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ORCHIDS

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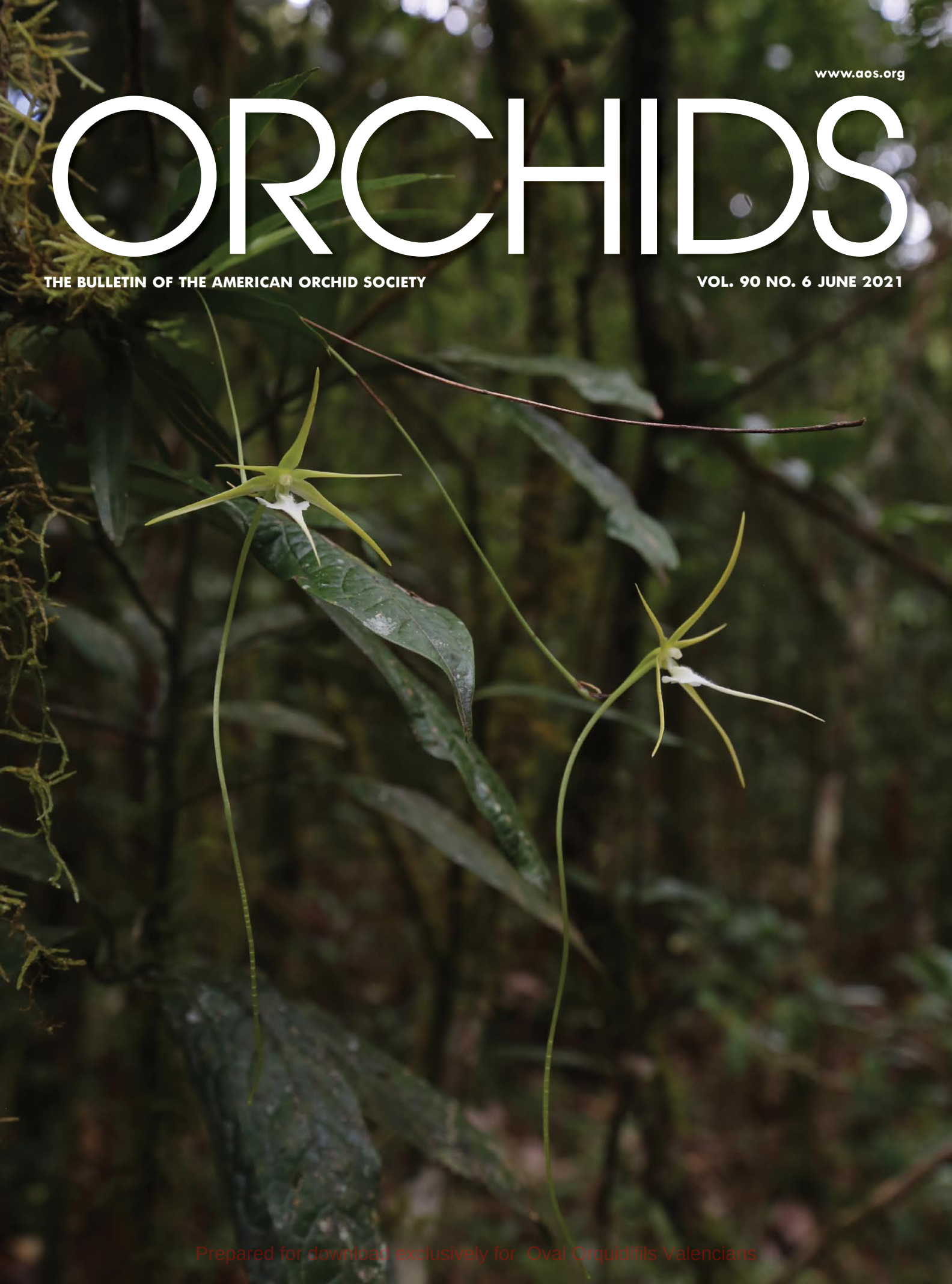

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The mission of the American Orchid Society is to promote and support the passion for orchids through education, conservation and research

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The American Orchid Society provides leadership in orchids

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The Bulletin of the American Orchid Society

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FRONT COVER

Aeranthes schlecteri is found in northern and northwestern Madagascar in deciduous and semi-deciduous forest, flowering in February and March. The large, striking flowers are carried at the end of a long, slender inflorescence two or three times longer than the leaves.

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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.

accipiter (ak-SIP-ih-ter)
Acineta (a-sin-EE-ta)
adefa (AY-def-a)
Aerangis (air-RANG-iss)
Aeranthes (air-RAN-thees)
alcedo (al-SEE-doe)
Amorphophallus (ay-more-foe-FAL-luss)
Angraecum (an-GRAY-kum)
anguilla (an-GWEE-la)
Anoectochilus (an-ek-toe-KYE-luss)
antennophora (an-ten-OFF-ore-a)
aphylla (ay-FILL-la)
Araucaria (ar-ow-KARE-ee-a)
Arethusa (air-eh-THOO-sa)
araucana (ar-ow-KAY-na)
Auxopus (AWKS-oh-puss)
avahi (AH-va-hee)
beccarii (beh-KAR-ee-eye)
bispiculata (bye-spik-yew-LAY-ta)
Bletia (BLEE-tee-a or BLAY-tee-a)
Boophis (BOH-oh-fiss)
Bulbophyllum (bulb-oh-FILL-lum)
bulbosa (bul-BOH-sa)
caerulea (ser-ROO-lee-a)
calceolus (kal-see-OH-lus)
californicum (kal-ih-FORE-nih-kum)
calophylla (kal-oh-FILL-a)
Calopogon (kal-oh-POH-gone)
Calypso (ka-LIP-so)
Calyptrochilus (ka-lip-troh-KYE-luss)
Catasetum (kat-a-SEE-tum)
Cattleya (KAT-lee-a)
caudata (kaw-DAY-ta)
caudatum (kaw-DAY-tum)
Cleistes (KLY-steez)
Cleistesiopsis (kly-steez-ee-OP-sis)
cochleata (koke-lee-AY-ta)
Corybas (KORE-ee-bas)
costaricensis (kos-ta-ree-KEN-sis)
Coua (KOO-a)
Crepidium (kreh-PID-ee-um)
cuthbertsonii (kuth-bert-SON-ee-eye)
Cycnoches (SIK-no-keez)
Dypsis (DIP-sis)
ecornuta (ee-kore-NYEW-ta)
elisabethae (ee-liz-a BEE-thee)
Encyclia (en-SIK-lee-a)
Erasanthe (air-a-SAN-thee)
Eufriesia (yew-FREEZ-ee-a)
Euglossa (yew-GLOS-sa)
Euglossine (yew-GLOS-seen)
Eulaema (yew-LEE-ma)
Eulemer (YEW-leh-mer)
Eulophiella (yew-lof-ee-ELL-a)
euphlebia (yew-FLAY-bee-a)
Euryceros (yure-ee-SER-oss)
fanjana (fan-JAY-na)
fibrosa (fye-BROH-sa)
filicornu (fill-ee-KORE-noo)
fimbriatus (fim-bree-AY-tus)
fowlieana (fow-lee-AY-na)
francesii (fran-SESS-ee-eye)
fulvus (FULL-vuss)
Gastrodia (gas-TROH-dee-a)
Gastrorchis (gast-RORE-kiss)
glomeratum (glom-er-AY-tum)
grandiflora (gran-dee-FLORE-a)
graveolens (grav-ee-OH-lenz)
Habenaria (hab-en-AIR-ee-a)
hamelinii (ham-el-IN-ee-eye)
Hemipilia (hem-ee-PEE-lee-a)
henrici (HEN-rik-ee)
Hexalectris (heks-a-LEK-triss)
horichiana (hore-ik-ee-AY-na)
Imerinaea (im-er-IN-ee-a)
isaloensis (ee-sa-loh-EN-sis)
Ispidina (iss-pih-DEE-na)
kalololohai (ka-loe-loe-HA-ee)
labiata (lahb-ee-AY-ta)
Laelia (LAY-lee-a)
laevifolium (lay-vih-FOLE-ee-um)
laniger (LAY-nih-ger)
leucophaea (lew-koh-FAY-a)
lewisae (LOO-iss-ee)
Lichenophylax (lye-ken-oh-FYE-laks)
Limodorum (lim-oh-DORE-um)
lobbii (LOB-ee-eye)
longicalcar (lon-jee-KAL-kar)
lowiana (low-ee-AY-na)
Lycaste (lye-KAS-tee)
madagascarica (mad-a-gas-KAR-ee-ka)
madagascariensis (mad-a-gas-kar-ee-EN-sis)
marmorata (mar-more-AY-ta)
Masdevallia (mas-deh-VAHL-ee-a)
mauritianum (maw-ree-tee-AY-num)
metallica (meh-TAL-lih-ka)
Microcoelia (mye-kroh-SEE-lee-a)
Microstylis (mye-kroh-STY-liss)
Miltoniopsis (mil-tone-ee-OP-sis)
morgani (MORE-gan-ee)
Myrmecophila (mir-meh-KOF-ee-la)
Nervilia (ner-VIL-ee-a)
Odontoglossum (oh-don-toe-GLOSS-sum)
odorata (oh-dore-AY-ta)
oppositifolia (op-poe-sit-ih-FOLE-ee-a)
orthopoda (ore-tho-POH-da)
parviflorum (par-vee-FLORE-um)
pentadactylon (pen-ta-DAK-till-on)
perpusillum (per-pew-SIL-lum)
Phaius (FYE-us)
Phalaenopsis (fail-en-OP-sis)
pheantha (fay-AN-tha)
Phragmipedium (frag-mih-PEED-ee-um)
Platanthera (plat-AN-ther-a)
plicata (plee-KAY-ta)
Ploiarium (plo-ee-AIR-ee-um)
Pogonia (poh-GON-ee-a)
polyphyllum (pol-ee-FILL-um)
prevostii (pree-VOS-tee-eye)
Prosthechea (pros-THECK-ee-a)
protectum (pro-TEK-tum)
Pteroglossa (ter-oh-GLOS-sa)
pulchella (pul-KEL-la)
punctatum (punk-TAY-tum)
purpurascens (per-per-AH-senz)
purpurata (per-per-AY-ta)
ramosa (ray-MOH-sa)
reginae (reh-JYE-nee)
rhynchoglossum (rink-oh-GLOS-sum)
roezlii (ROZE-lee-eye)
roseipalmata (roh-zee-pal-MAY-tum)
sanvicensis (san-vee-KEN-sis)
Sanzinia (san-ZEE-nee-a)
Satranala (sat-ran-AY-la)
schlecteri (SHLEK-ter-ee)
schmidtiana (shimd-tee-AY-na)
Schomburgkia (shom-BURG-kee-a)
seegeri (SEE-ger-ee)
sesquipedale (ses-kwi-ped-AY-lee)
Somacantha (soh-mah-KAN-tha)
Spathomorpha (spath-oh-MORE-fa)
spicata (spy-KAY-ta)
Spiranthes (spy-RAN-theez)
Stanhopea (stan-HOPE-a but most often heard mispronounced as stan-HOPE-ee-a)
Stanhopeastum (stan-hope-AST-rum)
Stanhopeinae (stan-hope-EE-nee)
suavis (SWA-viss)
sulawesiense (soo-la-wee-zee-EN-see)
tankervilleae (tank-er-VILL-ee)
titanum (tye-TAY-num)
treacherianum (tree-cher-ee-AY-num)
trianthophoros (try-an-THOF-ore-us)
tricolor (TRYE-kuhl-ur)
Triphora (TRYE-fore-a)
tuberculosa (too-ber-kew-LOH-sa)
tuberosus (too-ber-OH-sus)
Uroplatus (yew-roh-PLAY-tus)
Vanda (VAN-da)
Vanilla (van-ILL-la)
vexillaria (veks-ill-LAIR-ee-a)
vintsioides (vint-see-OY-deez)
varatraensis (var-at-tra-EN-sis)
wardii (WARD-ee-eye)
Xanthopan (ZAN-tho-pan)

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When	**June 08, 2021** 8:30pm EDT Tuesday	**June 17, 2021** 8:30pm EDT Thursday	**July 06, 2021** 8:30pm EDT Tuesday	**July 15, 2021** 8:30pm EDT Thursday
Topic	Show Trophy Subjective or Objective	Greenhouse Chat (Orchid Q&A) *Send in your Questions!*	Greenhouse Chat (Orchid Q&A) *Send in your Questions!*	Cyrtochilums: Dancing Ladies of the High Andes
Presenter	**Marc Burchette** Head of Biltmore Estate Orchid Collection	**Ron McHatton** Chief Education and Science Officer	**Ron McHatton** Chief Education and Science Officer	**Dr. Leslie Ee, ND** Associate Judge President of COC

REGISTRATION REQUIRED: http://www.aos.org/orchids/webinars.aspx

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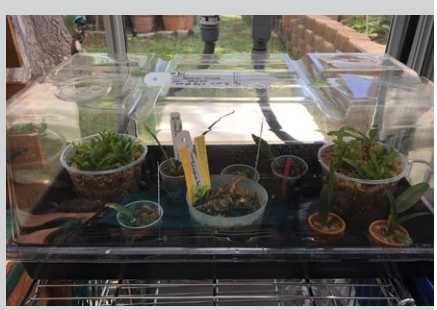
GREENHOUSE CHAT Webinars are indexed by topic for future viewing.

Send your Greenhouse Chat questions and photos to: greenhousechat@aos.org

Vegetable Starter Trays for Orchid Seedlings

I USE SEEDLING starter trays with humidity domes in the fall and spring for my vegetables. It did not occur to me to use them in the greenhouse for my orchids but when I deflasked my first orchid seedlings a couple of months ago, I needed a place, protected from the elements, to put the fragile seedlings. I keep a small amount of water in the tray and the humidity dome on top with both vents open. It sits on a shelf in my Arizona greenhouse in the southeast corner. After the first month, my seedlings doubled in size (the seedlings are pictured in the larger containers). So, I decided to move a few of my more fragile orchid divisions into the tray to see if I could encourage strength and growth. After another month, I noticed new growth and better color on the leaves (the divisions are pictured in the smaller pots).

I feed them every other week with MSU high–potassium fertilizer. Once a week, I leave the lid off for several hours just to increase the airflow and prevent mold or fungi from growing. If you grow indoors, this would be a great place



for orchids needing higher humidity or those that are more fragile. We often get small divisions or purchase orchids in 2-inch (5-cm) pots because they are cheaper. This tray and dome will keep them protected as they grow. It fits well under a counter and you can even mount a grow light under the counter if you are growing in a more shaded environment. These seedling starter trays with humidity domes cost under $10. Be sure to get the heavy weight tray so that it will not collapse when moved.

— Cindy Jepsen (email: cindyjepsen@cox.net).

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ORCHIDS … THEY ARE what the American Orchid Society is all about. One hundred years ago, a handful of orchid-loving people formed the AOS and 100 years later it is still here, only with thousands of people now. In those 100 years, many, many people have left an indelible mark, not only on the AOS, but also on others that have embraced what this society stands for today.

Year after year, the AOS has awarded many orchids and earning that badge of honor is what many of us strive to achieve. But consider everything involved in earning an award: caring for the plant, waiting for the bloom, finding the opportunity to exhibit the plant for consideration by a team of judges and the study the judges must do to ensure the orchid merits the award. The award-winning plant is photographed for posterity and proudly displayed in *Orchids* magazine. Every step along the way involves people. Folks dedicated to the culture of orchids, folks dedicated to the study of orchids, folks dedicated to the recordkeeping of orchids and, like a small town, we all know each other well.

This last year made it difficult to judge orchids and scores of opportunities to have orchids judged and be awarded were lost. It was a tragedy for many. But the drive to move forward and continue aspiring to grow that show-stopping orchid never waned. Judges were hungry to judge. The AOS wanted to award orchids. All the pieces of the puzzle were there waiting to fall into place. The old year ended and the new one began. With it, the pieces began falling into place. Events began to be organized, with organizers urging orchid enthusiasts to bring their orchids in for judging. As a result, many orchids were judged and many were awarded. Judging orchids is not where it was before the pandemic, but it certainly is picking up speed.

So, what does this all mean? It means things are slowly but surely getting back to normal. The normal we know today does include masks and social distancing, but it does not mean we sit on the sidelines watching life go by. It means we go out to our gardens to work on our collections and check with the AOS to see where and when judgings will take place. It means judges, who are an amazing group of people, can do what they love to do. We can leave behind all the politics and get to the business at hand.

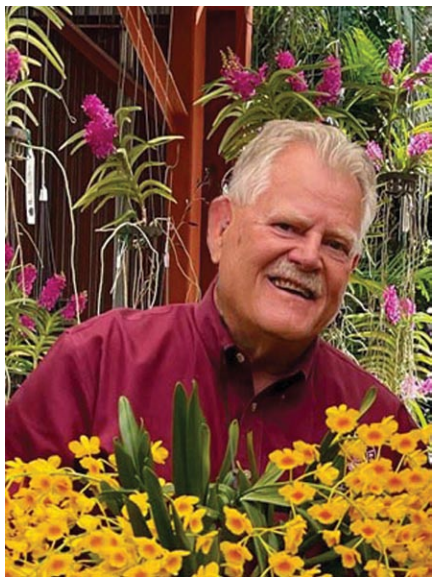
I have been very fortunate to participate in a handful of judgings this year and, I must say, the enthusiasm is so thick among the judges and orchidists that you can cut it with a knife. To begin with, the orchidists, who work tirelessly on their collections, are looking for that justification for their work. They beam with pride when their orchids are selected for consideration. To have their orchid awarded by the most prestigious orchid society in the world is the highest compliment. To earn that medal of honor that no one can ever take away from them is the ultimate prize.

Fast forward to the judges. The personal sacrifices they have made to become judges is incredible. It takes several years, so when they reach that pinnacle in their career, more than anything, they want to be part of the team that considers these top specimens for an award. Judges deserve a lot of kudos. They are volunteers that may have to take time away from their families and travel to many different locations to do the job asked of them. But seeing that once-in-a-lifetime orchid has no description. At that point, everyone is in awe.

In the coming months, as more and more pieces continue falling into place, cultivating will become second nature and judges will all still be there to consider and appreciate the work of the cultivators. We all certainly follow whatever guidelines happen to be around at the time, but our gut instincts will kick in and that familiarity will transport us back to the way things used to be. Life will be good again.

The fervor for the upcoming American Orchid Society Centennial Celebration is close to peaking. There is so much happening for this prestigious event, I cannot even begin to count it all. The committees are working almost around the clock to accomplish their goals and it is evident they are succeeding. Having the right people in the right place makes a world of difference. At this time, I am pleased to report on the official Centennial poster. It is a magnificent work of art, in watercolor, created by the renowned Angela Mirro, a botanical artist with remarkable talents. All the posters that were available for presale were sold in two days!

In addition, registered guests will have an opportunity to let their hair down and mingle with other AOS members at the meet-n-greet. Add to that the expert speakers who will share their incredible knowledge of orchids in America and conservation projects throughout the world. We will have the auction, the East Everglades show and sale that includes judging and, of course, the Centennial Gala Celebration, where a good time is guaranteed to be had by all.



Bob Fuchs admiring a magnificent *Dendrobium chrysotoxum* specimen belonging to Christa Collins.

We can speak about the Centennial at length at any time, but I would be remiss in not mentioning that the proceeds from all of this will go toward orchid conservation. As I started my message by noting that we are all here for orchids, any time the world loses a specimen of any kind, it is a calamity. However, in the world of orchids, there are so many people that recognize the priceless value of keeping these incredible plants alive and well for future generations that they devote much of their time and energy to this. These are the unsung heroes of the orchid world and deserve our admiration and cooperation. With the ease of being connected electronically on a global platform, it is easy to support conservation projects worldwide in addition to local efforts.

The Centennial will be an amazing event, and your participation will aid in this endeavor. Tickets for the gala are selling fast, so do not hesitate. Get yours today. Registration for the other events of the fall 2021 Members' Meeting can be found on the AOS website. There you will find more information on the other events as well. The fall 2021 Member's Meeting will be here before we know it, so let us all be proactive and sign our John Hancock for the event. I am looking forward to seeing many of you there. It will be an event we will not soon forget!

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

Recognition from the Spring Meeting

By Jean Hollebone

THE AMERICAN ORCHID Society lives and thrives on the work completed by its many dedicated volunteers. Nominations to recognize outstanding achievement and/or volunteerism may be submitted by any member to the Awards Task Force for consideration. The Task Force puts the nominations through a preliminary screening to determine if the nominations have sufficient information for evaluation and meet the criteria for the award sought. The AOS Board of Trustees then considers the nominations, and may approve them and announce the award recipients at the semiannual spring and fall AOS Members Meetings. At the recent March 2021 meeting, the Board was pleased to announce three individual awards of distinction and one society service award.

MARY GOO

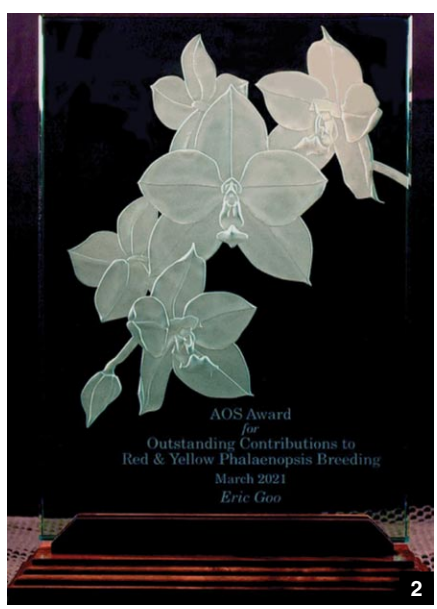
1

AOS MEDAL FOR EXCELLENCE IN HYBRIDIZING TO ERIC GOO Goo is an unusual nominee, as he is a hobbyist who works in the arduous climate of Phoenix, Arizona, where he specializes in *Phalaenopsis*. His growing facilities consist of a single 450-square-foot (42 sq m) greenhouse. He is challenged simply showing his work in Arizona (only two shows a year; otherwise, monthly judging involves a road trip of 1,000 miles [1,609 km]).

Goo made his first cross in 1987, registered as *Phalaenopsis* Phoenix Sunrise in 1991, and was soon making many crosses. His first interest was in breeding yellows, but as time went on, he started breeding reds and oranges. Some of the parents Eric has used over the years are for yellows — Deventeriana, Sogo Lawrence, Hausermann's Goldcup and Arizona Amber; for oranges, which Eric hypothesized could be created by breeding a yellow with either a red or a purple: *Phalaenopsis venosa*, Red Devil, Mary Lillian Taylor (which Eric created), Zuma Garnet, Summer Joy, Hausermann's Goldcup, Red Elf and Spirit House. He has used Zuma Garnet (which was one of the first plants Eric purchased to use in his red breeding program), Andalusia, Tabasco Tex, Jim, Red Elf, Red Devil, Malibu Imp, Inferno and Zuma Garnet to develop reds.

Goo has made 116 hybrids, 56 of which have been awarded for a total of 92 AOS awards — a spectacular achievement. Such a high percentage (nearly 50%) would be considered the pinnacle of success for any hybridizer. In addition, 34 (37%) hybrids have received quality Awards of Merit (AMs).

Goo also grows other orchids, which have also been awarded, bringing his total awards to an amazing 163 quality and cultural awards. This includes eight Awards of Quality (12 plants are required to be presented simultaneously and one must receive a quality award) to *Phalaenopsis* Arizona Amber, *Phalaenopsis* Mary Tauscher-Goo, *Phalaenopsis* Ben Goo, *Phalaenopsis* Ruth Tauscher, *Phalaenopsis* Memoria Sam Goo, *Phalaenopsis* Arizona Princess, *Phalaenopsis* Phoenix Canary and *Phalaenopsis* Peggy Tauscher. In addition to the AQs, Goo's breeding produced unique strains of hybrids that were registered by others. These unique strains produced the following AQs: *Phalaenopsis* An Tai Spot (Goo's unique strain received the AQ and all six quality awards to the cross so far), and *Phalaenopsis* Summer Garnet (his unique strain received the AQ, and four of the five quality awards given to the cross). Goo's hybrid *Phalaenopsis* Sweet Shadow 'Phoenix Gold' AM/AOS was also the recipient of the 2018 prestigious Herb Hager Award. His hybrid, *Phalaenopsis* Long Trieu 'Phoenix' AM/AOS, was



LINDA MAYSE

2

[1] Eric Goo posing with one of his award-winning Phalaenopsis. Inset photograph by Eric Goo is *Phalaenopsis* Long Trieu 'Phoenix' AM/AOS, from a crossing of *Phalaenopsis* (Dragon Tree Eagle × Sweet Trinity) registered by Eric in 2018. Flowers are about 2 ¼ × 2 ½ inch (5.6 × 6.3 cm) natural spread.

[2] The trophy created by Nature Glass-works features one of Eric's awarded plants.

the 2020 Facebook People's Choice Champion.

These are remarkable accomplishments and deserve recognition by the American Orchid Society. The Board offers congratulations to Eric Goo for his outstanding achievement and were pleased to award him the AOS Medal for Excellence in Hybridizing at the spring AOS Members Meeting.

AOS SILVER MEDAL TO JEAN ALLEN-IKESON The Board was pleased to award Jean Allen-Ikeson the AOS Silver Medal, which recognizes a specific, singular exceptional contribution of outstanding service to a major project of the AOS and/or orchid community. *Orchids* magazine is a major source of information for AOS members, containing over time just about everything one could possibly want to know about orchids. Each new monthly magazine is eagerly anticipated and read by an avid membership. Each issue evokes a variety of emotions; it excites, educates, informs, intrigues, titillates and creates lust, envy and hope as readers pour over the latest presentation of engrossing articles.

As chair of the Editorial Board, Allen-Ikeson spends much time, in consultation with the Editor and the Editorial Board, planning the contents of *Orchids*, developing a variety of subjects that would appeal to readers, and then approaching authors to write articles to share their knowledge with AOS members. This can also entail occasional arm-twisting to receive promised articles on time, editing and occasionally rewrites of material received. Allen-Ikeson's unflagging support in developing concepts, lining up contributors, and managing the editing has been a great help to Ron McHatton, the Editor, in producing an often nationally awarded publication. An associated major contribution has been the broadening of the scope and contents of the annual supplements to *Orchids* magazine on specific genera such as cattleyas, cymbidiums, oncidiums, vandas, etc., thus raising their profile. Each has been received with excellent reviews and helps fill the gap created by the lack of books published on the major genera in the last 10 years.

If there is one word to describe Allen-Ikeson, it is indefatigable. Concerned that magazine archives were not readily available to members over the spectrum of AOS history and recognizing their importance to students in the judging program or anyone researching orchids, she initiated and vigorously pursued a campaign to complete the digital conversion and indexing of the magazine archives (https://www.aos.org/about-us/orchids-magazine.aspx). Thanks to her support and drive, this project and more recently a companion project on the scientific journal *Lindleyana* have been completed and implemented.


3 MARGARET BAIRD


4 JEN SCHMIDT

[3] Jean Allen-Ikeson with *Cattleya purpurata*.
[4] Barb Schmidt

At her local judging center, Allen-Ikeson has tirelessly supported and cajoled student/associate judges into becoming the best judges they can be. The extensive educational aids that she has developed over the years and put to use in the Toronto Judging Center are now the base on which Jean is building the National Education program for new judges as well as the continuing education for all. With her team and under the auspices of the Judging Committee, she has been the major force in developing a new series of training webinars to advance student progress more rapidly. The newly posted Guidelines for Education Coordinators (https://www.aos.org/awards-and-judging/judging-education.aspx) for judging provides a common standard for education. Allen-Ikeson is committed to educating judges to the highest level and to the uniformity of the judging process across all the AOS judging Centers.

For these reasons the Board was pleased to honor Allen-Ikeson for her many achievements in support of the AOS.

CERTIFICATE OF MERITORIOUS ACHIEVEMENT IN ORCHID EDUCATION TO BARBARA SCHMIDT The Board is pleased to recognize Barbara Schmidt with the Certificate of Meritorious Achievement in Orchid Education. In her three years participating on the Education Committee, Schmidt has brought superb innovative, comprehensive education projects to the committee. For example, she initiated and managed the Junior Orchid Show in Philadelphia, which highlighted youth participation in the understanding, care and love of orchids. Over 30 young people experienced the joy of watching an orchid seedling bud open for the first time after wondering for weeks what it might look like. Then Schmidt created an opportunity for them to display their orchids and have them judged in the Philadelphia Flower Show. She gave those young people an exciting experience that will last a lifetime.

Schmidt has exemplified the volunteer spirit in all phases of orchid education. She has served on multiple AOS Committees, is Vice Chair of the Education Committee and has recently joined the AOS Board of Trustees. As a teacher by profession, she has brought an easygoing presentation spirit and boundless energy to everything she does. From creating the student orchid contest in Philadelphia to teaching orchid classes at multiple sites and events, to writing books and magazine articles, Schmidt is an ambassador for orchid education. Her innovative project to develop QR codes for all AOS culture sheets has made the resources more widely available to anyone, anywhere, with a smart phone and a need for orchid information.

