

www.aos.org

# ORCHIDS

THE BULLETIN OF THE AMERICAN ORCHID SOCIETY

VOL. 91 NO. 5 MAY 2022



# The 10" Slot Pot is Here.



- 4 Vibrant Colors plus Clear
- Perfect for Orchids, African Violets and other fine plants

Designed by rePotme to maximize air flow and drainage, these terrific pots are as effective as they are beautiful. We call them "Super Slot Pots" because they have more drainage capacity than any single pot we carry. That's important to help prevent trouble caused by too much moisture at the root zone.

White  
From \$11.45



Rose Quartz



Green Emerald



Sapphire Blue



Clear



[www.rePotme.com](http://www.rePotme.com)



HARTLEY  BOTANIC  
HANDMADE WITH PRIDE SINCE 1938

# SPRINGTIME EVENT



VICTORIAN MANOR  
Virginia, USA

Discover the secret of Hartley Botanic by calling 781 933 1993 or visit [www.hartley-botanic.com](http://www.hartley-botanic.com)



HANDMADE IN ENGLAND, CHERISHED IN AMERICA

The only aluminium Glasshouses and Greenhouses endorsed by the RHS

© The Royal Horticultural Society. The Royal Horticultural Society, and its logo, are trade marks of The Royal Horticultural Society (Registered Charity No 222879/SC038262) and used under licence from RHS Enterprises Limited.

Prepared for download exclusively for **Oval Orquidifils Valencians**

# 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](mailto:theaos@aos.org) or join online at [www.aos.org](http://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 (Online Access)	Gold (Online access PLUS delivery of <i>Orchids</i> Magazine)
Individual	\$4.50/month	\$6.75/month
Joint*	\$5.75/month	\$7.83/month
Youth**	\$3.35/month	\$6.17/month
Society***	N/A	\$6.75/month
<b>Additional postage</b>		
United States Only	N/A	\$2.50/month for 1st-class delivery
Canada/Mexico	N/A	\$1.67/month
All other countries	N/A	\$3.33/month

Membership subscription billing cycle options: 1 year or 2 years

\* 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

<i>Orchids</i> — The Bulletin of the American Orchid Society	10 percent discount on AOS publications
Members-Only section of <a href="http://www.aos.org">www.aos.org</a>	First-time members receive a free copy of <i>Your First Orchid</i> and 15 percent off additional AOS-produced books (plus shipping)
Unlimited access to educational webinars	<i>OrchidPro</i>
Discounts at select gardens and arboreta in the United States (see <a href="http://www.ahs.org">www.ahs.org</a> )	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](mailto: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](mailto:theaos@aos.org) Website [www.aos.org](http://www.aos.org)  
Main Office Monday-Friday (by appointment only)



# SERVICES

**Ron McHatton, PhD** ([rmchatton@aos.org](mailto: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](mailto:naya@aos.org))  
**Director of Administration and Member Services** (305-740-2010)

Administration  
AOS Policy Information  
Business Operations

**Accounting** ([victor@aos.org](mailto:victor@aos.org))  
**Victor Parera** (305-740-2010 ext 104)

**Advertising** ([melwell@allenpress.com](mailto:melwell@allenpress.com))  
(785-865-9264)

*Orchids*, AOS Website, *Orchid-Gram*

**Affiliated Societies** ([sandra@aos.org](mailto:sandra@aos.org))  
**Sandra Kurzban** (305-740-2010 ext 102)

Committee Volunteers  
Shows  
Contact Updates  
Website listings

**Awards Registrar** ([laura@aos.org](mailto:laura@aos.org))  
**Laura Newton**

Award issues and questions  
Certificates

**Development** ([theaos@aos.org](mailto:theaos@aos.org))

Annual Giving  
Bequests  
Major Gifts  
Planned Giving

**Membership Associates**  
**Sandra Kurzban** ([sandra@aos.org](mailto:sandra@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](mailto: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**  
Mary Elwell  
Advertising Sales  
Allen Press  
810 East 10th Street  
Lawrence, Kansas 66044  
melwell@allenpress.com  
(785-865-9264)

