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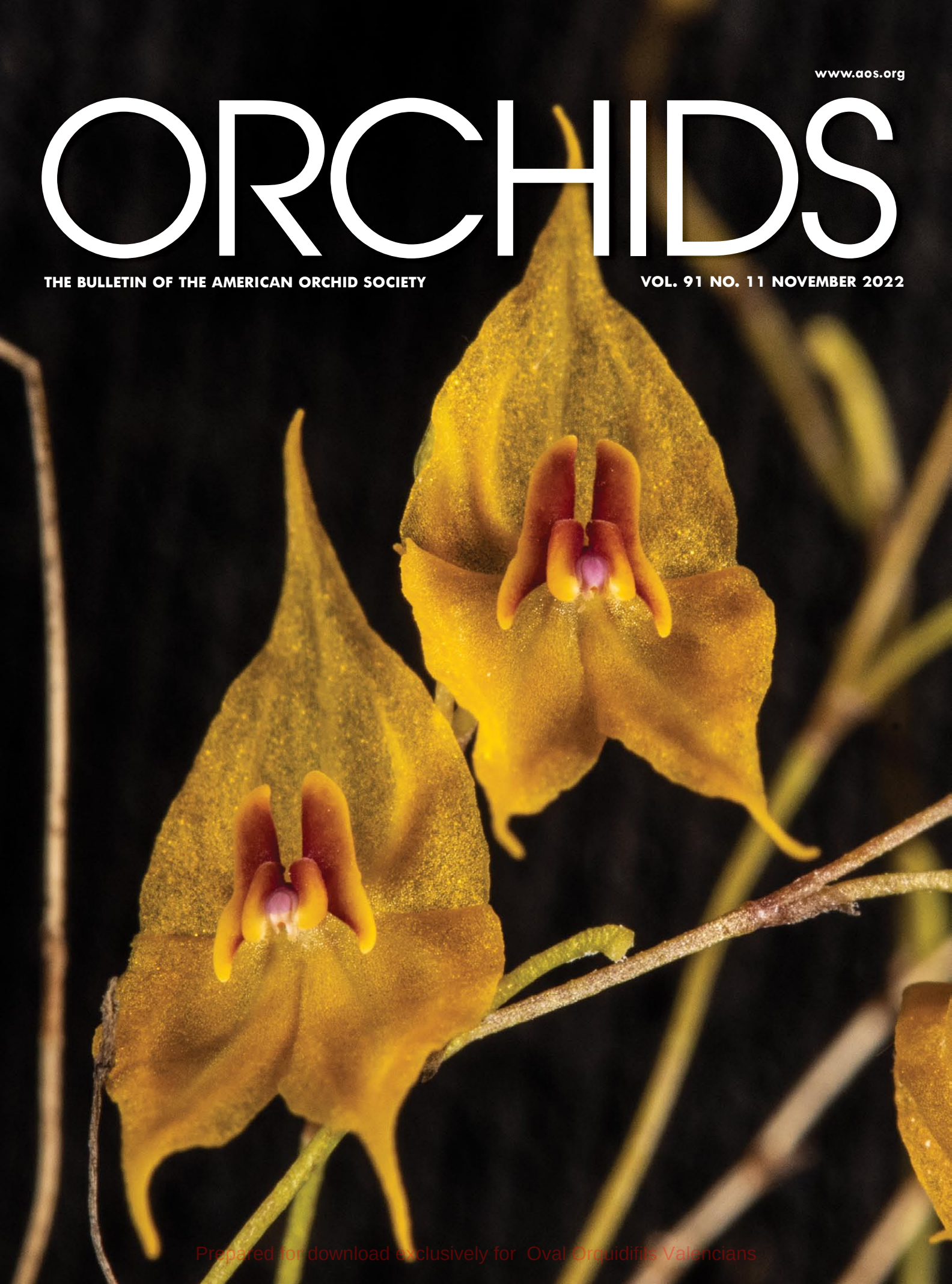
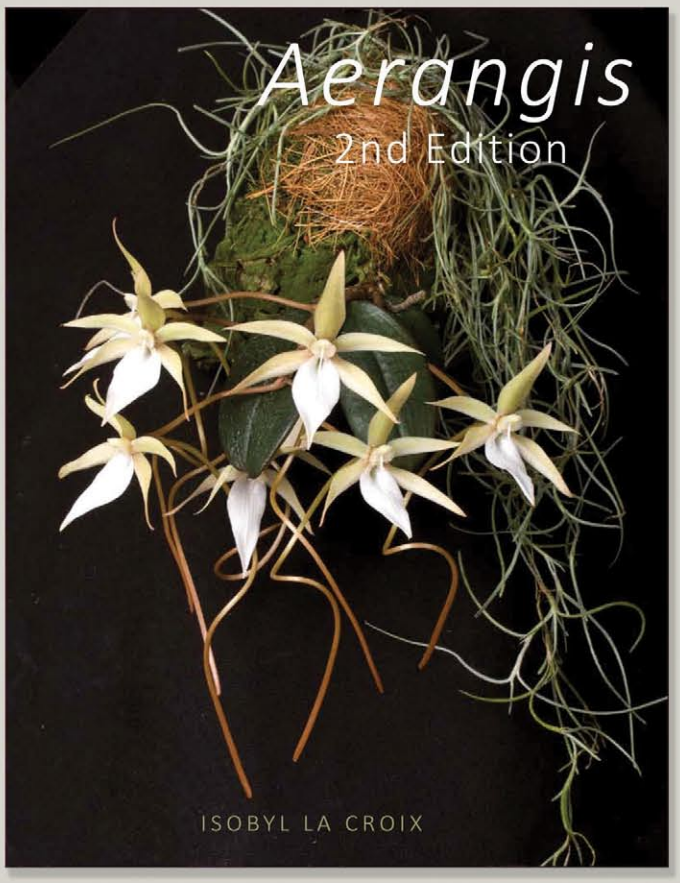
ORCHIDS

THE BULLETIN OF THE AMERICAN ORCHID SOCIETY

VOL. 91 NO. 11 NOVEMBER 2022

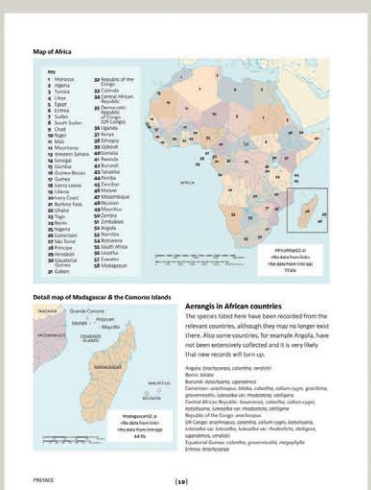


AERANGIS 2nd Edition



Author: Isobyl la Croix
ISBN: 979-8-9859580-0-3
Pages: 228
Images: 270
Page size: 7.5 x 10 inches (190 x 255 mm)
Cover format: Hardcover

The genus Aerangis is the focus of this spectacular book by Isobyl la Croix who spent many years studying African orchids in their native habitat.
It features detailed descriptions of the 59 species, accounts of the terrain, climate and habitats in which they live, and cultivation advice. These orchids, which grow on branches and rocks in the forests of Africa and Madagascar, have long nectar-filled spurs that release a delicate scent at night attracting hawk moths. This feature, along with their often disproportionately large flowers, make them rewarding to grow and, given the right conditions, they will flower year after year. Many are threatened in their native habitat and home cultivation makes an important contribution to their long-term welfare. Beautiful photographs of the plants and essential botanical information make this a unique reference that will delight orchid lovers.



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ORCHIDS

The Bulletin of the American Orchid Society

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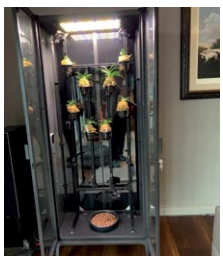
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FEATURES

DEPARTMENTS

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Lepanthes guatemalensis 'Tiny Dancer' CHM/AOS exhibited November 20, 2021 at the AOS Northeast montly judging in Morris Township and photographed by Maurice Garvey.

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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.

Aerides (ay-air-EE-deez)
alucitae (al-OO-sih-tee)
amabilis (a-MAH-bil-iss)
ampliatum (am-plee-AY-tum)
Anacheilium (an-a-KYE-lee-um)
andersonianum (an-der-sone-ee-AY-num)
Angraecinae (an-gray-KEE-nee)
armeniacum (ar-men-ee-AY-kum)
barbatum (bar-BAY-tum)
Barkeria (bar-KARE-ee-a)
bicaudatum (by-kaw-DAY-tum)
Bollea (BOLL-ee-a)
Brocklehurstiana (brahk-l-hurst-ee-AY-na)
Bulbinella (bulb-in-EL-la)
cerina (SEER-ee-na)
cervantesii (seer-van-TESS-ee-eye)
chamberlainianum (chame-ber-lain-ee AY-num)
charlesworthii (charles-WORTH-ee-eye)
ciliare (sil-ee-AIR-ee)
citrina (si-TRYE-nah)
coccinea (kok-SIN-ee-a)
cochleatum (koh-klee-AY-tum)
Cochlopetalum (koh-klo-PET-a-lum)
coelestis (see-LESS-tiss)
Coelogyne (see-LODJ-ih-nee)
compacta (kom-PAK-ta)
coronaria (kore-oh-NARE-ee-a)
crinita (si-TRYE-nah) ?kri -nee-ta???
crispum (KRIS-pum)
cristata (kris-TAY-ta)
Dactylorhiza (dak-till-oh-RYE-za)
dayana (day-AY-na)
deceptrix (dee-SEP-triks)
densiflorum (den-sih-FLORE-um)
digbyana (dig-bee-AY-na)
dimorphotricha (dye-more-foh-TRIH-ka)
doucetteana (doo-set-AY-na)
dowiana (dow-ee-AY-na)
ecuadorana (ek-wha-dore-AY-na)
Encyclia (en-SIK-lee-a)
Epidendroideae (ep-ih-den-DROY-de-ee)
Epipactis (ep-ee-PAK-tiss)
fairrieanum (fare-ee-AY-num)
fieldingii (feeld-ING-ee-eye)
flaveolum (flay-vee-OH-lum)
flavescens (fla-VES-senz)
flavum (FLAY-vum)
fournieriana (fore-nee-are-ee-AY-na)
fuscatum (foos-KAY-tum)
glaucophyllum (glaw-koh-FILL-um)
gouldiana (goold-ee-AY-na)
gratrixianum (gray-triks-ee-AY-num)
guttulatum (gut-tyew-LAY-tum)
helleborine (hell-eh-BORE-in-ee)
hirsutissimum (her-soo-TISS-ih-mum)
hirtzii (HERTZ-ee-eye)
Houlletia (hoo-LET-ee-a)
Humbertiana (hum-bert-ee-AY-na)
Huntleya (HUNT-lee-a)
imperialis (im-peer-ee-AY-liss)
infundibulum (in-fund-DIB-yew-lum)
insignis (in-SIG-niss)
jamesianum (james-ee-AY-num)
jungermannioides (yung-er-mann-ee-OY deez)
Klabochorum (klab-oh-KORE-um)
labiata (la-bee-AY-ta)
Laeliocattleya (lay-lee-oh-KAT-lee-a)
lalindei (la-LIND-ee-eye)
lamellosa (lam-ell-LOH-sa)
lawrenceana (law-rens-AY-na)
lehmannii (lay-MANN-ee-eye)
Limatodis (lim-AT-oh-diss)
longifolium (lon-gee-FOLE-ee-um)
lotax (LOH-taks)
Lycaste (lye-KAS-tee)
maculata (mak-yew-LAY-ta)
Malaxis (mah-LAKS-iss)
Masdevallia (mas-deh-VAHL-ee-a)
Maxillare (maks-ill-LAIR-ee)
measuresianum (meh-zurs-ee-AY-num)
medusae (meh-DOO-see)
mendelii (men-DELL-ee-eye)
minimiflora (min-ee-MIH-flore-a)
moniliforme (mon-ill-ee-FORE-mee)
monophyllos (mon-oh-FILL-los)
mossiae (MOSS-ee-eye)
niveum (NEE-vee-um)
nobile (NOH-bih-lee)
nonum (NOH-num)
Oeonia (ee-OH-nee-a)
Ophrys (OFF-riss)
Orchidaceae (ore-kih-DAY-see-ee)
ovata (oh-VAY-ta)
paludosa (pal-oo-DOH-sa)
Pantlingia (pant-LING-ee-a)
papilio (pap-EE-lee-oh)
peperomia (peh-per-OH-mee-a)
percivaliana (per-sih-val-ee-AY-na)
perrinii (per-RIN-ee-eye)
Pescatoria (pes-ka-TORE-ee-a)
Phaiocalanthe (fye-oh-kal-AN-thee)
Phaius (FYE-us)
Phragmipedium (frag-mih-PEED-ee-um)
Platystele (plat-ee-STEE-lee)
Pleurothallidinae (plur-oh-thal-LID-ee nee
Pleurothallids (plur-oh-THAL-lids)
Pleurothallis (plur-oh-THAL-liss)
poissoniana (poy-sone-ee-AY-na)
Polyantha (pol-ee-AN-tha)
polysticta (pol-ee-STIK-ta)
primulinum (prim-yew-LEE-num)
Prosthechea (pros-THEK-ee-a)
Psychopsis (sye-KOP-sis)
pulcherrima (pull-KER-ree-ma)
pyriformis (peer-rih-FORE-miss)
Rhyncholaelia (rin-koh-LAY-lee-a)
Rhyncholaeliocattleya (rin-koh-lay-lee-oh KAT-lee-a)
Rhynchostele (rin-koh-STEE-lee)
robusta (roh-BUS-ta)
roezlii (ROZE-lee-eye)
rosea (ROZE-ee-a)
rothschildianum (roths-child-ee-AY-num)
rueckerianum (roo-ker-ee-AY-num)
rumphianum (rum-fee-AY-num)
Satyrium (sa-TEER-ee-um)
sceptrum (SEP-trum)
schilleriana (shil-ler-ee-AY-na)
sesquipedale (ses-kwi-peh-DAY-lee)
sinensis (sin-EN-sis)
Sobennikoffia (soh-ben-nih-KOF-fee-a)
speciosa (spee-see-OH-sa)
spicerianum (spy-ser-ee-AY-num)
Spiranthes (spy-RAN-theez)
Stanhopea (stan-HOPE-a)
suavis (SWAH-viss)
sukhakulii (soo-ka-KOOL-ee-eye)
sulcata (sul-KAY-ta)
superbiens (soo-PER-bee-enz)
tenebrosa (ten-eh-BROH-sa)
tigrina (tih-GRYE-nah)
trianae (TREE-an-ee)
Trichopilia (trik-oh-PEEL-ee-a)
tricolor (TRY-kuhl-ur)
Vandeae (VAN-de-ee)
veitchiana (veech-ee-AY-na)
venustum (ven-OO-stum)
vexillaria (veks-il-LARE-ee-a)
vinaceum (vye-NAY-see-um)
violacea (vye-oh-LAY-see-a)
wallichii (wal-LIK-ee-eye)
wallisii (wal-LISS-ee-eye)
warszewiczii (var-shuh-VITZ-ee-eye)
wilckeanum (wilk-ee-AY-num)
zamorensis (zam-ore-EN-sis)
Zygopetalum (zye-goh-PET-a-lum)

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In addition to vital support through membership dues, the American Orchid Society relies on grants, bequests and other gifts to support its programs. We would like to thank the following donors for gifts received between September 1, 2022 and September 30, 2022.

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ONE OF THE things that I find really fun about raising orchids is exploring all the little tricks and fun things you can do to help your plants grow better in your conditions. Pretty much anything that you have around the house can be used to help grow your orchids.

We all know the many varied things you can make with wire hangers: hooks and mounts to attach a pot to a fence, pot, rhizome clips, etc.

I use extra wire clothes hangers as plant stakes. The wire is not quite strong enough for a pot clip, but it works well to keep a floppy new growth upright or to hold a bloom stalk. Just cut the curved hanger part off and bend the wire straight and you have a 2-foot (60-cm) piece of nice wire to use! The stronger wire (12 gauge) that you need for pot clips and pot hangers is the same wire that is used to build dropped ceilings and you can find it in straight, precut 6-foot (1.8-m) lengths in home improvement stores.

How about repurposing things des-tined for the trash? The kitchen is actually a great source of items to repurpose (recycle, and keep out of the trash). Of course, everyone knows about reusing strawberry or blueberry containers as pots for community pots or small seedlings. The wonderful drainage holes in the bottom and sides of those containers allow the mix to not stay wet when the little roots are developing. And if the plants are small enough, the lid can be closed to retain an extra bit of humidity.

When most (normal) people look at a used yogurt container, they see something destined for either the recycle or trash bin. But I see something I can use in the greenhouse! With a quick scissor cut, the yogurt container is magically transformed into a small saucer perfect for holding water under a small pot. I water all my plants at the same time, so using a little homemade saucer like this is perfect for allowing the small plants in clay pots to retain an extra bit of moisture between waterings. The ones I cut are usually only ¼ inch (6.4 mm) deep. But if you need to retain a bit more water, just cut the saucer to be a little deeper.

The masters of these tips and tricks were Bill Tippit and Ed Wright. They published all kinds of wonderful unique ideas in *Orchids* magazine in the 1990s under the title "GreatIdeas." Later, the GreatIdeas banner was taken up by Jean Allen-Ikeson. We have also been reprinting some of the original Wright–Tippit articles as well. These tips never go out of style! In our magazine search, search on "Greatideas" (one word) and you will find endless fun ideas to try with your orchids.

I challenge you to repurpose three things from your house into your orchid collection. Your spouse or significant other will probably call you crazy…and that may be well deserved, but your reward will come when your fellow orchid growers visit and say "I never thought of that" or "That is such a great idea I am going to use it with my plants!"

On a personal note, Bill Tippit is one of the people who had a very formative influence on me as a new orchid grower. When I first met Bill, he had recently retired from the same company that I worked for. After retiring, Bill set up a small hobby orchid business with a wonderful greenhouse and a very functional small lab where he pursued multifloral phalaenopsis breeding. When I was still working, I used to take a half day off every few months and visit him. Bill had some garden chairs in his greenhouse, and we would sit, drink a few adult beverages, and talk about orchid growing, hybridizing, lab techniques, work people, and orchid people. This is exactly what I am aspiring for with this hobby now that I am retired.

— Text and photographs by Jay Balchan (jay@aos.org).

[1] A rack of small plants sitting in plastic trays cut from yogurt containers.
[2] Author cutting a tray from a used yogurt container.
[3] For plants that need a bit more moisture, cut a deeper tray.

One Society's Success Story

by Lorraine Conover

How we grew 75 percent in one year during the Covid-19 pandemic

THIS IS NOT about growing your orchids but rather about how we grew the Jacksonville Orchid Society membership during 2021.

The Jacksonville Orchid Society has typically had somewhere around 100 members, give or take a few yearly. What we like as a society is having fun and experiencing something new, and learning how to get our plants healthy and blooming. Jacksonville is on the upper northeastern Florida coast, and we have climate challenges like everyone else. Cold can be a problem in our area, and we do the "orchid shuffle" many times from November until almost April, and that does not count hurricane season, which we have managed to escape often.

We recently were able to add more than 70 new members, because we involve the public monthly at not one but two potting clinics in two different locations. On Saturday mornings, our volunteers show up to educate people who bring their desperately declining orchids to us for help. Sometimes they are beyond saving, but we share the correct culture, showing them what medium to use, how to water properly, what to feed, and the right size pot. We have a nominal charge per size of the pot to cover our material costs. One location is an Ace Hardware and the other is at one of our local nurseries. They offer a discount that day on supplies and often on the orchids they have for sale. We cannot teach patience, but we encourage it. A once pathetic-looking piece of dying roots, shriveled pseudobulbs, etc. the following year transforms into something beautiful. We have the chance to talk about the plant and also share our society's information. We have great speakers, we raffle plants, we have auctions twice a year for members, silent auctions and plant sales from guest speakers who are growers. We have business cards with meeting info on the front and all the potting clinic information on the back.

Our members are involved throughout the year — not only at our yearly spring shows and fall plant sales. We have several greenhouse tours of our members' homes during the year. These are really "show 'em where you grow 'em" events, complete with repotting or mounting assistance. The society is, above all, a social environment, sharing orchid stories and everything else, a place to ask questions one on one and get ideas.


ART RUSSELL 1


ART RUSSELL 2


ART RUSSELL 3

[1] Monthly potting clinic at a local Jacksonville nursery.
[2] Greenhouse tour.
[3] Workshop meeting with guest speaker, Steve Hawkins.

Hands-on workshops are scheduled as our monthly program once each quarter. Sometimes it is the experienced members leading, other times a vendor comes and adds some spice to the night. We offer a young plant to mount on wood at a nominal cost and members can also bring their own and see what to do with it. These meetings are well attended. Newbies have a lot to learn.

Our society also has a "beauty contest" on our Facebook page each month. Secret judges vote on the prettiest pictured flower submitted by members. The judges do not know who submitted the pictures. They are sent to them anonymously by our webmaster. Winners are announced at the following meeting and given 10 free raffle tickets — another chance to grow a collection and learn something new.

When a new member joins, we assign them to an experienced ambassador if they choose or need help with any society or orchid-related information.

We moved our meeting location in the middle of the pandemic in 2020 and started back with small, masked meetings at our new location. We survived 2020 and in 2021 we held our first show in a new location with vendors in tents outside and displays inside. Masks were required. With the new location came challenges galore, but it was a huge success. As I write this, we are one week away from our annual show. We already have at least a dozen new members this year. Showtime to someone who has not experienced any events like ours opens the world of orchids not found at the local grocery or box stores.

I hope this may give you ideas that your society might use to increase enthusiasm, grow your membership and experience the thrill of this fascinating hobby.

— Lorraine Conover is the Jacksonville Orchid Society's first vice-president (email lorrainesorchids@gmail.com).

GENUS OF THE MONTH

Pescatoria by Thomas Mirenda

Blue bloods and royals

1

AS CURRENTLY CIRCUMSCRIBED, the genus *Pescatoria*, including the former genus *Bollea*, consists of 21 species and three natural hybrids distributed from Costa Rica to Ecuador. The correct spelling of the genus name continues to evoke some controversy, although not to the extent it did 10 years ago. When a version of this article was first published in 2011 (Mirenda), by way of explanation, Ron McHatton wrote: "Reichenbach coined the name *Pescatoria* in 1882 to honor M. Pescatoré, a French orchid patron. The correct Latinized form of Pescatoré is *Pescatorius*. To create the genus name, the -us was dropped and -a added. This results in *Pescatoria* in keeping with many other genera similarly derived: *Barkeria* from *Barkerius*, *Masdevallia* from *Masdevallius*, *Pantlingia* from *Pantlingius*, etc. The controversy arises because Reichenbach never again spelled the genus name as *Pescatoria* but rather, 17 years later as *Pescatorea* when describing new combinations in the *Gardener's Chronicle*. Was, as some assert, the original spelling an unintentional error or, as others claim, actually done correctly and the later use of *Pescatorea* in error?" (651). We may never know for sure but both *The World Checklist of Selected Families* and *Tropicos* now consider *Pescatoria* to be the valid spelling.

Large plants of *Pescatoria* are among the showiest orchids I have come across at shows. A well-grown and bloomed specimen will stop the casual observer and orchid aficionada alike with its beauty and unusual coloration. Pescatorias are generally easy to grow, certainly more so than some of their popular relatives, including the rather uncooperative plants in *Huntleya*, and yet pescatorias are rarely encountered in collections, neither public nor private. Let us try to remedy that.

Like their close relatives in the genus *Huntleya*, *Pescatoria* flowers, though large and colorful, are borne singly on short, often laxly pendent inflorescences. While this means they will probably never be popular as cut-flowers, their sapphire-blue, amethyst-, garnet- and topaz-colored flowers are a wonder to behold. Even though there is only one long-lasting flower per inflorescence, they are individually showy and of great substance. The plants grow quickly into large specimens, each growth producing several individually well-spaced scapes at one time.

Graceful and leafy fan-shaped plants from wet, low- to middle elevation cloud forests, pescatorias are notable for having basically no pseudobulbs. Because those food and moisture storage organs are mostly absent, plants need frequent watering, more than typical succulent, pseudobulbous orchids. If watered sufficiently, the plants thrive in both pots and baskets and bloom regularly and profusely. They are rather adaptable in their temperature requirements, doing best in intermediate conditions: 72–78 F (22–26 C) days and 60–65 F (16–18 C) nights. They do best in a well-draining but moisture-retentive bark mixture with some sphagnum moss added.

There are many species and several hybrids available to the hobbyist, and all are lovely and rewarding subjects. While I make some distinctions in color descriptions here, it is also true that in this genus there can be tremendous variation in color within a species concept. Therefore, you may want to see the flower of the species or hybrid you are acquiring first before deciding which to get. *Pescatoria cerina*, one of the few species found in Central America (Costa Rica to Colombia), is probably one of the easiest to grow, though it has less of a propensity to develop into a large specimen than some of the others. Its buff-yellow flowers may be the least colorful but still are striking with


LUIS BRENES LOAIZA

2


ERIC HUNT

3

[1] *Pescatoria coelestis* 'San Isidro' FCC-CCE/AOS, exhibited by Daniel Piedrahita is an incredible example of the almost indigo-flowered form of the species. Photographed by Nicolas Gomez Rios.

[2] *Pescatoria cerina* 'Sara Lucia' AM/AOS; exhibitor: Juan Jose Zuniga.

[3] *Pescatoria coronaria*


4 BRYON RINKE


5 NICOLAS GOMEZ RIOS


6 JUAN CARLOS URIBE


7 MAURICE MARIETTI


8 ERIC HUNT


9 ERIC HUNT


10 AOS AWARD ARCHIVES


11 AOS AWARD ARCHIVES


12 AOS AWARD ARCHIVES

their toothy maroon grooves in the lip and reddish anther cap. *Pescatoria coronaria*, though a dusky maroon-purple, has similar lip grooves, much more reminiscent of the peaks of a crown from which it gets its name. *Pescatoria dayana* and *Pescatoria klabochorum* are similar: white flowers with reddish garnet tips and lip and keel colors. Each species has several named varieties that probably represent a continuum of intermediate forms. I have never seen a bad one. Another showy and worthy species is *Pescatoria lehmannii* from Colombia with its deliciously striped dark red flowers and unusual bristly lip.

The most famous species, which are generally considered the most desirable, are the so-called "blue" species. True blue is rare in orchids, but these flowers are extremely close. Good clones of *Pescatoria coelestis* are about as blue as you can get in New World orchids. And the plants are astonishing when grown to specimen size. Similar species, such as *Pescatoria lawrenceana* and *Pescatoria violacea*, are equally stunning, even if a bit less blue. These flowers, though quite different in form, rival the showiest of cattleyas with their size, substance and intense colors. Let us give these undercultivated, but spectacular orchids the recognition they deserve. There are many excellent sources for seed-grown plants of superior forms of *Pescatoria* species. Include one on your next orchid order.

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


ERIC HUNT 13


ERIC HUNT 14


ERIC HUNT 15


16

[4] *Pescatoria dayana* 'Bryon'
[5] *Pescatoria klabochorum* 'Gustavo Moreno' AM/AOS; exhibitor: Esperanza Mejia de Moreno.
[6] *Pescatoria lehmannii* 'Adelaida' HCC/AOS; exhibitor: Adalaida de Bohmer.
[7] *Pescatoria violacea* 'Rona' CCM/AOS; exhibitor: Harold and Rona Goldstein.
[8] *Pescatoria ecuadorana*
[9] *Pescatoria wallisii*
[10] *Pescatoria lalindei* 'Patti' CHM/AOS; exhibitor: William T. Hammond.
[11] *Pescatoria hirtzii* 'Sue Ge Wiz'; exhibitor: Sue Golan.
[12] *Pescatoria lamellosa* 'Vera Cruz' CHM/AOS; exhibitor: David G. Hunt.

[13–16] *Pescatoria coelestis* is the most variable of the species, occurring in color forms ranging from near white to the intense indigo-colored form pictured at the beginning of this article: Bicolor forms [13–14] that vary from white flowers marked with blue to those of a more rosy hue such as these photographed by Eric Hunt. This clone [15], also photographed by Eric Hunt represents one of the more pastel bluish forms. 'La Aldea' CHM/AOS [16] grown by David Manzur and photographed by Nicolas Gomez Rios is one of the nearly white forms; not true albinos, these forms have very pale pink, rose or purple flushes.

FIRST A WORD about cultural questions. These need to be taken in the correct context. Although I am familiar with the various cultural issues around the country and have grown under a myriad of growing conditions from windowsills to greenhouses to under lights and open shade houses here in Florida, specific comments generally refer to my conditions here in Florida. How to manage so-called dry winter rest conditions are a good case in point. I may be able to provide no misting or pot watering for months while this may be impossible in cold northern climes growing in a basement. If in doubt, work with local growers or your local society. Ask them what they do and how they handle growing specific orchids in your local area.

PHRAGMIPEDIUM CULTURE

QUESTION

What is causing the reddish marking on the leaves of this *Phragmipedium*?

ANSWER

As a general rule, these sorts of leaf blemishes are a response to conditions in the growing environment that are not to the plant's liking. Insufficient light is a very common one. Overly wet, sodden potting mix is another one. This plant is reacting to stress. I would suggest taking a look at the root system. Are there only a few live roots or roots with active root tips? Is the mix old or overly wet? There is a fine line between lots of water and a sodden or sour mix. I grow my phragmipediums in straight sphagnum as I find it holds a lot of water but it does not sodden easily and provides some natural antifungal/antibacterial efficacy.

If the root system is strong, check your light level. Phragmipediums need more light than paphiopedilums or phalaenopsis. I grow mine under generally cattleya conditions — quite bright. Growing phragmipediums under too little light makes for a weak plant that is now more susceptible to disease.

Another similar problem occurs in paphiopedilums and phragmipediums that starts as a watersoaked, brownish area at the base of the leaf down on the fan near the potting mix (although it can also start on the leaf surface). These watersoaked lesions are the result of a bacterial infection, *Erwinia cypripedii*. The disease gets its foothold in weakened plants with poor conditions at the roots.

MOUNTED PHALAENOPSIS

QUESTION

This phalaenopsis is mounted on a piece of driftwood I found at the beach. Now the growth is much smaller and misshapen. I think I took good care of it so what is wrong?

ANSWER

Driftwood found on the beach can cause a problem because it can hold a lot of excess salt. The roots of plants mounted to wood with a toxic salt content will refuse to attach to the mount and may die back as soon as they touch it. In this case, the roots of your plant are very well attached to the mount and from one of the photographs you supplied, appear to have extended down the entire mount. Looking at your plant and the roots it has produced, I think the plant is fine.

Roots adapt themselves to the medium in (or on) which they grow and any time a drastic change is made in either potting medium, pot to mount, basket to mount, etc., much of the existing root system will likely die. Such plants eventually adapt to the new medium, producing new roots but during the interval when this adaptation is taking place, leaves (or pseudobulbs) produced may be smaller and possibly less turgid. This plant has one small leaf I suspect was produced right after attaching the plant to the mount but also has produced two more normal leaves over time and those really good new roots and is recovering from the mounting process.

Phalaenopsis plants in nature do not grow upright as we insist they do in pots, but rather grow out to the side and long leaves may droop toward the ground — all designed to shed water from the crown of the plant. Your downward-pointing leaves are just gravity doing what it does to a phalaenopsis growing on the side of a tree. All in all, I think this plant is in good condition, establishing itself, and looks fine.

ONCIDIUM ALLIANCE WOES

QUESTION

This *Alicera* (*Beallara*) Marfitch has

These questions were part of one or more 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.*

done well since I bought it in 2019, but this year the pseudobulbs are completely curved, bending over, and the new leaves are hanging downward. What is going on?

ANSWER

What you see is a reaction to dehydration. Plants in the Oncidium Alliance tend not to produce a flush of new roots until the new growth is very well developed (in some of them, not until the new pseudobulb begins to swell). If plants are repotted at the wrong time or into a mix that does not provide sufficient available water to the roots, as the new growth develops, the plant will move water from the older growths (their purpose in the first place is water storage) and, as that water is depleted, the pseudobulbs flatten and, depending on the genetic background, may bend down or twist.

