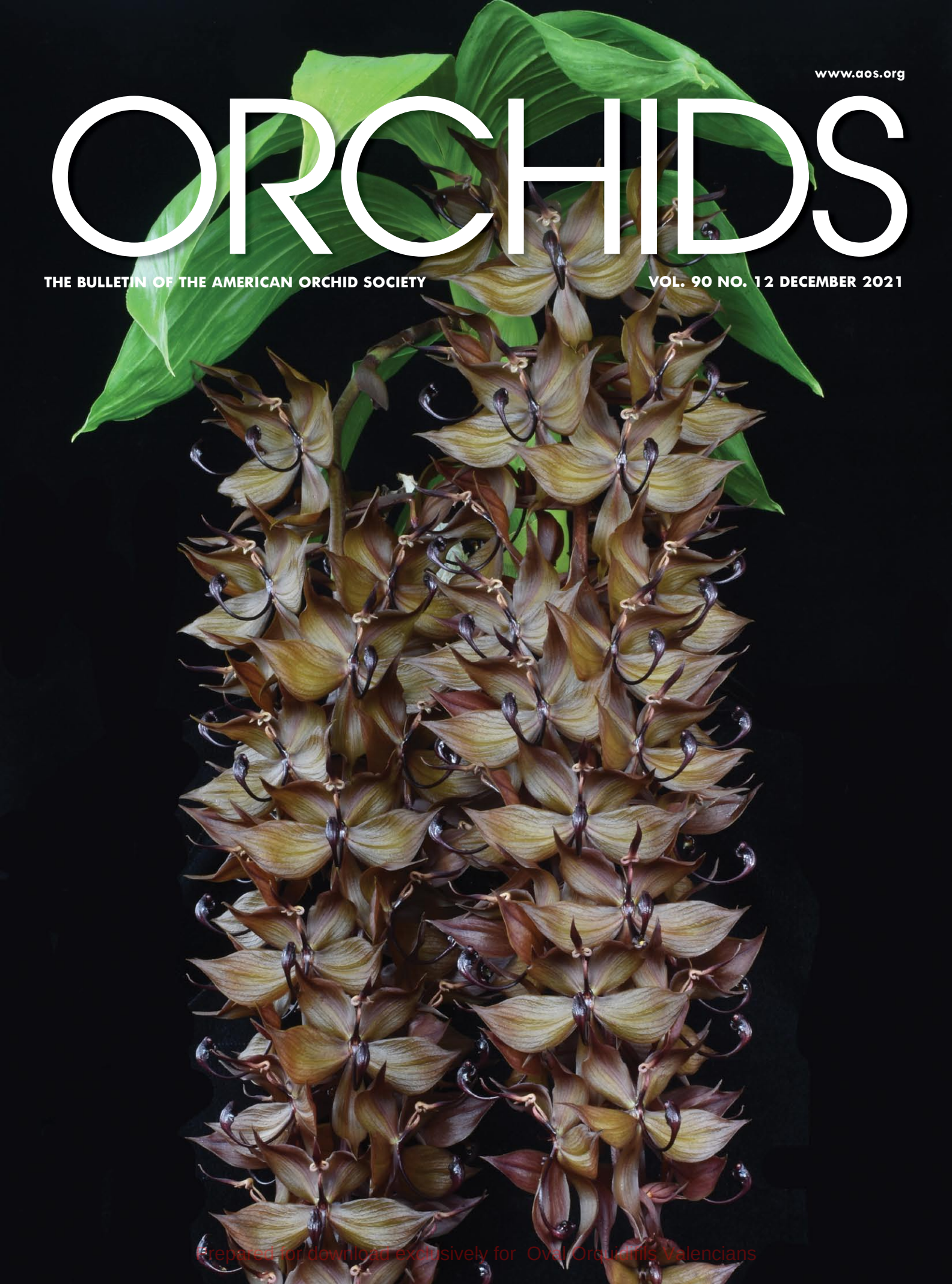
www.aos.org

ORCHIDS

THE BULLETIN OF THE AMERICAN ORCHID SOCIETY

VOL. 90 NO. 12 DECEMBER 2021



The 2022 Tamiami International Orchid Festival

MIAMI-DADE COUNTY
FAIR & EXPO CENTER
10901 SW 24TH ST.
MIAMI, FL 33165

JANUARY 14, 15, & 16

ORCHIDFESTIVAL.COM

American Orchid Society

A 501(c)(3) Nonprofit Organization Founded in 1921

MISSION

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

VISION STATEMENT

The American Orchid Society provides leadership in orchids

Membership Information and Rates

Membership in the AOS includes a subscription to *Orchids* magazine that begins with the next available issue at the time of enrollment. For information on membership, please call 305-740-2010, email theaos@aos.org or join online at www.aos.org.
Payments must be made through a US bank in US funds or by International Money Order. MasterCard, American Express, Visa and Discover are accepted. Prices are subject to change without notice and memberships are nonrefundable or transferable. *Orchids* is distributed via periodicals-class mail. First-class delivery is available in the United States for an additional $30 per year.

Membership Type	Silver (Digital Only)	Gold US Destination (Digital and Print)	Gold Canada and Mexico (Digital and Print)	Gold All Other Countries (Digital and Print)
Individual or vendor				
one year	**$54.00**	**$79.00**	**$99.00**	**$119.00**
two years	**$103.00**	**$153.00**	**$193.00**	**$233.00**
Joint, one year*	**$69.00**	**$94.00**	**$114.00**	**$134.00**
Joint, two years*	**$133.00**	**$183.00**	**$223.00**	**$263.00**
Youth, one year**	**$39.00**	**$54.00**	**$74.00**	**$94.00**
Youth, two years**	**$73.00**	**$103.00**	**$143.00**	**$183.00**
Society, one year***	**N/A**	**$79.00**	**$99.00**	**$119.00**
Society, two year***	**N/A**	**$153.00**	**$193.00**	**$233.00**

* Joint membership is for two individuals residing at the same address and includes only one subscription to the monthly magazine *Orchids*.
** Youth members must be under the age of 25
Valid proof of age required at time of application.
*** Affiliated Societies must appoint an AOS Representative who is also an AOS member.

Membership Benefits

Orchids — The Bulletin of the American Orchid Society
Members-Only section of www.aos.org
Unlimited access to educational webinars
Discounts at select gardens and arboreta in the United States (see www.ahs.org)
10 percent discount on AOS publications
First-time members receive a free copy of *Your First Orchid* and 15 percent off additional AOS-produced books (plus shipping)
OrchidPro
Over $700 in vendor coupons (terms and conditions apply, i.e., 2-yr billing cycle)

Orchids — Replacement Copies

Any member who does not receive a scheduled issue of *Orchids* should notify the Membership Services Department (tel 305-740-2010; email membership@aos.org) within 60 days (US residents) or 90 days (nonUS residents) of date of issue to receive a replacement copy at no charge.

Membership Policy

Membership in the American Orchid Society is open to all individuals without regard to race, color, ethnicity, national origin, religion, gender, sexual orientation, disability or age. All activities of the American Orchid Society are conducted in accordance with the principles of nondiscrimination and mutual respect. Further, the American Orchid Society does not condone or endorse any conduct that is not in accord with these principles.

American Orchid Society
Education. Conservation. Research.

American Orchid Society
at Fairchild Tropical Botanic Garden
10901 Old Cutler Road, Coral Gables, Florida 33156
Mailing address: PO Box 565477, Miami, Florida 33256
Tel 305-740-2010
Email theaos@aos.org Website www.aos.org
Main Office Monday–Friday (by appointment only)

Services

Ron McHatton, PhD (rmchatton@aos.org)
Chief Education and Science Officer (305-740-2010 ext 106)
- Education
- Nomenclature
- Orchid Information
- *Orchids* — Editorial
- Publications

Naya Marcano (naya@aos.org)
Director of Administration and Member Services (305-740-2010)
- Administration
- AOS Policy Information
- Business Operations

Accounting (victor@aos.org)
Victor Parera (305-740-2010 ext 104)

Advertising (khall@allenpress.com)
Kevin Hall – Advertising Sales Manager, Allen Press, Inc. (785-865-9143)
- *Orchids*, *Orchid Source Directory*

Affiliated Societies (sandra@aos.org)
Sandra Kurzban (305-740-2010 ext 102)
- Committee Volunteers
- Shows
- Contact Updates
- Website listings

Awards Registrar (laura@aos.org)
Laura Newton
- Award issues and questions
- Certificates

Development (theaos@aos.org)
- Annual Giving
- Bequests
- Major Gifts
- Planned Giving

Membership Associates
Sandra Kurzban (sandra@aos.org)
Daniella Estrada (daniellae@aos.org)
- *OrchidPro*
- Membership renewals
- Gift Memberships
- Back Issues — *Orchids*
- Book Sales
- Change of Address
- Damaged and Missing Issues
- Membership Brochures and Benefits
- Membership Questions
- Remove Name from Mailing List
- Website (login and password issues)

Information Technology (305-740-2010)
- Website functionality
- *OrchidPro* functionality

For questions not addressed above please contact theaos@aos.org or call 305-740-2010

ORCHIDS

The Bulletin of the American Orchid Society

RON MCHATTON
Chief Education and Science Officer
Editor, *Orchids* Magazine
rmchatton@aos.org

AWARDS REGISTRAR
Laura Newton
laura@aos.org

ADVERTISING
Kevin Hall
Advertising Sales Executive
Allen Press
810 East 10th Street
Lawrence, Kansas 66044
khall@allenpress.com
785-865-9143

SUBSCRIPTIONS AND MISSING ISSUES
Membership Services Department
Tel 305-740-2010 Fax 305-747-7154
membership@aos.org

Volume 90, Number 12 December, 2021 *Orchids* (ISSN 1087-1950) is published monthly by the American Orchid Society, Inc., at Fairchild Tropical Botanic Garden Editorial Office: 10901 Old Cutler Road, Coral Gables, Florida 33156 (telephone 305-740-2010; fax 305-747-7154; email theaos@aos.org; website www.aos.org).

Printed by Allen Press, 810 East 10th Street, Lawrence, Kansas 66044. Subscription price of *Orchids* is $79 a year within the US, $99 Canada and Mexico and $119 for all other countries. Single copies of current issue cost $8.50 (plus shipping and handling). Prices are subject to change without notice. Although *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. Periodical postage paid at Miami, FL and additional offices. POSTMASTER: Send address changes to: Orchids, PO Box 565477, Miami, FL 33256. The American Orchid Society follows the *World Checklist of Selected Plant Families* with regard to questions of botanical nomenclature and synonymy in orchid species names and the International Orchid Register for hybrid nomenclature and parentage in editorial. The opinions and recommendations that appear in *Orchids* regarding the selection and use of specific plant-care products, including but not limited to pesticides, fungicides and herbicides, are those of the individual authors, and not those of the American Orchid Society, which neither adopts nor endorses such opinions and recommendations and disclaims all responsibility for them. When selecting and using such products, readers should seek and obtain the advice of the manufacturer and of responsible government agencies. Mail date: November 26, 2021.

MIX
Paper from responsible sources
FSC® C006300
www.fsc.org

Printed on 10 percent post-consumer recycled paper.

CONTENTS

December 2021 Volume 90 Number 12


902


920


924


931

FEATURES

DEPARTMENTS

In This Issue

FRONT COVER

Cycnoches cooperi 'Mission Accomplished' FCC/AOS was given its FCC as part of the group of plants resulting in an Award of Quality for the strain and Ben Oliveros, Orchid Eros, in Hawaii. This magnificent group of plants is the spotlight of this issue. Photographs by Glen Barfield.

American Orchid Society National Volunteers

Officers
Robert Fuchs
President

Jay Balchan
Jeff Saal
Vice Presidents

Cheryl Erins
Secretary

James Heilig, PhD
Treasurer

Julio Hector
Assistant Treasurer

Susan Wedegaertner
Immediate Past President

Trustees

2019–2022
Greg Filter, Joyce Medcalf

2020–2022
Catherine Higgins, Kenneth Jacobsen, PhD

2020–2023
William Bodei, David Edgley,
Theresa Kennedy, Phyllis Prestia

2021–2024
Barbara Schmidt, Michelle Dobard-Anderson,
Alison Gallaway, Edna Hamilton-Cirilo

Honorary Vice Presidents
Roger Brown, Donna Craig, Peter R. Furniss,
Harry Gallis, MD, Ann Jesup,
Taylor Slaughter

Past Presidents
Albert C. Burrage, F. Eugene Dixon, Wharton Sinkler, Rodney Wilcox Jones, Frederick T. Bonham, George W. Butterworth Sr., Frank J. Lind, Robert M. Scully Sr., G. Ferguson Beall, Walter Slagle, Lewis C. Vaughn, Keith Shaffer, Dr. Jonathan W. Williams, Norman B. Merkel, Dr. Lawrence L. Vance, Merritt W. Huntington, Raymond McCullough, William E. Farrell, Paul B. Moore, Dr. David H. Brown, FL Stevenson, Dr. J. Woodson Phillips, Donna Craig, Mary Davidson Dunnell, Donald E. Herman, Peter R. Furniss, Marvin Gerber, Milton O. Carpenter, Roger Brown, Robert J. Griesbach, Art Moore, Carlos Fighetti, Chris Rehmann, Sandra Tillisch Svoboda, Franklin A. Smith, George Hatfield, Susan Wedegaertner

Affiliated Societies Committee
affiliated_societies@aos.org
Denise Lucero, Chair
Chad Brinkerhuff, Lois Dauelsberg, Edna Hamilton, Eileen Hector (vice-chair), Candace Hollinger, Donna Petitt, Graham Ramsey, Alex Rodriguez
Staff liaison: Naya Marcano

Audit Committee
audit_committee@aos.org
William Bodei, Chair
David Edgley, Kenneth Jacobsen
Consulting members: Lois Cinert, Dennis Seffernick, Linda Wilhelm

Conservation Committee
conservation_committee@aos.org
Charles Wilson, Chair
Kathy Barrett, Virginia Clark, Ron Kaufmann (vice-chair), Mark Sullivan, Brandon Tam, Susan Wilson
Advisory members: Judith Rapacz-Hasler

Development Committee
development_committee@aos.org
Cheryl Erins, Chair
Jay Balchan, Marlene Dawdy, Robert Fuchs (Centennial Task Force chair), Ashley Grable, Eileen Hector, Julio Hector, Catherine Higgins, Jean Hollebone, Joyce Medcalf, Jennifer Reinoso (cochair), Marian Sheehan
Staff liaison: Naya Marcano

Education Committee
education_committee@aos.org
Phyllis Prestia, EdD, Chair
Donna Ballard, Eron Borne, Cynthia Coty, Melana Davison, Michelle Dobard-Anderson, Cheryl Erins, Edna Hamilton-Cirilio, Barbara Schmidt, Bev Tall, David Vandenbroek, Susan Wilson

Executive Committee
executive_committee@aos.org
Robert Fuchs, Chair
Jay Balchan, Cheryl Erins, James Heilig, PhD, Julio Hector, Jeff Saal, Susan Wedegaertner

Finance Committee
finance_committee@aos.org
James Heilig, PhD, Chair
Greg Filter, Julio Hector, Susan Wedegaertner
—Investment Task Force
Nancy Mountford, Chair
Doris Asher, Kenneth Jacobsen, PhD, Ron McHatton
—Awards Task Force
Jean Hollebone, Chair
George Hatfield, Will Riley

Governance Committee
governance_committee@aos.org
Jean Hollebone, Chair
Judy Bailey, Cheryl Erins, Harry Gallis, MD, James Heilig, PhD, Theresa Kennedy (vice-chair), Jeff Saal

Information Technology Committee
information_technology_committee@aos.org
Jay Balchan, Chair
Manuel Aybar, William Bannon, David Edgley, Greg Filter (vice-chair), Ted Kellogg, Frank Slaughter
Staff liaison: Laura Newton

Judging Committee
judging_committee@aos.org
Taylor Slaughter, Chair
Jean Allen-Ikeson (nat'l ed. coord.), Nathan Bell, Lois Cinert, Judy Cook, André Couture, Jim Davison, David Edgley (vice-chair), Tom Etheridge, Glenn Evans, Alison Gallaway, René García, Wilton Guillory, Doug Hartong, George Hatfield, Julio Hector, Marilyn Holloway, Japheth Ko, Valerie Lowe, Joyce Medcalf, Ben Oliveros, Sarah Patterson, Ian Rich, Abu Salleh, Dennis Seffernick, Max Thompson, Mark Werther, Robert Winkley, Susan Wedegaertner, Jackie Wood
Staff liaisons: Ron McHatton, Laura Newton
—Species Identification Task Force (SITF)
awardid@aos.org
Joe Bryson, Chair
Randall Bayer, Marc Hachadourian, Ron McHatton, Laura Newton, Jay Norris, William Pinnix, Ken Roberts, Jean Stefanik, Charles Wilson

Library/Archives Committee
library_committee@aos.org
Melana Davison, Chair
Cheryl Erins, Robert Fuchs, Claire Garrett, Catherine Higgins, Jean Hollebone, Chris Rehmann, Katherine Weitz (vice-chair)
Staff liaison: Laura Newton

Membership and Marketing Committee
membership_Committee@aos.org
William (Bill) Bodei, Chair
Deb Bodei, Candace Hollinger, Graham Ramsey, Jeff Saal, Linda Wilhelm
Staff liaison: Laura Newton

Nominating Committee
nominating_committee@aos.org
William Riley, PhD, Chair
Tim Brooks, David Edgley, Edna Hamilton, George Hatfield, Joyce Medcalf, Susan Wedegaertner

Research Committee
research_committee@aos.org
Dr. Robert Griesbach, Chair
Dr. Teresita Amore, Dr. Andy Cameron, Dr. John Finer, Dr. James Heilig, Dr. Hideka Kobayashi, Dr. Melissa McCormick, Dr. Retha Meier, Dr. John Stommel (vice-chair), Dr. Cynthia van der Wiele, Dr. Wagner Vendrame

PRONUNCIATION GUIDE

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

Acianthera (ay-see-AN-ther-a)
Acineta (as-sin-EE-ta)
acutissima (a-kew-TISS-ih-ma)
arbuthnotiana (ar-buth-not-ee-AY-na)
arcuigera (are-kew-IJ-er-a)
Ascocentrum (as-koh-SEN-trum)
aves-seriales (AY-veez-seer-ee-AY-leez)
ayubii (eye-YUBE-ee-eye)
Bletilla (bleh-TILL-la)
Braemia (BREEM-ee-a)
Brassavola (brah-SAH-vohl-la)
Brassia (BRASS-ee-a)
caprimulgus (kap-rih-MUL-guss)
carinatus (kar-in-AY-tus)
Catasetum (kat-a-SEE-tum)
Cattleya (KAT-lee-a)
Cattlianthe (kat-lee-AN-thee)
caudata (kaw-DAY-ta)
chloroleuca (klore-oh-LEW-ka)
Christensonia (krist-en-SONE-ee-a)
coerulea (see-ROO-lee-a)
Comparettia (kom-par-ET-tee-a)
cooperi (KOO-per-eye or KOO-per-ee)
cristata (kriss-TAY-ta)
Cryptosanus (krypt-oh-SAY-nus)
Cycnoches (sik-NOH-keez)
Cymbidieae (sim-BID-ee-ee)
Cymbidium (sim-BID-ee-um)
Dendrobium (den-DROH-bee-um)
denisoniana (den-ih-sone-ee-AY-na)
echinata (ek-in-AY-ta)
elata (ee-LAY-ta)
Epidendroideae (ep-ih-den-DROY-dee)
Epidendrum (ep-ih-DEN-drum)
Erycina (err-ee-SEE-na)
erythroxantha (err-ith-roe-ZAN-tha)
escifera (es-KIF-er-a)
falcata (fal-KAY-ta)
felis (FEE-liss)
gigantifolium (jye-gan-tee-FOLL-ee-um)
gomezii (goh-MEZ-ee-eye)
Gongora (GONE-gore-a)
Gongoreae (GONE-gore-ee)
Goniochilus (goh-nee-oh-KYE-luss)
herbaceous (her-BAY-see-us)
Hirtzia (HERTZ-ee-a)
Hookeriana (hook-er-ee-AY-na)
hortensis (hore-TEN-sis
Hybochilus (hye-boh-KYE-luss)
Ionopsis (eye-on-OP-sis)
isthmii-australis (ISTH-mee-eye-awe-STRAY-liss)
jainii (JANE-ee-eye)
Jennyella (jen-nee-ELL-la)
labiatus (lab-ee-AY-tuss)
Leochilus (lee-oh-KYE-luss)
Lepanthes (leh-PAN-theez)
lepidota (leh-pih-DOE-ta)
Lueckella (lewk-ELL-la)
luzonica (lew-ZON-ih-ka)
Lycaste (lye-KAS-tee)
Macradenia (mak-ra-DEN-ee-a)
Macrantherum (mak-RAN-ther-um)
Macroclinium (mak-roh-KLIN-ee-um)
maculata (mak-yew-LAY-ta)
Maxillarieae (mak-sill-LAIRE-ee-ee)
moniliforme (mon-il-ee-FORE-mee)
Neofinetia (nee-oh-FIN-ay-a although usually mispronounced nee-oh-fin-ET-ee-a)
nodosa (noh-DOSE-a)
Notylia (noh-TILL-ee-a)
ochracea (oh-KRAY-see-a)
Oncidiinae (on-sid-EE-ee-nee)
oncidioides (on-sid-ee-OY-deez)
Oncidium (on-SID-ee-um)
ophelma (OH-fell-ma)
Paphinia (paff-EE-nee-a)
papilionanthe (pap-ee-lee-oh-NAN-thee)
Papperitzia (pah-per-ITZ-ee-a)
percivaliana (per-sih-vahl-ee-AY-na)
Peristeria (per-is-TER-ee-ah)
Pescatoria (pes-ka-TORE-ee-a)
Phalaenopsis (fail-en-OP-sis)
Pleurothallis (plur-oh-THAL-liss)
pumila (PEW-mil-la)
ribes (REE-bees)
rodrigoi (rod-REE-goh-ee)
Rodriguezia (rod-ree-GEZ-ee-a)
Saccolabium (sak-koh-LAY-bee-um)
Schunkea (SHUNK-ay-a)
scriptus (SKRIP-tuss)
Seegeriella (see-ger-ee-ELL-la)
sicaria (see-KAR-ee-a)
Sievekingia (seev-eh-KING-ee-a)
sincorana (sin-koh-RAY-na)
Stanhopea (stan-HOPE-a but usually mispronounced stan-HOPE-ee-a)
Stanhopeinae (stan-hope-EE-nee)
Stelis (STEE-liss)
stonei (STONE-ee or STONE-eye)
striata (stree-AY-ta)
suavissima (swah-VISS-ee-ma)
subulifolia (sub-yew-lee-FOLL-lee-a)
Sutrina (soo-TREE-na)
teres (TER-eez)
thyrsiflorum (thir-see-FLOR-um)
Tibouchina (tih-boo-CHEE-na)
tibouchinicola (tih-boo-chin-ih-KOH-la)
trianae (TREE-an-ee)
tricolor (TRYE-kuhl-ur)
tricuspidatus (trye-kus-pih-DAY-tus)
Trizeuxis (trye-ZEWK-siss)
Vanda (VAN-da)
verrucosa (ver-roo-KOH-sa)
vietnamica (vee-et-NAM-ee-ka)
walkeriana (walk-er-ee-AY-na)
Warmingia (war-MING-ee-a)
warneri (WAR-ner-eye)
Xylocopa (zye-loh-KOH-pa)

Gifts of Note

In addition to vital support through membership dues, the American Orchid Society relies on grants, bequests and other gifts to support its programs. We would like to thank the following donors for gifts received between October 1, 2021 and October 31, 2021.

Anonymous (3)
Jay Balchan
Vanessa Castleberry
Marilynn Davis
Pam DeLaquil
David Edgley
Robin Erickson
Cheryl Erins
Heather Finke
Harry Gallis
Maria Ghigliotty
James Heilig, PhD
and Matthew Berry, PhD
Jean Hollebone
Doug and Theresa Kennedy
Denise Lucero
Naya Marcano-Cotarelo
Fred Missbach
Laura and Wes Newton
Suzanne Pearman
Carolyn Pedone and John Rose
Helena Rame
Brooke and Jeff Saal
Frank and Taylor Slaughter
Nicholas Swicegood
James Uzcategui-Gaymon
Susan Wedegaertner
Linda Wilhelm

In honor of
— Jean Allen-Ikeson and Ron McHatton
Jean Hollebone (Annual Supplement)
— Kathy Barrett
Charles and Susan Wilson (Conservation Endowment)
— Ron Kaufmann
Charles and Susan Wilson (Conservation Endowment)
— Beth Martin and the AOS
Manhattan Orchid Society
— Ron McHatton
Gloria K. Vanderhorst
— Martin Motes
Anonymous (Motes Award)
— Paul and Mary Storm
Norine Petronia (Storm Award)

In lieu of a speaker's fee
— Theresa Hill
Theresa Hill
Portland Orchid Society
— Charles Wilson
Charles Wilson (Conservation Endowment)
Portland Orchid Society (Conservation Endowment)

In memory of
— Ed Barber
Great Lakes Judging Center
— Karl H. Schober
Karl Schober
— Ron Sellon
Theresa Hill
— Denise Tremblay
Doug and Theresa Kennedy (Annual Supplement)
Joyce Medcalf (Annual Supplement)
— Barbara Wilkins
Robert Fuchs (Centennial Celebration)

Permanently restricted
— Conservation Endowment
Donald Bilbrey
Heather Ferrill
Richard E. Palley
Mark Sullivan
Robert Winkley

Temporarily restricted
— Annual Supplement
Bill and Deb Bodei
Sue and Terry Bottom
Carol Butcher
Jayme Hennek
Gail Schwarz
Larry Sexton
Toronto Judging Center
Patrick Vuurman
— Centennial Celebration
Robert Fuchs
Alison Gallaway
— Conservation
Anonymous (2)
Catherine Higgins
Valerie Melanson
Judith Rapacz-Hasler
Toronto Judging Centre
— Research
Valerie Melanson
— Technology
Greg Filter
Joyce Medcalf
Graham Ramsey

THIS IS MY favorite time of the year. The holidays are here and that will add an element of nostalgia with all of the traditions families share during this time. It is a wonderful time to concentrate on the foods, the gifts and decorations for whichever holiday you celebrate in December. It would be so nice to forget everything bad that has happened over these last two years and look forward to the wonderful aroma of home cooking, selecting that perfect gift (an orchid plant) for those we hold dear and decorating our home to bring everything together.

This year has been a major improvement over last year. As the year progressed, we saw a marked increase in judging events and orchid shows. The first event I was able to attend was in the very beginning of the year. First, it was well attended, and you could tell that all that attended were quite happy to be at a judging event. Appreciating the orchids, entering into discussions with the other judges, and awarding the work of the exhibitors was a welcome relief. Since then, I have traveled to Michigan, Georgia, Hawaii and parts in between. Each time, it has been the same wonderful experience but better as time went on.

I am 100% confident that next year will be even better. I have seen, firsthand, our judging centers and orchid societies adapt to the new normal and building a better American Orchid Society for all orchid lovers everywhere. Modern technology has made the world smaller and brought everyone closer together. There is no reason to miss another meeting. I am seeing more in-person meetings being simultaneously transmitted as virtual meetings.

Now, with the fall Members' Meeting officially in the books, we have the American Orchid Society Centennial Celebration and the spring 2022 Members' Meeting to look forward to. This is something we all should be excited about. Originally, the plan was to hold it in the spring of this year, but we all know what happened then. The new dates are April 6–9, 2022. If you have not already done so, register today! It is going to be phenomenal.

In Florida, the coronavirus numbers continue to fall, and more and more COVID-19 restrictions are fading. South Florida is the perfect remedy to the virus. It is a place where we can be outdoors 12 months a year — the perfect choice for this celebration.

The Centennial Celebration will be the highlight of next year. I have been sharing with all of you what to expect at the Centennial for months now. I want the anticipation and excitement to grow with each passing month. I do not want, however, for us to lose focus on the purpose of the Centennial, with the proceeds going toward orchid conservation. Even while the lights are shining and the music is playing, the work of orchid conservation moves on.

The work of orchid conservation is so important. It is one of the reasons the American Orchid Society is here today. We cannot forget that. Thousands of people around the world share a passion for these amazing plants and the desire to work at preserving them for future generations to enjoy as we have.

Along with the Centennial, we will be seeing more and more events taking place. Orchid societies will be having their meetings and hosting more shows. Take a few moments to check out the events tab on the AOS website (www.aos.org/news-events.aspx). Every week, more activities are being added.

I am convinced 2022 will be a great year.