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

**EDITORIAL BOARD**  
Jean Allen-Ikeson, Chair  
Greg Allikas, Sue Bottom, Carol Butcher  
Mark Chase, Phillip Cribb, Nile Dusdieker,  
Wes Higgins, Carol Klonowski,  
Judith Rapacz-Hasler, Larry Sexton  
Send electronic submissions to jean.ikeson@gmail.com or  
rmchatton@aos.org

**PROOFREADERS**  
Alina Furtak, Laura Newton,  
Larry Sexton, Susan Wedegaertner

**FORMER EDITORS**  
Dr. David Lumsden (1932-1940), Dr. Louis O.  
Williams (1940-1943), Gordon Dillon (1943-1967;  
1970-1973), Merle Reinikka (1968-1969),  
Richard Peterson (1973-1984), Stephen R. Batchelor  
(1984), Alec Pridgeon, PhD (1984-1988;  
1989-1991), Chuck McCartney (1988-1989),  
James B. Watson (1991-2013)

Volume 91, Number 5 May, 2022 *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). ©American Orchid Society, Inc. 2021. Printed by Allen Press, 810 East 10th Street, Lawrence, Kansas 66044. Subscription price of *Orchids* is \$81 a year within the US, \$101 Canada and Mexico and \$121 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: April 28, 2022.



Printed on 10 percent post-consumer recycled paper.

# CONTENTS

May 2022 Volume 91 Number 5



358



364



372



392

## FEATURES

### 358 ORCHIDS OF BHUTAN

*Cypripedium*

*Pem Zam, Stig Dalström, Choki Gyeltshen, Nima Gyeltshen and Kezang Tobgay*

### 364 CYPRIPEDIUMS IN CHINA

*Cypripedium* species of the Subsections *Cypripedium* and *Macrantha* and Their Resulting Hybrids

*Judith Rapacz-Hasler, Tom Velardi and Wenqing Perner*

### 372 FIRST LADIES AND THEIR CATTLEYS

*Grace Coolidge (1923-1929)*

*Arthur E. Chadwick*

## DEPARTMENTS

### Tom's Monthly Checklist 330

*May: The Month of Myth, Legend and Deity*  
*Thomas Mirenda*

### For the Novice 342

*Slug and Bush Snail Problems? Solved!*  
*Chuck Oldenburg*

### Collector's Item 346

*Dendrobium amethystoglossum*  
*Judith Rapacz-Hasler*

### Judge's Corner 348

*Outreach AOS Judging at an Affiliated Society*  
*Jean Allen-Ikeson*

### Orchids Places 350

*Jamaica: Land of Extremes*  
*Thomas Mirenda*

### Orchids Illustrated 354

*Bulbophyllum* section *Cirrhopetalum*  
*Wesley Higgins and Peggy Alrich*

### Awards Gallery 376

### Lindleyana 392

*A New Species of Andinia (Orchidaceae: Pleurothallidinae) from the Ecuadorian Amazon*  
*Hugo Medina, José Portilla and Iván Portilla*

## In This Issue

AOS MEMBERSHIP INFORMATION 322

AOS DIRECTORY OF SERVICES 322

AOS NATIONAL VOLUNTEERS 324

PRONUNCIATION GUIDE 325

GIFTS OF NOTE 326

PRESIDENT'S MESSAGE 328

WEBINARS 331

QUESTIONS AND ANSWERS 332

PAST, PRESENT, FUTURE 334

HOME REMEDIES 349

CALENDAR 396

IN MEMORIAM 320

*Milton O. Carpenter*  
*Brian Monk, DVM*

ORCHIDS CLASSIFIEDS 400

AD INDEX 400

## FRONT COVER

Separated from *Pleurothallis* by Carlyle Luer in 2000, *Andinia* now contains some 70 recognized species — all miniatures from the Andean cloudforests of South America. Hugo Medina, José Portilla and Iván Portilla describe another new species in their *Lindleyana* Orchids from Ecuador contribution (see article beginning on page 392 of this issue).