These are just some of the highlights of her considerable contributions. Schmidt is a creative and talented educator who deserves this prestigious award. For these

many reasons, the Board was pleased to award Barbara Schmidt the Certificate of Meritorious Achievement in Orchid Education.

DISTINGUISHED AFFILIATED SOCIETIES SERVICE AWARD TO EAST EVERGLADES ORCHID SOCIETY This year the Affiliated Societies Committee of the AOS is pleased to announce that the East Everglades Orchid Society has been chosen to receive the Distinguished Affiliated Societies Service Award. Over many years, they have been strong supporters of the American Orchid Society, as exemplified by providing annual support to their local judging center, the West Palm Beach Judging Center, by supporting various AOS Outreach Judging events and by solely sponsoring the successful 2019 fall Members Meeting held in Homestead, Florida. They have often sponsored meals for judges at various events, and this year are sponsoring box lunches for the judges at the 2021 fall Members Meeting during judging. By serving and underwriting these many orchid-related events, the East Everglades Orchid Society exemplifies the best of volunteerism in the AOS. The affiliated Society Committee and the Board congratulate and thank the Society for their generous and appreciated efforts.

FUTURE AWARDS Is there a member you feel deserves recognition for outstanding service? Members are invited to make submissions to the Awards Task Force for awards to be presented at the 100th Anniversary Celebration banquet. The listing of the awards and the information required to support a nomination are available in the awards policy (https://www.aos.org/about-us/policies-and-procedures.aspx). Deadline for submissions is July 15, 2021 (as it takes time to prepare the presentation awards), and submissions should be directed to the chair of the Awards Task Force, Jean Hollebone (jean@hollebone.ca). Nominations for the DASSA award will be reviewed by the Affiliated Societies Committee and should be sent to affiliated_societies_committee@aos.org

— Since 2011, Dr. Jean Hollebone has held a number of positions on the Society's Board, including trustee, secretary and Vice President. Currently, she chairs both the Awards Task Force and Governance Committee. She is an associate judge in the Toronto Judging Center and she grows orchids in Ottawa, Canada.

IX International Conference on Orchid Conservation "Soroa 2022"

THE SOROA BOTANICAL and Orchid Garden and the University of Artemisa announce the IX International Conference on Orchid Conservation "Soroa -2021," which will take place February 22–25, 2022 (NEW DATE) at our facilities.
The Symposium will feature scientific panels addressing such topics such as:

- In situ and ex situ Conservation
- Ecology and Population Dynamics
- Systematic
- Invasive Species
- Biotechnology
- Environmental Education

The Organizing Committee consists of:

- Dr. Carlos E. Suárez Ponciano. Honorary President
- Ms.C. José Lázaro Bocourt Vigil, President of the Organizing Committee (bocourt@upr.edu.cu)
- Dr. Elaine González Hernández, Vice-president of the Organizing Committee (egh75@upr.edu.cu)
- Dr. Ernesto Mujica Benítez, Scientific Secretary of the Organizing Committee (emujica@upr.edu.cu)
- Ms. C. Esther Liliam Santa Cruz Cabrera, Executive Secretary of the Organizing Committee (lilyscruz@ecovida.cu)

For more information on the Conference, contact Dr. Lawrence W. Zettler (lwzettle@ic.edu) or Dr. Ernesto Mujica Benítez Scientific Secretary (emujica@upr.edu.cu).

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Naples Orchid Society

June: The Month of Trees

By Thomas Mirenda

WHEN I FIRST arrived here on Hawaii Island, I was asked to give a brief, crisp and fun talk about orchids to a wonderful group — the Hawaii Island Palm Society (HIPS; https://www.hawaiiislandpalmsociety.com/). Thinking I would evoke a strong reaction from the serious palm enthusiasts, I stated in my presentation that I "loved palms because they make terrific orchid mounts!" only to be told that their members all love orchids because they make terrific palm jewelry! Touché! Indeed, although orchids may rarely grow on palms in nature, they do seem to grow, thrive and luxuriate when planted on them, especially here on the Big Island.

Thomas Mirenda

But my point here is a larger one. Although certainly there are some lovely terrestrial and lithophytic orchids, the overwhelming majority that we grow are epiphytes. There would be far fewer orchids if we did not have trees and the multitude of ecological niches they provide. Forests are integral to the survival of orchids in the wild and, frankly, to the survival of the planet and all its denizens. Let us take a moment to praise and fully appreciate trees for everything they give us and how important they are, not only for our beloved orchids, but for us all.

GREG ALLIKAS

Most of the orchids that we all grow are epiphytes in nature and often grow in association with an array of other epiphytic plants species. This *Cattleya* species has colonized a branch also host to several different bromeliads.

LEAFY LODGINGS Even in the northernmost deciduous forests, the shady canopy of leaves has returned this month. Most epiphytic orchids grow under this canopy and is the reason why we need to supply sufficient shade to so many orchid species and their hybrids. Although many orchids (such as catasetums and certain dendrobiums and lycastes) are deciduous during their dormant periods when rain is scarce, most of those genera are now rebounding with perky new growths and copious roots. Many growers from temperate climates find that orchids do better outside as ambient temperatures increase. Be sure to choose an area well off the ground to avoid infestations of creepy crawlers and pathogenic fungi. Select a spot with excellent natural air movement and dapped light from the tree canopy for optimum growth and plant happiness.

BARKING UP THE RIGHT TREE June is still a prime month for repotting your collection though it may be getting late for some orchids that are further along. Although bark is the medium preferred by many, it is not the only way to grow orchids. With modified watering and fertilizing, orchids can be grown in a wide variety of media including sphagnum moss, tree-fern fiber, volcanic cinders and ceramic aggregates, as well as on assorted mounts and using many other approaches. Terrestrial orchids have an even more varied array of ingredients for their planting mixes. Only you can do the research necessary to provide the best possible planting mix for the varied individuals in your collection.

TREED AND TRUE Now that we are in the prime growing season with the sun high in the sky and longer day lengths, most of your orchids are focused on producing vegetative growth, although notable exceptions include myrmecophilas and laelias once included in the genus *Schomburgkia*, as well as encyclias that produce extensive inflorescences during the long days of summer. So now is the time to feed perhaps a little more heavily than you might at other times of the year. Although there are a multitude of different fertilizers on the market, it is impossible to make a recommendation for every orchid, every watering regimen and every grower in every region. One thing I will say is that a fertilizer that has nitrate-nitrogen rather than urea-nitrogen is more likely to induce stronger growth in your plants. Avoid feeding orchids with urea-based fertilizers that require soil organisms to break them down to a form usable by epiphytes.

THE FOREST FOR THE TREES June may be the finest month to see wild terrestrial orchids in bloom throughout much of the Northern Hemisphere. Indeed, if you have planted terrestrial orchids such as cypripediums, bletillas and calanthes in your garden, depending on your latitude and elevation, they should be approaching readiness for their glorious annual show. Although orchids will always remain the focus of our devotion, we should never forget the other elements that support the success of orchids in the wild: pollinators, mycorrhizae and, of course, the trees in their forest homes. It is our responsibility as stewards of the orchid world to ensure the natural habitats where orchids evolved continue to thrive for future generations. Generations of both the orchids themselves and our descendants who will surely love them as much in the future as we do today.

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

Vandaceous Orchids

Supplement to volume 90, Orchids magazine

As in the past, our annual supplement is largely underwritten by donations from our members. Even a small donation enables us to continue producing these in-depth special issues on specific groups of orchids.

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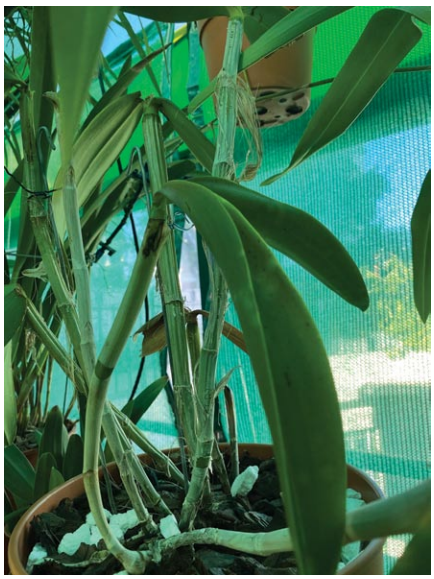

QUESTION

What causes the new leaves of *Cattleya amethystoglossa* and some other bifoliates to be soft, floppy, and hang down like a rabbit's ears? Is this characteristic of these cattleyas or a cultural problem?

ANSWER

It is appears to be related to light levels even though the amount of light seems to be fine for other cattleyas and also does not prevent these from flowering. This group of cattleyas has evolved to grow in exceptionally bright locations and often in full sun. In this respect, they behave like the laelias that were once classified as schomburgkias. Your plant gets enough light to grow vigorously and to even flower but not enough to get the foliage really firm and hard. The problem is exacerbated by the fact that these plants are often putting up growth in the winter when light levels are naturally lower. We see this in other bifoliates such as *guttata* and *trigrina* and their hybrids. I have the same issue with an *Rlc*. Tatarown (Memoria Helen Brown × *C. guttata*). Growths are strong, upright and flower beautifully but one or both of the new leaves will droop, even when the light level is high enough to create a purplish wash to the foliage and sheath.

By the way, this is not the same problem as the tall growth bending in the upper half (and in some cases actually making a hairpin turn). I think this bent growth bending has a strong genetic component much like the twisted foliage of breeding lines such as *Cattlianthe* Jewel Box. I have a *Cattlianthe Portia* where growths bend about three-quarters of the way up the pseudobulb, but the leaves are never floppy.

QUESTION

I have trouble blooming my cattleya. I get sheaths but no buds. What can I do to improve my blooming chances?

ANSWER

There are several factors that could be creating your problem. First, Cattleyas need as much light as you can give them short of burning the plants. If light levels are not high enough, especially if the plant is actively growing in the winter, it may not flower. In this particular case, you may not be giving the plant a long enough night so the plant misses the trigger that initiates flowering. In phalenopsis blooming is determined by temperature, and nurseries take advantage of this to force blooming for the pot plant industry year-round. On the other hand most cattleyas barely respond to temperature when it comes to blooming. Temperature will slow down or speed up bud development, but does not initiate them. A change in day-night lengths do, however. Winter-flowering cattleya are triggered to flower by the shorter days of fall and late winter-early spring blooming cattleyas react to a night length that stops getting shorter and then begins to lengthen. The cattleya cut-flower industry was based on a number of hybrids whose flowering could be so controlled. *Cattleya* Trimos and *Rlc*. Betty Ford can be flowered for Mother's Day or in the fall, depending on day length control.

This sensitivity to day-night length can become an issue for hobby growers who summer plants out-of-doors during the warmer parts of the year and bring them inside for the winter. Unless you are careful to mimic the shorter days of fall and then lengthening days as winter comes to a close, your plants may not get the trigger they need and will either flower early or, worse yet, not at all. Light-sensitive cattleyas can also be thrown off by extra sources of light in our homes. If you grow your plants in a room that is occupied late into the night, the lights we live by may be enough to stop your cattleyas from flowering.

QUESTION

Should all three of these oncidiums be repotted? I have had the largest since 2019, and the two others I got in 2020.

ANSWER

Let us start with the big one which looks like it has an inflorescence. Unless it is an emergency, oncidiums should not be potted when developing an inflorescence or flowering. This is because oncidiums are not actively growing roots at this time. The plant will just sit and pull water out of the existing pseudobulbs, causing them to shrivel and it may actually shorten the life of the inflorescence. Instead, wait for the new growths to start producing new roots. This also does not happen when the new growth starts but much later in the development. In some cases, this is months after a new growth begins. Watch the base of the new growth for the first signs of roots and this is your signal to repot!

The smaller plants do not look like they need to be repotted unless the medium is breaking down. When you do repot, chose pots that are only big enough for two new growths and tailor the medium to the pot size. Oncidiums generally have fine root systems so you want a medium that fills in and around the roots easily. For plants in less that 5-inch (12.5-cm) pots a fine fir-bark based medium would work well. For larger pots, you can substitute medium bark for some of the fine material to help keep the mix open. You want to work toward a medium that dries out in about 3–5 day cycles..

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

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- Exclusive Meet & Greet Reception - Wednesday, October 27th @ 6:00 PM
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GENUS OF THE MONTH

Aeranthes and the Green-Eyed Monster

By Thomas Mirenda

JEALOUSY OFTEN PLAYS a role in the plants I choose to collect, especially in these days of social media postings and Zoom conferences. Sometimes I see things truly covet-worthy among these cyber-beauties that I simply cannot live without. I have unquestionably developed such a fixation and obsession over this outstanding genus. Bearing green, hyaline flowers often in great profusion from often lengthy thread-like scapes, the genus *Aeranthes* offers us plants and flowers significantly distinctive from any other. Still rare in cultivation, only a very few species are offered by nurseries, and only nurseries that specialize in angraecoid oddities, such as Botanica Limited, or Afri Orchids in South Africa, are likely to offer any of these astonishing beauties. Rare as they may be, they are worth seeking out for the elegance and wonder of their flowers.

Thomas Mirenda

There are currently 44 species and two varieties, with more likely to be discovered, mostly in Madagascar but a few radiating to nearby islands such as the Comoros and Mascarenes, as well as two species making landfall on the African mainland, there is a great deal of endemism in the genus. Plants are almost always epiphytes with a monopodial, vandaceous growth habit. Roots are unusual in that they are clasping and finely textured, unlike most other angraecoids with their fleshy roots. Even so, as they mature, they tend to make multiple clumping basal growths, each of which are capable of producing superb, pendulous inflorescences; in certain species, these grow up to 4 feet (1.2 m) in length! These scapes should never be removed as they can bloom both successively and repeatedly, even when seemingly brown and lifeless. There is significant floral diversity among the many species: some are large, some miniature, some with one flower open at a time and some multifloral. Colors are frequently in various shades of green, some yellowish, occasionally white, but almost all of them are magically translucent, extremely attractive and ultimately appealing, They prefer shady, humid and moist conditions and uniform fertilization year round, as their habitats tend to be wet and rainy much of the year. The plants are best grown in baskets with an epiphytic mix to accommodate those long, pendent inflorescences.

Although still undocumented, there are some intriguing theories regarding *Aeranthes* species and their pollinators. Most species bear a nectary spur like almost all other angraecoid flowers, but these are not long nectaries such as those found on *Angraecum sesquipedale* or *Angraecum longicalcar* that are known to be pandering to long-tongued hawkmoths. Instead, their spurs are short and club-like, indicating a very different pollination syndrome. The stems of the long thread-like scapes are practically invisible, so the flowers actually flutter in the breeze, seemingly unattached to any plant. Indeed, the etymology of the genus, from the Greek αέρα ("air") and άνθος ("anthos," or flower") literally means "flowers in the air." In my view, a most appropriate and enchantingly descriptive moniker. Among the theories proposed for their unique plant habit is that as the flowers hover in the Madagascan forest, they are perceived as nocturnal insect snacks by hungry bats that can detect them through echolocation. This would be an unprecedented type of orchid deception. It would be an outstanding project for some graduate student to document this, if indeed it is true.

Although there is certainly not enough space to review all the species here, there are a few that stand out and should be in your collection if you can find them, including *Aeranthes antennophora*, *Aeranthes grandiflora* and *Aeranthes caudata*, which is a reasonably common plant in the area surrounding Madagascar's capital, Antananarivo. These species do not have an exceptional flower count but instead bear rather large, spidery flowers with acuminate tips on the floral segments, a flower shape that I find quite attractive. *Aeranthes orthopoda* and *Aeranthes ramosa* have green flowers with a rounder, stellate form, and often outstanding lengthy inflorescences with the potential to make dozens of flowers at a time, forming a curtain of magical glistening stars.

One species that I have never seen in person, but am obsessing over from images, is *Aeranthes schlechteri* (see the front cover). Only known from 15 specimens, this miniature plant with shorter scapes bearing single white, spidery blooms of astonishing beauty, is apparently highly threatened due to

JEAN-MICHEL HEROUET

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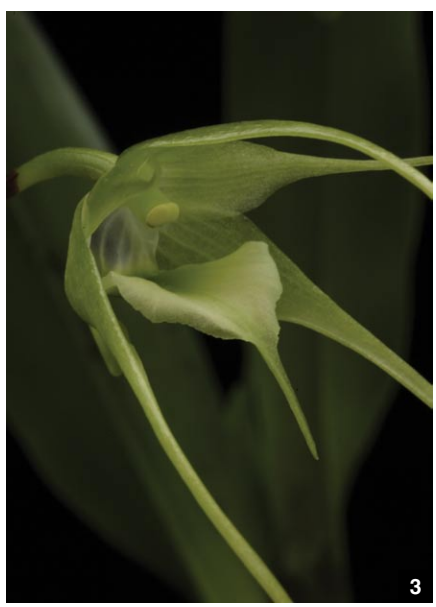

JOHAN HERMANS

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[1] *Aeranthes grandiflora*, Madagascar, in cultivation. Photograph by Johan Hermans.

[2] *Aeranthes antennophora* photographed in situ in Madagascar.

[3] *Aeranthes caudata*, Madagascar, in cultivation. This species is also known by the synonym *Aeranthes imerinensis*.

JOHAN HERMANS

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disappearing habitat from forest clearing for mining projects and slash-and-burn subsistence agriculture. It would be tragic to think these spectacular plants and birthright of the Malagasy people could be completely lost due to these pressures. It is one of the reasons that last year AOS conservation supported two reserves in northeastern Madagascar. I hope to visit these reserves as soon as the pandemic allows. Maybe I will see this outstanding species, and a few others, in person. I will bring a camera trap, too, and see if verification of bat pollination can be documented. Wish me luck.

No discussion of *Aeranthes* would be complete with showing the recently segregated species *Erasanthe henrici*. With extraordinary, large and spectacular flowers, this may be one of the most coveted species in horticulture, with very few appearing in the trade. Quite different from the *Aeranthes* species previously discussed, *Erasanthe henrici,* a larger plant with a scape of several large — almost monstrous — flowers that have that WOW factor, is the only species in its genus so far known. Seeing this rare species in bloom in person will get even the most ardent of plant lovers extremely jealous, just as I am! Beware orchid lovers! There is no going back to your regular life after seeing these green-eyed monsters in bloom.

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

JOHAN HERMANS

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[4] Described by Schlechter in 1925 as *Aeranthes henrici* and moved to the monotypic genus *Erasanthe* in 2007 by Cribb, Hermans and Roberts, the species remains the only recognized species. There are two recognized subspecies *henrici* subsp. *henrici* and subsp. *isaloensis*, the latter distinguished by its triangular, acute floral bracts, smaller flowers, shorter pedicel, ovary and spur, differently shaped column and details of the lip crest.

[5] *Aeranthes ramosa* photographed in situ in eastern Madagascar. Inflorescences can reach several feet (a meter or more) in length.

Judging Miltoniopsis

By Mark Whelan

WHEN JUDGES SIT down to judge *Miltoniopsis*, the task at hand seems well-known and understood. The *Miltoniopsis* scale is quickly chosen and the standards of fullness, roundness and flatness along with the factors for color, symmetry and presentation are evaluated. Descriptions are written for awarded flowers with a sense of completeness and correctness. Documents are signed and delivered, and the judging process is considered to have been successful.

However, the process sometimes runs amuck. Because of a lack of understanding of the nature of color composition, mask characteristics, and lip markings for *Miltoniopsis*, sometimes flowers are not evaluated or scored correctly. Descriptions lack full notations for flower parts and patterns. This may result in awards that do not fully recognize and appreciate the presented flowers. This article provides a clearer understanding of the composition of *Miltoniopsis* flowers so that the flowers can be fully recognized and described.

There are three main species of *Miltoniopsis* that have traditionally been used to create the hybrids seen today. All from Colombia, they are *Miltoniopsis vexillaria*, *Miltoniopsis roezlii* and *Miltoniopsis phalaenopsis* (Rosenfeld 2019). Ivan Komoda, an experienced, well-known and respected *Miltoniopsis* grower and breeder, believes that the base color of these species is either white or yellow (Komoda, pers. comm.). This characteristic has been carried forward to their progeny. He feels that all reds, pinks, lavenders and pastels are overlays on top of white or yellow. Descriptions are often written with overlays identified as base colors. Even with white showing through in some areas, the overlay is often identified as the base color. Red, pink, lavender, or pastel — full or partial overlays — appear in both species and hybrids. Breeders have worked hard to reinforce these color characteristics through successive line-breeding efforts, resulting in solid or almost-solid overlays.

In the early days of hybridizing *Miltoniopsis*, line breeding the red down and across the lip in successive hybrids started with *Miltoniopsis* Bleuana, resulting in solid reds that originated from the red in *Mps. roezlii* (Liebman 1982). Whether solid or partial, the color


1 KENNETH JACOBSEN


2 GREG ALLIKAS


3 JUAN CARLOS


4 GLEN BARFIELD


5 NICOLAS GOMEZ


6 MAURICE MARIETTI

combinations should be crisp, distinct and pleasing to the eye (Komoda, pers. comm.). To recognize the nature of the species at hand and the breeder's work fully, it is suggested that the base color used for judging be either white or yellow, and the other colors identified as overlays or blushes (Komoda, pers. comm.).

The *Miltoniopsis* scale recognizes the dominant nature of the lip on the flower. The lip contributes nine points or 30% to flower form and color of flower to the judging score for flower quality. Lips should be full, flat, and round. The roundness of hybrid lips is a trait inherited from *Mps. roezlii* (Komoda, pers. comm.). Color should be cohesive and consistent as well as a pleasing shade.

What about the mask? Is it part of the lip? What are desirable mask characteristics? Scoring the mask is part of scoring the lip. The mask is not an overlay and is a distinct part of the flower (Komoda, pers. comm.). Some flowers do not have masks. Masks come in different colors and shapes, and there are separate genes that determine the mask color (Komoda, pers. comm.). Mask colors include yellows, oranges and reds (some deep enough to be called black). Darker and intense mask colors should increase color scores for the lip (Komoda, pers. comm.).

There are many different mask shapes. Discs, triangular shapes, bat shapes and butterflies are a few. The shape of the mask should be included in the description. The most desirable shape is the butterfly shape (Komoda, pers. comm.). This shape was derived from *Miltoniopsis vexillaria* 'GD Owen', a famous clone (Komoda, pers. comm.). Whatever the shape of the mask, it should allow the flower to open fully and be flat. An impressive mask should always increase the score for the lip. The color and shape of the mask should be judged for the value of its inherent and intrinsic qualities as well as its contribution to the presentation of the flower. Masks are often described as overlays in award descriptions. They should be referred to as masks stating the color, descriptive size and shape.

Waterfalls — what are they and what do we do with these intriguing structures? They do not appear on all *Miltoniopsis* but when they do, they catch our eye and grab our attention. They are extensions of the mask (Komoda, pers. comm.). Larger and bolder waterfalls are derived from *Mps. phalaenopsis* (Komoda, pers. comm.). Finer waterfall patterns have a different genetic origin, most likely from older vexillarias that had thin waterfall patterns (Komoda, pers. comm.).

A typical waterfall does not exist. The patterns can be long or short, solid or broken, or dotted or a raindrop pattern,


MAURICE MARIETTI 7


ALEXEY TETYAKOV 9


JAMES MCCULLOCH 10


BRYON RINKE 8

[1] *Milt.* Don Egger 'Snow Ruby' FCC/AOS; exhibitor: Golden Gate Orchids; white with rose-purple, full, round lip and a dark-purple (black), butterfly-shaped mask, no waterfall.

[2] *Milt.* Bruce Cobbledick 'Camano Joy' FCC/AOS; exhibitor: Larry Cox; white with raspberry red, large, full lip and a dark-red butterfly mask, no waterfall.

[3] *Milt.* Rosicler 'Natalia' AM/AOS; exhibitor: Orquideas Katia; pleasing combination of colors, pink blush on white with a yellow, butterfly-shaped mask, fine-lined, burgundy waterfall

[4] *Milt.* Rene Komoda 'Aka's Acquisition AM/AOS; exhibitor: Art Buckman; white, pink blush, large lip, yellow butterfly-shaped mask, no waterfall

[5] *Milt.* Memoria Macias Judith 'Manizales' AM/AOS; exhibitor: David Manzur; White with deep-rose blush, disc-shaped mask; small, solid-lined, dark-red waterfall.

[6] *Milt.* David Rosenberg 'Bob's Lucky Visit' HCC/AOS; exhibitor: David and Joan Rosenfeld; pink, rose blush, rose veins, raspberry butterfly-shaped mask; teardrop red waterfall.

[7] *Milt.* Joan Rosenfeld 'April Waterfall' AM/AOS; exhibitor: David and Joan Rosenfeld; interesting color combination of fuschia and white, full round lip, with red butterfly mask; large, solid, dotted pink waterfall.

[8] *Milt.* Morris Chestnut 'H171' AM/AOS; exhibitor: Max C. Thompson; magenta on white with a magenta butterfly mask, dark-bronze, red-solid and dotted waterfall.

[9] *Milt.* Les Dirouilles 'Lone Survivor' AM/AOS; exhibitor: Poul Hansen; Rich, red-purple, burgundy and white; a butterfly-shaped, deep-burgundy mask, no waterfall.

[10] *Milt.* Steve Skoien 'Cat Eyes' HCC/AOS; exhibitor: Lee Fister, Jr; Flat and round, white flowers, wine red overlay, mask rich red, wine red waterfall.

among others. The waterfall should be crisp and distinct and the further down the lip, the better (Komoda, pers. comm.). It should be balanced, distinct and pleasing to the eye. The best waterfall colors are darker (Komoda, pers. comm.). Yellow patterns exist, but they are weak and not as well developed as the darker patterns (Komoda pers. comm.). The quality of the waterfall is included in the scoring for the lip for both flower form and flower color. Characteristics of the waterfall should be evaluated and included in the description.

Fragrance is often detected when judging, but rarely included in descriptions. Side lobes should be evaluated and mentioned if deemed notable. The callus is often lined. The column color is often white or cream. Substance and texture can vary quite a bit from soft to hard or velvety to crystalline, to mention a few descriptors.

Breeders have sought to create bigger flowers, warm-tolerant plants, vigorous growers and well-presented flowers on strong inflorescences (Komoda 2001). Stronger, more intense colors, interesting and bold masks, and waterfall patterns are breeding goals. High contrasting color combinations with masks, flowers and waterfalls have resulted in intriguing, charming and well-loved pansy style flowers. These flowers deserve to be judged taking into account the full complement of their colors, patterns and characteristics providing their admirers with their just desserts.

— Mark Whelan, 204 McEwan Avenue, Windsor, Ontario, Canada N9B 2E4 (email: hscman1@gmx.com).

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Acknowledgment

A special thanks to Ivan Komoda. This article could not have been written without the technical knowledge, expertise and understanding of *Miltoniopsis* provided by Ivan. He contributed necessary information about color, masks and waterfalls, as well as important breeding information that is responsible for today's array of *Miltoniopsis*. Ivan edited this article for technical correctness.


11 FRED RINDLISBACHER


12 GLEN BARFIELD


13 JUDITH HIGHAM


14 FRED RINDLISBACHER


15 FRED RINDLISBACHER


16 GLEN BARFIELD

MAURICE MARIETTI

[11] *Milt.* Jean Inouye 'She Smiles' AM/AOS; exhibitor: Ivan Komoda; yellow flower with darker-yellow mask.
[12] *Milt.* Michiko Hayasuke 'Mango Dancer' AM/AOS; exhibitor: Winning Orchids; yellow flower with pale-rose blush, butterfly-shaped, rust-colored mask, no waterfall.
[13] *Milt.* Teresa Mulhollan 'Sophia' AM/AOS; exhibitor: Poul Hansen; white flowers, shades of magenta, golden yellow mask, small magenta waterfall.
[14] *Milt.* Hoover and Dolly Willis 'Summer Heat' AM/AOS; exhibitor: Ivan Komoda; round and flat. Yellow with burgundy overlays. Butterfly mask dark maroon. No waterfall.
[15] *Milt.* Lennart Karl Gottling 'Black Ruby' AM/AOS; exhibitor: Ivan Komoda; solid red flower, large lip, red mask, no waterfall.
[16] *Milt.* Island Peach AD/AOS; exhibitor: Kalapana Tropicals, hybridizer: Ivan Komoda; yellow with lavender-pink ,lavender, butterfly mask rust. Recognized for the new distinctive color form.
[17] *Milt.* Ambre's Charm 'Cream Puff' AM/AOS; exhibitor: Waldor Orchids, Inc.; pale yellow flowers, magenta basal third, chestnut mask, no waterfall.

