growth chambers, but it does not seem like this approach reached orchid hobbyists for another 50 to 60 years. I first learned about the technique of growing plants in wine coolers my senior year of college. I

- [1] Percival's first walk-in chamber developed for climate-controlled plant growth. Photograph courtesy of Percival Scientific, Inc., all rights reserved.
- [2] The author's first attempt at constructing a wine cooler. The grow light was too big and the contraption he rigged blocked the view and made watering difficult.
- [3] The author's second, successful attempt at putting a wine cooler together. The chamber was too tall and narrow to provide enough illumination throughout the case, so a grow light was suspended vertically.
- [4] Equipment cords for lights, the fan and the temperature sensor run through the gap between the door and wine cooler's chamber.

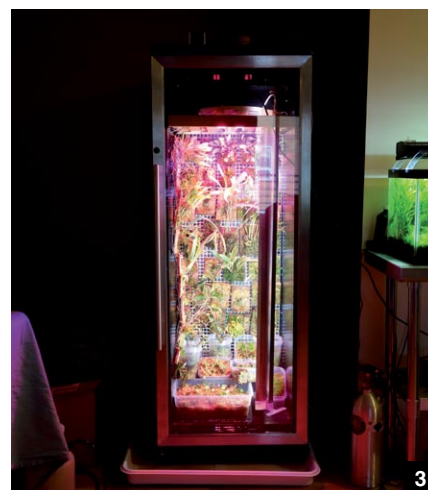
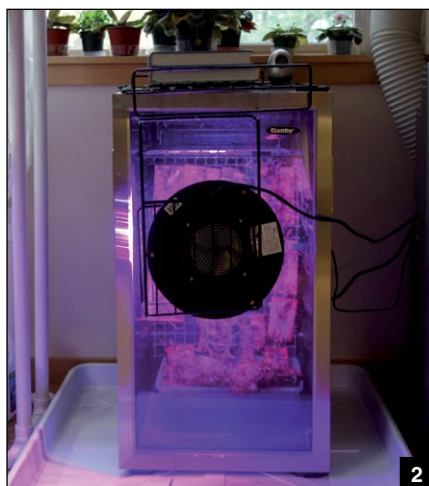
Wine Coolers

was doing fieldwork in Panama at Finca Dracula and I had the good fortune of meeting a researcher named Justin Yeager that worked on dart frogs. He had an interest in developing vivariums and growing cloud forest plants. Justin introduced me to the idea of growing plants in wine coolers.

In 2013, I set up my first wine cooler, a Danby 36-bottle wine cooler (model #DWC93BLSDB) with a 180-watt UFO LED grow light I bought on eBay from a Chinese manufacturer. It was a disaster due to my poor planning. The light was too big to fit in the growth chamber so I zip tied some of the wine cooler shelving together to hang the light in front of the glass front door. This contraption made watering a chore and viewing the plants impossible.

I had also drilled through the side of the wine cooler to insert the sensor for a temperature controller. Drilling through the side was not a problem, but I would later discover I could push the cord through the side of the door, which is a much easier solution. To top it all off, I discovered that the wine cooler leaked. The leak resulted in a large dark stain on the carpet. This was in an apartment I did not own. Fortunately, I was able to remove the stain with some elbow grease and OxyClean and I prayed that the lighter, slightly fuzzy patch of carpet would go unnoticed by the inspector after I left; it was and I received my security deposit back.

My next attempt was more successful. I purchased a Summit 80-bottle free-standing dual zone wine cooler (model #SWC154). The unit stood about 5 feet (1.5 m) tall and I hung a 4-foot (1.2-m) long T5 grow light fixture (Sun Blaze 960350: T5 High Output Supreme Fluorescent Strip Light, 4 Feet, 1 Lamp) vertically in the case. That wine cooler would last about five years until the cooling unit gave out. I am not sure if this happened because it was in standing water for those five years or not, but I decided it would be a good idea to raise the wine coolers above the



water that collected in the drip trays after that and now I keep them on bricks. The bricks also offer the advantage of helping the doors open smoothly above the lip of the drip tray on smaller units.

In the seven years since I set up my first wine coolers, documented in *Doucette* (2014), I have learned that the drop in night temperature does not seem to be that critical for the species that I grow. I discovered that 68–70 F (20–21 C) seems to be a magic temperature where you can keep both cool- and warm-growing pleurothallids blooming and growing. There is no drilling necessary to assemble the wine cooler. All you really need is the wine cooler, a light, a fan, something to hang your plants on and a drip mat. I discuss these items in detail and provide a complete list of the materials you can use to set up your own wine cooler as follows.

THE BUILD Plan for a full day to set up your wine cooler. It is a fun weekend project if you have the time. The most tedious aspect of setting up the cooler is trimming the hardware cloth (plastic-coated wire mesh) to size. The rest of the setup is fairly simple because it is just a matter of running cords through the side of the door and wiring the fan and wiring the hardware cloth in place. All the materials you need can be purchased online and delivered right to your home or apartment.

Wine Coolers. These can be heavy, so find out how much your unit will weigh and plan how you will get it to its final location. I am currently growing in an Insignia 29-bottle wine cooler (model #NS-WC29SS9) and an Insignia 115-can beverage cooler (model #NS-BC115SS9; Figure 7). I would guess they weigh 50–60 lbs (22.7–27.2 kg) empty. The larger units that can fit over 100 wine bottles are too heavy for me to lift on my own and I would guess they weigh over 100 lbs. I remove all of the shelves but I leave the topmost one to hang the hardware cloth, lights and fan from. I run cords for the lights, fan and temperature sensor through the side of the door where it is hinged to the chamber.

Temperature Controls. Not all the models will allow you to set a day and night temperature, so I recommend checking that before purchase if you want to access that feature. I am using a TrolMaster Legacy Beta Series Digital Day/Night Temperature Controller—BETA-4 to manage the temperature in my wine coolers. I also use a digital hygrometer and indoor thermometer (AcuRite 00613) to



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make sure the chamber is maintaining the right humidity and temperature metrics.

Lights. I am currently using a 12–18 inch (30.5–45.7 cm) MingDak LED aquarium plant light for my 29-bottle wine cooler and 115-can beverage cooler. I like that model because it has expanding legs that I can use to prop it up at the top of the cooler. It fits right into the grooves where the shelves would slide in. I noticed that it was falling out occasionally when I opened the wine cooler so I used some electrical tape to keep it fixed and that solved the problem. Your lights will need to be on a timer if there is not one built in. I have my lights on 12 hours a day.

I am no longer growing in 100+ bottle wine coolers, but I would recommend a model like LEONLITE 4-ft LED Grow Lights

[5] One-inch (2.5 cm) fan secured in the author's 115-can beverage cooler using laminated twist ties.

[6] Detail of the way the author bends the brown vinyl coated wire to secure the hardware cloth from which plants hang. This is the same wire used to secure the hardware cloth in the packaging.

[7] The author's current growing set-up. Insignia 29-bottle wine cooler (left) used for warm growers. Insignia 115-can beverage cooler (right) used for cool growers. Either unit can be used for warm or cool growing plants because the temperature is managed by a temperature controller.

[8] Cord box used to reduce visual clutter from equipment wires.

48W Full Spectrum if you are looking for an LED light that will provide even illumination across the chamber. Even illumination for your plants is difficult the taller and narrower the chamber is unless you hang a light vertically. I am using a LEONLITE LED for the orchids I keep in my basement in PVC chambers and I am happy with the results.

Fans. Cooling fans are run 24/7 and I would recommend a 1-inch (2.5 cm) model for 36 bottle wine coolers and a 3-inch (7.6 cm) fan for 100+ bottle wine coolers. Fans are important to evenly distribute the temperature and humidity levels throughout your wine cooler. I wire the fans either to some hardware cloth and then wire that hardware cloth to the topmost rack facing down or directly to the topmost rack using galvanized wire. I use 14-gauge galvanized steel wire (OOK brand, 100-ft 75 lb; \$7 at Home Depot) to wire fans equal to or greater than 3 inches (7.6 cm). I use laminated twist ties for securing 1-inch (2.5 cm) fans. I aim the fans pointing to the bottom of the chamber to provide circulation between the upper and lower portions of the case.

Cord Box. A cord box is not a must-have, but I like having them because it helps keep the space tidy. I put mine on top of the small wine coolers I keep and place the power strip and all the excess length of cord I can in one. I am using a cable management box from CGH that I purchased from Amazon for about \$20.

Hangers. I hang my plants from vinyl coated hardware cloth. This comes in a roll and needs to be cut down to size in order to fit in your wine cooler. Once it is trimmed, you can suspend it from the topmost rack of the wine cooler using 14-gauge galvanized steel wire. I used the vinyl-coated wire used to secure the hardware cloth I purchased in the package for my 29-bottle wine cooler and 115-can beverage cooler. You will need a pair of needle-nose pliers to cut the hardware cloth and to cut and twist the galvanized wire around the wine cooler rack. The hardware cloth will come in a roll so you will need to bend it flat. The only precaution I would mention is that the edges of any wire you cut can be sharp and scratch, so wear a pair of gardening gloves if you would like protection. I like to hang the hardware cloth from all three sides facing the glass front door to maximize the surface area I can hang plants on when I am using overhead lighting. I only add hardware cloth to the two sides of the chamber opposing a light when the light is hung vertically.