# AMERICAN ORCHID SOCIETY NATIONAL VOLUNTEERS

## Officers

Jay Balchan  
President

Cheryl Erins  
Alison Galloway  
Vice Presidents

Theresa Kennedy  
Secretary

Julio Hector  
Treasurer

Nancy Mountford  
Assistant Treasurer

Robert Fuchs  
Immediate Past President

## Trustees

### 2020–2023

William Bodei, David Edgley,  
Phyllis Prestia

### 2021–2024

Michelle Dobard–Anderson, Edna Hamilton–  
Cirilo, Barbara Schmidt

### 2022–2023

Russ Vernon

### 2022–2024

Jurahame Leyva

### 2022–2025

Catherine Higgins, Denise Lucero,  
Thomas Mirenda, Dr. Larry Sexton

## 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, Robert Fuchs

## Affiliated Societies Committee

affiliated\_societies@aos.org  
Edna Hamilton–Cirilo, Chair  
Chad Brinkerhuff, Lois Dauelsberg, Candace  
Hollinger, Donna Lipowicz, Donna Pettitt,  
Graham Ramsey, Alex Rodriguez  
Staff liaison: Naya Marcano

## Audit Committee

audit\_committee@aos.org  
Michelle Dobard, Chair  
William Bodei, David Edgley

## Awards Committee

awards\_committee@aos.org  
Dr. Jean Hollebone, Chair  
George Hatfield, William Riley, PhD

## Conservation Committee

conservation\_committee@aos.org  
Ron Kaufmann, Chair  
Kathy Barrett, Virginia Clark, Mark Sullivan,  
Brandon Tam  
Advisory members: Judith Rapacz–Hasler,  
Charles Wilson

## Development Committee

development\_committee@aos.org  
Marlene Dawdy, Chair  
Jay Balchan, Robert Fuchs (Centennial Task  
Force chair), Ashley Grable, Julio Hector, Cath-  
erine Higgins, Jean Hollebone, Joyce Medcalf,  
Jennifer Reinoso (cochair), Marian Sheehan  
Staff liaison: Naya Marcano

## Education Committee

education\_committee@aos.org  
Barb Schmidt, Chair  
Donna Ballard, Eron Borne, Michelle Dobard–  
Anderson, Dr. John J. Finer, David George, Edna  
Hamilton–Cirilo, Judith Rapacz–Hasler, Phyllis  
Prestia, EdD, Bev Tall, David Vandenbroek, Russ  
Vernon

## Executive Committee

executive\_committee@aos.org  
Jay Balchan, Chair  
Cheryl Erins, Robert Fuchs, Alison Galloway,  
Julio Hector, Terry Kennedy, Nancy Mountford

## Finance Committee

finance\_committee@aos.org  
Julio Hector, Chair  
Greg Filter, Nancy Mountford, Susan  
Wedegaertner  
—Investment Task Force  
Nancy Mountford, Chair  
Doris Asher, Ron McHatton  
—Awards Task Force  
Jean Hollebone, Chair  
George Hatfield, Will Riley

## Governance Committee

governance\_committee@aos.org  
Alison Galloway, Chair  
Cheryl Erins, Harry Gallis, MD, Edna  
Hamilton–Cirilo, James Heilig, PhD, Theresa  
Kennedy (vice–chair), Jeff Saal