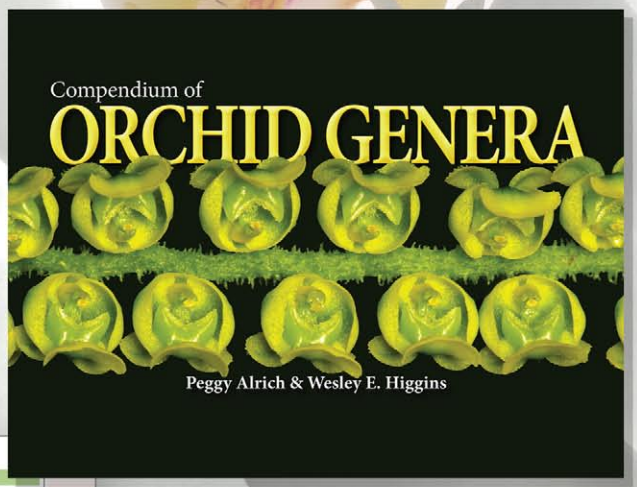
Bob Fuchs with *Vanda* Daisy Wortel (Barbara Knaus × Gladys Lavaud)

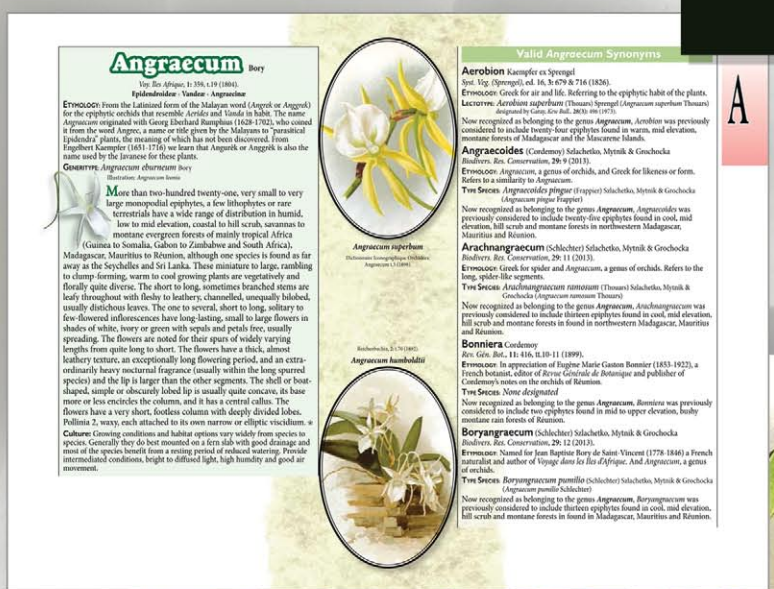
So, happy holidays, everyone! I wish all of you a happy and safe New Year!

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

Presenting

The Compendium of Orchid Genera by Peggy Alrich and Wesley Higgins





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

American Orchid Society
Education. Conservation. Research.

Order now for $99.00*

Available online at www.aos.org

*Plus shipping and insurance. AOS members receive a 10% discount.

December: The Faithful Month

By Thomas Mirenda

THROUGHOUT MY LIFE, I have eagerly anticipated the arrival of the 12th month. As a youngster, I relished the prospects of holiday festivities and decorations, my neighborhood transformed by ice and snow, the prospect of presents, my favorite traditional holiday treats such as Strufoli (deep-fried, bite-sized cookies covered with honey and sprinkles) and joyful gatherings with family and friends, themselves all dressed up in their finery, like jovial, elegantly wrapped packages of love and merriment tied with colorful bows. To this day, the prospect of being with friends and loved ones at a holiday event reliably brings a warm, peaceful glow to my tattered thoughts, and comfort to my internal moody "agita."

Thomas Mirenda

As the world aspires to achieve some normalcy this year and next, I wish for a speedy end to the necessity of restrictions among my orchid friends and the community we all share. We really need to return to the joy and wonder of orchids as soon as feasible, but also in the safest manner possible. We have all lost so much in the past year — friends, collaborators, cancelled events and trips, opportunities, progress — as well as all the network of connections we have built over the decades. While there are those that say our networks in social media and cyberspace compensate for these losses, I beg to differ. For me, no virtual experience will ever replace the real thing, especially when it comes to the magical world of orchids. May this holiday season remind us of the importance of faithfully keeping our orchid traditions even when we cannot be together.

PEACE Perhaps the best part of winter orchid culture is the fact that there is much less to actually do. Watering and feeding are at a minimum, most actual growing is at a standstill and all that really remains is to reap the fruits of our labors from last year: the many, many flowers that are on their way. While standard dendrobiums and fall-blooming cattleyas are starting to lose their long-lasting blossoms, phalaenopsis, cymbidiums and lycastes are preparing to impress us with their annual winter extravaganza. Make sure inflorescences are unobstructed and well-supported so they can expand fully and naturally and be enjoyed to the fullest, just like a holiday party.

Brassavola Little Stars (*nodosa* × *subulifolia*) exhibited by David Medus; photographed by Wilton Guillory. Approximately 655 flowers and 30 buds on 117 inflorescences. Plant approximately 20 inches (50cm) wide by 12 inches (30cm) tall, grown in a 14-inch (36 cm) slatted basket.

JOY Few things delight us in the way that flowers do, particularly when those flowers are the result of our dedicated labors on their behalf. When long-awaited buds begin to open, I am reminded of how beautiful it is to see old friends and family at my holiday dining table each year. Orchids we have had for years or decades blooming reliably in season are indeed like reunions with old friends. In fact, I have been known to put those orchidaceous friends in places of honor, including the dining table, until the time a small millipede came out of one and headed for the lasagna. That was the last time I tried that.

VISITORS As so many orchids may have been outside for the growing months, it is possible that some have picked up unwanted hitchhikers while summering under your maples. By now you have likely seen and eradicated most orchid pests that may have accompanied your orchids on their trip back into their winter dwellings. But there are a few insidious ones that may start appearing now. In particular this month, beware of mites on any soft-leaved orchids. Even though many such leaves may be deciduous on lycastes and catasetums, the impact of mites can be devastating. Look for silvery dotting on the top surface and check for their webs on the undersurface. Under dry conditions these tiny arachnids can proliferate incredibly rapidly and suck that holiday spirit right out of your plants.

PRESENTS If like me, you have many friends that love and grow orchids, it makes your holiday gift-giving much easier. I will often buy two or more of a particular plant because I know a friend is looking for it, and if I grow it well, I can give it to them for their birthday or some other event. Most of my orchid friends appreciate this. The only problem is that when orchid shopping, I tend to get much more for myself than I do for those friends, leaving me with a perpetual space crunch. On the other hand, if I buy three seedlings with the intention of giving away two of them, and bloom them all, I can keep the best one for myself while still seeming to be ultra-generous! In any case, December is also, faithfully, my birthday month, and I deserve a few presents too. Happy holidays to you all!

— 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).

Too cold in the winter greenhouse?

Stick one side of Velcro disks a foot apart onto the inside of the north side of the greenhouse to fit the shape of the foil-covered, bubble-wrap-type batts like the material used as jackets for hot water heaters. It can be purchased in rolls. The foil will reflect light back into the greenhouse and the bubble wrap will help insulate against the cold. It may also be used to insulate the west side of the greenhouse on the outside to help keep the greenhouse cool during the summer months. — *Jean Allen-Ikeson*

MAKING SURE PEOPLE CAN REACH YOUR AFFILIATED SOCIETY IS NOW EASIER THAN EVER

There's a new easier way to keep your society's AOS information current.

An authorized Rep. can simply sign into www.aos.org with society credentials to update your AOS Profile immediately.

Click **Access your account and quick links**
Choose **My Account**
Click **Edit My Profile** (directly below "Welcome Back")
Make the necessary changes to contact details and address and **Save changes** (lower left corner of the screen)

Help us ensure the AOS Corner, renewal notices and important correspondence reach you. Update any time you have a change.

HOME REMEDIES

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

— Aspirin (just ¾ of one 325 mg tablet per gallon of water) helps protect plants from fungal and viral pathogens when used as a spray. More is NOT better. Do not exceed this amount.

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

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

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

FERTILIZER/FERTILIZATION

QUESTION

Do orchids need a lot of fertilizer compared to other plants and do you think the advice "feed weakly, weekly" is applicable to all orchid growers or only for beginners?

ANSWER

Most orchids have adapted to habitats where nutrients are scarce and are able to efficiently extract nutrients out of their environment. In addition, many orchids have adapted a carbohydrate metabolic pathway called Crassulacean Acid Metabolism that drastically reduces the minimum nutrient levels for survival. This is the origin of the term "weak feeders." It does not mean that they cannot use more fertilizer but rather that they do not require more.

The proscription "weakly, weekly" comes about because most hobby growers, especially those growing plants on windowsills, do not have sufficient light to metabolize more fertilizer and "weakly, weekly" helps to avoid weak, soft growth that leads to little, if any, flowering. For those who have more light and warm temperatures, additional fertilizer can very well be beneficial. As with everything orchid, make changes slowly and monitor plants and flowering as you add more fertilizer.

QUESTION

Can you overfeed an orchid? If so how can I tell?

ANSWER

Yes you can overfeed an orchid. Signs of overfeeding are weak, soft growth prone to bacterial and fungal problems, or lots of growths that produce few, if any, flowers.

QUESTION

Do I fertilize all year round or just when the orchid is blooming?

ANSWER

Most flowering orchids are at a low point in their growth cycle if not actually dormant and do not need much, if any, fertilizer. It is far more important to feed plants when they start active growth to produce the biggest, strongest growth you can. The low point in the growth cycle of phalaenopsis is the short period between the time the inflorescence first erupts from the leaf axil and when the first bud is visible on the stem. If you watch carefully, you will notice during this short time that root growth ceases and leaf extension slows down dramatically but once you see the first bud on the stem, it starts back up again. These plants can be fed lightly throughout the year.

The effects of increased light and additional fertilizer (left) promise a spectacular blooming compared to the plant on the right grown with lower light and less fertilizer.

Also remember that in a mixed collection there will be plants that start and stop growth at different times of the year. Some orchids start growing with the onset of spring and longer days, others start growing with the onset of the rainy or monsoon season where they evolved. And still others start growing with the onset of cooler weather. Grouping plants with similar growth habits will let you easily fertilize that specific group, while not fertilizing, or at least cutting back fertilizer to a different group in a resting phase.

QUESTION

Is a balanced fertilizer such as 20–20–20 good all year round or do I change for a blooming plant as opposed to other times?

ANSWER

Fertilizer — composition, frequency, strength — Should probably be included in the list of topics not discussed in polite company. If you ask the same fertilizer questions to 10 different growers, it will likely generate at least a dozen or more answers. This is because everyone seems to have their favorite recipes and protocols that may not really be best practices. So-called balanced fertilizers; those with the three principal nutrient percentages the same (20-20-20; 16-16-16, 13-12-13) are simply mathematically balanced and 20-20-20 means 20% nitrogen, 20% phosphorus and 20% potassium (NPK). Thanks to very careful work done a number of years ago at Michigan State University, we know that these "balanced" fertilizers have little relationship to the way orchids take up and utilize nutrients and the so-called MSU fertilizers are typically more like 13-3-15.

The theory behind running a "balanced" fertilizer for some period of the year and switching to a blossom booster formulation (for instance 10-30-20) is to alter the balance of nutrients and reduce the availability of nitrogen which shifts the plant out of a growth phase. We now know that the same result can be obtained using an MSU formulation year round but many growers still swear by blossom boosters.

My suggestion would be to find a good fertilizer, possibly an MSU formulation and stick with it. As with all things orchid, make changes slowly, increase application frequency before increasing concentration and watch your plants' response. The best test of a fertilizer is whether you are getting what you want out of your plants. If you are happy with how your plants perform, you may not want to change anything. If you are not happy experiment with something different.

One last comment about fertilizer composition: we used to believe that high nitrogen (30%) fertilizers were a requirement of bark culture because the bark supplies little to no nitrogen and the fungi that break down the bark can actually rob nitrogen from the root zone. The problem with fertilizers that contain more than 20% nitrogen is that the way to get to those percentages is with the incorporation of urea into the formula. Urea is a readily available, cheap nitrogen source. That said, plants do not take up

Dendrobium thyrsiflorum grown with year-round application of an MSU fertilizer formulation

urea nitrogen directly and depend on soil organisms to convert the urea to a more readily available nitrogen form such as nitrate. Epiphytic potting media do not readily support these soil organisms so much of the high nitrogen fertilizer applied simply washes through to the ground, feeding whatever is on the floor of the greenhouse or the city sewer. Of course, some of it is converted but depending on the temperature, much of it may not be. Read your fertilizer labels and avoid urea-rich fertilizers.

QUESTION

If my orchids are not doing well, will feeding them more help?

ANSWER

That all depends on what "not doing well" means. If the root system is gone, no amount of fertilizer will help the plant. Similarly, get to the root of the problem first. Are the plants getting enough light and water? If you are sure that you have optimized all the other parameters, additional fertilizer might help. I often tell beginners to take their fertilizers, lock them in a cabinet and throw away the key. What that really means is figure out the other parameters first, grow the best root system and strongest plants you can and then think about fertilizer rather than the reverse.

QUESTION

Should I water first before I fertilize, or can I just put the fertilizer in the water that I use to water the plants?

ANSWER

It is best to water first, then fertilize. Fertilizer solutions are largely dissolved mineral salts and if applied to dry roots, you do run the risk of burning tender roots. Watering first hydrates the root. Hydrated roots take up fertilizer much more slowly, thus lessening the potential for root burn. This is also true when using pesticides; water first then apply the pesticide. I usually water the day before I use a pesticide, as this helps keep the pesticide solution in contact with the root system for a longer time.

QUESTION

Do I have to "flush" out my pots to get rid of fertilizer salts?

ANSWER

Yes, flushing with just water will help remove the excess fertilizer that dries and sticks to your potting mix. Flushing helps prevent this build up, which over time can make your potting medium toxic to your orchids.

QUESTION

Do orchids need supplements such as calcium and magnesium?

ANSWER

Orchids benefit not only from macronutrients such as nitrogen, phosphorus, potassium, calcium and magnesium but they also benefit from minors and trace elements. Calcium is critical to the formation of cell walls and magnesium is essential to the synthesis of chlorophyll. Calcium cannot be

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.*

transported throughout the plant and its deficiency, especially in cattleyas, is new growth dieback that is jet black in color and often most noticeable at high temperatures and with aging potting mix, the latter adding to calcium uptake problems. Unlike calcium, magnesium can be efficiently moved throughout the plant and deficiencies most often appear as yellowing of the foliage in bright light.

QUESTION

What are trace elements, and do my orchids need them?

ANSWER

There are a whole host of them and they are similar to what we humans need such as copper, zinc, iron and selenium. Select a fertilizer that has multiple trace elements and this will make your fertilizing job much easier!

QUESTION

Would you recommend using a time-released fertilizer as the only form of feeding your orchids or would you combine liquid fertilizer and slow-release?

ANSWER

This is on the slippery slope of "ask 10 orchid growers……" I know many growers who use nothing but time-release fertilizer. It is an easy solution for people who do not have a great deal of time and, if you chose a six-month formulation, it is easy to apply and forget for the growing season. Can you combine this with liquid, yes you can and I also know many who do. Just be careful of the total fertilizer dose, and how your watering and greenhouse temperatures affect the release rate.

QUESTION

Does temperature affect how fast time-release fertilizers discharge their nutrients?

ANSWER

It depends on what time-release fertilizer you chose. Nutricote (available in small quantities as Dynamite) releases based on the moisture content of your potting mix. The coating is specially formulated to allow moisture to enter the beads, dissolving the nutrients inside and then the nutrients are released to the environment via osmotic pressure buildup between the inside of the bead and outside the coating. Although affected by temperature, it is much less so than the other common time-release product — Osmocote. Osmocote's time-release profile is dramatically altered by increases in temperature which can lead to sudden release and burning of roots.

The Natural Genus *Vanda*

A Monograph

Motes, M. 2021. Redland Press, Redland, Florida. Printed in China. ISBN 978-1-6376033-0-7. Hardbound with dust jacket, 360 pages, 311 color photographs, 14 watercolor or watercolor-painted drawings and 21 line drawings. Order online at https://www.motesorchids.com/store?category=Books).

THE *NATURAL GENUS Vanda* is simply a gold mine of intensively researched information and *clarification* — some via valuable collaboration with a number of herbaria, taxonomists and respected nonprofessionals *cum* a high level of expertise such as Johan Hermans and Peter O'Byrne. What does he mean by 'the natural genus': species currently considered as *Vanda* including genera folded into *Vanda* such as the former *Ascocentrum* and *Neofinetia*. This book is intended to be used and not left on a shelf: the dust jacket is substantial and the paper inside the book is heavy and allowed for clear printing of photos and drawings.

The bibliography and the index to species are extensive. My only complaint is that the index to illustrations only lists the photographers' names—there is no list of illustrations by species. You can dig through all the references to species in the species index but if you simply want a photo of *Vanda tricolor* or a variety, you have to wade through nearly 30 listings. Likewise, the Table of Contents lists the sections of *Vanda*, but not the individual species for quick reference to the main start page for each. However, there is a chart of each section, the species included in each, key morphological characteristics and the natural location, which will speed location of a description in the book.

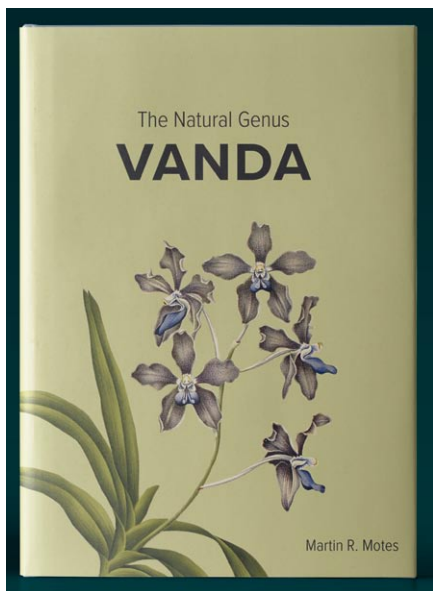
The book, however, organizes the species by section based on the DNA analysis by Lauren Gardiner, a student of Dr. David Roberts, who was then at Kew, and further modified by a mutual (with Motes) understanding of the morphology of the species in *Vanda.* The result became a working structure of the sections of *Vanda* for future research. Numerous other people contributed expertise, discussion and advice, such as Eric Christenson, Phillip Cribb, Tim Yam. Emrys Chew, Stig Dalström, Destario Metusala, and Gary Yong Gee.

Forget that Martin Motes is an owner of Motes Orchids, best known commercially for hybrids and improved species, this book is a solid scientific reference with a history of the genus, descriptions and some information on hybridization for many species and a 12-page chapter on the history of vanda hybridization that would also be valuable to orchid judges and orchid growers. The author, through detailed and extensive research, teases out differences between species and elucidates descriptions of species heretofore not recognized as species or folds a species currently recognized by the World Checklist of Selected Plant families into another species (e.g. *Vanda jainii* into *Vanda cristata*) or rejects a species such as *Vanda arbuthnotiana* but with detailed justification. Classification of orchids is always a moving target as research offers new insights. Numerous natural hybrids are also discussed including the history and historical confusion.

Each species has a general description with some history, a description that will make orchid growers and hybridizers happy. For example: *Vanda vietnamica*:

> "First described as a monotopic genus, *Christensonia*, DNA evidence has placed *Vanda vietnamica* firmly in *Vanda*. Its creamy-white tepals and large spreading white lip make this species an attractive horticultural subject. The board flat leaves of *V. vietnamica* are very efficient light gatherers making this plant similar to *Phalaenopsis* in its precocious flowering and tolerance of lower light. Seedlings of the species are known to bloom for the first time on plants with stems no more than two centimeters tall. These qualities are encouraging its use in hybridization. Like *V. falcata* and *V. denisoniana*, this species suppresses color in its progeny. As with *V. falcata*, the most successful hybrids to date have resulted from breeding *V. vietnamica* to flowers with strong lip color." (page 224)

Note that there are hints about culture and flowering, a description of its horticultural qualities and use in hybridization. The next page gives a standard type description for those trying to ascertain if a particular plant is actually



what it is supposed to be: SITF rejoice! Photos demonstrate the inflorescence and key points of morphology needed for identification (in this case, the column foot side view and erect scape). The initial description for some species also points out AOS awards correctly or erroneously attributed to the species, e.g., *Vanda luzonica*. Such information can be invaluable for AOS judges. There is also an index to synonyms and a checklist of species once described in other species but currently included in *Vanda*.

A few people will be disappointed that no detailed description of how to grow each species exists in the book. Be fair! Such descriptions could not take into account the myriad growing conditions that hobby growers experience, yet hints such as found for *V. vietnamica* for early flowering and tolerance of low light (who says all vandas need high light!) should help substantially with culture. This book is, as mentioned in the first sentence, a gold mine for hobbyists, judges and scientists alike.

— Jean Allen-Ikeson is the Chair of the AOS editorial board (email: jean.ikeson@gmail.com).

Orchid Societies and Judging Centers

The Golden Relationship

by Jean Allen-Ikeson

JUDGES AND JUDGING centers enrich the orchid community in many ways and our mandate is to serve. You may be familiar with judges at shows awarding AOS flower and cultural awards, they may be good friends (as we are all orchid lovers and growers like you), you may have seen them in action at a local judging center or you may have heard one speak at your orchid society.

Orchid societies, on the other hand, support judges and judging centers in many ways. They encourage hobby growers and stage orchid shows, both of which are the energy that helps feed a healthy judging program.

Judging Centers

One way that judging centers assist societies is speakers. Judges are required to complete at least 12 hours of education a year. Much of that comes from presentations in their own centers and most centers welcome the public if they wish to attend the talks. While these are originally slanted toward judging, many are reworked, often with cultural information, for presentation at local societies, seminars and AOS webinars. Before the pandemic increased the popularity of virtual presentations, societies that were within a couple of hours of a judging center enjoyed a local and inexpensive source of programs for their society. Virtual talks, now commonly available, have expanded the reach to almost any orchid society. Judges may also be a great source for short articles for society newsletters.

Did you know that your society may request an Outreach Judging (section V.5.7, https;//www.aos.org/orchid-awards-judging-handbook.aspx) as a program for your local society? An application needs to be sent to the AOS and the society needs to contact the chair of the judging center initially to ensure that judges are available and there are no conflicts with center or show judging dates. When my home judging center in Toronto does one of these, we screen for a limited number of plants that we feel are most likely to be awarded from the society show table. Then we seat ourselves at the front where society members can see and hear what is going on. One judge projects information from the databases onto a screen so that members can see some of the information that we use to judge their plants. It is a good way to get to know the AOS awards and orchid database, *OrchidPro,* that is free as a member benefit to all AOS members. This helps demystify what judging and AOS awards are all about.

1 JEAN ALLEN-IKESON

Judges also support local orchid shows by providing a chance for anyone or their plant to achieve an AOS award. Most shows have people attending from at least several societies. Most plants are chosen for judging from the show, but growers may bring a plant in to be judged without exhibiting it (but you may have to pay an entrance fee into the show — contact the show to find out what time AOS judging is scheduled). Most shows involve AOS judges or a mixture of AOS and lay judges in ribbon judging as well.

Many judging centers have a website and/or a Facebook page that keeps people informed as to upcoming judging dates and what has been awarded recently. It is

a great way for centers to communicate with orchid growers.

Some centers communicate more directly with societies by sending a monthly report to society newsletter editors of awards granted, photographs of plants, names of the plant owners and upcoming center judging or show dates and when and where to bring plants into judging. This makes a great public relations opportunity for centers and a colorful addition to society newsletters, which are always looking for content. A regular report from the center encourages societies within the center's region to send orchids for regular judging and is a positive reminder of the value of the affiliated societies' support. Doug Hartong (orchid169345@gmail.com), chair of the Atlanta Judging Center, is doing a terrific job of this. You might contact him for ideas.

Judging centers and judges may want to present to societies during judging the AOS webinar "Come Join Us" https://www.aos.org/all-about-orchids/webinars/judging/come-join-us.aspx) presented February 14, 2021. If you want the PowerPoint for this program to modify for your specific area, contact jean.ikeson@gmail.com. This program is an introduction to and explanation of what is involved in becoming an orchid judge and what is required along the way.

Orchid Societies

What do orchid societies do for judging centers? They stage AOS sanctioned shows where judges recognize plants, exhibits or people (cultural awards) with AOS awards. That and ribbon judging provide a valuable place for judges to see a large variety of species and hybrids—we are always eager to learn more and see the unusual!

Orchid society newsletters spread the word about when and where to take plants to be judged and hopefully notify members what has been recently awarded. Members enjoy sharing the news of their latest awards—something to be proud of!

Societies also provide modest yearly donations to judging centers to help them with expenses for judging center venues, audiovisual equipment and supplies. Each judging center has a 'home' society [III.3.9 (1) of the Judging Handbook] that is expected to provide some support, often in the form of holding an auction to raise funds for the center. Did you know that none of the fees paid to the AOS for awards go to the local judging center directly? Nor are judges paid—they volunteer for the love of orchids! It means that centers are dependent on donations from societies to pay center expenses.

EILEEN HECTOR

What does the AOS do with award fees? It maintains the awards database, *OrchidPro*, that is a membership benefit for all AOS members. The AOS also administers approving awards (Laura Newton, a dynamo, is the current awards registrar), ensuring that species names are correct (SITF), publishes photos and names of recent awards in *Orchids* on a monthly basis, provides award supplies such as forms and award stickers to centers, pays for printing and mailing award certificates, supports education materials for judges through webinars and the website, and also administers judging centers through the Judging Committee, made up primarily of volunteers (the JC Chair, center chairs and a few others), etc.

The bottom line: judging centers and orchid societies benefit each other—the more we support each other and communicate that support, the healthier both will be!

[1] Toronto judges (left to right: Mark Whelan, Ed Cott and Jay Norris) at an outreach judging at the Royal Botanical Gardens Orchid Society.

[2] Judging at the International Vanda & Slipper Orchid Symposium in Apopka, Florida in November 2021.

— Jean Allen-Ikeson is the Chair of the AOS editorial board, the Education Coordinator for the Toronto judging center and the AOS National Judges Education Coordinator (email: jean.ikeson@gmail.com).

Diversity of Orchid Species in Antioquia — Colombia

By Maria Alejandra Moreno V and Isabel Cristina Montoya S

FUNDACIÓN GUANACAS IS a nonprofit organization created in 2007 for the conservation of a 1,853 acre (750 ha) nature reserve located in Santa Rosa de Osos, Antioquia in the central mountain range of the Andes in Colombia. The predominant ecosystem that we protect is the cloud forest, characterized by its persistent humidity and recognized for the high diversity of plants, especially the wonderful orchids that develop here with high levels of endemism.

The Andean region where the reserve is located has the highest historical rate of landscape transformation and population density in the country, making deforestation the main threat to orchids and other wildlife in this area, to such an extent that much of what is destroyed is not yet known or identified, both because of the accelerated degradation process and the lack of incentives and support for biological research.

Thanks to the support of the American Orchid Society, we have carried out two explorations for the characterization of orchids in the Guanacas Reserve. The first was carried out in September 2019 and the second in October 2020, from which we obtained a cumulative list of 130 morphologically distinct species of orchids present in the reserve, distributed in 28 genera. Among the findings were 16 whose record is unique for the mountain range and six others whose identification has raised doubts among experts on the subject, opening up the possibility that they are new species.

Each exploration lasted 10 days and was carried out in the company of the reserve's rangers, with a team of experts in identification and handling of botanical samples, who collected and took the specimens to the herbarium for identification.

This project seeks to create a baseline to recognize, protect and conserve the wild orchid populations within the Guanacas Reserve. It aims to strengthen in situ conservation strategies and implement programs that lead to community socialization, appropriation and sense of belonging for the natural environment, starting with this charismatic group. We are currently in the process of documenting all the findings on cards or flyers that can be used for identification and environmental education programs.

It is worth highlighting the relevance and importance of this type of support for conservation agents such as private or public nature reserves, research groups and orchid enthusiasts, because it is through these participatory research projects that the natural heritage becomes known and taking into account that only what is loved is conserved and only what is known is loved.

We invite you to learn more about us at https://www.fundacionguanacas.org. Do not hesitate to contact us if you have any comments or concerns at maria.moreno@fundacionguanacas.org.

We hope you enjoy these photographs and descriptions of a few of the recorded species by Esteban Domínguez, leader of the explorations.

Acknowledgment

We are especially grateful for the dedication of Esteban Domínguez Vargas, a photographer and biology student passionate about orchids who served as the principal investigator for the project, to Dino J. Tuberquia, professor of botany at the CES University and to the students who contributed and continue to support the project that we hope will continue to grow and expand the orchid records for the reserve.

Right: *Acianthera rodrigoi* (Luer) Luer
A little-known species, perhaps traditionally confused with *Acianthera sicaria*. It is endemic to the department of Antioquia and the central mountain range, found at higher elevations and in more humid areas near streams.

Left: *Lepanthes tibouchinicola* Luer & R.Escobar
A highly conspicuous species due to its yellow and bright orange colors; it grows on trees commonly called "sietecueros" (*Tibouchina lepidota*), from which it gets its name, preferring this host over other shrubs and trees. Its flowers can reach up nearly an inch (2 cm) in length and its inflorescences up to 10 inches (25 cm). The species is endemic to the north of the central and western mountain ranges in Colombia.