This is potted in a very coarse potting mix for an oncidium so even if repotted at the correct time, it may still not be getting sufficient water at the roots. The typical recommendation for a potting mix for these plants would be small bark, with or without amendments up to even 5-inch pots (12.5 cm) because of their fine roots.

I do not see anything significantly wrong with the plant that increased watering and humidity will not cure and, once the new growth produces a flush of new roots, the new growth should finish developing normally. Also, this plant is growing in a coarse open non-moisture-holding medium in a very open (many drain holes) pot. All this contributes to moisture loss, potentially keeping the plant too dry.

I know many growers who note on their name tags when new root growth appears from the new growth and then use that date as a guide to repotting rather than when the new growth first starts.

HOME REMEDY

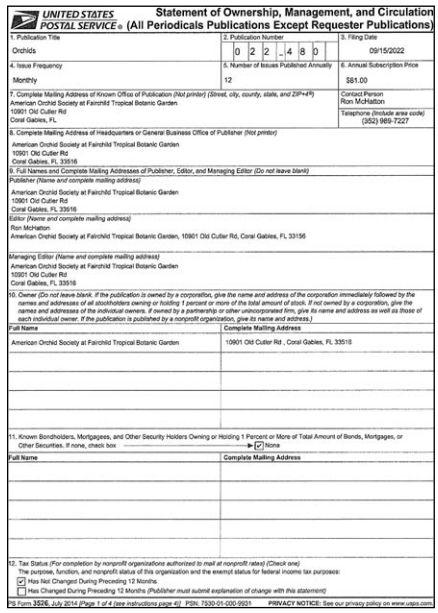
QUESTION

The home remedy insecticide recipe specifically lists Formula 409 as one of three ingredients. Does it have to be this specific cleaner? If so, what makes it so special? Are there alternatives?

ANSWER

We know that this particular cleaning product works and does not damage the plant significantly. The recipe is from a GREATIdeas column written by Ed Wright decades ago so it has been around for a long time. Other products might work just as well but they should be tried carefully on a test plant before committing a large portion of your collection to it.

The active ingredient in Formula 409 is a quaternary ammonium salt and many cleaning products include one of these but it also includes a more or less non-corrosive, plant-based surfactant that breaks the surface tension on the leaf surface. Other cleaning products may have surfactants that are quite detrimental to leaf surfaces. Read the product labels and look for another product that does not contain such a corrosive surfactant and *always* test a plant leaf first.



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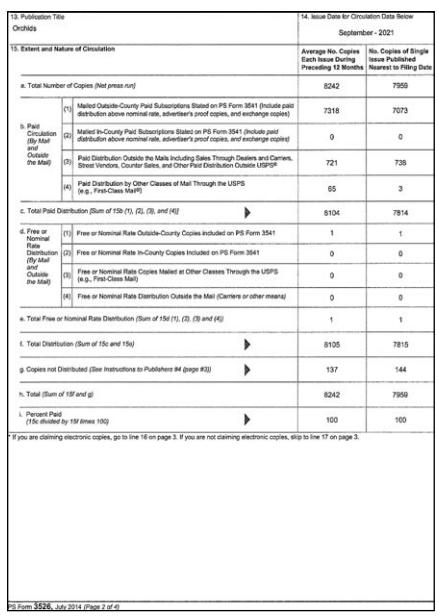

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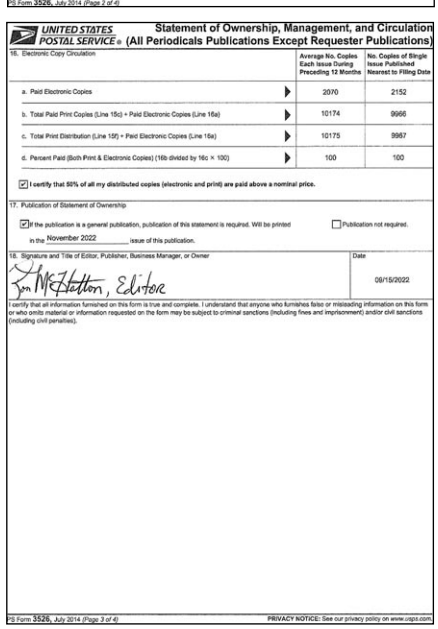

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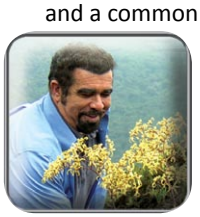
November: A Little Help From My Friends

By Thomas Mirenda

MORE THAN 50 years ago, Ringo Starr sang this song that has stuck with me since my childhood. I could not possibly count the number of times I have been pulled out of difficult situations by my wonderful friends over so many decades. In most things, collaboration is the key to success, with everyone contributing their own talents and abilities to a "whole" that is often far greater than the sum of its parts. Orchid shows are prime examples. Having been involved in many exhibits approaching close to 40 years, I can attest to the fact that a good show involves many contributors: excellent growers of fine plants, handy builder types, creative ideators, historians, publicists and planners, artists, writers, all the way to the grunters and cleaners that move everything in and out! Doing a great orchid show requires teamwork, devotion and a common purpose.



Thomas Mirenda

Admiring orchids as much as we do, we aim to share that love with others from our community, in the hope that we can convert them into fellow orchid devotees. While it is true that we do not always get along perfectly, I found that in this year's Hilo Orchid Society Show, nearly all the exhibits were combined efforts. The joy of creating beauty with these plants not only solidified existing friendships but even had the ability to heal tremulous ones. The warm feelings we get from creating beauty and the pride we feel in our successful joint efforts attract others to us and to the greater, world orchid community. While we are all certainly hungry for the return of in-person events and spectacle, Hilo Orchid Society's efforts this year resulted in a record number of new members! I am thankful to have found my way into this delightful pursuit and will always be grateful to have had a little help from my friends.

HARVEST In most of the northern hemisphere, orchid cultivation efforts have moved from growing pseudobulbs and foliage to the production of flowers. Inflorescences on phalaenopsis, cymbidiums, and many others have emerged and are rapidly elongating. Buds on the stems are starting to inflate, promising much-needed exceptional beauty over the upcoming winter season. There are a few things you can do now to ensure the harvest of pulchritude reaches fruition.

Dracula lotax 'Dean's One' AM/AOS; exhibitor: Jungle Mist Orchids; photographer: Glen Barfield; Hawaii monthly judging, Hilo.

CLEAR THE AIR Outside temperatures are starting to plummet and sometimes, as the heaters turn on in your growing area, there can be gas leaks that will result in the blasting of some buds. That, and the occasional cold blast of air through small breaches in your greenhouse or growing area, can cause real heartbreak. So now is your last chance before the onset of really cold weather to make sure all your environmental conditions are in tip-top shape. We heap so much care on the plants themselves and often neglect the infrastructure of our collections. Do this now to ensure the safety and consistency of temperatures, humidity and light during this important transition period for your orchids.

WHAT IS AT STAKE Much as my parents supported me as I grew and bloomed, it is really important, at least for potted plants, to be staked for the best presentation. Many growers start with a guiding stake as inflorescences begin to appear to direct multiple inflorescences in a pleasing, attractive way. Then use

a stronger or more permanent stake just before flowering. If you neglect this task, inflorescences may get tangled or misdirected as flowers open, causing irreparable damage and poor presentation. Staking too late will often result in confused-looking upside-down flowers and messy-looking arrangements. Mounted plants or those naturalized in trees or in the landscape should be allowed to do what they do naturally.

HUNKER DOWN Winter is coming! And while you may not need to fear blizzards, avalanches or the "White Walkers" where you live, it is always a good idea to be prepared for whatever may come. Terrestrial orchids have retreated underground storing energy for next spring's emergence. Giving them an insulating mulch of leaf mold or pine straw is often appreciated around now. Indeed, your bletillas and lady's slippers will show their gratitude by rewarding your efforts with luscious blooms in the new year.

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

COLLECTOR'S ITEM

Sobennikoffia robusta

(Schltr.) Schltr. 1925

By Judith Rapacz-Hasler

Family: Orchidaceae
Subfamily: Epidendroideae
Tribe: Vandeae
Subtribe: Angraecinae

SYNONYMS *Angraecum robustum* (Schltr.) Schltr. 1915, *Oeonia robusta* Schltr. 1913

ETYMOLOGY The species was named by Rudolf Schlechter in 1925 for his wife, whose maiden name was Sobennikoff.

Sobennikoffia circumscribes four known species, all endemic to Madagascar: *Sobennikoffia fournieriana* (Kraenzl.) Schltr., *Sobennikoffia humbertiana* H. Perrier, *Sobennikoffia poissoniana* H. Perrier and *Sobennikoffia robusta* (Schltr.) Schltr.

Sobennikoffia robusta, also known as the Robust Sobennikoffia, can be found in northwestern Madagascar in sandy, dry woods at the base of trees and shrubs with dappled shade at elevations of 5,150 feet (1,569 m). In its native range, they grow lithophytically or epiphytically, meaning that plants grow on rocks or trees rather than soil, but indoor gardeners typically grow them in a basket of fir bark. The plants are small-to-medium sized, warm-to-cool growing with a short stem carrying numerous, large, loriforme (strap-shaped), coriaceous (leathery), and apically unequally bilobed-obtuse leaves. Plants bloom in late spring on a 16-inch (40 cm) long, erect-to-arched, rigid inflorescence enveloped by several sheaths. The flowers are unusually shaped and quite striking resulting in a lovely display. The sweetly fragrant flowers, up to about 2.75 inches (7 cm) across and 2 inches (5 cm) tall are white, the lateral sepals are falcate (sickle-shaped) and upturned apically with their inferior halves blushed chartreuse, the somewhat reflexed petals are also falcate. The proximal half of the trilobed lip is suffused light green with a medial keel, the two outer lobes broadly pointed with a sharply pointed, small midlobe. The light-green spur reaches 2.2 inches (5.5 cm) long. The white column has broad downswept anterior wings and a contrasting yellow or green anther cap.

CULTURE Plants may be tied to a slab of cedar, pine or other softwood allowing the roots to grow onto the bark and stabilize the plant, or plants can be set in a wooden slatted basket, which allows the roots to extend into the air. They grow best in well-drained media, such as tree fern fiber or fir bark. Provide plants with a bright and warm spot in the greenhouse or windowsill protected from direct sun. Plants sunburn easily so the leaves must not be allowed to become hot in the sunlight! High humidity (at least 50 percent) and strong air movement are musts. Plants need cool nights and warm daytime temperatures: an ideal range of 50 F (10 C) to a maximum of 86 F (30 C). Nighttime drops of 20 F (c. 11 C), particularly throughout spring, is optimal for blooming. Use tepid water and spray mounted plants daily. During active growth, the plants should be fertilized every two weeks using ¼- to ½-strength balanced fertilizer. A balanced fertilizer, with NPK in equal proportions (e.g., 20-20-20, 5-5-5) is recommended. Before fertilizing, the plants should be wet so that the roots are not burned by the fertilizer.

Do not fertilize during periods of low light (November–February). The resting period and diurnal temperature drop follows blooming, and is the most critical time for successful culture. Careful management of both the plants and their environment is the key to long-lived plants and the reward of many inflorescences with showy, fragrant, and long-lived flowers every year.

[1–2] *Sobennikoffia robusta* 'Interlaken' AM-CCM/AOS; exhibitors: Ron McHatton and Randy Young, and Steve Balderson; photographer: Wes Newton.

— Judith Rapacz-Hasler (email jorapacz@gmail.com).

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JUDGE'S CORNER

Judging Floriferousness Part 2:

Masdevallia and Paphiopedilums

By Andrew Coghill-Behrends

THE ASPECTS OF judging floriferousness that I proposed in *Orchids* (Coghill-Behrends 2022) in Part 1 are applicable here, especially for masdevallias and paphiopedilums that produce single-flowered inflorescences.

MASDEVALLIA

Masdevallia is another genus in which one flower per inflorescence for most species and hybrids is to be expected. Additionally, only one inflorescence per mature growth is the norm, though a mature growth may produce a bloom for several years under good culture, and dependent on the lineage. The Pleurothallid Scale in the traditionally used set of scales is also the only scale, besides the Paphiopedilum Scale, that attributes more than 30 points to form and color (35 each), leaving only 30 points for the other attributes. Consequently, the points for floriferousness are de-emphasized in the Masdevallia Scale (which only allows a maximum of 8 points for floriferousness).

As I noted previously (Coghill-Behrends 2017) Mario Ferrusi wrote in 2015 that it is one of his pet peeves when a *Masdevallia* is awarded with only one flower; in his opinion, a plant with only one flower should receive *zero* of the eight points for floriferousness (Ferrusi 2015). Floriferousness is especially important because it is crucial to "see more than one flower to make sure the form of the flower is consistent..."

In fact, the AOS Handbook on Judging reinforces that perspective when discussing the Masdevallia Scale: "Normally, pleurothallids are floriferous, and this should be considered when determining the floriferousness of any plant…The inflorescence should be mature enough to show the full potential of the flower or flowers. Pleurothallidinae without caudae and other flowers not matching the above criteria should be judged using the General Scale" (AOS Handbook on Judging 2021)

However, there are certainly examples of plants being awarded — often very highly awarded — with only a single flower. When I researched masdevallias several years ago, one of the hybrids I looked closely at was *Masdevallia* O'Brien's Passion (Annette Hall × *coccinea*) — which at the time had received five HCCs and four AMs. In 2020, this was awarded: *Masdevallia* O'Brien's Passion 'Only One' FCC/AOS (90 points)… can you guess what the issue is?

"One impressive, eye-catching flower on a solitary 44-cm inflorescence… recognized for exceptional color and outstanding size; exhibitor's first FCC." It is a nice flower, indeed, but if Ferrusi's opinion is correct, that would leave a margin of only 2 additional points to be deducted. If the clone 'Curiously Lehua' AM/AOS (86) is used as a reference point, however, I can understand *why* judges might decide that it is worth an FCC — it is obviously superior in size and form (and maybe color, if that is your jam) — I just cannot understand *how* they got to 90 points.

Even though single flowers are the norm for most masdevallias, there are examples of sequential-blooming species. *Masdevallia deceptrix* 'Cross Your Heart' AM/AOS (82 points) was awarded in 2021. "Three flowers on three 14-cm, upright, laterally compressed sequentially blooming inflorescences plus two immature inflorescences…additional photo added to show the sequential nature of the species."

This was only the third award to the species, with the other two being 'Lil' CBR/AOS in 1990, which carried four flowers and four buds on four inflorescences, and 'Manuela' CHM/AOS (83 points) in 2009, which carried eight flowers and seven buds on 11 inflorescences. This species has been used as a parent in five hybrids; only one of those hybrids has been awarded but does not appear to have inherited the sequential nature of *Masd. deceptrix.*

Beyond sequentially blooming masdevallias, there are multifloral masdevallias. *Masdevallia sceptrum*


GLEN BARFIELD 2


GLEN BARFIELD 3


RAMON DE LOS SANTOS 4

[1] *Masd.* Gypsy 'HOF' FCC/AOS. Although each inflorescence carries only a single flower, even relatively small plants can be covered in flowers. Exhibitor: Longwood Gardens; photographer: Maurice Marietti.

[2] *Masd.* O'Brien's Passion 'Only One' FCC/AOS; exhibitor Glen Barfield – Okika Ltd.

[3] *Masd.* O'Brien's Passion 'Curiously Lehua' HCC/AOS; exhibitor: Lehua Orchids.

[4] *Masd. deceptrix* 'Cross Your Heart' AM/AOS; exhibitor: Tyler M. Albrecht. Inset photograph: 'Lil' CBR/AOS; exhibitor: Mr. and Mrs. Henry Severin; from the AOS award archives.


5 DOUG BOVEE

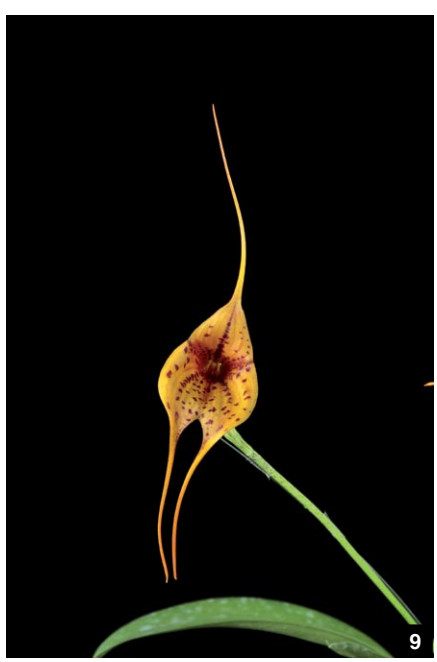

6 MELISSA GARNER


7 ARTHUR PINKERS


8 AWARD ARCHIVES

has received two awards. *Masdevallia sceptrum* 'Laval' CBR/AOS was awarded in 1991. At the time it was presented, it held 13 flowers on two inflorescences. Another clone (name unknown) was awarded a CHM/AOS in 2015 and had three flowers and four buds on two inflorescences. This latter award was nullified because the award was to *Masdevallia medusae* and the SITF later identified it as *Masd. sceptrum.* Other multifloral masdevallias include *Masdevallia amanda* (no AOS awards, no F1 offspring), *Masdevallia dimorphotricha* (which received a CHM/AOS in 1998 and an AM/AOS in 2011, no F1 offspring), *Masdevallia polysticta* (which has received 2 CBR/AOS, CHM/AOS, CCM/AOS, HCC/AOS, an AM/AOS, and has 2 unawarded F1 offspring), and *Masdevallia lehmannii* (which received a CCM/AOS in 2005 and an AM/AOS in 2011, and has three F1 offspring, one awarded).

The only awarded offspring of these is *Masdevallia* Spiderman (*lehmannii* × Copper Angel), which has received one AOS award: the clone 'Tomas', which was awarded an AM/AOS of 85 points in 2009 in Medellin, Colombia. It was described as having "[t]wo flowers on two inflorescences." This is a small sample size from which to make generalizations, but, unfortunately, the multifloral nature of these masdevallias tends not to be strongly imparted to their offspring if at all. When judging multifloral hybrids, therefore, plants should not be penalized


9 AWARD ARCHIVES


10 ERIC HUNT

[5] *Masd. sceptrum* grown by the Muttart Conservatory.
[6] *Masd. amanda* 'Forest's Melissa' CHM/AOS; exhibitor: Randy Bayer.
[7] *Masd. dimorphortricha* 'Windflower' AM/AOS; exhibitor: Betty Kelepecz.
[8] *Masd. polysticta* 'Diana' AM/AOS; exhibitor: Mario Portilla.
[9] *Masd.* Spiderman 'Tomas' AM/AOS; exhibitor: Colomborquideas Ltda.
[10] *Masd. lehmannii*
[11] *Paph. spicerianum* 'Margy' CCE/AOS; exhibitor: John Whiting.
[12] *Paph. venustum* f. *measuresianum* 'Haley Suzannne' HCC/AOS; exhibitor: Glen Decker.
[13] *Paph. venustum* 'Bloomin' Fool' CCM/AOS; exhibitor: Jerry Seidel.

for this.

PAPHIOPEDILUM

We also need to look at paphiopedilums (and the Paphiopedilum Scale, which I referenced earlier), which provide an interesting juxtaposition with the lycastes discussed in Part 1 (Coghill-Behrends 2022). With paphiopedilums, you might not expect to see multiple inflorescences per lead, but there are numerous possibilities regarding flowers per inflorescence, which are worthy of consideration.

The Paphiopedilum Scale that has traditionally been used is the only one that does not have floriferousness as a "line item" and appoints exactly 0 points for this area. But this scale only applies to single-flowered species and hybrids that are only expected to have one flower at maturity per inflorescence. Multiflorals are to be judged with the General Scale, which apportions 10 points for floriferousness: "*The great variety of paphiopedilums currently grown, from species to primary hybrids to the modern complex hybrids, makes uniformly applicable criteria impossible to define*" [emphasis added]. The majority of judged paphiopedilums are those having a single flower on an upright stem; these are scored using the Paphiopedilum Point Scale in paragraph 7.2.7. Those having several flowers on an upright or arched inflorescence are commonly termed multifloral paphiopedilums and should be scored according to the General Point Scale in paragraph 7.2.1, as their floriferousness and arrangement on the inflorescence are of substantial importance." (AOS Handbook on Judging 2021).

Commonly termed multifloral paphiopedilums would seem to indicate that only paphiopedilums from Section *Polyantha* (and resultant intra- and intergeneric hybrids) would be scored with the General Scale. But Allen-Ikeson (2019) notes that: "...it is assumed that one flower is one flower and floriferousness is not an issue because, besides having a single flower, the potential is only for a single flower per inflorescence. That would assume that the only definition of floriferousness is the number of flowers per inflorescence and that total number of flowers is insignificant. What if you have a plant such as *Paphiopedilum charlesworthii*, which has eight inflorescences? You are judging for quality, not culture. Is it reasonable to say that plant, if everything else is equal to the plant with a single inflorescence, should not have any points for floriferousness?"

BRYAN RAMSAY

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MAURICE GARVEY

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Further complicating the implementation of this scale is the fact that many of the species in the genus are truly single-flowered (at least at the present time), but there are examples of multiple blooms on a single inflorescence in quite a few of the "single-flowered" species (and this is only a partial list).

Paphiopedilum spicerianum 'Margy' CCE/AOS (91) was awarded in 2015 and had "[t]wenty flowers and six buds on 23 staked inflorescences..."

Of the 194 awards to *Paphiopedilum sukhakulii*, there are multiple examples of one flower and one bud on one inflorescence. 'Albarino' (2010), 'Green Horizon' (2009), and 'Marriott Leopard' (2007) are the most recent examples

MILTON WITTMANN

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that have more than one flower per inflorescence: each awarded with one flower and one bud on a single inflorescence.

Paphiopedilum venustum has several examples with multiple blooms per inflorescence. 'Haley Suzanne' HCC/AOS (78) in 2014 and 'Bloomin' Fool' CCM/AOS (86) in 2013 are two of them. 'Bloomin' Fool' had 11 flowers and four buds on 11 inflorescences. 'Haley Suzanne' possessed four flowers on two inflorescences.

It is unusual to have more than one bloom per inflorescence with *fairrieanum,* but there are three awarded clones that presented with *three* flowers and buds. In 1965, the clone 'Graceful' was awarded an AM/AOS (81 points) with two flowers and one bud on one inflorescence. Unfortunately, there is no photograph accompanying the *OrchidPro* entry. Two other clones — 'Jeanette' HCC/AOS (79 points in 1986) and 'Jared' AM/AOS (80 points) in 2001 — were recorded as having one flower and two buds on a single inflorescence. There are photos accompanying the *OrchidPro* entries for these two clones, but there is no evidence of buds. One issue that should be considered when evaluating the floriferousness of some of these species (and resultant hybrids) is the viability of the terminal "bud" on an inflorescence. Oftentimes, there is the appearance of what might be a bud at the end of an inflorescence (this can also be the case in some breeding lines of *Phalaenopsis*, especially with novelty hybrids). It is the opinion of David Sorokowsky (pers. comm.) — and I concur — that the final bud on an inflorescence should be definitively viable before it is considered a bud for the floriferousness count.

Paphiopedilum niveum has many examples of three flowers and buds and clear evidence of it.

Tom Kalina (1990) has indicated that the sequentially blooming paphiopedilum species of "Section Cochlopetalum will generally present one, or rarely, two flowers open at the same time on the same inflorescence and should be judged using the Paphiopedilum Point Scale." This consideration is consistent with all the "single-flowered" species, so for the purposes of this discussion, I will use the working assumption that only species in Section Polyantha will be judged using the General Scale and that all other species will be judged with the Paphiopedilum Scale.

The increase in floriferousness of the species has definitely shown an increase in the proportion of multifloral cultivars in the single-flowered species and with *fairrieanum* and *niveum* playing a large role in current hybridizing efforts, floriferousness of the single-flowered species is definitely something we need to consider. Maudiae-type hybrids now can often have two flowers per inflorescence, yet receive no boost in their score for this improvement in modern breeding. Looking at the hybrid *Paphiopedilum* Angela (*niveum* × *fairrieanum*), we can see that, currently, one flower should be considered the exception and two (or even three) flowers per inflorescence is the rule.

Paphiopedilum Angela 'Krull-Smith'


14 NILE DUSDIEKER


15 ARTHUR PINKERS


16 JEA SHANG PHOTOGRAPHY


17 JAY NORRIS

AM/AOS (81 points) 2008, had "Five flowers and one bud on two arched inflorescences..." The photographic evidence does not show the full inflorescences, but the description is clear that is five *open* flowers.

Paphiopedilum Angela 'Ellen' CCM/AOS (82 points), 2009, had "Six flowers and two buds on four inflorescences..." And the photographic evidence here is clear; those are certainly viable, nearly open buds.

At some point, it will be necessary to decide when these single-flowered species and hybrids deserve some credit for floriferousness.

Of interest is that the former Cymbidium Society of America, Inc., though outside the AOS Judging system, waded into the judging of paphiopedilums and allocated five points for floriferousness to "novelty hybrids" (and also some points for "overall charm and distinction"), which could address the breeding lines for miniature paphiopedilums... This/(these) could be a viable bridge between the competing standards.

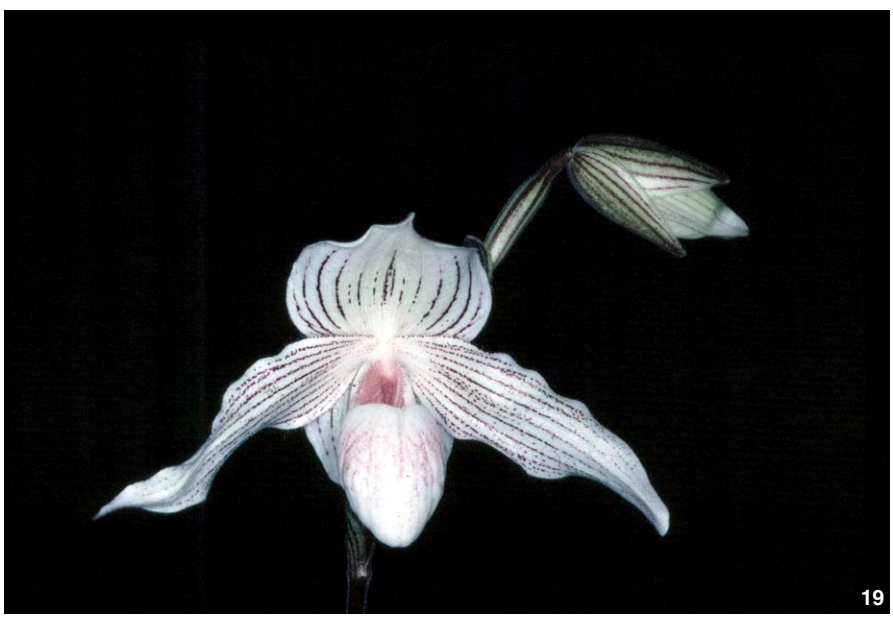
That is only a hybrid of two single-flowered species. And the dilemma is only compounded when we start to look at hybrids with Section *Polyantha*. Cross-sectional hybrids with Section *Polyantha* have some fairly predictable results, which would make scoring for floriferousness somewhat routine, but sometimes the results are surprising. Kalina (1990) suggests that:

"[t]he expected number of flowers in hybrids between any of the multifloral sections can be estimated by multiplying together the number of flowers expected for each of the parents and then taking the square root of the resultant number. This is called the geometric mean, and is used to estimate size expectancy as well."

When Section *Polyantha* is crossed with a normally single-flowered species, the offspring have typically one, two, or rarely three flowers per inflorescence consistently. *Paphiopedilum* Dollgoldi (*armeniacum* × *rothschildianum*) is a good example of this. Of the 52 AOS awards to this primary hybrid, the results are pretty evenly split between one- and two-flowered inflorescences, with only a handful of three-flowered clones.

When Section *Polyantha* is crossed with a species with tendencies to produce multiple flowers per inflorescence, the offspring typically present with 2–3 or 4 flowers per inflorescence. *Paphiopedilum* Woluwense (*niveum* × *rothschildianum*) has received 17 AOS awards, only two of


ROSS LEACH 18


SADAO OKUHARA 19


JAMES OSEN 20

[14] *Paph. niveum* 'Deerwood #4' HCC/AOS; exhibitor: Ross Hella.

[15] *Paph. fairrieanum* 'Richard' CHM/AOS; exhibitor: Harold Koopowitz — Paph Factory.

[16] *Paph.* Angela 'Angel' AM/AOS; exhibitor: Ruey Hua Orchids.

[17] *Paph.* Angela 'Ellen' CCM/AOS; exhibitor: Eric and Ellen Lee.

[18] *Paph.* Dollgoldi 'Sheri' FCC/AOS; exhibitor: Hillsview Orchids.

[19] *Paph.* Woluwense 'TENRAN' AM/AOS; exhibitor: Thomas and Henrietta Fujiwara.

[20] *Paph.* Transvaal 'Joan' HCC/AOS; exhibitor: Dr. and Mrs. Stephen H. Feairheller.

which were granted with a single flower per inflorescence, with the remaining 15 awards reasonably evenly divided between two- and three-flowered cultivars.

But interestingly, intersectional hybrids made with Sections *Polyantha* and *Cochlopetalum* have 3–6 flowers per inflorescence consistently, though they often assume at least some of the sequentially blooming habit of Section *Cochlopetalum*. For example, *Paphiopedilum* Transvaal (*chamberlainianum* × *rothschildianum*) has a couple of awards from the 1970s with only a single bloom, but the trend toward much higher flower counts is convincing, with two-thirds of the remaining AOS awards having 3.0–5.5 flowers and buds per inflorescence.

Paphiopedilum Vanguard (*glaucophyllum* × *rothschildianum*) is another good example. Of the 40 AOS-awarded plants, only four (10%) had fewer than three flowers per inflorescence, with the remaining cultivars having between 3.0 and 6.0 flowers and buds per inflorescence.

Finally, *Paphiopedilum* Prime Child (*primulinum* × *rothschildianum*), one of my favorite primary hybrids, has been awarded 23 times and only two were recorded as having two flowers per inflorescence…and one of those was in error. 'Wingdreams' HCC/AOS (77 points), 2021, was recorded as having one flower and one bud, but appears to have three flowers and one bud. The vast majority of clones had between 3.0 and 6.0 flowers per inflorescence. The clone 'Minh Yen' AM/AOS (82 points) was awarded in 2015 with three flowers and three buds on one inflorescence, but here is that pesky issue of the terminal bud being viable. I would certainly count the first two buds, but the third is questionable, in my opinion.

This brief analysis of awards to the intrageneric *Polyantha* primary hybrids indicates that when the other parent is a normally single-flowered species, the resultant hybrid will underperform on a mean test. And if the other parent is from Section *Cochlopetalum*, the resultant hybrid will overperform on the same mean test. Only the hybrids with a species with multifloral potential fall within the expected range using either arithmetic or geometric means testing.

Looking at hybrids between single-flowered paphiopedilums and those from Section *Cochlopetalum*, some trends are also evident. There are 32 AOS awards to the six cross-sectional hybrids created between the single-flowered *Paph. fairrieanum* or *niveum* and the sequentially blooming *Paphiopedilum glaucophyllum*, *primulinum*, or *chamberlainianum*. Section *Cochlopetalum* pushes the floriferousness of the resultant hybrids upwards, to the point where four flowers per inflorescence are more likely than just one.

If and when a particular plant presented at the judging table is not nearly as cut and dried as the judging scales allow, discretion must be taken by the team captain to make sure that discussion about the potential of intergeneric hybrids is discussed in the deliberations and that the "correct" scale is used.

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— Andrew Coghill-Behrends (email mistercoghill@hotmail.com).

ERNEST WALTERS

ARTHUR PINKERS

[21] *Paph.* Vanguard 'Semper Fi' CCE/AOS; exhibitor: Bill Thoms and Doris Dukes.