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Watering. I use an Undersink Reverse Osmosis Water Filter System (Home Master TMAFC-ERP) and a Chapin 1-Gallon SureSpray (model: #023883200107) to water my plants. I generally water my plants two-to-three times a week depending on the species and its placement. If you have more than 100 plants originating from cloud forests and

you do not have a reverse osmosis (RO) system, I recommend getting one. Lugging gallons of water every week to your home is not practical as your collection grows.

Drip Mats. Wine coolers will leak after you water your plants and as condensation collects on the back wall and drains from the unit. A drip mat like those used for washing machines will protect your

floors. I use a 32 × 30 inch (81.3 × 76.2 cm) washing machine pan (Oatey 34067) that I got for about \$30 on Amazon. I also recommend adding bricks to elevate your wine cooler so it is not sitting in water and to allow the doors to open easily. I purchased bricks used for cooking (US Stove Company FBP6E FireBrick) for this on Amazon for about \$30. It is also a good practice to keep a dedicated turkey baster to drain excess water from the tray if it is at risk of overflowing. I use a turkey baster and an empty gallon jug to collect any excess water.

Table 1 is a breakdown of all the basics you need to build your own wine cooler. These are not the only products you can use to achieve the success I have found in growing cloud-forest orchids. Rather, this list is meant to give you an idea of where you can find the products and how much they cost.

Table 2 is a list of some additional items that are not required, but I recommend them to optimize your experience.

Here are the basic steps to configuring a wine cooler for orchid cultivation:

1. Place the drip tray in the final location for your wine cooler.
2. Set down the bricks so they are spaced to match the feet of the wine cooler.
3. Place the wine cooler on top of the bricks.
4. Remove all but the topmost shelf from the wine cooler.
5. Secure the trimmed hardware cloth to hang from the topmost shelf using wire.
6. Add the light and wire it in place or tape it in place with electrical tape, if necessary; run the cord between door and case.
7. Add the fan and wire in place, if necessary; run the cord between door and case.
8. Add the temperature sensor, tape in place using electrical tape, if necessary; run the cord between door and case.
9. Plug in all of your equipment.
10. Set the light's timer.
11. Add the digital thermometer and hygrometer to the chamber.
12. Hang up your plants and enjoy!

THE PLANTS I like to think about drought tolerance, shading and flower presentation when arranging plants within a wine cooler. I put plants that like warmer, drier conditions nearest the lights and fan. I gauge which plants might like drier, brighter conditions based on their vegetative morphology.

Table 1. Basics needed to build your own wine cooler

Item	Potential vendor	Approximate cost
Insignia 115 Can Cooler	Best Buy	\$250
Day/Night Temperature Controller	Hydrobuilder	\$66
12–18 inch LED Grow Light	Amazon	\$30
Hardware Cloth	Home Depot	\$15
14-Gauge Galvanized Wire	Home Depot	\$7
Oatey Washing Machine Pan	Home Depot	\$22
Bricks	Amazon	\$30
USB Fan	Amazon	\$12
Total	ca.	\$430

Table 2. Optional items for building your own wine cooler

Item	Potential vendor	Approximate cost
RO System	Amazon	\$350
Electrical Timer	Amazon	\$12
Surge Protector Power Strip	Amazon	\$25
Spray Canister	Amazon	\$25
Cable Box	Amazon	\$20
Needle Nose Pliers	Amazon	\$10
Turkey Baster	Amazon	\$6
Digital Hygrometer/Thermometer	Amazon	\$10
Total:	ca.	\$460
Grand Total:	ca.	\$900



Terete, semi-terete and succulent leaves are adaptations to reduce water loss and can be used to infer which plants might handle exposure to high airflow, drought, and bright light the best. I also try to think about shading. I arrange the tallest plants farthest away from the light so as not to shade out shorter plants. The final consideration I make when arranging the plants within a wine cooler is their flowers. Some species have flowers that are interesting in profile and I try to hang those on the sides of the wine cooler to best show off their blooms. I think of these as “profile flowers.”

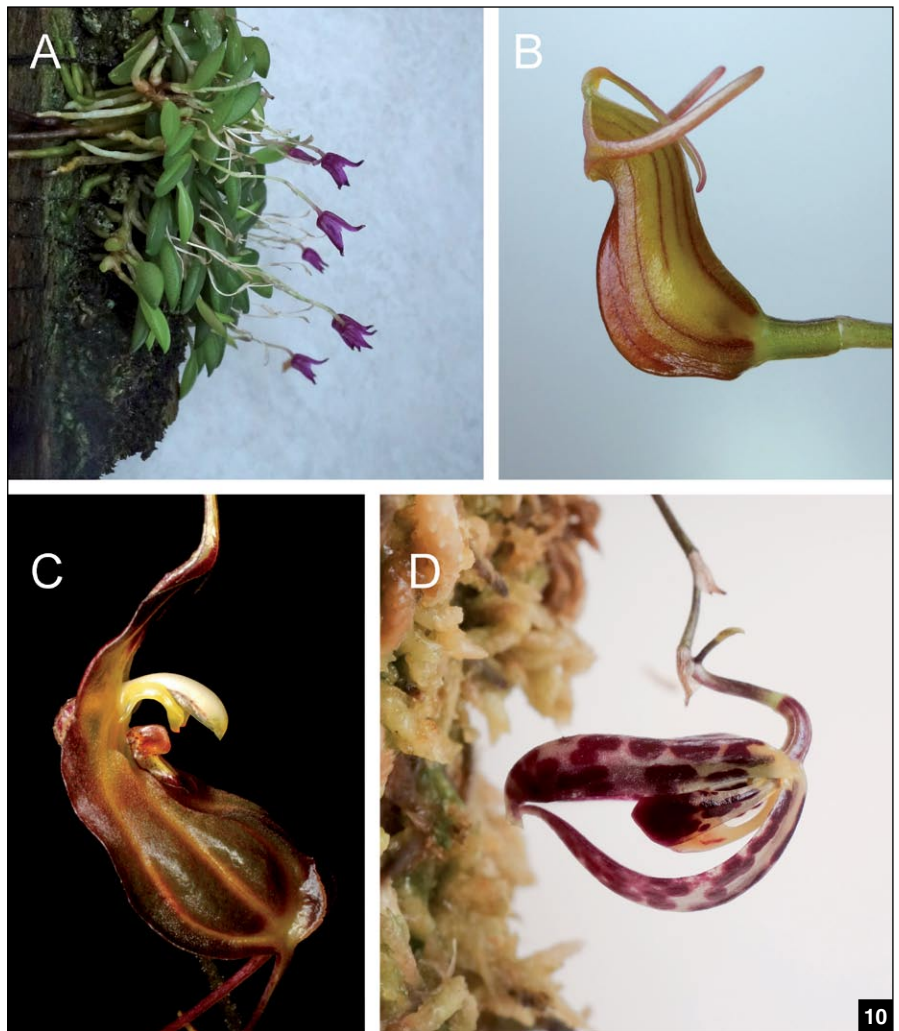
Warm Growers. These are lowland, mainly epiphytic species found below 3,281 feet (1,000 m). It took me a few years to learn that not all pleurothallids like to be grown cool and some species will slowly decline over time if the night temps are consistently dropping into the 50s F (10 C). A good way to prevent that from happening is to check to see from what elevation your species originated. I keep my warm growers around 80 F (27 C) during the day and drop that to about 68 F (20 C) at night.

Intermediate to Cool Growers. I grow species that originate from 4,900–9,850 feet (1,500–3,000 m) under the same temperature conditions and they appear to do fine. Species from above 3,280 feet (1,000 m) will generally do well under these conditions too but there may be some variation between species so it is best to play around. Signs I have noticed for plants being grown too warm or too cold are slowed growth and leaves lost faster than they are replaced. I keep my cool growers around 75 F (24 C) during the day and drop that to about 55 F (12 C) at night.

I use the elevation where a tropical species grows to tell me whether I should grow the plants warm or cool. The Internet Orchid Species Encyclopedia (IOSPE) is one of my favorite places to check for these data. I simply enter the species name and IOSPE into a search engine (e.g., Google) to look up the species’ growing elevation.

I remount all my plants once every six months to keep the moss from becoming so acidic that the plants cannot take up the proper levels of nutrients. Nutrient uptake is affected by pH. I water once every few days with RO water and I try to fertilize once a week with MSU Orchid fertilizer.

For centuries there have been tropical orchids that remained out of reach for growers in temperate areas, specifically those delicate, miniature orchid species



[9] *Dryadella lilliputana* (Cogn.) Luer illustrates the type of leaf morphology that can indicate a tolerance for bright, dry conditions found near the top of a wine cooler by the lights and fans. Species with this type of morphology are good candidates for areas of your wine cooler with high exposure to light and air flow. The author acquired his plant from Andy’s Orchids but they have also been offered for sale by Tarzane Group.