Sylvia Strigari

Stanhopea ecornuta

Text by Franco Pupulin/Watercolor by Sylvia Strigari

Tribe Cymbidieae
Sutribe Stanhopeinae
Genus Stanhopea *Frost ex Hook.*

Stanhopea ecornuta Lemaire, *Flore des Serres* 2: 181, t. 9. 1846. *Stanhopeastrum ecornutum* (Lemaire) Rchb.f., *Bot. Zeit.* (*Hamburg*) 10:927. 1852. TYPE: Guatemala. Ex hort. van Houtte, *J. Warszewicz s.n.* (holotype probably not prepared; the type specimen illustrated in *Flore des Serres*, loc. cit). Neotype, designed by Jenny (1988): Guatemala. [Near St. Toma,] ex hort. van Houtte, *J. Warszewicz s.n.* (W23047). *Stanhopea calceolus* Rchb.f., *Xenia Orchid.* 1:117. 1855. TYPE: Central America, *J. Warszewicz s.n.* (not located, sketch at W23046).

A large, epiphytic, caespitose *herb* to 55 cm tall. *Roots* rather coarse, flexuous, to 2 mm in diameter. *Pseudobulbs* ovoid, strongly ridged, dark green, to 20–48 × 15–30 mm, monophyllous, protected at the base by several triangular, acute to acuminate, fibrous sheaths 5–9 cm long, becoming dry-papyraceous and eventually breaking with age. *Leaf* plicate, leathery, petiolate, elliptic, obtuse, abruptly acute, 15–44 × 5–9 cm, the petiole to 2–10 cm long, with 5–7 mayor veins protruding on the underside. *Inflorescence* a stout, pendent, two-flowered raceme from the base of the pseudobulb, 5–11 cm long, the peduncle concealed by several imbricating, strongly conduplicate-ancipitous, tight to loose, papery, broadly ovate, acute, spathaceous bracts, progressively larger toward the apex, 18–30 × 16–22 mm. *Floral bracts* broadly ovate to transversely triangular, acute, papery, keeled, 35–40 × 20–26 mm. Pedicellate *ovary* terete, pale green, sparsely covered with fine pale brown hairs, to 5 cm long. *Flowers* produced in pairs, with their ventral surface facing each other, membranaceous, faintly fragrant, short-lived (3–4 days), with creamish white sepals and petals, sparsely spotted with red at the base, some of the spots eye-shaped, the lip orange at the base, flushing cream-yellow toward the apex, irregularly spotted with dark red up to the middle, the column white to pale green, abaxially marked with purple at the base and up to the middle. *Dorsal sepal* suberect, elliptic, concave, 45–49 × 28–31 mm. *Lateral sepals* spreading, slightly reflexed then incurved, asymmetrically broadly ovate-elliptic, obtuse, abruptly subacute, concave, 50–65 × 35–43 mm. *Petals* porrect, ovate-elliptic, obtuse, concave, the upper margin undulate, 38–40 × 20–25 mm. *Lip* fleshy, two-segmented, rigidly inserted at the base of the column, 40–42 × 28–32 mm; the hypochile saccate, inflated, dorsiventrally flattened, obovate, flattened on the rear side, protruding toward the epichile, the lateral margins erect, apically becoming two rounded, thick, blunt teeth, the opening broadly obtriangular; epichile thick, waxy, articulate to the apex of hypochile through a rounded keel, transversely triangular, obtuse, 6–7 × 10–15 mm. *Column* short, stout, semiterete, straight, 30–33 mm long, with narrow, triangular wings in the apical two-thirds, the clinandrium with two protruding, broadly obtuse, rectangular teeth. *Anther cap* white, cucullate, broadly obovate, truncate, bilocular. *Pollinia* two, clavate, deeply cleft, on straplike stipe and a transversely bilobed, whale tale-shaped viscidium.

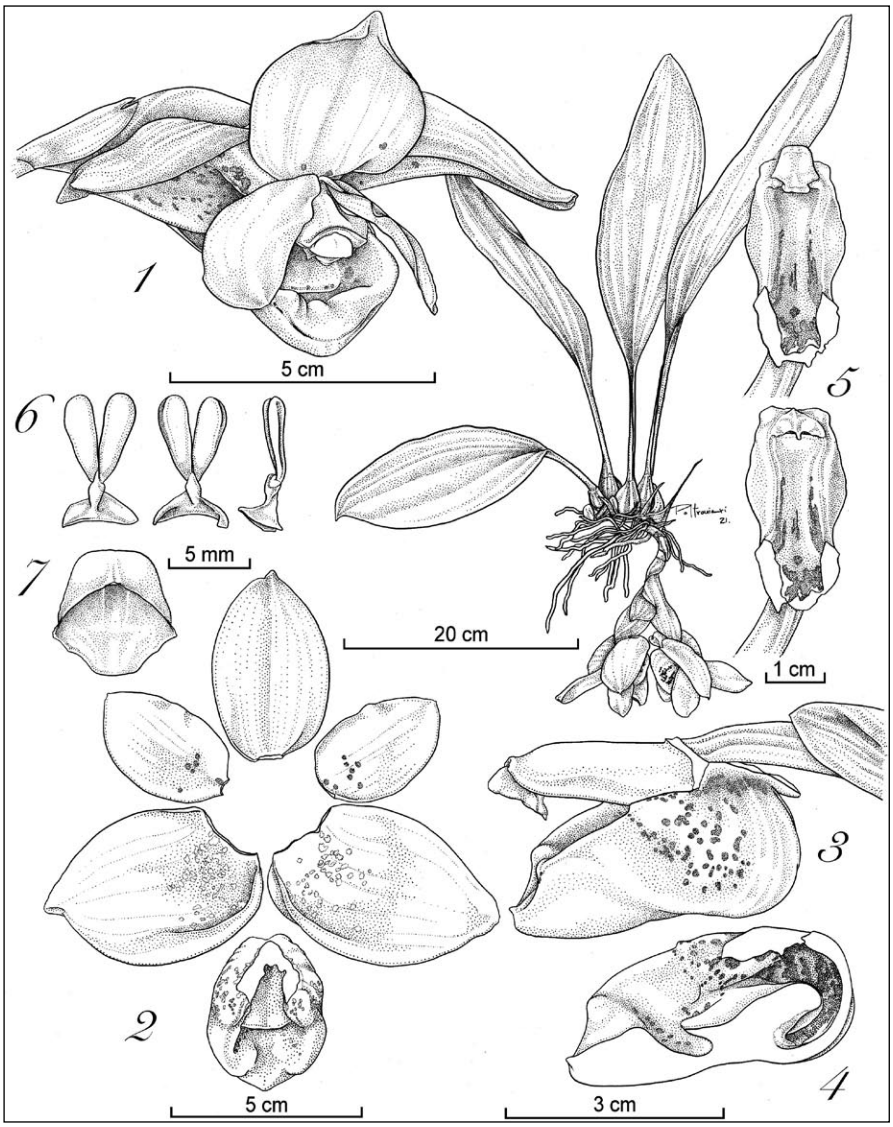
This anomalous and sinisterly beautiful species of *Stanhopea* was described by the French botanist Charles Antoine Lemaire (1800–1871), mostly noted for his publications on Cactaceae. After being the main editor of the gardening journals *Jardin Fleuriste* and *L'Horticulteur Universel*, both published in Paris and where he acquired the reputation of an outstanding author, his services were engaged by the already famous orchidist Louis van Houtte in Ghent, to give birth to the journal *Flore des Serres et des Jardins de l'Europe*. Uninterruptedly published from 1845 to 1888, *Flore des Serres* was one of the finest European horticulture journals of the 19th century, spanning 23 volumes and over 2,000 colored plates depicting and describing botanical curiosities and treasures from around the world. He also later edited *L'Illustration Horticole*, another great horticultiural journal published in Ghent, to which Lemaire devoted his interest practically until his death. He always lived in semi-poverty and never attracted the attention of a wealthy sponsor.

According to the protologue published in the second volume of *Flore des Serres* (Lemaire 1846), the "Stanhopea without horns" was received by van Houtte from his most zealous collector, Józéf Warszewicz, who collected it "in Central America." Reichenbach (1858) goes further, stating that *Stanhopea ecornuta* was "the first discovery of our friend v. Warscewicz" and providing a type locality for the species, which was found "in abundance in the forest, a quarter of an hour from Sto. Toma de Guatemala." By that time, the plants collected by Warszewicz had already found, via van Houtte's nurseries, the way to reach several of the largest orchid collections in Europe such as Dr. Hooker's and Loddiges' collections in England (later studied by Lindley), the garden of Countess Thun in Tetschen and that of Hofrath Keil in Leipzig, as well as the renown German collectors, the senator Jenisch and consul Schiller in Hamburg. Reichenbach himself received material from Hermann Wendlnad, gardener at the the Herrenhausen Gardens established by the Royal House of Hanover, and from the head gardener at van Houtten establishments, Hermann Aribert Heinrich Kegel (Reichenbach 1858a).

Lemaire's (1846) original description is quite accurate, and he correctly stated that the inflorescence bears two flowers, but I suspect that one of the buds did not reach maturity, as Lemaire was unable to note the anomalous position of the two flowers, with their "ventral" side facing each other, and the illustrator Louis-Constantin Stroobant (1814-1872) depicted them instead one on top of the other.

A few years later, Lindley (1850) was unable to add additional details about the inflorescence of *Stanhopea eburnea,* but he regarded it as a species with only the hypochile, or lower half of the lip, present, and he also first suggested the possibility that the "extremely curious" plant described by Lemaire was a "monster" of *Stanhopea tricornis*.

In 1852, when Reichenbach created the genus *Stanhopeastrum* to accommodate the plant discovered by Warszewicz, he based his judgement on a single fresh flower received from Wendland, who also (erroneously) drew his attention to the fact that "this species always carries the flower stem upwards" (Reichenbach 1852), something that actually can rarely happen when the plants are grown in pots



Stanhopea ecornuta. The plant.
1. Flower.
2. Perianth flattened.
3. Ovary, column and lip, lateral view.
4. Lip, longitudinal section.
5. Column, ventral view (bottom, emasculated).
6. Pollinarium, three views.
7. Anther cap.

Drawn by Sara Poltronieri from *Bogarín et al. 11258*.

or baskets, where the short inflorescences cannot emerge from the underside of the container. The peculiar, stalked plate placed in the middle of the basal, inner side of the lip, which Reichenbach baptized "*sella-turcica*" (Turkish saddle), reminded him of a character belonging to *Acineta*, and he considererd *Stanhopeastrum* "a most interesting member between the genera *Acineta* and *Stanhopea*" (Reichenbach 1852). Of course, accepting it as the type species for his new genus, Reichenbach definitively dismissed Lindley's suggestion about the "monstruosity" of the plant described by Lemaire.

Nevertheless, it was not until 1858 when Reichenbach first published a sketch that correctly depicted the pendent inflorescence of *Stanhopea eburnea* and the arrangement of its flowers. This was enough for him to retrace his steps and make him rethink the alleged peculiarities of the genus, leading him to accept it as a good species of the genus *Stanhopea* (Reichenbach 1858a).

In his general treatment of *Stanhopea* for *Xenia Orchidacea* (Reichenbach 1858b), he reduced *Stanhopeastrum* to a section of *Stanhopea*, and he also described a second species of *Stanhopea* belonging to the same group, his *Stanhopea calceolus*, today generally regarded as a synonym of Lemaire's species. Gerlach (1999) adopted *Stanhopeastrum* as a subgenus within *Stanhopea*. In recent years, Szlachetko (2007) revived *Stanhopeastrum* at the generic rank, transferring to it an additional four species, but his proposal has not received support among contemporary botanists.

Jenny (1988) argued that the original illustration of *Stanhopea ecornuta*, published together with Lemaire's (1846) account in *Flores des Serres* (vol. 2, pl. 9) was not accurate enough to serve as a type for the species, but I personally find that this illustration, prepared from the specimen that Lemaire used for his description, would have been a good candidate for lectotypifcation. Regardless, the specimen in Reichenbach's herbarium in Vienna that Jenny selected as the species' neotype, ostensibly belongs to the same collection originally sent by Warszewicz to van Houtte, where Kegel prepared it for Reichenbach.

Stanhopea ecornuta is easily recognized by its vegetative and floral characters, varying little in color and morphology. The leaves are usually very broad, and the inflorescences invariably very short and two-flowered. Sepals and petals are snow white, spotted purple near the base, and the lip is a rich yellow or orange at the base, spotted with purple, and the apex white.

The species is known from Guatemala to western Panama, where it inhabits the warm environments of the lowlands from sea level to about 700 meters. Plants are usually found in shady places, and frequently in close proximity to water courses, when not directly growing on the branches and trunks of trees hanging over the water. The flowers are visited by several species of euglossine bees belonging to the genera *Eufriesia*, *Eulaema* and *Euglossa*, and at least *Eulaema nigrita* and *Eulaema schmidtiana* have been observed pollinating them (Whitten and Williams 1992, Jenny 2010).

Three natural hybrids have been recorded with *Stanhopea ecornuta* as one of the putative parents. *Stanhopea ×fowlieana* and *Stanhopea ×horichiana* are known from the Caribbean lowlands of Costa Rica, and are considered the result of the cross between *Stanhopea eburnea* with *Stanhopea wardii* and *Stanhopea costaricensis*, respectively; with the latter, *Stan. ecornuta* shares two

common pollinators. *Stanhopea ×lewisae* was originally described as a good species from Guatemala, and is now considered the natural cross of *Stan. ecornuta* with *Stanhopea graveolens*.

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Yellow Sticky Traps

YELLOW STICKY CARDS are widely used to attract and capture the adult life stage (winged) insect pests including fungus gnats, leafminers, shore flies, thrips, winged aphids and whiteflies. If you don't have a ready source of these cards, you can easily make yellow sticky traps using readily available materials. Simply take a yellow plastic cup, cover the outside with Vaseline or Tanglefoot® (sold in most garden centers and big-box stores) and place the cup upside down on a stake tall enough to put the cup opening at just above foliage level. The cups should be replaced periodically because of either trapped insects in the coating or loss of stickiness over time.

Thank you to Laura Newton, AOS Awards Registrar, for bringing this homemade alternative to my attention. — *Ron McHatton (rmchatton@aos.org).*

Selected Botanical Terms

abaxial – underside
acuminate – tapering to a long point
acute – pointed
ancipitous – having two edges
apical – at or from the top
articulate – having a clear joint between two separable parts
bilocular – having two chambers
bract – modified or specialized leaf
caespitose – clumped or clumping
clavate – club-shaped
clinandrium – cavity in the apex of the column where the anther rests
concave – curved inward like the inside of a sphere
conduplicate – folded lengthwise with upper surfaces facing each other
convex – shaped like the outside of a sphere
cucullate – hooded
dorsiventrally – flattended like a leaf blade
elliptic – oval
epichile – terminal part of a lip clearly divided into distinct sections
epiphyte – a plant that uses another plant as a means of support
fibrous – resembling fibers
flexuous – thin and flexible
hemi – half; often used synonymously with semi-
hypochile – basal segment of a lip having clearly distinct sections
imbricate – having regular overlapping edges
incurved – curved inward
inflorescence – the entire flowering structure including the peduncle and rachis
lanceolate – narrow oval tapering to a point at each end
membranaceous – thin, flexible, almost translucent
monophyllous – having one leaf
neotype – a type specimen selected after the description of a species to replace a preexisting type lost or destroyed
ob – effectively inverted; obcordate would be an inverted heart-shape
obovate – egg-shaped, narrowest basally
obtriangular – like an inverted triangle
obtuse – blunt
ovoid – egg-shaped
papyraceous – papery
peduncle – the part of an inflorescence before the rachis or section to which the flowers are attached
petiolate – stalked as in a stalk connecting the leaf blade to stem
plicate – folded like a fan
porrect – held forward more or less parallel to the column
raceme – an inflorescence where flowers are individually attached by stalks at intervals along the stem
recurved – curved backward
reflexed – curved backward
saccate – sacklike
semi – half or nearly
sinuous – wavy
spathaceous – resembling a spathe
spathe – modified leaf, sheathing bract
spatulate –spoon-shaped
stipe – the stalk holding the pollinia
sub – somewhat less than; i.e., subsperical would refer to almost but not quite a sphere
terete - cylindrical or pencil-shaped
transverse – across the main axis
truncate – terminated abruptly as if cut off
viscidium – sticky pad to which the stipe is connected

COLLECTOR'S ITEM

Dendrobium cuthbertsonii F.Muell. 1888

Two different perspectives

A California Perspective

By Tom Perlite

THIS IS MY THIRD article for *Orchids* on the subject of *Dendrobium cuthbertsonii*, and I was not sure what I could add to the previous articles. I still find *cuthbertsonii* challenging to grow, and extremely rewarding when grown well. Just when I think I have figured out the best way to grow this species, something changes and I start all over again. I have grown *Den. cuthbertsonii f*or close to 25 years and I am still learning how best to grow it.

Living in San Francisco, we have the ideal climate and conditions to succeed with this cloud-forest species from New Guinea. We are blessed with moderate temperatures that rarely get too hot or too cold. In recent years, we have had occasional days in the 90s F (32–35 C) and even up to 100 F (38 C), but the temperature always drops into the 50s F (10–14 C) in the evening. This drop in daytime temperature at night is very important in growing *cuthbertsonii*. Ideally, the daytime temperatures should be 70–80 F (21–27 C), with nighttime temperatures in the 50s (10–14 C). Growers in the San Francisco area successfully grow *cuthbertsonii* outdoors, with winter temperatures occasionally dropping into the high 30s F (4 C).

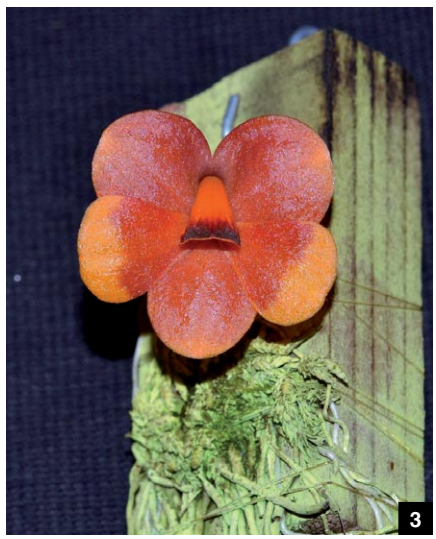
Dendrobium cuthbertsonii demands pure water and is highly sensitive to high levels of dissolved salts in the water. San Francisco's water source is from snowmelt in the Sierra Nevada mountain range. It is extremely pure and has an average electrical conductivity (EC) consistent with 25–50 parts per million dissolved salts. I routinely test the tap water and fertilizer solution to make sure the salt levels are safe for the plants. Water low in salts is essential in keeping *Den. cuthbertsonii* roots healthy. A high salt level or overfertilizing will quickly burn the roots, and the plant will rapidly go into decline.

Over the years, I have grown *cuthbertsonii* in New Zealand sphagnum moss in clay pots, mounted on small pieces of cork oak, and mounted on small pieces of construction-grade redwood. *Dendrobium cuthbertsonii* does not like its roots disturbed by frequent repotting or remounting. Every time the roots are disturbed the plants struggle to re-establish.

As the quality of sphagnum moss has declined in recent years, I found that the plants in pots needed the moss changed every year. This frequent repotting always resulted in the loss of some of the plants. In addition, when the plants are in small pots on the greenhouse bench, they are easy prey for slugs, which will eat the buds and flowers, but also the developing new growth. For all of these reasons, I switched to growing the plants mounted on cork and suspended above the benches.

I grow the mounted plants on circular racks suspended from the roof of a cool greenhouse where masdevallias and odontoglossum-type oncidiums are also grown. The temperatures are typically in the 70s F (21–26 C) during the days and in the 50s F (10–14 C) at night. We have occasional temperatures in the 90s F (above 32 C) but usually for


TOM PERLITE 2


TOM PERLITE 3


TOM PERLITE 4


TOM PERLITE 5

[1] *Dendrobium cuthbertsonii* 'Tari Gap' is a plant collected when it was legal to do so by Dick Emory in the late 1970s; likely a diploid. Photograph courtesy of John Leathers.

[2] *Dendrobium cuthbertsonii* 'Bicolor Sunset' AM/AOS is from a cross of two cultivars, 'Dark Panda' × 'Pink Panda', two pink-and-white bicolors.

[3] *Dendrobium cuthbertsonii* 'Bicolor Dream' AM/AOS is from a selfing of 'White Tips' AM/AOS, a pink cultivar with white sepal and petal apices.

[4] *Dendrobium cuthbertsonii* 'Blushing Panda' AM/AOS is another form resulting from 'Dark Panda' × 'Pink Panda'.

[5] *Dendrobium cuthbertsonii* 'Candy Cane' AM/AOS also arising from the crossing of 'Dark Panda' and 'Pink Panda'.

only a day or two at a time. I grow *Den. cuthbertsonii* in relatively bright light (1,200 foot-candles), always making sure the temperature remains cool. Because the plants are mounted with only a small bit of moss on the cork, they are watered in the morning every day except in the winter months. I like to let the plants approach dryness by the end of the day, but the humidity of the greenhouse prevents them from getting dehydrated. I fertilize *cuthbertsonii* every two weeks, alternating with 20–20–20, 20–10–20 and 15–5–15 Cal-Mag fertilizers. The irrigating EC with the fertilizer added is 200 ppm. I always water the plants with plain water before I fertilize them. Keeping a healthy root system is paramount, and I think the plants also benefit from removing the flowers in the winter to give them a little rest from blooming.

All the plants that I grow are grown from seed as opposed to collected plants. Collected plants from New Guinea typically have smaller flowers that are slightly cupped. By selectively choosing and then crossing those seedlings with the best size, shape, and color, I am always trying to improve the flower quality and vigor of the species.

I have had customers request so-called "tetraploid" seedlings or divisions, but I have found it difficult to specifically identify *cuthbertsonii* plants as being tetraploid. The species in nature is diploid, and there have been seed populations grown that have been treated with colchicine or oryzalin in an attempt to convert them to tetraploids. Bob Hamilton, of Hawk Hill Orchids, has done much of this work, and he has been successful in converting different orchid species from diploid to tetraploid. Seedlings from these treated flasks show many of the traits of tetraploids: larger flowers with heavy substance and thicker leaves and roots. Quite often they also grow more slowly and are not as vigorous as collected plants. I keep records of the parentage of all the plants I use to make seed in an attempt to cross these tetraploids with other tetraploids. But without counting chromosomes, it is all speculation based on the plant's characteristics.

Dendrobium cuthbertsonii is notoriously difficult in setting seed, and I do not know why. Generally, I get 10% of the flowers I pollinate to set seed, and once a seed capsule forms, there is usually an abundance of seed. Setting the capsule is the difficult part. I have tried pollination at different times of the day, differently aged flowers, fresh pollen and old pollen, and nothing seems to make a difference. At my previous growing area in Pacifica, California, I grew the plants in a greenhouse with side vents that were open 24 hours every day. Hummingbirds often flew into the greenhouse and pollinated the *cuthbertsonii* freely. There would be 20–30 seed capsules on a variety of *cuthbertsonii* seedlings, which I would pick off, since I did not know the parentage. Unfortunately, because there is no nectar in *cuthbertsonii* flowers, the hummingbirds would die from lack of nutrients and I would find them lying on the bench. I need to train a hummingbird to do my pollination.

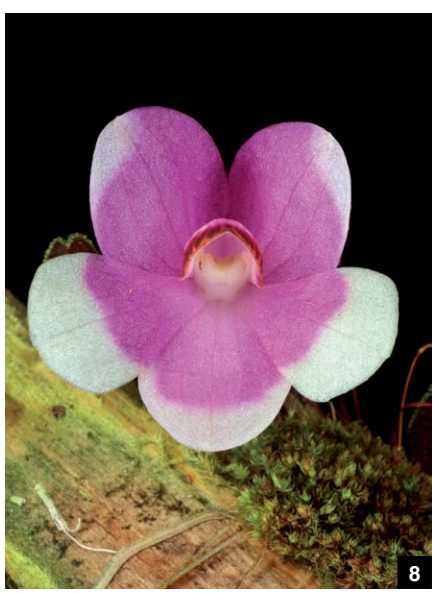
In nature, *Den. cuthbertsonii* has flowers in a range of colors from orange, red, orange and red bicolor, pink, pink and white bicolor and yellow to white. I try to cross the same color types but even when doing so, you will get some that have orange flowers. Some of the most beautiful seedlings have resulted from the crossing of a pink flower with an orange and red bicolor. These seedlings have the full range of colors, except white, with deep, intense coloring.

For those who have had limited or no success growing *cuthbertsonii,* I suggest trying again with the conditions the plant requires. I hate to say you have to kill a few to figure out how to grow them, but that has been my experience. I continue to strive to find the best way to grow this species, because it gives so much back to you when grown well.

— Tom Perlite is the owner of Golden Gate Orchids in San Francisco and has been growing orchids for the past 45 years. After receiving a degree in botany


6 RAMON DE LOS SANTOS


7 RAMON DE LOS SANTOS


8 RAMON DE LOS SANTOS

[6] *Dendrobium cuthbertsonii* 'Full Moon' AM/AOS resulted from a crossing of two whites, 'Kiwi Cream' × 'Kiwi Ghost'.

[7] *Dendrobium cuthbertsonii* 'Genevieve' AM/AOS is another seedling from the selfing of 'White Tips' AM/AOS.

[8] *Dendrobium cuthbertsonii* 'Pink Halo' AM/AOS resulted from the mating of a pink with an orange-and-red bicolor ('Pink Giant' HCC/AOS × bicolor).

[9] *Dendrobium cuthbertsonii* 'Liagam Sunrise' collected by Dr. Ernie Katler in the late 1970s with Dick Emory; likely a diploid.

[10] *Dendrobium cuthbertsonii* 'Dick Emory'. Another likely diploid collected by Dick Emory in the late 1970s.

JOHN LEATHERS

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JOHN LEATHERS

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from U.C. Berkeley, he worked at the Rod McLellan Co., and subsequently started Golden Gate Orchids in 1981. For many years Golden Gate Orchids specialized in cool-growing orchids, including odontoglossums, masdevallias, miltonias and dendrobiums. Tom downsized the nursery a few years ago and now focuses on Dendrobium cuthbertsonii*. Tom is a retired AOS judge and has received numerous awards including the Grand Champion at the Osaka International Orchid Show, the George Moore Medal from the Royal Horticultural Society, and the Butterworth Prize from the AOS. Tom is currently an instructor at City College of San Francisco in the Environmental Horticulture program (email: tmperlite@gmail.com).*

Love at first sight!

By Elisabeth Breitenstein/Edited and translated by Judith Rapacz-Hasler

A FEW YEARS ago, I stood completely enchanted at a sales booth at the Dresden (Germany) orchid show, admiring these fine, small plants with magnificent flowers. A member of the Dresden orchid group immediately brought me back to reality: cool greenhouse, air conditioning, almost no fertilizer, high humidity and, if a snail kills a plant in one night, simply put, very difficult. Returning home, I checked the internet to see what the different forums and groups write about their growing conditions. I had a small greenhouse, cultivating warm-growing paphiopedilums and phragmipediums, which I did not want to sacrifice. With my husband Erich, we got to work and a new greenhouse was built, divided into warm and temperate zones, and the old one became a cold house.

The upcoming orchid exhibit in Bern, Switzerland enabled me to order the first plants. I ordered *in vitro* flasks from America (Marni Turkel), England (Equatorialplants) and was lucky to find flasks with *Dendrobium cuthbertsonii* at Lucke orchid nursery in Germany. Egon Görtler, an expert grower who had seeds of *Den. cuthbertsonii* cultivated at Lucke's, was also in attendance, and he generously gave me a flask of his seedlings.

Through my colleague Helmut Sang, I got to meet Peter Teipel, whose greenhouse is full of rare species. The greenhouse floor was covered with *Den. cuthbertsonii* pots. He showed me hybrids he made that were warm tolerant and suggested that I visit the Schwerter orchid nursery in Germany, which had five tables full of flowering *cuthbertsonii*, mostly natural yellow, yellow–orange and red forms, as well as various hybrids in pink–white and yellow–orange — seeing this was just a delight. I acquired the necessary CITES paperwork and, within 10 days, I received the selected plants.

These species and hybrids have one of the longest blooming periods of any orchid, with individual flowers remaining open for up to nine months. The stems are 0.4–0.8 inches (1–2 cm) tall and 0.16–0.28 inches (4–7 mm) wide; the flowers are 1.0–1.6 inches (25–40 mm) long, 0.5–1.4 inches (13–35 -mm) wide, and are extremely variable in color.