[22] *Paph.* Prime Child 'Minh Yen' AM/AOS; exhibitor: Minh Yen.

EDITOR'S NOTE A new point scale has been proposed, first at the Judges Forum at the Centennial Celebration Members Meeting (2022), which was revised in September 2022 (see Webinars, Judging, aos.org) by a task force appointed by the Chair of the Judging Committee. The proposed scale accounts for a single flower/single inflorescence on a plant or multiple instances of single-flowered inflorescences on a plant and apportions points accordingly. The necessity of using the General Scale, with its pitfalls, is avoided, and none exists in the proposal. Floriferousness would now include more than counting flowers: habit and arrangement, branching, stem, etc. would be part of the points given for the inflorescence, a more inclusive term.

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— *Jean Allen-Ikeson*


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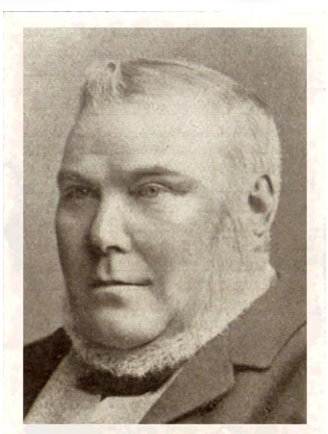
The Dell

The Dell was a country estate in Englefield Green, Egham, Surrey located just 24 miles (38.6 km) west of Central London. The Manor House at Dell Park was originally occupied by Archibald Campbell Douglas Hawksley prior to being purchased by John Henry William Schröder in 1864. Schröder extended the house and then lavished a great deal of attention on his gardens, where he grew orchids, grapes, peaches, nectarines, and melons in a group of large greenhouses. He bought more land from the Castle Hill Estate and constructed a tree-lined allée between the Dell House and neighboring Heath Lodge, which was purchased by his nephew Bruno Schröder. The two estates were combined after the childless death of J.H.W. Schröder, in 1910.

Later Baron Bruno Schröder (1867–1940) rebuilt and enlarged Heath Lodge to accommodate 120 beds and equipped it with ten bathrooms. Under the new name of Dell Park, the house was used as a Red Cross military hospital during World War II. The property has changed hands several times since the last Schröder died in 1977. After remodeling, it opened as the luxury Fairmont Windsor Park Hotel.


Baron John Henry William Schröder


Henry Ballantine, VM

Johann Heinrich Wilhelm Schröder was born in Hamburg, Germany in 1825. When J.H.W. Schröder settled in England to run his family's bank, he obtained a Royal License (baronetcy) to use his Prussian nobility title, "Baron." A baronetcy is a hereditary title (not a peerage) awarded by the British Crown as a means of raising funds for the Crown. During World War I, King George V revoked all royal licenses for holders of Austrian and German titles.

Baron Schröder was a distinguished orchid collector who bought the finest plants available. Bruno Schröder continued to grow and show the orchid collection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after the Baron's death. The skill of the gardener, Mr. Henry Ballantine, was often acknowledged in publications such as *The Gardeners Chronicle* and *The Garden*. The Royal Horticultural Society awarded Mr. Ballantine the Victoria Medal of Honour (VMH).

The beauty of the Schröder collection has been documented by the RHS which had hired an artist, Nellie Roberts, to paint award-winning orchids to have a record of what had been considered award worthy. James O'Brien, the RHS Orchid Committee Secretary wrote (1910):

"Baron Schröder as an Orchid Grower.

It may be said that Odontoglossums were always his first favourites; he had a splendid collection of blotched forms of *O*. *crispum*. The appreciation for these spotted forms was materially assisted by the Baron's purchase of *O*. *crispum* Apiatum at a record price. It secured a first-class certificate in 1886, an honour which had before fallen to the varieties Ballantinei, dellense and Veitchiana. Following from The Dell collection in succession were other first-class varieties of *O*. *crispum*, namely, Sanderianum [10] and Schröderianum [16] (1885), and later Wolstenholmiae, Truffantianum [11], Rex, Graude Maculatum, Princess Christian [9], Princess of Wales [8] and many others. The two finest blotched forms of *O*. *pescatorei*, namely Schröderianum and Veitchii, are now in The Dell collection, Veitchii having been there since 1882.


The Dell

Among hybrid odontoglossums at The Dell are many fine forms of *O*. Wilckeanum [17]; the original secured a first-class certificate in 1885, and the latest, *O*. W. Schröderianum [16], in 1908. The handsome *O*. John Clarke [13] and other hybrids first appeared in the late Baron's garden. He was a keen judge of a good plant and never submitted one to the Orchard [sic Orchid] Committee for an award unless he judged it to be worthy of that distinction. The results proved the correctness of his opinion, for nearly all his awards consisted of first-class certificates. The enumeration of a few will show the wide range represented in the collection, some of the oldest being now as rare as when first shown: *Aerides Fieldingi* Album (1888); *Cattleya Lawrenceana* (1886), the finest white *Cattleya Mossiae* Wageneri superba (1888), *Vanda insignis* Schröderiana (1883), *Miltonia Schröderiana* (1887), *Laelia anceps* Schröderiana [3] (1890) and *L*. *Perrinii* Alba. A striking example is *Cattleya* Lamberhurst hybrid (*citrina* ×


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RHS Awarded — Exhibited by Henry Schröder

TOP ROW

[1] Award: First Class Certificate
Date: June 12, 1906 — Shown by: Schröder, H.
Recorded as: *Cattleya mossiae* Reinickiana 'The Baron'
Painted by Nellie Roberts
Reference: *The Orchid Review*.14:211.

[2] Award: Award of Merit
Date: May 26, 1897 — Shown by: Schröder, H.
Recorded as: *Coelogyne dayana* 'The Dell'
Painted by Nellie Roberts
Reference: *The Orchid Review*. 5:186.

[3] Award: First Class Certificate
Date: January 10, 1888 — Shown by: Schröder, H.
Recorded as: *Laelia anceps* Schroederae
Painted by Nellie Roberts
RHS Notes: Drawn January 1902

[4] Award: First Class Certificate
Date: November 10, 1903 — Shown by Schröder, H.
Recorded as: *Laeliocattleya* Bletchleyensis 'Ruby King'
Painted by Nellie Roberts
Reference: *The Orchid Review*. 11:362.

[5] Award: First Class Certificate
Date: April 17, 1906 — Shown by: Schröder, H.
Recorded as: *Laeliocattleya* Callistoglossa 'The Dell'
Painted by Nellie Roberts
Reference: *The Orchid Review*. 14:149.

[6] Award: First Class Certificate
Date: June 9, 1908 — Shown by Schröder, H.
Recorded as: *Miltonia* Saint André
Painted by Nellie Roberts
Reference: *The Orchid Review*. 16:202.

[7] Award: Award of Merit
Date: August 29, 1905 — Shown by: Schröder, H.
Recorded as: *Miltonia vexillaria* 'The Dell'
Painted by Nellie Roberts
Reference: *The Orchid Review*. 13:276.

[8] Award: First Class Certificate
Date: June 23, 1908 — Shown by: Schröder, H.
Recorded as: *Odontoglossum crispum* 'Princess of Wales'
Painted by Nellie Roberts
Reference: *The Orchid Review*. 16:204

[9] Award: First Class Certificate
Date: March 22, 1898 — Shown by: Schröder, H.
Recorded as: *Odontoglossum crispum* 'Princess Christian'
Painted by Nellie Roberts
Reference: *The Orchid Review*. 6:127

BOTTOM ROW

[10] Award: First Class Certificate
Date: May 12, 1885 — Shown by: Schröder, H.
Recorded as: *Odontoglossum crispum* 'Sanderianum'
Painted by Nellie Roberts
References: PR.7 (n.s.), p. 88, *The Gardeners Chronicle*.1885, May, 641.

[11] Award: Award of Merit
Date: June 9, 1903 — Shown by: Schröder, H.
Recorded as: *Odontoglossum crispum* 'Truffautianum'
Painted by Nellie Roberts
Reference: *The Orchid Review*. 11:210.

[12] Award: First Class Certificate
Date: June 24, 1884 — Shown by: Schröder, H.
Recorded as: *Odontoglossum crispum* 'Veitchianum'
Painted by Nellie Roberts
Reference: *The Gardeners Chronicle*, 1884, June: 836.

[13] Award: First Class Certificate
Date: November 26, 1907 — Shown by Schröder, H.
Recorded as: *Odontoglossum* John Clarke
Painted by Nellie Roberts
References: *The Orchid Review*. 16:10.

[14] Award: First Class Certificate
Date: June 9, 1908 — Shown by: Schröder, H.
Recorded as: *Odontoglossum* Phoebe 'The Dell'
Painted by Nellie Roberts
References: *The Orchid Review*. 16:202.

[15] Award: Award of Merit
Date: May 16, 1899 — Shown by Schröder, H.
Recorded as: *Odontoglossum sceptrum* 'The Dell'
Painted by Nellie Roberts
References: *The Orchid Review*.7:190.

[16] Award: First Class Certificate
Date: May 12, 1908 — Shown by: Schröder, H.
Recorded as: *Odontoglossum wilckeanum* 'Schröderianum'
Painted by Nellie Roberts
Reference: *The Orchid Review*. 16:171

[17] Award: Award of Merit
Date: February 28, 1899 — Shown by: Schröder, H.
Recorded as: *Odontoglossum wilckeanum* 'The Dell'
Painted by Nellie Roberts
References: *The Orchid Review*.7:124.

[18] Award: First Class Certificate
Date: March 8, 1910 — Shown by: Schröder, H.
Recorded as: *Phaiocalanthe* Schröderiana
Painted by Nellie Roberts
References: *The Orchid Review*. 18:114.

intermedia) (F.C.C, 1888). The death of this plant after its first flowering was predicted on account of its dissimilar parentage, but Mr. Ballantine, who has been gardener to the Baron for so many years, showed it again quite recently. Some of the best forms of *Miltonia vexillaria* [7] are credited to The Dell collection, and in *Laelio-Cattleyas* most of the earlier forms were first shown by Baron Schröder; *L.C. triophthalma* (1884). *L.C.* Sedenii and *L.C. bella*, followed by *L.C.* Amesiana, *L.C.* Victoria, *L.*C. Bletchleyensis Ruby King [4], *L.C.* Callistoglossa [5] (1884) and many others. A few good hybrids emanated from the Dell, the most satisfactory being the fine *Calanthe* Baron Schröder, and the hybrid from this and *Phaius* Wallichii, named *Phaio-Calanthe* Schröderiana [18], which secured a first-class certificate early this year." (p. 281)

Reference

O'Brien, J. 1910. Baron Schröder as an Orchid Grower. *The Gardeners Chronicle*, Ser. 3, 47:281.

RHS-Awarded
Exhibited by Bruno Schröder

[1] Award: First Class Certificate
Date: October 1, 1930 — Shown by: Schröder, B.
Recorded as: *Laeliocattleya* Horos 'Dell Park'
Painted by Nellie Roberts
Reference: *The Orchid Review*. 14:211.

[2] Award: First Class C
Date: February 22, 1821 —
Recorded as: *Dendrobiu*
Painted by Nellie Robert
Reference: *The Orchid R*

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Class Certificate
1821 — Shown by: Schröder, B.
drobium Model 'The Dell''
Roberts
rchid Review. 29:96

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[3] Award: First Class Certificate
Date: March 27, 1917 — Shown by: Schröder, B.
Recorded as: *Paphiopedilum* Eurybiades 'The Baron'
Painted by Nellie Roberts
Reference: *The Orchid Review*. 25:91.

Cattleya Schroederoe Alba
Reicenbachia, 2:t.17 (1894).
Named after Baroness Schröder, wife of Baron John Schröder. (Rchb.f.) Sander 1888.

RHS Victoria Medalist

Henry Ballantine

Head Gardner at The Dell

Henry was born in 1883 in Scotland and began his career in gardening as a young man. While still a young gentleman he was appointed gardener and bailiff (steward) at The Dell in Englefield Green. Here he stayed for 47 years working with Sir John on both the orchid houses, various varieties of flowers and vegetables creating numerous new award-winning plants. He was a member of the RHS Orchid Committee and in 1907 was presented with a Victoria Medal of Honour. He retired in 1911 and after the death of Sir John moved to Westwood, Egham. Upon the death of Sir John, he was left a legacy of 1,000£.

James O'Brien, RHS Orchid Committee Secretary (1907)

"Mr. Henry Ballantine, (VMH) has been for many years head gardener to Baron Sir H. Schröder, The Dell, Egham. The Dell gardens are among the most beautiful and best maintained establishments in this country. They are especially famous for the rich collection of Orchids they contain. Many important species and varieties have been shown from this collection at the Royal Horticultural Society's meetings and may be found in the list of plants which have received first class certificates. It is interesting to recall some of the fine plants, which Mr. Ballantine has first presented from The Dell gardens.

Taking, for example, the spotted forms of *Odontoglossom crispum*, which are among the greatest favourites at the present day, there is a very fine collection at The Dell, and this collection contains specimens from the earlier introductions, which are still some of the best plants to be seen, notwithstanding they have been under cultivation for long periods. First-class certificates have been obtained by *O. crispum* Ballantinei, *O. c. flaveolum*, *O. c.* Dellense and *O. c.* Veitchianum in 1884; *O. c.* Schroderianum and O. *c.* Sanderianum in 1885; for *O. c. apiatum*, which was the sensational Orchid of its day, in 1886, and for *O. c.* Baroness Schröder, *O. c. nobilior* and other grand forms at more recent dates.

Turning to the blotched forms of *O. Pescatorei*, the record is equally remarkable, The Dell collection still retaining in splendid health the beautiful *O. Pescatorei* Veitchii (F.C.C., 1882) and *O. P.* Schröderianum, both of which plants are still unmatched, despite the thousands of specimens of this species which have been imported since that year. Mr. Ballantine had the good fortune to present the first *Odontoglossum* Wilckeanum [17] on March 10, 1885, and its variety Godefroyae on the same day. First class certificates were awarded for both plants. In most of the other sections of *Odontoglossum* early honours were secured by representatives from this collection. From 1891, when The Dell specimen of *Cypripedium insigne* Sanderæ secured a first-class certificate, it was for some years, and probably still is, one of the best plants of its kind; and many other cases might be cited where Baron Schröder's liberality in securing the best varieties and Mr. Ballantine's skill in cultivating them to the highest standard have brought credit to the gardens in which they both take such delight.

Although the Orchids have played the most important part in spreading the fame of The Dell gardens, other branches of gardening have been equally well carried out. It would be well for horticulture if the type of owner represented by Baron Schröder and of gardeners by Mr. H. Ballantine were the general rule."

Reference

O'Brien, J. 1907. Article Title. *The Gardeners Chronicle, ser. 3*, 42:200–201.

NOTES

Nomenclature: The names used in this article are those in use when the plants were awarded and may not agree with current nomenclature.

Transliteration: In the German alphabet, the letter "o" with umlaut (ö) represents "œ" or "oe". When searching for names with an umlaut (ö), use all variations of spelling, (i.e., Schröder, Schrœder, Schroeder and Schroder) for best results.

Growing Areas

TEXT AND PHOTOGRAPHS BY SANDRA MICUCCI

HOW DO YOU choose what orchids to grow? When I first started growing orchids, I chose orchids that I thought were the most intriguing or beautiful. It took me some time to realize that the orchids I should grow should either be consistent with the environment that I have to offer or be within the environment I could artificially reproduce. There was a lot of trial and error and many contributions to the compost pile.

I live in southern Ontario, Canada. We have four definite seasons. In the summer it could go to 90 F (32 C) and in the winter 14 F (−10 C). At best, the majority of orchids can be outside for about six months. My house is built on a hill. The "basement" or lower level is finished and has large windows all along the back of the house that faces south to southwest. The house is air-conditioned in the summer and heated in the winter, so the relative humidity is usually low. There are not many orchids that can thrive in these conditions.

To accommodate the orchids I chose to grow, I have six growing areas. In order of effort, there is a low-maintenance area, a mid-maintenance area, an IKEA™ cabinet, terrariums, a grow tent, and a mount rack in the sunroom.

LOW-MAINTENANCE AREA

The low-maintenance area is for wintering dendrobiums. For me, this genus stays outside the longest. They get their fill of water and sun outside for just over six months. Two baker's racks are set up in front of the southwest-facing windows. If you get baker's racks, make sure you get them with wheels. You will want to move them to keep an eye on what is going on next to the window. Baker's racks are available online and in most department stores. I do not want water on the floor of this room. Plants on the shelves are in saucers lined with plastic egg crate pieces (traditionally used as diffusers in fluorescent light fixtures) so as not to block the light from the plants underneath. I use egg crate in most of my saucers and trays and sometimes on wire shelves to add stability to the pots placed on them. I purchased PLASKOLITE 24 × 48–inch (122 cm × 60 cm) louvered ceiling light panels from Lowes. The panels are easy to cut to the required size. They are not inexpensive at $33.85 (about $25 US) apiece, but they are easy to clean and can be used over and over.

There is no artificial light or humidification supplied other than the humidity provided in the saucers. Because the pots are sitting on the egg crate, I can leave water in the saucers. The natural temperature is warm when the sun is out and cooler when it is not, giving a diurnal

[1] Author's baker's rack low-maintenance growing area.

[2] Plants staged on trays with eggcrate inserts in the mid-maintenance area.

[3] Lights suspended from the ceiling and humidity maintained with a cool-mist humidifier.

range of about 25 F (12 C).

MID-MAINTENANCE AREA

I winter my rhyncholaelias, brassavolas, brassias, lycastes, and Chinese cymbidiums in the mid-maintenance area. These genera are outside almost as long as the genera in the low-maintenance area, but I would like to extend their photoperiod. Because they are in an inside room with no windows, I must supply some environmental modifications. The plants are on shelves built by Andrew, my husband. You will see Andrew does a lot to facilitate my orchids. It also helps that he is an engineer. There are three shelves, staggered, 72 × 14 inches (183 × 36 cm). The shelves are lined with recycled rubber-boot trays lined with egg crate. I put a hole in the corner of the trays so they drain. There is a drain in the floor of this room. Before I had them in a room that did not have a drain and I inserted silicone tubing in the holes that drained into pails. There is a cool-mist humidifier in this area maintaining a 60+% humidity level. The humidifier is controlled by a hygrometer. I use INKBIRD controllers in all my areas. When you choose a humidifier that will be controlled by a timer or hygrometer, make sure that it will run when the power to it turns off and comes back on. Most do not. I use 0.8 gallon (3 L) Taotronics Humidifiers. Light is supplied by a six-tube, 4-foot (12 m), 216-W T5 LED tube system and a Mars TS 3000, full-spectrum LED system. For Canadians, I purchased them from www.growlights.ca. I have cedar lattice on the ceiling from which to hang the lights and some plants. All electrical outlets have ground-fault circuit interrupters.

IKEA CABINET

The IKEA cabinet is for wintering vandas (neofinetias) and *Dendrobium moniliforme* specimens that need to stay cooler. They can withstand and require cold temperatures and stay outside the longest. The neofinetias winter in a bedroom that is the coolest room in the house. I wanted this area to look more like furniture instead of racks. I was surfing around on social media one day and saw people growing orchids and aroids in IKEA cabinets. There is quite a Facebook presence on IKEA "greenhouses" (IKEA Greenhouse Club) that is highly informative. I also picked up more ideas from Cheryl Erins' virtual presentation at the Orchid Society of the Royal Botanical Gardens a year or so ago on what she grows in her cabinet.

The cabinet is in a corner of a bedroom and not in front of a window, so I needed artificial light. Neofinetias do not need a lot of light. I use a Derlights four-strip 48-W, 192 LED grow light purchased from Amazon. The lights are dimmable and on a timer. I took out the glass shelves because they blocked the air movement. My neofinetias are grown in the traditional Japanese-style moss mound in a Fukiran Fuuran pot. I do need more practice at that. Andrew built an interior framework for the cabinet from ZYLtech black, 2020 T-slot aluminum

[4] The IKEA cabinet. The dish of expanded clay in the bottom helps maintain humidity.

[5] INKBIRD thermostat.

[6] Taotronics humidifier.

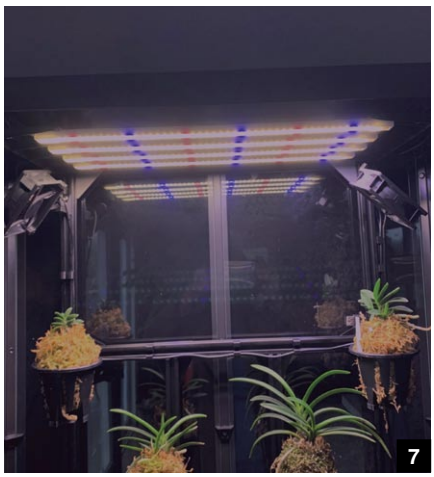
extrusion. As he is an engineer, Andrew designed and printed special holders that the Fukiran (or Fu-Ran) pots fit into on a 3-D printer. The holders are movable and slide up and down in the T-slot aluminum. He also built holders for the USB multifans so that I could slant them. My preferred brand of fan is AC Infinity, which can be purchased directly from AC Infinity (www.acinfinity.com) or from Amazon.ca if you want to avoid the hassle and charges of importing them. I applied weather stripping to the opening of the cabinet doors and humidity is maintained at 65+% with only a humidity tray at the bottom of the cabinet.

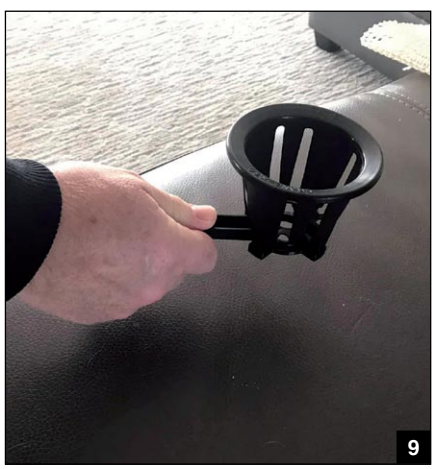
As I said earlier, I wanted this area to look more like furniture. I put a piece of black velvet around three-sides of the cabinet. At night, with the grow light on, the neofinetias appear to be floating in the air.

TERRARIUMS

I now have three terrariums. They house my miniature, fussy, high-humidity, warm, and mostly mounted plants from Madagascar and South Africa. They live in the terrariums year-round. If you are thinking of growing in a terrarium, check out www.pumpkinbeth.com. She is a knowledgeable horticulturist from England who has a wealth of information on terrarium set-ups and the orchids you could grow in terrariums. All three of my terrariums are built by Exo Terra™. I like the Exo Terra terrariums because they have vents for airflow and large, hinged doors for easy access. My largest terrarium is 36 × 18 × 36 inches (90 × 45 × 90 cm), the medium terrarium is 24 × 18 × 24 inches (60 × 45 × 60 cm), and the small terrarium is 18 × 18 × 36 inches (45 × 45 × 60 cm). I replaced the top screen of the large terrarium with 0.55-inch (1.4 mm) plexiglass that had to be reinforced with an aluminum strip because the plexiglass started to sag. I put a piece of acetate clear-transparency film over the top screens in the other two terrariums.

The bottoms of the terrariums are composed of between 2 and 5 inches (5–12 cm) of extra-large, expanded, baked clay pellets covered by weed barrier, coir, and then moss. The coir and moss make it challenging to keep the terrarium clean, and I have removed them from the large terrarium. You can have a hole drilled into the bottom of the terrarium to drain water. I still may have this done — not something I would attempt myself because I could shatter the glass. A plastic-coated wire, wall-grid panel was cut to fit three sides. Most of my mounts are on cork and they





[7] Fans and lighting fixture installed in the top of the IKEA cabinet.

[8] 3-D printed pot holder.

[9] These holders were designed and built by the author's husband to hold special Fukiran pots.

[10] *Vanda falcata* plant attached to the frame of the IKEA cabinet.

[11] One of the author's terrarium growing chambers.

easily hang from the grid.

Terrariums are not a lot of maintenance if you engage the available technology. In the large terrarium, I have a Mars TS 600, indoor full-spectrum LED grow light on a timer. The light is off to one side of the terrarium, and I have shade cloth on the top to protect the lower-light plants on the other side. Three AC Infinity multifan mini compact USB fans were installed to ensure good air circulation. It is best to use fans that are UL certified for aquariums because of the humidity. They are more costly but last longer than the fans that are not UL certified. I did install a MistKing misting system with one nozzle on a hygrometer in the large terrarium, but found I did not need it to maintain a humidity level of over 80%. The smaller terrariums have a grow light on a timer and AC Infinity fans as well.

Another valuable piece of technology, if you are like me and want to know what is going on at any time, is the Govee Bluetooth humidity meter, hygrometer/thermometer with APP alerts, and data storage. I have one in each terrarium and in all the other locations. I can look at my phone and make sure everything is working as it should.

GROW TENT

A grow tent is basically a large terrarium. Grow tents range in size from 2.5 × 2.5 × 2.5 feet (80 × 80 × 80 cm) to 20 × 10 × 7–8 feet (600 × 300 × 210–240 cm) and are easily purchased online. Again, for you Canadian readers, I purchased my grow tent and all my lights from www.growlights.ca. You can erect a grow tent in a closet or any room in your home.

My grow tent is on the other side of the room from my mid-maintenance area. It houses bare-root vandas and some mounted plants that demand high light, high humidity, and an abundance of water. Grow tents can accommodate many different environments. I have seen orchidists use grow tents with chillers for genera such as masdevallias, draculas, nepanthes, jewels, etc. The plants I have in the grow tent are only outside for a few months because they do not do well below 55 F (13 C). Although our days could be 86 F (30 C), the nights could get chilly. I only was able to have the vandas out for parts of July and August this year and had to bring them in more than a few times because of the chilly nights.

My grow tent is a 71 × 48 × 78 inches (180 × 120 × 200 cm) Fusion Hut 1680D. There is a removable tray made of the same material as the tent at the bottom of the tent, but because the vandas require so much water I removed it and installed a drain. I say "I" but it was more like Andrew. Andrew designed a platform with 2 × 4–inch, pressure-treated wood and a plywood top sloped to a drain. He then installed PEX (cross-linked polyethylene) piping to take the water from underneath the platform to the drain. This setup allows me to spray water freely in the tent with my trusty lithium-ion, battery-powered pump. I also spray the sides and bottom of the tent with Physan 20 every few weeks and run bleach down the drain weekly to avoid mold setting in with all the heat, humidity, and water.

I added more poles running the length of the tent to hang the vandas on and hung a piece of lattice on the tent frame against one wall for mounted plants. Light is supplied by a Mars TSL 2000 indoor full-

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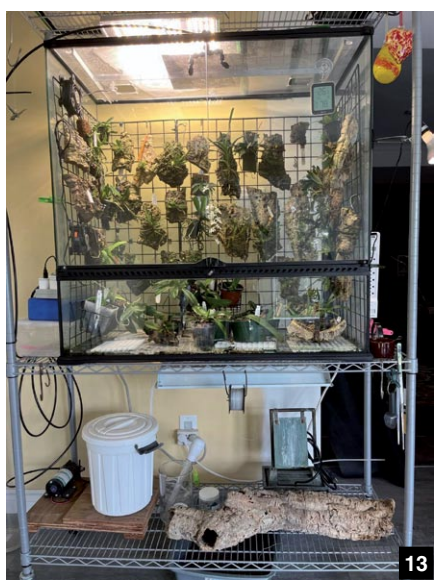

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[12] This terrarium fogger helps maintain humidity.

[13] The author's large terrarium.

[14] A MISTKING kit.

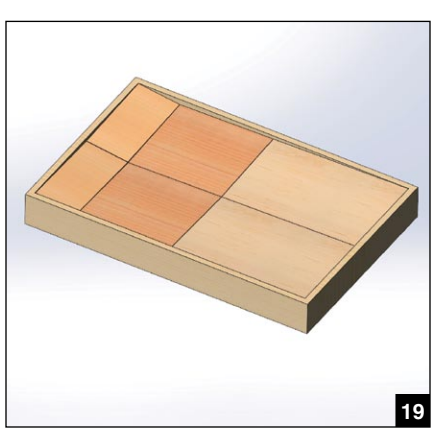
[15] Govee smart hygrometer.

spectrum LED grow light. A grow tent is highly reflective, so the distance from the light does not decrease the amount of light a plant receives as it would normally. I have burned vandas. I use shade cloth to protect plants requiring lower light. Two small, internal fans run 24/7 to keep the air moving. For humidity, I use a Taotronics cool mist humidifer with an INKBIRD thermostat and humidity controller. I only have to fill the humidifier every few days because the tent holds the humidity quite well.

MOUNT RACK

This is my newest grow area. This rack is for large mounts that are around 16 inches (40 cm) in length. Most of the plants are angraecoids and they do not go outside. Angraecoids require heat and humidity and not quite as much water as the vandas.

The rack is a 4 × 8–foot (1.22 × 2.44 m), cedar-framed, 4 × 4–inch (10 × 10 cm), wire-mesh panel purchased from the local lumber store. Andrew built a structure with wheels for the panel to sit in so it could be independently upright and easily moved. The mount is in a sunroom with skylights, so I can mount plants on both sides. The room also has a tile floor and drains. There is a shelf on each side



[16] The author's vandas growing comfortably in her grow tent.
[17] The inside of a grow tent before installation of plants.
[18] Drain installed in the tent's base to facilitate watering ease.
[19] Pressure-treated base designed by the author's husband to house the drain.
[20] A piece of tubing runs from the drain, through the base to the floor drain.
[21] Oscillating fan to facilitate air movement.
[22] Lattice hung from the tent frame houses small mounted plants.
[23] Author's newest growing area to house large mounted plants.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of the rack that holds some potted plants and the misting system. I have a MistKing misting system with two double nozzles at the top of each side. The misting system was controlled by a humidistat and would run all afternoon as the room humidity decreased with the room heating up. I did not want that much water in the room. I changed the control to a timer to come on for a few minutes every other hour from noon until dusk. From dusk to noon the room can maintain a humidity level of 85%. I hung a Mars TSL 2000 indoor, full-spectrum, LED grow light to extend the photoperiod.

Believe it or not, there are no orchids on the main level of our home. Andrew and I have designed all these environments to provide the conditions for the orchids that I want to grow and contained them in a part of the house. Some of the environments that I was able to replicate are quite different from the one I live in. Orchids of Madagascar, South Africa, South America, Japan, and China are alive and doing well in a home in Ontario, Canada.

— Sandra Micucci is a student judge in the Toronto Judging Centre, treasurer of the Orchid Society of the Royal Botanical Gardens, and member of the Southern Ontario Orchid Society, and the Niagara Region Orchid Society. She has a PhD in Epidemiology and has spent most of her career at McMaster University in Hamilton, Ontario and a short time at Vanderbilt University in Nashville, Tennessee. After retiring and returning to Canada in 2010, Sandra and Andrew, her husband, started a structural and civil engineering, and landscape architectural firm in Brantford, Ontario. If that was not enough, Sandra went to an orchid show and got hooked on orchids (email sandra.micucci@gmail.com).


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Émilie Vouga (1839–1909)

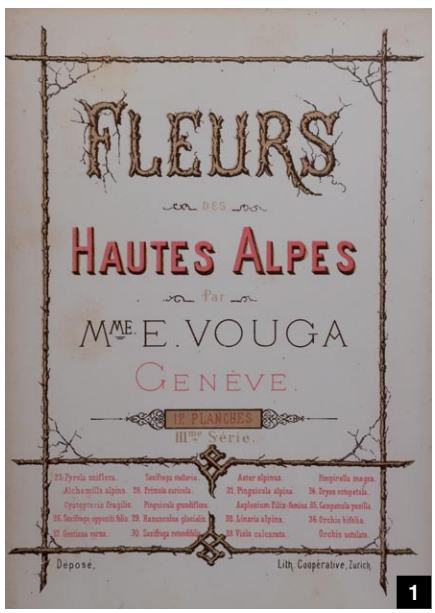
A Forgotten Painter of Orchids

BY CLARE HERMANS AND JOHAN HERMANS

CHARLES NUGENT FITCH, Henry Moon, Marianne North, Peter De Pannemaeker and many others are familiar names in Victorian botanical art, but it is very rare for the name Émilie Vouga to appear in this context. The height of Vouga's recognition was from 1870 to 1880 when she published three series of chromolithographs of orchids; today, her work is overshadowed by contemporaries such as the illustrations in *Lindenia*, *Reichenbachia* and *The Orchid Album*. However, it turns out that Émilie was an accomplished painter of flowers, birds and animals with an unmistakable hallmark of composite pictures, with bold colors and textures, glossy highlights and the use of dark paper as a background. In addition, she created a mass market for pretty ephemera and collectible postcards.