[10] These “profile flowers” have flowers that are interesting when viewed from the side, which makes them a good option for hanging on the sides of your wine cooler. **A.**

Specklinia macayensis A.Doucette is a micro miniature that stays under 0.5 inch (1.2 cm) tall and produces dark purple flowers in late summer through fall. This is a warm-growing species collected during the author’s fieldwork in Haiti. **B.** *Masdevallia unguentum* A.Doucette is a miniature species that stays under 5 inches (13 cm) tall and produces a delightful fragrance similar to cloves. Established plants are free flowering throughout the year. This is a cool grower acquired from Finca Dracula. **C.** *Masdevallia bicornis* Luer, is a medium-sized plant that stays under 12 inches (30 cm) tall and can be in bloom year-round on established specimens. This is an intermediate to warm grower acquired from Clackamas Orchids. The author has also seen them offered for sale by Ecuagenera. **D.** *Phloeophila alphonsiana* L.M.Matthews is a mysterious orchid with upside down flowers. A wild population remains unknown. Established plants stay under 5 inches (13 cm) tall and are in bloom all year long. This is an intermediate to cool grower acquired from J&L Orchids.

from cloud forests. Cloud forest orchids are hard to grow because they lack the defenses against dehydration and hot temperatures that their more robust lowland cousins have. Wine coolers

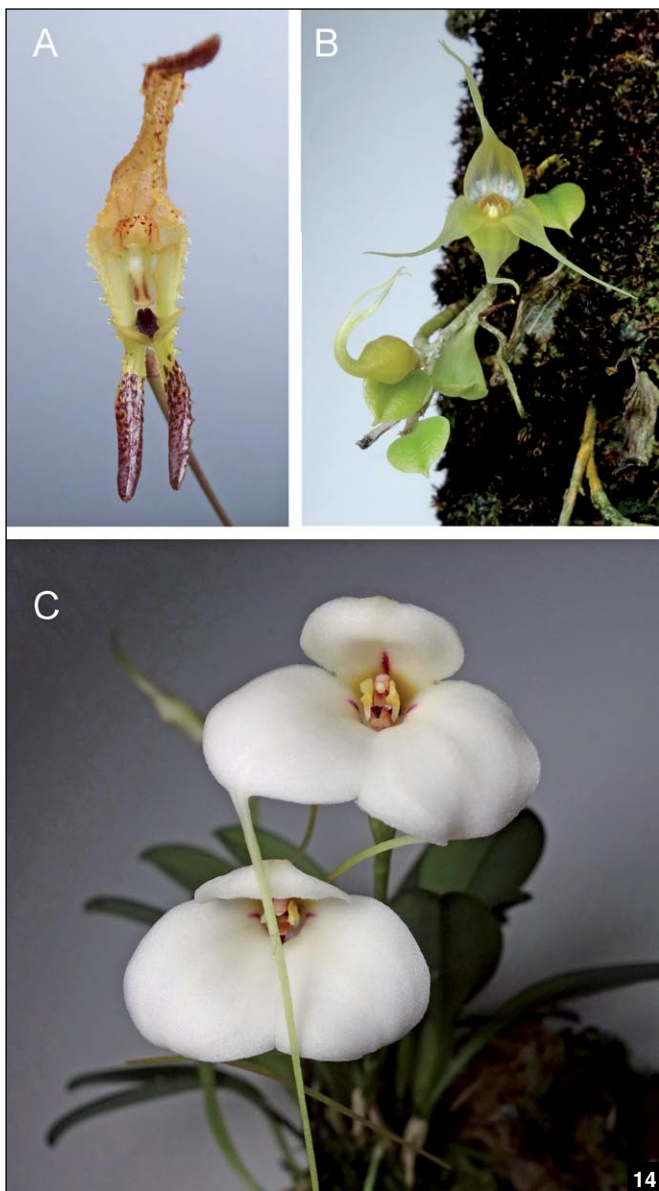
bring cloud forest orchids into our reach. Conversely, wine coolers might also lend themselves to an opposite growing situation — they might make temperate orchid species like *Cypripedium* or *Ophrys*



11] *Lepanthes rhodophylla* Schltr. is an example of a large plant best suited for the lower portions of a wine cooler. It can grow over 2 ft (0.6 m) tall, dwarfing many of its relatives. The species produces purple, convex, slightly ruffled leaves with a drip tip. The small, intricate flowers have caramel-colored sepals, chartreuse petals and a purple lip that wraps tightly around the column. The plant was acquired from J&L Orchids.

[12] *Lepanthopsis doucetteana* Pfahl is a recently described species that shows promise for wine cooler cultivation given the miniature size and ever-blooming habit. The plants stay under 3 inches (8 cm) tall, preventing them from shading plants below. The inflorescences provide an interesting view from the side making the species a good candidate for hanging from the side of a wine cooler. **A.** Plant habit. **B.** Detail of the tiny inflorescence next to a U.S. quarter. **C.** A pale color form of the species. The photographs here are of plants recently imported from Ecuador by the Tarzane Group. Photographs courtesy of Tomas Bajza.

[13] Three of my favorite warm growers: **A.** *Acianthera nikoleae* A.Doucette & J.Portilla is a species all about textures! The leaves are warty, and the flowers are fuzzy. This species flowers freely throughout the year. The author acquired his plant from Ecuagenera. **B.** *Lepanthes telipogoniflora* Schuit. & A.de Wilde is an incredible miniature that stays under 3 inches (7.5 cm) tall and produces blooms that look like little orange umbrellas. Established plants can be in bloom all year long. Plant acquired from Orquideas del Valle and Ecuagenera. **C.** *Lepanthes calodictyon* Hook gets its name from the beautiful, purple net-venation on the leaves. This species can be in bloom all year long when it is happy. Plants acquired from Ecuagenera and Orquideas del Valle.



accessible to people living in tropical areas.

We are living in an exciting time to grow orchids. We have unlocked the secrets to their reproduction from seed, we have RO systems to purify water to satisfy the needs of sensitive orchid species, fertilizers have been developed that are tailored specifically for orchid nutrition, and techniques involving refrigeration have advanced enough and become accessible enough that anyone can cultivate species that our predecessors could only dream of growing, let alone keep in the luxury of their own homes.

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[14] Three of my favorite cool growers: **A.** *Porroglossum mordax* (Rchb.f.) H.R.Sweet produces glossy, dark green leaves and wiry inflorescences that hold the gnarly flowers well above the foliage. This species is the Venus flytrap of orchids. The lip snaps shut when disturbed by an insect or orchid grower. The author acquired his plant in a trade via Instagram, but these are also available from Ecuagenera. **B.** *Brachionidium polypodium* Luer is part of a genus of orchids with a reputation for being impossible to grow. Wine coolers make this species and other delicate, high elevation cloud forest species accessible to the home grower. This plant was acquired from Finca Dracula. **C.** *Masdevallia andreettaeana* Luer is a voluptuous beauty with white flowers that provide a dramatic contrast against the dark green, spoon-shaped leaves. The author acquired his plant from Ecuagenera.

[15] *Neocogniauxia monophylla* Schltr. can handle warm and cool temperatures but not extremes at either end. The species is native to Jamaica where it is found between 3,275 and 5,240 feet (1,000–1,600 m). It produces bright red-orange flowers that seem to glow because they are so vibrant. This species produces shoots that stay under 10 inches (25 cm) tall, but the inflorescences are equally as long making this species better suited for larger wine coolers. This plant was acquired from Orchids Forum, but I have also seen them for sale by Ecuagenera.



Alfonso Doucette, PhD

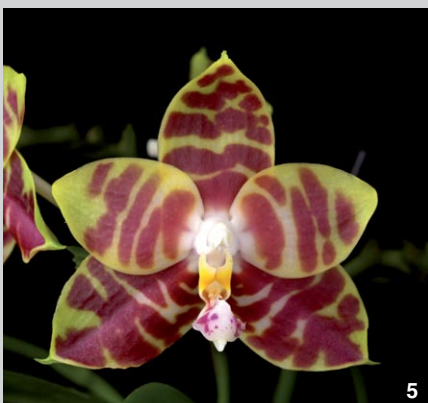
anyone that has built a wine cooler for orchids following his recommendations to share their experiences with him (email: adoucette@wisc.edu).

— Alfonso Doucette, PhD, speaks internationally for orchid societies and conferences on a range of subjects including growing orchids in wine coolers and the systematics and cultivation of pleurothallid orchids. He received a doctorate in botany from the University of Wisconsin–Madison and completed a bachelor of plant sciences at Cornell University. He encourages