Dendrobium cuthbertsonii (F. Mueller 1888, Section *Calyptrochilus*) is a species

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of orchid in the genus *Dendrobium*. This species is a high-altitude, mossy-tree–growing, miniature epiphyte, or it grows as a lithophyte on rocks with mainly eastern exposure at up to 10,000 feet (~3,000 m) above sea level in New Guinea and the Bismarck Archipelago. Temperatures at the habitat range from 41 to 78.8 F (5–26 C), with 90% humidity. At this altitude it rains several times a day, and fog covers the mountainous region most of the day. Also known as Cuthbertson's dendrobium, *Dendrobium cuthbertsonii* is free-flowering, with a solitary flower on a terminal to an axillary, short, single-flowered inflorescence. The flowers are 0.9–1.6 inches (2.4–4 cm), and rarely reach 2 inches (5 cm) in diameter. In the sunlight, they glow and shine. The petals of both whorls are usually crimson to purplish red, but can be purple, pink, orange, yellow or white. Occasionally flowers with bicolor petals are found. The lip is often paler and has darker, reddish-brown spots around the apex. Flowers are of a variety of sizes and colors.

HYBRIDS

***Dendrobium* (*cuthbertsonii* × *glomeratum* [*sulawesiense*])**

Dendrobium glomeratum (H.J.Veitch ex Rob 1893 Section *Calytrochilus*) (syn. *sulawesiense*) is found in the Moluccas Islands (eastern Indonesia) in old forests at elevations of 3,937 feet (1,200 m) and higher. The crosses of *Den. sulawesiense* with *Den. cuthbertsonii* produced quite warm-tolerant plants, because the cross is produced with cooler- and warmer-growing species. The hybrids are either pink, pink–white or yellow–orange, depending on the *Den. cuthbertsonii* color. They can be cultivated on the windowsill as well as in a temperate greenhouse. The plant grows 3.9–5.9 inches (10–15 cm) high, and flowers are long lasting. If the hybrid is backcrossed with *Den. cuthbertsonii*, it is difficult to distinguish them from the natural form. The plants are still about 2.8 inches (7 cm) high and the flowers are like a *Den. cuthbertsonii*, but are a bit larger.

***Dendrobium* (*cuthbertsonii* × *laevifolium*)**

Dendrobium laevifolium (Stapf 1924 Section *Calyptrochilus*) is found as a mini-miniature, warm-to cool-growing epiphyte that occurs on moss-covered trees in New Guinea, the Solomon Islands, the Santa Cruz Islands and Vanuatu at elevations of 2,132–7,874 feet (650–2,400 m). Again, this cross is also warm tolerant. The plant flowers are a delicate pink, white or yellow–orange. They are slightly smaller than *Dendrobium curthbertsonii*. It is best to reduce water slightly and withhold fertilizer until new growth is initiated in the spring. They are well suited for the windowsill on the north or east side of the house (bathroom or kitchen).

MY CULTURE My cold greenhouse is built about 3 feet (~1 m) into the ground with windows all around. Fans are a must if the temperature is above 50 F (10 C),


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[1] *Dendrobium cuthbertsonii* growing on cork slabs.
[2] A yellow form of the species.
[3] An orange form.
[4] Red forms are very popular.
[5] The species is also found in white forms, here growing on a cork slab.
[6] A pink form.
[7] An orange-red form.
[8] Even bicolor forms exist.

at which time I also open the greenhouse door. If the temperature rises above 77 F (25 C), the forced ventilation is switched on, at 81 F (27 C) along with the fog system. This allows me to keep the temperature "cuthbertsonii compatible" in summer. They can tolerate 86 F (30 C) for a short period, but it requires a lot of time to keep them moist. If they are mounted, it takes longer to keep them moist. The humidity is about 80% at night.

Some of the plants are tied on robinia (black locust) or ash bark. The advantage is that they dry out easily. The plants are sprinkled in the early morning; in summer this should be done two or three times a day. They are immersed in a bath once a week. Every two weeks, they are watered with a shower before being immersed into rainwater containing fertilizer to 150 microsiemens. Never fertilize dry plants!

As soon as plants attach well to the bark, I loosen the thread. I have noticed that they stand away from the bark, which prevents rot or fungus naturally. Peter Teipel cultivates all plants in Chilean sphagnum, so I also tried some of my young plants in clay pots with sphagnum. Depending on the temperature, they are sprinkled daily and dipped weekly. Clay pots have the advantage that they cool by the evaporation of water.

A few young plants are in a substrate that consists of equal parts of fine bark, pumice, perlite and Seramis® (a granulate with a fine-pored structure, which allows it to absorb water and nutrients like a sponge. This allows each plant to take in as much water as it needs). The substrate is washed thoroughly before use, as these plants have very sensitive roots. I repot them in clay pots every year. Clay pots are first soaked in rainwater until the water has 0 microsiemens. Before repotting I swivel the plant roots in rainwater to remove accumulation of salts. Under optimal conditions the flowers can last up to 6–12 months.

Dendrobium cuthbertsonii plants are available in different colors: white, yellow, pink, orange and red. The orange and red flowers are bright and shiny. Bicolored flowering plants are rarer and grow a bit more slowly. I bought my first plant in April 2016 and, after 18 months, it had seven flowers, one year later 13, then 17 and at the moment 27. Plants flowered for the first time about 2–3 years after deflasking.

ADDITIONAL CULTURAL RECOMMENDATIONS *Dendrobium cuthbertsonii* usually grows well under the same conditions as the cold-loving genus *Masdevallia*.


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High humidity and air movement are particularly important. However, this plant has a reputation for being difficult to care for, and even experienced flower growers say their dendrobium sometimes dies after years of unproblematic growth. The reasons for this could be the short life of this species or abundant flowering, leading to the death of the plant. This species blooms, as a rule, five years after sowing, but there are cases of flowering 1–2 years after deflasking. It is recommended to remove the flowers from the first flowering of seedlings immediately after viewing them, rather than allowing them to bloom for six months or more, as this will allow the plant to regain strength and find additional reserves.

LIGHT Cuthbertson's dendrobium needs a light level of 1,5000–3,000 footcandles (15,000 – 30,000 lux). They can tolerate high levels of light, especially in the morning.

TEMPERATURE It is a cold-loving plant. Throughout the year, the average day temperature is 71.6–77 F (22–25 C) and the average night temperature is 50–53.6 F (10–12 C), with a daily high of 50–59 F (10–15 C).

HUMIDITY This species needs humidity of more than 80% throughout the year. High humidity and excellent air movement are important in growing, especially when the temperatures are higher. It is advantageous to place the plant at the outlet of a cool humidifier or fogger.

SUBSTRATE, GROWING MEDIA AND REPOTTING *Dendrobium cuthbertsonii* grows best in New Zealand sphagnum, as in such medium the roots grow better and are healthier. They can also be mounted on pieces of tree fern, but they must be sprinkled often and the substrate should never dry out. For the substrate, you can use a small osmunda fern layer on a layer of crumbled pots or chopped tree fern fibers. However, that woody fern decomposes after about two years.

Repotting is best done in early spring, when the conditions for active growth are best. Plants cultivated in the sphagnum should be repotted at least once a year. They should not be divided into small tufts, because the separated part rarely survives if the conditions of separation are not ideal.

WATERING Water is abundant throughout the year, but the conditions are slightly drier during 3–4 winter months. The substrate of the plants in cultivation should be constantly moist, with little dryness between watering.


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JOHANNA WILLINK

FERTILIZER *Dendrobium cuthbertsonii* should be fertilized at 1/4–1/2 the recommended dose for orchids. It should be fertilized all year round once a week or once every two weeks using a balanced fertilizer. This species requires little fertilizer, or even none at all, if it is grown in a living sphagnum moss. When cultivating in a different substrate, the fertilizer solution should be very weak.

REST PERIOD In winter, the amount of water can be somewhat reduced, especially if the plants are grown during the short dark days that occur at moderate latitudes, but plants should never be completely devoid of water. Occasional morning spraying is very beneficial, especially during bright, sunny weather.

Reference

https://travaldo.blogspot.com. Accessed March 2021.

— *Elisabeth Breitenstein has been growing mainly Paphiopedilum and Phragmipedium since 1973. With a new greenhouse she now also cultivates various orchid species. At present she is the President of the Swiss Orchid Society (SOG). Brunnäckerstrasse 21, CH-5618 Bettwil, Switzerland (email: Elisabeth@Breitenstein.Ag).*

[9] Under proper conditions, plants grow very rapidly. This plant is only four years from flask.

[10] *Dendrobium glomeratum*

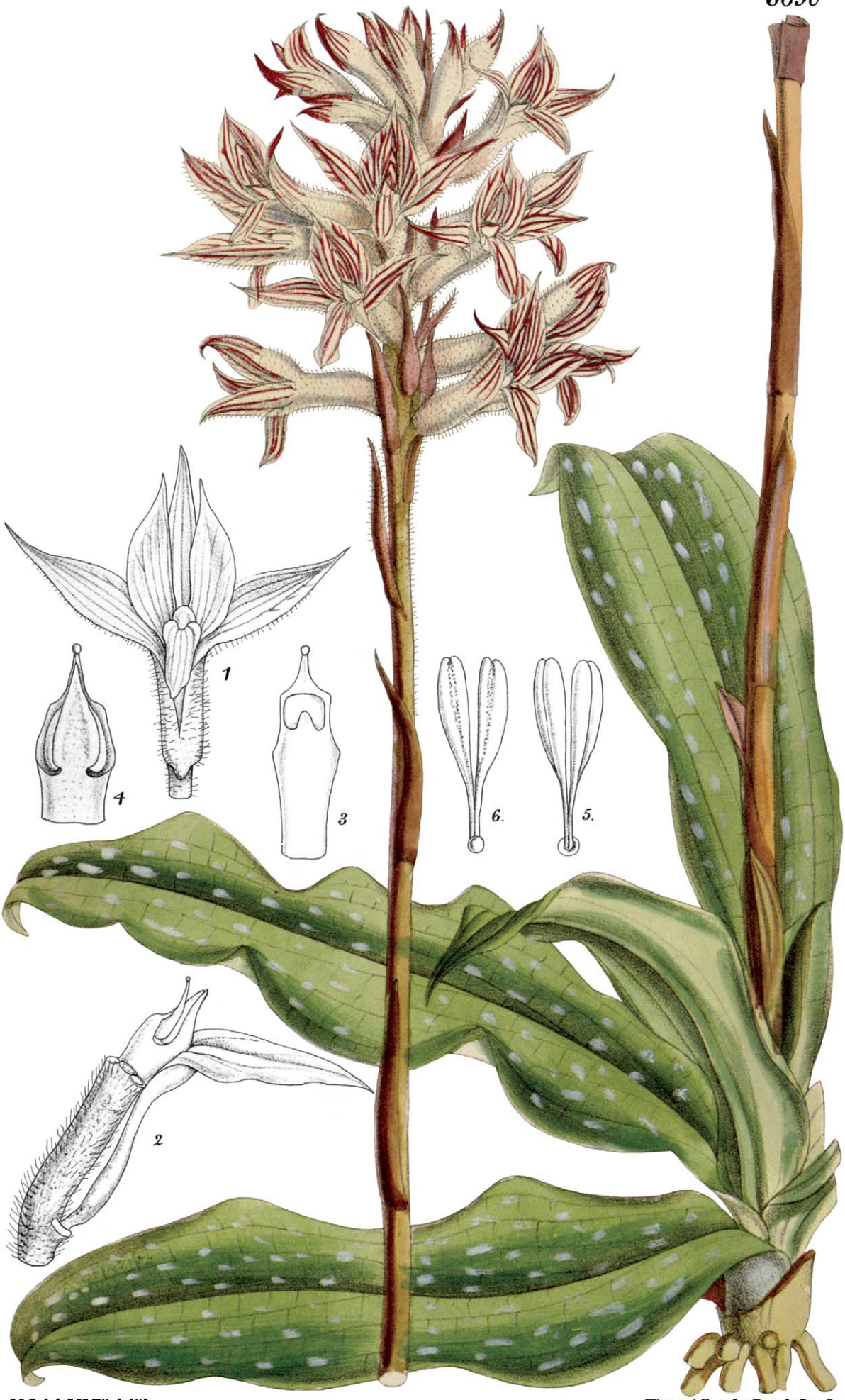
[11] *Dendrobium* Mtn's Butterfly Kisses (*glomeratum* × *cuthbertsonii*).

[12] *Dendrobium* Swiss Mountain Palace (Mtn's Butterfly Kisses × *cuthbertsonii*).

[13] *Dendrobium cuthbertsonii*, 'Luchs' CCM/GM/SOG (98 Pkt.) grown by Hans Luchs of Baar, Switzerland; 155 flowers and a bud on 156 inflorescences. This exceptionally well-cultivated, beautiful plant is an excellent example of a pure red form of the species. Individual flower are 1.3 inch (3.2 cm) wide by 1.1in (2.9-cm) tall.

[14] Dendrobium Aussie's Hi-Lo 'Satomi' SM/JOGA (*cuthbertsonii* × *laevifolium*).

[15] *Dendrobium laevifolium* 'Carolyn's Joy' HCC-CCM/AOS was exhibited by Carolyn Robinson at the 2013 Gainesville Orchid Society show. It carried 57 densely clustered, nonresupinate flowers on 20 inflorescences entirely covering the 7.8 inch wide by 2.9 inch (20 × 7.5 cm) tall plant grown on a 13-inch (33-cm) cork slab.



M.S.del J.N.Fitch lith.

Vincent Brooks Day & Son Imp.

Women Illustrators: Matilda Smith

By Wesley Higgins and Peggy Alrich

Matilda Smith

MISS MATILDA SMITH was born in Bombay, India (July 30, 1854) to James Smith, a Scottish merchant, and Ann Matilda Rigby. She was a second maternal cousin to Joseph Dalton Hooker through their great-grandfather William Palgrave (1745–1822). Matilda's family immigrated to England before 1861, when she was still a small child.

Joseph Dalton Hooker was editor of *Curtis's Botanical Magazine* and director of Royal Botanic Gardens, Kew. When Walter Hood Fitch (1817–1892) withdrew his services as illustrator for *Curtis's Botanical Magazine* in 1877, Sir Hooker invited Matilda to Kew to be trained as a botanical illustrator.

She trained under J.D. Hooker, a botanical artist in his own right, and Hooker's daughter Harriet Thiselton-Dyer, who had replaced Fitch. Matilda frankly acknowledged her admiration for her predecessors' work and her inability to emulate it. Despite her limited artistic training, Hooker encouraged her to submit her own work to the magazine, and in October 1878 the magazine published the first of her drawings.

She became a talented botanical artist and also prepared many of the lithographs from her drawings. In the period 1879–1881, each issue of the magazine included some 20 of her drawings, and by 1887, she was practically the sole illustrator for the magazine. In 1898, Matilda was appointed the magazine's sole official artist. Over the

45 years between 1878 and 1923, Smith drew more than 2,300 plates for *Curtis's Botanical Magazine*.

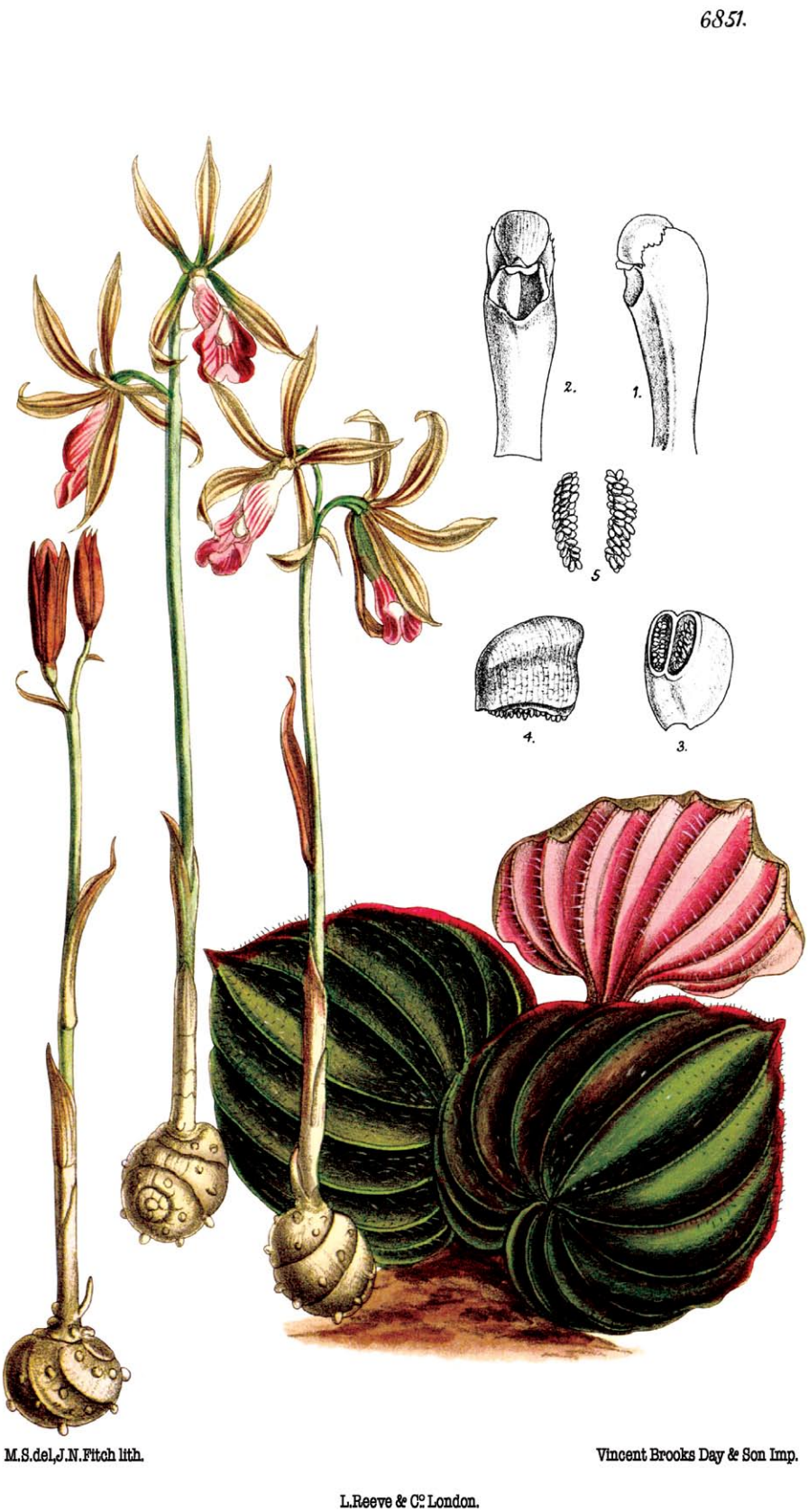
In 1881, she was made the sole artist and lithographer for Hooker's *Icones Plantarum* and created 1,500 illustrations for this extensive series of published volumes of botanical illustration, initiated by William Hooker. Matilda became the first artist to depict New Zealand's flora in depth, and was especially well-regarded for her ability to create credible illustrations from dried, flattened, and sometimes imperfect specimens. She also illustrated a number of other books, including Watt's *The Wild and Cultivated Cotton Plants of the World* (1907).

The corpse flower, *Amorphophallus titanium*, infamous for its odor of rotting flesh, is an effective adaptation for attracting pollinators but a very unpleasant experience for anyone standing, or painting, nearby. Hooker (1891) reported on its first flowering at Kew:

> The following account of the development and flowering of *Amorphophallus titanum* (Tab. 7153) at Kew has been kindly drawn up for me by Mr. William Watson, Assistant Curator of the Royal Gardens, who reared it from infancy to its final full stature. Unfortunately, the flowering stage was so rapid that it was witnessed by few, and by them at the expense of enduring an atrocious stench, resembling that of *Bulbophyllum beccarii* (Tab. 6507), which rendered the tropical Orchid house at Kew unendurable during its flowering in 1881. I should be wanting in gratitude if I did not here express my deep obligation to the talented artist of this work (Miss Smith), who, in her efforts to do justice by her pencil to these plants, suffered in each case a prolonged martyrdom that terminated in illness in the case of the orchid.

That long-suffering "Miss Smith" was Matilda.

Matilda Smith, a botanical artist, is the first and only female to appear in the 1893 *Kew Guild Journal*. She is mentioned as having been employed since 1878, when she was recruited by Sir Joseph Hooker. Her exceptional contributions to Kew Gardens led to her being designated the first official botanical artist of Kew Gardens



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in 1898. Matilda gave freely of her time to assist visitors to Kew and took an active part in local public matters. She was the first woman to be appointed president of the Kew Guild, an organization of senior employees of Kew.

Following Sir J.D. Hooker's death in 1911, Matilda was chosen to design a portion of Hooker's memorial wall tablet in St. Anne's Church near Kew Gardens. Surrounding a profile of Hooker are five gracefully drawn plants by Smith, each representing a region of the world that had been prominent in Hooker's career.

In 1921 when she retired, Matilda became the second woman to be named an associate of the Linnaean Society of London. In 1926, she was awarded the Royal Horticultural Society's silver Veitch Medal for her skills in botanical illustration. Matilda died in 1926.

Despite being a highly acclaimed and awarded artist, Wilfrid Blunt (1950), in a Victorian-era pattern of devaluing botany and botanical art of women, dismissed Matilda Smith as an artist of inferior skills, praising her faintly for her charm, her work ethic, and her usefulness in creating a record of otherwise unpictured plants.

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ANTIQUE PLATES

[1] *Pteroglossa euphlebia* as *Spiranthes euphlebia*, *Botanical Magazine* 109: t.6690 (1883).

[2] *Nervilia plicata* as *Pogonia pulchella*, *Botanical Magazine* 111:t.6851 (1885).

[3] *Dendrobium treacherianum*, *Botanical Magazine* 107:t.6591 (1881).

[4] *Hemipilia calophylla*, *Botanical Magazine* 113:t.6920 (1887).

[5] *Bulbophyllum beccarii*, *Botanical Magazine* 107:t.6567 (1881).

[6] *Crepidium metallicum* as *Microstylis metallica*, *Botanical Magazine* 109: t.6668 (1883).

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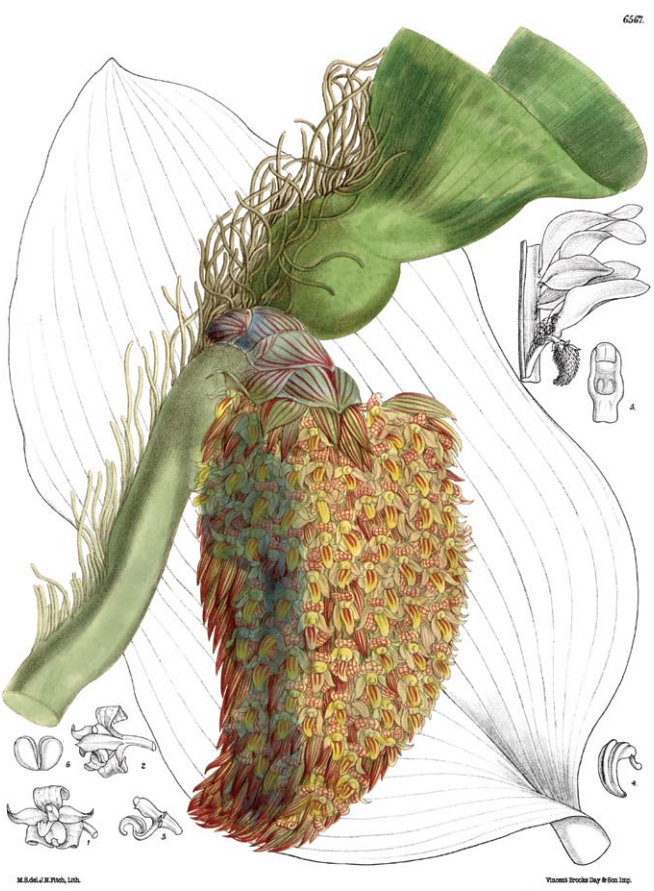

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Styrofoam Peanuts for Drainage

Text and photographs by Esteban (Steve) Gonzalez-Costa

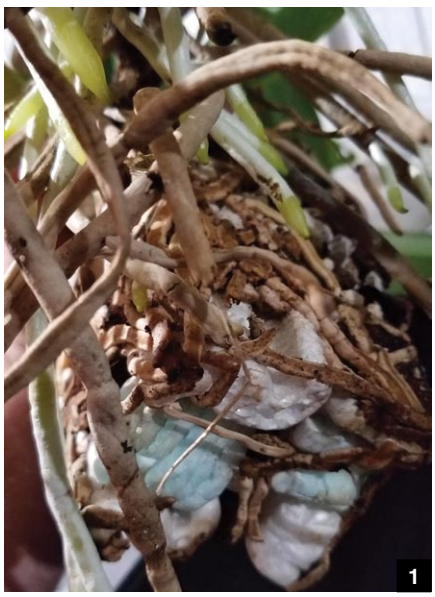
LATELY, I HAVE been fine-tuning many aspects of growing. Because of the pandemic and not traveling for work over 50% of the time, I had more time than ever to focus on my plants. Having repotted many paphiopedilums and phalaenopsis in the early spring, I thought it would be a good year to get ahead and scrutinize the more than 60% of my collection from the Cattleya Alliance. To my surprise, some of my plants had their last repotting 3–5 years ago. In 2019, most plants were not put outdoors because of home improvements. Repotting almost everything gave me a chance to see the results I obtained by fine-tuning bark size and bottom drainage media that I started implementing a few years back.

I had started to experiment with using more of a right-sized *Pinus radiata* and regular fir bark mix and working with the size of the drainage peanuts. Overall, trying to balance watering and how long potting media lasts, I found that my bark was too large and dried out too fast. That is why it lasted so long. At the bottom of the pots, I have usually used what we typically call "peanuts." Peanuts are made of polystyrene (Styrofoam), a resin invented in the 1960s. I must caution that peanuts are not a biodegradable (environmentally friendly) material, so you need to decide whether you feel their long-term use and disposal is against your beliefs. Otherwise, if you repot less frequently, like I do now, every 3–5 years, your impact will not be extensive.

I should also say that you should be cautious about using peanuts that have dyes and fragrances added, which could adversely affect your orchids. When using peanuts, the first thing you need to make sure is that you do not use the cornstarch types because they will turn to sticky mush and clog the bottom of your pots fairly quickly when wet. I also do not use Styrofoam from sheets or types that can easily pull apart into small spheres. I have seen interesting articles where growers use this type of Styrofoam as a majority of the media for plants. That, I have not tried.

I used to use peanuts by dropping full pieces at the bottom of any pot size, small or large. I had seen before how filling the bottom ¼ to ⅓ of the pot with peanuts was beneficial in creating a "moisture reserve" that roots can grow into. This helps to mitigate my "human" wet–dry cycles. The end result when peanuts were too big for the pot size was that water would drain out quickly and the "bottom peanut region" would dry out faster, leading to overly dry bark.

My hypothesis was that I needed to go finer with the average size of my bark mix and then correctly size peanuts more proportionately to the pot size. My plan was, in smaller pots, to use smaller peanuts and in 7–8-inch (17–20-cm) or larger pots use mostly full-size peanuts. For pots ranging from 3–6 inches (7.5–15



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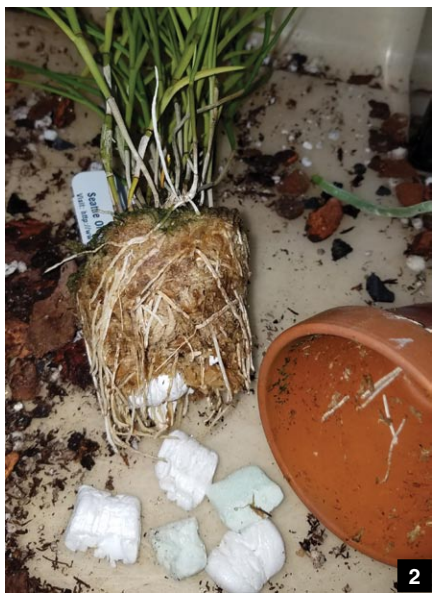

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[1] These cattleya roots have grown into and around the Styrofoam peanuts used for drainage.

[2] A dendrobium grown in New Zealand Sphagnum moss and peanuts for drainage.

[3] Typical types of peanuts available commercially.

[4] Clockwise from the left: whole peanut; peanut broken in two pieces; broken in four pieces; broken in three pieces.

[5] One of two shrink-wrapped bags dropped off by the carrier.

cm) an in-between size of broken pieces would be added. Keep in mind that the largest peanut size I have is about 1 inch × 1.5 inch (2.5 × 3.8 cm), but some are smaller. Having this inert media at the bottom of the pot helps to provide more constant moisture and keep roots growing and alive.

By using the large peanut size as the benchmark, I have been following the bark mix and peanut breakdown combinations given in Table 1.

For a paphiopedilum in a 2-inch (5-cm) pot that likes more moisture, I break down peanuts into smaller (4–5) pieces with a smaller-to-fine-to-seedling bark mix. For a larger cattleya seedling that prefers to dry out a bit more between waterings, I would mix in some small-to-medium bark with larger Perlite so that it dries out a little faster. The peanut size remains the same for either.