Initial research revealed few facts about her life, and even then, they were often third-hand in articles concerning other artists. She was born Émilie (sometimes misspelled Emile) Pradès in Vevey, a town on Lake Geneva, Switzerland in 1839 and she died in Geneva in 1909. She taught the American botanical artist Adelia Sarah Gates (1825–1912) in Geneva in the late 1880s during the latter's European travels. Another confirmed date is May 1892 when Émilie traveled first class to New York on the French steamship *Le Gascoigne* departing from Le Havre; she accompanied the sculptor and painter Louise Artus-Perrelet (1867–1946), a colleague from La Société des Arts de Genève. How long she stayed or what she did in the US remains somewhat unclear.

Nowadays the name Vouga is better known for postcards and greetings cards. The firm Maison Vouga et Cie was the first major publisher in Switzerland from 1899 and specialized in illustrations of flowers. The *Journal de Genève* December 14, 1900, said they were "delicious, illustrated postcards in the watercolour style." Some were signed E. Vouga and continued to be produced after Émilie's death. In 1928, the firm merged with the Zurich based company Photoglob-Wehrli & Co. AG, they specialized in photochromic images, a process bringing vibrant color to black and white photographs, and together became Photoglob-Wehrli & Vouga AG. The name Vouga was dropped in 1974, though Photoglob AG continues as a publishing house.



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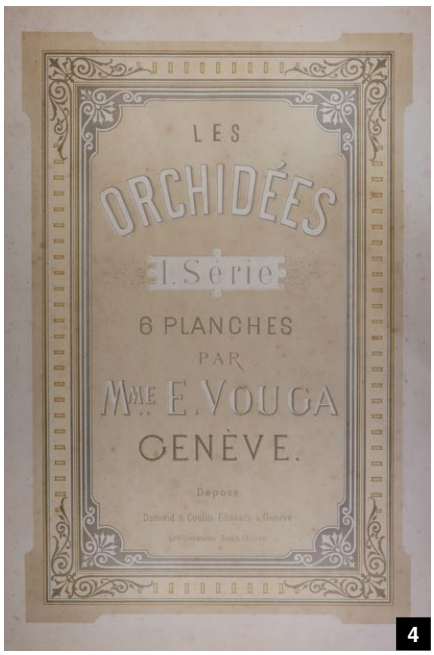
For a time, this was all the information available until discovering the *Journal de Genève*, which revealed a treasure trove of searchable digitized back-issues. The most important finds were Émilie's obituary, advertisements for her publications and regular reviews of what turned out to be a prodigious output. Now, some of the gaps were filled: first, her date of birth was confirmed as May 20, 1839, and not 1840 as frequently given, and her death was sometime before July 16, 1909, the obituary's date. A wedding notice in April 1861, using the alternative spelling Pradez, announced her marriage to Eugène-Henri Vouga. In August the next year, Charles Louis Henri Vouga was born. While Émilie and Eugène-Henri's death notices confirmed they had children, the number is not stated but from the mourners' names listed it seems likely they had a daughter. Émilie's obituary



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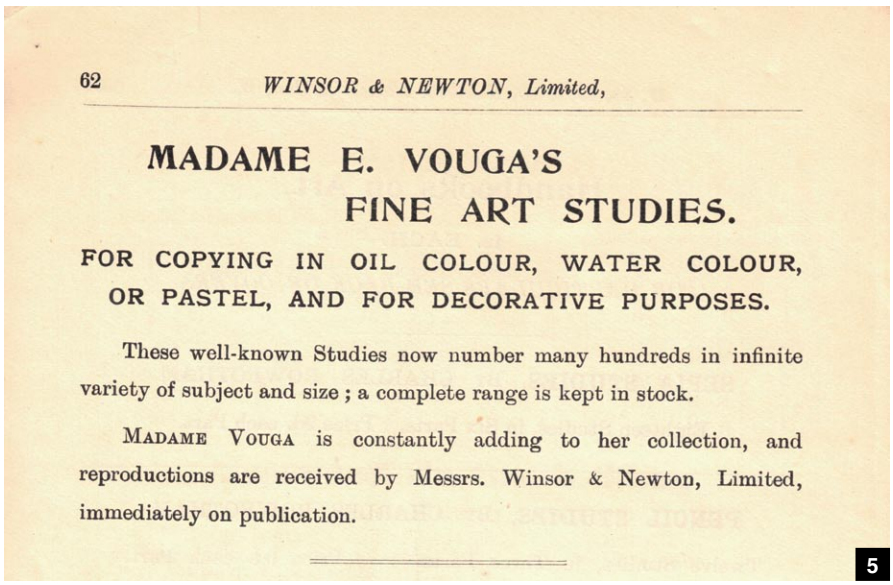
declares she "experienced material difficulties at a very young age." Evidence about the nature of these "difficulties" comes from an announcement by Mr. E. Vouga in October 1867 saying "Mr. and Mrs. Puchat were no longer financially involved in his cafés, and he would be responsible for any outstanding debts." A subsequent notice replies: "Mr. and Mrs. Puchat no longer have any commercial dealings with Mr. Vouga-Pradez and his wife." Two months later there is a request for a house to rent by Mr. Vouga-Pradez: he required one close to town with 10–15 rooms and a paddock. Then, there is a five-year interval without news of the couple.

The first clue regarding Émilie's new career is in October 1872 when her exhibit at the "Exposition Permanente" at the Palais de L'Athénée, the Headquarters of La Société des Arts in Geneva is mentioned. The names of all the exhibitors were regularly recorded in the *Journal de Genève.* Although the subject matter or the number of objects displayed was never listed, hers were probably flower paintings. This is implied by an advertisement the following September, which stated Madame Vouga would shortly resume her flower drawing and painting class. Interestingly, we are informed by the obituary that Émilie was self-taught and that she learned from winter evenings spent copying the works of the Swiss landscape painter, Alexandre Calame (1810–1864) who was also born in Vevey.

Émilie's first commercial publication was in the summer of 1876 with her *Flora Alpina* (or *Fleurs des Alpes)* a set


62 *WINSOR & NEWTON, Limited,*

MADAME E. VOUGA'S FINE ART STUDIES.

FOR COPYING IN OIL COLOUR, WATER COLOUR, OR PASTEL, AND FOR DECORATIVE PURPOSES.

These well-known Studies now number many hundreds in infinite variety of subject and size ; a complete range is kept in stock.

MADAME VOUGA is constantly adding to her collection, and reproductions are received by Messrs. Winsor & Newton, Limited, immediately on publication.
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[1] Title page for the 3rd series of Fleurs des Hautes Alpes, published in 1881.
[2] Plate 36 of the Fleurs des Hautes Alpes showing Platanthera bifolia and Neotinea ustulata, published 1881.
[3] A decorative plate showing slipper orchids of an unknown date.
[4] Title page for the first series of Les Orchidées by Mme Vouga, published in 1882.
[5] Winsor & Newton Catalogue advertising Madame Vouga's prints for copying or decorative purposes, c. 1890's.
[6] Plate 1 of Vouga's Les Orchidées, showing *Cattleya crispa*.
[7] Plate 2. *Vanda tricolor* var. *suavis*.
[8] Plate 3. *Stanhopea guttulata*.

of six quarto chromolithographs in an album priced 15 Swiss Francs (CHF). The reviewer wrote "The prints, large quarto, are so successful that it is very difficult to distinguish at first glance the reproduction of the originals … we do not hesitate to declare them little masterpieces of taste, art, and truth." Moreover, the quality of the reproduction by Braun & Cie, Geneva was commended, and it was observed some had required between 12–16 printing stones. It was quickly followed by *Fleurs des Hautes Alpes* in December comprising 12 smaller, octavo plates for 12 CHF and the review recommended them as a New Year's gift or tourist souvenir. Her first card collection *Perles des Alpes* was issued in 1877 and was more modestly priced at 2 CHF, there were 12 in an envelope, and it was aimed at the popular market. A slightly different card design was released in December 1878; *Gouttes de Rosée* consisted of 24 flower illustrations with or without biblical texts. During subsequent years new series of all three were printed by the Zurich Lithograph Cooperative, often appearing just in time for Christmas and New Year. They were accompanied by other titles including *Les Champs & Les Bois*, *Flore de Sud, Les Voeux de Noel* and *Seize Ans & La Résurrection*. As before, many of the originals were exhibited at the regular "Exposition Permanente" at the Palais de L'Athénée until this ceased in 1898; after this, there is no record of Émilie at the Société des Arts or information on the whereabouts of the originals.

A December 1882 article "*Flowers of Madame Vouga*" gives an update on her recent productions and includes the first mention of an orchid album, therefore, contradicting the frequently cited 1890 as the publication date. The commentator wrote "Here is another magnificent album completely devoted to Orchids, and which will rather delight the amateurs than those of the general public, but these amateurs themselves form a considerable audience, if we judge by the sales success that she has already obtained." Interestingly, these were published by Damond & Coulin, Geneva but still printed by the Zurich Lithograph Cooperative. A hint regarding Émilie's painting origin is also provided. In the text about the latest *Flore de Sud*, which contained an illustration of the waterlily *Victoria regina*, it stated "Madame Vouga has made the pilgrimage to Bonn in its honour," thus confirming she worked from life and was prepared to travel a distance in pursuit of a plant in flower.


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Broadening her appeal Émilie used a similar format for birds as the alpine flower albums, a large one *Sur la Branche* and a smaller *Sous la Veuillée*, both appeared in 1885. Continuing the bird theme, a collection of panels was launched in December of the same year "intended for living room screens so fashionable today. There are waders, Herons, Flamingos, all placed in their chosen environment." In addition, in 1891 Émilie collaborated with Mrs. Colomb on a set of albums illustrating examples of designs on porcelain for amateurs to reproduce. Meanwhile, the *Nouvelle Gouttes de Rosée* gave greater emphasis on landscapes and included exotic locations such as a tent in a desert oasis. Furthermore, during this period she produced a series of prints titled *Collection*

[9] Plate 4. *Epidendrum ciliare* and *Coelogyne speciosa.*

[10] Plate 5. *Prosthechea cochleata*, *Dendrobium densiflorum* and *Coelogyne cristata*.

[11] Plate 6. *Stanhopea tigrina*.

[12] Plate 7. *Phalaenopsis schilleriana*, *Rhynchostele cervantesii* and *Prosthechea citrina*.

E Vouga, sometimes with images of single flowers of orchids in a pattern similar to designs for wallpaper; they included *Dendrobium, Paphiopedilum* and *Stanhopea*.

A list of *Madame E Vouga's Fine Art Studies* "for copying in oil colour, water colour, or pastel, and for decorative purposes" were included in the Winsor & Newton catalog at the end of their One Shilling Handbooks on Art. The handbooks included *The Art of Flower Painting in Water Colours* by Mary Elizabeth Duffield and *The Art of Miniature Painting* by Charles William Day. The range of designs now included landscapes, flowers, birds, dogs, cats, horses and cacti for door panels, friezes, screens and wall decorations in varying sizes. There was even No. 4 *Orchid Studies* priced at 2 shillings and 6 pence (12½ p).

Furthermore, in 1891, Émilie launched a monthly magazine *Vouga's Art Folio* in the United States. The subscription was $4 a year and included designs for China, tapestry and pastel painting consisting of her flower studies, landscapes and animals. The publisher was Vouga & Co., 205 Broadway, New York. The 1892 trip was probably a promotional tour as in addition at least two sets of *Flower Studies by Mme E. Vouga* comprising four plates were published by Wirths Bros. & Owen, New York and London. In May 1903, her husband died after a short illness. Intriguingly his death notice still used their combined surnames, Vouga-Pradez though she used the sole name Vouga in all her publications. It also gave a long list of relatives including a Pradez in Rio de Janeiro, without any more details concerning his life.

When Émilie died at 70 in 1909, her obituary commented further on her early achievements. "But soon her practical mind, which, a rare thing, paired with her aesthetic sense, showed her a new path in which she was an initiator and where she excelled, we want to talk about the Vouga cards that are known in the whole world." It is clear her business was very successful and "she had many collaborators and edited compositions by other painters, she, moreover, did not forget the modest little cards of the beginning." It noted that she continued working until she died. Her character was described as "pious, very modest and very charitable" and "the main thing for her was to do it well." Unhappily we found no mention of the Maison Vouga et Cie publishing house; nonetheless, Émilie must have had a connection with the firm in view of their use of her images.


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THE ORCHID PLATES From time to time, Émilie's orchid chromolithographs *Les Orchidées par Mme. E Vouga Genève* appear for sale. We were fortunate to acquire complete sets of series one comprising six plates, the second with seven plates together with part of the third. The year of publication for the latter two is uncertain as none of her work is dated; the only dates known come from newspaper adverts and reviews. The plates are loose-leaf in a rigid folder, in a similar arrangement to *Fleurs des Hautes Alpes* except it is large folio, comparable in size to Sander's standard edition of *Reichenbachia.* Her style is instantly recognizable; the plant or plants in flower are grouped together on pale green or brown paper with additional foliage to complete the composition if required and are reminiscent of Henry Moon's (1857–1905) near contemporary illustrations in *Reichenbachia*.

[13] Plate 8. *Paphiopedilum barbatum*, *Paphiopedilum histutissimum* and *Phragmipedium roezlii.*

[14] Plate 9. *Zygopetalum maxillare* and *Miltonia flavescens.*

[15] Plate 10. *Phaius wallichii* and *Trichopilia suavis.*

[16] Plate 11. *Oncidium fuscatum* and *Angraecum sesquipedale*

They are romantic and atmospheric rather than strictly botanically accurate and characteristic of the age. All the

plates are species, and it seems unlikely the missing ones are hybrids. Given the comments on painting the *Victoria regina* they were doubtless drawn from life; however, who grew the plants and where they were painted remains a mystery. None of the orchids are particularly unusual for the era, nevertheless, they encompass a variety of temperature requirements, so a significant collection, or collections were involved.

The subjects of the first folder are No. 1 *Laelia* (*Cattleya) crispa*; No. 2 *Vanda tricolor* var. *suavis*; No. 3 *Stanhopea guttulata*; No. 4 *Epidendrum ciliare* and *Coelogyne speciosa*; No. 5 *Epidendrum cochleatum* (*Prosthechea cochleata), Dendrobium densiflorum* and *Coelogyne cristata* and No 6. *Stanhopea tigrina*.

The plates for the second are No. 7 *Phalaenopsis schilleriana*, *Odontoglossum* (*Rhynchostele*) *cervantesii* and *Encyclia* (*Prosthechea*) *citrina*; No. 8 *Paphiopedilum barbatum*, *Paph. hirsutissimum* and *Phragmipedium roezlii* (*longifolium* var. *longifolium*); No. 9 *Zygopetalum maxillare* and *Miltonia flavescens*; No. 10 *Phaius wallichii* and *Trichopilia suavis*; No. 11 *Miltonia warszewiczii* (*Oncidium fuscatum*) and *Angraecum sesquipedale*; No. 12 *Limatodis* (*Calanthe*) *rosea* and *Phalaenopsis amabilis;* and No. 13 *Oncidium* (*Psychopsis*) *papilio* and *Dendrobium* sp.

The two odd plates from the third series are No. 14 *Houlletia brocklehurstiana* and *Dendrobium jamesianum* (*infundibulum*) and No. 17 *Odontoglossum* × *rueckerianum* (*Oncidium* × *andersonianum*) and *Masdevallia veitchiana*.

It has been a journey to discover more regarding Madame Émilie Vouga and although she has emerged from the shadows, some things remain an enigma; fortunately, the legacy of her work lives on and has found a new and appreciative audience.

Acknowledgments

We would like to thank Charlotte Brooks, Art Curator, RHS Lindley Library, and Sylvain Wenger of La Société des Arts, Genève for their assistance.

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_. *Fleurs des Hautes Alpes* 1st series 1876, 2nd series 1878 (?), 3rd series 1881, 4th series 1882, 5th series (date unknown). Publisher, Location. 12 plates in each.

_. *Les Orchidées.* 1st series 1882, 2nd (date unknown), and 3rd (date unknown). Publisher, Location.

_. (date unknown). *'Collection E. Vouga' "Fleurs détachées"* lithographs of flowers: Series 55 contained Dendrobiums, Paphiopedilums and Stanhopeas & *Flower Studies by Mme E. Vouga* Series 1 and 2. Wirths Bros. & Owen, New York and London.

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[17] Plate 12. *Calanthe rosea* and *Phalaenopsis amabilis*

[18] Plate 13. *Oncidium papilio* and an unnamed *Dendrobium*.

[19] Plate 14. *Houlletia brockelhurstiana* and *Dendrobium infundibulum*.

[20] Plate 17. *Oncidium* × *andersonianum* and *Masdevallia veitchii*.

First Ladies and Their Cattleyas

Mrs. Herbert Hoover: U.S. First Lady 1929–1933 (Revisited)

BY ARTHUR E. CHADWICK/PHOTOGRAPHS BY ARTHUR E. CHADWICK UNLESS OTHERWISE NOTED.

SEVERAL MONTHS BEFORE the stock market crash of 1929, a new cattleya hybrid was introduced that honored the wife of the President of the United States. Never had an orchid been named after an American First Lady, for it had always been their husbands who received the distinction. This hybrid would make history, as it started a tradition of First Lady namesakes that continues today.

Lou Henry was born in 1874 in Waterloo, Iowa. She met her husband, Herbert Hoover, while attending Stanford University. The couple was proficient in Chinese, as his first job was overseas near Shanghai, China. They returned to the United States, where he served as head of the Food Administration under Woodrow Wilson during World War I. He would later be Secretary of Commerce under Presidents Harding and Coolidge.

As First Lady, Lou Hoover gave regular radio broadcasts to the American people about the importance of volunteering. She also promoted the Girl Scouts, having previously served as national president. Mrs. Hoover oversaw the development of a presidential retreat located at Rapidan Camp in Madison County, Virginia in what was the precursor to Camp David.

Lou Hoover's namesake orchid is noteworthy not just because it was the first to be named for the wife of an American president or because it started a tradition that has lasted over a century. The flowers themselves are most unusual and were nothing like anyone had ever seen before.

A large commercial grower from New Jersey was responsible for developing and distributing the Hoover orchid. Joseph Manda and Sons was a sizable cut flower operation in Bridgeport with over 1 acre (0.4 ha) of cattleyas under glass. Their market was primarily the wholesale trade in the northeast, but they also had a potted plant division that targeted the hobby market.

In breeding this orchid, Manda did not use any of the large round cattleya species that were so popular as corsage flowers. There was no *Cattleya trianae*, *Cattleya*

[1] *Rlc.* Mrs. Herbert Hoover (Pervenusta × British Queen) was bred in 1929 by Joseph Manda and Sons of Bridgeport, New Jersey. The hybrid is noteworthy for many reasons not the least of which is the fantastic shape of the flowers.

[2] The Hoover namesake gets its wild shape from the species, *Rl. digbyana*, which appears on both sides of the lineage. The stunning color and hairy lip made this orchid popular with both hobbyists and breeders.

[3] The primary hybrid, *C.* Bletchleyensis (*tenebrosa* × *warscewiczii*), was originally made in 1899 by Sir Herbert Leon of Bletchley Park, England. There are remakes of this cross in circulation today.

mossiae, or *Cattleya labiata*. Instead, the lineage drew upon such starry species as *Cattleya tenebrosa*, *Cattleya dowiana*, and *Cattleya warscewiczii*, as well as *Rhyncholaelia digbyana* on both sides of the parentage.

One parent of the Hoover namesake is the novelty hybrid *Rhyncholaeliocattleya* Pervenusta (*Rl. digbyana* × *C.* Bletchleyensis) from 1914. The breeder, Charlesworth, catered entirely to the English hobbyist, who was always looking for something a little different. These flowers have extremely narrow petals and an exaggerated hairy lip like the species grandparent, *Rl. digbyana*, which happens to be the national flower of Honduras.

Rhyncholaeliocattleya Pervenusta petals remain narrow because of the other grandparent, *C.* Bletchleyensis (tenebrosa × *warscewiczii*), from 1899. This primary hybrid was named after Bletchley Park, England by the owner of the estate, Sir Herbert Leon. These flowers are dramatic and remakes of this cross can be found in circulation today.

The other parent of the Hoover namesake honors the wife of King Edward V, Mary of Tech, who was on the throne at the time. *Rhyncholaeliocattleya* British Queen (Impératrice de Russíe × *Cattleya* Lord Rothschild) was bred in 1922 by wealthy English hobbyist Samuel Gratrix, who lived for decades on a splendid estate called West Point in Whalley Range, Manchester. Gratrix was horticulturally inclined and first started outdoors with peaches and nectarines before being forced inside by the poor air quality of nearby factories.

Gratrix excelled in greenhouse plants and was best known for his work with cypripediums (now paphiopedilums), culminating in a new species being named for him, *Paphiopedilum gratrixianum*. His collection was "healthy and very vigorous,"

with the slippers having as many as "five growths," according to an early Royal Horticultural Society (RHS) newsletter account. The head gardener, Mr. J. Brown, oversaw not only the extensive orchids but also 17 acres (6.9 ha) of cultivated grounds.

Gratrix had modern greenhouses for the times that included lath roller blinds and rarely seen humidity control, which he had invented. His best plants were exhibited at the Manchester Orchid Society, where watercolor artists painted all the award winners. He had individual houses for the lady slippers, dendrobiums, odontoglossums, and, most importantly, cattleyas.

The RHS reporter noted that the pedigree cattleya collection included the "...much prized Brassavola hybrids — Bc Digbyano-Mossiae, the elegant Bc Mrs. J. Leemann, and Bc Mrs. M. Gratrix." Also blooming were "rare albinos such as C percivaliana alba...along with fine varieties of Slc Marathon...C Iris, C Fabia, and Lc Canhamiana. Suspended in baskets from the roof were several masses of the recently imported Laelia gouldiana."

With this kind of firepower, it is no surprise that Gratrix bred a hybrid fit for the Queen of Britain. The flowers were a pleasing concolor, pale to medium lavender, with fullish petals and an oversized ruffled lip. The RHS gave three flower quality awards to *Rlc.* British

[4] Lou Hoover delighted in wearing cattleya corsages to all the important events of the day including the World Series of 1929. *Note the other ladies and their corsages.* Photograph courtesy of Alamy.

[5] Lou Hoover was an active first lady and participated in numerous events and ceremonies. Here, she plants a tree while her husband looks on. Photograph courtesy of Alamy.

[6] Hobbyist Samuel Gratrix lived on a splendid estate called West Point in northwest England. His gardener, Mr. J Brown, oversaw an extensive orchid collection as well as 17acres (6.9 ha) of cultivated grounds. Photograph courtesy of The Orchid World.

[7] One parent of the Hoover namesake, *Rlc.* British Queen was bred by wealthy English hobbyist, Samuel Gratrix, of Whalley Range, Manchester in 1922. He was horticulturally inclined and first started outdoors with peaches and nectarines. Photograph courtesy of The Orchid World.

Queen — AM/RHS in 1923, 'Splendens' FCC/RHS in 1924, and 'Stonehurst' FCC/RHS in 1932, as well as numerous culture awards. Not only were the flowers well-shaped and plentiful, but the foliage was vigorous. Manda would later use a select variety to make the Hoover namesake.

It can take up to seven years to bloom a cattleya from seed and, sure enough, *Rlc*. Mrs. Herbert Hoover (Pervenusta × British Queen) was registered in 1929 — exactly seven years after the parent, British Queen. Manda sold his new first lady hybrid briefly but, within six months, America fell into the Great Depression and there were few buyers of anything. President Hoover took much of the blame, and his wife's namesake fell out of favor rather quickly. Even my father, who was a lifelong orchid history buff, did not have this plant in his collection.

One day in the 1990s, however, lightning struck when we attended a monthly Delaware Orchid Society meeting. There on the show table with all the other blooming orchids that had been brought in by members to discuss was something very unusual. The tag was handwritten, faded, and barely readable. *Rhyncholaeliocattleya* Mrs. Herbert Hoover!

We immediately sought out the owner, who was more than glad to give us a piece. Over the years, she had divided the mother plant many times and traded divisions with other society members. Clearly, it pays to attend orchid meetings.

The Hoover namesake is noteworthy for several reasons. Aside from its fantastic shape and radiant color, the hybrid is known to bloom twice a year, usually with two large flowers. The foliage is modest and takes after the *Rl*. *digbyana*, so the net effect is that of a smallish plant with big blooms. Lastly, Manda chose the more formal approach to naming after married females by adding the prefix, Mrs., before the husband's first and last name.

Orchid historians will note that Mrs. Hoover had a second cattleya named after her in 1949, five years after her death. This hybrid was made by Goldfarb who, this time, used her full name – *Cattleya* Lou Henry Hoover (Madame Leten × Gravesiana). President Hoover had two of his own namesakes — an oncidium (then an odontoglossum) in 1930 and a phalaenopsis in 1964.

[8] The Hoover namesake gets much of its pizzazz from the 1899 primary hybrid, *Rlc.* Impératrice de Russíe (*Rl. digbyana* × *Cattleya mendelii*) (also known as *Rlc.* Empress of Russia). Many RHS awards have been given to this cross which, back then, was known as *Bc.* Digbyano-Mendelii.

Arthur E. Chadwick

— Arthur E. Chadwick is a coauthor 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. His next book, First Ladies and their Cattleyas: A Century of Namesake Orchids*, is to be released in early 2023 (email art@chadwickorchids.com; Website www.chadwickorchids.com).*

Personal Life

LOU HENRY GREW up participating in a variety of outdoor activities, including equestrianism, camping, taxidermy and mining. Her tomboy nature continued through her youth as she moved to California. She graduated from high school and pursued a bachelor's degree in geology at Stanford, where she met her future husband, Herbert Hoover. Upon their graduation, Herbert cabled her a wedding proposal, which she immediately accepted by return wire. The pair were wed in 1899 and had two sons together, Herbert and Allan, both of whom also graduated from Stanford. Today, the Lou Henry and Herbert Hoover House is the official residence of the President of Stanford.

Resupination

Early Illustrations and Descriptions and Possible Functions

BY JOSEPH ARDITTI

EARLY ONE MORNING, about 80 million years ago, a dinosaur went searching for food. After a short search, it saw a pretty and tasty morsel. An orchid flower! The dinosaur decided to take a bite. This shocked the unopened buds near the flower so profoundly that they twisted around 180 degrees and opened with their lips (labela) below the columns (gynostemia). This was a reversal of the positions of the lips and columns in the buds before the dinosaur tried to take a bite.

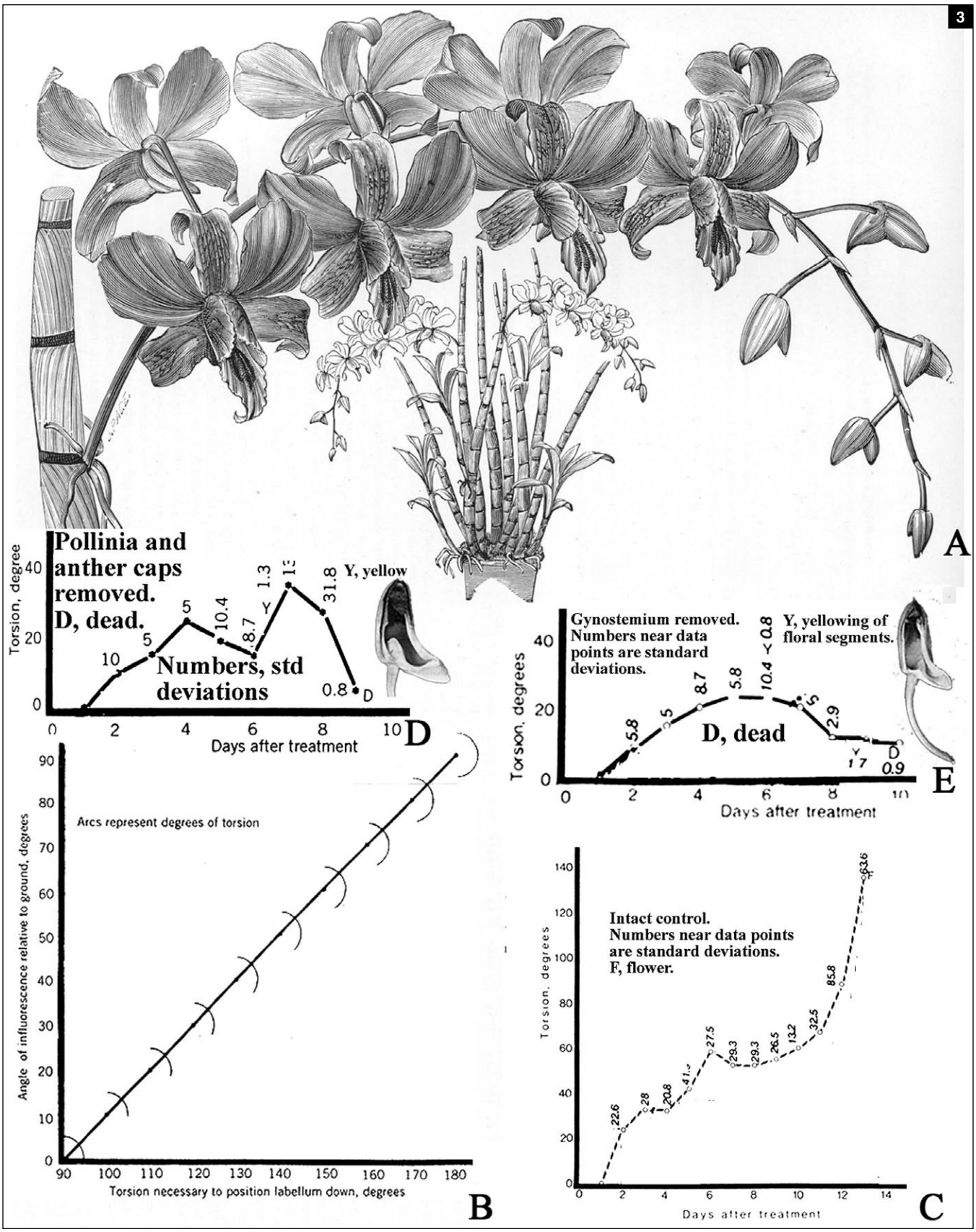
Ever since then, most orchid buds undergo torsion during anthesis, and when flowers are fully open the labellum is below the column. Some of the braver orchid flowers still keep the lip above the column. Nice story if it was true. Sadly, it is not. It is an invention that only serves to open this article.

Dinosaurs (which roamed the earth 245–66 million years ago) and orchids (evolved 76–125 million years ago) did coexist. It is even possible that some herbivorous dinosaurs did eat orchids, but this has nothing to do with the bud torsion phenomenon, which is known as resupination.