- [1] *Vanda* Suksamran Spots 'Soroa' AM/AOS (Gold Spots x Butterfly) 85 pts. Exhibitor: Soroa Orchids, Inc.; Photographer: Carmen Johnston. Florida-Caribbean Judging
- [2] *Paphiopedilum* Palani Quintal 'Cool Paradise' AM/AOS (Memoria Miguel Medina x *philippinense*) 84 pts. Exhibitor: Cheryl Jones; Photographer: Kathy Barrett. California Sierra Nevada Judging
- [3] *Holcoglossum* *phongii* 'Charmer' CBR/AOS. Exhibitor: Charles and Jane High; Photographer: K Payeur L Cinert. Chicago Judging
- [4] *Paphiopedilum* Jared's Time 'Izzy' AM/AOS (Boom Time x Jared's Choice) 80 pts. Exhibitor: Robert and Fay Sun; Photographer: Jonathan Rollins. California Sierra Nevada Judging
- [5] *Miltonia* *cuneata* 'Bonheur' HCC/AOS 78 pts. Exhibitor: Lynne Murrell; Photographer: Jonathan Rollins. California Sierra Nevada Judging
- [6] *Lycaste* Gamora Vanity 'Duchess of Dilworth' AM/AOS (Jackie-Bear x Gamora Ablaze) 81 pts. Exhibitor: Marc Burchette; Photographer: Sarah Goldberg. Carolinas Judging
- [7] *Dendrobium* *faciferum* 'Seagrove Melon Treat' CCM/AOS 87 pts. Exhibitor: Seagrove Orchids; Photographer: Sarah Goldberg. Carolinas Judging
- [8] *Procatavola* Key Lime Stars 'Seagrove Margarita' AM/AOS (*Cattleychea* Lime Sherbet x *Brassavola* *nodosa*) 80 pts. Exhibitor: Seagrove Orchids; Photographer: Sarah Goldberg. Carolinas Judging
- [9] *Lycaste* Abou Sunset 'Goodstuff' AM/AOS (Chita Sunset x Alan Salzman) 81 pts. Exhibitor: Tom Pickford; Photographer: Jonathan Rollins. California Sierra Nevada Judging
- [10] *Tolumnia* Golden Sunset 'Stelmar' CCM/AOS (Stanley Smith x Tiny Tim) 87 pts. Exhibitor: Stelmar Gardens; Photographer: Carmen Johnston. Florida-Caribbean Judging
- [11] *Paphiopedilum* Tawan 'Deerwood' AM/AOS (*thaiantum* x *fairrieantum*) 82 pts. Exhibitor: Ross Hella; Photographer: K Payeur L Cinert. Chicago Judging
- [12] *Paphiopedilum* *haynaldianum* 'Leo 1' AM/AOS 83 pts. Exhibitor: Pam Kolb; Photographer: Sarah Goldberg. Carolinas Judging
- [13] *Sudamerlycaste* *barrowiorum* 'Baby Totz' CBR-AM/AOS 83 pts. Exhibitor: David and Kathy Konkol; Photographer: Katie Payeur. Chicago Judging
- [14] *Cymbidium* Charismatic Alvin 'Jaybee' HCC/AOS (Yai x Joan's Charisma) 79 pts. Exhibitor: Ed Dumaguin; Photographer: Kathy Barrett. California Sierra Nevada Judging
- [15] *Phalaenopsis* Liu's Triprince 'Leighton' HCC/AOS (Eduardo Quisumbing x *Jobbii*) 77 pts. Exhibitor: Margaret Bowling; Photographer: Sarah Goldberg. Carolinas Judging
- [16] *Stelis* *immersa* 'Brooke' CCM/AOS 83 pts. Exhibitor: Charles and Jane High; Photographer: Katie Payeur. Chicago Judging





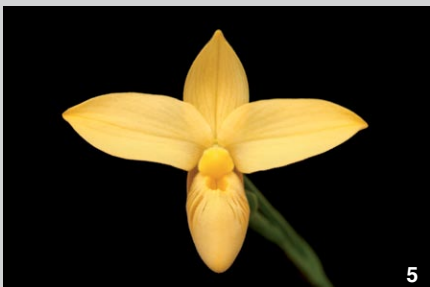
- [1] *Paphiopedilum mastersianum* 'Deerwood' AM/AOS 83 pts. Exhibitor: Ross Hella; Photographer: Katie Payeur. Chicago Judging
- [2] *Dendrobium* Diane Meyer 'Rhonda's Wish' AM/AOS (Roy Tokunaga x Stephen Batchelor) 82 pts. Exhibitor: Mike Beber; Photographer: David Gould. Dallas Judging
- [3] *Rhyncholaeliocattleya* Burdekin Wonder 'Perfection' HCC/AOS (Donna Kimura x Sylvia Fry) 79 pts. Exhibitor: Daniel Callahan; Photographer: David Gould. Dallas Judging
- [4] *Clowesetum* Diane Drisch 'Pink Lemonade' HCC/AOS (Grace Dunn x *Catasetum tigrinum*) 78 pts. Exhibitor: Carol Panza; Photographer: Ed Cott. Great Lakes Judging
- [5] *Phalaenopsis* Yaphon Sir 'Yaphon' FCC/AOS (Gelblieber x Macassar) 92 pts. Exhibitor: Big Leaf Orchids; Exhibitor 2: Big Leaf Orchids; Photographer: David Gould. Dallas Judging
- [6] *Papilionanda* Batram 'YourEye' AM/AOS (Mimi Palmer x *Vanda denisoniana*) 85 pts. Exhibitor: Juraj Kojis; Photographer: Carmen Johnston. Florida-Caribbean Judging



- [7] *Paphiopedilum* Pisgah Green 'Krull's Emerald' AM/AOS (Memoria Brayden Nicholson x Hilo Green Mountain) 81 pts. Exhibitor: Krull-Smith; Photographer: Carmen Johnston. Florida-Caribbean Judging
- [8] *Cattleya maxima* (Coerulea) 'Stevie Ray Vaughan' AM/AOS 83 pts. Exhibitor: Ben Oliveros and Orchid Eros; Photographer: Glen Barfield. Hawaii Judging
- [9] *Santanderella amadorinconiana* 'Julian' CCM/AOS 84 pts. Exhibitor: Jorge Solarte; Photographer: Bryan Ramsay. Pacific Northwest Judging
- [10] *Paphiopedilum* Saint Swithin 'Nike' CCE/AOS (*philippinense* x *rothschildianum*) 91 pts. Exhibitor: Ernie Barham; Photographer: Carmen Johnston. Florida-Caribbean Judging
- [11] *Dendrobium* Ku-Ring-Gai 'Chelsea' HCC/AOS (*tetragonum* x *xspeciokingianum*) 76 pts. Exhibitor: Susan Dunlap; Photographer: Ed Cott. Great Lakes Judging



- [12] *Cattleya walkeriana* 'Couto' AM/AOS 80 pts. Exhibitor: Ben Oliveros and Orchid Eros; Photographer: Glen Barfield. Hawaii Judging
- [13] *Cattleya walkeriana* 'Polyhymie' AM/AOS 88 pts. Exhibitor: Ben Oliveros and Orchid Eros; Photographer: Glen Barfield. Hawaii Judging
- [14] *Phragmipedium* Early Surprise 'Kat's Song' HCC/AOS (Waunakee Sunset x Rosalie Dixler) 78 pts. Exhibitor: Darlene Thompson; Photographer: Ed Cott. Great Lakes Judging
- [15] *Epidendrum stamfordianum* 'Windswept's Beauty' CCM/AOS 87 pts. Exhibitor: Windswept in Time Orchids; Photographer: Ed Cott. Great Lakes Judging
- [16] *Cattlianthe* Pixie Treat 'M & B' AM/AOS (Pixie x Trick or Treat) 80 pts. Exhibitor: Max Thompson and Bryon Rinke; Photographer: Bryon Rinke. Great Plains Judging





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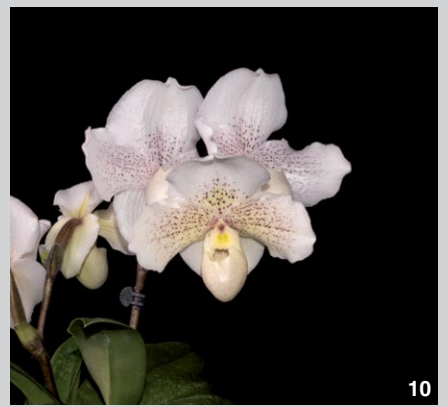
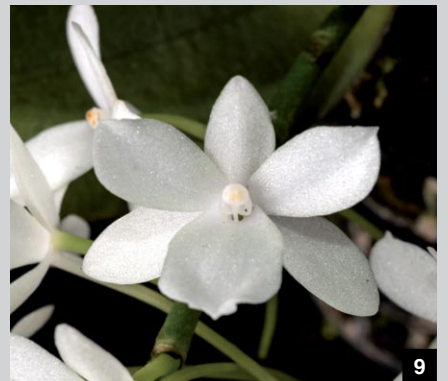
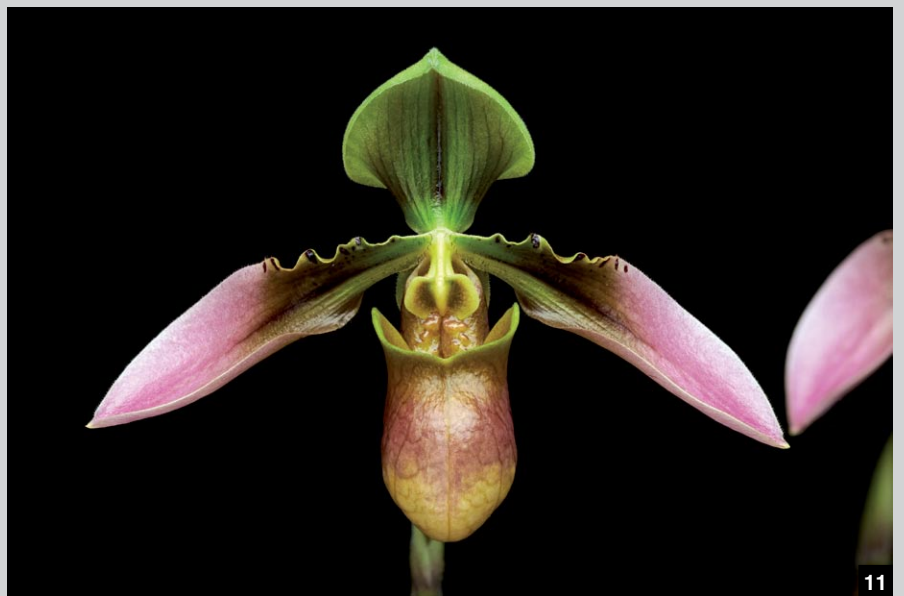
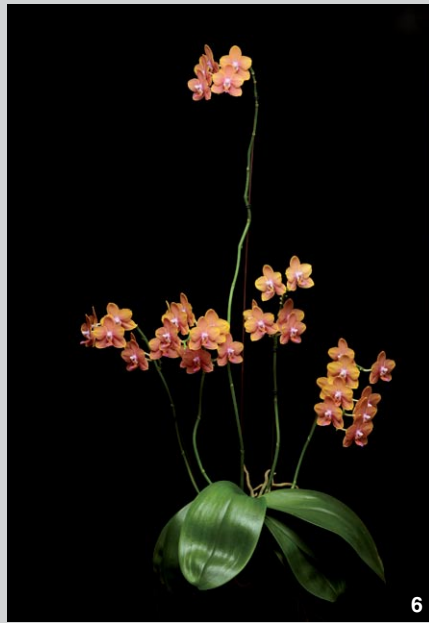