I use the exactly the same principle when using New Zealand sphagnum moss and plastic or clay pots, except I might fill closer to a third of the bottom of the pot with peanuts. This has also helped to keep the moss from being overly soggy.

Maintaining the right amount of hydration is all about the right mix size and whether you use a bottom filler — one that will not allow water to escape quickly will later dry out too fast. My normal watering with a hose and water wand occurs every 3–4 days in the summer and fall, and every 5–6 days when I cut back watering in the winter indoors. Plants that are outdoors, if it has not rained, get a drench every three or so days and are lightly misted daily when the temperatures are well above 80 F (27 C) midafternoon in the heat of the day.

The end result for me has been a better root system and plants that progress well and are better hydrated from my basement wintering and the outdoor summering, which in Minnesota, can barely last a few days beyond three months. I do not use peanuts to save money on bark, I used them to give my plants that moisture reservoir buffer.

I can only hope that, until something better comes along, the peanuts I separate and discard will be compressed to a minimum. It is my hope that this article will stimulate readers to come up with other ideas to add to their growing techniques and improve their culture. If you have other suggestions, please consider sharing them.

— Steve Gonzalez has been growing orchids for over 35 years since landing a neighborhood garden job repotting cattleyas in Rio Piedras, Puerto Rico. He is a past president and has been a member of the Orchid Society of Minnesota since 1991, and is currently an associate judge in the Chicago judging center. Living in the Caribbean and US Midwest and working as an international manager traveling Latin America over time has given him the opportunity to see plants in situ and meet many of the business and botanical experts in the Americas' orchid world over the last 40 years (email stevegonzalez@live.com).

Table 1. Potting medium and peanut combinations by pot size.

Pot Size		
Small pots 2 inch (5–7 cm) or so diameter	Medium Pots 3-5" (7.6 – 12.7 cm)	Large pots 6–8-inch (15–20+-cm) diameter
Fine bark	Small to medium bark	Larger bark
Break peanuts into 4–5 pieces	Break peanuts into 3–4 pieces	Break (some) peanuts in half or keep as full pieces


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greatideas

by Ed Wright and Bill Tippit

Telephone Wire Loops to Support *Phalaenopsis* Spikes

SUPPORT FOR AN emerging *Phalaenopsis* inflorescence (herein called the spike) can present problems both horticultural and structural. We have tried various methods ranging from the common plastic clip to tying the spike to a galvanized-metal support rod. None of these methods worked to our satisfaction.

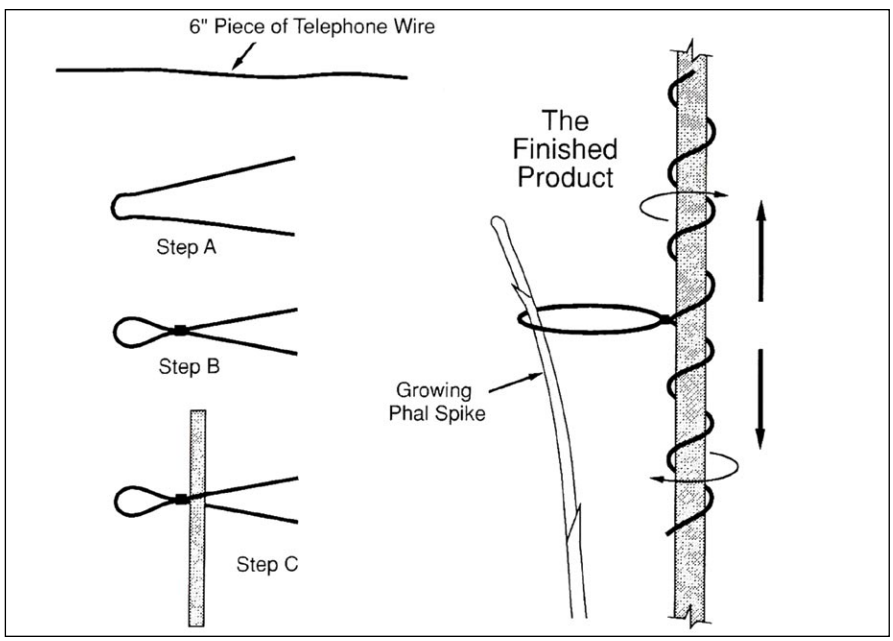
Plastic clips seem to degrade after a while and either break or fail to retain enough spring tension to grip the support rod. Tying the spike to a support rod does not allow for growth of the spike, so we are constantly retying.

A technique we developed using light-weight telephone wire (22-24 gauge, plastic insulated) has solved the problem and is just about the ideal way to support a *Phalaenopsis* spike. Attributes like economy, speed of assembly (or construction) and ease of adjustment are the pluses.

Start with a reasonably straight piece of telephone wire about 6 inches (15 cm) long. As shown in Step A, make a hairpin shape with legs of equal length. Now twist a loop (½–¾ inch [1.3–1.9 cm]) in the U-shaped end (Step B). Spread the legs at the open end and place one on either side of the galvanized support rod (Step C). Wrap one leg clockwise around the galvanized support rod, then wrap the other leg counterclockwise around the rod. Wrapping the two legs in opposing directions will cause the resulting coils to grip the support rod firmly while still permitting the loop to slide up or down the rod as needed to support the growing spike.

Each completed support loop should look like the drawing of the finished product. When a new phalaenopsis spike first needs support, insert a galvanized support rod, with loop attached, in the pot. Slide the loop up and down until an appropriate support level is obtained. Gently force the emerging spike into the loop. Check each staked plant frequently and adjust the level of the loop as often as necessary to keep the spike supported fully. — February 1994

In the late 1990s, Ed Wright and Bill Tippit authored the regular feature, "Great Ideas," showing readers useful tips for growing orchids. They were always a popular addition to the magazine. Ed and Bill have graciously agreed to allow us to republish "GreatIdeas."



Fertilizer Baskets

These little baskets were first introduced to me by Desert Valley Orchid Society (Phoenix) member Karla Velasco who was using them with a timed-release fertlizer. Because I was using a liquid fertilizer at the time, I put it aside for future use. Then I read about a fertilizer called Purely Organic manufactured in South Carolina (purelyorganicfertilizer.com/about/how-to-order). Sue Bottom's article (2017) showed excellent results on struggling orchids. The instructions were to put it into a tea bag and place the tea bag on top of the medium. The fertilizer will slowly release its nutrients as you water. I used the tea bag approach, which worked but looked really ugly sitting in the orchid pot. So, I ordered these little fertilizer baskets (the small size is 0.8 inches [2 cm]) from Amazon, 100 for around $16.50. They were designed for pelletized fertilizers for plants such as bonsai and orchids. So far, they work beautifully. They blend in well with the plant and even fit into my small 2-inch (5.1-cm) pots. For my larger pots, I use two. You would think that the powdered fertilizer would fall through the small holes but if you press it down firmly, it does not leak out. — *Cindy Jepsen (email: cindyjepsen@cox.net).*

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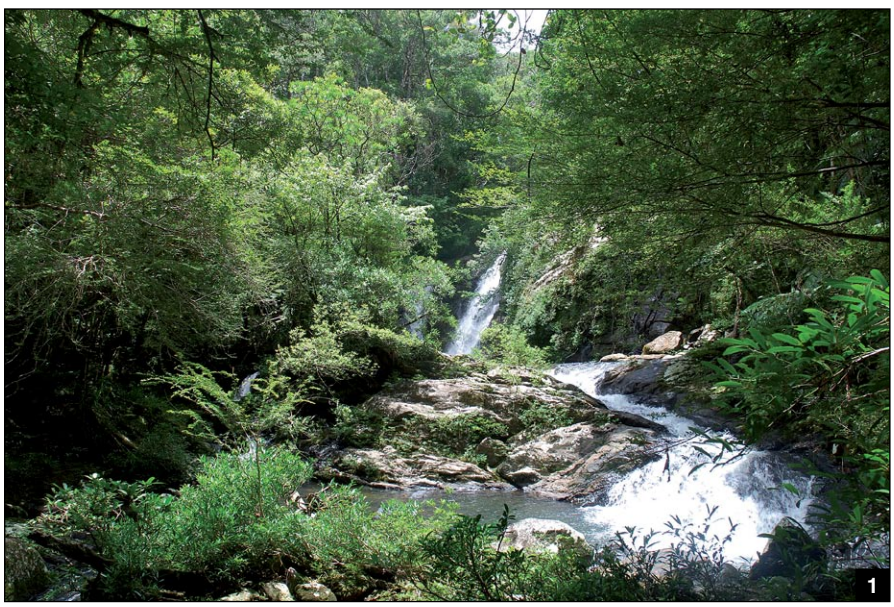
ADAFAM

Ambodiriana forest protection in Madagascar

BY JEAN-MICHEL HERVOUET AND CHANTAL MISANDEAU/TRANSLATION BY THIERRY PAIN

OVER TWO DECADES of investigation, a small forest covering 593 acres (240 ha) along the eastern coast of Madagascar has revealed some 100 orchid species, many of them new to science, some only known from their type specimens held in the Muséum National d'Histoire Naturelle, Paris, others that appeared suddenly, then abruptly disappeared, and still others, vanillas, that are regarded as new by molecular biology, the hypothetical blooming of which has been expected for years. The Ambodiriana forest is definitely a botanical paradise and this paper will shed light on some of the most interesting orchids of the area. This paradise is endangered, threatened all around its perimeter by slash-and-burn practices and the echoes of axes and saws. Every day, a procession of woodcutters from the Manompana village goes through the forest and reaches the last remaining blocks of forest inland, several miles away. They come back by night, carrying trunks on their shoulders and walk again through that Ambodiriana forest, which they respect so far, but for how much longer? Ambodiriana is the story of an environmental struggle that is worth telling, a story with a presently unclear ending; in truth, its outcome depends on us.



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CHANTAL MISANDEAU

THE THREE AMBODIRIANA MERMAIDS

"Timber belongs to the man who cuts it, land belongs to the man who clears it" — this is the customary law of the Betsimisaraka ("those who are numerous and remain together") living along the eastern coast, but it does not really align with sustainable development and has devastating results. Around the Manompana village one can often detect the burning smell of so-called "tavy," that is, cleared and burnt areas for growing crops that quickly deplete the soils. At a latitude of 16°40′ S and a longitude of 49°42′ E, 124 miles (200 km) north of Toamasina along the eastern coast, off the Sainte-Marie island, just north of the Pointe-à-Larrée tombolo, a low-elevation tropical rainforest once stretched as far as the eye could see. The elders in Manompana remember that a primeval forest once covered the hills; then everything gradually disappeared, for cultivation, house building and rice cooking. Well, maybe not everything — one hill is still standing. When you reach Manompana by boat, arriving near the stunning Tintingue bay, you notice two white spots in an island of greenery near the horizon. They are two of the three waterfalls in the Ambodiriana forest, "the place below the falls," where the Manompana river is fed by its first tributary, the Antsahamangarana, before rushing to the sea at the eponym village. Ambodiriana is a magical site that was spotted by nature lovers from Reunion Island who used to visit the area in the 1990s. Sadly, at that time, the tavy were perilously close and fires were threatening. Yet, these spectacular waterfalls and their couple of forested hills, which peak at 1,000 ft (305 m), are theoretically protected by taboos known as "fady." According to folklore, each waterfall is inhabited by a mermaid that protects it; nonetheless all the surrounding hills are being ravaged.

ADAFAM The last chance for the survival of the forest was embodied in Association Des Amis de la Forêt d'Ambodiriana à Manompana (ADAFAM), established at Saint-Leu, Reunion Island, on December 27, 1996. Three women — the President, Chantal Misandeau, Annie-Claude Gonneaud and Florence Trentin (the latter two are, respectively, professors of French studies and biology) — then raised the forest issue with the Manompana authorities. It was a tricky task, but the reactions were unexpectedly favorable. A long time later, during a casual conversation, it become apparent that the three-mermaid legend might have played a beneficial role. Because the forest is located in a state-owned area outside the jurisdiction of the Manompana municipality, a comanagement agreement was signed with the Malagasy government in 1999. The reserve initially covered 593 acres (240 ha). The aims pursued by the association are, in addition to protection, the promotion of a sustainable ecotourism in partnership with the local communities and the extension of the protected area up to 21,000 acres (8,500 ha), with a trend toward status as an outstanding national monument. The involvement of the local community of Manompana

villagers is crucial, as in all conservation projects. Nothing can be done without the support of villagers and the consideration of their interests. Funding is provided by the members, by visitors and through a sustained attendance in all the garage sales on Reunion Island.

FADY The challenges are obviously numerous, not least of which is the fady governing the Ambodiriana forest. Just to bring home the point, planting trees is prohibited, visitors are obliged to walk barefoot, institutionalization of nude bathing in the cascades, requirement to close on Tuesdays and, lastly, a prohibitive clause, forbidding entry to "vazaha" (foreigners). Fortunately, nothing is ever definitive and folk wisdom in Madagascar is totally alien to fundamentalism. These taboos, even if at least one is decidedly not unpleasant when in good company, are not immutable; the ancestor spirits are their guardians, but they can relent. Thus, in 2007, after consulting the "Tangalamena" (the spiritual authorities), the ceremony of "joro" took place; a large rally of the Manompana population around a zebu meat-based dish (a subspecies of domesticated cattle that arose in Southeast Asia characterized by a fatty hump on its back). A sacrifice was required and, consequently, a second zebu was needed as a token of gratitude for their acceptance.

ADAFAM may now do its job and gradually prepare facilities for visitors. Before reaching the reserve, they must manage to go to Manompana, not presently an easy task because they must first board three successive ferries after leaving the city of Soanierana-Ivongo, the last tarred section of national road 5 when you come from Toamasina. The adventure then begins. First are the nearly 25 miles (40 km) of fairly impassable track that is waterlogged during the rainy season. From Manompana, a pirogue (a small boat, dugout or native canoe) trip along the homonymous river, then a 1–2-hour walk are required, so that an on-site accommodation is necessary. Small bungalows have been built at the camp near the lowermost waterfall; an opportunity for the Manompana craftsmen and the volunteers to get some work. Rustic showers and toilets are provided, as well as a kitchen and a room for meals. Foreign visitors, who now may come wearing a good pair of shoes on Tuesday and are additionally allowed to swim in a bathing suit, first visit the nursery constructed for the future reforestation, then read a placard that specifies the new "fady" in force: keep to the marked paths, take your rubbish away with you, do not disturb animals, do not cut or pick anything, pets are not permitted, fires and unsupervised camping are strictly prohibited.

A NEW DESTINATION FOR TOURISTS AND SCIENTISTS There are several miles (kilometers) of trails, never far off the cool waterfalls, and the top of the hill offers a splendid view over the Manompana village, the cultivation fields and the coast with Sainte-Marie island looming in the distance. Some people even say that whales can be spotted during the appropriate season, and a whale-watching placard is provided indicating the best vantage point. At night, frogs and chameleons become active, lemurs can be detected by the reflection of their eyes in the light from headlamps, lots of bright spots hopping among the foliage. The forest is becoming a source of local pride and travel agencies are including it in their plans. The guides take advantage of the coming of wildlife enthusiasts, botanists and ornithologists to hone their knowledge, and are becoming experts.

The first visit by the Société Française d'Orchidophilie (SFO) took place in December 2007; it was followed by the construction of an orchidarium where the plants recovered from trees felled by woodcutters are hosted. The deforestation process is more than ever in full swing, but Ambodiriana is protected by a permanent presence. The guides are provided with cameras and GPS devices and roam the forest all year round. Orchid photos are taken every season and hold a lot of surprises; in particular, the blooming periods are longer than those found in the literature. Partnership agreements have been signed with the Reunion Island University, the French Centre National de Recherche Scientifique, agricultural colleges that send trainees (Saint-Paul on Reunion Island, Montmorot in the French Jura department), botanical gardens around the world (Kew, Missouri), other foreign entities (Braunschweig University, The Field Museum of Chicago, etc.) and, of course, such Madagascan partners as the Tsimbazaza park and the Institut Malgache de Recherches Agronomiques. Every year, the reserve regularly attracts many scientists and trainees and the discoveries are made in series. This is possibly because of the microclimate that is governed by the waterfalls, or perhaps it was previously like that everywhere. The different experts who followed each other reveal over the years an unexpectedly rich biodiversity: in addition to the previously mentioned 100 or so orchid species, 800 tree species, including 35 palms, in particular the rarities *Satranala decussilvae* Beentje and J.Dransf. and *Dypsis fanjana* Beentje, and 53 fern species. No fewer than 30 reptile species are listed, among which are the placid boa *Sanzinia madagascariensis* Duméril and Bibron, the evidence of an earlier connection to South America, and


MATHILDE REBERAT
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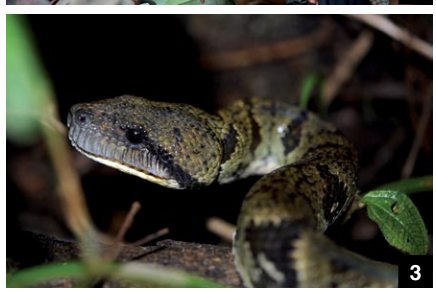
JEAN-MICHEL HERVOUET
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NICOLAS CLIQUENNOIS
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[1] A waterfall at Ambodiriana, November 8, 2007.
[2] Joro ceremony in Manompana, November 10, 2007.
[3] *Sanzinia madagascariensis*, August 25, 2014.
[4] *Uroplatus fimbriatus*, August 26, 2014.
[5] The blue-eyed, pink-legged frog, *Boophis roseipalmata*, October 6, 2006.

some mimetic lizards such as *Uroplatus fimbriatus*. Forty-five amphibians have been reported, about 10 of which are not yet identified. The discovery of *Boophis roseipalmata*, the blue-eyed, pink-legged frog, is something new to the region. Bird-watchers also enjoy the reserve, with 80 bird species, including the fantastic *Euryceros prevostii* Lesson, which builds its nest in the tree ferns, the Frances' sparrowhawk (*Accipiter francesii* Smith), the blue coua (*Coua caerulea* L.), a malachite kingfisher (*Alcedo vintsioides*) and an endemic Madagascar pygmy kingfisher (*Ispidina madagascariensis* L.). Not all the insects have been accurately listed yet, but two new stick insect species have been named: *Spathomorpha adefa* Cliquennois and *Somacantha kalolohai* Cliquennois, the latter being dedicated to the first local ADAFAM guide, Augustin Kaloloha. The fish are not overlooked and the striking giant mottled eel *Anguilla marmorata* Quoy and Gaimard can be seen at night in the ford near the camp. Twelve lemur species inhabit the forest, particularly *Eulemur fulvus* E. Geoffroy and *Avahi laniger* Gmelin, and above all the extremely rare Aye-aye (*Daubentonia madagascariensis* Gmelin). New mammal species have been discovered: a bat and in 2014, a nocturnal lemur.

ORCHIDS IN AMBODIRIANA In Madagascar, and more generally in the tropics, where the coastal forests are usually not as rich as the high-altitude ones, it is all the more surprising that the Ambodiriana forest hosts 100 or so orchid species. Each year brings its share of discoveries made by visitors and guides. The latter patrol the trails all year round and in all weather conditions, fitted with GPS devices and (waterproof) cameras as supplied by SFO. Thus, Augustin Kaloloha, in addition to the discovery of a stick insect, sent us in March 2010 a photo of *Imerinaea madagascarica*, a pink-flowered terrestrial orchid. It has appeared only once and has not been seen again. Before the recent discovery of a more accessible site, many outings and observations were necessary around the month of October to come across *Eulophiella elisabethae* in full bloom on its host palm *Dypsis fibrosa*. It could be admired among the foliage only by using binoculars. It took a lot of time to detect even such impressive species as *Bulbophyllum hamelinii*, one of the largest ones in this genus. Its flowers were only seen in March 2014, even though the previously observed pseudobulbs had left little doubt of its presence. Hence, the reserve allows for a more thorough approach than a one-off tour. Continuous monitoring makes it possible to get a better insight into biotopes, flowering dates and durations, and it often questions earlier data. For instance, *Aerangis seegeri*, considered to be a June-flowering species in its original description of 1984, has now been observed in bloom from November to June.


JEAN-MICHEL HERVOUET


JEAN-MICHEL HERVOUET

[6] *Angraecum filicornu*, Ambodiriana, August 27, 2014.
[7] *Angraecum filicornu* spur. Inset photograph taken three days later.
[8] *Bulbophyllum perpusillum*, Ambodiriana. Inset photograph is another, as yet unidentified Bulbophyllum species.
[9] *Bulbophyllum protectum*, Ambodiriana.

Without going into useless detail, we will discuss hereinafter the most flagship species, in alphabetical order, but we will hold the amazing story of *Gastrodia madagascariensis* to the end.

ANGRAECUM FILICORNU

This species was among the first to be described from Madagascar, drawn by Aubert-Aubert du Petit-Thouars as far back as 1822 following his botanical investigations along the eastern coast. It looks like *Angraecum mauritianum*, but is smaller, with 1.6–3.5-in.- (4–9-cm-) long linear leaves not exceeding 0.16 in. (94 mm) in width. Its 7.9–10-in. (20–25-cm) stem hangs from trees. The sepals and petals of the single white flower are lanceolate and 0.4–0.5 in. (10–12 mm) long. The pollinator is not known, but the 4.3-in.- (11-cm-) long, drooping spur suggests it is closely related to the moth *Xanthopan morgani* (the pollinator of the famed *Angraecum sesquipedale*). Perrier de la Bâthie, the French botanist who discovered more than half of the orchids

from Madagascar, mentioned November to June as the flowering period; Phillip Cribb and Johan Hermans, in their *Field Guide to the Orchids of Madagascar*, extended it to September–July. Our own observation of the plant in full bloom in August leads to the conclusion that it can be observed in bloom all year round. It seems to never be very far from water. The spur develops very rapidly and turns white except for its nectar-filled end, which remains green.

BULBOPHYLLUM SECT. *LICHENOPHYLAX* SP. NOV.

This is one of the previously unknown species from the Ambodiriana forest, quite probably a new one, from section *Lichenophylax*. This exclusively Malagasian section presently includes 14 species, but Gunter Fischer, an expert in the *Bulbophyllum* from Madagascar, thinks at least some 10 more are still to be described. These quite small plants hardly show above the moss on the trunks and sometimes form mats. The pseudobulbs, spaced apart along a creeping rhizome, bear two leaves and are only a small fraction of an inch (few millimeters) in diameter. The flowers, which are proportionally very large and exhibit long-acuminate sepals, are borne on a silk-threadlike peduncle. The lip, with its ciliate border, is about 0.7 × 0.5 in. (18 × 12 mm) and the diagnostic stelidia comprise a pair of hornlike protrusions at the apex of the column. We intend to describe the species when the specimens taken from the wild have been deposited in the Antananarivo herbarium, and this is pending a number of authorizations from various agencies. *Bulbophyllum perpusillum*, from the same section, can also be found in bloom at the same place and time, in August. Its lip is ciliate as well, but the species differs in its pink and yellow lip, and much more long-acuminate sepals. The profile picture of the latter species, taken in the northern Mananara Park in 2006 allows one to appreciate the gigantism of the flower as compared to the approximately 0.12-in.-(3-mm-) long leaves.

BULBOPHYLLUM PROTECTUM H. PERRIER

This species was long overlooked among the bushes by the river Manompana, along the track leading to the forest. It is indeed necessary to peer beneath the pair of leaves to find the inflorescence. The species belongs to the section *Ploiarium*, the greatest brainteaser in Madagascar orchids, and includes many undescribed species (at least two of them in Ambodiriana). *Bulbophyllum protectum*, however, is one the most easily

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identifiable species, precisely because of its inflorescence adpressed to the underside of the leaf that shields it. The leaf edges are downcurved to enhance this protection, probably intended for a water-avoiding pollinator that is perhaps nocturnal, based on the fact that the flowers grouped on a rachis are quite colorless. Now that we have the general habit of the plant in mind, with its two bulging leaves making an angle of about 60 degrees, we can identify it even out of flower, because some rachis remnants are left, and we have found it on the Pointe-à-Larrée tombolo, off the Sainte-Marie island, and much further south down to the Ranomafana National Park.

CYNORKIS LOWIANA

The best way to appreciate *Cynorkis lowiana* is wearing a bathing suit. This very graceful species thrives only in the clouds of spray produced by the waterfalls or on banks of streams, and to photograph it, you must feel comfortable with standing in the water. Initially described in cultivation and found by Perrier de la Bâthie in the Antongil Bay, it is, as it turns out, widespread, and flowers at least from June to December. Its outstanding features are the single linear leaf sheathing the stem at the bottom, the very thin, elongate (1.2–1.8 in. [3–4.5 cm]) ovary, spur of similar length, the (not always) green lateral sepals and the fairly variable four-lobed pink lip. The two apical lobes can sometimes be fused into one lobe, giving the appearance of a trilobed lip. Quite characteristic are the very elongate (0.3 in. [8 mm]) caudicles resting against the long arms of a very complex rostellum, and beneath the stigmatic arms, which are slightly shorter but very conspicuous and deep purple. Earlier descriptions of the species mention one or two flowers,

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but we have observed up to seven per inflorescence in Ambodiriana. *Cynorkis purpurascens* is a closely related species with which it is likely to be confused, but the latter species has shorter caudicles, a different rostellum, usually a much larger leaf and prefers drier habitats.

CYNORKIS SCHLECHTERI (SCHLECHTER) PERRIER

It does not appear that Perrier de la Bâthie ever visited Ambodiriana for the purpose of botanizing. He can be tracked through the vouchers he has deposited at the MNHN herbarium, revealing that he collected plants just south of the forest, at the mouth of the Anove river. It is the place where the type specimen of *Cynorkis schlechteri* comes from, and this specimen remained the single known specimen for a long time, until it was discovered in Ambodiriana. That specimen

was described as *Cynorkis exilis* in 1916 by Schlechter, who had forgotten that he himself had used the same binomial a year before for Frappier's *Hemiperis exilis* from Reunion Island. It is another species living near water. For a long time, we had noticed near the waterfalls a *Cynorkis* with very small flowers that were always wilted and, at last, in August 2014 we were able to identify it in bloom. The highly complex lip is characteristic, with its five lobes, two of which are linear and erect forming a V-shape, sometimes bent at their ends. Ambodiriana is presently the single known site.

GASTRORCHIS TUBERCULOSA

This magnificent species has a short blooming season being not-yet-blooming in August and already faded in October, and we were lucky when we found the first flowers of the first plant on August 18, 2014. This *Gastrorchis* is the *Limodorum tuberculosum* as illustrated by du Petit-Thouars in 1822, and it was not until 1925 that Schlechter included it in the present genus. Perrier found the species at the mouth of the Anove river, from where it has probably disappeared. The species is in cultivation and not at risk of becoming extinct outside the wild, but only three or so known sites remain in the wild, and it is therefore classified as Endangered (EN) in the IUCN list. The plant can grow to over 39 in. (1 m) and the sepals can reach 1.8 in. (4.6 cm) in length. The Ambodiriana guides think that two species might exist in two different habitats. However, it seems these are only color variants of a single species differing in color on the lip side lobes, either red or yellow with red flecks. These variations are also found in cultivated plants.

MICROCOELIA BISPICULATA

The *Microcoelia* species are leafless plants with chlorophyll occurring in the fine network of roots clinging to the tree branches, but the plants are barely noticeable when out of flower. *Microcoelia bispiculata* was only discovered in April 1978, in the Sainte-Marie island, by the Swedish botanist Lars Jonsson, who published its description in 1981. The locus classicus is the Ikalalao forest, which is facing increased threats or even disappearing altogether, southeast of the Lonkintsy village. The name of the village is a rough phonetic transcription of a well-known figure, King Louis XV of France! The species has been identified in several photographs taken and sent by the Ambodiriana reserve guides, with up to 14 inflorescences bearing around 10 flowers each. It was formally identified in April 2016 near the hamlet of Ambalanirina, during an exploration of forest patches near Manompana. The species is distinguishable by the intense green tinge of the roots, the large size of the two pollinia in comparison to the rest of the flower, as well as their orange color. However, *Microcoelia aphylla*, which also exists in Ambodiriana and blooms earlier, can have orange pollinia as well. Lastly it should be pointed out that *Microcoelia bispiculata* is not the only species known from both Ikalalao and Ambodiriana forests. Besides *Aerangis seegeri*, *Angraecum rhynchoglossum*, and *Disperis oppositifolia*, the same is true for a new *Habenaria* species, to be described soon. This outstanding plant, the roots of which are always submerged in water along the streams, blooms in June.

GASTRODIA MADAGASCARIENSIS

This species was spotted in Ambodiriana during a night outing! The "thing" had been seen previously, but was classified as a fungus, so that one readily got an idea of its horticultural qualities. Nevertheless, this *Gastrodia* has a truly extraordinary ability, which we will disclose at the end of its story.