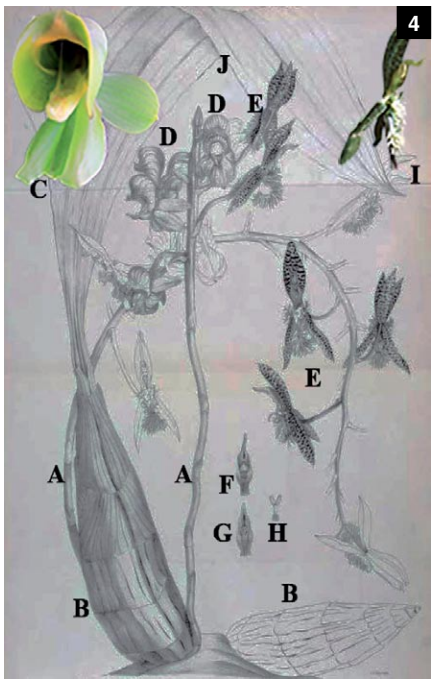
ORIGIN OF THE TERM The term resupination is derived from the Latin word *resupinus*, which means "to bend back, lying on back, or facing upwards." The Swedish botanist Carolus Linnaeus (1707–1788) was the first to use the term resupination in his descriptions of orchids and other plants. He wrote, "*Florum resupinatio, cum carollae labium superius inferius coelum spectat*" (Linnaeus 1780). The British botanist James Lee (1715–1795) translated this to mean, "A resupination: which is when the upper lip of the corolla looks towards the ground, and the under lip towards the heaven as in European *Violae*, *Ajuga orientalis*, *Ocymum* and some species of *Satyrium*" (Lee 1774). Only *Satyrium* is an orchid. Linnaeus' original definition and Lee's translation suggest that as originally used or conceived, the term resupination had a somewhat different meaning (only position of a flower or leaf) than the one used at present (torsion and position; Goebel 1920, Ernst and

[1] Apatosaurus dinosaur nibbling on an orchid (sources: dinosaur, https://www.google.com/search?sa=X&source=univ&tbm=isch&q=dinosaurs++public+domain+images&hl=en&client=firefox-b-1-d&ved=2ahUKEwjQs6Wc8JPyAhXBCjQIHYM1CAkQjJkEegQIFxAC&biw=1265&bih=780#imgrc=yGTR5Roq-un4QM; orchid, https://www.google.com/search?q=Orchid+public+domain+images&client=firefox-b-1-d&source=lnms&tbm=isch&sa=X&ved=2ahUKEwj9na2K8ZPyAhXyOX0KHe4hDP0Q_AUoAXoECAEQAw&biw=1265&bih=780).

[2] Resupinate and nonresupinate orchids. **A.** *Cymbidium giganteum.* **B.** *Angraecum eburneum.* (sources: A, Plate DCC, *Lindenia* 1885–1906; B, Plate CCXXXVI, *Lindenia* 1885–1906).



[3] Extent of resupination. **A.** Arching inflorescence of *Dendrobium.* **B.** Torsion required to position labellum lowermost. **C.** Torsion during bud opening. **D.** Torsion following removal of pollinia and anther cap. **E.** Torsion following excision of the column (sources: A, Williams and Williams 1894; B, Nyman et al. 1984; C, Arditti 2002; D, E, Nyman et al. 1985).



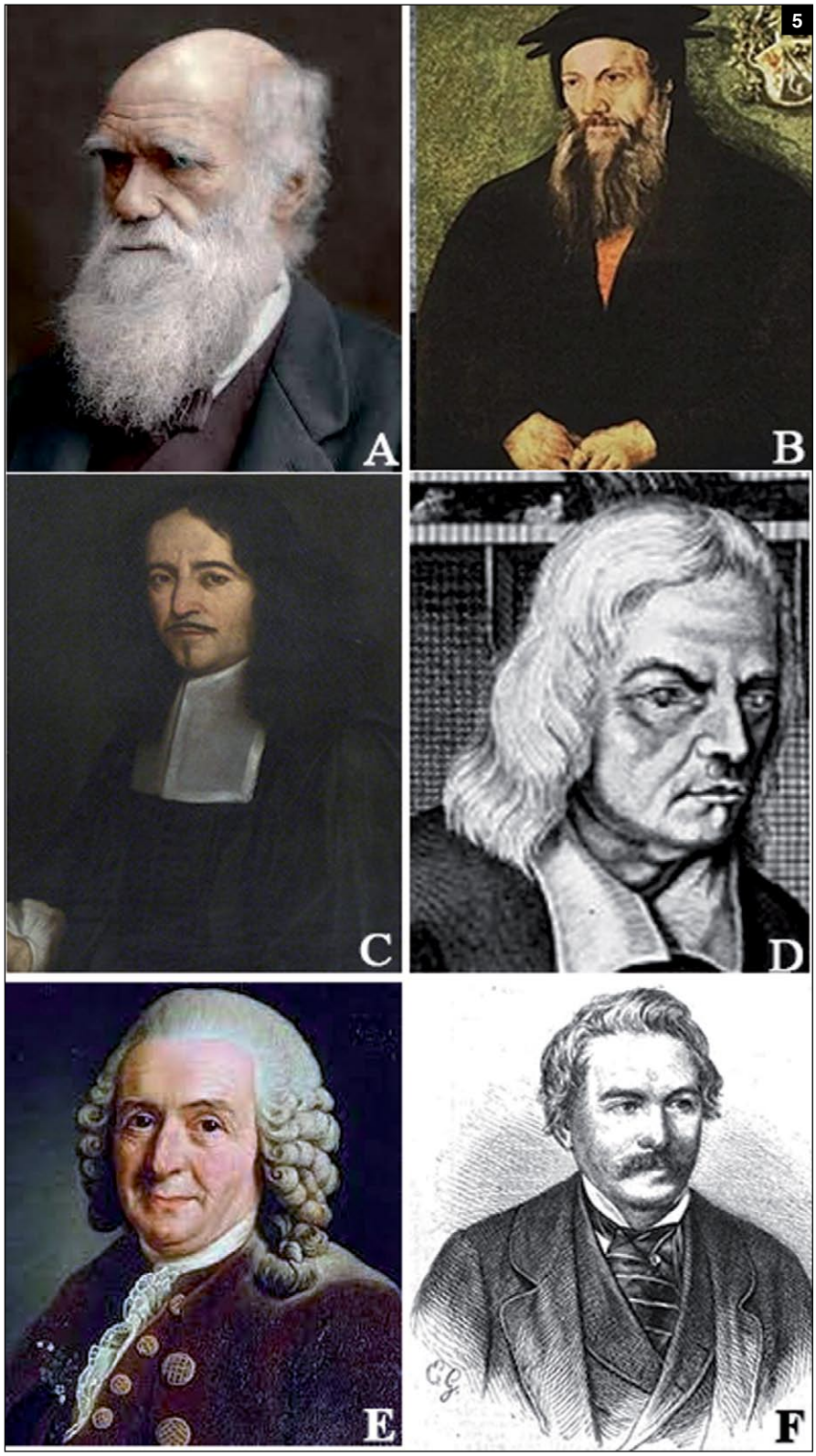
Arditti 1994, Arditti 2005). This does not matter. Only the current usage matters.

EARLY ILLUSTRATIONS Resupination was illustrated long before it was recognized as a position and a process that play roles in the life and survival of orchids. The first illustrations that show that orchid flowers turn as they open were made in Europe by the Swiss physician and naturalist Conrad Gessner (sometimes spelled as Gesner 1516–1565) after 1540 (Jacquet 1994, Wehner et al. 2002), but his *Opera Botanica* was published in 1751 (Gessner 1751) by Christophori Iacobi Trew and Casimirus Christophorus Schmidel. Gessner is also credited with inventing the pencil.

Chronologically, the next drawing that shows that flowers have undergone torsion was made by Georgius Everhardus Rumphius (1627–1702) in Ambon, Malukku Archipelago, Indonesia (de Wit 1977, Wehner et al. 2002, Beckman 2003) some time after 1650 and before 1670, when he became blind. These illustrations were included in Rumphius' *Herbarium Amboinense*, which was published in the Netherlands between 1741 and 1750. The second illustration was published before the first!

Marcello Malpighi (1628–1694), Professor of Medicine at the University of Bologna, Italy published in his *Anatome Plantarum* an illustration of an orchid he called *Palma Christi* (Malpighi 1675–1679), which shows spirals that result from torsion on the ovary. *Palma christi* has been identified as being *Orchis maculata* or *Dactylorhiza maculata*, which may well be one and the same species.

In the Americas, a painting that shows



[4] Resupinate (male) and nonresupinate (female) *Catasetum* flowers. Explanation of symbols (which were added): **A**, inflorescences growing out of pseudobulb; **B**, pseudobulbs; **C**, **D**, female flowers; **E**, **I**, male flowers; **F**, male column; **G**, female column; **H**, pollinia (source; Schomburgk 1837).

[5] Illustrators and students of resupination. **A.** Charles Darwin (1809–1882). **B.** Conrad Gessner (1516–1565). **C.** Marcello Malpighi (1628–1694). **D.** Georgius Everhardus Rumphius (1627–1702). **E.** Carolus Linnaeus (1707–1778). **F.** Robert Hermann Schomburgk (1804–1865; source: Wikipedia).

both resupinate and nonresupinate flowers of *Epidendrum peperomia* was made between 1760 and 1817 by the artists of the Real Expedición Botánica del Nuevo Reino de Granada (now Colombia). José Celestino Mutis (1732–1808) was the leader of the expedition.

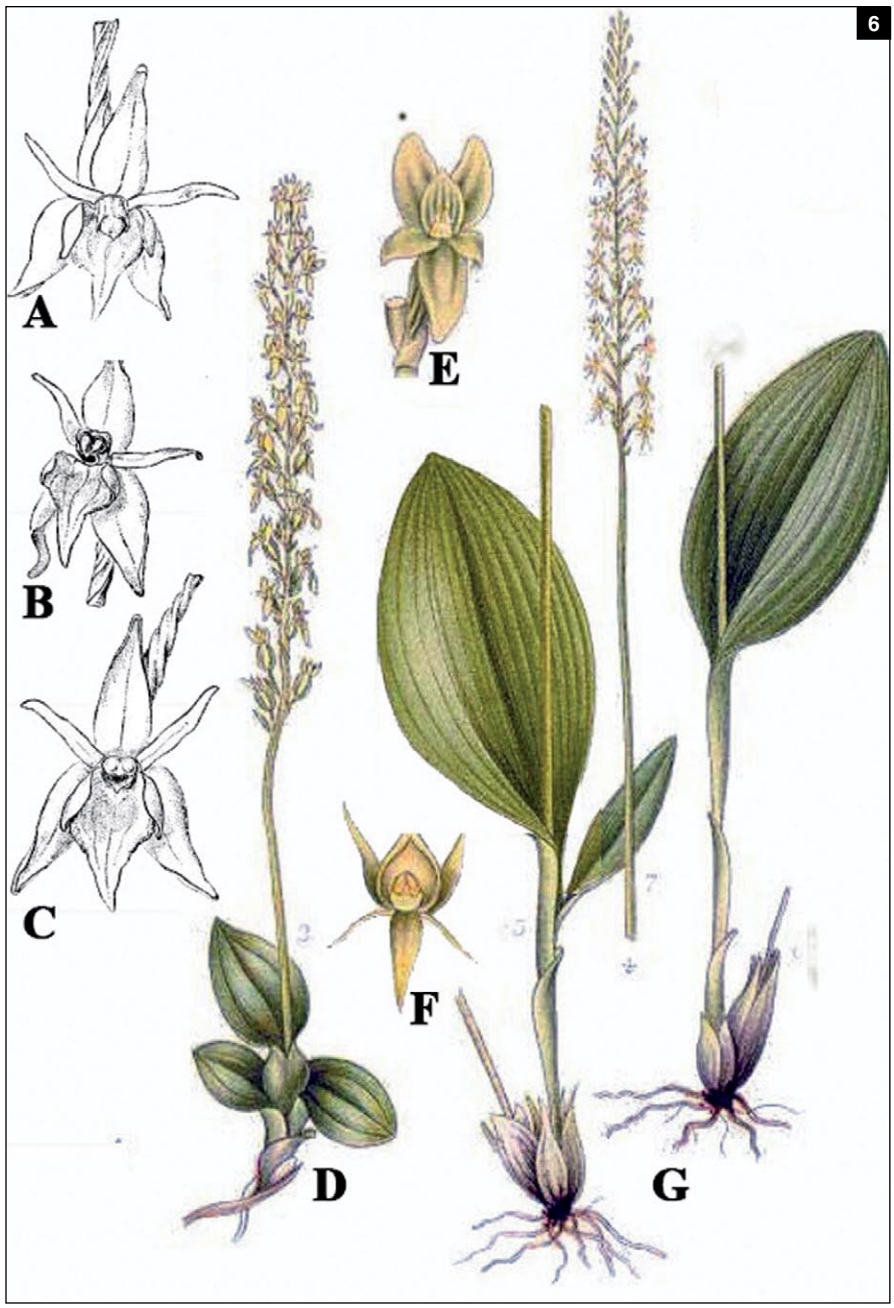
Kwan Koriba (1882–1957), the very humane Japanese director (a professor who was given the rank of general) of the Singapore Botanic Gardens during the World War II Japanese occupation (Arditti 1990), studied resupination and inflorescence twisting of *Spiranthes sinensis* in great detail (Koriba 1913a, 1913b, 1913–1915). Koriba's treatment of the interned British botanists, which included famed orchid expert Eric Holttum (1895–1990), well-known botanist E.J.H. Corner (1906–1996) and the local workers (who called him *orang baik sekali* which means "a very good man") was exemplary.

THE PROCESS In orchids, flower buds adhere closely to the axis of the inflorescence initially. As the buds develop and enlarge, they bend away from the axis of the inflorescence, undergo torsion, and eventually open with the lip lowermost. This may take several days. In arched inflorescences such as those of *Dendrobium superbiens*, every bud twists just enough to place the labellum lowermost. In upright inflorescences, the extent of torsion is also determined by the final positioning of the lip.

Resupination in *Malaxis* flowers is highly unusual. Flowers of *Malaxis paludosa* twist 360 degrees positioning the lip uppermost, where it would have been without torsion (Darwin 1890). The same is true for the European species of *Malaxis monophyllos*. Flowers of American species twist only 180 degrees placing the lip lowermost (Ames 1938).

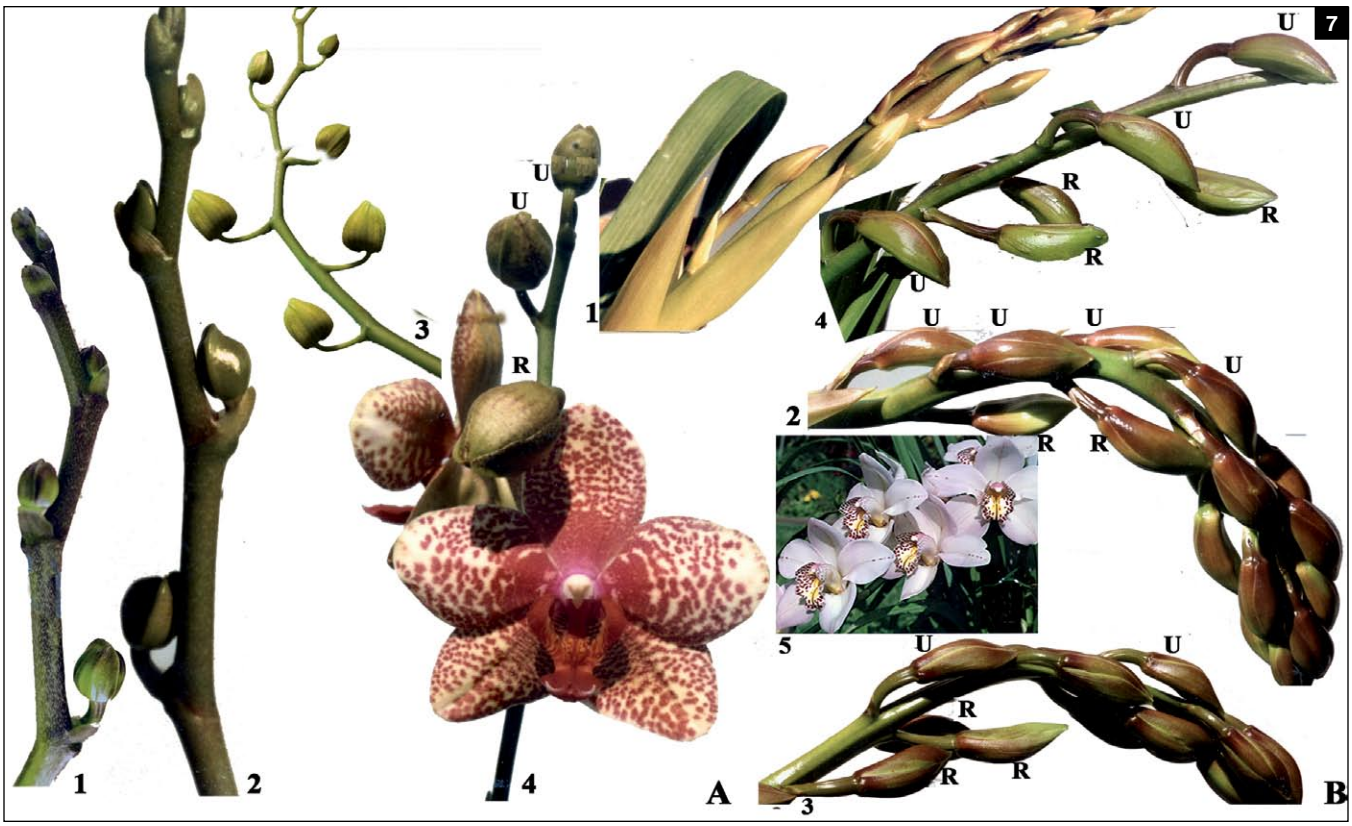
Most of early research on resupination was carried out in the 19th century during the relatively early days of plant physiology and published in German. This research (largely forgotten at present because few scientists read German now) established that resupination is a gravitropic (then called geotropic) phenomenon, which is largely independent of light (for reviews see Zimmermann 1933, Ames 1938, Hill 1939, Ernst and Arditti 1994, Arditti 2005).

More recent research (for reviews and numerous citations see Ernst and Arditti 1994, Arditti 2005) on resupination confirmed that the torsion is dependent largely on auxin and established that it conforms to the Cholodny–Went theory of gravitropism. Removal of the column, pollinia and anther caps prevent resupination. These experiments, plus studies of orchid flower physiology (Avadhani et al. 1994), and auxin transport in gynostemia (Strauss and Arditti 1984) suggest that the source(s) of auxin in resupination is (are) the pollinia and rostellum.



[6] Resupination in *Malaxis monophyllos*. **A.** *Malaxis monophyllos* from Siberia. **B.** *Malaxis monophyllos* var. *brachypoda* from Vermont. **C.** *Malaxis monophyllos* from Pomerania. **D**, **E.** *Malaxis paludosa*. **F**, **G.** *Malaxis monophylla*. American plants resupinate 180 degrees, whereas Eurasian species turn 360 degrees. This can be noted on the ovaries. There are more and tighter spirals in A, C and E (sources: A–C, Ames 1938; D–G, Lindman 1922–1926).

FUNCTIONS The first intimation that resupination may play a role in the pollination of some orchids was in an illustration of mimicry in a book by the eccentric genius Christian Konrad (sometimes spelled Conrad) Sprengel (1750–1816). The book (Sprengel 1793) was not received well at the time, but is considered a work of genius at present. The illustration shows a resupinate flower of *Ophrys ovata*, being visited by a wasp which resembles it. The flower



[7] Bud position and resupination. **A.** *Phalaenopsis.* **1.** Young buds are small and adhere closely to the inflorescence axis. A single bud has bent away from the axis. **2.** Buds enlarge and start to bend away from the axis of the inflorescence. **3.** Buds are bent outward and will start to resupinate in a day or two. **4.** Two buds have resupinated and opened, one is resupinate, but unopened. An apical bud and one below it are yet to resupinate. **B.** *Cymbidium.* **1.** Young inflorescence with buds adhering close to the inflorescence axis emerging from among leaves. **2.** Buds are enlarging, bending away from the axis and two are resupinating. **3.** Three buds are resupinating. **4.** All buds have bent away from the axis. **5.** Buds and open flowers have resupinated. Explanation of symbols: R, resupinate or resupinating; U, nonresupinate.

[8] First illustrations of resupination. **A.** *Angraecum nonum* or *Angraecum flavum* (in Latin) and anggrek lemon kitsjil (in Indonesian, small yellow orchid) in *Herbarium Amboinense*. Current name is either *Dendrobium rumphianum* (de Wit 1977) or *Dendrobium bicaudatum* (Beckman 2003). Wedges point to lip position, which is indicative of resupination. **B.** *Epipactis* (*Alismatis species rara* Gesn.), Plate XX in *Opera Botanica*. Arrows point to flowers, which have resupinated or are resupinating. **C.** *Epipactis helleborine* (*Alismatis species quae Heleborastrum album vocari potest* Gesn.). Numbers are added to buds and flowers to indicate stages of resupination: 1, 2, buds; 3–7, resupinating buds; 8–13, resupinating flowers; 14–18, fully open resupinate flowers; 19–22, resupinate and (probably) pollinated flowers with swelling ovaries; 23, senescing resupinate flower (sources: A, Rumphius 1750; B, C, Gessner 1751).

[9] Book title pages. **A.** Second volume of Gessner's *Opera Botanica*. **B**. Sixth volume of Rumphius' *Herbarium Amboinense.*

would not have resembled the wasp had the bud not resupinated 180 degrees.

Darwin believed that resupination made pollination possible (Darwin 1904). He wrote, "The ovarium . . . becomes for a period twisted, causing the labellum to assume the position of a lower petal, so that insects can easily visit the flower" (Darwin 1904). This is a reasonable suggestion, but it applies only to flowers that resupinate. Pollinators also visit and pollinate nonresupinate flowers. In the case of *Catasetum* and *Cycnoches*, which produce unisexual blossoms, flowers of one gender may resupinate, whereas those of the other do not, yet both are visited by the same pollinating vector.

Flower buds that adhere closely to the floral axis are less likely to be damaged or pulled away while the inflorescence is growing up through leaves than those that are extended out (Zimmermann 1933). This may be so, but once inflorescences have pushed through leaves, there is enough space for flowers to open even if they do not resupinate.

CONCLUSION Despite several suggestions, the function of resupination is still not entirely clear. Resupination is much more prevalent among orchids than other plants, but its origins, evolution, physiology, anatomy and function(s) are neither fully known nor entirely understood. It is yet another phenomenon that makes orchids mysterious and fascinating.

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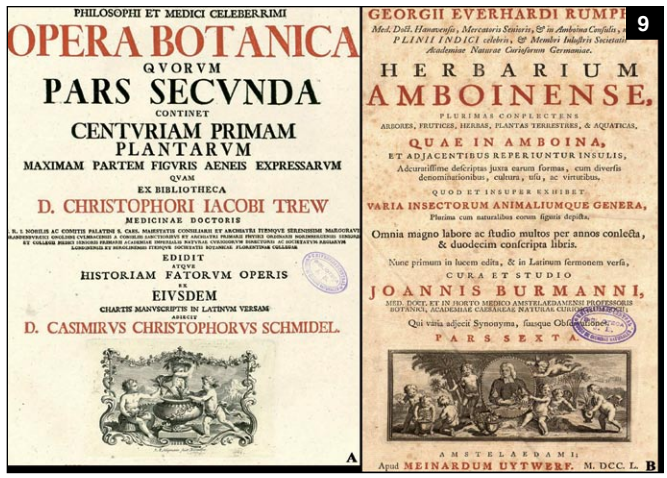

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—Joseph Arditti is Professor of Biology Emeritus at the University of California, Irvine. Dr. Arditti received his doctorate from the University of Southern California in 1965, accepted a position at UCI in 1966 and retired in 2001. He devoted his entire career to research on orchids. He dedicates this article to Anne and Don Nah, excellent neighbors and great friends for many years.

[10] Resupination of *Palma Christi* (*Dactylothiza maculata*). **A.** Description of *Palma Christi* (*Dactylothiza maculata*). Note, "*cujus uterus striatus"* which means "whose ovary is striated [or furrowed]." **B.** Malpighi's drawing of a flower of *Palma Christi* (*Dactylothiza maculata*) showing spirals, which are the result of resupination. **C.** More recent closeup painting of the flower of *Dactylothiza maculata* showing striations, which are results of resupination. **D.** Plant and flowers of *Dactylothiza maculata*. (sources: A,B, Malpighi 1675–1679; C, D, Lindman 1922–1926).

[11] Resupination, plants and people. **A.** Resupinate and nonresupinate flowers and buds of *Epidendrum peperomia* from New Grenada (now Colombia). Dark ridges, which are indicative of resupination-induced striation, can barely be seen on some ovaries. **B.** José Celestino Mutis. **C.** Flower of *Ophrys ovata* positioned with labellum down (**a**), mimicking the pollinating wasp, which visited it (**b**). **D.** Christian Konrad Sprengel. **E(a–d).** Resupination of flowers and twisting of inflorescence in *Spiranthes sinenis*. **E(e).** Kwan Koriba (sources: A, Fernandez Perez 1985; B, Rivas Goday 1954; D, public domain; E(a–d), Koriba 1913a, 1913b, 1913–1915; E(e), Arditti 1990).

LINDLEYANA

Platystele (Orchidaceae: Pleurothallidinae)

Two New Species from the Ecuadorian Amazon and a New Record of *Platystele pyriformis* in Ecuador

BY HUGO MEDINA, JOSÉ PORTILLA, AND IVÁN PORTILLA/
PHOTOGRAPHS AND DRAWINGS BY HUGO MEDINA

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ABSTRACT Two new species of *Platystele* (Pleurothallidinae Orchidaceae), *Platystele doucetteana* and *Platystele zamorensis*, first collected in the province of Zamora Chinchipe, Ecuador are described from material gathered under the research permit "Rescate, conservación, reproducción y manejo ex situ de la flora del Ecuador," No. 004-2016-IC-FLO-DNB/MA, authorized by the Ministerio del Ambiente of Ecuador under La Codificación a la ley Forestal y de Conservación de Áreas Naturales y Vida Silvestre, granted to Ecuagenera Cia. Ltda. *Platystele pyriformis* is established as a new record for Ecuador. The new species are compared with *Platystele alucitae* Luer and *Platystele sulcata* Luer & Hirtz, respectively.

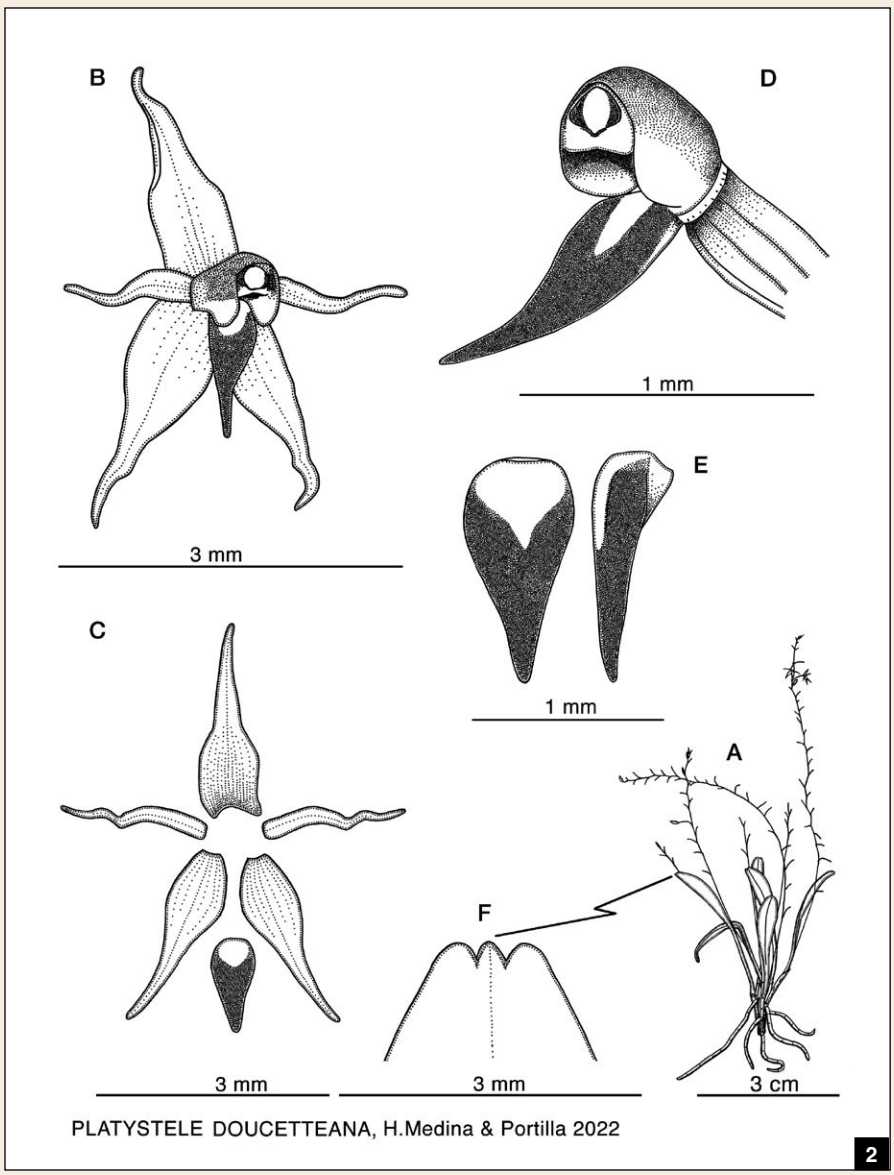
KEY WORDS Ecuadorian orchids, new Amazonian species, miniature epiphytes, intermediate growing orchids.

INTRODUCTION The earliest recognition of the genus *Platystele* Schltr. was by Auguste Endres around 1869 in a letter he wrote to Gustav Reichenbach f. accompanying an illustration of a plant that would eventually be described by Rudolf Schlechter as *Pleurothallis minimiflora* Schltr. (Luer 1990). Endres considered the species to belong to a novel genus and he proposed the generic name *Stelidiastrum* to classify the species (Bogarín and Karremans 2010). However, the name proposed by Endres was not validly published and the genus *Platystele* would not officially be recognized for about 40 years by Schlechter in 1910. He formed the generic name using the Greek words *platys*, meaning wide, and *stele*, meaning column, in reference to the wide column of the type species, *Platystele bulbinella* Schltr., which was later discovered to be a superfluous renaming of *Platystele compacta* (Ames) Ames (Luer 1990). The genus today includes 140 names, of which 122 are accepted species (Plants of the World Online [POWO] 2022).

Platystele species are distributed from Mexico south to Brazil and into the Antilles, but the highest concentration of species is found in Ecuador and Colombia, with ca. 65 species reported from Ecuadorian forests, at elevations ranging from 250 to 3,300 meters (Luer 1990, POWO 2022). They are most frequently encountered in humid primary forests, where they grow in shaded areas under the forest canopy and are easy to overlook in the field because of their small size. *Platystele* are among the smallest orchids in the entire orchid family, with species such as *Platystele imperialis* Archila, Chiron, & Szlachetko and *Platystele jungermannioides* (Schltr.) Garay, reported to be among the smallest orchid species known (Luer 1990, Archila et al. 2016).

Vegetatively, the species are characterized by elongated to abbreviated rhizomes resulting in plants with a creeping growth habit to tightly caspitose growth habits. The stems are shorter than the leaves and produce inflorescences from a small spathe held at the base of the leaf. Some of the species can be quite floriferous, producing more than 30 flowers per inflorescence. The flowers are freely expanded with the sepals generally free for their length; the lateral sepals are rarely connate for more than half their length (e.g., *Platystele crinita* Luer & Hirtz). The labellum is simple and adheres to the foot of the column. The column is abbreviated with an apical anther and broadly expanded to form an apical, bilobed stigma.

The three new species of *Platystele*, from the Ecuadorian Amazon, were recently identified as part of ongoing research conducted by Ecuagenera to describe, illustrate and protect Ecuador's native orchid species. The new species were determined to be new in part by utilizing the extensive collection of living material at Ecuagenera and reviewing the



[1] *Platystele doucetteana.* Right insert close-up photograph included for scale. Left inset photograph is an example of *Platystele alucitae.*

[2] *Platystele doucetteana* H.Medina et al. **A.** Habit. **B.** Three-quarter profile of the flower. **C.** Perianth dissected. **D.** Detail of the column and lip in a three-quarter profile. **E.** Lip upper surface and profile. **F.** Leaf apex. Illustration based on the

relevant literature on the known species. Luer's (1990) monograph on the genus was used as a starting point in identifying the species and supplemented by a review of the ca. 50 species described since its publication (Luer 1991, 1992, 1994, 1995, 1996, 1998, 2000, 2002, 2004, 2006, 2009, 2010; Ortiz 2002; Campacci 2009; Fernández et al. 2014; Archila et al. 2016; Doucette et al. 2016; Baquero and Zuchan 2017; Jost and Iturralde 2017; Karremans and Bogarín 2017; Reina-Rodríguez and Karremans 2018; Thoerle 2018; Thoerle and Cornejo 2018; Zambrano et al. 2018; Baquero and Verkovitch 2019).