## Information Technology Committee

information\_technology\_committee@aos.org  
Jeff Saal, 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  
Charles Wilson, Chair  
Jean Allen–Ikeson (nat'l ed. coord.), Ted  
Baenziger, Judy Cook, André Couture, Nile  
Dusdieker, David Edgley (vice–chair), Tom  
Etheridge, Glenn Evans, Alison Galloway, René  
García, Aileen Garrison, Don Ghiz, Wilton  
Guillory, Doug Hartong, George Hatfield, Julio  
Hector, Catherine Higgins, Theresa Kennedy,  
Japheth Ko, Valerie Lowe, Matthew Nutt, Ben  
Oliveros, Sarah Patterson, Ian Rich, Dennis  
Seffernick, Claire Jill Sidran, Taylor Slaughter,  
Max Thompson, 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, 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  
Steven Besseliu, Deb Bodei, Lois Cinert,  
Candace Hollinger, Graham Ramsey  
Staff liaison: Laura Newton

## 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>.

<i>Abies</i> (AY-bee-eez)	<i>freynii</i> (FREN-ee-eye)	OY-deez)
<i>aenigma</i> (eh-NIG-ma)	<i>fuscatum</i> (foos-KAY-tum)	<i>Oreophilus</i> (ore-ee-oh-FEE-luss)
<i>agnicapitatum</i> (ag-nih-kap-ih-TAY-tum)	<i>guttatum</i> (gut-TAY-tum)	<i>ornatissimum</i> (ore-nah-TISS-ih-mum)
<i>amethystoglossum</i> (am-eh-this-toh-GLOSS-a)	<i>harrisoniana</i> (hair-ih-sone-ee-AY-na)	<i>ortgesiana</i> (ort-geez-ee-AY-na)
<i>Andinia</i> (an-DEEN-ee-a)	<i>hexaptera</i> (heks-APT-er-a)	<i>Paphiopedilum</i> (paff-ee-oh-PED-a-lum)
<i>arboreus</i> (are-BORE-ee-us)	<i>himalaicum</i> (him-a-LAY-ih-kum)	<i>parviflorum</i> (par-vee-FLORE-um)
<i>Arion</i> (ARE-ee-on)	<i>igneus</i> (IG-nee-a)	<i>Pedilonum</i> (ped-ih-LOH-num)
<i>armeniacum</i> (are-men-ee-AY-kum)	<i>intermedium</i> (in-ter-MEE-dee-um)	<i>Penducella</i> (pen-dyew-SELL-la)
<i>Azidorachtin</i> (az-ih-doh-RAK-tin)	<i>Inti</i> (IN-tee)	<i>Pensilis</i> (pen-SEE-liss)
<i>barbeyi</i> (BAR-bee-eye)	<i>Jamaicensis</i> (ja-may-KEN-sis)	<i>Phalaenopsis</i> (fail-en-OP-sis)
<i>bardolphianum</i> (bar-doll-fee-AY-num)	<i>Juniperus</i> (joo-NIP-er-us)	<i>Phragmipedium</i> (frag-mih-PEED-ee-um)
<i>besseae</i> (BESS-ee-eye)	<i>kesselringii</i> (kes-sell-RING-ee-eye)	<i>Picea</i> (PYE-see-a)
<i>biflorum</i> (BYE-flore-um)	<i>krylowii</i> (krill-LOH-vee-eye)	<i>Pleurothallidinae</i> (plur-oh-thal-LID-ee-nee)
<i>binnendijkii</i> (bin-nen-DYEK-ee-eye)	<i>labiata</i> (lah-bee-AY-ta)	<i>pleurothallid</i> (plur-oh-THAL-lid)
<i>Bombas</i> (BOM-bas)	<i>Laelia</i> (LAY-lee-a)	<i>Pogonia</i> (poh-GOH-nee-a)