It all began in September 1912 when our indefatigable explorer and collector Perrier de la Bâthie discovered a nonchlorophyllous orchid in the basin of the river Fandrarazana, one of the three rivers to be crossed on a ferry when coming to Ambodiriana. The first written mention of the plant was made by Schlechter in 1925, with a very succinct description and under the provisional name *Gastrodia* nov. spec. Perrier de la Bâthie officially described his plant in 1939 as *Gastrodia madagascariensis*. The description is succinct as well, with


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[10] *Cynorkis lowiana*, Ambodiriana.
[11] *Cynorkis schlechteri*, Ambodiriana.
[12] *Gastrorchis tuberculosa*, Ambodiriana
[13] *Microcoelia bispiculata*, Ambalanirina.
[14] *Gastrodia madagascariensis* inflorescence. Inset photograph is a lip close-up showing a fruitfly egg (red arrow).

nothing being said about the flowers. The only clue referring to the genus is the following remark: "Fruit-bearing pedicels ultimately reaching 30–40 cm in length and 2–3 mm in diameter." Only four genera in the area have pedicels that continue elongating after flowering as the seed capsules mature, namely *Gastrodia*, *Didymoplexis*, *Auxopus* and sometimes *Corybas*. An unexpected event occurred in 1953 when Summerhayes, after having examined all the *Gastrodia* vouchers in Kew, covering 13 species, asserted that the pedicels of *Gastrodia* do not develop that way and transferred the species to the genus *Didymoplexis* (Summerhayes 1953). Note, however, that only flowers are helpful to separate the two genera. No one made any other observations of that plant until, during the eighth tour of the Société Française d'Orchidophilie in 2007, we found a *Didymoplexis* in bloom, some 18.6 miles (30 km) further north.

After an exchange of correspondence with our colleagues at Kew, we thought we had rediscovered Perrier's plant and published the photograph. However, Jean Bosser, who told us that we took risks with that identification, also published the photograph in the book he wrote with his coauthor Marcel Lecoufle. All that said, a complication arose when "showers" of new *Didymoplexis* species suddenly fell on Madagascar — and nowadays four species are proposed, one of which is as yet undescribed. Which one is relevant? None! The point is that Jean Bosser published the description of a *Gastrodia similis* from Reunion Island in 2006. The orchid found at Ambodiriana is very close to the latter and, despite the statements by Summerhayes, the fact is that we were dealing with a true *Gastrodia*, near Perrier's locus classicus, which blooms in July and August. Hence, *Gastrodia madagascariensis* is not a *Didymoplexis* and, at last, we had found it! The first *Didymoplexis* we found in bloom in 2007 is presently known as *Didymoplexis avaratraensis* (a name that might actually cover two species, but that is another story). The rest of the story of *Gastrodia madagascariensis* is related to the Florent Martos cameras continuously operating to capture images of the flower pollinator. This technique has already led to several discoveries on Reunion Island. The flowers, all the parts of which are fused into a bell, except for the lip, release a smell of rotten fruit. A camera has captured the following incredible scene:

1. A fruit fly enters the flowers and walks in it.


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2. The lip slowly rises! It begins to entrap the fly.
3. The fly escapes from the flower.
4. The lip slowly falls back!
5. The fly comes back and again enters the flower.
6. The lip rises again, still slowly, as though it was actuated by a small motor! However, this time it manages to trap the fly.
7. After an intense struggle, the fly crawls out of the flower, carrying the pollinia on its head.
8. The lip falls open again and the flower now waits for a fly carrying pollinia to visit.

So far, no explanation for the motion of the lip has been proposed; however, we do know what the fly intends to do in the flower. The answer to that question appeared on the photographs taken at Ambodiriana in August 2014. When examined closely back in Paris, a tiny transparent sausage could be seen stuck to the lip — a fruit fly egg. The fly enters the flower for the purpose of laying eggs, as it would do in a rotten fruit.

Gastrodia madagascariensis has recently been fully described thanks to the flowers from the Ambodiriana forest.

OVERVIEW OF THE SITUATION AT AMBODIRIANA The involvement of local communities is a success now, with a team of 12 people composed of cooks, guides, canoeists and rangers. The guides, who are encouraged to obtain a national diploma, have set up an independent association — the Association des Guides et Protecteurs de la Nature (AGePN) — that now covers the region. Other nongovernmental organizations, such as Kokopelli, or the educational farm Yapluka created in Manompana in 2011, have joined their forces to help the villagers enhance the productivity of their crops and provide seed. The effects are remarkable, because 25% of the municipality's income is derived from forest visitors in the best years. The emphasis has gradually shifted toward support to farmers and reforestation, through the creation of corridors that link Ambodiriana to other massifs further inland, such as the Anjinjabe forest, particularly for contributing to the free circulation of lemurs. Despite this, all around Ambodiriana, the forest has tragically shrunk in the last few years. The Ambodiriana forest is becoming one of the most studied forests in Madagascar and is the subject matter of many scientific reports and publications, all of them concluding that immense efforts are still to be made and that many other discoveries can be expected. ADAFAM experience suggests that many species can be preserved in dedicated islets with the aid of the local population and by promoting local development, thus guaranteeing long-lasting conservation. It is both a hope and a model for conservation in Madagascar.

Unfortunately, nothing can be taken for granted in Madagascar. A series of adverse events have occurred since 2015. The comanagement agreement with the state expired and had to be renewed. The negotiations for a new agreement were protracted. During that period of confusion, the enhancement of the

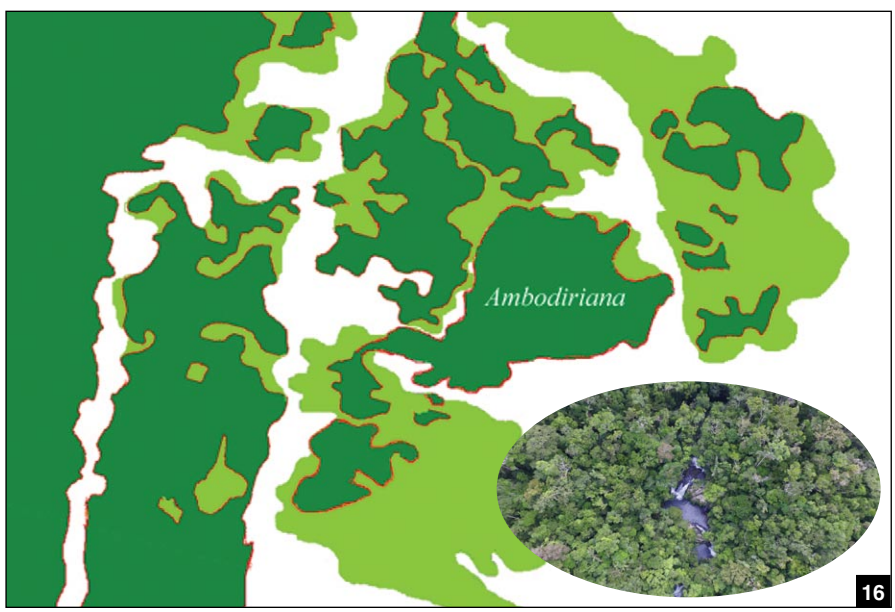
Ambodiriana camp facilities continued, with the installation of solar panels as funded by SFO members. The camp was brightly lit at night for a month, then the panels disappeared despite the continuous presence of a ranger. At the end of 2016, we suffered a further blow because the Ambodiriana camp was leased from a farmer who died. The seven heirs stated they wanted to recover the land to clear it and plant rice. All the bungalows were to be dismantled. We had to argue and, of course, pay to sign a new lease agreement. Unfortunately, that did not mean the bungalows were saved: the Enawo cyclone struck in April 2017. The walls of the kitchen collapsed and two bungalows were damaged by fallen trees. The forest remained inaccessible for several days because the pathway was flooded, and it was not until after the floodwaters receded that the restoration work could begin.

Priority was given to the creation of partnerships for long-term management of the forest. A sustainable collaboration with Univet Nature, an endowment fund created by French veterinaries, started in 2018. Through this channel, companies finance reforestation. It is presently the main part of ADAFAM funding, in particular guaranteeing the payment of wages to the guides ranging in the forest.

In spite of the coronavirus crisis that has seriously disrupted activities, 2020 was marked by renewal and hope. In the wake of recent changes in government, a five-year comanagement agreement with the Malagasy State was successfully executed and lastly, during the month of May 2020, we received good news regarding support by the American Orchid Society for a couple of years! That welcome aid will enable us to train a local guide specifically for identification and preservation of orchids. He or she will have to update the already spotty species records, guide experts or enthusiasts in the reserve, complete the mapping, as well as explore new areas that would be considered a priority for conservation.

A later paper, by the end of the AOS-funded project, will report its results and the new discoveries achieved thanks to that support.

Whatever happens, the Ambodiriana forest defenders will keep working hard to save the aye-aye, the blue-eyed frogs and the 100 orchids of the three-mermaid forest. Look at a bird's eye view of the forest and you will become as adamant as we are.



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[15] On the Manompana river en route toward Ambodiriana. The canoeist, Elysée, the guides Siraly Wanghou (aka "Galy") and Augustin Kaloloha and Bernard Billaud (SFO).

[16] Forest around Ambodiriana in 2008 (light green) and 2014 (dark green). After Alex Miller and the work of Ségolène Beaucent and Marc Fayolle. Inset photograph, by Eric Gentelet is a drone's eye view of the Ambodiriana forest on May 13, 2019.

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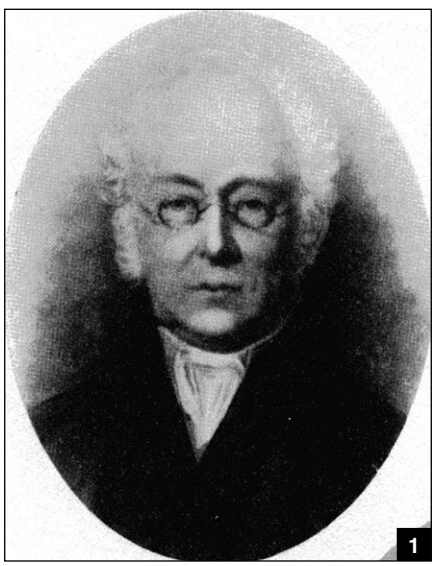
Who Were These Guys: Part 13

James Veitch and the Lobb Brothers

BY DAVID ROSENFELD, MD

EVER WONDER HOW "orchid mania" began in the British Isles in the 19th century? I think even the casual orchid grower today is aware that orchids were all the fashion in England and Europe in the second half of the 19th century, much like tulips were in Holland in the early 17th century. Actually, orchid species began to be imported during the 1700s. The first known species was imported from the Bahamas in 1731. This was the terrestrial orchid *Bletia purpurata*. This was followed by the South Asian orchid *Phaius tankervilleae* in 1767. Soon after, the clamshell orchid, *Prosthechea cochleata* from Central America, was bloomed at Kew Gardens in London. These orchids were mostly of interest to educated botanists, but it was the importation and blooming of the beautiful *Cattleya labiata* from Brazil in 1819 that sparked the desire of the English aristocracy for more of these exotic orchids. The first horticultural establishment that realized the potential financial bonanza of importing new desirable species of orchids and other plants was owned by James Veitch, the grandfather of Harry Veitch (Rosenfeld 2019) of Exeter in western England. Beginning in the 1840s, James Veitch (1792–1863) contracted with the brothers Lobb, William (1809–1864) and Thomas (1817–1894), to explore the Americas and Asia as plant hunters. This article is the story of the Lobb brothers' adventures and James Veitch's expanding and successful nursery.

In the 1770s, Scotsman John Veitch, James's father, was hired by a prosperous English gentleman, Sir Thomas Dyke Acland, as his gardener at his estate near Exeter. John Veitch later established his own nursery of fruit trees and ornamental shrubs. When his son James took over the business in the early 1830s, he built several greenhouses and a seed shop in Exeter. During the early decades of the 19th century, there had been a few plant hunters sent from other nurseries and botanical societies to collect plants and seeds from tropical regions. The shipping of plant material, more often than not, did not have a favorable outcome and the plants did not make it back to England alive. James, always desiring to expand his enterprise, was keenly aware of the rapidly increasing desire of the upper strata of English society for these rare, exotic plants and flowers. He developed an informal network of travelers and sea captains who were interested in botany to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WES NEWTON

[1] James Veitch, Sr. (1792–1863).

[2] There are no surviving pictures of Thomas Lobb and only this one of his brother William.

[3] Lithograph of *Vanda coerulea* by Walter Hood Fitch, *Select Orchidaceous Plants, first series* (1862–1865).

[4] *Vanda coerulea* 'Crystelle' FCC/AOS; exhibitor: Krull-Smith

send him back plant material from around the globe for him to propagate and sell.

In 1839, Veitch realized he needed more than just men who were willing to be plant hunters. As a nurseryman, he critically needed counsel, support, and expertise from the most notable British botanists. At this point in time, there were two prominent experts, John Lindley (1799–1865) (Rosenfeld 2018) and Sir William Hooker (1785–1865). These two men inspected all the newly imported plant material and provided critical information, including identification, description and naming. Without this documentation a new plant could not be marketed. James Veitch decided to correspond with William Hooker. William Hooker was the Regius Professor of Botany at the University of Glasgow and was knighted for services to the crown in 1836. In 1841, he was appointed director of London's Royal Botanic Gardens, Kew and served as editor of *Curtis's Botanical Magazine* for many years. During his 25-year tenure at Kew, he was responsible for the Kew's dramatic expansion from 10 to 250 acres (4–101 ha) and the erection of numerous greenhouses.

It is through a continual window of correspondence between Veitch and Hooker that we will learn about the travels of the Lobb brothers, for sadly there is almost no existing written communication from either William or Thomas Lobb to James Veitch. On the brothers' many plant hunting adventures, they sent back innumerable dried plant specimens for Hooker's herbarium and crates of live plant materials and seeds for Veitch.

5 LUIS BRENES LOAIZA

It is now time to introduce the Lobb brothers, William (1809–1864) and Thomas (1817–1894), formally. Their childhoods were spent in the far southwest English region of Cornwall. They were of modest background. Their father worked as a carpenter on local estates. From a young age, both William and Thomas were interested in botany. In their teens, rather than working in the vast copper mines in the area, they found employment as apprentice gardeners on Cornwall estates. By 1840, both men were accomplished nurserymen. William was becoming restless, nurturing a desire to travel to exotic places as a plant collector. Veitch described William in a letter to Hooker as "…not a first rate botanist…but is fond of plants and we think may fully be depended upon" (Shephard and Musgrave 2014). William was later described in the official history of the Veitch nursery *Hortus Veitchii* of 1906 as "…quick of observation, ready in resources and practical in application" (Veitch 1906). William signed a contract with Veitch in 1840 to explore South America for four years and had to agree to collect solely for the Veitch nursery. Almost all 19th-century plant hunters, including the Lobb brothers, traveled individually to the far corners of the globe. Often the only assistance were letters of introduction to prominent local Europeans living in cities that were stopping-off points, such as Lima, Peru for William Lobb and Singapore for Thomas Lobb. They often contracted with local guides who aided the brothers when they were traveling in remote regions.

William would make four extended visits to the Americas: 1840–1844 and 1845–1848 in South America and 1849–1853 and 1854–1857 in the Pacific Northwest. The first two trips were mostly to the western reaches of South America, especially Chile. There were also plant-hunting trips in Peru, Ecuador, Colombia and Panama. Veitch's main charge to William on the first voyage was to collect seeds of *Araucaria araucana*, the monkey puzzle tree, from the foothills of the Andes in central to southern Chile. This dramatic conifer had been previously introduced to England in 1795, and was known by Veitch to be prized by estate owners. The second trip to South America was mostly confined to Chile's more southern regions and Patagonia, where William collected mainly evergreen shrubs, conifer seeds and temperate nonorchidaceous flowers. There were several orchids sent back from both trips; the most notable were *Phragmipedium caudatum*, with its long petals, and *Cynoches pentaldactylon*. His last trips were confined to what is now California. William happened to be there during the time of the California gold

rush, and he struck botanical pay dirt for Veitch when he brought back seeds from giant 300-foot (92-m) sequoias from the central Sierra Nevada Mountains. Lindley classified the trees in a new genus, *Wellingtonia*.

From an orchid point of view, the travels of William's brother Thomas were much more interesting. Based on the early success of William, Veitch saw another business opportunity, that of sending an adventurer to southeast Asia. Veitch knew just the person, Thomas Lobb. Thomas was then 26 and had worked at his nursery for almost a decade. In a letter to Hooker, Veitch describes Thomas as "a much better botanist…quite steady and free from drinking…and he is a young man of very respectable manners and appearance" (Shephard and Musgrove 2014). Hooker, as on William's trips, offered his assistance based on a gentleman's agreement that he and Kew Gardens would receive the herbarium specimens. In return, Hooker would provide support in identifying and naming the new botanical introductions. As in William's contract, it was stated that Thomas was in the employ of Veitch "as botanical collector of living plants, seeds and dried specimens, and to collect for the said James Veitch & Son and for no other person" (Reinikka 1995).

Thomas Lobb was sent on three expeditions to Southeast Asia. These were to India, Myanmar (Burma), the Malay Peninsula, Borneo and Java (in what is now Indonesia) and the Philippine Islands. These trips were from 1848–1853, 1854–1857 and 1858–1860. The last trip was cut short by a severe leg injury while in a remote area in the Philippines. Thomas was fortunate to get back to civilization but was never able to leave his home in Cornwall again.

While on these plant-hunting excursions, Thomas collected and sent back to England significant numbers of orchids. Many of these plants were already known to science but were introduced into cultivation for the first time. From northeast India and adjacent Myanmar, Thomas collected the fabulous blue *Vanda coerulea*. Other notable orchids from this region were *Paphiopedilum villosum*, *Coelogyne maculata*, *Aerides multiflorum* and *Dendrobium infundibulum*. On his multiple collecting trips to the Sarawak region of northern Borneo, he discovered *Vanda tricolor* var. *suavis*, *Calanthe vestita*, *Paphiopedilum barbatum* and *Bulbophyllum lobbii*. From the Philippines, Thomas collected what was later identified as the first natural hybrid orchid *Phalaenopsis* × *intermedia* (anonymous 1894). It is not known whether on any of his three visits to this region he came into contact with English colonial administrator and orchid collector Hugh Low (Rosenfeld 2020), who lived in this area of Borneo and the adjacent small island of Labuan. Thomas also collected many other botanical treasures, including many varieties of rhododendrons and nepanthes. It is a fascinating sidelight to note the extent to which these collectors and horticultural establishments went to protect the locations of their new and desirable botanical treasures. To this end, Thomas would prepare four duplicate dried specimens of each plant to send back to England. He would label each of the four identical specimens as coming from different regions such as Borneo, the Philippines, Malay or Java. While providing secrecy of a plant's origin and aiding the individual firms in collecting additional plants, it later created much confusion for botanists trying to classify apparently new plant introductions.

Not much is known about the interaction of William and Thomas during their years traveling and collecting on opposing sides of the globe. There is no known correspondence between them. It is also unknown whether they met during the short intervals they were home in Cornwall between trips. We do know that neither of them ever married. William transiently returned to Cornwall in 1853 following his collection of the sequoia seeds. He stayed home only a short time before going back to California. He died in San Francisco in 1863. Thomas returned to Cornwall following his serious leg injury in 1860. He lived a quiet life tending his garden until his death in 1894. During their adventure years they must have had many, many extraordinary experiences. It is unfortunate that we do not have written personal accounts of their exotic travels.

KAY CLARK

6

[5] *Vanda tricolor* var. *suavis* 'Camila' AM/AOS; exhibitor: Oscar Sanchez Gomez.

[6] *Phalaenopsis lobbii* 'Fajen's Hat Trick' AM/AOS; exhibitor: Fajen's Orchids.

— David Rosenfeld, MD, has been growing orchids with his wife Joan for 40 years. David is a retired professor of pediatric radiology at the Rutgers Medical School. They have a 700-square foot (about 65-sq m) greenhouse with both warm and cool sections where they grow a mixed collection of species and hybrids. Their skill as growers is illustrated by their 100 awards. David has written 20 articles for Orchids *and last wrote about Oakes Ames in the February 2021 issue (90[2]:103–105) (email: orchiddoc@ comcast.net).*

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The Orchid Stamps of

The 2020 Dillon-Peterson Essay Contest Winner

BY CAROL ZAKAHI/STAMP PHOTOGRAPHS BY SAMANTHA DIAZ

OUR LOCAL CLUB, the Kona Daifukuji Club, was slated to have our orchid show in July 2020, but it was cancelled, like so many other events around the world, due to the pandemic. I usually have a special event display in honor of our late advisor Tom Kadooka, featuring cups, plates, pitchers, jewelry, stamps, badges, Orchid-gami, sculptures, old paintings of orchids and just about anything with orchids. The area surrounding my displays is usually filled with live orchids and special displays. I had titled my display "Global Affair of Orchid Stamps," but alas, it did not happen this year. I was a bit disappointed because I usually plan a year in advance for the annual show, so I decided to write this article on the orchid stamps issued in the US.

In our little town of Holualoa, Hawaii, life in the 1950s was simple, in the middle of the Pacific Ocean, away from everybody and everything; even neighbors and friends were a distance away. You were lucky to have a car and a flushing toilet. Social gatherings did not happen often, so when COVID-19 struck us in 2020, I felt as I had been propelled back into my childhood in the 1950s.

Fairy tales, scary stories and old movies kept us entertained. My late father introduced me to postage stamp collecting when I was 12, and gave me a magnifier that I have kept for years.

In 1987, I belonged to our newly formed orchid club, the Kona Daifukuji Orchid Club, and receiving the American Orchid Society magazine, wherein I found an article about orchid stamps. It sparked my interest in collecting orchid postage stamps exclusively. It was an article written by the late Roy S. Bigham Jr., MD. I searched through my old album for orchid stamps but there were none, so I started my search for the stamps. I finally wrote to Dr. Bigham in December 1993 and he graciously replied with information on where I could start getting stamps. He also told me that his article was soon to be published in the February 1994 issue, and that it would answer my many questions on the stamps.

I was thrilled to have him reply, and I also gathered information on the Orchid Stamp Club International (OSCI), based in Australia. I was the first person from Hawaii to join the club and was a member until the club closed its doors in January. I have an international collection, and when people hear about it, they remember whenever they see an orchid postage stamp. Some of my friends had given me orchid postage stamps for my collection throughout the years.

Throughout the years, I have displayed my collection with our annual orchid show. I found out that the first orchid stamps in the world were issued by the Caribbean Island of Guadeloupe in 1905, depicting vanilla vines, vanilla beans, a commercial crop, and with the Soufriere volcano in the background. Since then, thousands of stamps have been issued with orchids on them. I have focused on the postage stamps of the USA for this article, and I found out that orchid postage stamps were few and far between. But there were many *AOS Bulletin* articles about orchid postage stamps, written by Billy M. Collins in 1964; Charles Marden Fitch in 1978; Roy S. Bigham, MD, in 1989, 1991 and 1994; James Watson in 1994; Lokewara Ray Madiraju in 2018; Albert W.B. Sydney in 2002; Carlos Ossenbach in 2006; and Arthur Chadwick and Susan Wedegaertner in 2020. In 1994, the American Orchid Society announced that Dr. Bigham had donated his extensive collection of orchid

the United States

stamps to the Society.

My membership in AOS meant that much information was at my fingertips. I also received tremendous help from OSCI International Secretary Myra Chalmers, the late Sam Flagler, Ron Hanko of OSCI, and Jay O'Neill of the Smithsonian Environmental Research Center (SERC). Internet searches have supplemented these sources, and I have made a nice collection of the orchid stamps of the USA.

According to Billy M. Collins in the *AOS Bulletin* of July 1964, the USA at that time had issued only one stamp that possibly had an orchid on it; it was probably the first orchid stamp of the USA. In an update on orchids on stamps in the June 1987 issue of the *AOS Bulletin*, Dr. Bigham mentioned that the 1959 airmail stamp with the vanda in the lei was the beginning of orchid stamps being produced in the USA. Interesting to us in Hawaii was the issuance of the "Diamond Head" stamp in 1952. Though no orchid was on it, it was an 80-cent stamp specially issued for the transport of orchid blooms between Hawaii and the mainland America. It was noted that these shipments were indeed the rare 1952 "FDC Orchid Box."

In 1969, the US Postal Service (USPS) issued stamps to commemorate the 11th International Botanical Congress in Seattle, Washington. There was a 6-cent stamp featuring an engraving of *Cypripedium reginae*, the Showy Lady's Slipper.

In conjunction with the 11th World Orchid Conference in Miami in 1984, a four-stamp "Native Orchids of North America" set included Wild Pink or Dragon's Mouth (*Arethusa bulbosa*), Yellow Lady's Slipper (*Cypripedium calceolus,* renamed *Cypripedium parviflorum* as calceolus is a European orchid), Spreading Pogonia, or Rosebud Orchid (*Cleistes divaricata,* renamed *Cleistesiopsis divaricata*) and Pacific Calypso or Fairy Slipper (*Calypso bulbosa*).

In 2002, a souvenir sheet series of the "Nature of America" featured an

ecological community sheet, "Longleaf Pine Forest" in Tallahassee, Florida. It had two different orchids, the Rosebud Orchid (*Cleistes divaricata*) and the Grass Pink Orchid (*Calopogon tuberosus*).

Another souvenir sheet of the "Nature of America" featured "Southern Florida Wetland" in 2006 in Naples, Florida. Among the flora and fauna, there was one stamp, the Cowhorn orchid (*Cyrtopodium punctatum*) with its yellow–orange–brown flowers and an illustration of a creeping Vanilla vine (*Vanilla pheantha*) with yellow–green flowers.

In the eleventh series of the "Nature of America" another orchid was featured in the "Hawaiian Rain Forest" issued in 2010 by the Hawaii National Parks. In a pane of 10 44-cent stamps was the Jewel Orchid (*Anoectochilus sanvicensis*). This series of stamps showed the beauty and complexity of plant and animal communities in the USA.

The first notice in 2020 of the Forever stamp (nondenominational first class postage, which means the stamps can be used to mail first class letters no matter what the postal rate) was sent to me by Jay O'Neil. On December 11, 2019, he had emailed me regarding the news of the Forever stamps of 2020, which included a collection featuring orchids of nine species that grow wild in the USA. Those stamps were designed by Art Director Ethel Kessler with existing photographs by Jim Fowler, and the stamps were released in February 2020. The first time I saw them was when they were featured in the AOS's *Orchids* in February 2020 by AOS President Susan Wedegaertner. Our post office did not have them until about April,

and Jay O'Neill sent me my first pane of 10 stamps. The species depicted were *Triphora trianthophoros*, *Cypripedium californicum*, *Hexalectris spicata*, *Cyp-*

ripedium reginae, *Spiranthes odorata*, *Platanthera leucophaea*, *Platanthera grandiflora*, *Cyrtopodium polyphyllum* and *Calopogon tuberosus*. The stamps were featured again in AOS *Orchids* in March 2020 in the Past, Present, Future article "New Orchid Stamps" by Arthur Chadwick, then again in the April 2020 issue of *Orchids* by President Susan Wedegaertner, who reported on the Florida ceremony wherein the USPS unveiled the new orchid stamps.

On this journey of collecting orchid stamps, I have met some very interesting people, both in person and on the internet. All of them have been gracious to me and have given me so much advice. In October of 2004, I had the pleasure of meeting the late Charles Bracker from the Lafayette Orchid Society of Indiana. He had come with his family to rent my vacation rental. His son raced in our famous Iron Man Triathlon here in Kona. During his stay, I showed him my collection of stamps, and by 2005, he had designed his own stamps with photographs of his orchid collection as US stamps. The USPS grants licenses to a few companies to create their own stamps.

Just recently, Jay O'Neill sent me two orchid stamps by Mary Ruden, an artist who designed her own stamps of the USA, a Ghost Orchid and a Pink Lady's Slipper, which I added to my collection of

USA orchid postage stamps.

I have thoroughly enjoyed everything that orchids have brought into my life. Since I became a charter member for our orchid club, collecting the live ones has given me much pleasure. I have always said that you go through five stages of orchid growing: buying, killing, growing, blooming and selling. I found that my stamp collection does away with the killing and growing, especially potting, fertilizing, watering, etc. This hobby sits on my shelf ready anytime for discovery of places and orchids around the globe. As I look forward to the rest of my senior years and with my collection of magnifying glasses, I will still be able to learn about orchids through my stamps. I am so grateful as I look back on the people I have met on my journey with orchids. They have given me so much inspiration, and belonging to the AOS has been such an enormous influence in my life.

— Carol Zakahi is a charter member of, and the historian for, the Kona Daifukuji Orchid Club. She is a long-term AOS member and the Club's AOS representative. She is the owner of the TNSZ Connection, a mini family museum, and lauhala shop, and a former member of the now- dissolved International Orchid Stamp Club and the Orchid Badge Club International (email: carolazakahi@aol.com).