Guanacas Reserve

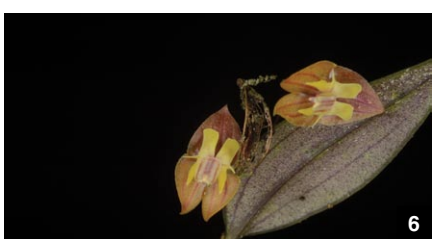

1


2

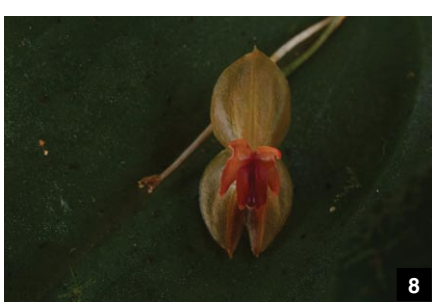

3


4


5


6


7


8

[1] *Pleurothallis* aff. *gomezii*
A rare miniature orchid most similar to *Pleurothallis gomezii* that needs more study to make a final determination.

[2] A yellow form *Pleurothallis aves-seriales* Luer & R.Escobar
A little-known color form of the species. Although a simple phenotypic variation, it is nonetheless an eye-catching specimen.

[3] *Stelis acutissima* Lindl
Another little-known species, abundant in high mountain populations, predominantly on the most open and humid ridges and paths. Its flowers exceed 0.4 inch (1 cm) in length.

[4] *Pleurothallis sp. nov.* (*chloroleuca* complex)
At this point in time, further study is being made to determine whether or not it is a new species not as its color and shape differ completely from the other three species that are very similar to it.

[5] *Lepanthes sp. nov.* (aff. *elata*)
Although most similar to *Lepanthes elata*, this species differs completely in its column and labellum and is being described as a new species.

[6] *Lepanthes sp. nov.* (cf. *ophelma*)
A species we are still in the process of identification; possibly a variant of *Lepanthes ophelma* or *Lepanthes hortensis*.

[7] *Lepanthes sp. nov.* (aff. *felis*)
Another new species, related *to Lepanthes felis*, *Lepanthes caprimulgus* and *Lepanthes ribes*; perhaps the largest of the subgenus Marsipanthes to which it belongs. It is currently in the process of description and publication by Esteban Domínguez Vargas (Colombia) and Diego Bogarín (Costa Rica).

[8] *Lepanthes sp. nov.*(aff. *escifera*)
Although similar to *Lepanthes escifera*, this species differs sufficiently to consider it an undescribed new species in the process of publication by its principal investigator, Sebastian Vieira.

New Education Grants

By Phyllis S. Prestia, Chair

THE EDUCATION COMMITTEE'S focus is to promote and support the passion for orchids through education. There are myriad ways to achieve that goal. This year's grants are diversified, yet pique interest in these beautiful flowers and stimulate a desire to learn more about their uses and culture. It gives me great pleasure to announce these two orchid education grants.

DENDROBIUM ORCHIDS AND MEDICINE Orchids have been used in medicinal ways for at least a thousand years in India, Asia and communities all over the world with roots in these geographic areas. *Dendrobium* is one genus that has enormous economic importance globally as a source for medicine.

Jacqueline Bowman is the Co-Director of Living Exhibits at The Mütter Museum of the College of Physicians of Philadelphia, as well as the director of the College's Center for Education also located in Philadelphia, Pennsylvania. She has overseen a revitalization of the Benjamin Rush Medicinal Plant Garden at the College, which features plants used in medicine. Jacqueline's intention for this project is to add a display dedicated to dendrobiums to the existing medicinal plant garden. The museum receives many visitors over the course of a year, and Jacqueline's research in identifying important plants will also be done with an eye toward blooming cycles over the months.

The goal of the project is to create intrigue and educate visitors about the genus and its historical importance. Visitors to the museum will use an audio guide developed for this purpose with information about the plants, including the need for conservation, in the display. In addition, information about the development and installation of the display will be posted on her Center for Education blog to stimulate this interest.

NATURALIZATION OF ORCHIDS AT THE BREVARD ZOO The Brevard Zoo is set in a 75-acre (30.3 ha) thick, lush, tropical native Florida forest hammock in the city of Melbourne, Florida, which is located on south-central east coast of the state. For the past two years, volunteers have been placing orchids on a display table at the entrance to the La Selva Rainforest path. These potted plants are grown in the zoo's greenhouse. Over 500 volunteer hours over the last two years has been spent working to create the table displays.

JACQUELINE BOWMAN

CHRISTINE VALENTI

Volunteers at the zoo attest to visitor's enthusiasm by the number of questions they regularly receive about the orchids in the display. In the years since the orchid display table has been employed, volunteers have seen a greater awareness and excitement about these plants. Impressed by the public's overwhelming and positive reactions to the beautiful

[1] *Dendrobium moniliforme* has been widely used in nontraditional medicine.
[2] Benjamin Rush Medical Plant garden where the display will be added.
[3] Orchid display table at the Brevard Zoo.
[4] Cattleya plant placed in the crook of a tree at the zoo.

displays, one volunteer, Christine Valenti, wanted to do more and her passion for orchids is contagious.

Christine has been a volunteer at the zoo for many years. It is her great desire to promote appreciation of the beauty of the blooms and stimulate interest in growing the plants by naturalizing orchids in the trees and shrubs along visitor paths at the zoo. Plants suitable to thriving in the conditions at the zoo, both hybrids and species and including native orchids of Florida, will be placed along the La Selva Rainforest and Florida train loops. Plants will be selected with an eye to including orchids that will bloom at various times during the year, creating something for visitors to observe throughout the months.

To satisfy Christine's zeal in appreciating the beauty of the blooms and stimulating interest in growing orchids, a display board at the entrance will alert zoo visitors to the types of orchids they are about to see. Quick Response (QR) codes linked to the American Orchid Society's online culture sheets (www.aos.org/orchids/culture-sheets.aspx), will assist visitors in identifying and learning more about the orchids they observe on their walks.

Both of these new grants contribute, each in their own way, to the goals of promoting and supporting the passion for orchids through education. The Education Committee looks forward to watching the hopes of these projects come to fruition. If you have an idea for an educational project that supports your passion for orchids, send your inquiries to education_committee@aos.org. New grant proposals may be submitted now through February 1, 2022.

— Phyllis S. Prestia, Ed.D., is Chair of the AOS Educational Committee, an AOS accredited judge in the Pacific South Judging Region and Chair of the San Diego Judging Site of Pacific South Center (email: education_committee@aos.org).

CHRISTINE VALENTI

3

CHRISTINE VALENTI

4

COLLECTOR'S ITEM

Acineta erythroxantha

La Llave & Lex. 1825

By Judith Rapacz-Hasler

Subfamily: *Epidendroideae*
Tribe: *Maxillarieae/Gongoreae*
Subtribe: *Stanhopeinae*

ACINETAS GROW AS robust epiphytic (occasionally lithophytic) plants in tropical America ranging from southern Mexico to Ecuador, including Venezuela, Colombia, Panama, Costa Rica and Peru in wet montane forest, but are occasionally found as terrestrials on steep embankments, at altitudes of 2,630 to over 6,500 feet (800–2,000 m). The name for this genus was taken from the Greek word "akinetos," meaning "motionless," in reference to the rigid, jointless aspect of the lip. Currently, the World Checklist of Selected Plant Families (WCSPF) recognizes a total of 14 species.

John Lindley described the genus *Acineta* in 1843, and the large, plicate foliage closely resemble those of *Stanhopea* and *Lycaste*. In floral characteristics, *Acineta* more closely resemble *Pescatoria* or *Peristeria*, in that the lateral lobes of the lip are joined by a central callus, although the inflorescence is pendulous as in *Stanhopea*. The pseudobulbs are ovoid to cylindrical in shape, with two to three leaves with prominent veins on the underside. The lovely pendent inflorescences emerge from the base of a recently matured pseudobulb in racemes of a few to more than 20 large 2-inch (5-cm) flowers. Each flower has an elliptical-ovate floral bract, up to 0.8 inch (2 cm) long, and are thus much shorter than the ovary.

Twenty open flowers on one pendent inflorescence is a rather spectacular sight growing in a hanging basket. The golden yellow-green cupped flowers with red spots on the callus and side lobes are fleshy in texture and usually fragrant.

Because this species grows epiphytically in wet forests at relatively high altitudes, it is best cultivated in baskets under moist, intermediate to cool conditions. If plants are grown too warmly, they will be stressed, drop leaves, and form keikis at the top of the pseudobulbs

CULTURE This genus requires moderate light, mild night temperatures and constant humidity at their roots; however, they should dry somewhat between waterings but should not be dry for long periods. Because of the long, pendent inflorescence, basket culture is most desirable. The plant, shown in the photographs, is grown in a plastic basket with medium-sized pine bark. It grows on the eastern side of the greenhouse and receives good light in the morning and less for the rest of the day. The average day temperatures during the summer months are 72–75 F (22–24 C). Night temperatures ideally should be around 55 F (13 C) with a range of 48–52 F (9–11 C). Strong air movement should be provided at all times. Other well-draining potting media choices may be medium fir bark with perlite, tree fern fiber or sphagnum moss. When the new growths emerge and during the period of active growth, plants need to be watered well, preferably with rainwater or water purified by reverse osmosis. When growths are completed in the fall and throughout the winter months, water less frequently and provide a cooler, dryer rest period. The growing area should be humid and relatively cool. Never expose plants to direct sunlight as the thin foliage will burn easily. During the growing period, fertilize monthly with liquid fertilizer, the amount depending on the medium used. Before fertilizing, it is important to water thoroughly to avoid potential fertilizer burn and to leach the potting medium of salt build-up.

[1–2] *Acineta erythroxantha* grown by Stefan Reisch at Mainau Island, Germany's flower island. Photographs by Johann Blättler.

JOHANN BLÄTTLER

Flowering occurs in July and August.

— *Judith Rapacz-Hasler (email: jorapacz@wisc.edu).*

Further Reading

Dunsterville, G.C.K. and L.A. Garay. 1966. *Venezuelan Orchids Illustrated*, Vol. 4. [*Acineta erythroxantha; Acn. Volteriana*], p.32–33.. Andre Deutsch, London, England.

Schlechter, R. 1917. Die Gattung *Acineta* Ldl. *Orchis* 11:21–48.

Winter Care Tips

by the AOS Education Committee/Photographs by Greg Allikas

Baby it is Cold Outside

EXCEPT FOR A few parts of the country, winter is in full swing. The shorter and often dull days, along with cooler temperatures, affect our orchids in both good and bad ways.

First the good news; cooler temperatures and shorter days send the signal to many orchid species and hybrids that it is time to flower. Inflorescences on many phalaenopsis and cymbidium hybrids should be well developed by Christmas. Be on the lookout for bugs that think of your precious orchid buds as tasty winter treats. Mealybugs will be the most likely suspects. Fortunately, these soft-bodied pests can be easily controlled with 1 teaspoon (5 ml) castile soap (we use Dr. Bronner's peppermint soap) in a quart (0.9 L) of water in a hand sprayer. This safe home treatment may require several applications every other day until control is achieved. Do not be tempted to mix any chemical control, even one as benign as soap, stronger than recommended.

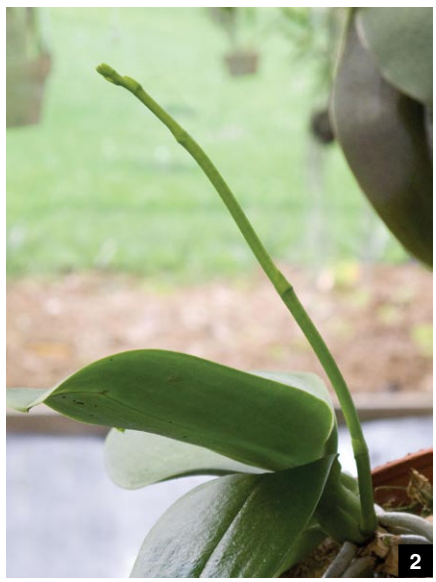
It is a good idea to begin staking phalaenopsis spikes before they get too far along. Done while the inflorescence is still pliable it is easy but if you wait too long they become brittle like asparagus and it is so easy to accidentally snap them off. Certain *Cattleya* species bloom on cue for the holidays, notably *Cattleya trianae* and *Cattleya percivaliana* (although both bloom across wider seasons in nature). It is a good idea to stake cattleyas also, as the flowers will display better. Decorating the home with blooming orchids can provide colorful accents that are always admired by guests. If you have any orchid shows nearby at this time of year, try to make the time to attend one and pick out a few plants that will bloom reliably at the holidays for years to come.

Here are a few suggestions to keep your orchids healthy this winter:

If you are a windowsill grower, the light will be entirely different at this time of year. Assess it carefully and make any necessary adjustments. A south window may be brighter due to bare trees and the sun being lower in the sky. Watch for sunburn and move plants back from the window or add a sheer curtain to cut down the light.

Shorter days and gloomy weather in many parts of the country can cause plants to produce soft growths that are more susceptible to pests and disease. Some orchids will not flower if they do not receive enough light. If necessary, use a grow light on a timer to provide additional light in winter.


1


2


3

[1] If you grow in parts of the country where cold snaps are few and short, plants can be left out if covered. Always use cloth covers not plastic.
[2] Early staking of new spikes is critical to protect them from accidental breakage and to assure they develop correctly.
[3] *Cattleya trianae* 'Mary Fennell' AM/AOS grown by Fennell's Orchid Jungle.

Orchids grow more slowly in winter and will need less water and fertilizer. Most growers cut their fertilizer back to twice a month at half strength. Monitor orchids to keep them at their proper moisture level for their type. Generally, orchids will need about half as much water in winter as they do in summer. Some orchids must have a dry winter rest in order to flower.

The loss of humidity as a result of forced-air heating can take its toll on your orchids. Remember, most orchids grow optimally with 60–75 percent humidity. If your home is especially dry, and you will know by the way your own skin reacts to winter, provide extra humidity for your orchids. A tried and true method is to set orchid pots on trays of pebbles that are filled with water; just make sure your plant is not set in the water. Misting a couple times a day can also help.

Winter is cold, so protect plants from drafts. If buds start falling off of a phalaenopsis inflorescence the first thing to suspect is a drafty window. Do not put plants close enough to a window to touch the glass!

If you happen to be lucky enough to live in an area where you grow your orchids outdoors year-round, do not be caught with your guard down. Even South Florida, the Gulf Coast and Southern California can experience damaging cold temperatures. Have a plan and supplies for covering or moving plants should cold weather be heading your way.

Providing a little extra attention to your orchids at this time of year will get them through the winter in good health and bloom!!!

Call for Grants!

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

EDUCATION

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

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

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

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

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

CONSERVATION

All conservation-oriented projects, anywhere in the world, will be considered. An institutional affiliation is required for administration of international grants. We are seeking applicants engaging in a wide range of projects that study, protect or restore orchids and their natural habitats. Conservation grants are intended to encourage a more practical, applied, hands-on approach. We require all projects to be reported on annually, and that an article featuring your project be submitted for publication in *Orchids* magazine within six months of completion. Multiyear projects are funded on an annual basis after a required satisfactory progress report has been submitted by March 14 on work from the previous year. Applications must be submitted on the application form, which is available with instructions on the AOS website at https://www.aos.org/about-us/orchid-conservation/grant-application.aspx. Your grant may be more suited for either a research or education grant, which are also available, but those applications must be submitted separately to their respective committees. Please contact the Conservation Committee at conservation_committee@aos.org with any questions in advance of the February 1, 2022 deadline. All applicants will be notified of their acceptance status by May 1, 2022.

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

RESEARCH

All orchid research projects, anywhere in the world, will be considered. An institutional affiliation is required for administration of international grants. We are seeking applicants engaging in a wide range of research projects with a focus on orchids, such as anatomy, biogeography, conservation science, development, ecology, evolution, genetics, horticulture, morphology, physiology, propagation, systematics and so on. We require all projects to be reported on annually, and that an article featuring your project be submitted for publication in *Orchids* magazine within six months of completion. Multiyear projects are funded on an annual basis when a satisfactory progress report on work from the previous year is submitted by March 14. Applications must be submitted on the application form, which is available with instructions on the AOS website at https://www.aos.org/about-us/orchid-research/application-guidelines.aspx. Your grant may be more suited for a conservation or education grant, which are also available, but applications for these must be submitted separately to their respective committees. Please contact the Research Committee at research_committee@aos.org with any questions in advance of the February 1, 2022 deadline. All applicants will be notified of their acceptance status by May 1, 2022.

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

Sylvia Strigari

Brassia isthmii-australis

Text by Franco Pupulin and Diego Bogarín/Watercolor by Sylvia Strigari

Tribe Cymbidieae
Sutribe Oncidiinae
Genus Brassia *R.Br.*

Brassia isthmii-australis Pupulin & Bogarín, *ined*.

An epiphytic, large, caespitose, erect *herb* to 35 cm tall. *Roots* flexuous, fleshy, glabrous, with green apices, to 3.5 mm in diameter. *Pseudobulbs* oblong, dorsiventrally flattened, subancipitous, diphyllous, becoming wrinkled with age, 6–11 × 2.5–3.8 cm, covered at the base by 3–5 imbricating, triangular, acute sheaths, 2–5 cm long, green-glumaceous when young, rapidly aging to dry-papyraceous and fibrous, eventually dissolving with age. *Leaves* two at the apex of the pseudobulb, distichous, erect-arching, thinly coriaceous, elliptic, acute to minutely acuminate, contracted at the base into a conduplicate petiole ca. 1.5 cm long, abaxially ribbed along the midvein, grass green 16–20 × 3.5–4.8 cm. *Inflorescences* one or two, lateral, emerging from the axils of the upper sheath, suberect–arching, a several- to many-flowered (7–15), loose raceme to 45 cm long, brownish green, with 2–3 ovate, subacuminate, glumaceous, pale green bracts to 4 mm long, tightly clasping the peduncle. *Floral bract* glumaceous, green, broadly ovate, acute, to 5 × 4 mm. Pedicellate *ovary* straight, terete-subclavate, to 2.2 cm long including the pedicel. *Flowers* spreading, sweetly scented, the sepals and petals yellow with chestnut blotches and bars mostly in the basal half, the lip white with sparse red blotches, the callus white and yellow; the column pale green spotted reddish brown. *Dorsal sepal* erect, linear-lanceolate, attenuate, 7–10 × 0.5–0.6 cm, abaxially keeled. *Lateral sepals* obliquely linear-lanceolate, attenuate-filiform at apex, 16–20 × 0.4–0.5 cm, keeled. *Petals* narrowly lanceolate-subfalcate, attenuate, subporrect, 6 × 0.5 cm. *Lip* entire, sessile, adnate to the column, narrowly elliptic, the apical margins inflexed toward the acuminate apex, 4.0–4.4 × 1.3–1.5 cm; callus of two adpressed, parallel keels, tomentose on the inner wall, in front of which are two triangular, acute, laterally flattened teeth. *Column* short and stout, straight, to 8 mm long, semiterete from a concave base, with two elliptic, small, parastigmatic wings. *Anther cap* deeply cucullate, elliptic, bilocular. *Pollinia* two, ovate, dorsiventrally complanate, cleft, on a broadly elliptic stipe provided with a protruding pouch, and a large, peltate, brown viscidium.

Many years ago, when we described *Brassia suavissima* (which was later featured in the sixth release of the *New Refugium Botanicum*), we ventured into a sort of "summary" of our knowledge of the genus *Brassia* in Costa Rica (Pupulin and Bogarín 2005). Rereading that survey, which largely followed what had already been published on the subject, we can now say with great certainty that we were wrong about almost everything.

Apart from the sensational novelty of *Brassia suavissima*, we accepted the concept of *Brassia verrucosa* in a rather uncritical form, we took the name of *Brassia arcuigera* for good for Costa Rican populations — while today we know it must be used exclusively for an Andean species — and a little tentatively we joined the line of authors who included *Brassia caudata* in the Costa Rican catalog, without anyone knowing exactly what this abused name means in the kingdom of *Brassia*. And, it is precisely from the concept of *Brs. caudata* that the story of this chapter of the *New Refugium Botanicum* begins, and from our impossibility — at least for now — to formally give a name to the beautiful (and fragrant) *Brassia* that Sylvia Strigari painted in the Lankester Botanical Garden.

A *Brassia* constructed like this, roughly like most *Brassia* species look, has traditionally been treated within a broad concept of *Brs. caudata* in the flora of Costa Rica. This *Brassia* was collected sporadically in the southern region of Costa Rica, but only along the areas that are on the Pacific side of the high mountain ranges that form the continental division. Even though it has been rarely collected in the valleys of El General and Coto Brus, in southern Costa Rica, judging by the number of individuals we grow at the Lankester Botanic Garden — many of which are products of a confiscation of illegally harvested plants — the species does not even appear to be particularly rare. During one of his recent study trips, together with Zabdy Samudio from the Autonomous University of Chiriquí in Panama, one of us (DB) was able to document the presence of this same species, as we had predicted, also in the Pacific region of the Chiriquí province in western Panama.

The *Brassia* species from the southern valleys of Costa Rica and Panama has large and scented flowers, mostly in the range of 25 cm "long" (but depending on the individual and the position of the flower on the rachis, they vary from about 17 to over 30 cm), with yellow sepals and petals sparsely blotched in the basal zone with hazel-colored spots, and a pure white lip with large blotches and some red "eye" spots. The flowers may have quite drooping sepals or lateral sepals held at an angle of almost 45 degrees, and the flowers are not crowded on the rachis, but rather produced in two rows and quite distant on a loose inflorescence. We have observed from 7 to 15 flowers per raceme. The petals, invariably shorter than the sepals, are upcurved and somewhat porrect (forward oriented) in natural position.

In her treatment of *Brassia* for *Flora Costaricensis*, Dora Emilia Mora de Retana (1999) considered that the rare collections from the Pacific coast could represent a natural hybrid or perhaps an unnamed species. Mora Retana thought this *Brassia* "perhaps unnamed" because she had no doubt that the other *Brs. caudata* from Costa Rica, the species quite common on the Caribbean lowlands, was the true *Epidendrum caudatum* described by Linnaeus on a plate originally prepared by the French monk and botanist Charles Plumier. Modern interpreters, including us, have followed this view.

The Caribbean "long-tailed" brassia from Costa Rica looks in fact quite distinct from its Pacific counterpart. The flowers are smaller, well-spaced on a usually pendent inflorescence, with green to pale orange sepals and petals, with brown blotches arranged as transverse bars all along their length, and the cream to pale yellow lip has the base covered by large reddish brown blotches. More interestingly, from our systematic point of view, the two species have very different pollinaria. In the "Caribbean" *Brassia* the pollinia are affixed to a narrow, stripe-like to subtriangular stipe, distinctly narrower than a single pollinium, and the viscidium is about half the size of the pollinium, while in the Pacific populations the stipe of the pollinarium is broad, almost suborbicular, and the viscidium is the size of a pollinium.

Of course, in order to decide which

one of the two "caudate" or tailed species of *Brassia* we have in Costa Rica (if any) corresponds to the species described by Linné, we should study the type. But the type of *Epidendrum caudatum* is an illustration (McLeish et al. 1995 selected it as the lectotype) made by Plumier, which Burman published in 1758. Unfortunately, even though Plumier's drawings were renowned during his life for their fineness and scientific accuracy, and as pleasing as the drawing of *Epidendrum caudatum* is, many of the critical details that we would need to make a clear decision concerning the identity of the species portrayed do not appear in the original illustration.

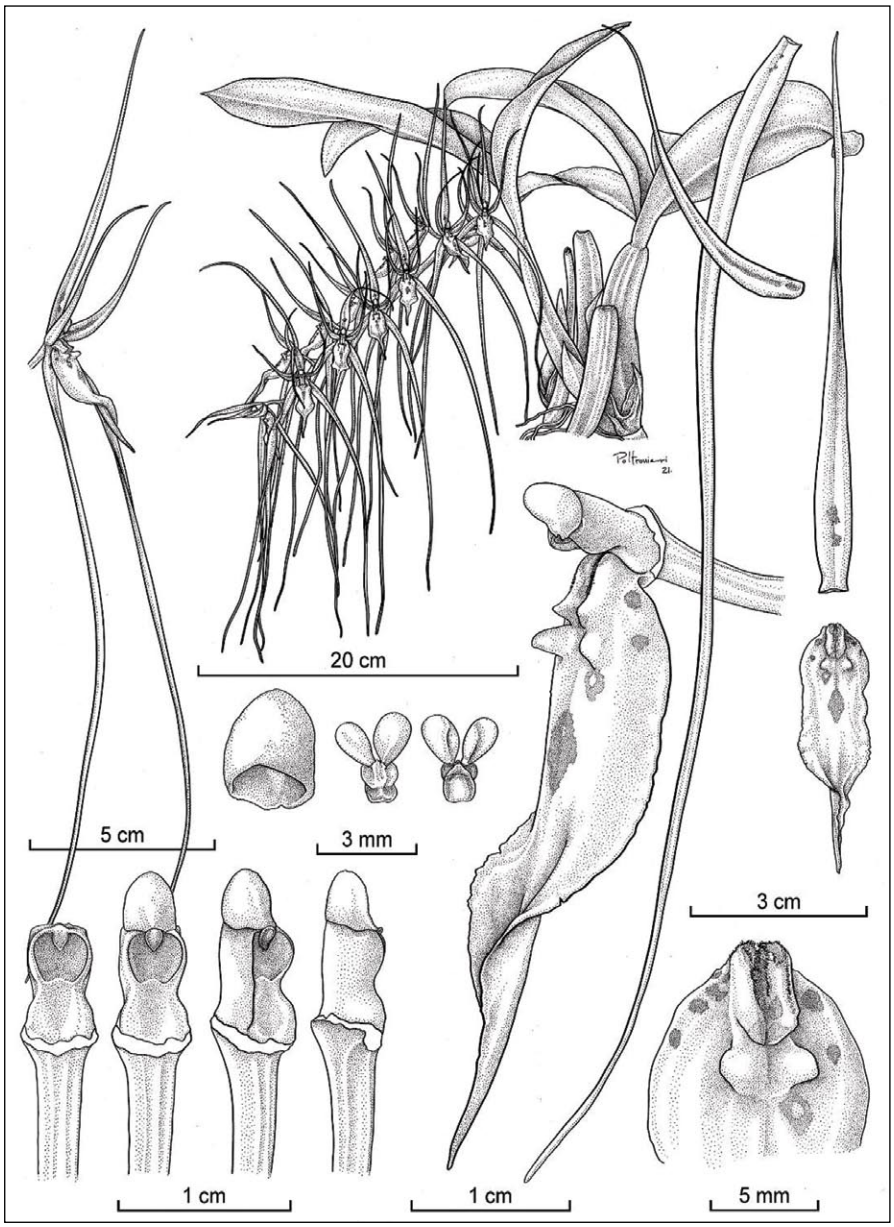
In his extraordinary account of the orchids from the Greater Antilles, Ackerman (2014) only records two species of *Brassia* for the island, *Brassia maculata* and *Brs. caudata*. Although the former does not fit the protologue and illustration of *Brs. caudata* by virtue of its single-leaved pseudobulbs and rather small flowers, the latter is only recorded from Cuba, Jamaica, and the island of Hispaniola (Haiti and Dominican Republic). Among these, Plumier only went to Haiti and Saint-Domingue in 1667–68 and 1694–95.

Although we have no access to Haitian or Dominican populations, we were fortunate to obtain through Claude Hamilton, a healthy specimen of the Antillean *Brassia* from Jamaica. Is this the true *Epidendrum caudatum*? When it eventually flowered at Lankester, to our great surprise, the Jamaican plant was much more similar to the population of Pacific Costa Rica in all respects, including the shape of the pollinarium.

One could be tempted to jump quickly to the conclusion that the true *Brassia caudata* of Costa Rica is therefore that of the South Pacific, which most closely resembles the *Brassia* of Jamaica, which would leave the Costa Rican populations of the Caribbean coast without a name. Before reaching this conclusion, however, we must remember that Plumier never collected in Jamaica, and therefore leave room for doubt that the species we received from Hamilton is not the same as that collected by Plumier on the island of Hispaniola. It may well be that, as Ackerman indicates, the true *Brassia caudata* exists in Jamaica, but we should have a much clearer idea of the possible natural variation of this species to rule out the existence of two different species on the island. If so, it could be possible that our Jamaican plant, which should serve as a "touchstone" for Costa Rican species, is not the real *Brs. caudata*.

The data, for the moment, just indicate that in Costa Rica and Panama there are two different species, somehow referable to the concept of *Brs. caudata*, and that the morphological similarities are much more pronounced between the species of the Pacific side of Costa Rica and a species legitimately coming from the Antilles. However, there are still too many open doubts about the real identity of the single (or multiple) Antillean species because, however simple it may seem, we cannot solve the problem on the table (see, for a detailed account, Pupulin 2016:282–289).

Molecular taxonomy is of no use in determining the true identity of *Brs. caudata*, as the type of the species is a drawing with no DNA, but a genetic sampling of long-tailed *Brassia* species in the West Indies and on the continent may perhaps help in determining at least the



Brassia isthmii-australis (ined.). The plant.
1. Flower.
2. Dissected perianth.
3. Base of lip, with callus.
4. Column and lip, three quarters view.
5. Column, ventral, three quarters, and lateral views (emasculate at the left) .
6. Anther cap and pollinarium (two views).