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- [1] *Cattleya* Pole-Star 'Mirtha Isabel' AM/AOS (*coccinea* x *briegeri*) 81 pts. Exhibitor: Ben Oliveros and Orchid Eros; Photographer: Glen Barfield. Hawaii Judging
- [2] *Rhyncholaeliocattleya* Very Vermillion 'Abbey' AM/AOS (Paradise Rose x *Lebenkreis*) 89 pts. Exhibitor: Stephen Male and Fishing Creek Orchids; Photographer: Julie Rotramel. National Capital Judging
- [3] *Rhyncholaeliocattleya* Verbatim 'Quay San' AM/AOS (*Rubescence* x *Cattleya* Angel's Fantasy) 85 pts. Exhibitor: Stephen Male and Fishing Creek Orchids; Photographer: Julie Rotramel. National Capital Judging
- [4] *Paphiopedilum* Julius 'The Slipper Fits' HCC/AOS (*lowii* x *rothschildianum*) 76 pts. Exhibitor: Christopher Zajac; Photographer: Julie Rotramel. National Capital Judging
- [5] *Phragmipedium besseae* f. *flavum* 'Green Gold' HCC/AOS 77 pts. Exhibitor: Robert Gabel; Photographer: Bryan Ramsay. National Capital Judging
- [6] *Cattleya amethystoglossa* 'Put Me In The Zoo' AM/AOS 80 pts. Exhibitor: Ben Oliveros and Orchid Eros; Photographer: Glen Barfield. Hawaii Judging
- [7] *Vanda Motes Purple Rain* 'Reyna's Prince' AM/AOS (*Blue Tahourdin* x *tessellata*) 81 pts. Exhibitor: Sarah Waddoups; Photographer: Steve Marak. Mid-America Judging
- [8] *Sergioara* Yokosuka Story 'Canary' AM/AOS (*Rhyncattleanthe* Free Spirit x *Epicattleya* René Marqués) 82 pts. Exhibitor: Ron Biancosino; Photographer: Bryan Ramsay. National Capital Judging
- [9] *Bulbophyllum echinolabium* 'Loch Raven' AM/AOS 83 pts. Exhibitor: Marc Kiriou; Photographer: Julie Rotramel. National Capital Judging
- [10] *Paphiopedilum* Berenice 'Pip' CCM/AOS (*lowii* x *philippinense*) 85 pts. Exhibitor: Jeff Morris; Photographer: Julie Rotramel. National Capital Judging
- [11] *Dendrobium* Royal Chip AQ/AOS (Micro Chip 'HR 4N' x Roy Tokunaga 'H&R Pink Blush'). Exhibitor: H&R Nurseries, Inc.; Photographer: Alyn Nishioka. Hawaii Judging
- [12] *Dendrobium* Royal Chip 'Salt and Pepper' AM/AOS (Micro Chip x Roy Tokunaga) 81 pts. Exhibitor: H&R Nurseries, Inc.; Photographer: Alyn Nishioka. Hawaii Judging
- [13] *Paphiopedilum* Odette's Beguilement 'North Fork' AM/AOS (Grand Fred x Odette Doubled) 80 pts. Exhibitor: Woodstream Orchids; Photographer: Bryan Ramsay. National Capital Judging
- [14] *Dendrobium* Royal Chip 'Cherries and Cream' AM/AOS (Micro Chip x Roy Tokunaga) 82 pts. Exhibitor: H&R Nurseries, Inc.; Photographer: Alyn Nishioka. Hawaii Judging
- [15] *Dendrobium* Royal Chip 'Nora' AM/AOS (Micro Chip x Roy Tokunaga) 83 pts. Exhibitor: H&R Nurseries, Inc.; Photographer: Alyn Nishioka. Hawaii Judging
- [16] *Cattleya schroederae* 'Morrigh' CCM/AOS 87 pts. Exhibitor: Jeff Morris; Photographer: Julie Rotramel. National Capital Judging





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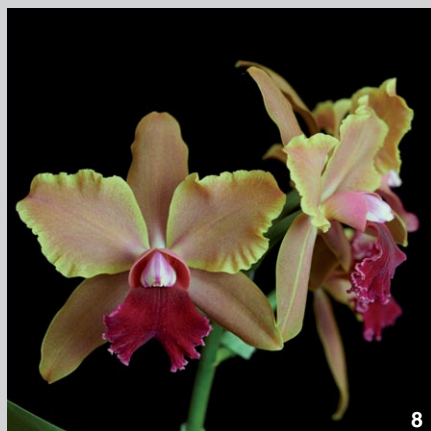
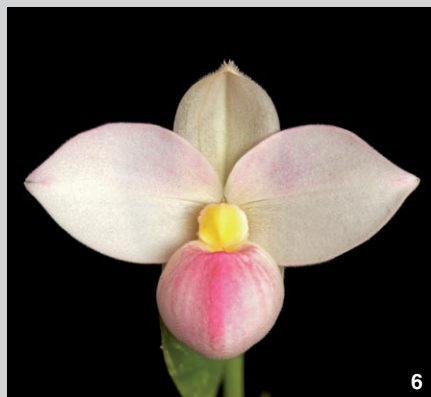


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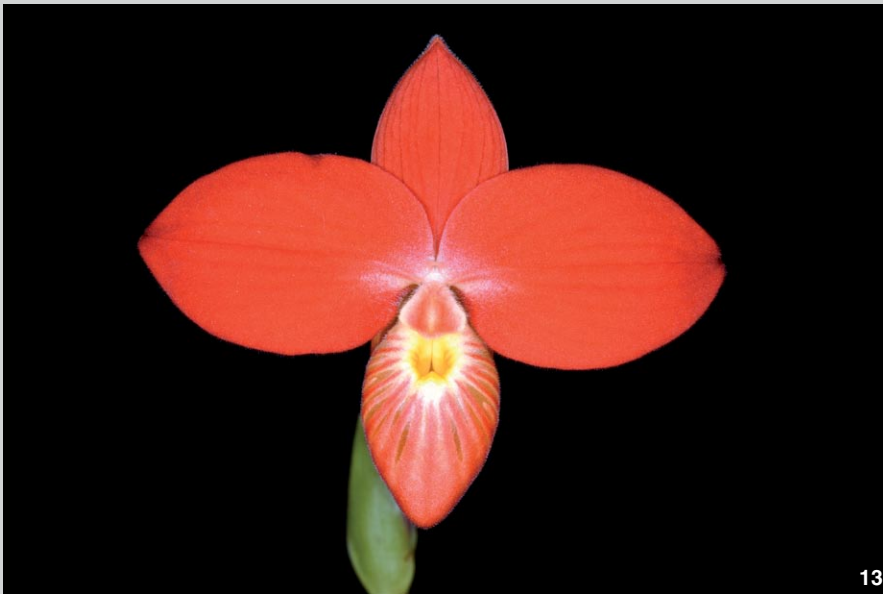
- [1] *Phalaenopsis* Corona 'Whalloper' HCC/AOS (*cornu-cervi* x *amboinensis*) 79 pts. Exhibitor: Ron Biancosino; Photographer: Bryan Ramsay. National Capital Judging
- [2] *Paphiopedilum primulinum* var. *primulinum* 'Whalloper' AM/AOS 84 pts. Exhibitor: Ron Biancosino; Photographer: Bryan Ramsay. National Capital Judging
- [3] *Paphiopedilum* Austin Cash 'Underworld' AM/AOS (*Elfstone* x *Alchemy*) 86 pts. Exhibitor: Marriott Orchids; Photographer: Kim Frankenfield. National Capital Judging
- [4] *Paphiopedilum dayanum* 'Tiny Jungle Champ' HCC/AOS 76 pts. Exhibitor: Chris Mende; Photographer: Japheth Ko. Pacific Central Judging
- [5] *Cattlianthe* Little Hazel 'Chasus' AM/AOS (*Hazel Boyd* x *Cattleya Psyche* (1902)) 80 pts. Exhibitor: Charles and Susan Wilson; Photographer: Ross Leach. Pacific Northwest Judging
- [6] *Phalaenopsis* Tying Shin Golden City 'Oriental' CCM/AOS (*Sogo Lawrence* x *Tying Shin Cellar*) 84 pts. Exhibitor: Ron Biancosino; Photographer: Bryan Ramsay. National Capital Judging
- [7] *Cymbidium* Kirby Lesh 'Cinnabar' CCM/AOS (*Pink Champagne* x *Red Beauty*) 87 pts. Exhibitor: Pierre Pujol; Photographer: Japheth Ko. Pacific Central Judging
- [8] *Fredclarkeara* Darkest Desire 'Brittany's Dark Side' AM/AOS (*Frank Smith* x *Catasetum* John C. Burchett) 80 pts. Exhibitor: Wade Hollenbach; Photographer: Kim Frankenfield. National Capital Judging
- [9] *Aerangis* James G. Coyner 'Jack Michael' AM/AOS (*citrata* x *fastuosa*) 80 pts. Exhibitor: Hossein Noorbakhsh; Photographer: Kim Frankenfield. National Capital Judging
- [10] *Paphiopedilum* Great Expectations 'Triplets' JC/AOS (*White Legacy* x *Skip Bartlett*). Exhibitor: Marriott Orchids; Photographer: Kim Frankenfield. National Capital Judging
- [11] *Paphiopedilum appletonianum* 'MS' AM/AOS 80 pts. Exhibitor: Michael Summers; Photographer: Bryan Ramsay. National Capital Judging
- [12] *Lycaste* Athanacia 'Brigitte Lee' AM/AOS (*virginialis* x *Kurt Servos*) 80 pts. Exhibitor: Jim Snyder; Photographer: Ross Leach. Pacific Northwest Judging
- [13] *Phalaenopsis schilleriana* 'Jane' AM/AOS 83 pts. Exhibitor: David A. Edgley; Photographer: Mike Pearson. Pacific Northwest Judging
- [14] *Cymbidium* Mini-Me 'Woodside' AM/AOS (*Vogel's Magic* x *Kirby Lesh*) 83 pts. Exhibitor: Pierre Pujol; Photographer: Japheth Ko. Pacific Central Judging
- [15] *Paphiopedilum* Saiun 'SkyBear' HCC/AOS (*sukhakulii* x *wardii*) 79 pts. Exhibitor: Harvey Brenneise; Photographer: Mike Pearson. Pacific Northwest Judging
- [16] *Bulbophyllum thaiorum* 'MikeAl' AM/AOS 81 pts. Exhibitor: Michael Curtin; Photographer: Ross Leach. Pacific Northwest Judging