2021 Dillon/Peterson Essay Prize

THE AOS IS celebrating its Centennial Anniversary in 2021. To join in the fun, the Dillon-Peterson Essay Contest is asking for in-depth articles relating to significant people, events, programs or even plants or technology changes that have helped shape the direction of the AOS or are likely to in the future. Was there someone special in the AOS who mentored and inspired you and others? Did an AOS award you received plant the seed that resulted in you becoming involved in judging—could you tie that into how the judging program has helped shape the AOS and Affiliated Societies? Perhaps it is technological changes that the AOS has adopted that have changed and will change the AOS and your enjoyment of orchids? Share why the AOS has had and will have an enormous influence over lifetimes.

Membership in the American Orchid Society is not necessary to enter the contest. **The deadline is November 30, 2021**. The winning entry, if any, will be published in the June issue of the following year. For complete contest rules see http://www.aos.org/about-us/article-submissions/essay-contest-winners.aspx

Submit all entries to the Dillon/Peterson Memorial Essay Prize at AOS headquarters: Ron McHatton, American Orchid Society at Fairchild Tropical Botanic Garden, PO Box 565477, Miami, Florida 33256 (email rmchatton@aos.org).


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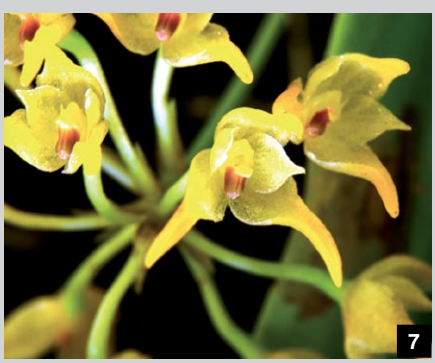
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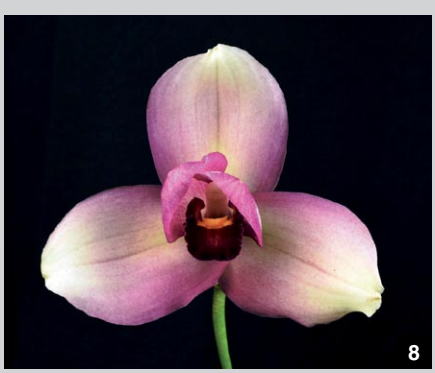
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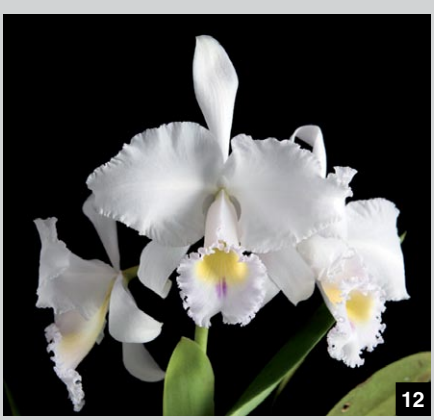
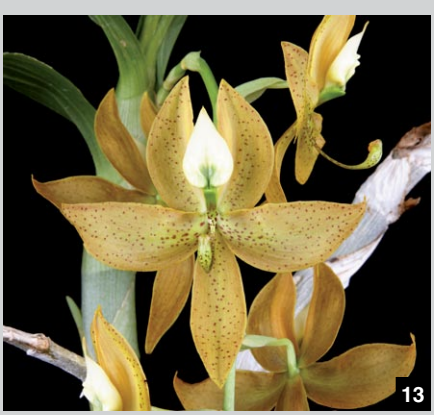
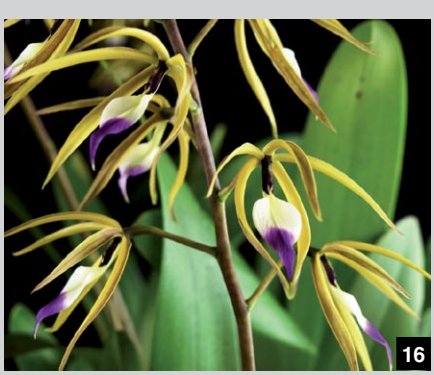






[1] *Prosthechea venezuelana* 'Maleja' CCM/AOS 85 pts. Exhibitor: James Torres; photographer: Nicolas Gomez Rios. West Palm Beach Judging

[2] *Rhynchostele bictoniensis* 'Carlos Bianchi' CCM/AOS 85 pts. Exhibitor: Carlos Bianchi; photographer: Jorge Carlos. West Palm Beach Judging

[3] *Phragmipedium* Ruby Slippers 'Alefran Medina' AM/AOS (*caudatum* x *besseae*) 84 pts. Exhibitor: Rafael Medina; photographer: Jorge Carlos. West Palm Beach Judging

[4] *Cattleya quadricolor* 'Memoria Nicolle Amelie Stephan' CCM/AOS 80 pts. Exhibitor: Pascal Arrondeau; photographer: Nicolas Gomez Rios. West Palm Beach Judging

[5] *Maxillaria procurrens* 'Isabella' CCE/AOS 90 pts. Exhibitor: Lucia Jaramillo de Gutierrez; photographer: Nicolas Gomez Rios. West Palm Beach Judging

[6] *Stanhopea dodsoniana* 'Sicani' AM/AOS 85 pts. Exhibitor: Miguel Angel Sican Rivera; photographer: Jorge Carlos. West Palm Beach Judging

[7] *Bulbophyllum cephalophorum* 'Mia Isabela' CBR/AOS. Exhibitor: Alejandro Bolanos Molina; Photographer: Jorge Carlos. West Palm Beach Judging

[8] *Lycaste* Rakuhoku 'Jose Francisco' AM/AOS (Auburn x Shoalhaven) 87 pts. Exhibitor: Alejandro Ruiz Moino; photographer: Jorge Carlos. West Palm Beach Judging

[9] *Barkeria scandens* 'Mario Palmieri' AM/AOS 87 pts. Exhibitor: Silvia and Mario Palmieri; photographer: Jorge Carlos. West Palm Beach Judging

[10] *Pleurothallis phalangifera* 'Almanzores' CCM/AOS 86 pts. Exhibitor: Hermanos Almanzar; photographer: Nicolas Gomez Rios. West Palm Beach Judging

[11] *Pescatoria coelestis* 'La Aldea' CHM/AOS 85 pts. Exhibitor: David Manzur; photographer: Nicolas Gomez Rios. West Palm Beach Judging

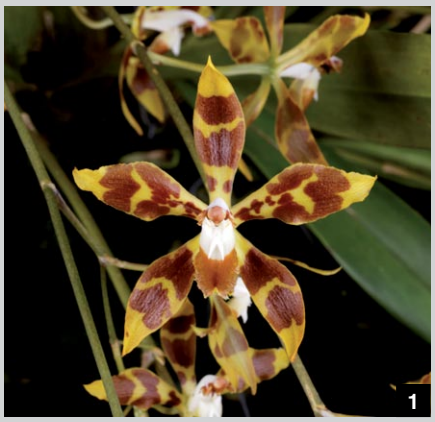
[12] *Cattleya trianae* 'May' AM/AOS 83 pts. Exhibitor: Jose Fernando Londono; photographer: Nicolas Gomez Rios. West Palm Beach Judging

[13] *Cycnoches* Maren Gleason 'Nax Golden Swan' HCC/AOS (*warszewiczii* x Martha Clarke) 77 pts. Exhibitor: Thornton Conservatory; photographer: Arthur Pinkers. Pacific South Judging

[14] *Paphiopedilum* Odette's Infatuation 'Red Proton' AM/AOS (Odette's Magic x Gyorgy Nagy) 81 pts. Exhibitor: Bryce Augustine; Photographer: Arthur Pinkers. Pacific South Judging

[15] *Cattleya quadricolor* 'Fabio Uribe' AM/AOS 80 pts. Exhibitor: Juan Manuel Palacio; photographer: Nicolas Gomez Rios. West Palm Beach Judging

[16] *Prosthechea brassavolae* 'Bianchi's Great Grandmother' AM/AOS 85 pts. Exhibitor: Carlos Bianchi; photographer: Jorge Carlos. West Palm Beach Judging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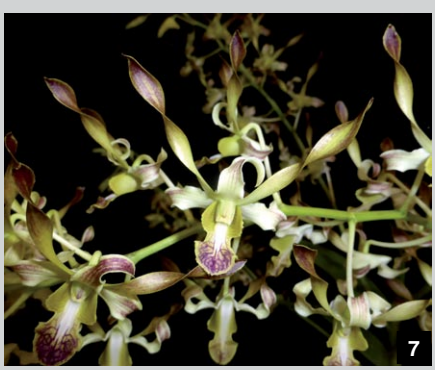
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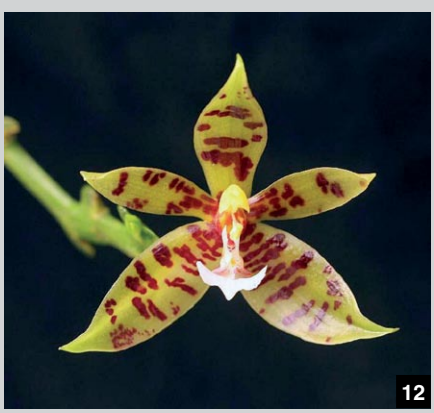
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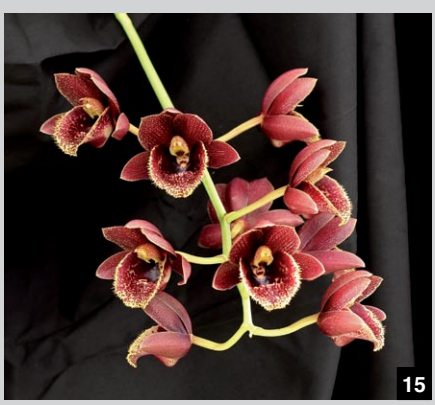
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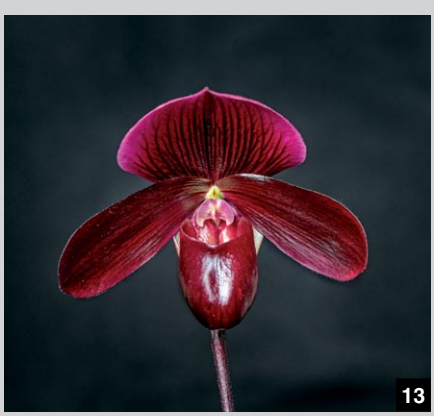
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[1] *Oncidium epidendroides* 'Sycamore Creek' HCC/AOS 75 pts. Exhibitor: Bill Robson; Photographer: Arthur Pinkers. Pacific South Judging

[2] *Catasetum* Edgardo A. Pauneto 'Suki's Frilly Jade' HCC/AOS (Frilly Doris x *lucis*) 75 pts. Exhibitor: Thornton Conservatory; Photographer: Arthur Pinkers. Pacific South Judging

[3] *Epidendrum* Panama Ruby 'Thornton Ruby Beetle' HCC/AOS (*medusae* x *peperomia*) 75 pts. Exhibitor: Thornton Conservatory; Photographer: Arthur Pinkers. Pacific South Judging

[4] *Paphiopedilum superbiens* var. *curtisii* 'Big Boy' AM/AOS 88 pts. Exhibitor: Leslie Ee, N.D.; Photographer: Ed Cott. Toronto Judging

[5] *Dendrobium* QF Kainoa 'Fco Georgian' HCC/AOS (*atroviolaceum* x *hodgkinsonii*) 79 pts. Exhibitor: Francisco Martinez Rivera; Photographer: Irma Saldaña. Puerto Rico Judging

[6] *Phalaenopsis* Mituo King Bellina 'K - 476 Pink' HCC/AOS (LD's Bear King x LD Bellina Eagle) 78 pts. Exhibitor: Carlos Fighetti; Photographer: Irma Saldaña. Puerto Rico Judging

[7] *Dendrobium* Chan-Chao 'Julio David' AM/AOS (Waianae Profusion x Ly) 80 pts. Exhibitor: Julio David Rios; Photographer: Irma Saldaña. Puerto Rico Judging

[8] *Polystachya foliosa* 'Tia Rosa Julia' CBR/AOS. Exhibitor: Rebecca I. Rodríguez; Photographer: Irma Saldaña. Puerto Rico Judging

[9] *Catasetum* Tom Pickens 'B-C' AM/AOS (Karen Armstrong x Alexa) 82 pts. Exhibitor: B. Butts- C. Lefaive; Photographer: Jay Norris. Toronto Judging

[10] *Bulbophyllum cumingii* 'Julio David' AM/AOS 86 pts. Exhibitor: Dr. Julio David Rios; Photographer: Irma Saldaña. Puerto Rico Judging

[11] *Paphiopedilum* Rollie Wilson 'Cad's Freakin Beast' AM/AOS (Hung Sheng Eagle x *rothschildianum*) 80 pts. Exhibitor: David Bryan; Photographer: Ed Cott. Toronto Judging

[12] *Phalaenopsis pantherina* 'Fco Katiana' AM/AOS 80 pts. Exhibitor: Francisco Martinez Rivera; Photographer: José A. González Pérez. Puerto Rico Judging

[13] *Paphiopedilum* Worthy Fred 'Teacher Maria' AM/AOS (President Fred x *charlesworthii*) 85 pts. Exhibitor: Charlie Spinelli; Photographer: Kurt Keller. Rocky Mountain Judging

[14] *Paphiopedilum* Fred's Style 'Cad's Peppered Jewel' HCC/AOS (Fred's Aura x Egret's Jewel) 79 pts. Exhibitor: David Bryan; Photographer: Ed Cott. Toronto Judging

[15] *Fredclarkeara* Oasis 'Louisiana' HCC/AOS (Desert Tenor x *Catasetum* Orchidglade) 79 pts. Exhibitor: Al Taylor; Photographer: Brandie Ferguson. Shreveport Judging

[16] *Phalaenopsis deliciosa* f. *alba* 'Ketracel-white' CHM/AOS 82 pts. Exhibitor: Drew Goddard; Photographer: Jay Norris. Toronto Judging


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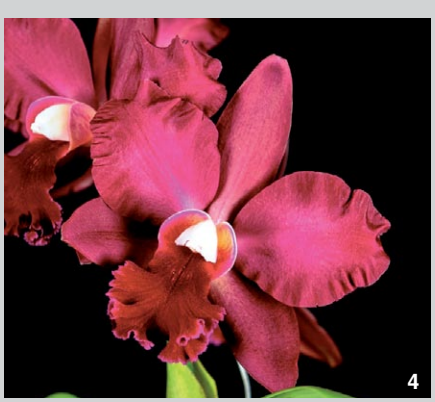
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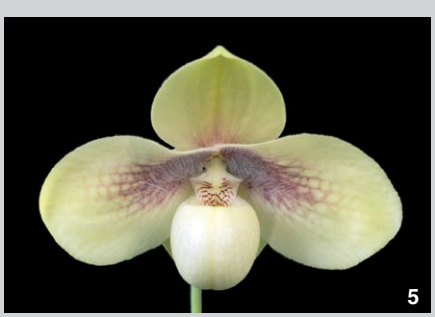
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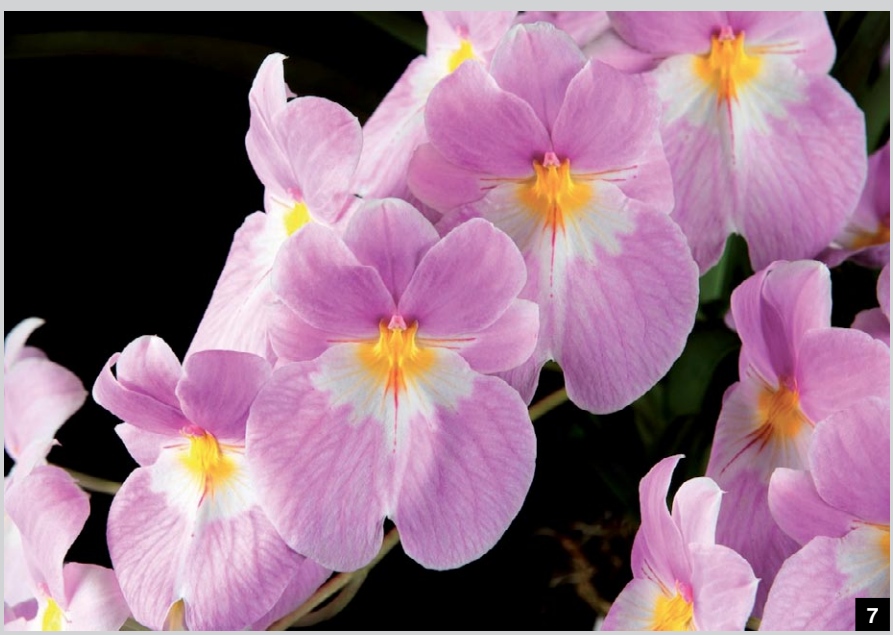
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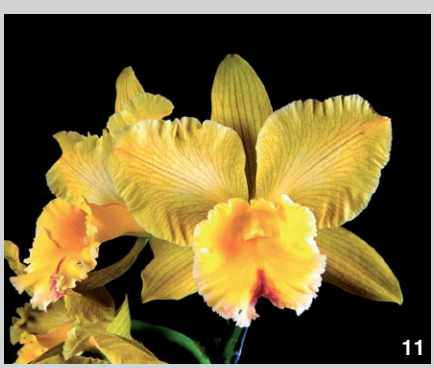

[1] *Paphiopedilum helenae* 'Our Tropics Butterscotch' HCC/AOS 79 pts. Exhibitor: Doug and Terry Kennedy; Photographer: Jay Norris. Toronto Judging

[2] *Cattleya trianae* 'Patricia' AM/AOS 84 pts. Exhibitor: Francisco V. Villegas; Photographer: Nicolas Gomez Rios. West Palm Beach Judging

[3] *Cattleya quadricolor* 'Las Mellizas' AM/AOS 85 pts. Exhibitor: Claudia Uribe Jaramillo; Photographer: Nicolas Gomez Rios. West Palm Beach Judging

[4] *Rhyncholaeliocattleya* Orquifollajes Vino 'Botanica' AM/AOS (Egyptian Queen x *Cattleya* Pão de Açúcar) 85 pts. Exhibitor: Bayron Pineda; Photographer: Nicolas Gomez Rios. West Palm Beach Judging

[5] *Paphiopedilum hangianum* 'Wellington's Forest View' AM/AOS 85 pts. Exhibitor: Lori Barrington; Photographer: Judith Higham. Western Canada Judging

[6] *Barbosella cogniauxiana* 'Arlette Alcazar Biljan' CCM/AOS 80 pts. Exhibitor: Angèle Biljan; Photographer: Jay Norris. Toronto Judging

[7] *Miltoniopsis vexillaria* 'San Isidro' AM/AOS 80 pts. Exhibitor: Daniel Piedrahita Thiriez; Photographer: Nicolas Gomez Rios. West Palm Beach Judging

[8] *Zootrophion endresianum* 'Colombo' CCM/AOS 82 pts. Exhibitor: Colomborquideas Ltda.; Photographer: Nicolas Gomez Rios. West Palm Beach Judging

[9] *Paraphadenia* Juraj Kojs 'Crownfox' HCC/AOS (*Seidenfadenia mitrata* x *Paraphalaenopsis labukensis*) 78 pts. Exhibitor: R.F. Orchids, Inc.; Photographer: Tom Kuligowski. West Palm Beach Judging

[10] *Aerides* Robsan's Gem 'Your Eye' AM/AOS (*quinquevulnera* x *lawrenceae*) 82 pts. Exhibitor: Juraj Kojs; Photographer: Tom Kuligowski. West Palm Beach Judging

[11] *Rhyncholaeliocattleya* Luna Verde d'Olga 'Corales' AM/AOS (Waikiki Gold x Goldenzelle) 80 pts. Exhibitor: Jardines Romeral; Photographer: Nicolas Gomez Rios. West Palm Beach Judging

[12] *Oncidium* Portentosa 'Sebastian' HCC/AOS (Mount Constance x Don Quichotte) 78 pts. Exhibitor: Francisco V. Villegas; Photographer: Nicolas Gomez Rios. West Palm Beach Judging

[13] *Caucaea sanguinolenta* 'Cascarrabia' HCC/AOS 78 pts. Exhibitor: Diego Aristizabal; Photographer: Nicolas Gomez Rios. West Palm Beach Judging

[14] *Fredclarkeara* Saturn Sky 'Summer Surprise' AM/AOS (*Mormodia* Painted Desert x *Catasetum* Frilly Doris) 80 pts. Exhibitor: Judy Bailey; Photographer: Tom Kuligowski. West Palm Beach Judging

[15] *Warnerara* Melida Demorizi 'Crownfox Gold' HCC/AOS (*Myrmecocattleya* Memoria Louise Fuchs x *Rhynchobrassoleya* Golden Tang) 79 pts. Exhibitor: R.F. Orchids, Inc.; Photographer: Tom Kuligowski. West Palm Beach Judging

[16] *Cattlianthe* Gigi Andrae Louis 'Maverick' HCC/AOS (Chocolate Drop x *Guarianthe skinneri*) 75 pts. Exhibitor: Gigi Louis; Photographer: Tom Kuligowski. West Palm Beach Judging


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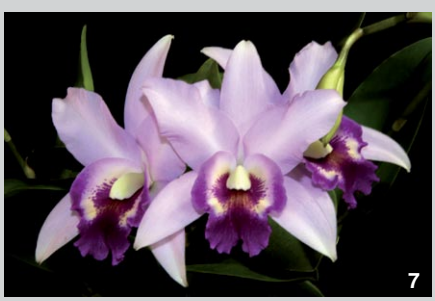
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[1] *Paphiopedilum* Magical Illusion (Magically Wood 'Serenity' x Red Illusion 'Lehua's The Only One' HCC/AOS) AQ/AOS. Exhibitor and Hybridizer: Lehua Orchids; Photographer: Ramon de los Santos. California Sierra Nevada Judging

[2] *Paphiopedilum* Magical Illusion 'Slipper Zone Formidable' AM/AOS (Magically Wood x Red Illusion) 81 pts. Exhibitor: Lehua Orchids; Photographer: Ramon de los Santos. California Sierra Nevada Judging

[3] *Paphiopedilum purpuratum* 'Orchidarium' HCC/AOS 77 pts. Exhibitor: T. Anthony Curtis; Photographer: James Curtis. Carolinas Judging

[4] *Paphiopedilum* Macabre Gem 'Slipper Zone Burgundy Glow' AM/AOS (Macabre Pops x Petula's Love) 81 pts. Exhibitor: Lehua Orchids; Photographer: Ramon de los Santos. California Sierra Nevada Judging

[5] *Cattleya* Sacramento Rose 'Old Rose' AM/AOS (Mini Purple x *alaorii*) 80 pts. Exhibitor: William Jeff Trimble; Photographer: Ramon de los Santos. California Sierra Nevada Judging

[6] *Paphiopedilum* Magical Illusion 'Slipper Zone Glorious' HCC/AOS (Magically Wood x Red Illusion) 79 pts. Exhibitor: Lehua Orchids; Photographer: Ramon de los Santos. California Sierra Nevada Judging

[7] *Laeliocattleya* Miss Wonderful 'Biltmore Estate' HCC/AOS (*Cattleya* Mari's Song x *Laelia anceps*) 77 pts. Exhibitor: Marc Burchette; Photographer: James Curtis. Carolinas Judging

[8] *Bulbophyllum fascinator* (Semialba) 'Woba' HCC/AOS 78 pts. Exhibitor: Ramon de los Santos; Photographer: Ramon de los Santos. California Sierra Nevada Judging

[9] *Paphiopedilum* Magical Illusion 'Slipper Zone Strident' AM/AOS (Magically Wood x Red Illusion) 80 pts. Exhibitor: Lehua Orchids; Photographer: Ramon de los Santos. California Sierra Nevada Judging

[10] *Paphiopedilum charlesworthii* f. *sandowiae* (album) 'Monster' AM/AOS 80 pts. Exhibitor: Ramon de los Santos; Photographer: Ramon de los Santos. California Sierra Nevada Judging

[11] *Jumellea comorensis* 'Noel' AM/AOS 80 pts. Exhibitor: Margaret Bowling; Photographer: James Curtis. Carolinas Judging

[12] *Habenaria rhodocheila* 'Salt Creek' AM/AOS 85 pts. Exhibitor: Joel R. Edwards; Photographer: Katie Payeur. Chicago Judging

[13] *Habenaria medusa* 'Cat's Whiskers' CCE-AM/AOS 94-87 pts. Exhibitor: Joel R. Edwards; Photographer: Katie Payeur. Chicago Judging

[14] *Tolumnia* Jairak Firm 'Sherbert' HCC/AOS (Rainbow x Plush) 78 pts. Exhibitor: Dennis and Janet Wade; Photographer: Ramon de los Santos. California Sierra Nevada Judging

[15] *Vanda* Motes Blue Yonder 'Karina Motes' AM/AOS (Violeta x *curvifolia*) 83 pts. Exhibitor: Motes Orchids; Photographer: Carmen Johnston. Florida-Caribbean Judging

[16] *Pararenanthera* NDC Singapore 'Norma' AM/AOS (Jaya Baleswari x *Renanthera storiei*) 84 pts. Exhibitor: Frank Francisco; Photographer: James Curtis. Carolinas Judging


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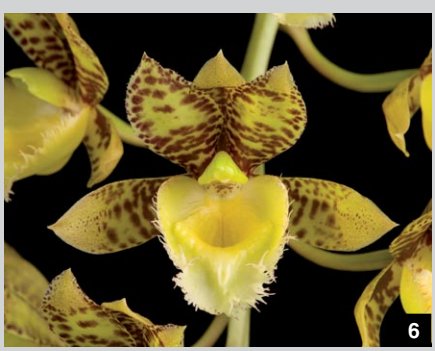
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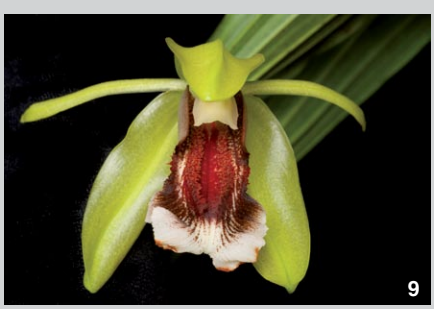
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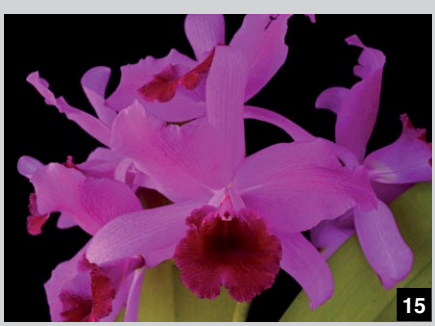

[1] *Lepanthes ortegae* 'Orkiddoc' CBR/AOS. Exhibitor: Larry Sexton; Photographer: Katie Payeur. Chicago Judging

[2] *Phragmipedium* Peruflora's Spirit 'Dusty's Sweetheart' HCC/AOS (*kovachii* x Eric Young) 77 pts. Exhibitor: Nile and Lois Dusdieker; Photographer: Nile Dusdieker. Chicago Judging

[3] *Warczerhyncha* Andrea Niessen 'Beepaw' HCC/AOS (*Warczewiczella amazonica* x *Chondrorhyncha andreae*) 76 pts. Exhibitor: Edward and Dana L. White, Jr; Photographer: Richard Noel. Cincinnati Judging

[4] *Bulbophyllum crassipes* 'Tower Grove' CCM/AOS 84 pts. Exhibitor: Blanche Wagner; Photographer: Nile Dusdieker. Chicago Judging

[5] *Paphiopedilum* Hop Butterscotch 'Deerwood' HCC/AOS (Jollix Land x *helenae*) 78 pts. Exhibitor: Ross Hella; Photographer: Nile Dusdieker. Chicago Judging

[6] *Clowesetum* Donna Ballard 'Fall Harvest' HCC/AOS (*Clowesia* Rebecca Northen x *Catasetum kleberianum*) 78 pts. Exhibitor: John and Cheryl Jaworski; Photographer: Richard Noel. Cincinnati Judging

[7] *Brassocattleya* Keowee 'Vi Galaxy' AM/AOS (*Cattleya* Lorraine Shirai x *Brassavola nodosa*) 84 pts. Exhibitor: Karen Davenport; Photographer: Carmen Johnston. Florida-Caribbean Judging

[8] *Paphiopedilum* Sierra Bell 'New Vision Belle' HCC/AOS (Sierra Lace x *bellatulum*) 79 pts. Exhibitor: New Vision Orchids; Photographer: Richard Noel. Cincinnati Judging

[9] *Coelogyne speciosa* 'Boomer' HCC/AOS 77 pts. Exhibitor: Ann DePrez; Photographer: Ann DePrez. Cincinnati Judging

[10] *Catasetum naso* 'Tricky Mickey' CHM/AOS 86 pts. Exhibitor: Sandy Schultz and Georgia Tasker; Photographer: Carmen Johnston. Florida-Caribbean Judging