All drawn from *JBL-21865* by S. Poltronieri.

number of distinct taxa in the complex, and to sort out a "genetic identity" of populations from Hispaniola. More field work, better modern documentation of the variation, and a study that probably encompasses all Central American and northern South American countries will be needed to make taxonomic and systematic decisions that have value over time. *Brassia isthmii-australis* will remain *inedita* for a long time to come.

References

Ackerman, J. F. 2014. Orchid Flora of the Greater Antilles. *Mem. New York Bot. Gard.* 109.

McLeish. I, B.R. Adams and N.R. Pearce. 1995. *Native Orchids of Belize*. Rotterdam, A. A. Balkema.

Mora de Retana, D. E. 1999. *Brassia* R. Br. Pp. 116–118 *in: Burger, W. (ed.). Flora costaricensis. Family #39 Orchidaceae: Tribe Maxillarieae: Subtribes Maxillariinae and Oncidiinae. Fieldiana, Bot.,* n.s. 40.

Pupulin, F. 2016. Why We Have no Serious Alternatives but Cooperative Taxonomy. *Lankesteriana* 16(2):279–291.

Pupulin, F. and D. Bogarín. 2005. The Genus *Brassia* in Costa Rica: a Survey of Four Species and a new Species. *Lindleyana in Orchids (Bull. Amer. Ocr. Soc.)* (3):202–207.

Selected Botanical Terms

abaxial – underside or backside
acuminate – tapering to a long point
acute – pointed
adnate – fused
adpressed – free but pressed flat against a surface
ancipitous – flattened with two edges
attenuate – gradually tapered
bilocular – having two chambers
bract – modified or specialized leaf
caespitose – clumping
callus – thickened tissue on the lip
clavate – club-shaped
complanate – flattened; carried in one plane
concave – bowl-shape; curved inward
conduplicate – folded together lengthwise
coriaceous – leathery
cucullate – hooded
diphyllous – having two leaves
distichous– arranged in two opposite rows
dorsiventrally flattened – flattened like a regular leaf blade
elliptic – oval
epiphyte – a plant that uses another plant as a means of support
falcate – sickle-shaped
filiform – shaped like a filament
flexuous – wiry
glabrous – smooth
glumaceous – having chaffy bracts as in grasses and sedges.
imbricate – overlapping like scales
inflexed – bent or curved inward
lanceolate – lance-shaped; widest near the middle, tapering both ends
ovate – egg-shaped with wider end at the base
papyraceous – dry, papery
pedicellate – appearing as a stalk
peduncle – stalk supporting the inflorescence
peltate – more or less circular with the stalk attached on the underside
porrect – projecting forward
sessile – attached directly without stalk
sub – somewhat less than; i.e., subsperical would refer to almost but not quite a sphere
terete - cylindrical or pencil-shaped
tomentose – woolly or downy
viscidium –sticky pad to which the pollinia are attached

Growing Environments

By Franco Pupulin

KARLA RICHMOND

The loveliest face of research at the Lankester Botanical Garden. Left to right, Grettel Salguero Hernández, Lisbeth Oses Salas, Noelia Belfort Oconitrillo, Melania Fernández Campos, and Melissa Díaz Morales.

I remember, when we started this project in 2015, Ron McHatton asked me if we wanted to write a column every month or if we would prefer the column to appear bimonthly. Thinking of equaling the number of chapters that the original *Refugium Botanicum* had dedicated to orchids, 72, it seemed to us that a bimonthly column would have meant too long a commitment, of over 12 years, to both sides and we chose the "short way" — a monthly column. Now, having reached the last chapter of the *New Refugium Botanicum*, after six-and-a-half years of uninterrupted contributions, I can candidly confess to gentle readers that it has been a more demanding job than I had supposed.

The preparation of a chapter of the *New Refugium Botanicum* is a work of considerable coordination, which requires the activity of several people who interact on the same material, sometimes almost contemporarily and sometimes, when this is not possible, at different moments. The beginning of the work involves the choice of one or several specimens cultivated in the collections of the Lankester Botanical Garden, which are interesting from the point of view of natural history, systematics, or simply for their rarity or scant presence in specialized literature. For the *Refugium Botanicum*, it is essential at this point that our painter can create the watercolor illustration of the plant and flowers. This requires Sylvia Strigari — who does not live year-round in Costa Rica — to have the star plant available for a few days to accurately study its morphology and colors on the living specimen.

Sometimes, at the end of these "few days," the flowers have faded. If the plant has no more flowers, that chapter of the *Refugium Botanicum* must be postponed until the next flowering — sometimes a year later, sometimes even two years — so that the botanical illustrator of the Lankester Botanical Garden can in turn study it live, document it, and create the botanical illustration in pen and ink that always accompanies Sylvia's watercolor.

In the meantime, the authors of the texts can carry out their work of documentation and study. This consists, rigorously, in the study of the protologue of each species, the evaluation of the correctness of its nomenclatorial history (which in two or three cases we had to correct with new combinations published in the *New Refugium Botanicum*), and the gathering of a large amount of information relating to the natural history of the species. Measurements and morphological characters assessed on the living specimens are then contrasted with those provided in the literature, in order to produce botanical descriptions that can truly encompass the expected range of that given species' natural variation in shape, dimensions, and colors. As far as possible, the geographical distribution reported in the literature is checked against the examination of real vouchers for each of the regions considered. Each species is critically evaluated as to its phylogenetic position, using the most modern research, and considering all the alternative hypotheses — from the point of view of classification — that are consistent with the available data, both molecular and chemical, ecological, morphological, and geographical. Given the fluidity of the current classification models, in many of the chapters we have presented to readers the reasons for our adherence to one rather than the other of

the possible evolutionary hypotheses, and in any case the authors of the *Refugium Botanicum* have endeavored to let readers understand how and why the hypotheses about the phylogenetic relationships of orchids are not written in stone.

Only at this point the different parts that make up the *New Refugium Botanicum* are ready to be reunited and transformed into a chapter of the series, which will still have to go through the filter of the philological revision, the layout, and two rounds of corrections before becoming a new column that readers will read in the magazine.

I estimate these activities, conservatively, in a dozen man-days for each chapter. This gives us a total of three and a half years of real work dedicated to the *New Refugium Botanicum*! Not only me, but no one, I believe, would have imagined the extent of this commitment in the now distant June of 2015, when we inaugurated the series.

Despite the great work it required, it is with a little regret on the part of all the participants in the project that I write these concluding lines of the *New Refugium Botanicum*. This series has been an extraordinary opportunity for us researchers from Lankester Garden to put our noses into groups of orchids which, not being native to the Mesoamerican area and tropical American regions, represent a focus of less priority for our center. The systematic botanist can only greatly appreciate the amount of stimulating information that derives from the comparative study of geographically different flora and from the sometimes profoundly different adaptations from a structural point of view that orchids implement to achieve the same goals. These observations often translate into new ideas and hypotheses relating to the evolution of orchids, and remind the scholar that hyper-specialization is often, at least in botany, a risky path for scientific creativity.

We therefore close the series with 77 releases, five more than the original *Refugium Botanicum*. Sylvia Strigari's watercolors are so beautiful that they deserve to be appreciated at their natural size, and for this reason we are already working on the idea of transforming this series originally designed for *Orchids* magazine into a large-format book, where illustrations can shine in all their glory. Who knows, perhaps the American Orchid Society may be a perfect partner in this new adventure as well, as it has been during the past six years it took to lead the series to its port of destination.

The *New Refugium Botanicum* required the cooperation and help of many researchers and botanical illustrators, who I want to acknowledge here personally: Jaime Aguilar Velásquez, Noelia Belfort Oconitrillo, Diego Bogarín, Isler F. Chinchilla, Melissa Díaz Morales, Melania Fernández Campos, Adam P. Karremans, Lizbeth Oses Salas, Sara Poltronieri, Joan M. Rodríguez Barquero, Gustavo Rojas-Alvarado, Grettel Salguero, Christina M. Smith, Sylvia Strigari, Esmée Winkel, and myself. As you may see, this is pretty much the entire past and present staff of Lankester Botanical Garden's scientific department! On the side of the American Orchid Society, this work would never have been possible without the editorial experience and attention to detail of the *Orchids* magazine's editor, Ron McHatton, as well as the philologists, proofreaders, and the rest of the editorial staff, who patiently accompanied us during the years of development of the work. With several of them, this professional cooperation has transformed over the years into a sincere friendship which I hope will last for a long time even after the conclusion of the *New Refugium Botanicum*.

On behalf of all the authors and other participants in this lasting project, I thank from the bottom of our hearts the readers of *Orchids*, who with their genuine interest, their curiosity, and their expressions of esteem, have provided the stimulus for this series maintained for so long that it became a "classic" of the magazine. See you all soon, with a new project from the Lankester Botanical Garden!

— *Franco Pupulin is a specialist in the systematics and taxonomy of Neotropical orchid. Pupulin works as a Senior Research Professor with the Universidad de Costa Rica, where he is Head of Research at the Lankester Botanical Garden and the Editor-in-Chief of Lankesteriana, the only international journal exclusively devoted to scientific orchidology. Franco is associated in research with the Harvard University Herbaria and the Marie Selby Botanical Gardens. Universidad de Costa Rica, Jardín Botánico Lankester, Costa Rica; Harvard University Herbaria, Cambridge, Massachusetts; Marie Selby Botanical Gardens, Sarasota, Florida (franco.pupulin@gmail.com).*

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).*

References

Bottom, S. 2017. Purely Organic. *Orchids* 87(5):344–349.

GENUS OF THE MONTH

Bletilla

Hardy Orchids for the Yard: And Easy to Grow!

TEXT AND PHOTOGRAPHS BY CHARLES WILSON

GROWERS AROUND THE world love orchids that can be grown without muss or fuss in the outdoor garden — especially those that can grow in temperate areas that experience snow and freezing temperatures in the winter. The genus *Bletilla* presents just such a delightful group for consideration. Ranging from as far north as Korea and southward through Japan and China to Myanmar and Taiwan, there are around nine species in the genus, of which only two are commonly available in the trade.

Bletilla striata, sometimes called the Chinese ground orchid and often sold as the hyacinth orchid, blooms early in the spring. Its lovely and fragrant lavender-colored flowers can present a wonderful display. There is often a white variety of this species encountered in the trade as horticultural form alba. *Bletilla ochracea*, the yellow ground orchid, blooms about a month later than its hyacinth-colored relative and into the early summer. Although it lacks fragrance, the cheerful and equally abundant yellow flowers are a welcome addition to the garden.

The corm-like pseudobulbs typically overwinter about 2 inches (5 cm) below the soil until spring, when they put forth 3–5 thin, plicate leaves that may be up to 24 inches (60 cm) tall and 3 inches (7.5 cm) wide. The leaves are quite attractive in the garden even when these orchids are not in bloom — and they grow new and fresh every spring. The inflorescences, which may be up to 18 inches (46 cm) tall, emerge later in the spring from the apex of the mature pseudobulbs, with as many as 14 cernuous (nodding) flowers 2 inches (5 cm) wide. Because the flowers open sequentially from the base upward, these orchids may be in flower for a month or longer. During winter, the foliage dies to the ground. *Bletilla* is a long-lived orchid and enjoys successive growth year after year and when the plants are allowed, can develop into a specimen size plant in just a few years.

The corms may be easily divided at the end of the growing season when the outside area or pot becomes too crowded. Some growers report propagating from seed naturally in the garden and others report successfully germinating the very fine seed in plastic bags or flats of damp sphagnum moss.

LIGHT AND TEMPERATURE *Bletilla* enjoy full morning sun but benefit from a bit of shade in the hot afternoon. This genus is recommended for outdoor gardens to USDA Zone 5 (down to −20 F [−29 C]). That is as far north as Washington on the West Coast through the central Great Plains states eastward around the southern Great Lakes and southern Canada and up the eastern seaboard to Maine. The more northern areas undoubtedly benefit from an extra application of mulch for the winter months, although the greatest advantage may be in that the plants stay reliably dormant through the entire winter. *Bletilla* can be grown in pots for the faint of heart in these and even colder more northern climes by simply moving them indoors to a protected area to allow for winter dormancy. Full sun exposure in these northern latitudes may be beneficial with their shorter growing season. Going further south into the somewhat warmer USDA Zone 9 where temperatures may drop on occasion to as low as 20 F (−17 C), *Bletilla* can be grown but may not thrive, in part at least, due to the regular warmer spells that interrupt a continuous winter dormancy.


2

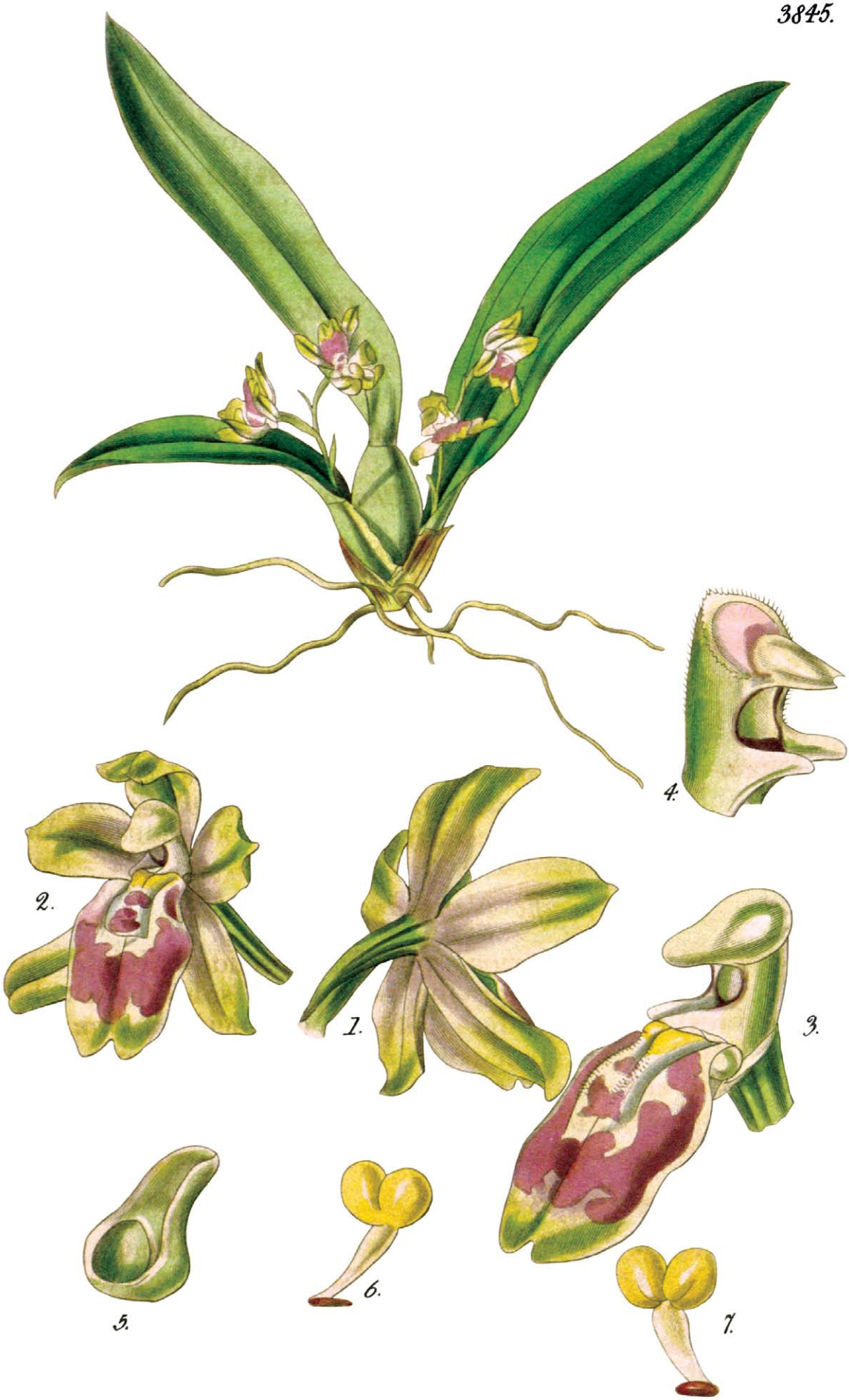

3

[1] *Bletilla striata*. Although normally purple in color, pure-white alba forms (inset) are also known.
[2] *Bletilla ochracea* 'Adelain's Chasus' CCM/AOS
[3] *Bletilla* Brigantes (*striata* × *ochracea*).

WATERING AND SOIL *Bletilla* are not necessarily picky about where they grow, being tolerant of a wide range of conditions. However, they do need to get enough moisture during the growing season and a reasonably rich soil. Well-balanced, slow-release fertilizers may be applied as for typical garden plants, whether grown in the yard or in pots. Most important is that they have excellent drainage regardless of where they are grown. Water pooling around the corms for very long, especially in the winter months, is a formula for disaster.

Easy to grow and with a potential to naturalize in the outdoor garden in many of the colder regions, this is a genus of orchids to recommend for about everyone.

— Charles Wilson is an accredited AOS judge out of the Atlanta judging center who has been growing orchids for over 40 years. He is Chair of the AOS Conservation Committee and serves on the Species Identification Task Force. His special interests include Bulbophyllum, Calanthe, Coelogyne, Dendrobium, Paphiopedilum *and about everything else, too! He can be reached at Zooemeritus@gmail.com.*



Leochilus

by Wesley Higgins and Peggy Alrich

A Southern Florida to Northern South America Genus

ORCHID TWIG EPIPHYTES are diminutive plants that occur on the smallest branches of their hosts. The high-light zone occurs in the outermost portions of the canopy and has the highest light and greatest fluctuation in water availability. Twig epiphytes' characteristics include shortened life cycles, psygmoid (fan-shaped) or leafless habits, seeds with testa extensions, and modified root velamen cells. These features allow them to adapt to the harsh and ephemeral conditions present on the outermost twigs in the canopy but also appear to be responsible for restricting the species to these sites. Botanists have always struggled with the generic limits in this oncidioid group (Chase 1986, 1987). The genus *Leochilus* was described by Knowles and Westcott (Knowles and Westcott *Fl. Cab.*, 2:143 [1838]). The name is from the Greek for "smooth" and "lip," referring to the smooth surface of the lip.

The genus has 12 species found in lower to middle elevation, hill scrub and evergreen montane forests from the eastern United States (southern Florida), Cuba to Trinidad, central Mexico to Peru, Venezuela and the Guianas with one species *Leochilus labiatus* found in northwestern (Amazonas, Roraima and Pará) and eastern (Pernambuco to Sergipe) Brazil. The center of diversity is in Central America.

These dwarf, tufted plants have single-noded, two-sided (ancipitous) pseudobulbous stems, subtended by compressed leaf-sheaths, each with one to two narrow, leathery, unequally bilobed leaves. The arching to hanging, sometimes branched, zigzagging, purple, numerous- to few-flowered inflorescence has small (mostly inconspicuous), fragrant, gray-green to yellow-green flowers often suffused brown or purple. The sepals are similar to the slightly smaller, wider petals. The simple or obscurely trilobed lip, joined to the base of the column, is often longer than the petals and has a cup-shaped, short hairy callus. The flowers have a short, straight, winged, footless column.

The pollinators include wasps or Halictidæ bees. Reported chromosome counts range from 2n = 42–48.

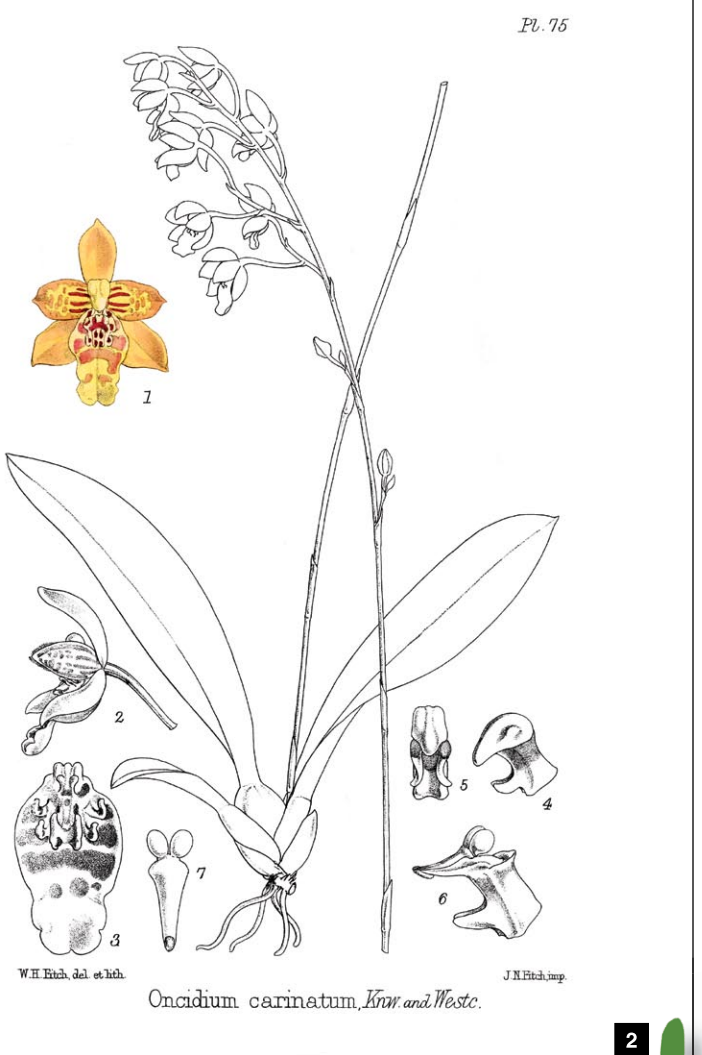
The genus *Leochilus* has historically suffered from a lack of consistent definition. These monospecific genera — *Papperitzia*, *Goniochilus*, *Cryptosanus* and *Hybochilus* — have been merged into *Leochilus*. Phylogenetically, *Leochilus* is closely related to a group of other twig epiphytes and is sister to a clade of: *Hirtzia*, *Comparettia*, *Ionopsis*; *Rodriguezia*, *Sutrina*, *Trizeuxis*; *Seegeriella*; *Macradenia*, *Schunkea*; *Warmingia*, *Macroclinium* and *Notylia* (Freudenstein and Chase 2015).

REFERENCES

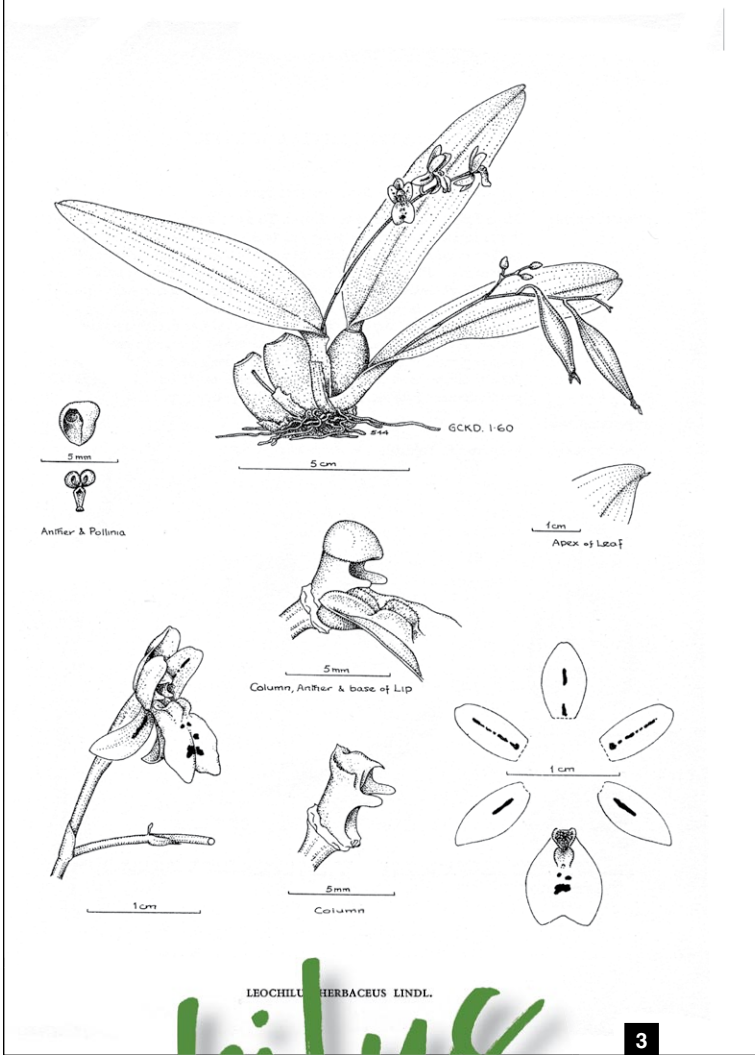
Chase, M.W. 1986. A Monograph of *Leochilus* (Orchidaceæ). *Systematic Botany Monographs* 14:1–97. American Society of Plant Taxonomists.

_. 1987. Obligate Twig Epiphytism in The Oncidiinæ and Other Neotropical Orchids. *Selbyana* 10:24–30.

Freudenstein, J.V. and M.W. Chase. 2015. Phylogenetic Relationships in Epidendroideæ (Orchidaceæ), One of the Great Flowering Plant Radiations: Progressive Specialization and Diversification. *Annals of Botany* 115:665–681.

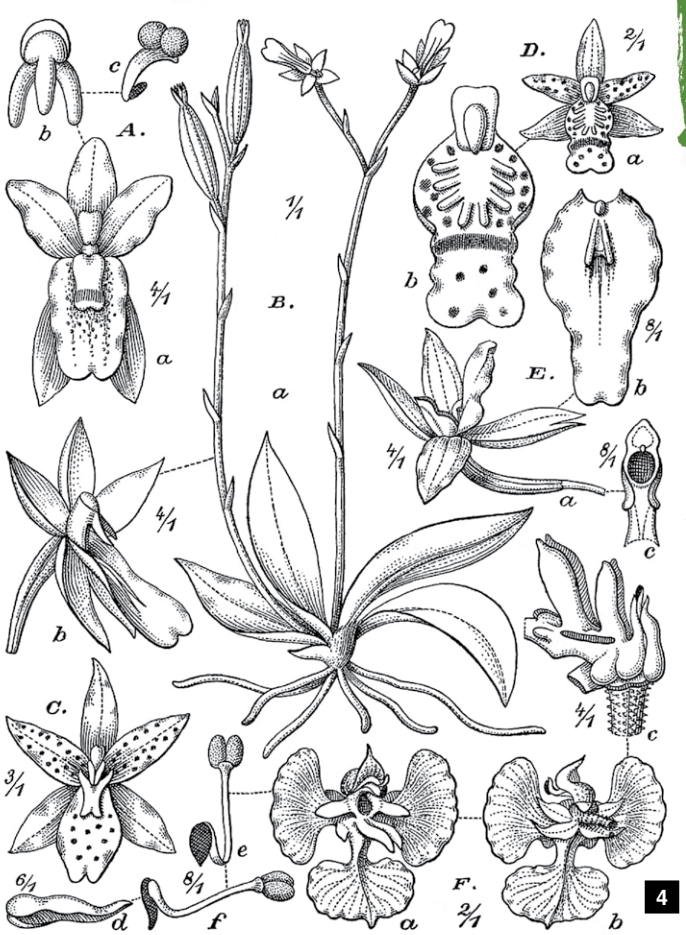


2



3

Leochilus



4

ANTIQUE PLATES

[1] *Leochilus oncidioides* as *Oncidium macrantherum*, *Botanical Magazine*, 67: t.3845 (1841).

[2] *Leochilus carinatus* as *Oncidium carinatum*, *Refugium Botanicum*, 2(1): t.75 (1869).

[3] *Leochilus scriptus* as *Leochilus herbaceus*, *Venezuelan Orchids Illustrated*, 2: t.182 (1961).

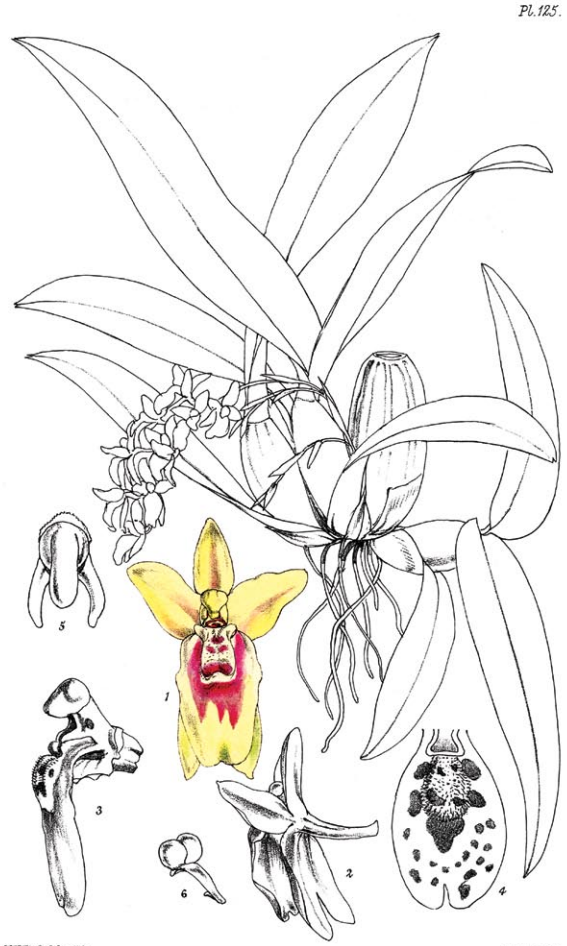
[4] *Leochilus scriptus*, *Leochilus labiatus*, *Leochilus carinatus*, *Leochilus oncidioides* and *Erycina echinata*, *Das Pflanzenreich*, (Heft 80) IV 50, 12: f.25 (1922).