- [1] *Dracula chiroptera* 'Sajamied' AM/AOS 83 pts. Exhibitor: James Pineda; Photographer: Bryan Ramsay. Pacific Northwest Judging
- [2] *Phragmipedium* Manzur La Aldea Caricias 'Aldea la Nube' JC/AOS (Manzur la Aldea x *schlimii* var. *manzurii*). Exhibitor: David Manzur; Photographer: Bryan Ramsay. Pacific Northwest Judging
- [3] *Lycaste* Alan Salzman 'Windflower' AM/AOS (Island of Vulcorn x Shoalhaven) 83 pts. Exhibitor: Betty Kelepecz; Photographer: Arnold Gum. Pacific South Judging
- [4] *Cyrtorchilum diceratum* 'Margarita' CHM/AOS 84 pts. Exhibitor: Juan Saldarriaga; Photographer: Bryan Ramsay. Pacific Northwest Judging
- [5] *Sobralia virginalis* 'Angelica' CCE/AOS 91 pts. Exhibitor: Jorge Solarte; Photographer: Bryan Ramsay. Pacific Northwest Judging
- [6] *Phragmipedium* Manzur La Aldea Caricias 'Aldea Colacion' AM/AOS (Manzur la Aldea x *schlimii* var. *manzurii*) 81 pts. Exhibitor: David Manzur; Photographer: Bryan Ramsay. Pacific Northwest Judging
- [7] *Paphiopedilum* Macabre 'Manzur la Aldea' AM/AOS (*sukhakulii* x Voodoo Magic) 86 pts. Exhibitor: David Manzur; Photographer: Bryan Ramsay. Pacific Northwest Judging
- [8] *Rhyncholaeliocattleya* Coffee Delight 'Purace' AM/AOS (*Cattleya bicolor* x Toshie Aoki) 80 pts. Exhibitor: Jardines Romeral; Photographer: Bryan Ramsay. Pacific Northwest Judging
- [9] *Paphiopedilum* Prince Edward of York 'Alejo' AM/AOS (*rothschildianum* x *sanderianum*) 81 pts. Exhibitor: Alvaro Villegas; Photographer: Bryan Ramsay. Pacific Northwest Judging
- [10] *Stelis morganii* 'Pascal' HCC/AOS 77 pts. Exhibitor: Pascal Arrondeau; Photographer: Bryan Ramsay. Pacific Northwest Judging
- [11] *Platystele beatricis* 'Diego' CCE/AOS 93 pts. Exhibitor: Pascal Arrondeau; Photographer: Bryan Ramsay. Pacific Northwest Judging
- [12] *Masdevallia* Galaxy 'Alma del Bosque' AM/AOS (*triangularis* x Kimballiana) 80 pts. Exhibitor: Daniel Piedrahita-Thiriez; Photographer: Bryan Ramsay. Pacific Northwest Judging
- [13] *Phalaenopsis* Phoenix Legacy 'Shadow' HCC/AOS (Sogo Lawrence x Brother Dendi) 77 pts. Exhibitor: Eric Goo/Phoenix Orchids; Photographer: Eric Goo. Pacific South Judging
- [14] *Eulophia* Shamara 'Yolinda' AM/AOS (*euglossa* x *guineensis*) 80 pts. Exhibitor: Yolanda Jaramillo; Photographer: Bryan Ramsay. Pacific Northwest Judging
- [15] *Microcoelia aphylla* 'Alma del Bosque' CCM/AOS 88 pts. Exhibitor: Daniel Piedrahita; Photographer: Bryan Ramsay. Pacific Northwest Judging
- [16] *Cattleya warszewiczii* 'Casmenga' CCM/AOS 84 pts. Exhibitor: Henry Eder; Photographer: Bryan Ramsay. Pacific Northwest Judging





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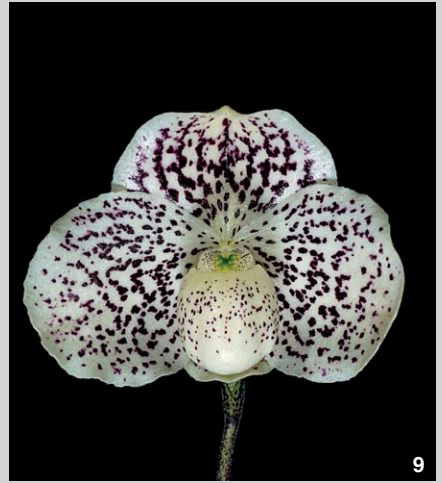


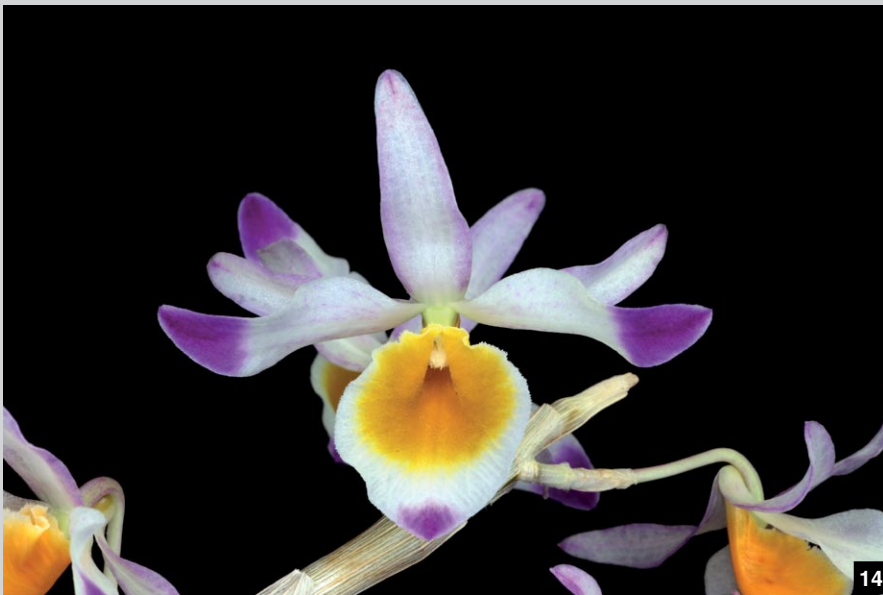
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- [1] *Catasetum* Sandra Dixon 'Corinne's Winged Tiger' AM/AOS (Susan Fuchs x *tigrinum*) 81 pts. Exhibitor: Corinne Arnold; Photographer: Wes Newton. Florida North-Central Judging
- [2] *Vanda* Motes Hot Mama 'MV Chocolatier' AM/AOS (Foxy Lady x *merrillii*) 81 pts. Exhibitor: Stuart Henderson; Photographer: Wes Newton. Florida North-Central Judging
- [3] *Paphiopedilum thaianum* 'Fajen's Orchids Too' AM/AOS 84 pts. Exhibitor: Fajen's Orchids; Photographer: Wes Newton. Florida North-Central Judging
- [4] *Phalaenopsis* Zheng Min Cheetah 'Krull-Smith' AM/AOS (Buena Jewel x Penang *Violacea*) 84 pts. Exhibitor: Krull-Smith; Photographer: Wes Newton. Florida North-Central Judging
- [5] *Clowesetum* Mark Margolis 'Joyce Adams' CCM-AM/AOS (*Catasetum* Durval Ferreira x *Clowesia dodsoniana*) 83-82 pts. Exhibitor: Edward W. Cavin; Photographer: Wes Newton. Florida North-Central Judging
- [6] *Paphiopedilum* Chou-Yi Anigode 'A-doribil' AM/AOS (*godefroyae* x *ad-ductum*) 85 pts. Exhibitor: Bill Thoms and Doris Dukes; Photographer: Wes Newton. Florida North-Central Judging
- [7] *Dendrobium spectabile* 'Papito N.O.K.' AM/AOS 83 pts. Exhibitor: Noel Soler-Figueroa; Photographer: Irma Saldaña. Puerto Rico Judging
- [8] *Fredclarkeara* Desert Davison 'Louisiana' AM/AOS (*Mormodia* Painted Desert x *Catasetum* Melana Davison) 83 pts. Exhibitor: Alan Taylor; Photographer: Wilton Guillory. Shreveport Judging
- [9] *Vanda* Lek 'Garrett's Little Lu' AM/AOS (*luzonica* x Flambeau) 84 pts. Exhibitor: Sharon and David Garrett; Photographer: Wes Newton. Florida North-Central Judging
- [10] *Phalaenopsis* Susan Philips 'Logan' HCC/AOS (Emeraude x Tsay's Evergreen) 77 pts. Exhibitor: Wes Addison; Photographer: Eric Goo. Pacific South Judging
- [11] *Phalaenopsis* Susan Philips (Emeraude 'Champion #6' x Tsay's Evergreen 'Fangtastic') AQ/AOS. Exhibitor: Wes Addison; Photographer: Eric Goo. Pacific South Judging
- [12] *Sudamerlycaste ciliata* 'José R. Fernández, Jr.' AM/AOS 81 pts. Exhibitor: Jose Fernandez; Photographer: Irma Saldaña. Puerto Rico Judging
- [13] *Phragmipedium besseae* 'Zephyrus Peach' HCC/AOS 75 pts. Exhibitor: John Doherty; Photographer: Jay Norris. Toronto Judging
- [14] *Paphiopedilum fairrieianum* 'Zephyrus Rioja' AM/AOS 80 pts. Exhibitor: John Doherty; Photographer: Jay Norris. Toronto Judging
- [15] *Papilionanda* James Craig Adamson 'Naoki Kawamura' HCC/AOS (Arjuna x *Vanda insignis*) 79 pts. Exhibitor: Naoki Kawamura; Photographer: Julien Baruch. Florida North-Central Judging
- [16] *Cymbidium* FouFou 'Bronze Sunset' CCM/AOS (Fifi x Roger Lee) 81 pts. Exhibitor: Jean Allen-Ikeson; Photographer: Jay Norris. Toronto Judging