A key challenge encountered in determining the identity of the novel species was the tiny size of the flowers; however, through a detailed study of the specimens' morphology, it was possible to conclude the identity of the species as new with confidence. Tools used for the study that helped make working with the tiny flowers possible included an Epson V600 scanner to obtain clear shots of the dissected parts of the flowers, and a high-resolution Nikon D7500 camera fitted with a Nikon AF.S. Micro 85 lens to photograph the tiny flowers. Exact measurements were obtained using a Digi-Science Accumatic Pro digital caliper. A Leica MZ75 stereoscope was used to review details of the floral anatomy.

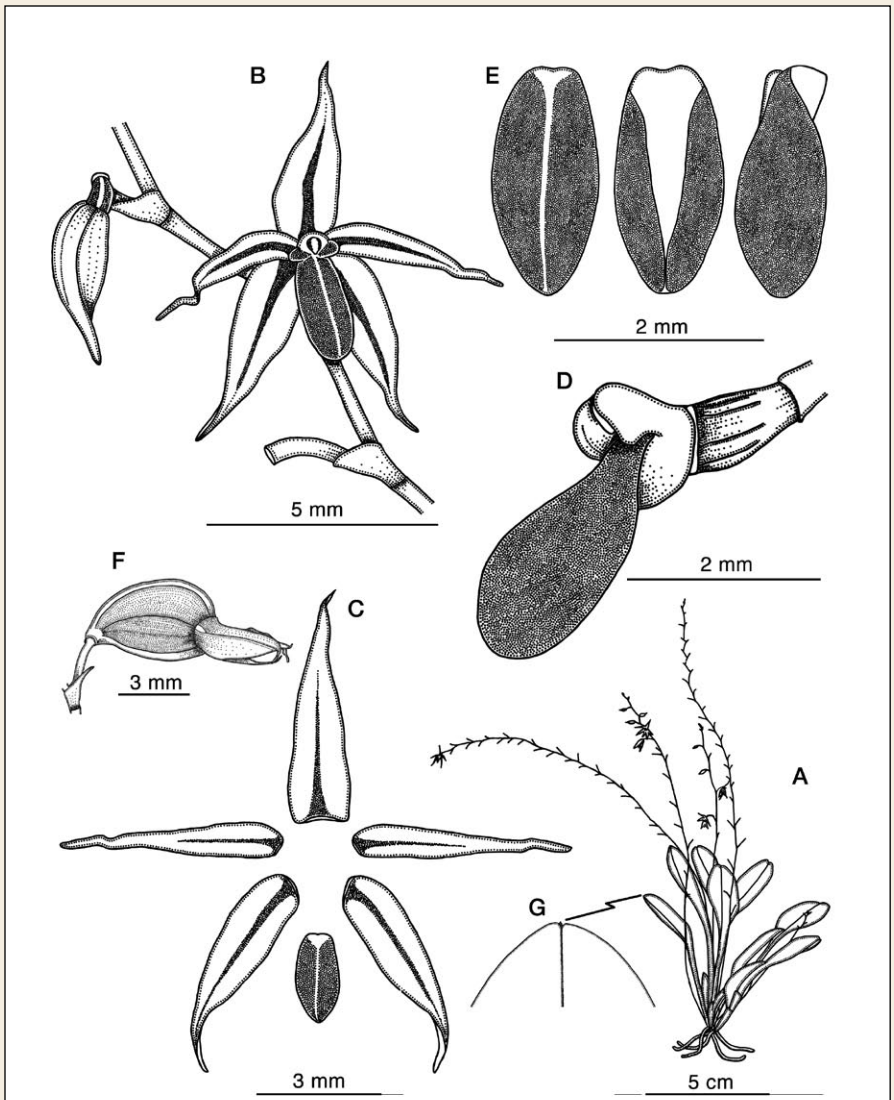
TAXONOMY

Platystele doucetteana H.Medina, J.Portilla & I.Portilla sp. nov.

TYPE ECUADOR. Zamora Chinchipe, cantón Zamora, parroquia San Carlos de las minas, 4°04'23.17" S 78°49'28.57" W, 1,800 meters flowered in cultivation at Ecuagenera, Gualaceo, December 2016, *I.Portilla 0096* (holotype: HA; Figs. 1, 2A,B).

DIAGNOSIS The new species is similar to *Platystele alucitae* Luer, but can be distinguished by the flower color yellowish brown (vs. translucent greenish white, sometimes suffused with rose), shorter pedicels (1.3 millimeters vs. 3.0–6.0 millimeters), sepals acuminate (vs. contracted into a filiform tail) and lip lanceolate–acuminate (vs. ovate–acute).

DESCRIPTION Plants erect, herbaceous, epiphytes 3.0–3.6 centimeters tall; roots whitish, with a green–yellow tip, 5.0–10.0 centimeters long, 0.5 millimeter in diameter; stems cylindrical, abbreviated, erect, 1.6–2.0 millimeters long, 0.5 millimeter in diameter, enveloped by 2–3 dry, foliaceous sheaths, lanceolate, apex acuminate, base truncate, 0.6–2.5 centimeters long, 0.1–0.4 centimeter wide; leaf olive green, erect, coriaceous, linear–spatulate, retuse apex, petiolate, 1.0–3.0 centimeters long, 0.2–0.4 centimeters wide; inflorescence racemes 8.0–12.0 centimeters long, 0.6 millimeter in diameter, up to 30 flowers produced in a slow succession with several open simultaneously, enveloped basally by a lanceolate, spathaceous bract, apex acuminate, truncated at the base 0.3 millimeter long, 3.0 millimeters wide; flowers without a detectable fragrance, small, translucent, yellowish brown, resupinate with a natural spread of 2.5–3.0 millimeters in diameter, pedicel terete 1.3 millimeters long, 2.0 millimeters wide enveloped by deltoid bracts, 1.2 millimeters long, 1.0 millimeter wide, apex acuminate, truncated base; dorsal sepal lanceolate, margin entire, apex abruptly acuminate, base truncate, slightly concave towards base, 1.8 millimeters long, 0.7 millimeter wide; lateral sepals not connate, color similar to dorsal sepal, 2.0 millimeters long, 0.8 millimeter wide, margin entire, apex acuminate and slightly attenuate, base truncate; petals linear, acuminate, flexuous, glabrous entire margins, 1.6 millimeters long, 2.5 millimeters wide, spreading horizontally and reflexed downwards; fleshy brown



plant that served as holotype.

[3] *Platystele pyriformis* Luer. **A.** Habit. **B.** Flower. **C.** Perianth dissected. **D.** Side view of column and lip. **E.** Front, side and back view of lip. **F.** Side view of capsule. **G.** Leaf apex. Illustration of the plant that served as holotype.

[4] Two different examples of *Platystele pyriformis* representing the newly reported Ecuadorian population

[5] *Platystele misera* which served as a com-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lip, elliptic, acuminate apex shorter than sepals, margin entire, base truncate, 1.1 millimeters long, 0.5 millimeter wide; column broadly winged, brown, robust, rounded seen from the front, bilobed stigmatic cavity forming a hood, 0.5 millimeter long, 0.4 millimeter wide; pollinia, two, deep yellow, obovate; ovary short, smooth 1.3 millimeters long, 0.4 millimeter wide; fruits and seed not seen.

ETYMOLOGY The new name is formed from the French surname Doucette, combined with the honorific suffix *-ana*. In this way the new species is named to honor Alfonso Doucette, a passionate student of the orchid flora.

DISTRIBUTION *Platystele doucetteana* is only known from the Amazon region of southeastern Ecuador in the province of Zamora Chinchipe.

PHENOLOGY In cultivation the plants have been observed in bloom during the months of May, July and October.

HABITAT AND ECOLOGY Twig epiphytes found growing in primary forest understories in association with lichens, moss and other miniature orchids at elevations ranging from 1,200 to 1,800 meters.

DISCUSSION The new species appears to be most similar to *Platystele alucitae* Luer given the unusual, flexuous petals, but the species is easily distinguished based on the flower morphology. The flowers are held on shorter pedicels (1.3 millimeters vs. 3.0–6.0 millimeters) and have sepals that are not contracted into filiform tails. The column also appears to have the lateral lobes less expanded creating a more hooded appearance. The heterotypic synonym of *Platystele alucitae*, *Platystele cuculligera* P.Ortiz, from Colombia was also reviewed and can be distinguished from the new species using the same traits provided in the diagnosis (Ortiz 1981).

The new species keys to *Platystele enervis* Luer in Luer (1990) but is readily distinguished by its flexuous (vs. straight–falcate) petals and lanceolate (vs. ovate) sepals.

Platystele pyriformis Luer

ECUADOR. Zamora Chinchipe, El Pangui, 3°37'14.57" S, 78°38'43.46" W, 1,600 meters, December 2016, *I.Portilla 0108* (holotype: HA; Figs. 3, Fig. 4A,B).

DESCRIPTION Plants erect, herbaceous, epiphytes 8.0–10.0 centi-meters tall; roots whitish, with a green–yellow tip, 10.0–16.0 centimeters long, 1.2 millimeters in diameter; stems cylindrical, abbreviated, erect, 2.4 millimeters long, 1.2 millimeters in diameter, covered by 2–3 papery foliaceous sheaths lanceolate, apex acuminate, base truncate 5.8–10.2 millimeters long, 4.0 millimeters wide; leaf olive green, erect, coriaceous, spatulate, retuse apex, petiolate, 4.3–6.5 centimeters long, 1.3–2.0 centimeters wide; inflorescence racemes 10.0–20.0 centimeters long, 1.0 millimeter in diameter, up to 30 flowers produced in a slow succession with one or a few open simultaneously, enveloped basally by a lanceolate, spathaceous bract, apex acuminate, truncated at the base 15.0 millimeters long, 4.0 millimeters wide; flowers without a detectable fragrance, small, translucent, maroon, resupinate with a natural spread of 7.0–8.5 millimeters in diameter, pedicel terete 5.0 millimeters long, 0.4 millimeter wide enveloped by deltoid bracts, apex acuminate, truncated base, 1.9 millimeters long, 2.0 millimeters wide; dorsal sepal lanceolate, margin entire, apex acuminate, base truncate, slightly concave towards base, inclined backwards at the apex, 5.8 millimeters long, 1.5 millimeters wide; lateral sepals free, similar to dorsal sepal in color and shape, margin entire, apex acuminate and slightly attenuate, base truncate, 5.8 millimeters long, 1.5 millimeters wide; petals linear, acuminate, glabrous, entire margins, spreading horizontally and reflexed downwards, 2.8 millimeters long, 1.1 millimeters wide; lip, fleshy, maroon, elliptic, obtuse apex shorter than sepals, margin entire, base truncate, 2.8 millimeters long, 1.1 millimeters wide; column winged, yellow–brown, robust, triangular when seen from the front, 1.1 millimeters long, 1.2 millimeters wide; pollinia two, deep yellow, obovate; ovary short, smooth, six-sulcate, 1.3 millimeters long, 0.4 millimeter wide; fruits green–brown, obovate, 4.8 millimeters long, 2.6 millimeters wide; seed not seen.

ETYMOLOGY From the Latin *pyriformis*, pear shaped, referring to the shape of the lip.

PHENOLOGY In cultivation the plants have been observed in bloom during the months of May and August.

HABITAT AND ECOLOGY Epiphytes found growing in primary forest understories in association with lichens, moss and other miniature orchids at

elevations ranging from 1,400 to 1,600 meters.

DISCUSSION *Platystele pyriformis* was previously only known from two collections. The first in Colombia, Antioquia, Frontino, *C.Luer 676* (SEL), and the second in Risaralda, Belen de Umbria, ca. 270 m, by *A.deWilde 3966* (MO). The plant material upon which the description presented here is based was originally thought to be new; however, upon keying the specimen out in Luer (1990) the species was discovered to represent a new record for *Platystele pyriformis* in Ecuador.

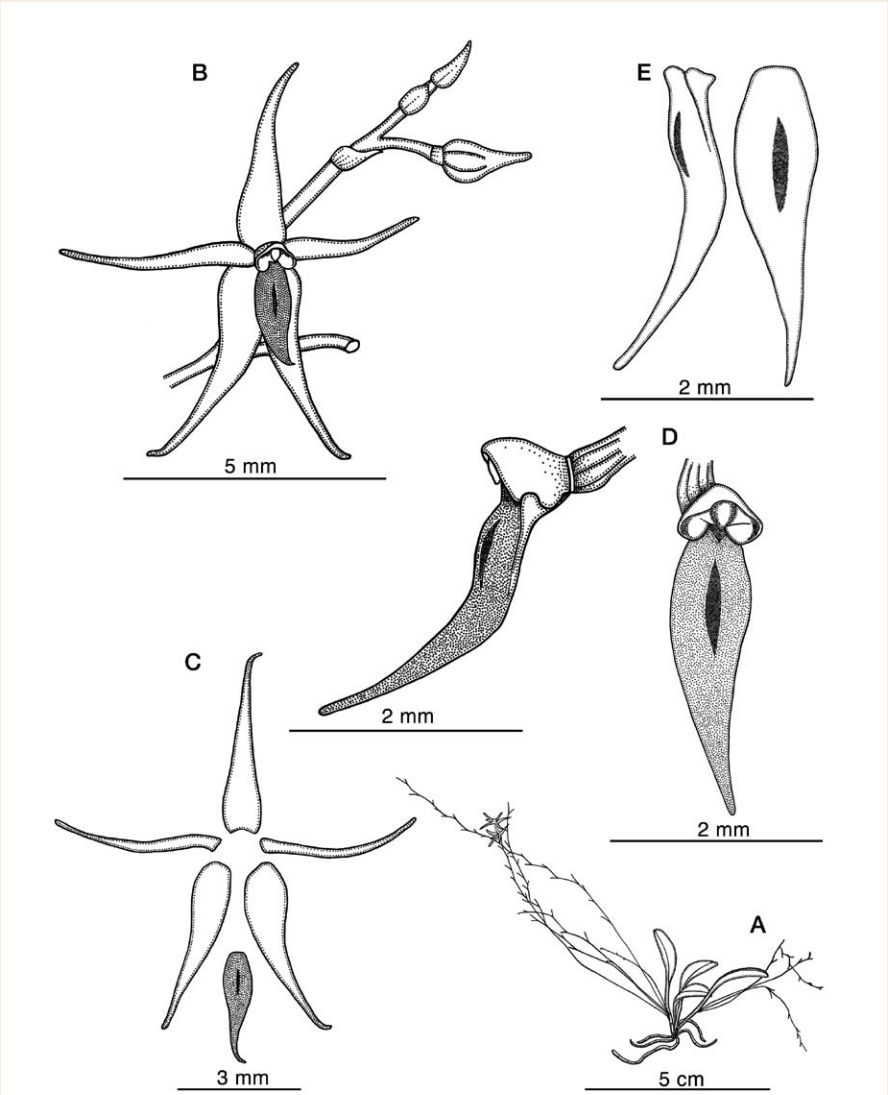
Vegetatively and florally the specimen agrees with the original description of the species only differing in having slightly longer sepals (4 mm vs. 5.8 mm), slightly short petals (2.8 mm vs. 3.0 mm) and a slightly longer lip (2.8 mm vs. 2.0 mm). Most significantly, the lip morphology of the specimen shares the thick, obovoid lip with a rounded apex and a shallow sulcus (groove) running down the middle characteristic of *Platystele pyriformis*.

Platystele zamorensis H.Medina, J.Portilla & I.Portilla sp. nov.

TYPE ECUADOR. Zamora Chinchipe: San Carlos de Las Minas canton, adjacent road that leads to Las Minas de Nambija, 4°05'26.79" S, 78°50'06.55" W, 1,700 meters, flowered in cultivation in Ecuagenera Gualaceo, s.d., *I.Portilla 0109* (holotype: HA; Figs. 5, 6A,B).

DIAGNOSIS The new species is similar to *Platystele sulcata* Luer & Hirtz, but can be distinguished by the smaller lip (2.4 mm vs. 5.5 mm long) shorter than (vs. about as long as) the sepals, which are glabrous (vs. ciliate–pubescent) in the new species.

DESCRIPTION Plants erect, herbaceous, epiphytes 3.0–4.0 centimeters tall; roots whitish, with a green–yellow tip, 4.0–7.0 centimeters long, 0.7 millimeter in diameter; stems cylindrical, abbreviated, erect, 1.3 millimeters long, 1.0 millimeter in diameter, covered by 2–3 papery lanceolate, foliaceous sheaths, apex acuminate, base truncate 3.2 millimeters long, 2.0 millimeters wide; leaf olive green, erect, coriaceous, spatulate, retuse apex, petiolate, 15–30 millimeters long, 4.5–4.7 millimeters wide, the blade extending into a petiole 3.5 millimeters long, 1.0 millimeter wide; inflorescence racemes 6.0–11.0 centimeters long, 0.4 millimeter in diameter, up to five flowers produced in a slow succession with one or a few open simultaneously, enveloped basally by a lanceolate, spathaceous bract, apex acuminate, truncated at the base 7.0 millimeters long, 2.4 millimeters wide; flowers without a detectable fragrance, small, translucent, yellow, resupinate with a natural spread of 7.0–8.0 millimeters in diameter, pedicel terete 3.3 millimeters long, 0.1 millimeter wide; dorsal sepal lanceolate, margin entire, narrowly acuminate apex, truncate base, semiribbed towards the base, inclined backwards at the apex, 4.6 millimeters long, 1.0 millimeter wide; lateral sepals free, similar to dorsal sepal in color and shape, margin entire, apex narrowly acuminate, base truncate, 4.3 millimeters long, 1.1 millimeters wide; petals narrowly linear, acuminate, glabrous, entire margins, spreading horizontally, 1.6 millimeters long, 0.3 millimeter wide; lip thick, light brown, semiterete, elliptic, narrowly acuminate incurved apex, shorter than sepals, entire margin slightly bent forwards at base, slightly notched on discal side, reflexed forwards, gradually tapering towards base, 0.24 centimeter long, 0.08 centimeter wide; column winged, greenish–yellowish, robust, bilobed stigma, triangular when seen from the front, 0.8 millimeter long, 1.0 millimeter wide; pollinia two, deep yellow, obovate, 0.3–0.6 millimeter in diameter; ovary light green, short, smooth, six-sulcate, 5.0 millimeters long, 3.5 millimeters wide; fruits and seeds not



PLATYSTELE ZAMORENSIS, H.Medina & Portilla 2022

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parison.

[6] *Platystele zamorensis* H.Medina, et al. **A.** Habit. **B.** Flower. **C.** Perianth dissected. **D.** Column and lip side and front view. **E.** Lip front and side view. Illustration of the plant that served as holotype.

[7] *Platystele zamorensis*.

[8] Photograph of *Platystele sulcata* serving as a comparison of *Platystele zamoren-*

seen.

ETYMOLOGY Named using the Latin adjectival suffix *-ensis* meaning originating in, in reference to the Ecuadorian province Zamora Chinchipe, where the species was first discovered.

PHENOLOGY In cultivation the plants have been observed in bloom during the months of May and August.

HABITAT AND ECOLOGY Epiphytes found growing in primary forest understories in association with lichens, moss and other miniature orchids at elevations ranging from 1,400 to 1,700 meters.

DISCUSSION The new species is similar to a number of currently described species but can be distinguished from all of them through a unique combination of glabrous sepals and a semiterete lip shorter than the sepals with a lightly incurved apex (see diagnosis for a comparison to *Platystele sulcata*). The new species keys out to *Platystele jesupiorum* Luer in Luer (1990), but can be distinguished by the glabrous sepals and petals, semiterete lip and more weakly incurved lip apex.

The new species bears a superficial resemblance to *Platystele acicularis* Luer & Hirtz, but can be distinguished by the glabrous sepals (vs. minutely ciliate, short–pubescent) and by lacking the distinct lip morphology described by Luer (1990) as "sides of the lip ... seem to wrap around the margins of the blade, often meeting in the middle of the blade, often meeting in the midline on the back surface."

The new species also bears a resemblance to *Platystele stonyx* Luer found at higher elevations (ca. 3,000 m), but can be distinguished by the longer (4.5 mm vs. 2.0–3.5 mm) lip with an incurved (vs. recurved) apex (Luer 1990).


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— José (Pepe) Portilla is the CEO, founder and President of Ecuagenera CIA Ltda. and the current president of the Azuay Orchid Society. Pepe, as most people know him, has dedicated his life to research and conservation of Ecuador's natural richness. Ecuagenera, a family-owned company in business more than 27 years, leads South America in research, conservation and propagation of species and new hybrids that are exported worldwide (email: pepe@ecuagenera.com). Iván Portilla, Pepe's brother, is Vice-President of Ecuagenera and in charge of orchid shows worldwide (email: ivan@ecuagenera.com) and Hugo Medina is a research assistant and has described numerous new Ecuadorian orchid species (email: produccion gye@ecuagenera.com).


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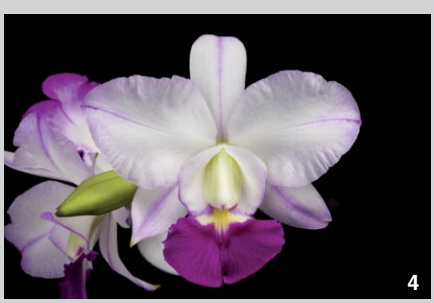
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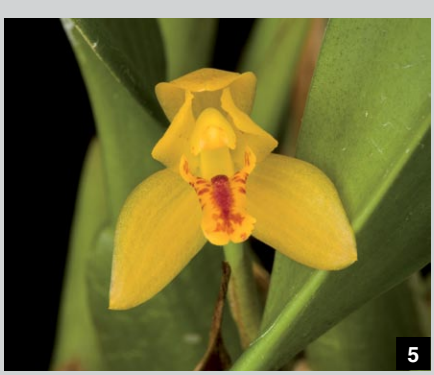
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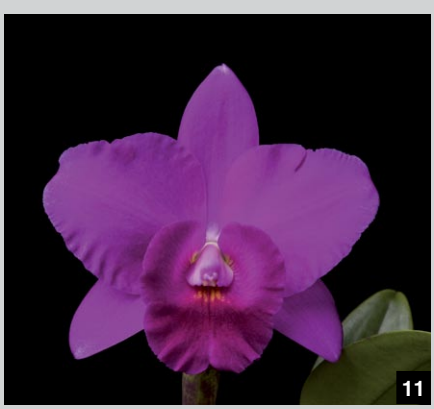
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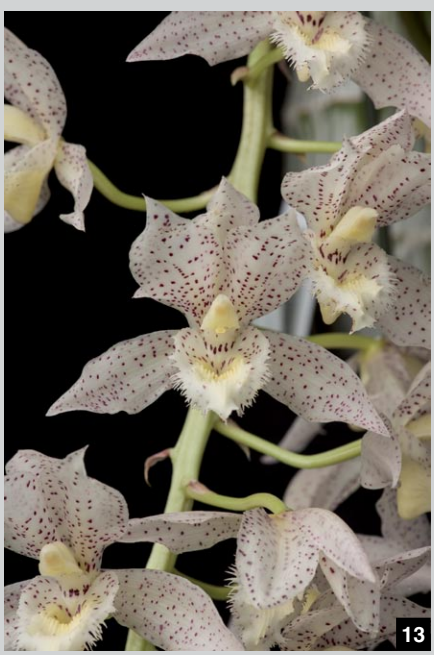
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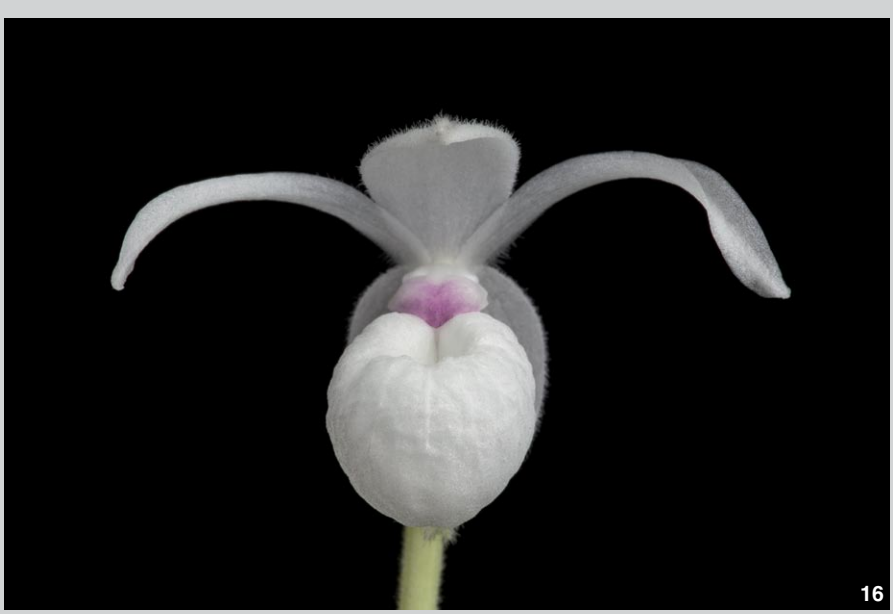
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[1] *Phalaenopsis bellina* 'Fernbrook' JC/AOS. Exhibitor: Orchids Limited; Photographer: Anne Kotowski. Chicago Judging

[2] *Paphiopedilum* Mary's Little Leopard 'Deerwood' AM/AOS (Mary Zdilla x Little By Little) 83 pts. Exhibitor: Deerwood Orchids; Photographer: Anne Kotowski. Chicago Judging

[3] *Paphiopedilum* Misty Lantern 'Leela' AM/AOS (Magic Lantern x *malipoense*) 88 pts. Exhibitor: Rick and Alexa Noel; Photographer: Richard Noel. Cincinnati Judging

[4] *Cattleya* Crownfox Sweetheart 'Paradise' HCC/AOS (*walkeriana* x Memoria Robert Strait) 76 pts. Exhibitor: Hideka Kobayashi; Photographer: Richard Noel. Cincinnati Judging

[5] *Maxillaria aureoglobula* 'River Valley' CBR/AOS. Exhibitor: Eric Sauer; Photographer: Richard Noel. Cincinnati Judging

[6] *Phragmipedium* Ouaisne 'Orangelica' AM/AOS (*dalessandroi* x Eric Young) 81 pts. Exhibitor: Orchids Limited; Photographer: Anne Kotowski. Chicago Judging

[7] *Habenaria rhodocheila* 'Windswept Tangerine' HCC/AOS 79 pts. Exhibitor: Windswept in Time Orchids; Photographer: Richard Noel. Cincinnati Judging

[8] *Habenaria* Flamingo 'Windswept' AM/AOS (*erichmichelii* x *carnea*) 83 pts. Exhibitor: Windswept in Time Orchids; Photographer: Richard Noel. Cincinnati Judging

[9] *Neogardneria murrayana* 'Orchidcourt' HCC/AOS 79 pts. Exhibitor: Tennis Maynard; Photographer: Richard Noel. Cincinnati Judging

[10] *Paphiopedilum* Alexej 'Golden Dragon' AM/AOS (*rothschildianum* x *hangianum*) 81 pts. Exhibitor: Orchid Inn, Ltd.; Photographer: Richard Noel. Cincinnati Judging

[11] *Cattleya* Michelle's High Bid 'Scot Mib' HCC/AOS (Sierra Doll x Mini Purple) 78 pts. Exhibitor: Roger Miller; Photographer: Richard Noel. Cincinnati Judging

[12] *Pectabenaria* Western Tanager 'Windswept's Apricot' HCC/AOS (*Habenaria* Conure x *Pecteilis hawkesiana*) 75 pts. Exhibitor: Windswept in Time Orchids; Photographer: Richard Noel. Cincinnati Judging

[13] *Clowesetum* Cheryl Erins 'Cheryl's Joy' HCC/AOS (*Clowesia russelliana* x *Catasetum tigrinum*) 78 pts. Exhibitor: Cheryl Erins; Photographer: Richard Noel. Cincinnati Judging

[14] *Pectabenaria* Perseus 'Windswept' AM/AOS (*Pecteilis hawkesiana* x *Habenaria medusa*) 88 pts. Exhibitor: Windswept in Time Orchids; Photographer: Richard Noel. Cincinnati Judging

[15] *Vandachostylis* Nopporn Orange Rosy 'Ed Kucharski' AM/AOS (Shigenori Yamanaka x *Vanda* Yarnisa Gold) 82 pts. Exhibitor: Wayne Green; Photographer: Carmen Johnston. Florida-Caribbean Judging

[16] *Mexipedium xerophyticum* 'Pixie Slippers' AM/AOS 84 pts. Exhibitor: Marilyn LeDoux; Photographer: Richard Noel. Cincinnati Judging


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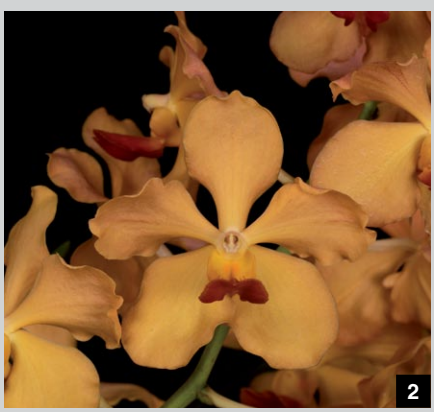
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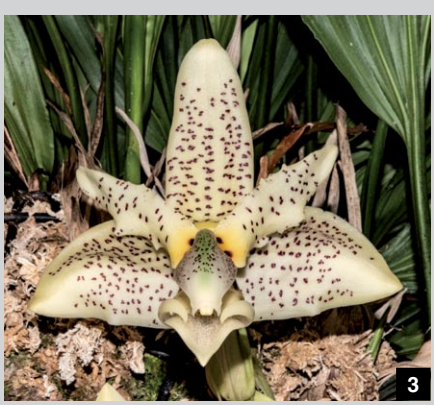
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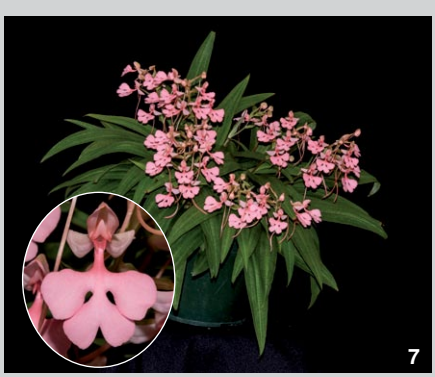
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[1] *Cattleya velutina* 'Rey' AM/AOS 81 pts. Exhibitor: Ben Oliveros and Orchid Eros; Photographer: Glen Barfield. Hawaii Judging

[2] *Papilionanda* JR Asia 'Dennis Crane' AM/AOS (Josephine van Brero x *Vanda* Suksamran Spots) 80 pts. Exhibitor: Wayne Green; Photographer: Carmen Johnston. Florida-Caribbean Judging

[3] *Stanhopea* Assidensis 'Max & Bryon' AM/AOS (*tigrina* x *wardii*) 84 pts. Exhibitor: Max Thompson and Bryon Rinke; Photographer: Bryon Rinke. Great Plains Judging

[4] *Vanda coerulea* 'Okika' AM/AOS 85 pts. Exhibitor: Okika Ltd. Glen Barfield; Photographer: Glen Barfield. Hawaii Judging

[5] *Catasetum* Valerio Padilla 'Nicola' AM/AOS (Melana Davison x Isobel's Sunshine) 80 pts. Exhibitor: Richard Fulford; Photographer: Carmen Johnston. Florida-Caribbean Judging