[5] *Leochilus oncidioides* as *Oncidium macrantherum*, *Refugium Botanicum*, 2(1): t.125 (1869).

[6] *Leochilus labiatus*, *Venezuelan Orchids Illustrated*, 3: t.152 (1963).

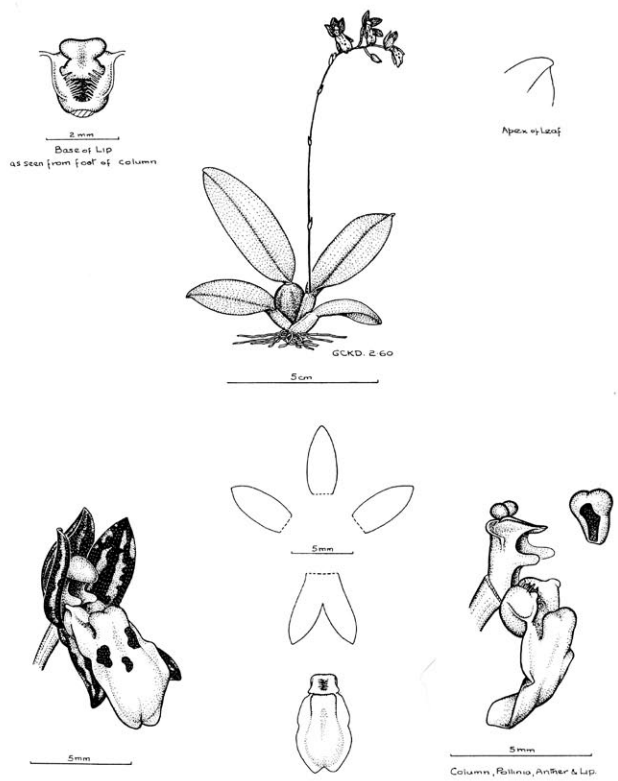
[7] *Leochilus labiatus*, *Flora Borinqueña*, unpublished, by Frances Worth Horne (1873–1967).

[8] *Leochilus tricuspidatus*, *Icones Plantarum Tropicarum*, 15(2): t.1443 (1992).



Oncidium macrantherum, *Hook.*

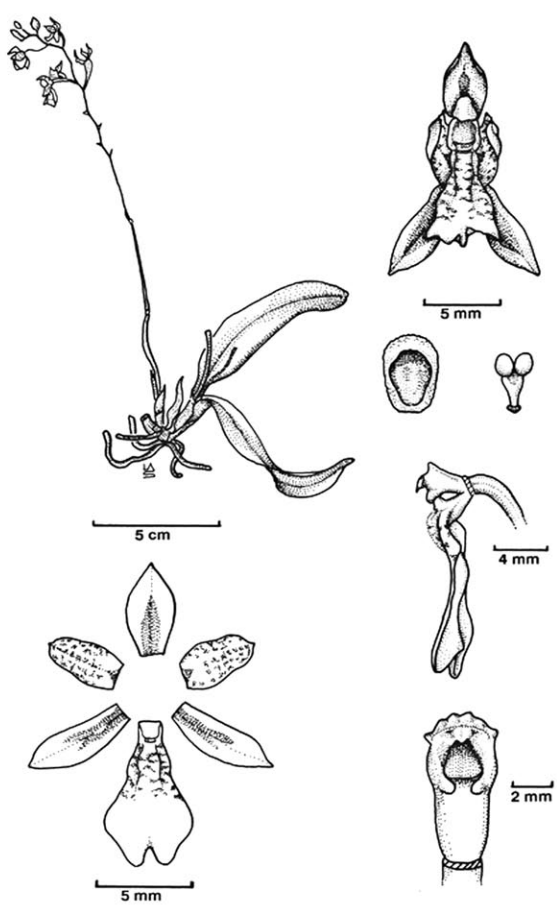
5



LEOCHILUS LABIATUS (SW.) O. KTZE.

6

7



8

Mini Blue Cattleyas

The Influence of Cattleya Mini Purple, Love Knot and Cornelia

BY FRED CLARKE

ARE THERE REALLY blue cattleya flowers? Well, not really. The pigments delphinidin and cyanodelphin, which make flowers blue, are absent in cattleyas. The botanical term for the "blue" color in cattleyas is coerulea (Latin "caerulea"). As you will see, I switch between the terms "coerulea" and "blue." Generally, we refer to the lighter shades as coerulea and the darker colors as blue. The unusual color forms have intrigued many a hobbyist, so much so that some have dedicated their entire collections to caerulean cattleyas. There are many famous hybrids with coerulea strains including *Cattlianthe* Ariel, *Cattlianthe* Blue Boy, *Cattlianthe* Mariner, *Laeliocattleya* Amoena and *Cattlianthe* Mary Elizabeth Bohn. One of the experts in blue breeding is Carson Whitlow, who wrote a series of excellent articles on "blue" cattleya breeding based on his experience from the 1960s–1980s while working as a plant breeder at Stewart Orchids in California. These articles can be found at http://www.c-we.com/blue.cattleyas/BlueCattleyas.pdf.

Due to the available genetic material, early hybrids were mostly derived from coerulea forms of larger-growing species: *Gurianthe bowringiana*, *Cattleya gaskelliana*, *Cattleya labiata*, *Cattleya mossiae*, *Cattleya purpurata* and *Cattleya warneri*. The result was a group of hybrids with large plants and flowers. A few crosses were made with smaller-growing species such as *Cattleya walkeriana* and *Cattleya pumila*, but the heyday for those hybrids did not occur until much later.

At Sunset Valley Orchids, most of our breeding has the hobbyist in mind. Our latest blue breeding is focused on two main characteristics, plant stature and flower size. For most hobbyists, having compact plants with big flowers makes a lot of sense. After all, who has extra space in their growing area? The modern hybrids emerging from our breeding program utilize a small number of carefully selected species with great success: *C. walkeriana*, *C. pumila*, *Cattleya sincorana*, and, to a lesser degree, *C. labiata* and *C. warneri*. So far, there have been three highly influential primary hybrids, acquired from other breeders, that have enabled us to make noteworthy improvements: *Cattleya* Mini Purple, *Cattleya* Love Knot and *Cattleya* Cornelia. They all impart specific traits that are valuable in our breeding program:

— ***Cattleya* Mini Purple** (*walkeriana* × *pumila*): plant stature less than 6 inches (15.2 cm) tall; free-blooming plants, often flowering twice a year and broad lips with rich caerulean color.

— ***Cattleya* Love Knot** (*walkeriana* × *sincorana*): small plant stature, tight internode spacing between pseudobulbs; flat sepals and petals and broad, flat lips.

— ***Cattleya* Cornelia** (*labiata* × *pumila*); short, stocky plant stature; large flower size and lightly ruffled, broad lips with rich caerulean color and yellow throat.

Cattleya walkeriana f. *coerulea*

×

Cattleya pumila f. *coerulea* 'Diamond Orchids' AM/AOS. Photograph by Arthur Pinkers

=

Cattleya Mini Purple 'H&R' 4n

Cattleya Mini Purple (*walkeriana* × *pumila*) is well known in its purple color form, thus the name. The caerulean form is available, albeit not as common. This was the first of the blue mini-catts. The plant is under 6 inches (15.2 cm) tall, enabling the first breeding for mini and compact plant size in today's hybrids. When crossed with larger-growing plants, *C.* Mini Purple reduces plant size in the progeny. The rich dark blue lip color from *C. pumila* f. *coerulea* is evident in the offspring, and many Mini Purple crosses flower twice a year.

Cattleya walkeriana f. *coerulea*

×

Cattleya sincorana f. *coerulea*

=

Cattleya Love Knot
'Sunset Valley Orchids' HCC/AOS

Cattleya Love Knot (*walkeriana* × *sincorana*) is also more commonly found as a purple color variety, though the coerulea form is very attractive. The flat flowers are produced from the newly developed growth with no sheath in late spring, like the *C. sincorana* parent. Plants are less than 6 inches (15.2 cm) tall, with pseudobulbs tightly spaced together. This compact plant habit is imparted to its progeny.

Cattleya labiata f. *coerulea*
'Luke's Lightsaber' AM/AOS
Photograph by Cecily Maciejeski

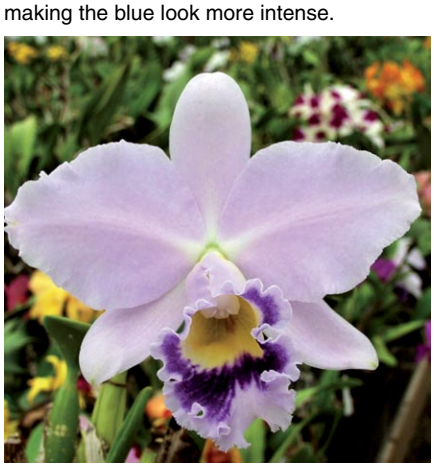
×

Cattleya pumila f. *coerulea*
'Diamond Orchids' AM/AOS.
Photograph by Arthur Pinkers

=

Cattleya Cornelia 'Floralia'

Cattleya Cornelia (*labiata* × *pumila*) has been available in lavender, alba and coerulea color forms. Many years ago this cultivar was offered by the Floralia orchid nursery in Brazil, and every time they come to orchid shows in the USA I'm on the lookout for this plant. Still waiting ... I might have to remake it myself. Cornelia plants are 7–9 inches (17.8– 22.9 cm) tall and stocky growers. This habit is influenced by the *Cattleya labiata* parent as is the outstanding flower size. The lip is ruffled and the throat is yellow, contrasting beautifully with the dark lip and making the blue look more intense.



Cattleya Cornelia 'Floralia'

×

Cattleya Love Knot 'Sunset Valley Orchids' HCC/AOS

=

Cattleya Cornelis' Love
'Sunset Valley Orchids' AM/AOS

Cattleya Cornelis' Love (Cornelia × Love Knot) beautifully combines the best qualities of both parents. Large flower size is inherited from Cornelia, and Love Knot provides the flat shape. The full-shaped dark blue lip has a touch of yellow in the throat, which is especially attractive. Plants are stocky, compact growers, standing just 8 inches (20.3 cm) tall with flowers 5.5 inches (14.0 cm) across. Yes, 5.5 inches across.

Cattleya Love Knot
'Sunset Valley Orchids' HCC/AOS

×

Cattleya warneri f. *coerulea*
Photograph by William Rogerson

=

Cattleya Ellery Tomaszkiewicz
'SVO Blue Star 'AM/AOS

This is a surprisingly floriferous hybrid. When it was awarded, *C.* Ellery Tomaszkiewicz 'SVO Blue Star' AM/AOS (Love Knot × *warneri*) carried five well-supported flowers on one upright inflorescence. The blooms measured 4.5 inches (11.4 cm) across on a plant just over 8 inches (20.3 cm) tall! That's a lot of flower color from a little plant. *Cattleya* Love Knot imparted flattened flower shape and reduced the plant stature, and *C. warneri* contributed floriferousness, improved flower size and a full lip.

Laelianthe Wrigleyi
(*Gur. bowringiana* × *L. anceps*)

×

Cattleya Cornelia 'Floralia'

=

Laeliocatanthe Boscia Winter Moon
'Boscia Blue' AM/SAOC

This lovely hybrid was registered by Nollie Cilliers of Plantae Orchids in South Africa as *Lcn.* Boscia Winter Moon (*Lnt*. Wrigleyi × *C.* Cornelia). The plant is 10 inches (25.4 cm) tall, and the parents imparted an impressively full shape and dark blue lip to this grex. The rich lip color is accentuated by distinctive blue veins that contrast against a yellow throat, courtesy of the *L. anceps* grandparent. Truly outstanding!

Cattleya Indigo Dawn 'Sunset Valley Orchids' (Dupreana × Mini Purple)

×

Cattleya Gaskell-Pumila
(*gaskelliana* × *pumila*)

=

Cattleya (Indigo Dawn × Gaskell-Pumila)
'Dark Blue Lip'

The species in the ancestry of this unregistered grex (*C.* Indigo Dawn × *C.* Gaskell-Pumila), listed from smallest plant size to largest, are: *C. pumila* (twice), *C. walkeriana*, *C. warneri*, *C. gaskelliana* and *C. warscewiczii*. This combination leads to large flowers ~5.5 inches (14.0 cm) across on a plant in the compact size range at 10 inches (25.4 cm) tall. The double dose of *pumila* has introduced the most amazing dark blue lip, contrasting nicely with the yellow throat.

Cattleya Mini Purple 'H&R' 4n × *Cattleya* Cornelia 'Floralia' = *Cattleya* Mini Blue Star 'Sunset Valley Orchid's Blues' HCC/AOS

This style of breeding that makes up *C.* Mini Blue Star (Mini Purple × Cornelia) produces surprisingly large flowers — often up to 5 inches (12.7 cm) across — on mini-catt plants just 6 inches (15.2 cm) tall. Cornelia imparts its large flower size and small plant stature. Combine these qualities with the free-flowering characteristics, small plant size and color of Mini Purple, and you have a near-ideal pairing. This cross started flowering in 3-inch (7.6-cm) pots, and many bloom twice a year.

Cattleya Love Knot 'Sunset Valley Orchids' HCC/AOS × The blue form of *Cattleya intermedia* var. *aquinii* = *Cattleya* Moonlight Dream

A review of modern blue mini-catts would not be complete without including the results of breeding with *C. intermedia* v. *aquinii* f. *coerulea*. The *aquinii* flower form is a genetic mutation in which lip color, markings and shape are expressed on the petals. You can clearly see this effect in the flowers of Moonlight Dream: the blue flares and veins mimic the lip colors, and the slight pinching of the petals results from the cleft in the lip of intermedia. These are small plants, standing just 6 inches (15.2 cm) tall, and the flowers can be up to 4 inches (10.2 cm) across.

Hybrids that arise from these species have several other important traits: they are robust growers, produce their first flowers on young plants, and continue to show improved flower size and shape as the plants reach maturity. Mature plants are generally 6–10 inches (15.2–25.4 cm) tall and produce two to four flowers measuring 4–5 inches (10.2–12.7 cm) across.

With all breeding programs we are looking forward to the future and capitalizing on the successes of earlier crosses. In particular, *Cattleya* Cornelis' Love, *Cattleya* Mini Blue Star and *Cattleya* Ellery Tomaszkiewicz have demonstrated significant potential for upcoming generations of blue cattleyas. One area being targeted for improvement is increasing flower count to an average of three to four flowers. What would be the ultimate achievement? How about deepening the color of the sepals and petals to match the dark blue lip? Now that would be a true-blue accomplishment!

Acknowledgments

I am indebted to Ron Kaufmann and Sue Bottom and honored to have them as my editors. Their combined insight and wisdom truly are beneficial.

—Fred Clarke owns and operates Sunset Valley Orchids, which is dedicated to developing hybrids and producing select species for the orchid enthusiast. He has been growing orchids for over 42 years and hybridizing for 40 of those years. He is committed to the education of orchid hobbyists around the world in the culture of their plants. Fred is an accredited American Orchid Society judge in the Pacific South judging region. His hybrids have received hundreds of quality awards for orchid enthusiasts from the American Orchid Society and other orchid societies worldwide (website: www.sunsetvalleyorchids.com, email: fred.clarke@att.net).

Mission Accomplished

Cycnoches cooperi AQ/AOS

BY THOMAS MIRENDA

HAVING BEEN AN orchid judge approaching a couple of decades now, I have seen many a magnificent marvel appear before me. Some would say we judges are jaded, too picky and have forgotten the *magic and wonder* that orchids bring to their lovers and enthusiasts. Those folks that love to judge us judges, may on some level have a point and are often swift to tell us how mistaken we are. Ultimately, however, I believe there is no community that appreciates orchids as much as we judges do. In the Hilo Judging Center, blessed with excellent weather year-round, we have been able to judge through much of the pandemic by being outside on a spacious lanai at the gracious home of Charles and Ann Mans of Pepeekeo, Hawaii.

At our October 2021 judging on the lanai, we were fortunate to have a truly extraordinary set of plants to review: a dozen or so of the recently discovered spectacular Peruvian species, *Cycnoches cooperi*, expertly grown and splendidly bloomed by Ben Oliveros of Orchid Eros Nursery in Mountain View, Hawaii. Aside from their dusky exotic beauty, bearing plentiful pendent inflorescences of very large, deliciously perfumed, stellate blooms, there were plants bedecked with both male and female flowers in the mix, something that may be unprecedented on the judging table. Despite a full week of rainy conditions preceding judging day, all the blooms were in excellent condition, a miracle in the Hilo area, and delivered and presented with precision and care, to best appreciate their exotic beauty and natural grace.

Where did these marvels come from? After asking the exhibitor this question, I learned that Ben purchased a flask of the species from Gene Monnier of JEM Orchids about 15 years ago when they were both recent émigrés to the Big Island. Gene informed Ben that the flask was an outcross of two dark clones he had acquired to breed with, 'JEM's Chocolate ' and 'JEM's Select Dark' both of which had previously received Awards of Merit from the AOS (AM/AOS). After growing out the flask-mates, a particularly nice clone, 'Orchid Eros', received an AM/AOS. Ben then outcrossed it with another well-formed dark flower ('Sebastian Ferrell') to create the batch he presented to the judges in October, in the hopes of having them recognized by the AOS. The Hilo judges delighted in such a rare opportunity and bestowed an AM to one clone, a First Class Certificate to a second, and an Award of Quality to the whole group! Congratulations, Ben, on your mission accomplished.

Photographer Glen Barfield had his work cut out for him on how to best arrange, present and photograph this delicate yet massive array of fabulousness. I know he pondered this for many hours while photographing several other plants awarded earlier that evening. He even looked for other AQ awards to *Cycnoches* hoping to get some insight from a previous photographer. Alas, there were no previous AQs to the genus; Glen was on his own! After many attempts and constructing a kind of stage for the group, Glen found the perfect configuration that shows each plant's virtues to their ultimate best.

Here's to a masterful grower, a masterful breeder and a masterful photographer all working together on the Big Island to create some really fantastic plants and sharing their *magic and wonder* with the rest of us. Like we always say here in the islands: "Lucky we live Hawaii!" — *Thomas Mirenda (email: biophiliak@gmail.com)*

Papilionanthe Miss Joaquim

How did it Originate?

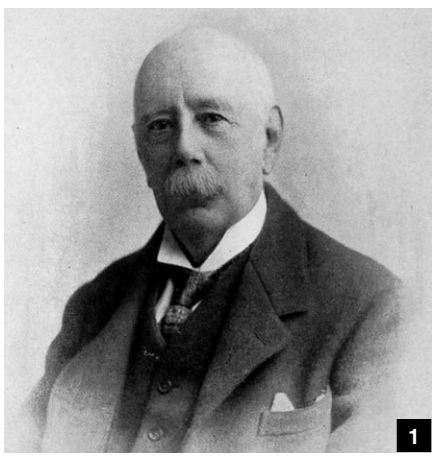
BY JOSEPH ARDITTI

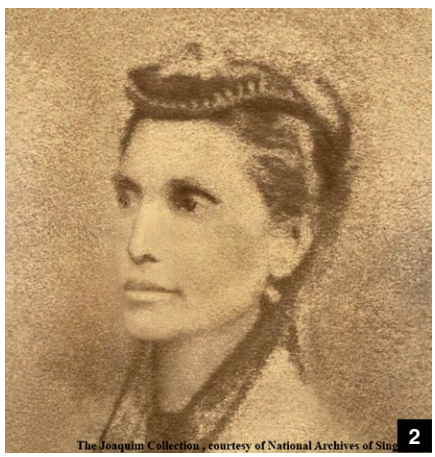
IN THE EARLY 1800s, the Dutch controlled most of the ports in the Malay Archipelago. Sir Stamford Raffles (1781–1826) wanted to end the Dutch near monopoly by establishing a British port in the area. He exploited strife between local rulers on the island of Singapore and managed to establish a British trading post on February 6, 1819. (https://en.wikipedia.org/wiki/History_of_Singapore). The post became the British Straits Settlements in 1826 and a crown colony in 1867.

Raffles established a Botanical and Experimental Garden in 1822 in Fort Canning, the Straits Settlements. The garden was moved to its present location in 1859 and renamed the Singapore Botanic Garden (SBG). In 1874, SBG was taken over by the colonial government. It started to appoint botanists trained at the Royal Botanic Gardens, Kew as directors (https://www.nparks.gov.sg/sbg/about/our-history). Henry Nicholas Ridley (1855–1956) was appointed as the first director in 1888. He served in that position until 1925.

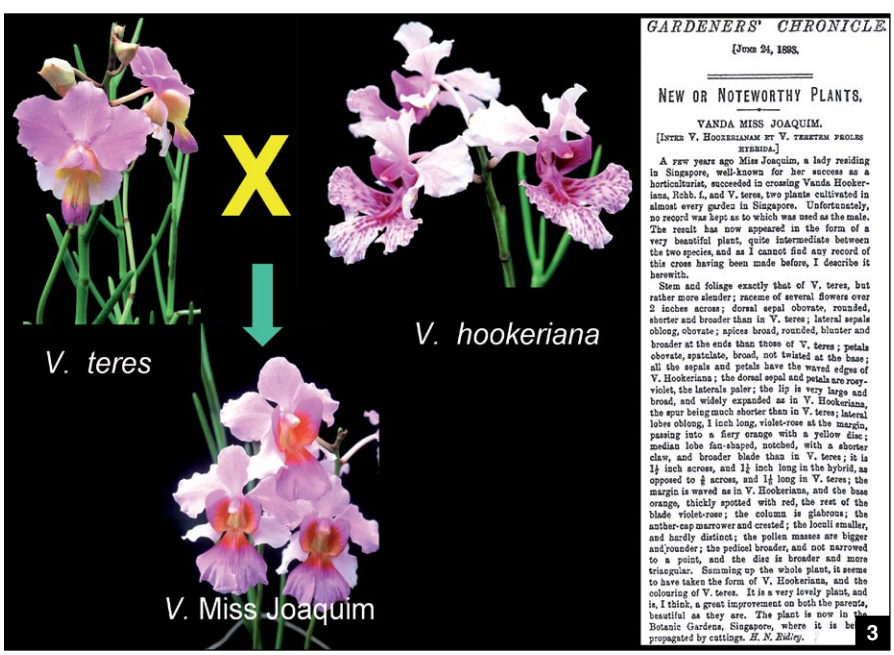
Ridley had varied interests, which ranged from agriculture and rubber trees, through ghostly phenomena and hairlessness in man, to nonflowering plants and orchids (for a list of publications see Salisbury 1957; for a review and additional citations see Arditti and Hew 2007). It was said that he "knew his plants as familiar friends, rather than [as] a critical botanist" (Salisbury 1957). This is Ridley's well-known shortcoming. He could be "explicit . . . dependable . . . [or] . . . succinct," to the point of omitting important details. Ridley also introduced errors because he was in a hurry (Purseglove 1955). Others have made similar comments (Arditti and Hew 2007).

Henry Ridley developed an interest in orchids. "He added two hundred species to the . . . orchid flora of the [Malay] Peninsula, [but] his published work is very confused and often erroneous" (Holttum 1977). His attempt at recognizing subgenera in an . . . enlarged genus [like] *Saccolabium* was a total confusion


1



2

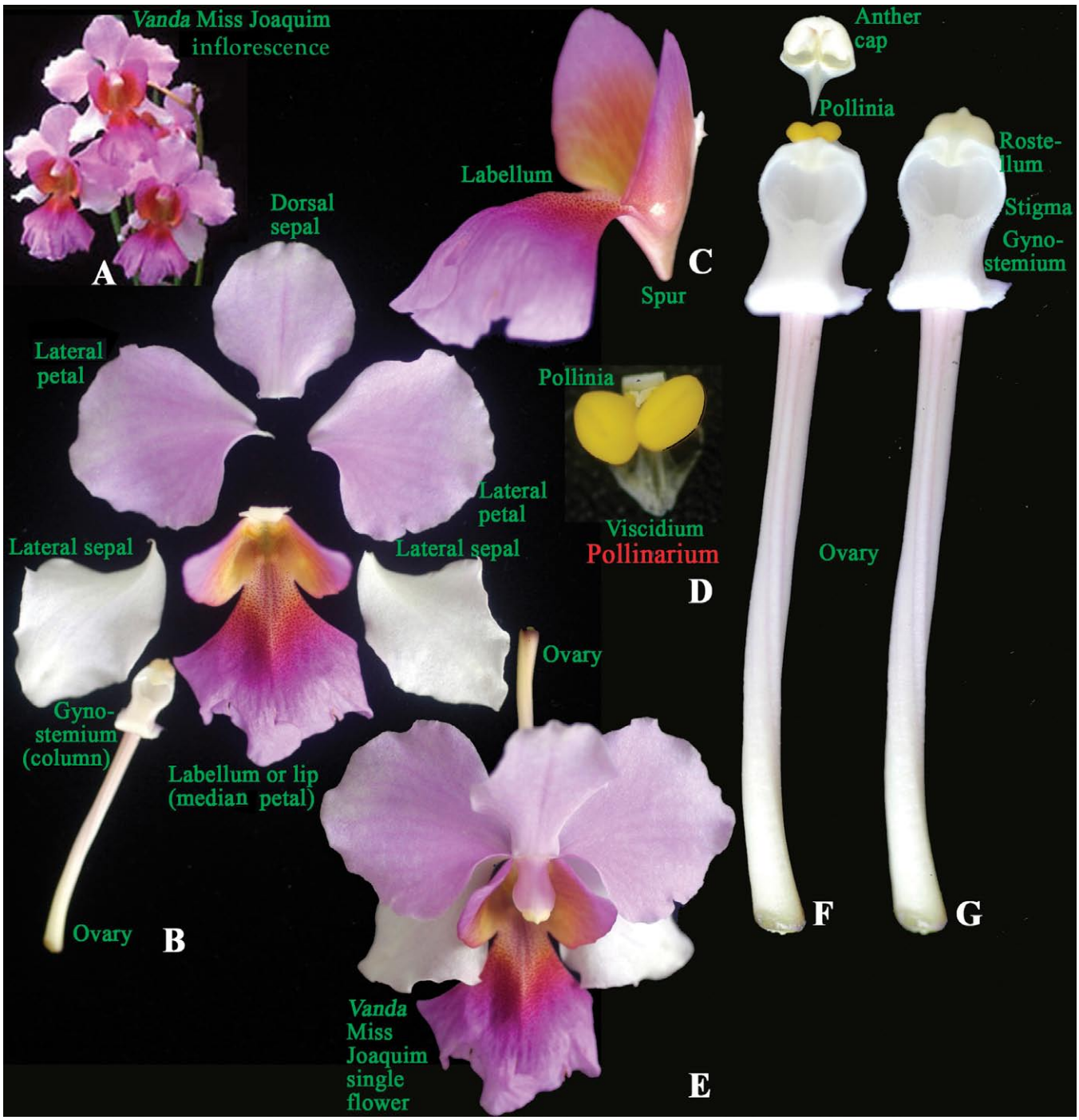


3

[1] Henry Nicholas Ridley (1855–1956), director of the Singapore Botanic Garden (1888–1925; source: Wikipedia).

[2] Miss Agnes Joaquim. As required by the National Archives of Singapore, this image is reproduced exactly as downloaded from their website, https://www.nas.gov.sg/archivesonline/photographs/record-details/940410c8-17a2-11e8-a2a9-001a4a5ba61b (The Joaquim Collection, courtesy of National Archives of Singapore).

[3] *Vanda* Miss Joaquim, its parents (*Vanda teres* is the seed parent) and Ridley's description. Photographs by Dr. T.W. Yam, montage by Dr. J. Arditti, description from the *Gardeners Chronicle ser.3:v.13*, 1983, p.740).



Papilionanthe Miss Joaquim flower(s) and parts. A. A three flower bouquet. B. Dissected flower. Like all other orchids, *Papilionanthe* flowers have three sepals, two lateral and one dorsal; three petals, two lateral and one modified to the labellum or lip; gynostemium on top of the ovary contains stigma and pollinia. C. Labellum with a spur. Spurs can contain nectaries. D. Pollinarium with two pollinia and viscidium. E. Single intact flower. F. Ovary showing spiral ribs and gynostemium. Anther cap was removed to show pollinia. G. Ovary showing spiral ribs and gynostemium as in F. Anther cap in place. Stigma is a cavity. (photographs by Dr. Tim Wing Yam, montage by Dr. Joseph Arditti).