- [1] *Vanda* Garrett's Rosey Freckles 'David's Speckelation' HCC/AOS (Mood Indigo x Yip Sum Wah) 76 pts. Exhibitor: Sharon and David Garrett; Photographer: Wes Newton. Florida North-Central Judging
- [2] *Bulbophyllum* Fullerton 'Whisper Kodachrome' HCC/AOS (Frank Smith x *claptonense*) 76 pts. Exhibitor: Laura and Wes Newton; Photographer: Wes Newton. Florida North-Central Judging
- [3] *Cattleya tenebrosa* 'Goodstuff' AM/AOS 83 pts. Exhibitor: Tom Pickford; Photographer: Ramon de los Santos. California Sierra Nevada Judging
- [4] *Paphiopedilum* Spidermaster 'Wacousta' AM/AOS (Spiderman x *rothschildianum*) 83 pts. Exhibitor: Dot Potter Barnett; Photographer: Richard Noel. Cincinnati Judging
- [5] *Vanda* Mary's Lemon Drop 'Chad's Yellow Joy' AM/AOS (Yoshiko Ise x *denisoniana*) 80 pts. Exhibitor: Chad Whetstone; Photographer: Wes Newton. Florida North-Central Judging
- [6] *Catasetum* Joseito's Moonlight 'Krull-Smith' HCC/AOS (*tenebrosum* x Double Down) 79 pts. Exhibitor: Krull-Smith; Photographer: Wes Newton. Florida North-Central Judging
- [7] *Cattleya tenebrosa* (Semi-Alba) 'Grass Valley' AM/AOS 83 pts. Exhibitor: Ted McClellan; Photographer: Ramon de los Santos. California Sierra Nevada Judging
- [8] *Catyclia* Walnut Valley Purple Star 'M & B' AM/AOS (*Cattleya violacea* x *Encyclia seidelii*) 86 pts. Exhibitor: Max Thompson and Bryon Rinke; Photographer: Bryon Rinke. Great Plains Judging
- [9] *Paphiopedilum* Nathaniel's Spectra 'Fajen's Orchids Too' HCC/AOS (*thaiantum* x *godefroyae*) 76 pts. Exhibitor: Fajen's Orchids; Photographer: Wes Newton. Florida North-Central Judging
- [10] *Paphiopedilum* Magic Paradise 'Niagara' AM/AOS (*liemianum* x Avalon Magic) 88 pts. Exhibitor: Dave Sorokowsky; Photographer: Ramon de los Santos. California Sierra Nevada Judging
- [11] *Paphiopedilum* Magic Paradise 'Goodstuff' AM/AOS (*liemianum* x Avalon Magic) 81 pts. Exhibitor: Tom Pickford; Photographer: Ramon de los Santos. California Sierra Nevada Judging
- [12] *Cattleya purpurata* (Striata) 'Dona's Treasures' HCC/AOS 77 pts. Exhibitor: Oakwood Orchids; Photographer: Richard Noel. Cincinnati Judging
- [13] *Paphiopedilum jackii* 'Zephyrus Jade' HCC/AOS 78 pts. Exhibitor: John Doherty; Photographer: Jay Norris. Toronto Judging
- [14] *Dendrobium crystallinum* 'Bonheur' CHM/AOS 81 pts. Exhibitor: Lynne Murrell; Photographer: Ramon de los Santos. California Sierra Nevada Judging
- [15] *Brassidomesa* Golden Stars 'Sonoma Gem' 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
- [16] *Cattleya purpurata* 'Goodstuff' CCE/AOS 91 pts. Exhibitor: Tom Pickford; Photographer: Ramon de los Santos. California Sierra Nevada Judging





- [1] *Paphiopedilum* Mysticly Contrasting 'Jack's Pride' HCC/AOS (Mystically Wood x Macabre Contrasts) 76 pts. Exhibitor: Bill Overton; Photographer: Lynn O'Shaughnessey. Great Lakes Judging
- [2] *Sarcophilus ceciliae* 'Bryon Rinke' AM/AOS 81 pts. Exhibitor: Bryon K. Rinke; Photographer: Bryon Rinke. Great Plains Judging
- [3] *Paphiopedilum* Joyce Hasegawa 'Memoria JoAnne Grub' AM/AOS (*deleatii* x *emersonii*) 80 pts. Exhibitor: Max C. Thompson; Photographer: Bryon K. Rinke. Great Plains Judging
- [4] *Phragmipedium* Kai Quintal 'Timbucktoo' AM/AOS (Sorcerer's Apprentice x *xrichterii*) 82 pts. Exhibitor: Sarah Pratt; Photographer: Bryon Rinke. Great Plains Judging
- [5] *Polystachya cultriformis* 'Vanderlip' CHM/AOS 83 pts. Exhibitor: Max Thompson and Bryon Rinke; Photographer: Bryon Rinke. Great Plains Judging
- [6] *Epidendrum arbuscula* 'Bryon' AM/AOS 81 pts. Exhibitor: Bryon K. Rinke; Photographer: Bryon Rinke. Great Plains Judging
- [7] *Bulbophyllum lobbii* 'Different' CCM/AOS 87 pts. Exhibitor: Sarah Pratt; Photographer: Bryon Rinke. Great Plains Judging
- [8] *Epidendrum oerstedii* 'Sarah & Bryon' CCE/AOS 90 pts. Exhibitor: Bryon K. Rinke; Photographer: Bryon Rinke. Great Plains Judging
- [9] *Sobennikoffia robusta* 'Max' CCE/AOS 90 pts. Exhibitor: Max C. Thompson; Photographer: Bryon Rinke. Great Plains Judging
- [10] *Phalaenopsis* Forever Young 'B & M' AM/AOS (Purple Gem x *deliciosa*) 80 pts. Exhibitor: Max Thompson and Bryon Rinke; Photographer: Bryon Rinke. Great Plains Judging
- [11] *Chiloschista parishii* 'Snookie' CCM/AOS 87 pts. Exhibitor: Mary Mancini; Photographer: Wilton Guillory. Shreveport Judging
- [12] *Vanda* Sanchai Gold Spots 'Susan' AM/AOS (Augusto Delight x Sankamphaeng) 82 pts. Exhibitor: Susan Tompkins; Photographer: Bryon Rinke. Great Plains Judging
- [13] *Dendrobium* Mtn's Butterfly Kisses 'Bryon' AM/AOS (*glomeratum* x *cuthbertsonii*) 80 pts. Exhibitor: Bryon K. Rinke; Photographer: Bryon Rinke. Great Plains Judging
- [14] *Paphiopedilum* Walnut Valley Royal Bel 'Max & Bryon's Best' HCC/AOS (Bel Royal x *armeniicum*) 78 pts. Exhibitor: Max Thompson and Bryon Rinke; Photographer: Bryon K. Rinke. Great Plains Judging
- [15] *Dendrobium lawesii* 'Bryon' HCC/AOS 79 pts. Exhibitor: Bryon K. Rinke; Photographer: Bryon K. Rinke. Great Plains Judging
- [16] *Epidendrum* Pacific Trek 'Max' AM/AOS (Pacific Padre x Pacific Crest) 82 pts. Exhibitor: Max C. Thompson; Photographer: Bryon Rinke. Great Plains Judging