[6] *Phalaenopsis pulcherrima* f. *alba* (Champornensis) 'Bryon' HCC/AOS 78 pts. Exhibitor: Bryon K. Rinke; Photographer: Bryon K Rinke. Great Plains Judging

[7] *Habenaria rhodocheila* subsp. *rhodocheila* 'Max & Bryon' CCM/AOS 89 pts. Exhibitor: Max Thompson and Bryon Rinke; Photographer: Bryon K Rinke. Great Plains Judging

[8] *Vanda* Motes Midnight 'Purple Magic' AM/AOS (Mary Motes x *tessellata*) 85 pts. Exhibitor: Motes Orchids, Inc.; Photographer: Carmen Johnston. Florida-Caribbean Judging

[9] *Janssenara* Memoria Owen Minott 'Maritza' HCC/AOS (*Guaricattonia* Michael Sampson x *Laeliocatonia* Mighty Titan) 78 pts. Exhibitor: Thad Bielecki; Photographer: Carmen Johnston. Florida-Caribbean Judging

[10] *Vandachostylis* Georgia Peach 'Thaddeus Jr' HCC/AOS (Lou Sneary x *Vanda vietnamica*) 75 pts. Exhibitor: Thad Bielicki; Photographer: Carmen Johnston. Florida-Caribbean Judging

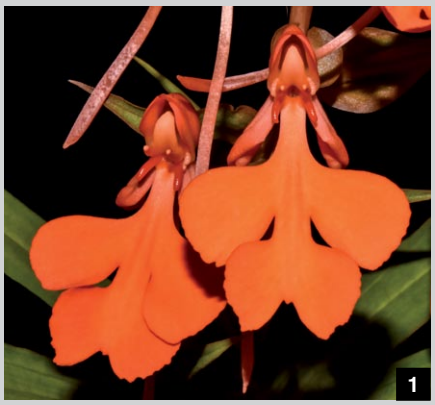
[11] *Anguloa eburnea* 'Lisse' CCM-AM/AOS 87-86 pts. Exhibitor: Douglas Needham; Photographer: Bryon K. Rinke. Great Plains Judging

[12] *Cattleya bicolor* 'La Monja' AM/AOS 80 pts. Exhibitor: Ben Oliveros and Orchid Eros; Photographer: Glen Barfield. Hawaii Judging

[13] *Habenaria rhodocheila* 'Max & Bryon's Big Pink' AM/AOS 82 pts. Exhibitor: Max Thompson and Bryon Rinke; Photographer: Bryon K. Rinke. Great Plains Judging

[14] *Encyclia phoenicea* 'Memoria Aida Vazquez-Gottlieb' AM/AOS 82 pts. Exhibitor: Eric Gottlieb; Photographer: Carmen Johnston. Florida-Caribbean Judging

[15] *Pleurothallis peculiaris* 'Bryon' CCM-CBR/AOS 88 pts. Exhibitor: Bryon K. Rinke; Photographer: Bryon K Rinke. Great Plains Judging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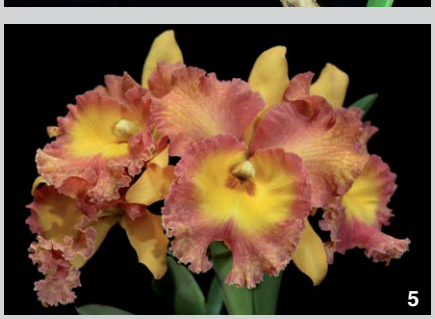
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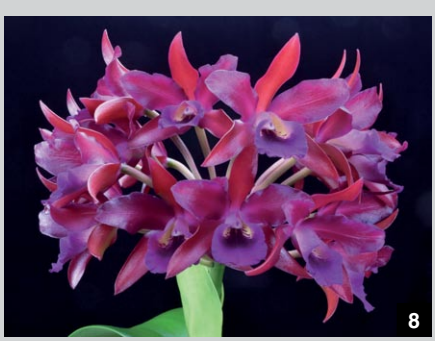
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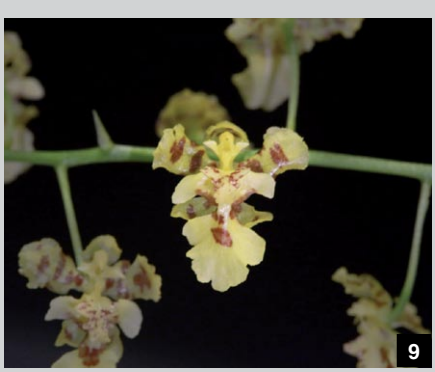
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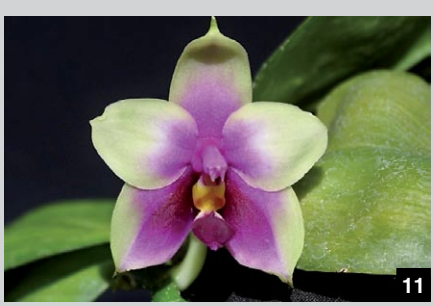
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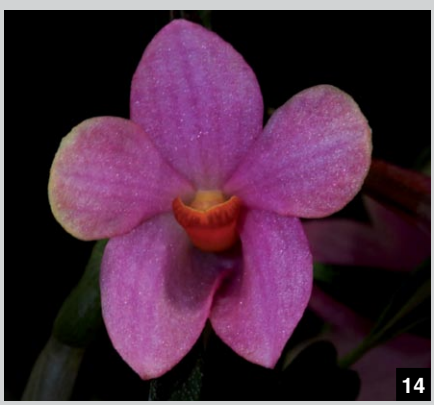
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[1] *Habenaria* Cock-Of-The-Rock 'Bryon' HCC/AOS (Oriole x Tanager) 77 pts. Exhibitor: Bryon K. Rinke; Photographer: Bryon K Rinke. Great Plains Judging

[2] *Cynorkis gibbosa* 'LHC Summer Wonder' AM/AOS 85 pts. Exhibitor: Leslie Hayes-Cullins; Photographer: Glen Barfield. Hawaii Judging

[3] *Rhyncholaeliocattleya* Harriet Brickell 'Sailor's Guide' AM/AOS (Sydney Southwick x *Cattleya bicolor*) 80 pts. Exhibitor: Ben Oliveros and Orchid Eros; Photographer: Glen Barfield. Hawaii Judging

[4] *Cattleya velutina* 'Leia' HCC/AOS 79 pts. Exhibitor: Ben Oliveros and Orchid Eros; Photographer: Glen Barfield. Hawaii Judging

[5] *Rhyncholaeliocattleya* Memoria Buranapan Nikom 'Sunset' HCC/AOS (Haadyai Delight x *Cattleya* Tainan City) 76 pts. Exhibitor: Calvin Kumano; Photographer: Roy Andrade. Hawaii Judging

[6] *Cattleya* Rhythm and Blues 'Aretha Franklin' AM/AOS (Leoloddiglossa x *tigrina*) 84 pts. Exhibitor: Ben Oliveros and Orchid Eros; Photographer: Glen Barfield. Hawaii Judging

[7] *Cattleya x dolosa* (Alba) 'Isabel Rosalia' AM/AOS (*loddigesii* x *walkeriana*) 87 pts. Exhibitor: Ben Oliveros and Orchid Eros; Photographer: Glen Barfield. Hawaii Judging

[8] *Rhyncattleanthe* Memoria Chao Tang Chang 'OrchidFix ' HCC/AOS (Love Triangle x *Cattlianthe* Chocolate Drop) 78 pts. Exhibitor: The OrchidFix Nursery, Inc.; Photographer: Glen Barfield. Hawaii Judging

[9] *Gomesa venusta* 'Bryon' HCC/AOS 77 pts. Exhibitor: Bryon K. Rinke; Photographer: Matthew Nutt. Mid-America Judging

[10] *Cattleya pumila* (Alba) 'White Wine' AM/AOS 87 pts. Exhibitor: Ben Oliveros and Orchid Eros; Photographer: Glen Barfield. Hawaii Judging

[11] *Phalaenopsis bellina* 'Akiko' HCC/AOS 79 pts. Exhibitor: Mid-Pacific Orchids; Photographer: Roy Andrade. Hawaii Judging

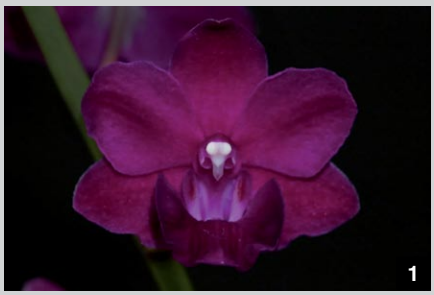
[12] *Trichocentrum microchilum* 'Tulsa Orchid Society' CCM/AOS 84 pts. Exhibitor: Max Thompson and Bryon Rinke; Photographer: Matthew Nutt. Mid-America Judging

[13] *Laeliocattleya* Aerial Explosion 'Fire Eater' HCC/AOS (*Cattleya* Jalapa x *Laelia lyonsii*) 76 pts. Exhibitor: Ben Oliveros and Orchid Eros; Photographer: Glen Barfield. Hawaii Judging

[14] *Dendrobium* Mtn's Butterfly Kisses 'Pink Wings' HCC/AOS (*glomeratum* x *cuthbertsonii*) 76 pts. Exhibitor: Matt Nutt; Photographer: Matthew Nutt. Mid-America Judging

[15] *Echinosepala shuarii* 'Bryon Rinke' HCC/AOS 76 pts. Exhibitor: Bryon K. Rinke; Photographer: Matthew Nutt. Mid-America Judging

[16] *Rhyncattleanthe* Memoria Chao Tang Chang 'OrchidFix Ditto' HCC/AOS (Love Triangle x *Cattlianthe* Chocolate Drop) 78 pts. Exhibitor: The OrchidFix Nursery, Inc.; Photographer: Glen Barfield. Hawaii Judging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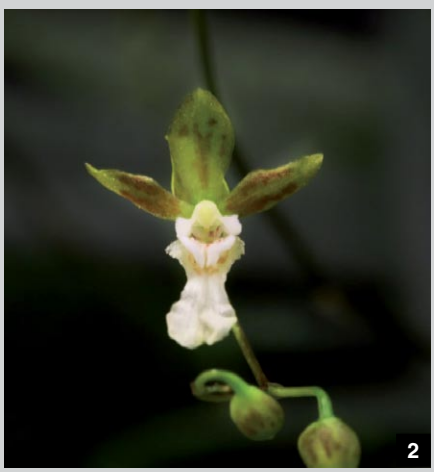
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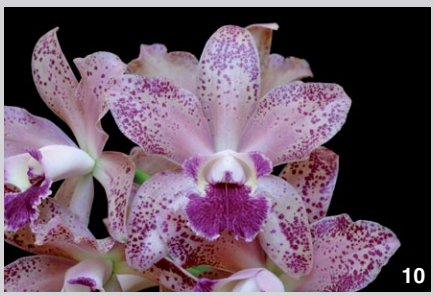

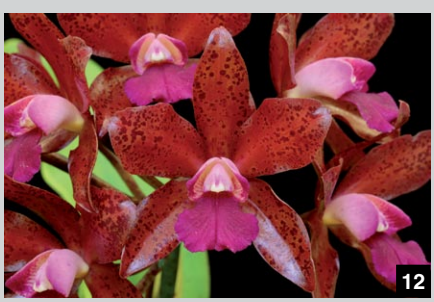

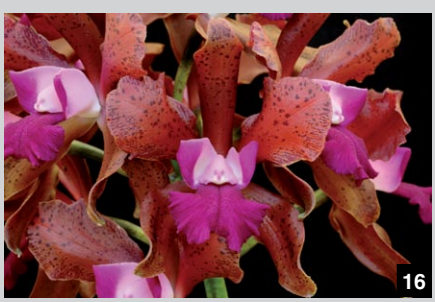

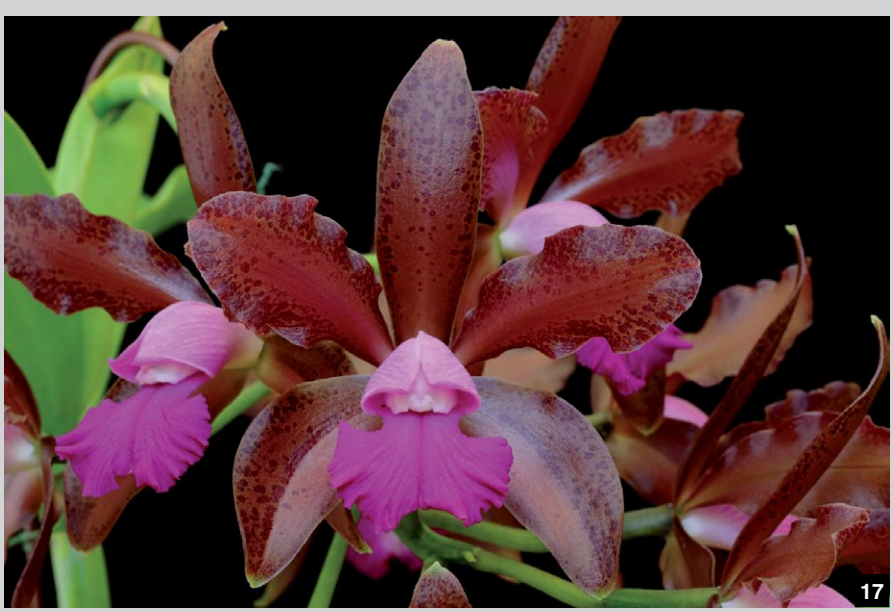

[1] *Phalaenopsis* Walnut Valley Purple Pixie 'Southwestern College' AM/AOS (Purple Gem x Pixie Star) 80 pts. Exhibitor: Max Thompson and Bryon Rinke; Photographer: Matthew Nutt. Mid-America Judging

[2] *Grandiphyllum hians* 'Mark & Karlene' AM/AOS 80 pts. Exhibitor: Max Thompson and Bryon Rinke; Photographer: Matthew Nutt. Mid-America Judging

[3] *Phalaenopsis* Summer Rose 'Toucan' HCC/AOS (Kenneth Schubert x *equestris*) 78 pts. Exhibitor: Michael J. Madonna; Photographer: Bayard Saraduke. Mid-Atlantic Judging

[4] *Cattlianthe* Bactia 'Grapewax' HCC/AOS (*Guarianthe bowringiana* x *Cattleya guttata*) 77 pts. Exhibitor: Kyle Saunders; Photographer: Maurice Garvey. Northeast Judging

[5] *Phalaenopsis* Taida King's Caroline 'Toucan' HCC/AOS (Ever-spring King x Ho's Little Caroline) 79 pts. Exhibitor: Michael J. Madonna; Photographer: Bayard Saraduke. Mid-Atlantic Judging

[6] *Phalaenopsis* Tai Lin Red Angel 'Toucan' AM/AOS (Tai Lin Angel x New Eagle) 82 pts. Exhibitor: Michael J. Madonna; Photographer: Bayard Saraduke. Mid-Atlantic Judging

[7] *Cattleya loddigesii* 'Silva's Husky Boy' AM/AOS 83 pts. Exhibitor: Joe and Tony Silva; Photographer: Maurice Garvey. Northeast Judging

[8] *Angraecum rutenbergianum* (cf.) 'Providence Star' CHM/AOS 82 pts. Exhibitor: Nathaniel (Nate) DePinto; Photographer: Maurice Garvey. Northeast Judging

[9] *Rhyncattleanthe* Angel Voice 'Blumen Insel' AM/AOS (Shinfong Little Love x *Cattleya coccinea*) 84 pts. Exhibitor: Michael J. Madonna; Photographer: Bayard Saraduke. Mid-Atlantic Judging

[10] *Rhyncholaeliocattleya* Pauwela Polka Dots 'Exotic Orchids' HCC/AOS (Penny's Spot x *Cattleya* Penny Kuroda (Penny Kuroda Group)) 77 pts. Exhibitor: Waldor Orchids, Inc.; Photographer: Bayard Saraduke. Mid-Atlantic Judging

[11] *Cattleya* Zip 'I' AM/AOS (*tenebrosa* x *milleri*) 85 pts. Exhibitor: Amy and Ken Jacobsen; Photographer: Japheth Ko. Pacific Central Judging

[12] *Cattlianthe* Suzy Stepnowski 'Wah Wa Wah' AM/AOS (*Cattleya* Allen Condo x Chocolate Drop) 86 pts. Exhibitor: Dave Off; Photographer: Bayard Saraduke. Mid-Atlantic Judging

[13] *Rhyncattleanthe* Pure Love 'Maplewood' AM/AOS (*Cattleya* Seagulls Apricot x Love Sound) 83 pts. Exhibitor: Kim Feddersen; Photographer: Maurice Garvey. Northeast Judging

[14] *Cattleya* Luisa Joy 'Stratford' HCC/AOS (*lawrenceana* x Good Friend) 79 pts. Exhibitor: Jaymie Santiago; Photographer: Maurice Garvey. Northeast Judging

[15] *Cattleya* Allen Condo 'Grezaffi's Legacy' AM/AOS (Summerland Girl x Mrs. Mahler) 85 pts. Exhibitor: Dave Off; Photographer: Bayard Saraduke. Mid-Atlantic Judging

[16] *Cattleya* Allen Condo 'Rosemarie' HCC/AOS (Summerland Girl x Mrs. Mahler) 79 pts. Exhibitor: Dave Off; Photographer: Bayard Saraduke. Mid-Atlantic Judging

[17] *Cattleya* Raspberry Smoke 'Deborah Off' AM/AOS (Allen Condo x Maui Plum) 85 pts. Exhibitor: Waldor Orchids, Inc.; Photographer: Bayard Saraduke. Mid-Atlantic Judging


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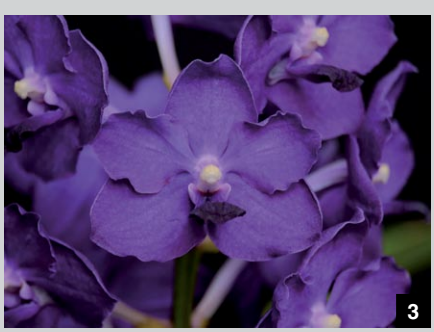
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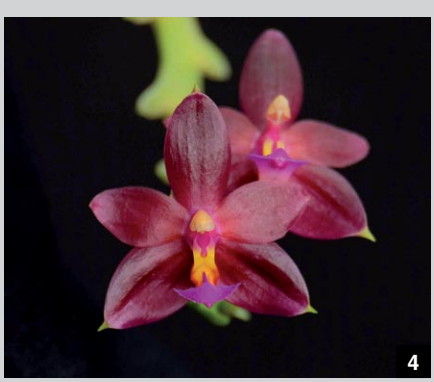
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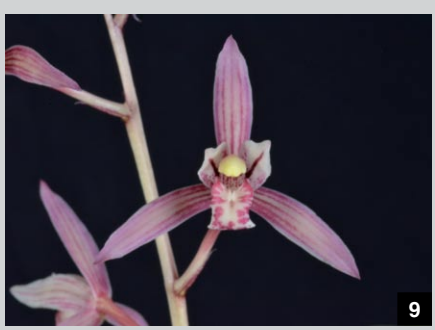
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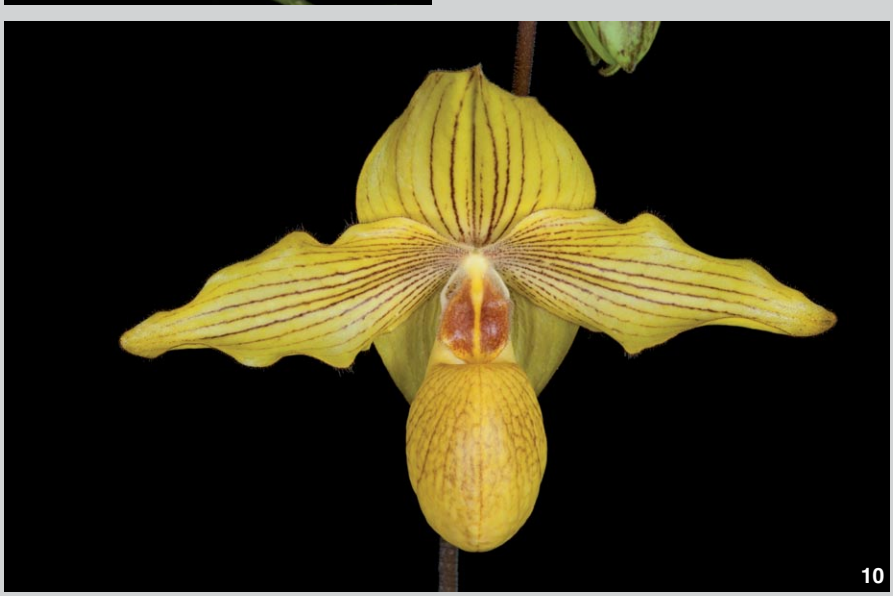
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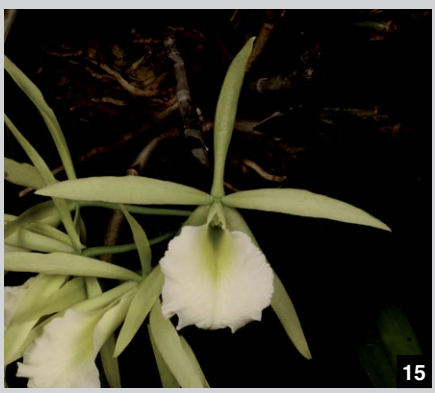
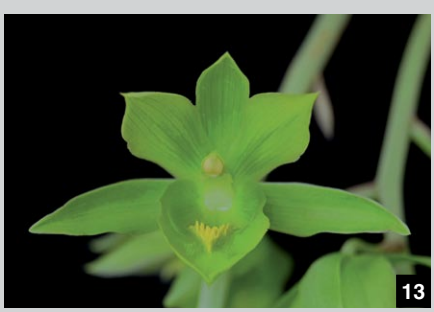




[1] *Masdevallia* Purple Haze 'Lise' AM/AOS (*discoidea* x *infracta*) 81 pts. Exhibitor: Mary Gerritsen; Photographer: Japheth Ko. Pacific Central Judging

[2] *Phalaenopsis* Liu's Bride Rouge 'J.A.R.R.' HCC/AOS (Pentel Gem x *equestris*) 78 pts. Exhibitor: José Román; Photographer: Fong Cing Li. Puerto Rico Judging

[3] *Vandachostylis* Ploenpit Blue 'Anna Claire' AM/AOS (*Vanda* Tristar Blue x Sasicha) 82 pts. Exhibitor: Eron Borne; Photographer: Susan Hathorn. Louisiana Judging

[4] *Phalaenopsis* Valentinii 'Louisiana' AM/AOS (*cornu-cervi* x *violacea*) 81 pts. Exhibitor: Alan Taylor; Photographer: Susan Hathorn. Louisiana Judging

[5] *Dendrobium* Eltonense 'Cavalier' HCC/AOS (*papilio* x *victoriae-reginae*) 77 pts. Exhibitor: Jason Douglass Ron Norris; Photographer: Japheth Ko. Pacific Central Judging

[6] *Vandachostylis* Lou Sneary 'Blue Bird' CCM/AOS (*Vanda falcata* x *Rhynchostylis coelestis*) 84 pts. Exhibitor: Lori Rheinberger; Photographer: Ross Leach. Pacific Northwest Judging

[7] *Phalaenopsis tetraspis* f. *christiana* 'Purple Passion' HCC/AOS 77 pts. Exhibitor: Jean Allen-Ikeson; Photographer: Ed Cott. Toronto Judging

[8] *Habenaria rhodocheila* 'The Phoenix' AM/AOS 82 pts. Exhibitor: Ronald Midgett; Photographer: Mark Van der Woerd. Rocky Mountain Judging

[9] *Cymbidium ensifolium* 'Bull Market' HCC/AOS 75 pts. Exhibitor: Amy and Ken Jacobsen; Photographer: Chaunie Langland. Pacific Central Judging

[10] *Paphiopedilum* Dollgoldi 'Lulu' AM/AOS (*rothschildianum* x *armeniacum*) 82 pts. Exhibitor: Hillsview Gardens; Photographer: Ross Leach. Pacific Northwest Judging

[11] *Oncidium* San Francisco Goldmine 'Rustic Canyon' AM/AOS (Tiger Hambühren x Jubilee Volunteer) 81 pts. Exhibitor: Howard Liebman, MD; Photographer: Arthur Pinkers. Pacific South Judging

[12] *Paphiopedilum rothschildianum* 'Electra' HCC/AOS 79 pts. Exhibitor: Hillsview Gardens; Photographer: Ross Leach. Pacific Northwest Judging

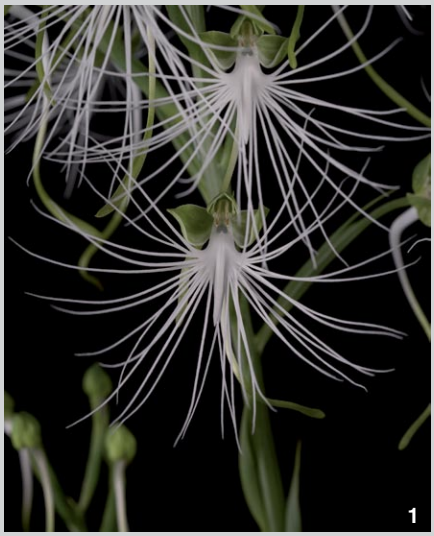
[13] *Clowesetum* Black Jade 'AntKaren' AM/AOS (*Clowesia russelliana* x *Catasetum expansum*) 83 pts. Exhibitor: Karen Armstrong; Photographer: Susan Hathorn. Louisiana Judging

[14] *Paphiopedilum* Hilo Jewel 'Emerald' AM/AOS (Hsinying Majakun x Hsinying Jewel) 81 pts. Exhibitor: Japheth Ko; Photographer: Chaunie Langland. Pacific Central Judging

[15] *Longwellara* Citrus Cricket 'Vitamin C' AM/AOS (*Cattleychea* Lime Sherbet x *Rhynchovola* Jimminey Cricket) 83 pts. Exhibitor: Jim Longwell; Photographer: Tom Kuligowski. West Palm Beach Judging

[16] *Phalaenopsis mirabilis* 'Balok' CHM/AOS 85 pts. Exhibitor: Drew Goddard; Photographer: Ed Cott. Toronto Judging

[17] *Galeandra greenwoodiana* 'Gayle' AM/AOS 81 pts. Exhibitor: Gayle Brodie; Photographer: Arthur Pinkers. Pacific South Judging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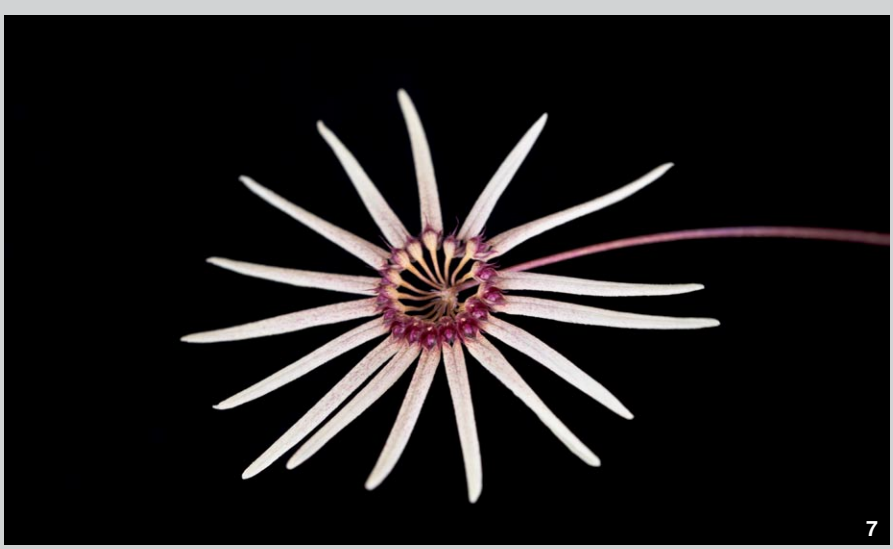
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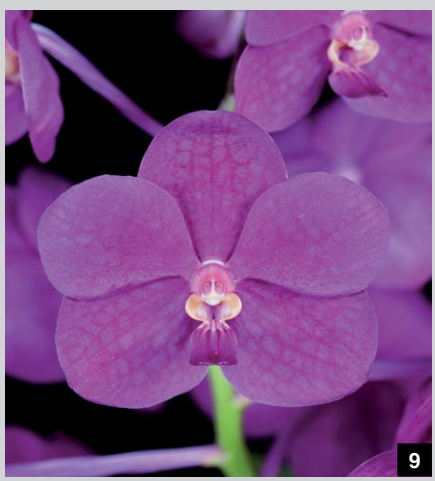
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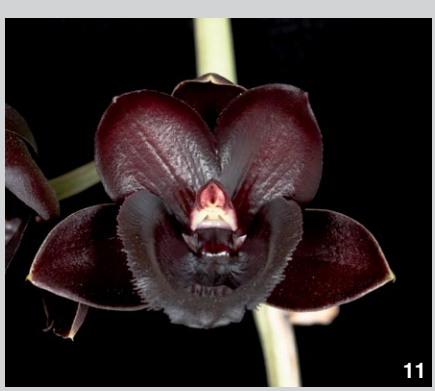
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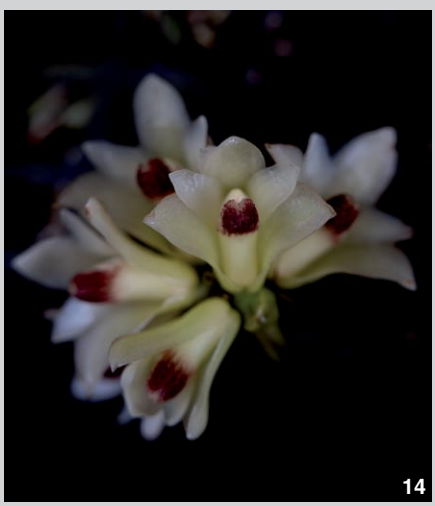
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[1] *Pectabenaria* Maxdusa 'Winter Haven's Snowstorm' AM/AOS (Wow's White Fairies x *Habenaria medusa*) 83 pts. Exhibitor: Keith and Dina Emig - Winter Haven Orchid Nursery; Photographer: Wes Newton. Florida North-Central Judging

[2] *Vanda* Petit Orange 'Garrett's Smokey Paprika' AM/AOS (Wanpen x *curvifolia*) 84 pts. Exhibitor: Sharon and David Garrett; Photographer: Wes Newton. Florida North-Central Judging

[3] *Bulbophyllum* Captain Rod 'Whisper Kathy's Sweet Pea' HCC/AOS (Lion King x *gracillimum*) 79 pts. Exhibitor: Kathy Cox; Photographer: Wes Newton. Florida North-Central Judging

[4] *Vanda* Tere Camacho 'Garrett's Little Cutie' AM/AOS (Sagarik Gold x *curvifolia*) 80 pts. Exhibitor: Sharon and David Garrett; Photographer: Wes Newton. Florida North-Central Judging

[5] *Vanda* Garrett's Mandarine 'Orange Marmalade' AM/AOS (Thai Gold x Yip Sum Wah) 85 pts. Exhibitor: Sharon and David Garrett; Photographer: Wes Newton. Florida North-Central Judging

[6] *Vanda* Leopardy 'Red Dots' HCC/AOS (*sanderiana* x Guo Chia Long) 76 pts. Exhibitor: Sharon and David Garrett; Photographer: Wes Newton. Florida North-Central Judging

[7] *Bulbophyllum makoyanum* 'Jenorchid's 1st' AM/AOS 83 pts. Exhibitor: Jennifer Reinoso; Photographer: Wes Newton. Florida North-Central Judging

[8] *Papilionanda* Esther Araneta Pure White 'Summer Snow' AM/AOS (Mevr. L. Velthuis x *Vanda* Darres' Golden Heritage) 80 pts. Exhibitor: Naoki Kawamura; Photographer: Wes Newton. Florida North-Central Judging