(Holttum 1977). A legendary orchid expert, a kind, polite and reserved person (I was fortunate to meet him at Kew Gardens in 1969), Holttum was not disparaging, "damning" (Wright 2005) or belittling. He was doing what scientists usually do, and must do, which is to call attention to errors and correct them (Arditti and Hew 2007). No scientist's work and publications are or can expect to be immune to this or spared critique, but criticism and corrections must be factual and based on good science, not polemics.

In his description of *Vanda* (now recognized as belonging to the genus *Papilionanthe*) Miss Joaquim, Ridley was either not at his best, had no time, was in a hurry or lacked enough information (Ridley 1893). He stated, "a few years ago" rather than give an exact date, not even a year. Instead of listing parents properly for what was then a possible hybrid, he reported that "no record was kept as to which was used as the male." He provided no information on if, how or where the seeds were germinated and whether the seedlings and plants were cultivated. The

herbarium sheet contains only part of the inflorescence axis, two buds and a flower, which was not pressed properly. Absence of this information left a gaping hole, which others tried to fill with recollections (Lim 1981), modern molecular biology (Khew and Chia 2012) or polemics (Wright 2000, 2003, 2004, 2005).

Basil Johannes of Perth, Western Australia at the time, and the only living person in 1981 to have met Miss Agnes Joaquim, told a reporter (Lim 1981), that "Aunt Agnes found the flower one morning when she was loitering in the garden. She was so excited" (Lim 1981). Use of the word "found" by Mr. Johannes indicates that Miss Agnes Joaquim did not expect the flower and probably did not even search for it. The flower was on a plant growing inside a clump of bamboo (Yeoh 1963; Teoh 1980, 1981, 1982, 1998; Hew, Yam and Arditti 2002; Yam, Arditti and Hew 2004; Arditti and Hew 2007). Explanations are required regarding how: (a) orchid seeds can get into a clump of bamboo, (b) the seeds would germinate once they got into the clump, (c) seedlings could develop and (d) plants can grow inside the bamboo.

"*Vanda hookeriana,* Rchb. f., and *V. teres,* [were] two [orchids] cultivated in almost every garden in Singapore" (Ridley 1893). They come into flower simultaneously (Dr. Tim Wing Yam, SBG, personal communication), and, like other *Papilionanthe* flowers, are pollinated by *Xylocopa* bees, as are blossoms of *Papilionanthe* Miss Joaquim (Ridley 1890, 1896, 1905; Holttum 1964, 1969; van der Pijl and Dodson 1966; Jackson and Woodbury 1976; Teoh 1980; Kusumastianto, Wibowo, Anggriasari, Maylia, Susila, Astmaja and Soesilohadi 2015; Buragohain and Chaturvedi 2016). Pollination by *Xylocopa* occurred in the 1800s and is still common at present.

Once a flower is pollinated, the ovary swells, grows, matures, splits and releases the many seeds it contains. *Papilionanthe* seeds are small, measuring 0.01–0.12 inch (0.23–0.31 ± 0.13 mm) in length and 0.004 inch (0.1 mm) wide (Burgeff 1936; Arditti and Ghani 2000). They can float in a glass tube (59 inches [1.5 m] tall, 3.9 inches [10 cm] in diameter) in which, there is no air movement, for 5–6.3 seconds (Burgeff 1936). This suggests that in the open where there are air eddies or movement and, sometimes wind, they can travel long distances like other orchid seeds (for a review see Arditti and Ghani 2000). In Singapore, orchid seeds are reported to travel 89, 177, 266 and up to 4,920 feet

Herbarium sheet of *Papilionanthe* Miss Joaquim and label indicating that the plant was provided by J[oe] P. Joaquim. Note that the parentage is listed as both "*V. teres* x *V. Hookeriana*" (on the gray rectangle dated April 1893) and "*Vanda hookerae* & *teres*" (on the white rectangle at the bottom of the large white sheet). The white label at middle right and the main sheet were photographed separately on film, the color prints (now lost) were scanned and combined electronically. It is not clear who attached the large white sheets to the herbarium sheet and why. Part of an inflorescence similar to the one on the herbarium sheet and a front view of a flower are added to allow for comparisons. Both the buds and the flower on the herbarium sheet are smaller than the ones in the color photographs on the left. If the buds and the flower on the herbarium sheet are from the original seedling, they may be smaller because growing conditions inside a clump of bamboo were not optimal. What appears to be Ridley's signature is at bottom right on the blue paper. Photographs by Dr. T.W. Yam, montage by Dr. J. Arditti.

(27 m, 54 m, 81 m and 1.5 km; Ridley 1930; Arditti and Ghani 2000). Any of these distances would have been enough for *Papilionanthe* seeds to travel from a plant to a clump of bamboo within or between gardens in Singapore in 1885–1899.

Colonization by mycorrhizal fungi is required by orchid seeds for germination. Seeds of *Didymoplexis pallens*, a leafless terrestrial orchid known as crystal bells, germinated in the clump of bamboo at the Bogor Botanical Gardens, Kebun Raya, Indonesia. That is the only way the plants could have gotten where Burgeff found them and, later, Comber examined them in 1997 (Comber 2000). This is an indication that fungal symbionts, which can bring about germination of orchid seeds, were present in the clump of bamboo in Bogor when the seeds were blown into it. If mycorrhizal fungi were present in a clump of bamboo in Bogor (about 590 miles or 950 km by air from Singapore), it is reasonable to assume that they also existed in Miss Agnes Joaquim's bamboo clump. If not carried by wind currents, the fungi or their spores could have been easily transported in even small particles of soil or mud on the shoes, sandals or bare feet of travelers between the two countries. There was always commerce between them.

Seeds of *Didymoplexis pallens* germinated in the protected environment of a bamboo clump in Bogor, and the seedlings developed and grew into mature plants, which flowered and survived for many years. Therefore, it is reasonable

to assume that the *Papilionanthe* hybrid seed(s) and seedling(s) did the same in Singapore. However, the plant may not have survived for long in a clump of bamboo because *Papilionanthe* Miss Joaquim prefers open, sunny areas. Luckily, Miss Agnes Joaquim found the plant in time and, being a good gardener, moved *Papilionanthe* Miss Joaquim to a proper location.

How the plant got to Ridley is not clear and may never become known. The legend is that Miss Agnes Joaquim took it to him, but there is no known record of a meeting between them. More importantly and indisputably, a note in Ridley's handwriting on the herbarium sheets states that the plant was provided by Joe Joaquim (1856–1902), Agnes' brother, not Agnes herself. This is highly significant.

Until 2000, only orchid experts, growers and scientists were concerned with the origin of *Papilionanthe* Miss Joaquim (Yeoh 1963; Alphonso 1981; Teoh 1981, 1982, 1998; Hew, Yam and Arditti 2002; Yam, Arditti and Hew 2004; Arditti and Hew, 2007). All knowledgeable orchid experts agreed for more than 100 years and still agree that *Papilionanthe* Miss Joaquim is a natural hybrid, the seed(s) of which germinated in a clump of bamboo where only a single plant may have come into being and survived.

An article by someone who was not and is not an orchid expert, grower and scientist suggested that Miss Agnes Joaquim bred *Papilionanthe* Miss Joaquim intentionally and grew the plant to flowering age (Wright 2000). Additional publications that advanced this view followed (Wright 2003, 2004, 2005). A debate has raged ever since. As a coauthor of the only scientific book about *Papilionanthe* Miss Joaquim (Hew, Yam and Arditti 2002), I was and am in the middle of it.

Several polemics were and are presented to buttress the argument that *Papilionanthe* Miss Joaquim was an intentional hybrid.

Miss Agnes Joaquim was an excellent gardener She definitely was, and liked to regularly exhibit her many well-grown flowers, vegetable and fruits, and received many prizes (Arunasalam, Ong and Lim 2017; Mukunthan 2017). Miss Agnes Joaquim started to exhibit what she grew in 1881 (and won prizes then, but had her name misspelled twice as Joakim: a first prize for a specimen *Begonia* and a second prize for "two verbenas" according to page 2 of the *Straits Times Overland Journal* for June 9, 1881), but she exhibited orchids for the first time in 1898, when she won first prize for orchid "cut flowers" (there are no other details) as reported on page 3 of the *Straits Times* for March 30, 1898. This is an indication that she either did not grow orchids from about 1881 until roughly 1898 or was not interested in them, not even *Papilionanthe* Miss Joaquim, which was discovered in 1893 (for a detailed discussion and multiple citations see Arditti and Hew 2007). In 1899, she exhibited *Papilionanthe* Miss Joaquim for the first time. The *Straits Times* (page 3, April 12) wrote, "One of the most noticeable flowers was the orchid [now referred to as] *Papilionanthe Miss Joaquim* (sic), named after Miss Joaquim and raised by that lady. This specimen took the prize for the rarest orchid in the show." If Miss Agnes Joaquim bred *Papilionanthe* Miss Joaquim intentionally, this would have been known in Singapore in 1899, and the *Straits Times* would have stated "hybridized" or "bred" instead of "raised," which is no more than a synonym for "grown" or "cultivated." Also, it must be noted that the award was not for a well-grown orchid. It was for the "rarest." Show reports in the *Straits Times* of that time should be read with great care because there were several exhibitors with last name Joaquim, and the name was misspelled at least twice.

Papilionanthe flowers, fruits and a pollinator. A. *Papilionanthe teres*, flower and young fruit (white arrow). Insert: *Xylocopa* bee. B. Young fruit (white arow) and flower of *Papilionanthe hookeriana*. Insert: *Papilionanthe* seed, 0.23 mm long and 0.1 mm wide (the width is its diameter). C. Three young fruits (left, behind the flower and at bottom; white arrows), and a flower of *Papilionanthe* Miss Joaquim. All fruit set because the flowers were pollinated by *Xylocopa* bees. Dates were imprinted automatically by the camera. They were moved electronically when the photographs were inserted in the plate. Photographs by Dr. T.W. Yam; drawing of seed is from Burgeff (1936).

Miss Agnes Joaquim "succeed in cultivating" Vanda *Miss Joaquim* If she had, she would have exhibited it several years before 1898, or shortly before or after 1893. Besides, "cultivating" is not the same as "producing," "breeding," "originating" or "hybridizing" (Arditti and Hew 2007).

Two natural hybrids of Papilionanthe *(which in the mind of scientists prove that natural hybrids in this genus are possible) were described as only "seem to be" that*

(Johnson, 2004) This is simply not true. Furthermore, natural hybrids of orchids are neither uncommon nor "seem to be" (Arditti and Hew 2007).

Other facts that favor the suggestion that *Papilionanthe* Miss Joaquim is not an intentional hybrid are:

— *Ridley's statement that "No record was kept as to which [species] was used as the male."* Breeders keep such records and have done so since the first orchid hybrid even if due to self-pollination (Arditti 1984; Arditti and Hew 2007). Moreover, Ridley, who was interested in self-pollination (at the time called "self-fertilization") and cleistogamy (self-pollination in flowers which remain closed and never open) in orchids (Ridley 1888), would have probably inquired intensely about the manner of pollination and parentage of *Papilionanthe* Miss Joaquim.

An answer about the parentage of *Papilionanthe* Miss Joaquim was obtained about 10 years ago by Professor (Retired) Tet Fatt Chia and an associate (Khew and Chia 2012). They used the chloroplast *matK* gene to establish that *Vanda teres* var *andersonii* is the seed parent and "by inference *V*[*anda*] *hookeriana* is the **likely** (emphasis added) paternal parent of *V*[*anda*] Miss Joaquim." Prof. Chia is an excellent scientist. His use of the word "likely" suggests some uncertainty or at least caution.

— *No information is presented about how the seeds were germinated, including the highly unlikely possibility that Miss Agnes Joaquim herself scattered them in the clump of bamboo.* Ridley was interested in germination and wanted to publish articles on the subject (Ridley and Main 1909, Ridley 1910). He would have certainly requested details about how Miss Agnes Joaquim germinated the seeds. If he asked, Ridley received no answer. Had he been told Ridley would have certainly described the method in his description of *Papilionanthe* Miss Joaquim (Ridley 1893) or written a separate article. He did neither or if he did, such an article was not found. This is an indication that Agnes did not germinate the seeds. If so, she also did not make the cross.

Regardless of how *Papilionanthe* Miss Joaquim came about, it became and was an internationally very famous orchid for a long time (Hew, Yam and Arditti 2002). With time, its fame diminished. It became famous again on April 15, 1981 when the then Singapore Minister of Culture, S. Dhanabalan announced that it was selected as the National Flower of Singapore. This bestowed new fame on *Papilionanthe* Miss Joaquim, gave it prominence and assured its future (Hew, Yam and Arditti 2002). All are well deserved. *Papilionanthe* Miss Joaquim is a beautiful and resilient orchid like the country it represents. Miss Agnes Joaquim deserves high praise for having found and saved the first plant.

References

Alphonso, A.G. 1981. Singapore National Flower (*Vanda* Miss Joaquim). *Malayan Orchid Review* 15:9–14.

Arditti, J. 1984. An History of Orchid Hybridization, Seed Germination and Tissue Culture. *Botanical Journal of the Linnean Society, London* 89:359–381.

Arditti, J. and A.K.A. Ghani. 2000. Numerical and Physical Properties of Orchid Seeds and Their Biological Implications. *New Phytologist* 145:367–421.

Arditti, J. and C.S. Hew. 2007. The Origin of *Vanda* Miss Joaquim. p. 261–309. *In:* K.M. Cameron, J. Arditti, and T. Kull, editors. *Orchid Biology, Reviews, and Perspectives,* Vol. IX. The New York Botanical Garden Press, Bronx, New York. 261–309.

Arunasalam, S., E.C. Ong and F. Lim. 2017. *Vanda* Miss Joaquim. Singapore Infopedia. Singapore: National Library Board. https://eresources.nlb.gov.sg/infopedia/articles/SIP_752_2005-01-10.html. Accessed June 20, 2021.

Buragohain, B. and S.K. Chaturvedi. 2016. Deceptive Pollination in an Endangered Orchid, *Vanda coerulea* Griff. Ex Lindl. (Orchidaceae). *Journal of the Orchid Society of India* 30:31–35.

Burgeff, H. 1936. *Samenkeimung der Orchideen und Entwicklung ihrer Keimpflanzen*. Verlag von Gustav Fischer, Jena, Germany. 312 pp.

Comber, J.B. 2000. *Orchids of Sumatra.* Royal Botanic Gardens, Kew, UK. 1036 pp.

Hew, C.S., T.W. Yam, and J. Arditti. 2002. *Biology of* Vanda *Miss Joaquim*. Singapore University Press, Singapore.

Holttum, R.E. 1964. *A Revised Flora of Malaya. I. Orchids of Malaya*, 3rd ed. Government Printing Office, Singapore.

Holttum, R.E. 1969. *Plant Life in Malaysia*. Longmans Malaysia SDN BHD, Petaling Jaya, Selangor, Malaysia.

Holttum, R.E. 1977. A Personal View of Orchids. pp. 15–24. *In:* J. Arditti, editor. *Orchid Biology, Reviews, and Perspectives,* Vol I. Cornell University Press, Ithaca, New York.

Jackson, G.C. and R.O. Woodbury. 1976. Host Plants of the Carpenter Bee, *Xylocopa brasiliantorum* L. (Hymenoptera:Apoidea) in Puerto Rico. *Journal of Agriculture of University of Puerto Rico* 60:639–660.

Johnson, H. 2004. *Vanda* Miss Joaquim. *Malayan Orchid Review.* 38:99–107.

Khew, G.S.-W. and T.F. Chia. 2012. Resolving a Century-Old Mystery: The Parentage of *Vanda* Miss Joaquim, Singapore's National Flower. *Gardenwise* 38:10–11.

Kusumasianto, A.P., A.R.U. Wibowo, A.M. Anggriasari, F.S. Maylia, H. Susila, M.B. Astmaja, M. B., and R.C.H. Soesilohadi. 2013. Diversity of *Vanda tricolor* Lindl. (Orchidaceae) Flower-Visiting Insects in the Turgo Hill of Mount Merapi National Park, Yogyakarta, Indonesia. *The Third International Conference on Biological Science 2013*. 2:533–539.

Lim, H.H. 1981. Miss Joaquim Fails to Greet Nephew at Gates. *Straits Times* (Singapore). July 23, 1981, p. 8.

Mukunthan, M. 2017. Agnes Joaquim. Singapore Infopedia. Singapore: National Library Board. https://eresources.nlb.gov.sg/infopedia/articles/SIP_838_2004-12-24.html, Accessed June 20, 2021.

Purseglove, J.W. 1955. Ridley, Malaya's Greatest Naturalist. *Malaysian Naturalist* 10:43–55.

Ridley, H.N. 1888. Notes on Self-Fertilization and Cleistogamy in Orchids. *Botanical Journal of the Linnean Society, London* 24:889–895.

Ridley, H.N. 1890. The Genus *Bromheadia. Botanical Journal of the Linnean Society, London* 28:331–339.

_. 1893. New and Noteworthy Plants. *Vanda* Miss Joaquim [inter *V.* Hookerianam et *V.* Teretem Hybrida]. *Gardeners Chronicle,* Ser. 3, 13 (June 3):740.

_. 1896. Orchideae and Apostasiaceae of the Malay Peninsula. *Botanical Journal of the Linnean Society, London* 32:213–416.

_. 1905. On the Fertilization of *Grammatophyllum. Journal of the Straits Branch of the Malay Branch of the Royal Asiatic Society* 44:228–229.

_. 1910. Annual Report on the Botanic Gardens, Singapore and Penang for the Year 1909. Straits Settlements Government Printing Office, Singapore.

_. 1930. *The Dispersal of Plants Throughout the World.* Reeve & Co., Ashford, UK. 744 pp.

Ridley, H.N. and T.W. Main. 1909. Ferns and Their Cultivation. *Agricultural Bulletin Straits and Malay States* 8:282–297.

Salisbury, E.J. 1957. Henry Nicholas Ridley, 1855–1956. *Biographical Memoirs of the Royal Society* 3:140–159.

Teoh, E.S. 1980. *Orchids of Asia.* Times Books International, Singapore.

_. 1981. *Vanda* Miss Joaquim, National Flower of Singapore. *Malayan Orchid Review.* 15:5–6.

_. 1982. *A Joy Forever:* Vanda *Miss Joaquim, Singapore National Flower*, 2nd ed. Times Books International. Singapore.

_. 1998. *A Joy Forever:* Vanda *Miss Joaquim, Singapore National Flower, revised edition*. Times Editions. Singapore.

van der Pijl, L. and C.H. Dodson. 1966. *Orchid Flowers, Their Pollination and Evolution*. University of Miami Press, Coral Gables, Florida.

Wright, N.H. 2000. The Origins of *Vanda* Miss Joaquim. *Malayan Orchid Review.* 34:70–73.

_. 2003. *Respected Citizens: The History of Armenians in Singapore and Malaysia.* Amassia Publishing, Middle Park, Victoria, Australia. This is a self-published book. Amassia Publishing is owned by N.H. Wright.

_. 2004. A Re-examination of the Origins of *Vanda* Miss Joaquim. *Orchid Review.* 112:29– 2298.

_. 2005. *Vanda* Miss Joaquim Deliberate or Chance Fertilization. https://hyetert.org/2013/05/14/vanda-miss-joaquim-a-deliberate-cross-or-chance-fertilization/ Accessed October 16, 2021.

Yam, T.W., J. Arditti, and C.S. Hew. 2004. The Origin of *Vanda* Joaquim. How did *Vanda* Miss Joaquim Really Originate? *Malayan Orchid Review.* 38:86–95.

Yeoh, B.C. 1963. Miss Joaquim Orchid. *Malayan Orchid Review* 7:36–39.

Dedication

Dr. Arditti dedicates this article to my long-time friend Mr. Rosario Di Marco.

— Joseph Arditti is Professor of Biology Emeritus at the University of California, Irvine. He received his doctorate from the University of Southern California in Los Angeles and spent his entire career carrying out research on and writing about orchids, some during many visits to Indonesia, Malaysia and Singapore. In addition to being interested in basic orchid science, Dr. Arditti likes to delve into unusual episodes of orchid history. This article is a gentler version of his other writings about the origins of Papilionanthe *Miss Joaquim. (jarditti@uci.edu)*

Paphiopedilum gigantifolium

The Species with Curiously Deflexed Petals

PETER R. SCHUSTER/EDITED AND TRANSLATED BY JUDITH RAPACZ-HASLER

PAPHIOPEDILUM GIGANTIFOLIUM IS a recently discovered orchid species in Orchidaceae that inhabits the south center of the island of Sulawesi, Indonesia. It was first described by Braem, Baker and Baker in 1997. It is a warm-growing terrestrial with green, fleshy, rigid leaves. The inflorescence may grow to 20–28 inches (50–70 cm) with 3–14 purple pubescent flowers and a white ovary. This species is easily distinguished from all other species in the genus by a number of floral features and by its overall floral morphology, especially by the curiously deflexed petals, the position of the dorsal sepal and by the morphology of the staminode and the staminodal shield.

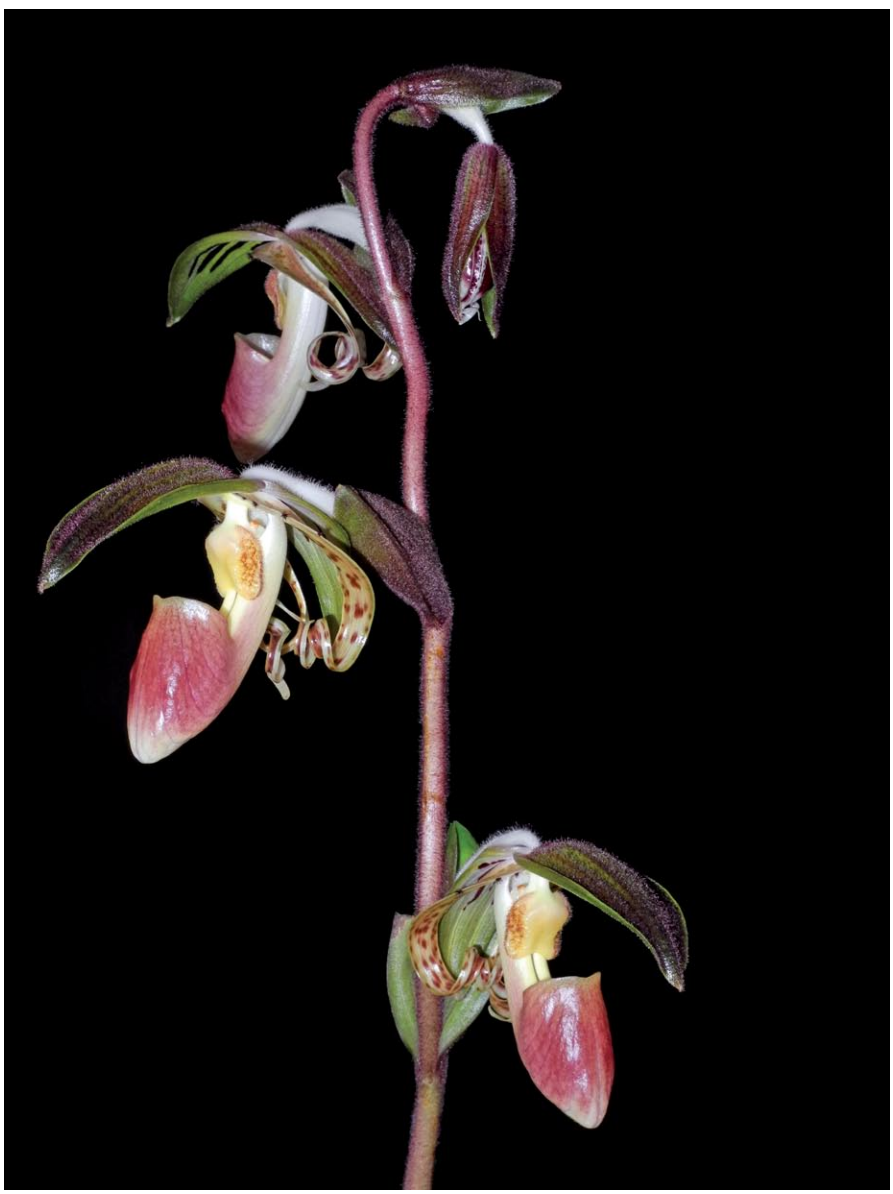
The plants grow on steep ravines in heavily shaded areas at elevations of 2,300–3,280 feet (700–1,000 m) near running water. They bloom in the spring and early summer on an erect, green, densely pubescent inflorescence with flowers opening successively and held well above the leaves.

ETYMOLOGY The giant-leaf *Paphiopedilum* — named for its extremely large leaves; possibly the largest in the genus.

SYNONYMS *Paphiopedilum ayubii* Hort. ex Parnata in *Australian Orchid Review*, 62(4):9–10 (1997).

In April 2006, I received two, small bonus seedlings (2.4 inch [6 cm] leaf span) of *Paphiopedilum gigantifolium*. Both plants grew slowly and, in 2016, one died. The second plant has grown over the past 14 years at the east window in my office. Because of the intense sunlight during the summer at 3,645 feet (1111 m), clear burn marks appeared on the paphs, so I used two hoya plants for shade. *Paphiopedilum gigantifolium* kept growing larger and larger and I paid little attention to it.

In August 2020, I noticed that an inflorescence had formed, which to my surprise grew quickly. At the beginning of October, the first flower opened. Four striking, hooded flowers unfolded on an erect 32-inch (82 cm) staked inflorescence.



The sepals are olive green, heavily striated dark brown, reverse striped dark brown and hirsute. The curiously deflexed (bent-downward) petals are light yellow and maculated brown. The pouch is almost white but suffused maroon and veined darker maroon. The staminode is yellow, the margins hirsute with firm substance, matte texture and a waxy pouch. Leaves are

Described in 1997, this species is endemic to the island of Sulawesi (also known as Celebes) situated between Borneo and the Maluku islands and south of Mindanao. As the name implies, the plants are huge with a leaf span of up to 4 feet (120 cm) and leaves 4.75 inches (12 cm) wide.

24 inches (60 cm) long and 2.4–2.8 inches (6.5–7 cm) wide. These quiet stunning flowers lasted 59 days and observing them daily gave me much joy and satisfaction — what a surprise it was!

On November 5, 2020, Johann Blättler, an avid orchid grower, pollinated two flowers. Both flowers have now formed seed capsules.

Because this is a warm-growing species, humidity and good air movement are essential. Although cool nighttime temperatures will not "kill" the *Paph. gigantifolium*, they invariably retard the growth, development and blooming. As I experienced, exposure to direct sunlight clearly spells disaster. This is a slow-growing orchid species and, for me, it bloomed finally after 14 years, so it is not a recommended species for the impatient grower or the faint at heart. It should bloom more quickly if the cultural conditions are favorable. For example, the plant might be kept outdoors in a shady spot during the summer and exposed to humidity and good air movement.

MY CULTURE My potting mix is pine bark with the addition of charcoal, lime and marble powder, which is replaced every two years. It is important that the bottom of the pot contain coarse substrate so that excess water can drain away. Equally important is to dry all leaf axils after watering and I find absorbent household paper towels work best. I water weekly and after watering provide strong air movement by a fan (recommended by a long-time paphiopedilum grower, H. Gunzenhauser), which is turned down overnight. I usually water in the morning, so that by evening the substrate is superficially dry. I reduce the amount of water during the winter months.

From time to time, I add Physan to the water (a broad spectrum disinfectant, fungicide, virucide, and algaecide which effectively controls a wide variety of pathogens on hard surfaces and plants — a tip from H. Kenntner).

My water is soft (20 µsiemens [13 ppm]), derived from the Granite Mountains at 3,645 feet (1111 m). I have used the same commercial fertilizer, GESAL, from the garden center for over 20 years (4-6-6 with trace minerals) and fertilize at a low concentration (200–300 µsiemens [130–192 ppm]) every 14 days. In the winter, the night temperature is around 61 F (16 C), while during the day, it warms up to 70 F (21 C). During the summer, the night temperature is about 68 F (20 C); during the day, it warms up to 75 F (24 C).

Paphiopedilum gigantifolium Culture

LIGHT *Paphiopedilum gigantifolium* needs a light level of 1,100–1,700 foot candles (12,000–18,000 lux). The light should be filtered or diffused and plants should never be exposed to direct midday sun.

TEMPERATURE Throughout the year, daytime temperatures should be 80–82 F (27–28 C) with nights of 66–68 F (19–20 C) providing a diurnal range of about 14 F (8 C).

HUMIDITY The giant-leaf paphiopedilum likes humidity of about 80 percent RH all year round. Strong air movement should be provided at all times.

POTTING MEDIA AND REPOTTING *Paphiopedilum gigantifolium* can be grown in a heavy, relatively shallow clay pot with a wide base in an open, well-drained medium that retains moisture but is never soggy. Plastic pots and the addition of sphagnum moss may be beneficial, especially for plants grown in drier areas with low humidity.

Plants should be repotted before the medium breaks down or becomes sour. Repotting may be done throughout the year, but is usually best done in autumn or winter so plants recover from potting stress and re-establish without the added stress of summer heat.

WATERING Plants should be watered often while actively growing, but drainage should be excellent and conditions around the roots should never be allowed to become stale or soggy. Plants decline rapidly under such conditions

REST PERIOD *Paphiopedilum gigantifolium* does not require a rest period. Growing conditions should be maintained all year. For plants grown at higher latitudes where winter days are short and light levels are lower may be watered less often, but they should not be allowed to dry out completely.