[11] *Vanda* Motes Purple Rain 'Karina Motes' AM/AOS (Blue Tahourdin x *tessellata*) 83 pts. Exhibitor: Motes Orchids; Photographer: Carmen Johnston. Florida-Caribbean Judging

[12] *Cattlianthe* Minerva 'Jill' AM/AOS (*Guarianthe bowringiana* x *Cattleya loddigesii*) 80 pts. Exhibitor: Linda Horton; Photographer: David Gould. Dallas Judging

[13] *Aerides lawrenceae* 'Soroa Sensation' FCC/AOS 92 pts. Exhibitor: Soroa Orchids, Inc.; Photographer: Carmen Johnston. Florida-Caribbean Judging

[14] *Fredclarkeara* Alexa's Raspberries 'Memoria Joseph Lodyga' HCC/AOS (*Mormodia* Painted Desert x *Catasetum expansum*) 77 pts. Exhibitor: Louis Lodyga; Photographer: Carmen Johnston. Florida-Caribbean Judging

[15] *Cattlianthe* Land of Enchantment 'Sudan' HCC/AOS (Molly Tyler x Ibbie) 77 pts. Exhibitor: Judy Cook, MD; Photographer: David Gould. Dallas Judging

[16] *Perreiraara* Cutie Pie 'Garrett's Sherry Baby' AM/AOS (*Aerides lawrenceae* x *Vandachostylis* Ladda Gold) 84 pts. Exhibitor: Sharon and David Garrett; Photographer: Wes Newton. Florida North-Central Judging


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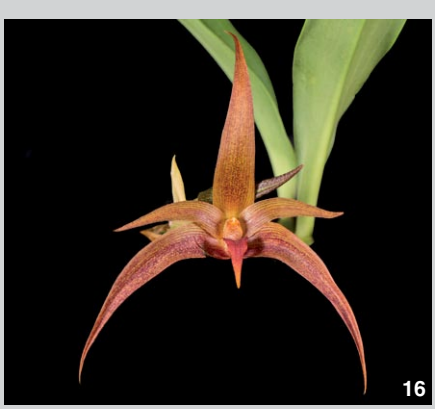
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[1] *Papilionanda* Mimi Palmer 'Garrett's Super Mimi' AM/AOS (Tan Chay Yan x *Vanda tessellata*) 81 pts. Exhibitor: Sharon and David Garrett; Photographer: Wes Newton. Florida North-Central Judging

[2] *Aerides quinquevulnera* 'Garrett's Pink Lady' AM/AOS 83 pts. Exhibitor: Sharon and David Garrett; Photographer: Wes Newton. Florida North-Central Judging

[3] *Epidendrum romero-castannedae* 'Bredren's Green Hornet' CHM/AOS 84 pts. Exhibitor: Bredren Orchids and Phillip Hamilton; Photographer: Kay Clark. Florida North-Central Judging

[4] *Vanda* Wapme 'Garrett's Red Brick Road' HCC/AOS (Wanpen x Meda Arnold) 77 pts. Exhibitor: Sharon and David Garrett; Photographer: Wes Newton. Florida North-Central Judging

[5] *Vandachostylis* October Twenty Second 'Ponkan' HCC/AOS (*Vanda tessellata* x Pine Rivers) 79 pts. Exhibitor: Krull-Smith; Photographer: Wes Newton. Florida North-Central Judging

[6] *Vascostylis* Pearl Cooper 'Chickadee' HCC/AOS (*Rhynchostylis coelestis* x *Vanda* Pralor) 78 pts. Exhibitor: Harriet and Mike Wright; Photographer: Harriet Wright. Florida North-Central Judging

[7] *Phalaenopsis hieroglyphica* 'Scott Ware' AM/AOS 83 pts. Exhibitor: Krull-Smith; Photographer: Wes Newton. Florida North-Central Judging

[8] *Microsaccus griffithii* 'Whisper Dottie's Gemini' CHM/AOS 82 pts. Exhibitor: Laura and Wes Newton; Photographer: Mark Duttweiler. Florida North-Central Judging

[9] *Bulbophyllum* Lady Sam 'Mike's Surprise' HCC/AOS (*macrobulbum* x *echinolabium*) 76 pts. Exhibitor: Mike and Joni Sielaff; Photographer: Kay Clark. Florida North-Central Judging

[10] *Paphiopedilum* Raingreen's Doll 'Carolyn's Joy' CCM/AOS (Raingreen's Cerella x Doll's Kobold) 86 pts. Exhibitor: Carolyn Robinson; Photographer: Kay Clark. Florida North-Central Judging

[11] *Rhyncholaeliocattleya* Birthday Dream 'Jack & Brenda' AM/AOS (Sweet Anniversary x *Cattleya* Beaufort) 81 pts. Exhibitor: John "Jack" Vernam III; Photographer: Kay Clark. Florida North-Central Judging

[12] *Bulbophyllum* Doris Dukes 'Oh Wow' CCM/AOS (*fascinator* x *rothschildianum*) 81 pts. Exhibitor: Ghislaine Carr; Photographer: Kay Clark. Florida North-Central Judging

[13] *Vandachostylis* October Twenty Second 'Loss For Words' AM/AOS (*Vanda tessellata* x Pine Rivers) 81 pts. Exhibitor: Krull-Smith; Photographer: Wes Newton. Florida North-Central Judging

[14] *Paphiopedilum leucochilum* 'Odom's Orchids' AM/AOS 82 pts. Exhibitor: Odom's Orchids, Inc.; Photographer: Kay Clark. Florida North-Central Judging

[15] *Rhyncatlaelia* Graf's Cacao 'De Chuao' HCC/AOS (*Rhyncholaeliocattleya* Chunyeah x *Laelia splendida*) 79 pts. Exhibitor: Plantio La Orquidea; Photographer: Kay Clark. Florida North-Central Judging

[16] *Bulbophyllum* Joni Sielaff 'Mike's Surprise' HCC/AOS (Jersey x *phalaenopsis*) 76 pts. Exhibitor: Mike and Joni Sielaff; Photographer: Kay Clark. Florida North-Central Judging


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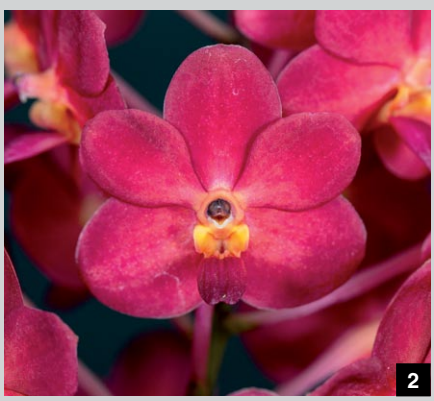
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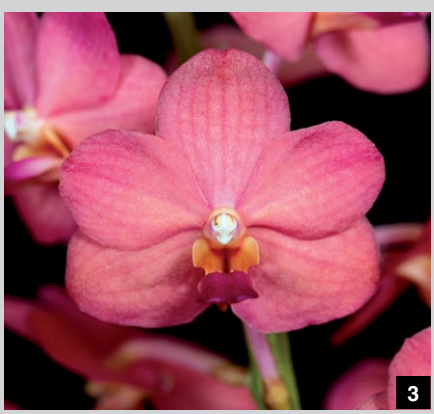
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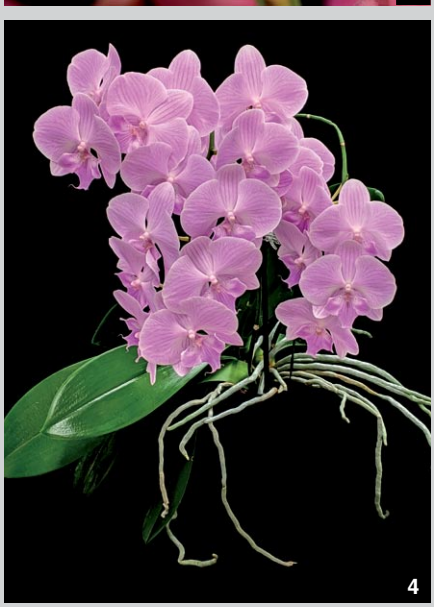
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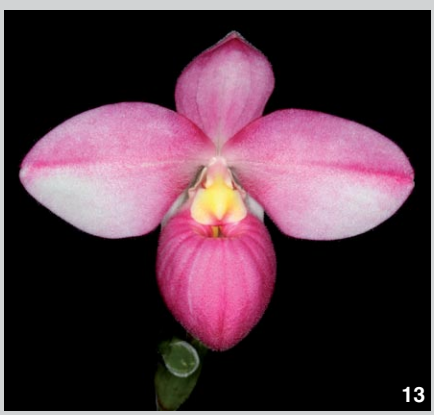
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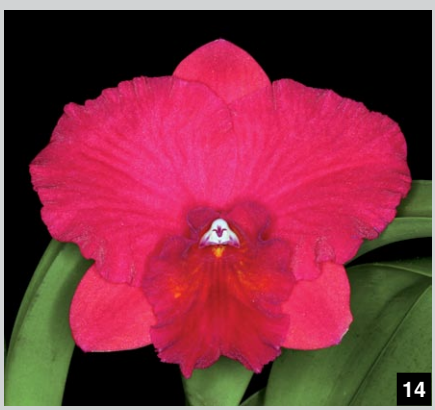
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[1] *Vanda* Memoria Louis Hatos 'Chad's Dark Passion' HCC/AOS (John De Biase x *tessellata*) 75 pts. Exhibitor: Chad Whetstone; Photographer: Kay Clark. Florida North-Central Judging

[2] *Vanda* Laksi 'Janis Red Glow' HCC/AOS (Thonglor x *curvifolia*) 77 pts. Exhibitor: Charles Whetstone; Photographer: Kay Clark. Florida North-Central Judging

[3] *Vandachostylis* Blue Fairy 'Janis Dark Pink' HCC/AOS (*Vanda* Meda Arnold x *Rhynchostylis coelestis*) 76 pts. Exhibitor: Chad Whetstone; Photographer: Kay Clark. Florida North-Central Judging

[4] *Phalaenopsis* Sweet Talk 'Dwain's Choice' CCM/AOS (Caledonia x Hilo Lip) 86 pts. Exhibitor: Jill Toma; Photographer: Katie Payeur. Great Lakes Judging

[5] *Vanda* Robert Moorhead 'Naoki's Purple Tongue' HCC/AOS (Lauren Gardiner x *insignis*) 78 pts. Exhibitor: Naoki Kawamura; Photographer: Kay Clark. Florida North-Central Judging

[6] *Vanda* Robert Moorhead 'Ed Carter' AM/AOS (Lauren Gardiner x *insignis*) 80 pts. Exhibitor: Naoki Kawamura; Photographer: Kay Clark. Florida North-Central Judging

[7] *Paphiopedilum* Spring Wolf 'Littlefrog Immense' AM/AOS (Dire Wolf x Spring Moonbeam) 82 pts. Exhibitor: Littlefrog Farm; Photographer: Katie Payeur. Great Lakes Judging

[8] *Vanda* Richard Killian (1988) 'Lemon Yellow Glow' HCC/AOS (*denisoniana* x Tavivat) 75 pts. Exhibitor: Chad Whetstone; Photographer: Kay Clark. Florida North-Central Judging

[9] *Vanda* Motes Burning Sands 'Orange Joy' HCC/AOS (*lamellata* x Motes Goldpiece) 78 pts. Exhibitor: Chad Whetstone; Photographer: Kay Clark. Florida North-Central Judging

[10] *Cattleya dormaniana* 'Okika' HCC/AOS 78 pts. Exhibitor: Okika, Ltd.; Photographer: Glen Barfield. Hawaii Judging

[11] *Cattleya* Sierra Winter 'Bodacious' AM/AOS (Old Sierra x Winter Mantle) 80 pts. Exhibitor: Ben Oliveros and Orchid Eros; Photographer: Glen Barfield. Hawaii Judging

[12] *Bulbophyllum* Tree Frog 'Crystelle' AM/AOS (*macrobulbum* x *bicolor*) 83 pts. Exhibitor: Krull-Smith; Photographer: Alberto Rodriguez. West Palm Beach Judging

[13] *Phragmipedium* Misty Run Sunrise 'Wacousta' AM/AOS (Waunakee Sunset x *fischeri*) 82 pts. Exhibitor: Dot Potter Barnett; Photographer: Katie Payeur. Great Lakes Judging

[14] *Rhyncholaeliocattleya* Circle of Nine 'Syzygy' AM/AOS (Loud Nine x Cattleya Circle of Life) 81 pts. Exhibitor: Peter Ostlund; Photographer: Katie Payeur. Great Lakes Judging

[15] *Paphiopedilum* Leyburnense 'Littlefrog Heritage' AM/AOS (*charlesworthii* x T. B. Haywood) 81 pts. Exhibitor: Little Frog Farm; Photographer: Katie Payeur. Great Lakes Judging

[16] *Phragmipedium* QF Leina'ala 'Amanda M' AM/AOS (Conchiferum x Incan Treasure) 82 pts. Exhibitor: Ruth Morlocke; Photographer: Katie Payeur. Great Lakes Judging

[17] *Cattleya dormaniana* 'Orchid Eros' CCM/AOS 83 pts. Exhibitor: Ben Oliveros and Orchid Eros; Photographer: Glen Barfield. Hawaii Judging


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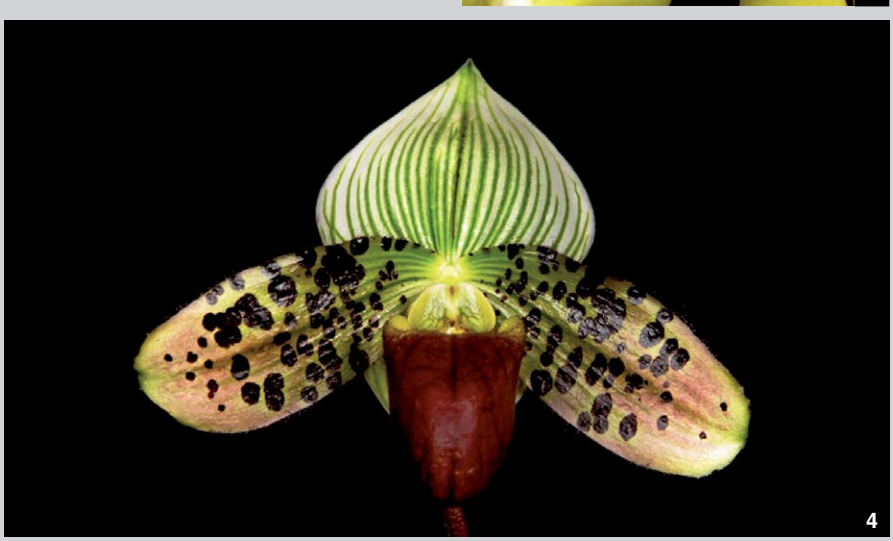
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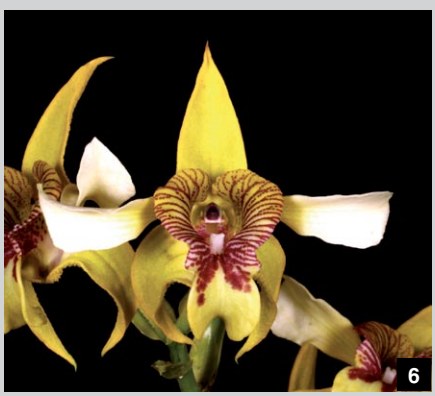
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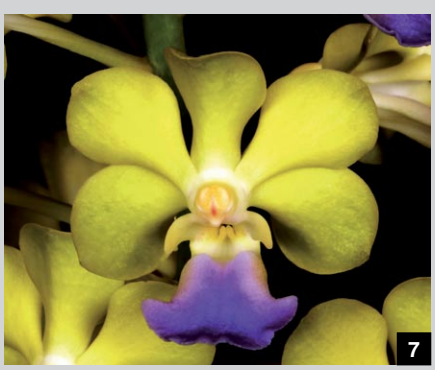
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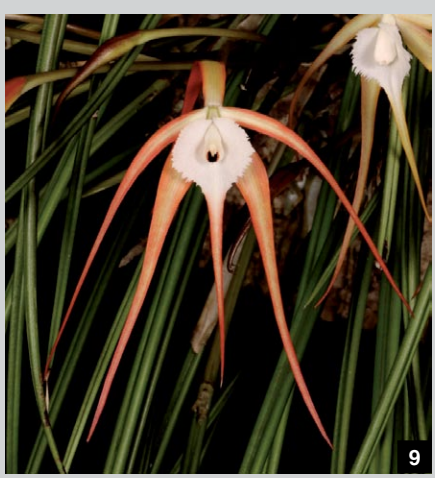
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[1] *Cattleya* Timely 'Paramount's Just In Time' AM/AOS (Haidee x Sabina (1941)) 80 pts. Exhibitor: Paramount Orchids; Photographer: Judith Higham. Western Canada Judging

[2] *Zygoneria* Caymus 'Paramount's Oceanside Vortex' HCC/AOS (Adelaide Meadows x *Zygopetalum* Helen-Ku) 76 pts. Exhibitor: Paramount Orchids; Photographer: Judith Higham. Western Canada Judging

[3] *Procatavola* Walnut Valley Lime Stars 'Memoria Peggy Rafter' CCM/AOS (*Cattleychea* Lime Sherbet x *Brassavola* Little Stars) 84 pts. Exhibitor: Wayne T. Green; Photographer: Tom Kuligowski. West Palm Beach Judging

[4] *Paphiopedilum* Wonderfully Wood 'Slipper Zone at Last' HCC/AOS (Magical Venus x Wood Wonder) 77 pts. Exhibitor: Lehua Orchids; Photographer: Alberto Rodriguez. West Palm Beach Judging

[5] *Bulbophyllum mastersianum* 'Bredren' AM/AOS 80 pts. Exhibitor: Bredren Orchids and Phillip Hamilton; Photographer: Tom Kuligowski. West Palm Beach Judging

[6] *Dendrobium shiraishii* 'Crystelle' AM/AOS 80 pts. Exhibitor: Krull-Smith; Photographer: Tom Kuligowski. West Palm Beach Judging

[7] *Vandachostylis* Luke Thai 'Judy's Surprise' AM/AOS (*Vanda* Vieng Ping x *Rhynchostylis coelestis*) 85 pts. Exhibitor: Judy Mezey; Photographer: Tom Kuligowski. West Palm Beach Judging

[8] *Arachnis* Maggie Oei 'Eric Ng' AM/AOS (*hookeriana* x *flos-aeris*) 82 pts. Exhibitor: Mac's Orchids; Photographer: Tom Kuligowski. West Palm Beach Judging

[9] *Brassavola cucullata* 'Julissa Demorizi' HCC/AOS 77 pts. Exhibitor: Melida Demorizi; Photographer: Tom Kuligowski. West Palm Beach Judging

[10] *Brassocattleya* Florida Stars 'Spring Zing' CCE/AOS (*Brassavola* Little Stars x *Cattleya* Mark Jones) 91 pts. Exhibitor: Jim Roberts Florida SunCoast Orchids; Photographer: Tom Kuligowski. West Palm Beach Judging

[11] *Paphiopedilum henryanum* 'October Trio' JC/AOS. Exhibitor: John Doherty; Photographer: Ed Cott. Toronto Judging

[12] *Dendrobium* Cream Cascade 'Crownfox Sunshine' AM/AOS (*densiflorum* x *thyrsiflorum*) 83 pts. Exhibitor: R.F. Orchids, Inc.; Photographer: Alberto Rodriguez. West Palm Beach Judging

[13] *Vanda* Golden Stone 'Krull-Smith' AM/AOS (Pimchai Beauty x Varut Leopard) 80 pts. Exhibitor: Krull-Smith; Photographer: Tom Kuligowski. West Palm Beach Judging

[14] *Catasetum* Rumba 'Henrique Graf' AM/AOS (Frilly Doris x Orchidglade) 85 pts. Exhibitor: Plantio la Orquidea; Photographer: Tom Kuligowski. West Palm Beach Judging

[15] *Phalaenopsis* Nobby's Purple Eagle 'Nobby' AM/AOS (Black Eagle x George Vasquez) 81 pts. Exhibitor: Christine Morales and Alex Rodriguez; Photographer: Tom Kuligowski. West Palm Beach Judging

[16] *Renanopsis* Lion's Splendor 'Giselle' CCM/AOS (Lena Rowold x *Renanthera Kalsom*) 84 pts. Exhibitor: Mac's Orchids; Photographer: Tom Kuligowski. West Palm Beach Judging

COVID CONCERNS AND RESTRICTIONS CONTINUE TO SEVERELY IMPACT SHOWS. LISTED BELOW ARE THOSE CURRENTLY SCHEDULED. CANCELATIONS CAN AND DO OCCUR WITH LITTLE OR NO WARNING. SEE THE AOS WEBSITE FOR CURRENT INFORMATION OR CHECK WITH THE PERSON LISTED AS EVENT CONTACT.

JUNE

5–6—Central Florida Orchid Society Show and Sale, Oviedo Mall, 1700 Oviedo Mall Blvd., Oviedo, FL. Contact: Jerry Steele; 352–300–6023, orchidguy.steele@gmail.com

JULY

24—Central Iowa Orchid Society Speaker's Day, Johnston Lions Club Community Center, 6401 Merle Hay Rd, Johnston, IA. Contact: Carson E. Whitlow; 515–993–4841, slipperguy@aol.com

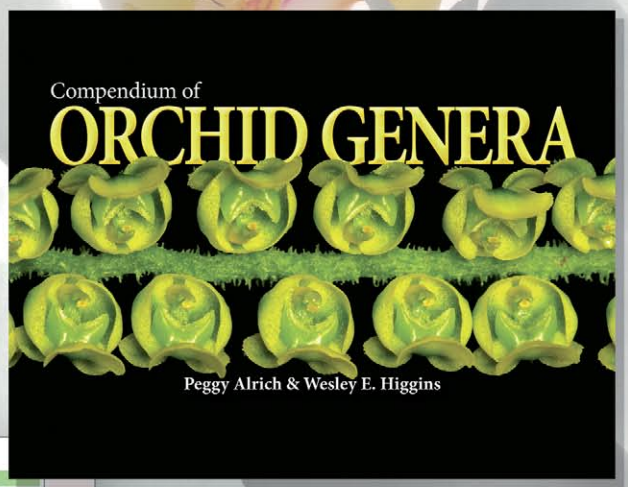
As of press time, the following judging centers are holding monthly judging events. Because of covid restrictions, this is subject to change without notice. Please contact the appropriate judging center chair for location and time before taking plants (https://www.aos.org/orchid-awards-judging/aos-judging-centers.aspx)

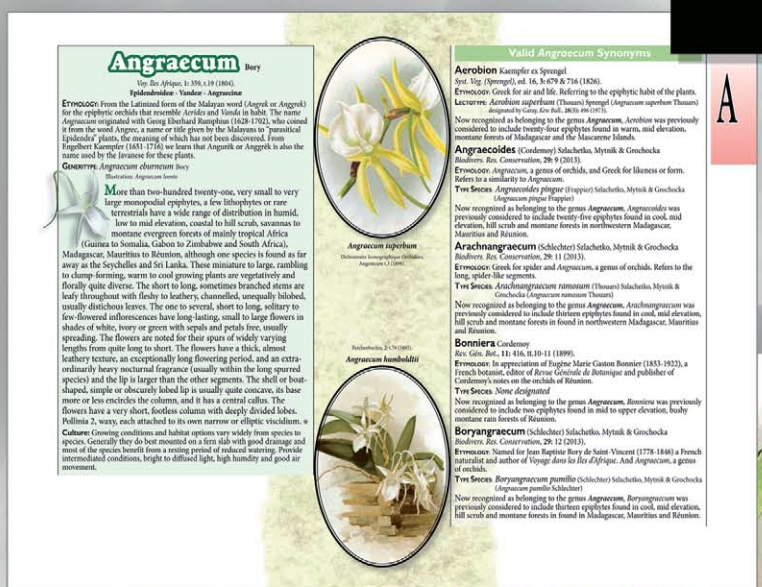
Alamo, Atlanta, California-Sierra Nevada, Carolinas, Chicago, Dallas, Florida Caribbean, Florida North-Central, Great Lakes, Great Plains, Hawaii (at least the Hilo site), Houston, Louisiana, Mid-America, Mid-Atlantic, Northeast (NJ location only), Pacific Central (Historic Filoli House), Pacific Northwest, Pacific South (Santa Barbara site only), Puerto Rico, Rocky Mountain, West Palm Beach

ORCHID MARKETPLACE

Presenting

The Compendium of Orchid Genera by Peggy Alrich and Wesley Higgins





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

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AD INDEX

Submission of articles for *ORCHIDS* magazine

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

The American Orchid Society, in congruence with its stated conservation aims and with the full approval of the AOS Trustees, prohibits advertisements for wild-collected orchids and orchid-collecting tours in the pages of *Orchids*. By submitting advertisements for orchid species, vendors are thereby asserting that plants advertised are either artificially propagated (from seed or meristem) or are nursery-grown divisions of legally acquired stock. While *Orchids* endeavors to assure the reliability of its advertising, neither *Orchids* nor the American Orchid Society, Inc., can assume responsibility for any transactions between our advertisers and our readers.

Attached Greenhouses

By Arthur E. Chadwick

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THERE IS A LONG-STANDING JOKE among hobbyists in which they collect so many orchids that a greenhouse is required to hold all their plants. This humorous scenario is coming true for many people now that working from home has become the norm. Tropical plants of all kinds are having a renaissance and growers simply need a place to put them.

This is not the first time that hobby greenhouses have surged in popularity. Great Britain saw a flurry of construction during the Victorian era as wealthy gardeners sought to outdo their friends with rare and exotic specimens. Closer to home, everyday Americans embarked on a greenhouse building spree during the 1940s to help supply cut-flower cattleyas during the glamorous corsage period.

Recently, I had the pleasure of visiting a client's new greenhouse in the suburbs of northern Virginia. The owners, Richard and Ginny Michaux, are retired and wanted to add a little piece of the tropics to their home environment. The new structure is attached to the south end of the house where it gets all day sun and is truly a sight to behold.

Dozens of colorful orchids of all genera have been placed on the benches and pedestals throughout, giving the viewer a lot to look at. There is considerable automation in the room, including louvers that open and close to maintain optimal temperature as well as fogging nozzles to supplement the humidity. The light levels are bright but diffused.

The Michauxs have chosen to keep only blooming orchids in the greenhouse, so, in effect, the 12 foot × 13 foot (3.7 m × 4 m) structure is more of a display house than a growing facility. As the plants drop their flowers, they are "sent off to boarding" until they bloom again. The benefit to this strategy is that a relatively small space yields a big show.

The visual impact is enhanced by colorful stained-glass windows that embellish the perimeter. The orchid designs were custom made and show images of ladyslippers, cattleyas, and phalaenopsis. As the sun's rays enter the space, the patterns seem to light up and glisten.

"If I were ordering again, I would make it twice the size" said Richard Michaux, who spends hours at a time in his new greenhouse. The orchid family is massive, and collections can grow exponentially. It is common for owners to underestimate the amount of square footage they need.

The Michauxs considered several greenhouse designs and manufacturers before deciding on Arcadia GlassHouses of Madison, Ohio (arcadiaglasshouse.com). This company has been around for years and offers a slew of options from stand alone to attached models of all shapes and sizes. A local construction crew prepared the Michaux site and Arcadia erected the greenhouse.

The CEO of Arcadia, Jeff Kenyon, is a horticulture major and has been personally building greenhouses since 1980. His designs are energy efficient and use extruded aluminum frames and double-paned glass. He has seen a huge spike in demand for hobby greenhouses in the past year.

"The Michaux greenhouse is special because of the octagon shape, stained glass windows, decorative trim arches, and cresting on the roof," said Kenyon. He travels the country assisting plant enthusiasts with their building projects. The lesson for growers everywhere is that the acquisition of a single, innocent orchid can lead to a sizable greenhouse full.

— 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. Arthur E. Chadwick along with his father A.A. Chadwick are regular contributors to Orchids magazine. His next book, First Ladies and their Cattleyas: A Century of Namesake Orchids *is due out in November (email art@chadwickorchids.com; Website www.chadwickorchids.com).*

RICHARD MICHAUX

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ARTHUR E. CHADWICK

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[1] This ornate aluminum-and-glass structure is manufactured by Arcadia GlassHouse and is attached directly to the house. The unit is oriented south and gets sun all day, but the tinted glass diffuses the light so that the plants inside do not get burned. Photograph by the owner, Richard Michaux.

[2] The inside of this hobby greenhouse is colorful and inviting thanks to a continuous rotation of blooming plants. Custom stained glass and decorative pedestals add to the effect.

[3] Lights have been installed inside the hobby greenhouse so that the owners can enjoy their plants at night. A wide variety of orchids are on display.

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