[9] *Vanda* Matthew Majewski 'Garrett's Fuchsia Fusion' AM/AOS (Onomea x Peggy Foo) 82 pts. Exhibitor: Sharon and David Garrett; Photographer: Wes Newton. Florida North-Central Judging

[10] *Catasetum* Greg Scott 'Corinne's Raspberries and Cream' HCC/AOS (Donna Wise x *pileatum*) 79 pts. Exhibitor: Corinne Arnold; Photographer: Wes Newton. Florida North-Central Judging

[11] *Fredclarkeara* Alexa's Raspberries 'Corinne's Raspberry Cobbler' AM/AOS (*Mormodia* Painted Desert x *Catasetum expansum*) 80 pts. Exhibitor: Corinne Arnold; Photographer: Wes Newton. Florida North-Central Judging

[12] *Bulbophyllum* Ares 'Crystelle' AM/AOS (Laura Newton x Herkules) 85 pts. Exhibitor: Krull-Smith; Photographer: Wes Newton. Florida North-Central Judging

[13] *Vanda* Golden Doubloon 'Vandaland NHM' AM/AOS (*denisoniana* x *tessellata*) 81 pts. Exhibitor: Keith and Dina Emig - Winter Haven Orchid Nursery; Photographer: Wes Newton. Florida North-Central Judging

[14] *Xylobium subpulchrum* 'Mar-ian' CBR/AOS. Exhibitor: Laurie Nissen; Photographer: Wes Newton. Florida North-Central Judging

[15] *Cattleya* Luminosa (1901) 'Merle's Goliath Goldfinch' AM/AOS (*dowiana* x *tenebrosa*) 81 pts. Exhibitor: David Moore, David's Goliath Orchids; Photographer: Wes Newton. Florida North-Central Judging

[16] Bulbophyllum Wes Newton 'Whisper Laura's Love' AM/AOS (Laura Newton x *echinolabium*) 85 pts. Exhibitor: Laura and Wes Newton; Photographer: Wes Newton. Florida North-Central Judging


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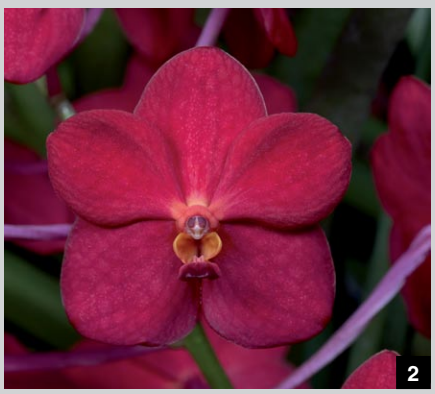
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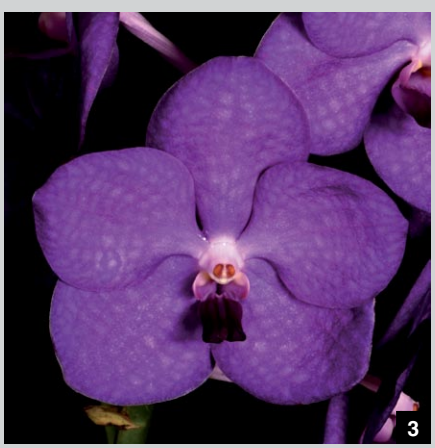
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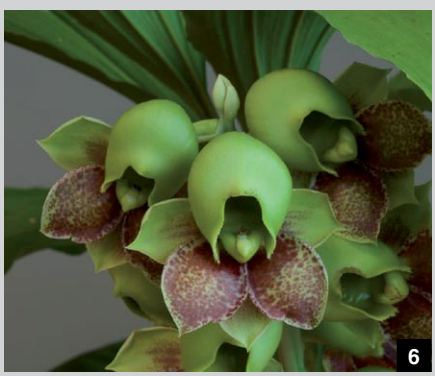
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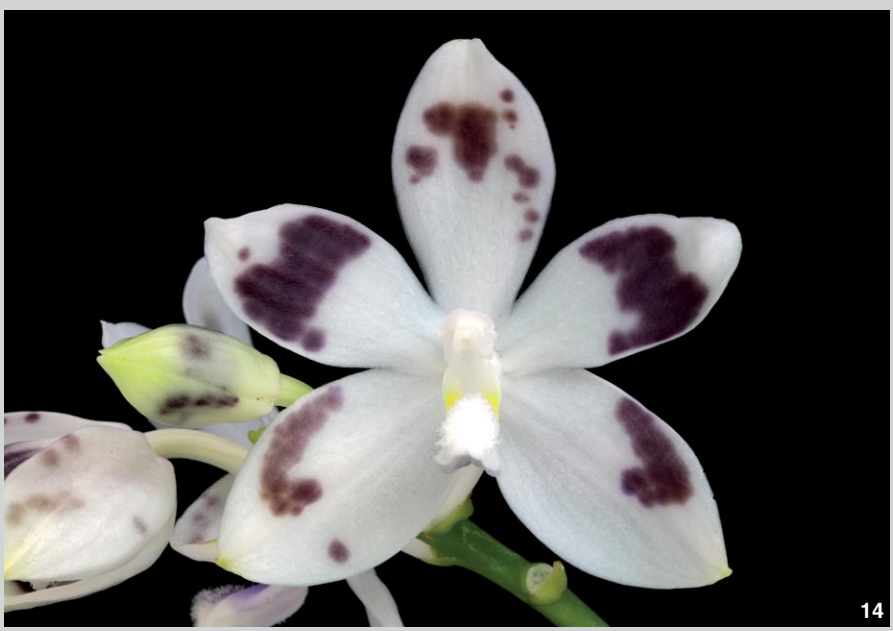

[1] *Catasetum* Jumbo Pearl 'Corinne's Yellow Brick Road' HCC/AOS (Penang x *tenebrosum*) 79 pts. Exhibitor: Corinne Arnold; Photographer: Wes Newton. Florida North-Central Judging

[2] *Vanda* Ashley Lowe 'Palmer Orchids' HCC/AOS (Sunchart x Yip Sum Wah) 79 pts. Exhibitor: Heather Gramling; Photographer: Wes Newton. Florida North-Central Judging

[3] *Vanda* Karen Ono (1972) 'Midnight' AM/AOS (Yip Sum Wah x *coerulea*) 81 pts. Exhibitor: R. F. Orchids, Inc.; Photographer: Tom Kuligowski. West Palm Beach Judging

[4] *Phalaenopsis tetraspis* (Alba) 'Monster' AM/AOS 81 pts. Exhibitor: Ramon de los Santos; Photographer: Ramon de los Santos. California-Sierra Nevada Judging

[5] *Dendrobium* King Dragon 'Pink Marquess' AM/AOS (Ekapol x Polar Queen) 80 pts. Exhibitor: R.F. Orchids, Inc.; Photographer: Tom Kuligowski. West Palm Beach Judging

[6] *Catasetum* Fong Cing 'Green Denali' HCC/AOS (José Abalo x Orchidglade) 77 pts. Exhibitor: Stephen Van Kampen-Lewis; Photographer: Charlotte Randolph. Alamo Judging

[7] *Paphiopedilum* Woluwense 'Chunky' AM/AOS (*niveum* x *rothschildianum*) 83 pts. Exhibitor: Ramon de los Santos; Photographer: Ramon de los Santos. California-Sierra Nevada Judging

[8] *Angraecum* Lemförde White Beauty 'Loomis Basin' AM/AOS (*magdalenae* x *sesquipedale*) 86 pts. Exhibitor: Tyler M. Albrecht; Photographer: Ramon de los Santos. California-Sierra Nevada Judging

[9] *Dendrobium* Emerald Green 'Crownfox' HCC/AOS (Amro x Anching Lubag) 78 pts. Exhibitor: R.F. Orchids, Inc.; Photographer: Tom Kuligowski. West Palm Beach Judging

[10] *Cattleya labiata* 'Cedarwood's Thrall' AM/AOS 84 pts. Exhibitor: Cecily Maciejeski; Photographer: Charlotte Randolph. Alamo Judging

[11] *Vandachostylis* Georgia Peach 'Panther Creek' HCC/AOS (Lou Sneary x *Vanda vietnamica*) 79 pts. Exhibitor: Barney and Aileen Garrison; Photographer: Charles Wilson. Atlanta Judging

[12] *Oncidium* Bonne Nuit 'Turtle Fairies' HCC/AOS (*sphacelatum* x Eric Young) 78 pts. Exhibitor: Tyler M. Albrecht; Photographer: Ramon de los Santos. California-Sierra Nevada Judging

[13] *Brassocattleya* Adrienne Arsht 'Naples Splash' CCM/AOS (*Cattleya* Netrasiri Beauty x *Brassavola nodosa*) 82 pts. Exhibitor: Jim Longwell; Photographer: Tom Kuligowski. West Palm Beach Judging

[14] *Phalaenopsis tetraspis* f. *speciosa* 'Chunky' AM/AOS 80 pts. Exhibitor: Ramon de los Santos; Photographer: Ramon de los Santos. California-Sierra Nevada Judging

[15] *Miltonia regnellii* f. *alba* 'Santwire's Diamond' CHM/AOS 84 pts. Exhibitor: Bailey Santwire; Photographer: Charles Wilson. Atlanta Judging


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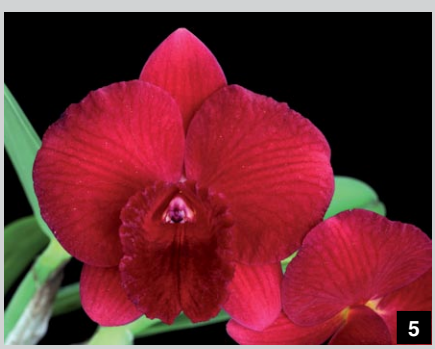
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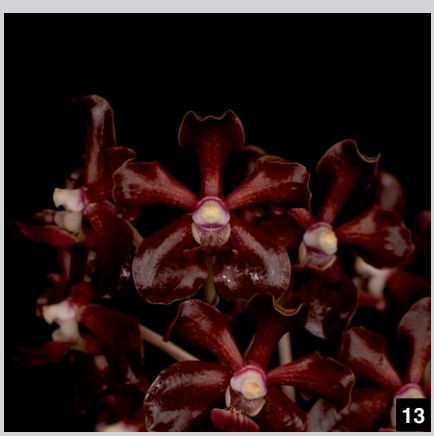
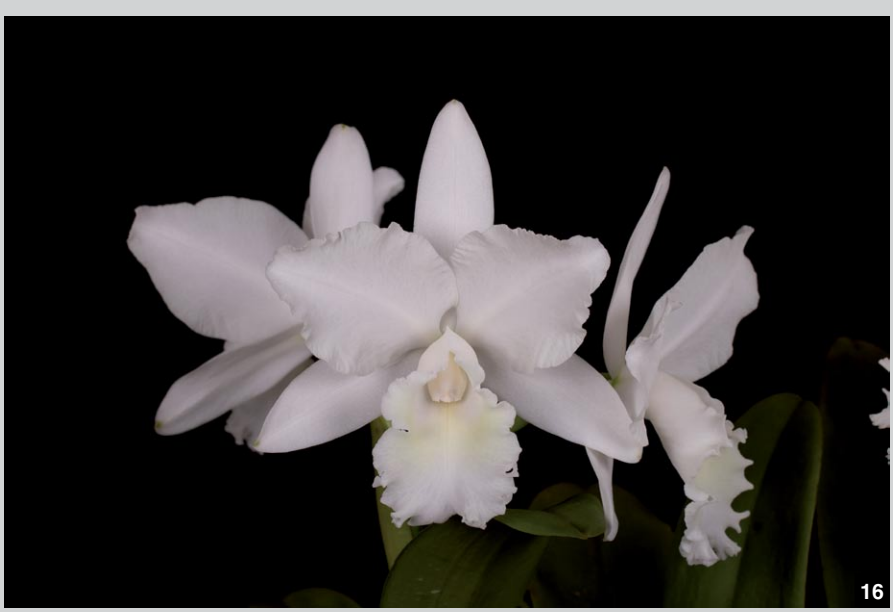




[1] *Polystachya subdiphylla* 'Mary Nisbet' CBR/AOS. Exhibitor: Chen-Hao Hsu; Photographer: Ramon de los Santos. California-Sierra Nevada Judging

[2] *Aerangis* Pionier 'Good Choices' HCC/AOS (*mystacidii* x *kotschyana*) 77 pts. Exhibitor: Anne Kimmerlein; Photographer: Ramon de los Santos. California-Sierra Nevada Judging

[3] *Paphiopedilum gratrixianum* 'Pinot Grigio' HCC/AOS 75 pts. Exhibitor: Dave Sorokowsky; Photographer: Ramon de los Santos. California-Sierra Nevada Judging

[4] *Pectabenaria* Maxdusa 'Kiki' AM/AOS (Wow's White Fairies x *Habenaria medusa*) 84 pts. Exhibitor: Anne Kimmerlein; Photographer: Ramon de los Santos. California-Sierra Nevada Judging

[5] *Rhyncholaeliocattleya* Ramon De Los Santos 'Melencia' AM/AOS (Memoria Irene Feil x Loud Nine) 85 pts. Exhibitor: Ramon de los Santos; Photographer: Ramon de los Santos. California-Sierra Nevada Judging

[6] *Paphiopedilum barbigerum* 'Sangria' HCC/AOS 77 pts. Exhibitor: Dave Sorokowsky; Photographer: Ramon de los Santos. California-Sierra Nevada Judging

[7] *Catasetum* Dark Odyssey 'Dark Knight' HCC/AOS (Karen Armstrong x Darkness) 79 pts. Exhibitor: Mark Margolis; Photographer: Carmen Johnston. Florida-Caribbean Judging

[8] *Gomesa venusta* 'Bonheur' HCC/AOS 78 pts. Exhibitor: Lynne Murrell; Photographer: Ramon de los Santos. California-Sierra Nevada Judging

[9] *Cattleya maxima* 'Elegance' CCE/AOS 91 pts. Exhibitor: William Rogerson; Photographer: Alison Fortney. Chicago Judging

[10] *Paphiopedilum* Paradise in Burgundy 'Diane' AM/AOS (After James x King Charles) 80 pts. Exhibitor: Dave Veach; Photographer: Ramon de los Santos. California-Sierra Nevada Judging

[11] *Catasetum* Green Dragon 'Cheryl's Joy' HCC/AOS (*schmidtianum* x Orchidglade) 78 pts. Exhibitor: Cheryl Erins; Photographer: Lois Cinert. Chicago Judging

[12] *Dendrobium* Illusion 'Embers' CCM/AOS (*lawesii* x *cuthbertsonii*) 83 pts. Exhibitor: Walter E. Crawford; Photographer: Alison Fortney. Chicago Judging

[13] *Vanda* Greg Scott 'Jayme's Sultry Lips' AM/AOS (*merrillii* x *tessellata*) 82 pts. Exhibitor: Cassian D'Cunha; Photographer: Carmen Johnston. Florida-Caribbean Judging

[14] *Rhyncholaeliocattleya* Surprise Rainbow 'Donna's Treasures' HCC/AOS (Yen Surprise x *Cattleya* Penny Kuroda (Penny Kuroda Group)) 77 pts. Exhibitor: Oakwood Orchids; Photographer: Yvonne Dunphe. Cincinnati Judging

[15] *Aerides lawrenceae* 'MUDr. Marta Kojšová' AM/AOS 88 pts. Exhibitor: Juraj Kojs; Photographer: Carmen Johnston. Florida-Caribbean Judging

[16] *Cattleya* White Reception 'NN#16' HCC/AOS (Hawaiian Wedding Song x Douglas Johnston) 78 pts. Exhibitor: Patricia Urban; Photographer: Carmen Johnston. Florida-Caribbean Judging

NOVEMBER

4–6—The Second International Vanda & Slipper Orchid Symposium, judging (sponsored by the Tampa Bay Orchid Society) at Northwest Orange County Improvement Association (NOCIA), 4253 W. Ponkan Rd., Apopka, FL (Sales at Krull–Smith Nursery, 2800 West Ponkan Rd, Apopka, FL); Contact: Julio Hector (Judging) and Krull–Smith (Sales), 813–765–9271/407–886–4134; j.hector@verizon.net/orchids@krullsmith.com

4–6—Orchid Awareness & Education Group's "Orchid Palette," Caribbean Museum Center for the Arts, 10 Strand St, Frederiksted, VI; Contact: Edna Hamilton, 340–514–5349; kimberlyorchidvi@gmail.com

5–6—Utah Orchid Society "Autumn In The Tropics," Red Butte Garden, 300 Wakara Way, Salt Lake City, UT; Contact: Shawn Quealy, 801–831–7359; shquealy@comcast.net

12–13—Deerfield Beach Orchid Society's "Orchid Obsession," Safe Schools Institute, 1790 Spanish River Boulevard, Boca Raton, FL; Contact: Angie O'Neil–Butler, 772–418–9504; orchidnanni@att.net

13—East Everglades Orchid Society Show, R.F. Orchids (in the Banyon Pavilion), 28100 SW 182 Ave, Homestead, FL; Contact: Tere Camacho, 305–401–8807; tere@bellsouth.net

14—Fort Lauderdale Orchid Society Outreach Judging, Christ Lutheran Church Social Hall, 1955 East Oakland Park Blvd, Ft Lauderdale, FL; Contact: Joan Connors, 954–336–4948; marti25999@hotmail.com

16–20—"XLIII Exposicion Internacional de Orquideas de Coban," Convento Santo Domingo de Guzman, 1a. calle y 1a. avenida zona 3, Coban, Alta Verapaz, Guatemala; Contact: Joan Stanley de Fernandez, +502–5723–0796; joansfer@gmail.com

20—Memphis Orchid Society Outreach Judging, Memphis Botanic Garden, 750 Cherry Rd, Memphis, TN; Contact: Randall Bayer, 901–606–8592; rbayer@memphis.edu

18–20—Asociacion Vallecaucana de Orquideologia "Caliorquideas 2022," Orquideorama, Avenida 2N #48–10, Cali, Colombia; Contact: Andrea Niessen, 57–315–572–2914; andreaniessen@orquivalle.com

26–27—Fort Pierce Orchid Society Show and Sale, River Walk Center, 600 N Indian River Dr, Fort Pierce, FL; Contact: Rita Zeblin, 772–418–7426 (text only); rita2zfpos@gmail.com

26–27—Saginaw Valley Orchid Society Show and Sale, Kochville Veterans Hall, 3265 Kochville Rd, Saginaw, MI; Contact: Tim Hueston, 989–837–0947; thueston@chartermi.net

CANCELED

DECEMBER 2022

3—Acadian Orchid Society "The Louisiana Orchid Short Course," Ira Nelson Horticulture Center, 2206 Johnston St, Lafayette, LA; Contact: Myrna Ayo, 337–207–3559; myrnaayo@gmail.com

JANUARY 2023

7–8—Sarasota Orchid Society's "Orchids in Paradise," Sarasota Municipal Auditorium, 801 N Tamiami Trail, Sarasota, FL; Contact: Larry Desiano, 941–724–6683; larrydesiano@sarasotaorchidsociety.org

12—*Boca Raton Orchid Society Outreach Judging, Safe Schools Institute, 1790 NW Spanish River Blvd, Boca Raton, FL; Contact: Kathy Kersey, 954–802–3575; kathykbros@gmail.com

13–15—North Jersey Orchid Society Show, Rutgers University Douglass Cook Student Center, 100 George St, New Brunswick, NJ; Contact: Carrie Buchman, 201–410–3089; cbuchman@tncb.net

21–22—Peninsula Orchid Society's Annual Show and Sale, Community Activities Building, 1400 Roosevelt Ave, Redwood City, CA; Contact: Daniel Williamson, 301–717–0939; dwillmsn–home@yahoo.com

21–22—Cape and Island Orchid Society's "Orchids in Captivity," The Resort and Conference Center at Hyannis, 35 Scudder Avenue, Hyannis, MA; Contact: Tina Balog, 508–540–5006; dglover@whoi.edu

28–29—Florida West Coast Orchid Society's "Sea of Orchids," City of Seminole Recreation Center, 9100 113th Street N, Seminole, FL; Contact: Bill Nunez, 727–239–2700; biddison22@aol.com

FEBRUARY

3–5—Susquehanna Orchid Society's "For the Love of Orchids," Milton and Catherine Hershey Conservatory at Hershey Gardens, 170 Hotel Road, Hershey, PA; Contact: Walter Meshaka, 717–728–0533; toadwally@gmail.com

4–5—Greater Cleveland Orchid Society 2023 Orchid Show & Sale, Cleveland Botanical Garden, 11030 East Blvd, Cleveland, OH; Contact: Mark Pollack, 216–218–0366; marcpoll@sbcglobal.net

4–5—Venice Area Orchid Society Show and Sale, Venice Community Center, 326 S Nokomis Ave, Venice, FL; Contact: Carol Wood & Judy Loeffler, 941–497–4995; showchair@vaos.org

4–5—Orchid Grower's Guild "Orchid Quest," Olbrich Botanical Gardens, 3330 Atwood Ave, Madison, WI; Contact: Terri Jozwiak, 608–592–7906; lodijoz@charter.net

11–12—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

18–19—Batavia Orchid Society Show, DuPage County Fairgrounds, 2015 Manchester Rd, Wheaton, IL; Contact: Larry Sexton, 630–406–8460; orkiddoc@aol.com

23–26—Pacific Orchid Exhibition 2023 — Celebrating Diversity, San Francisco Orchid Society; San Francisco County Fair Building in Golden Gate Park; Contact: info@orchidsanfrancisco.org, www.orchidsanfrancisco.org

25–26—Amherst Orchid Society Show, Smith Vocational and Agricultural High School, 80 Locust St (Rt. 9), Northampton, MA; Contact: Marc Gray, 802–346–7926; bulbophyllum@myfairpoint.net

25–26—Greater Lansing Orchid Society Orchid Show, Michigan State University Plant & Soil Sciences Building, 1066 Bogue St, East Lansing, MI; Contact: Ioana Sonea, 517–614–9120; ioanamsonea@gmail.com

MARCH

3–4—Englewood Area Orchid Society "Bewitched by Orchids," Ann & Chuck Dever Regional Park, 6961 San Casa Drive, Englewood, FL; Contact: Mary Ann DiGrazia, 941–697–9237; tommaryanne@centurylink.net

3–5—Martin County Orchid Society's "Orchid Express," Martin County Fair Grounds, Bldg G, 2616 SE Dixie Hwy, Stuart, FL; Contact: Nancy Speedy, 772–485–5310; aspeedy@bellsouth.net

4–5—Houston Orchid Society Show and Sale, Memorial City Mall, 303 Memorial Way, Houston, TX; Contact: Jay Balchan; balchan.jay@gmail.com

4–5—Tampa Bay Orchid Society's "For the Love of Orchids," Sons of

Italy Hall, 3315 W Lemon St, Tampa, FL; Contact: Pat Solakian, 203–214–7042; tampabayorchidsociety@yahoo.com

4–5—Wisconsin Orchid Society Show, Milaegers, 4838 Douglas Ave, Racine, WI; Contact: Richard Odders, 262–632–3008; odders2445@gmail.com

11–12—Greater North Texas Orchid Society Show and Sale, Texas A&M AgriLife – Water and Land Resources Building, 17360 Coit Road, Dallas, TX; Contact: Karl Varian, 972–423–9412; k.varian@ieee.org

17–19—Gulf Coast Orchid Alliance Show, North Collier Regional Park (Exhibition Hall), 15000 Livingston Rd, Naples, FL; Contact: Jim Longwell, 239–340–5520; jlongwell1@comcast.net

18–19—Jacksonville Orchid Society Show, Mandarin Garden Club, 2892 Loretto Road, Jacksonville, FL; Contact: Lorraine Conover, 561–302–6010; lorrainesorchids@gmail.com

18–19—Nature Coast Orchid Society Spring Show, VFW Post 8681, 18940 Drayton St, Spring Hill, FL; Contact: Matt Riesz, 732–687–2407; mrfishnj@gmail.com

18–19—Orchid Society of Western Pennsylvania's "Orchid Obsession," Crowne Plaza Hotel, 164 Fort Couch Road, Pittsburgh, PA; Contact: Sheila Nathanson, 412–576–1704; msnsan@gmail.com

25–26—Orchid Society of Highlands County's "Art in Bloom," Agri–Civic Center, 4509 George Blvd, Sebring, FL; Contact: Marlen Martinez, 863–446–0189; cmghmartinez@gmail.com

30–April 2—Genesee Region Orchid Society 47th Annual Show, Eisenhart Auditorium, Rochester Museum & Science Center, 657 East Ave, Rochester, NY; Contact: Michael Ackerman, 585–317–5185; michael.ackerman.dns@gmail.com

APRIL

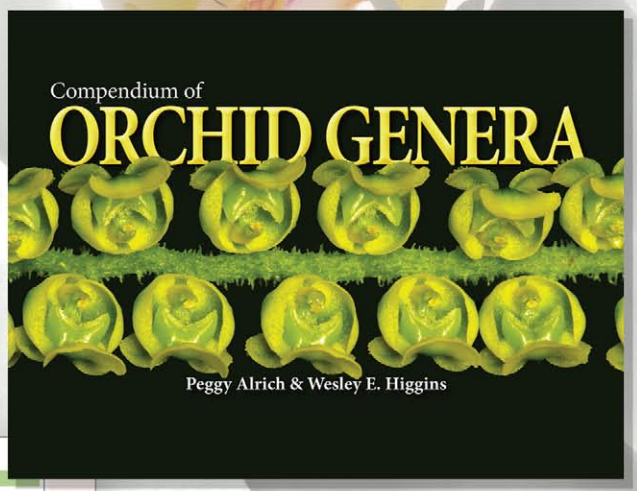
1–2—Port St. Lucie Orchid Society's "Hoot Loves Orchids," Port St. Lucie Polish American Club,343 NW Prima Vista Blvd, Port St. Lucie, FL; Contact: Andrea Heitfeld; tazzette55@gmail.com

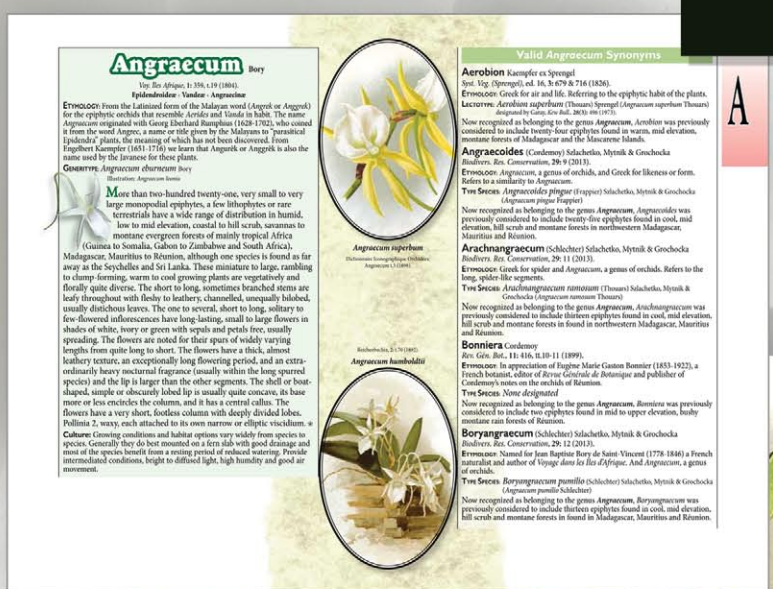
MAY

6–7—Oklahoma Orchid Society's "Orchid Kicks on Route 66," Will Rogers Gardens Exhibition Center, 3400 NW 36th Street, Oklahoma City, OK; Contact: Jana Butcher, 405–209–7657; oos_showchair@okorchidsociety.org

Presenting

The Compendium of Orchid Genera by Peggy Alrich and Wesley Higgins





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AD INDEX

Submission of articles for *ORCHIDS* magazine

The AOS welcomes the submission of manuscripts for publication in *Orchids* magazine from members and non-members alike. Articles should be about orchids or related topics and cultural articles are always especially welcome. These can run the gamut from major feature-length articles on such topics as growing under lights, windowsills and thorough discussions of a species, genus or habitat to shorter, focused articles on a single species or hybrid to run under the Collector's Item banner. The AOS follows Plants of the World Online (POWO) 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.

Prosthechea pulchra

by Wesley Higgins and Tadeusz Kawecki

Range Extension for *Prosthechea pulchra*

WHEN THE LOVELY species *Prosthechea pulchra* was named, the name was based on a specimen collected in Ecuador, located around 4°27'55"N, 79°09'48"W (4.465 –79.163). Zamora-Chinchipe: Beyond pass, Yangana to Valladolid, elevation 8,530 feet (2,600 m), July 24, 1985, *Dodson, Embree* & *Dalessandro 16033* (Holotype, MO).

SYNONYMS *Anacheilium vinaceum, Encyclia pulcherrima, Prosthechea vinacea*.

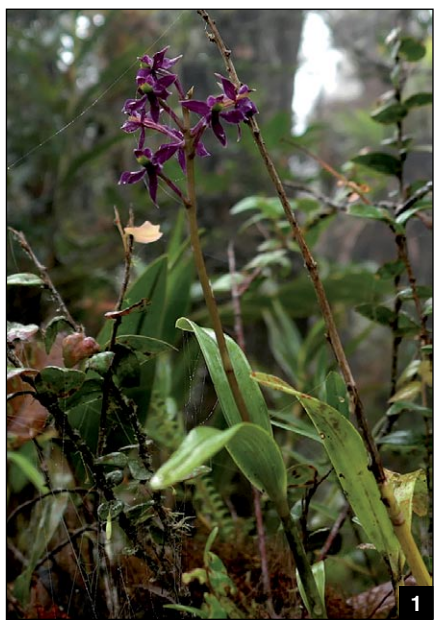
Prosthechea pulchra was known to occur in scattered populations in wet montane forest on the eastern slope of the Andes from central Ecuador to Peru at that time (2001). Plants of the World (Kew) now reports that the range extends into eastern Bolivia.

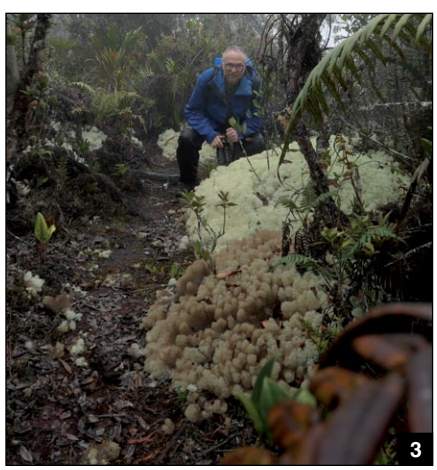
When author Kawecki was visiting the Cueva de los Guácharos National Natural Park, Colombia in the upper Magdalena Valley, he observed an unidentified orchid. (February 2018). The National Park is located on the western face of the Colombian Cordillera Oriental Andean Range (east of the central Andean cordillera). On a ridge SW of the Visitor Center, (1°36'28.8"N, 76°05'42.0"W [1.608, –76.095] elevation ± 7,168 feet [2,185 m] a.s.l.), the plant was found growing on a stump 3 feet (1 m) above the ground in an open stunted elfin montane forest, the understory dominated by ferns, mosses, and large lichens. Author Higgins has confirmed the plant as *Prosthechea pulchra*.

This observation extends the known range of *Pros. pulchra* by about 400 miles (740 km). It underscores the biogeographical contiguity of southern reaches of the Colombian Eastern Cordillera with the eastern Andean slope south of the equator.

— Wesley E. Higgins, Botanist, Lakes Park Botanical Garden, Fort Myers, Florida, https://orcid.org/0000-0003-2067-0880.

— Tadeusz J. Kawecki, Department of Ecology and Evolution, University of Lausanne, Switzerland, https://orcid.org/0000-0002-9244-1991.





[1] *Prosthechea pulchra* flower in Cueva de los Guacharos National Park.
[2] *Prosthechea pulchra* plant in situ.
[3] *Prosthechea pulchra* habitat with human for scale (Tadeusz Kawecki) in Cueva de los Guacharos National Park.

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