JANUARY 2022

8-9—Sarasota Orchid Society’s, “Orchids in Paradise,” Sarasota Municipal Auditorium, 801 N Tamiami Trail, Sarasota, FL; Contact: Larry Desiano, 941-724-6683; larrydesiano@gmail.com

14-16—Tamiami International Orchid Festival, Fuchs Pavilion Miami Dade Fair/Expo, 10900 Coral Way (SW 24th St), Miami, FL; Contact: Jose Exposito, 305-898-3182; soroa@att.net

21-23—Fort Lauderdale Orchid Society’s “Orchids Rock,” The Greater Ft Lauderdale Broward City Convention Center, 1950 Eisenhower Blvd, Ft Lauderdale, FL; Contact: Michael Schaberl, 954-683-9615; michaelshaberl@comcast.net

22—National Capital Orchid Society’s “42nd Paphiopedilum Forum,” U.S. National Arboretum, 3501 New York Avenue NE, Washington, DC; Contact: Roddy Gabel, 301-646-3657; former_zygote@hotmail.com

22-23—Cape and Islands Orchid Society Show, Resort and Conference Center, 35 Scudder Ave, Hyannis, MA; Contact: Tina Balog, 508-540-5006; tina@plaid.whoie.edu

28-30—Gulf Coast Orchid Society Show and Sale, Gautier Convention Center, 2012 Library Lane, Gautier, MS; Contact: Jo Ann Vaz, 601-530-8778; joannvaz@bellsouth.net

29—AOS 2nd Orchid Culture Day, Virtual/Online, \$30 to Register, See AOS.org for Details; Contact: AOS Staff, 305-740-2010; theaos@aos.org

29-30—Florida West Coast Orchid Society’s “Orchids Unmasked,” City of Seminole Recreation Center, 9100 113th Street North, Seminole, FL; Contact: Bill Nunez, 727-239-2700; biddison22@aol.com

29-30—Orchid Society of Minnesota’s “Winter Carnival Orchid Show,” Marjorie McNeely Conservatory, 1225 Estabrook Park, St. Paul, MN; Contact: Michael Dyda, 612-223-4059; michael1027us@yahoo.com

29-30—Peninsula Orchid Society Show & Sale, Community Activities Building, 1400 Roosevelt Ave, Redwood City, CA; Contact: Chaunie Langland, 510-364-2274; chaunieaos@gmail.com

29-30—Grand Valley Orchid Society’s Annual Orchid Show, Frederik Meijer Gardens & Sculpture Park, 1000 East Beltline Ave NE, Grand Rapids, MI; Contact: Mei Ling Clemens, 231-557-2647; meilingclemens@gmail.com

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—Orchid Growers Guild’s “Orchid Quest,” Olbrich Botanical Gardens, 3330 Atwood Ave, Madison, WI; Contact: Terri Jozwiak, 608-592-7906; lodijoz@charter.net

5-6—Venice Area Orchid Society Show & 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, 4000 Concord Blvd, Concord, CA; Contact: Eileen Jackson, 707-853-3963; eileen.jackson@att.net

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

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

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 Crucial 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; ioanamsona@gmail.com

26-27—Amherst Orchid Society Show, Smith Vocational and Agricultural High School, 80 Locust St Rt 9, Northampton, MA; Contact: Marc Gray, 802-346-7926 (landline)

or 802-258-8406 (cell); bulbophyllum@myfairpoint.net

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

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—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—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

10-13—Asociación Costarricense de Orquideología “Exposición Nacional de Orquideas 2022,” Jardín Botánico 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

**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


**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—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

**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

**26-27—The Central Pennsylvania Orchid
 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


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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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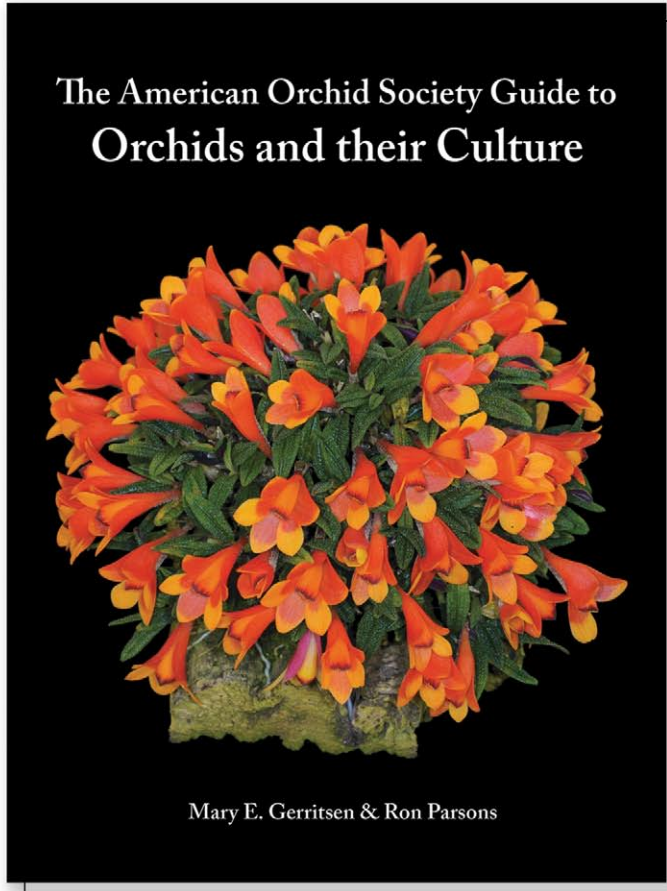
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Submission of articles for *ORCHIDS* magazine

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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Avoiding and Handling “Problem” Orders

By Ray Barkalow

WE ALL FACE this: every now and then we run into problems with stuff we have ordered from online vendors — broken containers, crushed boxes or damaged plants. Having been a buyer of orchids and supplies for almost 50 years and a vendor for 27, as well as a professional purchasing manager, I thought I would share some order-handling guidance. This may sound like common sense, but you would be surprised how often something is missed.

BEFORE OR DURING ORDERING First and foremost, pay with a credit card. It offers you protections that may come into play. PayPal is a reasonable second choice.

Second, understand the vendor’s policies on damage and replacement. Some are great; others, not so much. Caveat emptor! There are vendors who require the purchaser to pay return shipping of damaged goods, and I simply do not do business with them.

Then, be sure to have the package shipped to a secure, protected address — work, school, etc., indoors (especially in winter), out of direct sunlight and where it is not obvious to “porch pirates.”

ONCE THE ORDER IS RECEIVED Immediately upon receipt of the package, inspect it for external damage and to see if it looks like it has been opened and resealed. If there is any problem, photograph it before opening the package.

Open and inspect the contents. Note any damage, breakage, losses, pests on plants, etc., and try to assess how it may have happened. Again, photograph any issues. With broken supplies it is pretty obvious the packing was insufficient, but with plants, the condition could have been prime when they left the vendor, but damage can happen during transit (poor packing), gotten too cold (no heat packs — always ask for them if shipping in cold weather), or they could be cooked if the package was left sitting in direct sunshine at some point along the line. Pest issues obviously came from the vendor, but they might have been hidden and unnoticed.

If there is an issue, do not immediately think the vendor was trying to rip you off. Assigning motives in a vacuum does not put you in a mindset to address the issue reasonably. The vendor did not want there to be any issues any more than you, so most will make it right.

Contact the vendor, clearly state the facts of the issue (“When I unpacked it, the jar was broken” or “there is a mealybug infestation,” not, “Wow! Your packing was horrible, you lousy so-and-so!”) and request a remedy. Replacements at no charge (including shipping) or a refund are in order. Be reasonable and do not become the bad guy — a bent leaf, blasted bud or one broken jar in a shipment of several does not qualify for a full order replacement or refund.

If the vendor starts hemming and hawing — or worse — about resolving the issue, tell them you intend to file a dispute with the issuer of your credit card. When you order something and pay them to ship it to you, the vendor is responsible to get it to you,



as you ordered it. Not the wrong thing, not damaged or infested, and as they are the ones paying the carrier, it is their responsibility to choose one and prepare the package appropriately to ensure the shipment makes it to you intact.

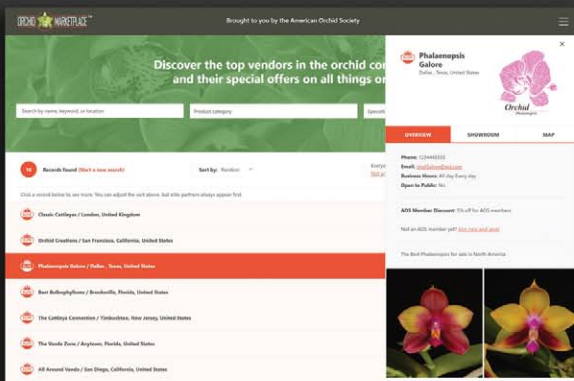
If they still refuse to respond reasonably — or do not respond at all — contact the card issuer and file the dispute, carefully sharing the same, objective facts and the actions you have taken to try to resolve the issue directly. The charge will immediately be put on hold, meaning you do not owe it and will not incur interest charges on the full amount until it is resolved. The last time I had an issue that required going this route, the card issuer called the vendor with me on the line. The agent did all of the talking, asked for confirmation of the corrective action, then asked my acceptance. One minute and it was resolved.


If that gets you nowhere, rest assured that you will not pay for anything and keep what you received (unless they pay for the return), and the vendor will not get paid and will incur a penalty chargeback fee from the card issuer. Think twice about ordering from them again. — Ray Barkalow (email: raybark@firstrays.com).

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