References

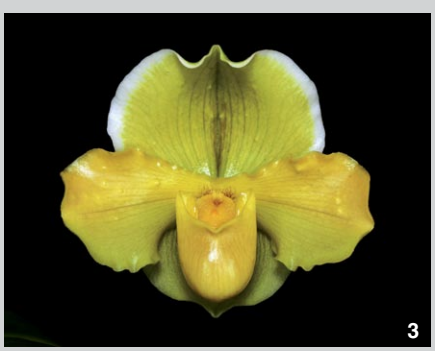
Braem, G., M.L. Baker and C.O. Baker. 1997. *Paphiopedilum gigantifolium. Orchidées. Culture et Protection* 31:34.

— Peter R. Schuster received his first orchid as a birthday present in 1985 — a miltonia hybrid — sinfully expensive. But, it had only a short life. A colleague drew his attention to the fact that there was an orchid nursery nearby and Schuster began going there at least twice a month. The gardener, H. Nothelfer, was an absolute aficionado of paphiopedilums and provided many practical growing tips. Over discussions and an occasional beer, Schuster says he got "infected" and, as a result, his collection of paphiopedilums and phragmipediums has continued to expand. Bahnhofplatz 2, 6487 Göschenen, Switzerland (email: p.r.schuster@web.de).

Facing page: Plants of *Paphiopedilum gigantifolium* bear a passing resemblance to those of *Paphiopedilum stonei* but the species is easily distinguished by features clearly visible in these two photographs: densely red-brown pubescent bracts, white pubescent ovary, sepals that are densely purple pubescent on their outer surface, a yellowish green dorsal sepal and the rows of irregular maroon spots on the rolled, twisted petals.


1


2


3


4


5


6

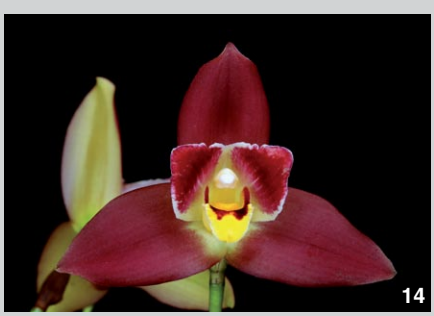

7


8


9


10


11



[1] *Dendrobium scabrilingue* 'Forest's Sandy Tongue' HCC/AOS 77 pts. Exhibitor: Randy Bayer; Photographer: Melissa Garner. Mid-America Judging

[2] *Dendrobium* Australian Robbie McInnes 'Yellow Sun' HCC/AOS (Aussie Parade x *speciosum*) 77 pts. Exhibitor: Bob Pettibone; Photographer: Melissa Garner. Mid-America Judging

[3] *Paphiopedilum* Magic Mood 'Spring Magic' HCC/AOS (Golden Diana x Peter Black) 76 pts. Exhibitor: Sergey Skoropad; Photographer: Bayard Saraduke. Mid-Atlantic Judging

[4] *Paphiopedilum gratrixianum* var. *christensonianum* 'Mini Me' CHM/AOS 82 pts. Exhibitor: Sergey Skoropad; Photographer: Bayard Saraduke. Mid-Atlantic Judging

[5] *Cattleya* Rosa Navarro 'Rosa's Surprise' HCC/AOS (Blue Rose x Love Knot) 75 pts. Exhibitor: Doug and Beth Martin; Photographer: Melissa Garner. Mid-America Judging

[6] *Paphiopedilum* Petula's Sensation 'Louise's Delight' HCC/AOS (Macabre Contrasts x Petula's Flame) 77 pts. Exhibitor: David Potts; Photographer: Melissa Garner. Mid-America Judging

[7] *Cymbidium sinense* 'Jin Hua Shan' AM/AOS 81 pts. Exhibitor: Hong Zhang; Photographer: Bryan Ramsay. National Capital Judging

[8] *Barkeria skinneri* 'Best of Friends' CCM/AOS 85 pts. Exhibitor: Marilyn LeDoux; Photographer: Melissa Garner. Mid-America Judging

[9] *Dendrobium mulderi* 'Forest's White Jewell' CBR/AOS. Exhibitor: Randy Bayer; Photographer: Melissa Garner. Mid-America Judging

[10] *Cattleya* Richard Stone 'Red Magic' AM/AOS (Circle of Life x *coccinea*) 80 pts. Exhibitor: Sergey Skoropad; Photographer: Bayard Saraduke. Mid-Atlantic Judging

[11] *Masdevallia amanda* 'Forest's Melissa' CHM/AOS 82 pts. Exhibitor: Randy Bayer; Photographer: Melissa Garner. Mid-America Judging

[12] *Cattleya coccinea* 'Memoria Frances Saraduke' CCM/AOS 83 pts. Exhibitor: Bayard Saraduke; Photographer: Bayard Saraduke. Mid-Atlantic Judging

[13] *Rhyncholaeliocattleya* Smiley Cupid 'Wilson' HCC/AOS (Elegant Dancer x Shinfong Honey) 77 pts. Exhibitor: Bayard Saraduke; Photographer: Bayard Saraduke. Mid-Atlantic Judging

[14] *Lysudamuloa* Red Jewel 'JustPat' AM/AOS (*Lycamerlycaste* Geyser Gold x *Angulocaste* Red Jade) 85 pts. Exhibitor: Paul Sheetz; Photographer: Bayard Saraduke. Mid-Atlantic Judging

[15] *Coelogyne flaccida* 'Jill' CCE/AOS 90 pts. Exhibitor: Stuart Hughes; Photographer: Bayard Saraduke. Mid-Atlantic Judging

[16] *Dendrochilum wenzelii* 'Irene' CCE/AOS 92 pts. Exhibitor: Al and Irene Messina; Photographer: Bayard Saraduke. Mid-Atlantic Judging


1


2


3


4

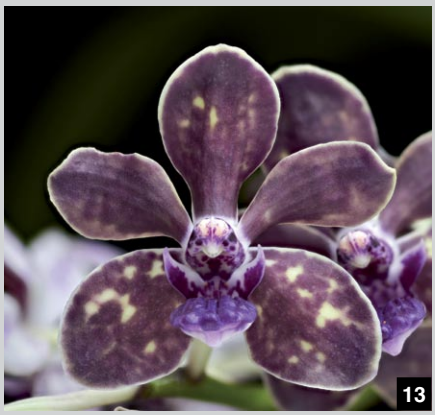

5

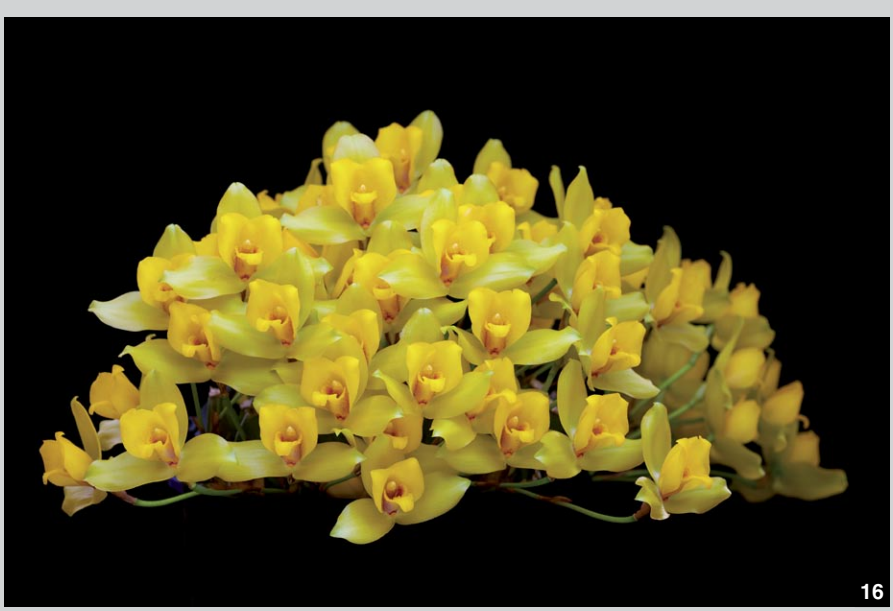

6


7


8


9





[1] *Coelogyne speciosa* subsp. *fimbriata* 'Irene' CHM/AOS 83 pts. Exhibitor: Al and Irene Messina; Photographer: Bayard Saraduke. Mid-Atlantic Judging

[2] *Lycaste* Phoebe 'Loretta' CCM/AOS (*brevispatha* x *macrobulbon*) 89 pts. Exhibitor: Chris and Loretta Rehmann; Photographer: Bayard Saraduke. Mid-Atlantic Judging

[3] *Bulbophyllum debrincatiae* 'Irene' CBR/AOS. Exhibitor: Al and Irene Messina; Photographer: Bayard Saraduke. Mid-Atlantic Judging

[4] *Coelogyne* Unchained Melody 'Lord Fairfax' CCM/AOS (*cristata* x *flaccida*) 82 pts. Exhibitor: Robin Collins; Photographer: Bryan Ramsay. National Capital Judging

[5] *Dendrochilum tenellum* 'Cecelia' CCM/AOS 80 pts. Exhibitor: Chuck and Sue Andersen; Photographer: Joseph Maciaszek. Northeast Judging

[6] *Cattleya* Lake Tahoe 'Loretta' AM/AOS (Floralia's Azul x *sincorana*) 82 pts. Exhibitor: Chris and Loretta Rehmann; Photographer: Bayard Saraduke. Mid-Atlantic Judging

[7] *Chysis violacea* 'Deirdre' AM/AOS 89 pts. Exhibitor: Dee and Bill Elbert; Photographer: Bryan Ramsay. National Capital Judging

[8] *Sudamerlycaste andreettae* 'Margaret G' CCE/AOS 90 pts. Exhibitor: David Smith; Photographer: Bryan Ramsay. National Capital Judging

[9] *Calanthe leonidii* 'Irene' CHM/AOS 83 pts. Exhibitor: Al and Irene Messina; Photographer: Bayard Saraduke. Mid-Atlantic Judging

[10] *Cattleya trianae* 'Loretta' JC/AOS. Exhibitor: Chris and Loretta Rehmann; Photographer: Bayard Saraduke. Mid-Atlantic Judging

[11] *Rhyncholaeliocattleya* Michael Tomihama 'Loretta' AM/AOS (*Cattleya* Circle of Life x Ryo Iwata) 84 pts. Exhibitor: Chris and Loretta Rehmann; Photographer: Bayard Saraduke. Mid-Atlantic Judging

[12] *Dendrobium* Duno Marilyn 'Carol's Valentine' HCC/AOS (Monroe x Dunokayla) 76 pts. Exhibitor: Dick and Carol Doran; Photographer: Cheryl Langseth. Northeast Judging

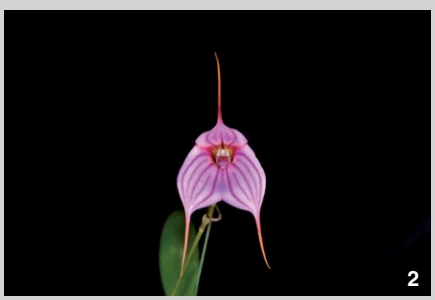
[13] *Vandachostylis* Sri-Siam 'Debbie's Beauty' AM/AOS (*Vanda tessellata* x *Rhynchostylis gigantea*) 80 pts. Exhibitor: Dave McDaniel and Orchid Classics; Photographer: Bryan Ramsay. National Capital Judging

[14] *Cattleya walkeriana* 'Shelly-O' AM/AOS 84 pts. Exhibitor: Ken Reynolds; Photographer: Cheryl Langseth. Northeast Judging

[15] *Dendrobium* Harlekin 'Cordelia' AM/AOS (Swiss Mountain Palace x *cuthbertsonii*) 82 pts. Exhibitor: Cordelia Head; Photographer: Cheryl Langseth. Northeast Judging

[16] *Lycaste* Green Valley 'Cin Cin' CCE-AM/AOS (Leo x Kansas Yellow) 91-84 pts. Exhibitor: Floradise Orchids; Photographer: Bryan Ramsay. National Capital Judging

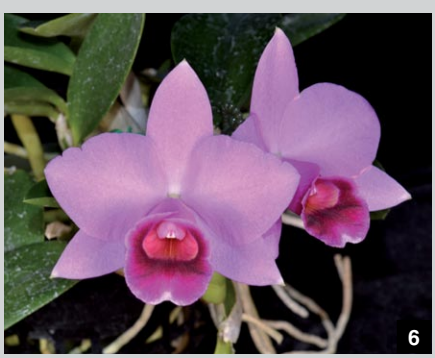

1


2


3


4


5

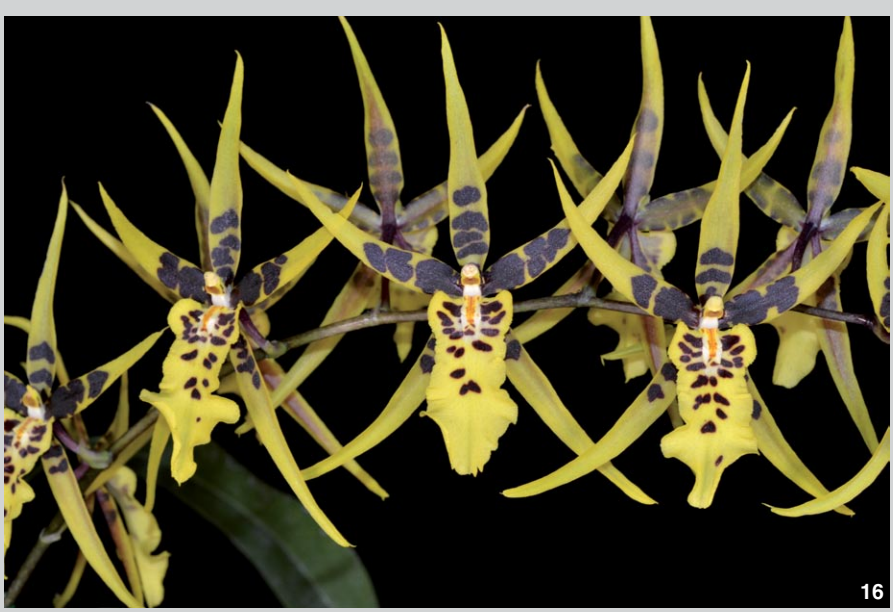

6


7


8


9


10



[1] *Dendrobium* Cherry Blossom 'Waldor' CCM-AM/AOS (Sapa Beauty x *speciosum*) 82-83 pts. Exhibitor: Waldor Orchids, Inc.; Photographer: Cheryl Langseth. Northeast Judging

[2] *Masdevallia* Clive Halls 'Lothian Stripes' AM/AOS (*calocodon* x Agi Halls) 81 pts. Exhibitor: John J. Leathers; Photographer: Ken Jacobsen. Pacific Central Judging

[3] *Tainia latifolia* subsp. *elongata* 'Irene' CBR/AOS. Exhibitor: Al and Irene Messina; Photographer: Maurice Garvey. Northeast Judging

[4] *Dendrobium* × *suffusum* 'Timothy Henry' CHM/AOS 83 pts. Exhibitor: Carrie Buchman; Photographer: Maurice Garvey. Northeast Judging

[5] *Cymbidium* Marilyn Hatfield 'Dick Weaver' HCC/AOS (James Toya x Flaming Pepper) 75 pts. Exhibitor: Bill Weaver; Photographer: Ken Jacobsen. Pacific Central Judging

[6] *Cattleya* Sacramento Rose 'Kodiak' AM/AOS (Mini Purple x *alaorii*) 80 pts. Exhibitor: Susan Anderson; Photographer: Ken Jacobsen. Pacific Central Judging

[7] *Maxillaria schweinfurthiana* 'Irene' CHM/AOS 83 pts. Exhibitor: Al and Irene Messina; Photographer: Maurice Garvey. Northeast Judging

[8] *Dendrobium xichouense* 'Irene' CBR/AOS. Exhibitor: Al and Irene Messina; Photographer: Maurice Garvey. Northeast Judging

[9] *Cymbidium* Kimberley Beauty 'Woodside' HCC/AOS (Red Beauty x Kirby Lesh) 79 pts. Exhibitor: Pierre Pujol; Photographer: Ken Jacobsen. Pacific Central Judging

[10] *Calanthe rubens* 'Irene' CBR/AOS. Exhibitor: Al and Irene Messina; Photographer: Maurice Garvey. Northeast Judging

[11] *Masdevallia* Bay Breeze 'Red Velvet' AM/AOS (Fraseri x John Tomaschke) 83 pts. Exhibitor: John J. Leathers; Photographer: Ken Jacobsen. Pacific Central Judging

[12] *Cattleya* Petitfleur 'Gracie' AM/AOS (*jongheana* x *praestans*) 81 pts. Exhibitor: Amy and Ken Jacobsen; Photographer: Ken Jacobsen. Pacific Central Judging

[13] *Paphiopedilum* Hawaiian Peacock 'Chancellor' AM/AOS (Hawaiian Illusion x Petula's Peacock) 83 pts. Exhibitor: Dave Sorokowsky; Photographer: Ken Jacobsen. Pacific Central Judging

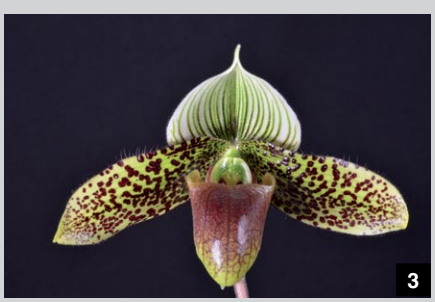
[14] *Dracula ubangina* 'Colomborquideas' AM/AOS 82 pts. Exhibitor: Joe Parker; Photographer: Ken Jacobsen. Pacific Central Judging

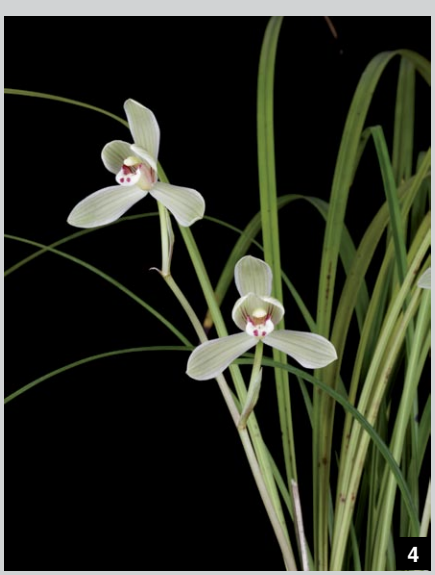
[15] *Dendrobium* Greta Snow 'Cheryl' AM/AOS (Jayden x speciosum) 81 pts. Exhibitor: Cal-Orchid, Inc.; Photographer: Ken Jacobsen. Pacific Central Judging

[16] *Brassidomesa* Golden Stars 'Vera' AM/AOS (*Gomesa echinata* x *Brassidium* Shooting Star) 83 pts. Exhibitor: Gold Country Orchids/Alan Koch; Photographer: Ken Jacobsen. Pacific Central Judging


1


2


3

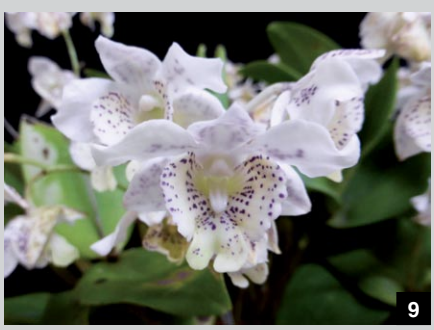

4

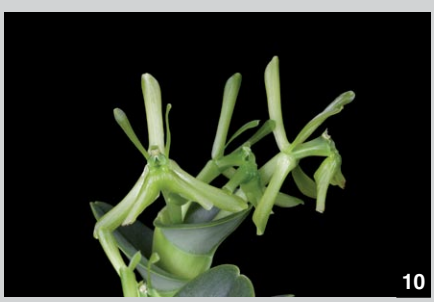

5


6

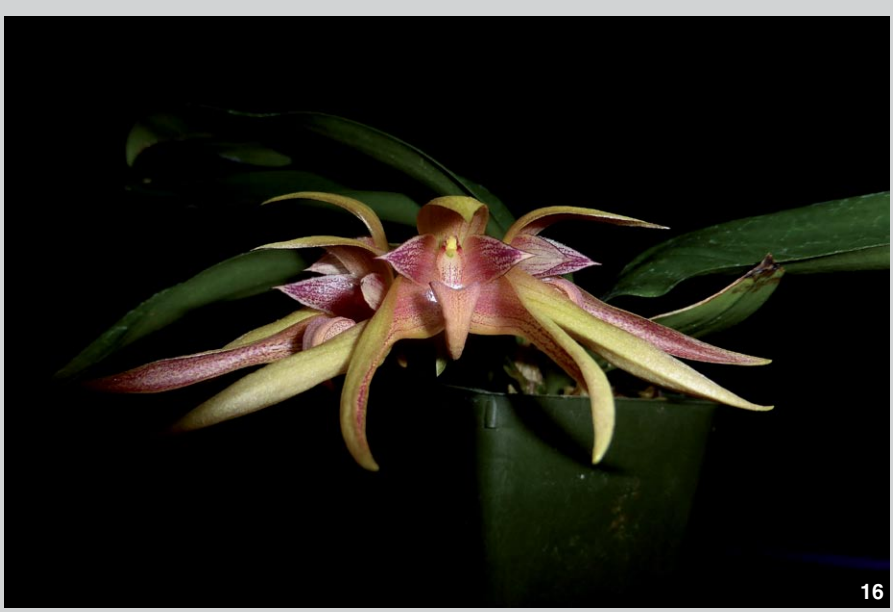

7


8


9


10


11



[1] *Bulbophyllum grandiflorum* 'Snake Charmer' HCC/AOS 78 pts. Exhibitor: Cal-Orchids, Inc.; Photographer: Ken Jacobsen. Pacific Central Judging

[2] *Paphiopedilum* Big Thunder 'Monterey Bay' HCC/AOS (Big Smile x Thunder World) 78 pts. Exhibitor: Echo Valley Orchids; Photographer: Chaunie Langland. Pacific Central Judging

[3] *Paphiopedilum* Enchanting Knight 'Slipper Zone Yellow Gleam' HCC/AOS (Ninja x Enchantingly Wood) 76 pts. Exhibitor: Lehua Orchids; Photographer: Chaunie Langland. Pacific Central Judging

[4] *Cymbidium tortisepalum* 'Dian Cang Mei' AM/AOS 80 pts. Exhibitor: Jack Zhu; Photographer: Arthur Pinkers. Pacific South Judging

[5] *Dendrobium papilio* 'Vistamont' CCE/AOS 94 pts. Exhibitor: Golden Gate Orchids; Photographer: Ken Jacobsen. Pacific Central Judging

[6] *Clowesetum* Diane Drisch 'Pretty Plush' AM/AOS (*Clowesia* Grace Dunn x *Catasetum tigrinum*) 81 pts. Exhibitor: Marian Morton; Photographer: Ross Leach. Pacific Northwest Judging

[7] *Cymbidium goeringii* 'New Moon' AM/AOS 82 pts. Exhibitor: Jack Zhu; Photographer: Arthur Pinkers. Pacific South Judging

[8] *Nottara* Lucy's Sassafras 'Gayle' HCC/AOS (*Galabstia* Green Tyger x *Zygogardmannia* Dynamite Peru) 78 pts. Exhibitor: Gayle Brodie; Photographer: Arthur Pinkers. Pacific South Judging

[9] *Dendrobium* Royal Chip 'Fco Nilda' AM/AOS (Micro Chip x Roy Tokunaga) 80 pts. Exhibitor: Francisco Martinez Rivera; Photographer: Irma Saldaña. Puerto Rico Judging

[10] *Epidendrum sympetalostele* 'Chapulin' CBR/AOS. Exhibitor: Deborah Halliday; Photographer: Arthur Pinkers. Pacific South Judging

[11] *Cymbidium faberi* 'Ding Hong' JC/AOS. Exhibitor: Jack Zhu; Photographer: Arthur Pinkers. Pacific South Judging

[12] *Phalaenopsis tetraspis* f. *christiana* 'Cyan's Nighttime Fiasco' CCM-AM/AOS 85-88 pts. Exhibitor: Dan Forbes; Photographer: Arthur Pinkers. Pacific South Judging

[13] *Cattleya wittigiana* 'Tokyo Pearl' HCC/AOS 76 pts. Exhibitor: Peter T. Lin; Photographer: Arthur Pinkers. Pacific South Judging

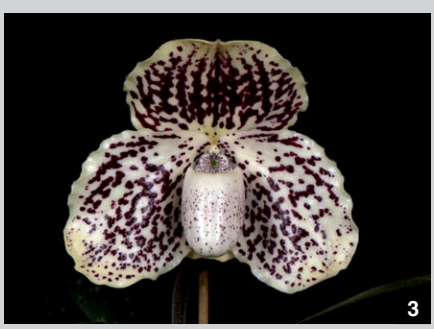
[14] *Dendrobium* Ruth Reingold 'Diamond Orchids' AM/AOS (Tosca Starburst x Royal Vista) 81 pts. Exhibitor: Peter T. Lin; Photographer: Arthur Pinkers. Pacific South Judging

[15] *Mormodes skinneri* 'Maria Paula' AM/AOS 82 pts. Exhibitor: Abraham Bolaños; Photographer: Jorge Enrique Céspedes Trigueros. Puerto Rico Judging

[16] *Bulbophyllum* Fong Cing Li 'Stinky Gift' HCC/AOS (*annandalei* x *reticulatum*) 78 pts. Exhibitor: Carlos Fighetti; Photographer: Irma Saldaña. Puerto Rico Judging


1


2

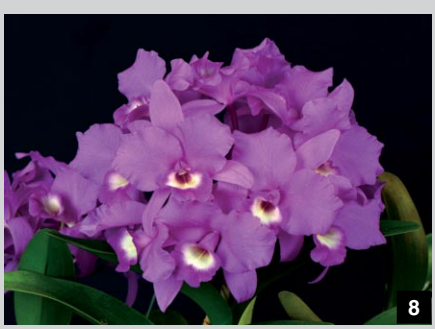

3


4


5


6


7


8

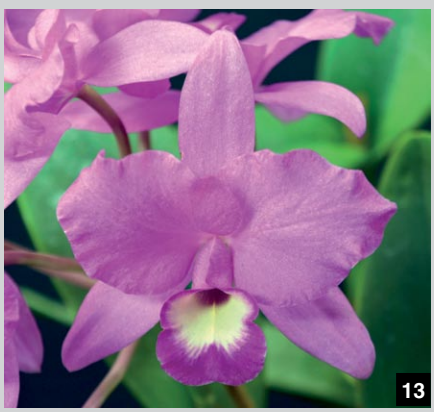

9


10


11

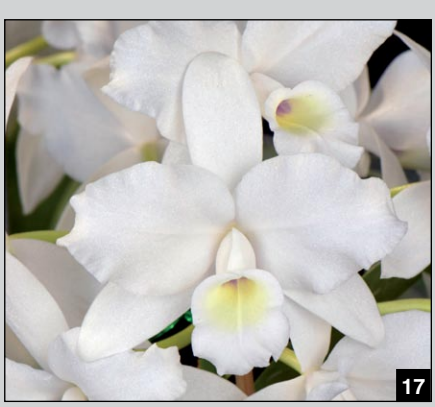

12

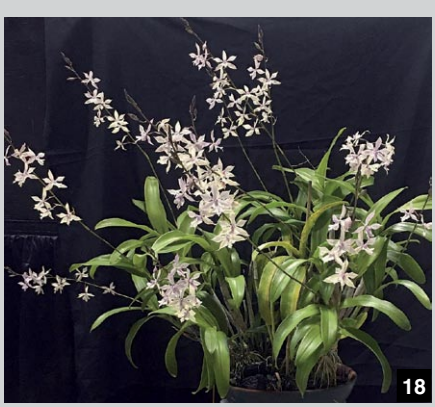

14


13


15


16


17


18

[1] *Rhyncholaeliocattleya* Darcy-Rose Campbell 'Memoria Carlos Zuñiga' HCC/AOS (Goldenzelle x Chyong Guu Chaffinch) 78 pts. Exhibitor: Juan Zuñiga; Photographer: Jorge Enrique Céspedes Trigueros. Puerto Rico Judging

[2] *Stanhopea x fowlieana* 'Casa de Campo' AM/AOS 82 pts. Exhibitor: Gustavo Barboza; Photographer: Jorge Enrique Céspedes Trigueros. Puerto Rico Judging

[3] P*aphiopedilum godefroyae* 'Susan Benavides' AM/AOS 84 pts. Exhibitor: Jeannette Loria; Photographer: Jorge Enrique Céspedes Trigueros. Puerto Rico Judging

[4] *Guarianthe skinneri* (Semi-Alba) 'Judy Bach' JC/AOS. Exhibitor: Gabriel Bach; Photographer: Jorge Enrique Céspedes Trigueros. Puerto Rico Judging

[5] *Cattleya schilleriana* (1857) 'Carlos Granados' AM/AOS 86 pts. Exhibitor: Carlos Granados; Photographer: Jorge Enrique Céspedes Trigueros. Puerto Rico Judging

[6] *Dendrobium pulchellum* 'Mireya Cordero' AM/AOS 81 pts. Exhibitor: Mireya Cordero; Photographer: Jorge Enrique Céspedes Trigueros. Puerto Rico Judging

[7] *Guarianthe skinneri* 'Christopher Arias' HCC/AOS 78 pts. Exhibitor: Christopher Arias; Photographer: Jorge Enrique Céspedes Trigueros. Puerto Rico Judging

[8] *Guarianthe skinneri* 'Marcos Solorzano' AM/AOS 83 pts. Exhibitor: Christopher Arias; Photographer: Jorge Enrique Céspedes Trigueros. Puerto Rico Judging

[9] *Guarianthe skinneri* (Albescens) 'Milagro' AM/AOS 81 pts. Exhibitor: Erick Arce; Photographer: Jorge Enrique Céspedes Trigueros. Puerto Rico Judging

[10] *Cattleya lawrenceana* (Flamea) 'Orosi' AM/AOS 80 pts. Exhibitor: Erick Arce; Photographer: Jorge Enrique Céspedes Trigueros. Puerto Rico Judging

[11] *Mormodes colossus* 'Alejandro' AM/AOS 80 pts. Exhibitor: Alejandro Rodriguez; Photographer: Jorge Enrique Céspedes Trigueros. Puerto Rico Judging

[12] *Paphiopedilum* Cloud's Abducted Mockingbird 'Silvia Santamaría' HCC/AOS (*moquetteanum* x *adductum*) 79 pts. Exhibitor: Jorge Roldan; Photographer: Jorge Enrique Céspedes Trigueros. Puerto Rico Judging

[13] *Guarianthe skinneri* 'Isaac Ledezma' AM/AOS 81 pts. Exhibitor: Magdalena Ledezma; Photographer: Jorge Enrique Cespedes. Puerto Rico Judging

[14] *Brassocattleya* Mary Dodson 'Magda Finch' AM/AOS (*Brassavola nodosa* x *Cattleya schilleriana* (1857)) 81 pts. Exhibitor: Magda B. Finch; Photographer: Debra Tryon. Puerto Rico Judging

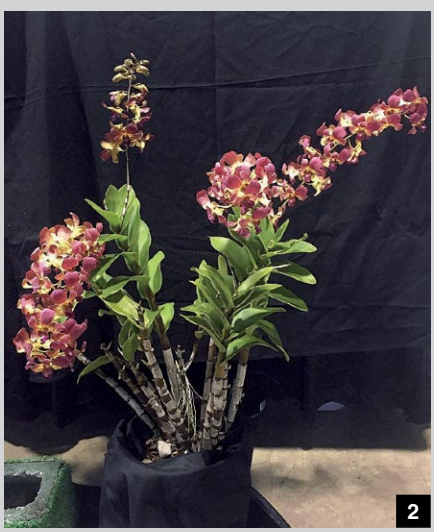
[15] *Paphiopedilum* Mele's Moonbeam 'Brazos' HCC/AOS (Spring Moonbeam x Dreaming Mele) 79 pts. Exhibitor: Mitsi Runyan; Photographer: Wilton Guillory. Shreveport Judging

[16] *Guarianthe skinneri* 'Emmanuel - La Amistad' CCE-AM/AOS 93-88 pts. Exhibitor: Emanuel Quesada; Photographer: Jorge Enrique Céspedes Trigueros. Puerto Rico Judging

[17] *Guarianthe skinneri* (Oculata) 'Tío Neno' AM/AOS 86 pts. Exhibitor: Erick Arce; Photographer: Jorge Enrique Cespedes. Puerto Rico Judging

[18] *Epiarthron* Kevin Mark Ragbir 'Illiana's Delight' CCM/AOS (*Caularthron bicornutum* x *Epidendrum stamfordianum*) 85 pts. Exhibitor: Tom Hannah; Photographer: Debra Tryon. Puerto Rico Judging


1


2


3

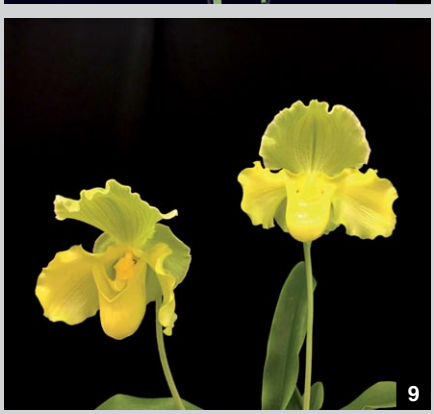

4


5


6


7


8


9


10

[1] *Bulbophyllum maxillare* 'Debra's Passion' HCC/AOS 78 pts. Exhibitor: Debra Tryon; Photographer: Debra Tryon. Puerto Rico Judging

[2] *Dendrobium* Sampran Brown 'Gertrude' CCM/AOS (Suzanne Neil x Bertha Chong) 83 pts. Exhibitor: Gertrude Gumbs; Photographer: Debra Tryon. Puerto Rico Judging

[3] *Oberonia miniata* 'Les Fous du Blizzard' CCM/AOS 87 pts. Exhibitor: Nicole Roy; Photographer: Jay Norris. Toronto Judging

[4] *Epidendrum ciliare* 'Charmaine Finch' CCE/AOS 90 pts. Exhibitor: Magda B. Finch; Photographer: Debra Tryon. Puerto Rico Judging

[5] *Paphiopedilum* Excitingly Wood 'Brazos' AM/AOS (Friedrich von Hayek x Wood Wonder) 80 pts. Exhibitor: Mitsi Runyan; Photographer: Wilton Guillory. Shreveport Judging

[6] *Cymbidium goeringii* 'Tama-no-yuubae' CCM/AOS 84 pts. Exhibitor: Michael Hwang and Taras Kowalczuk; Photographer: Ed Cott. Toronto Judging

[7] *Vanda* Merrill Sum Wah 'Catahoula Fireball' AM/AOS (*merrillii* x Yip Sum Wah) 83 pts. Exhibitor: Eron Borne; Photographer: Wilton Guillory. Shreveport Judging

[8] *Paphiopedilum* Mele Star 'Brazos' AM/AOS (Mele Pops x Telstar) 82 pts. Exhibitor: Mitsi Runyan; Photographer: Wilton Guillory. Shreveport Judging

[9] Paphiopedilum Hell's Emerald 'Brazos' HCC/AOS (Dreaming Emerald x Hellyer) 76 pts. Exhibitor: Mitsi R. Runyan; Photographer: Wilton Guillory. Shreveport Judging

[10] *Rhyncattleanthe* Roy's Magic 'Di Ciommo Sun Flares' CCM/AOS (Burana Beauty x *Cattleya* Tokyo Magic) 84 pts. Exhibitor: Di Ciommo's Orchids; Photographer: Ed Cott. Toronto Judging

[11] *Paphiopedilum* Raisin Jewel 'Boston's Best' HCC/AOS (Egret's Jewel x Raisin Magic) 78 pts. Exhibitor: Daniel Scher; Photographer: Ed Cott. Toronto Judging

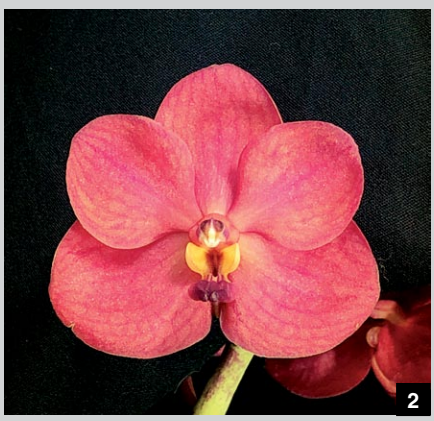
[12] *Paphiopedilum* Pink Ghost 'Vegas Baby' HCC/AOS (Magic Pink x Macbeth's Ghost) 76 pts. Exhibitor: Daniel Scher; Photographer: Ed Cott. Toronto Judging

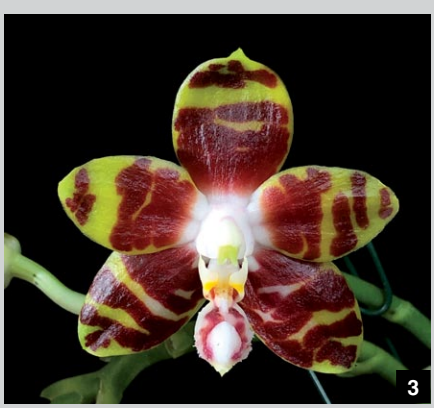
[13] *Paphiopedilum* QF Hula Dancer 'Scher Exstacy' AM/AOS (Chiu Hua Dancer x *praestans*) 81 pts. Exhibitor: Daniel Scher; Photographer: Ed Cott. Toronto Judging

[14] *Paphiopedilum* Wössner China Moon 'Scher's Delight' AM/AOS (*armeniacum* x *hangianum*) 81 pts. Exhibitor: Daniel Scher; Photographer: Jay Norris. Toronto Judging

[15] *Dendrobium* Mini Snowflake 'Synea' CCM/AOS (*aberrans* x *johnsoniae*) 84 pts. Exhibitor: Synea Tan; Photographer: Jay Norris. Toronto Judging

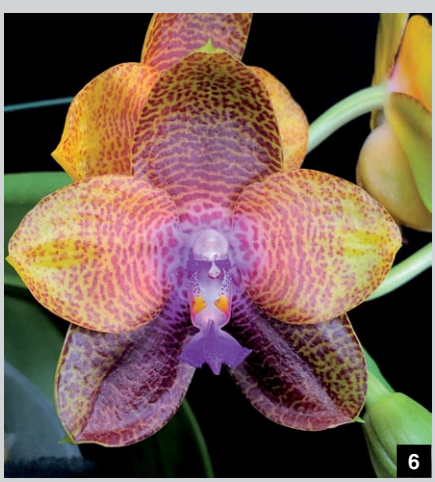

1


2


3


4


5


6


7


8


9


10


11


12


13


14


15

[1] *Papilionanda* Ben Fragrance 'Garrett's Golden Prize' AM/AOS (*Vanda* Memoria Thianchai x Mimi Palmer) 83 pts. Exhibitor: Sharon and David Garrett; Photographer: Wes Newton. Florida North-Central Judging

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

[3] *Phalaenopsis amboinensis* 'Ponkan Road' HCC/AOS 78 pts. Exhibitor: Krull-Smith; Photographer: Wes Newton. Florida North-Central Judging

[4] *Phalaenopsis* Corona 'Krull-Smith' AM/AOS (*cornu-cervi* x *amboinensis*) 88 pts. Exhibitor: Krull-Smith; Photographer: Wes Newton. Florida North-Central Judging

[5] *Paphiopedilum* Sugar Suite 'Whisper Happy Birthday Lindsey' AM/AOS (*emersonii* x *niveum*) 82 pts. Exhibitor: Laura and Wes Newton; Photographer: Wes Newton. Florida North-Central Judging

[6] *Phalaenopsis* Pylo's Giga Eagle 'Jim Krull' AM/AOS (*gigantea* x Dragon Tree Eagle) 85 pts. Exhibitor: Krull-Smith; Photographer: Wes Newton. Florida North-Central Judging

[7] *Specklinia corniculata* 'Laura Bonnell' CCM/AOS 83 pts. Exhibitor: Laura Bonnell; Photographer: Thang Dam. Toronto Judging

[8] *Cymbidium* Bill Guest 'Tygr Jade' HCC/AOS (Paul Robeson x Red Beauty) 78 pts. Exhibitor: Ed Dumaguin; Photographer: Kathy Barrett. California Sierra Nevada Judging

[9] *Paphiopedilum* Krull's Comet 'Crystelle' AM/AOS (*rothschildianum* x Paul Parks) 89 pts. Exhibitor: Krull-Smith; Photographer: Wes Newton. Florida North-Central Judging

[10] *Vandachostylis* Banjong Pearl 'The Adorable Garretts' AM/AOS (Seng x *Vanda* Memoria Choo Laikeun) 82 pts. Exhibitor: Sharon and David Garrett; Photographer: Wes Newton. Florida North-Central Judging

[11] *Trichoglottis rosea* 'Smiley Love Nongyow' CCM/AOS 81 pts. Exhibitor: Smiley Orchids; Photographer: Wes Newton. Florida North-Central Judging

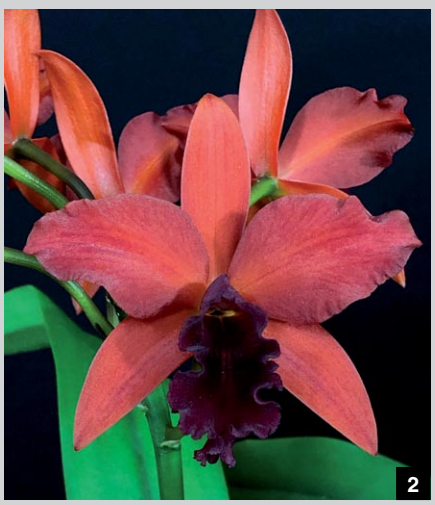
[12] *Phragmipedium* Yelva Myhre 'Velvet Massacre' HCC/AOS (Rosalie Dixler x *kovachii*) 77 pts. Exhibitor: Daina and Chris Schreiber; Photographer: Jay Norris. Toronto Judging

[13] *Cyrtochilum detortum* 'Jardin botanique de Montreal' CBR/AOS. Exhibitor: Jardin botanique de Montréal; Photographer: Thang Dam. Toronto Judging

[14] *Phragmipedium* Andean Fire 'Joelle's Smile' CCM/AOS (*besseae* x *lindleyanum*) 83 pts. Exhibitor: Diana Rowles; Photographer: Judith Higham. Western Canada Judging

[15] *Dendrobium* Specio-kingianum 'Jardin botanique de Montreal' CCM/AOS (*kingianum* x *speciosum*) 80 pts. Exhibitor: Jardin botanique de Montréal; Photographer: Jay Norris. Toronto Judging


1


2


3


4

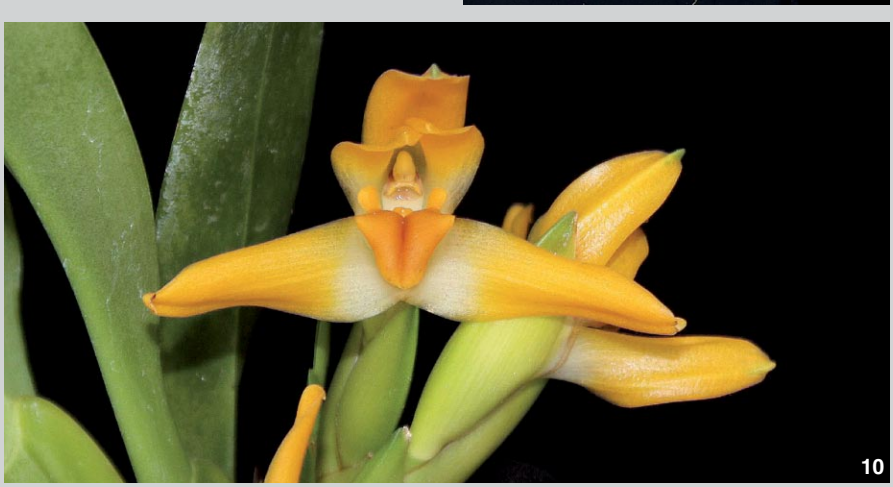

5


6


7


8


9


10


11


12


15


13


16


14


17

[1] *Rhyncholaeliocattleya* Mount Dora 'Crystelle' AM/AOS (Cornerstone x Pamela Delgado) 84 pts. Exhibitor: Krull-Smith; Photographer: Wes Newton. Florida North-Central Judging

[2] *Cattlianthe* Naranja en Flor 'Krull-Smith' HCC/AOS (Spring Fires x Trick or Treat) 77 pts. Exhibitor: Krull-Smith; Photographer: Wes Newton. Florida North-Central Judging

[3] *Phalaenopsis* Pylo's Sensation 'Krull's Rainbow' HCC/AOS (Yaphon Sensational x Dragon Tree Eagle) 79 pts. Exhibitor: Krull-Smith; Photographer: Wes Newton. Florida North-Central Judging

[4] *Cattleya walkeriana* 'Jim and Melana' AM/AOS 81 pts. Exhibitor: Jim and Melana Davison; Photographer: David Nickerson. West Palm Beach Judging

[5] *Cattlianthe* Billy's Golden Shower 'Gusher' HCC/AOS (*Cattleya cinnabarina* x Pixie) 78 pts. Exhibitor: Krull-Smith; Photographer: Wes Newton. Florida North-Central Judging

[6] *Vanda* Greg Scott 'Crystelle' AM/AOS (*merrillii* x *tessellata*) 85 pts. Exhibitor: Krull-Smith; Photographer: Wes Newton. Florida North-Central Judging

[7] *Rhyncholaeliocattleya* Krull's Dragon Fire 'Crystelle' AM/AOS (Carolina Splendor x Theresa Hill) 84 pts. Exhibitor: Krull-Smith; Photographer: Wes Newton. Florida North-Central Judging

[8] *Paphiopedilum* Krull's Seminole Chief 'Crystelle' AM/AOS (Sander's Pride x *glanduliferum*) 85 pts. Exhibitor: Krull-Smith; Photographer: Wes Newton. Florida North-Central Judging

[9] *Vanda christensoniana* 'MV Pink Clouds' CCE/AOS 90 pts. Exhibitor: Stuart Henderson; Photographer: Wes Newton. Florida North-Central Judging

[10] *Maxillaria cacaoensis* 'Sunshine' HCC/AOS 79 pts. Exhibitor: Galen Carpenter; Photographer: Kathy Barrett. California Sierra Nevada Judging

[11] *Phalaenopsis* Bredren's Imp AQ/AOS (LD's Bear King 'YK1' x *mannii* 'Bredren's Black Rook'). Exhibitor and Hybridizer: Bredren Orchids and Phillip Hamilton; Photographer: Wes Newton. Florida North-Central Judging

[12] *Phalaenopsis* Bredren's Imp 'Petit Chocolat' AM/AOS (LD's Bear King x *mannii*) 82 pts. Exhibitor: Bredren Orchids and Phillip Hamilton; Photographer: Wes Newton. Florida North-Central Judging

[13] *Paphiopedilum* Wössner Black Wings 'Bitis Botanical' AM/AOS (*rothschildianum* x *anitum*) 87 pts. Exhibitor: Tony Casler; Photographer: Sarah Goldberg. Carolinas Judging

[14] *Phalaenopsis* Little Gem 'Memoria Tom Ritter' HCC/AOS (Hebe x *sanderiana*) 78 pts. Exhibitor: Ritter Tropic 1 Orchids; Photographer: David Nickerson. West Palm Beach Judging

[15] *Phalaenopsis* Bredren's Imp 'Xavier' AM/AOS (LD's Bear King x *mannii*) 80 pts. Exhibitor: Bredren Orchids and Phillip Hamilton; Photographer: Wes Newton. Florida North-Central Judging

[16] *Phalaenopsis* Bredren's Imp 'Betty' AM/AOS (LD's Bear King x *mannii*) 81 pts. Exhibitor: Bredren Orchids and Phillip Hamilton; Photographer: Wes Newton. Florida North-Central Judging

[17] *Phalaenopsis* Ba-Shi Canary 'Crystelle' CCE-AM/AOS (Yungho Gelb Canary x *violacea*) 91-85 pts. Exhibitor: Krull-Smith; Photographer: Wes Newton. Florida North-Central Judging

ORCHIDS

Author Index Volume 90 2021

THE AUTHOR AND SUBJECT INDEXES FOR VOLUME 89 were prepared by Ron McHatton.

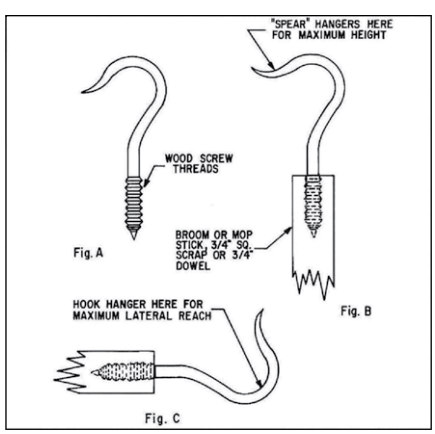
GREATIdeas by Ed Wright

A Super Hook for Pot Hangers

Reprinted from The American Orchid Society Bulletin 1983 52(5):491

WE SHORT PEOPLE sometimes despair when pot-hangers perversely arrange themselves just out of comfortable reach. Around our greenhouse, you will find several super hooks — dual-purpose "reach extenders" which are really helpful. The only item we purchase is a standard screw-in hook which we buy at the neighborhood hardware store. The figure shows how we modify and use these hooks to reach many things. The modification consists of holding the bill or tip of the hook in a vise or a pair of vise-grip pliers and giving it a much sharper bend away from the body of the hook. If the large curve of the hook opens a bit during this process, squeeze it back together just a bit.

We use almost anything for a handle, but you can go first-class and buy a replacement handle for a push-broom (about the same as an extension handle for a paint roller, but half the price). Make a starter-hole in the end of the handle and screw the modified hook well into it. Should the hook become loose after use, unscrew it, apply white glue to the threads and reinstall. It will be good as new in an hour or so. When "fishing" for overhead



hangers, use a spearing motion to hook the pot-hanger with the upper portion of the hook, right where you increased the bend. To move pots to and from that dead corner we all have on our benches, turn the hook over and use the larger, inside portion of the hook to support the pot-hanger. With this easy device, you will enjoy the reach of a basketball player and be amazed at how precisely you can place pots!

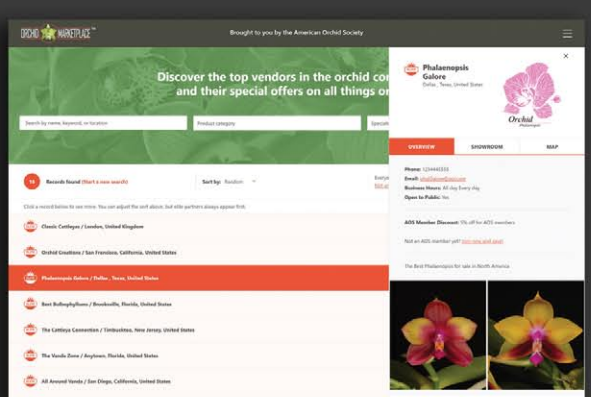
— 223 Larkwood Drive, San Antonio, Texas 78209

ORCHIDS

Subject Index Volume 90 2021

The American Orchid Society is pleased to announce

The Orchid Marketplace™
A curated collection of the world's top orchid vendors



- Find your favorite vendors (and discover new ones!)
- Enjoy discounts exclusive for AOS members
- Mobile friendly

orchidmarketplace.com

Where orchid growers discover orchid vendors from around the world

DECEMBER 2022

4—Baton Rouge Orchid Society's "Louisiana December Short Course," Burden Museum and Gardens (Conference Center), 4560 Essen Lane, Baton Rouge, LA; Contact: Frank Zachariah, 225-202-0377; lousid8@gmail.com

12—East Everglades Orchid Society's Holiday Orchid Event, R.F. Orchids (in the Banyon Pavilion), 21800 SW 182nd Ave, Homestead, FL; Contact: Kim Belisle, 786-367-7177; concept22@aol.com

18—Northeast Judging Center Annual Auction, First Presbyterian Church, 14 Hanover Road, East Hanover, NJ; Contact: Wayne Wiegand, 781-856-1652; weulerw@msn.com; nejcaos.org for details.

JANUARY 2022

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

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

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

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

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

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

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

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

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

FEBRUARY 2022

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

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

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

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

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

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

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

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

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

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

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

26-27—Amherst Orchid Society Show, Smith Vocational and Agricultural High School, 80 Locust St Rt 9, Northampton, MA; Contact: Marc Gray, 802-346-7926 (landline) or 802-258-8406 (cell); bulbophyllum@myfairpoint.net

MARCH 2022

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

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

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

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

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

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

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

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

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

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

26–27—The Central Pennsylvania Orchid Society's 55th Annual Orchid Show, Penn State University, Ag Arena, University Park, PA; Contact: Wade Hollenbach, 570-837-9157; wadeh@ptd.net

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

IX International Conference on Orchid Conservation "Soroa 2022"

NEW DATES

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

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

ORCHIDS CLASSIFIEDS

SALES

NEW VISION ORCHIDS — Specializing in phalaenopsis: standards, novelties. Odontoglossums, intergenerics, lycastes and vandaceous. Russ Vernon — hybridizer. Divisions of select, awarded plants available. Flasks and plants. Tel.: 765-749-5809. E-mail: newvisionorchids@aol.com, www.newvisionorchids.com.

SALES

BROWARD ORCHID SUPPLY — we carry fertilizers, fungicides, pesticides, pots, baskets, growing media, tree fern, cork, wire goods, labels, pruners and more. For our complete product line, visit our website at www.browardorchidsupply.com. Call 954-925-2021 for our catalog or questions. AOS members receive a 10% discount. We cater to the hobbyist.

SALES

SELLING MY PRIVATE collection after 28 years; 2,500 sq ft of overgrown cattleyas and 500 sq ft of overgrown dendrobiums are available in Titusville, Fl. Contact: Kenny Yii @ 321-720-7337.

Classified ads are $55 for five lines (45 characters/spaces per line) and $15 for each additional line. $25 for first three words in red. $25 to include logo. The first three words can be in all caps, if requested.

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.

Rudolf Jenny

(1953–2021)

BY VERONIKA JENNY-KELLER, LORENZ AND CHRISTOPH JENNY, CARSTEN HAMMER AND EMIL LÜCKEL

RUDOLF JENNY WAS born on July 26, 1953 in Bern, Switzerland. As his father was head of the Swiss Federal Nursery, Rudolf was exposed to a rich flora already at an early age and even built a herbarium of fern specimens on his own. Soon, he discovered orchids in the greenhouses and developed a passion for these exotic plants and that passion never faded.

As a trained chemist, Rudolf Jenny worked in the field of environmental and ozone technology until his retirement in 2008. As a hobby, Rudolf worked with orchids for more than 40 years, and since 1995 he cultivated many tropical orchid plants in his large collection. Over many years, numerous trips took him to Central and South America for his studies on pollination techniques and taxonomy of orchids. He was especially fond of Costa Rica, where he took part in many expeditions with his friend Clarence K. Horich, to whom he also dedicated the orchid genus *Horichia* (*The Orchid*, 1981). Furthermore, he dedicated other orchid genera such as *Braemia* (*Die Orchidee*, 1985) or *Lueckelia* (*Australian Orchid Review*, 1999) to well-known orchid friends. The orchid genus *Jennyella* was named after Rudolf, described by E. Lückel and H. Fessel (*Caesiana*, *Revista Italiana di Orchidologia*, 1999).

Altogether, Rudolf Jenny wrote more than 600 articles published in many well-known orchid journals, including monographs on the genera *Gongora*, *Stanhopea*, *Paphinia* and *Sievekingia*. He also wrote the three-part (only two parts published) book series *of Men and Orchids* about the background of orchid names and the stories behind the discoverers and researchers. As a regular participant and presenter at major orchid conferences such as the World Orchid Conference (WOC), the European Orchid Conference (EOC) and numerous other congresses, Rudolf was not only able to maintain his international relationships, but also to pursue his passion for photography. Rudolf was also the founder and owner of BibliOrchidea, the world's largest and freely accessible database of orchid literature with over 165,000 entries, covering more than 90 percent of the existing orchid literature.

Rudolf Jenny was an honorary member of the German Orchid Society (DOG) and the European Orchid Council (EOC), where he held the position of Secretary General since 2010. With his profound knowledge, he also supported the Jany Renz Herbarium of the University of Basel in Switzerland. In addition, Rudolf Jenny was an active member with the Royal Horticultural Society's Orchid Hybrid Registration Advisory Group (OHRAG) and a former member of the RHS Orchid Committee, both based in England.

Rudolf was a pillar of strength for his wife, Veronika Jenny-Keller, and his two sons, Lorenz and Christoph. He was an extremely generous person who was lacking in anything petty. He loved spending his family vacation days in his small cottage in the mountains, and together they also enjoyed traveling to numerous countries. Until his last day, Rudolf was an interested and exciting conversationalist and family man. He was networked with countless orchid specialists worldwide, and gladly answered questions of all kinds. He was happy when he could help — a lively exchange always gave him much pleasure. Profit motivation was unknown to him. His *Gongora* monograph, co-authored with Günter Gerlach, is nearly ready for print. Rudolf was excited about publishing his new work.

Rudolf Jenny

Rudolf passed away completely unexpectedly on August 10, 2021.

Fort Lauderdale Orchid Society

presents

Orchid Show and Sale

January 21, 22 & 23, 2022 www.FLOS.org

ORCHIDS ROCK!

1950 Eisenhower Blvd.
Fort Lauderdale, FL 33316

GREATER FORT LAUDERDALE BROWARD COUNTY
CONVENTION CENTER

Tel: 407.886.4134 • Fax: 407.886.0438 • Email: orchids@krullsmith.com
2800 W. Ponkan Rd • Apopka, FL 32712