<i>Brachycladium</i> (brak-ee-KLAY-dee-um)	<i>Laeliinae</i> (lay-LEE-ee-nee)	<i>Pyriproxifen</i> (pier-ih-PROKS-ih-fen)
<i>Brassia</i> (BRASS-ee-a)	<i>lappacea</i> (lap-PACE-ay-a)	<i>quadricolor</i> (kwad-RIH-kuhl-ur)
<i>Bratonia</i> (bra-TONE-ee-a)	<i>Lepanthes</i> (leh-PAN-theez)	<i>reticulatum</i> (reh-tik-yew-LAY-tum)
<i>Broughtonia</i> (brow-TONE-ee-a)	<i>loddigesii</i> (lode-ih-GEEZ-ee-eye)	<i>Rhynchoaeliocattleya</i> (rin-koh-lay-lee-oh-KAT-lee-a)
<i>Bulbophyllum</i> (bulb-oh-FILL-um)	<i>longiflorum</i> (lon-jee-FLORE-um)	<i>roseum</i> (ROH-zee-um)
<i>calceolus</i> (kal-SEE-oh-luss)	<i>Lueranthos</i> (lure-AN-thos)	<i>rothschildianum</i> (roths-child-ee-AY-num)
<i>calvicola</i> (kal-SEE-koh-la)	<i>mackayi</i> (MACK-ay-eye)	<i>sanderianum</i> (san-der-ee-AY-num)
<i>Callista</i> (kal-LIS-ta)	<i>Macrantha</i> (mak-RAN-tha)	<i>sanguinea</i> (sang-GWIN-ee-a)
<i>Calypso</i> (ka-LIP-so)	<i>macranthos</i> (mak-RAN-thos)	<i>Satyrium</i> (sa-TEER-ee-um)
<i>Caragana</i> (kair-a-GAY-na)	<i>makasin</i> (MAHK-a-sin)	<i>Scaphyglottis</i> (skaf-ee-GLOT-tiss)
<i>Cattleya</i> (KAT-lee-a)	<i>malipoense</i> (mal-ee-poh-EN-say)	<i>schilleriana</i> (shil-ler-ee-AY-na)
<i>charlesworthii</i> (charles-WORTH-ee-eye)	<i>manchuricum</i> (man-CHURE-ih-kum)	<i>schroederae</i> (SHROH-der-ee)
<i>Cirrhopetalum</i> (ser-oh-PET-a-lum)	<i>Masdevallia</i> (mas-deh-VAHL-ee-a)	<i>shanxiense</i> (shawn-chee-EN-sis)
<i>coccinea</i> (kok-SIN-ee-a)	<i>Masdevalliantha</i> (mas-deh-vahl-lee-AN-tha)	<i>sinapoides</i> (sin-ap-OY-deez)
<i>condorensis</i> (kon-dore-EN-sis)	<i>mastersianum</i> (mas-ters-ee-AY-num)	<i>spectatissimum</i> (spek-tah-TISS-ih-mum)
<i>cordigerum</i> (kore-DIJ-er-um)	<i>mendelii</i> (men-DELL-ee-eye)	<i>Spinulosa</i> (spy-nyew-LOH-sa)
<i>Cypripedium</i> (sip-rih-PEED-ee-um)	<i>Methoprene</i> (meth-oh-PREEN)	<i>Spiranthes</i> (spy-RAN-theez)
<i>Cyromazine</i> (SY-roh-may-zine)	<i>micranthum</i> (mye-KRAN-thum)	<i>subfuscus</i> (sub-FOOS-kus)
<i>Cyrtopodium</i> (sir-toh-POH-dee-um)	<i>Miltonia</i> (mil-TONE-ee-a)	<i>tenebrosa</i> (ten-eh-BROH-sa)
<i>delenatii</i> (del-en-AT-ee-eye)	<i>Miltoniopsis</i> (mil-tone-ee-OP-sis)	<i>thouarsii</i> (thou-ARS-ee-eye)
<i>Dendrobium</i> (den-DROH-bee-um)	<i>monophylla</i> (mon-oh-FILL-a)	<i>tibeticum</i> (tih-BET-ih-kum)
<i>densa</i> (DEN-sa)	<i>morinanthum</i> (more-in-AN-thum)	<i> trianae</i> (tree-AN-ee)
<i>Deroceras</i> (deer-oh-SEER-us)	<i>muscicola</i> (mew-SIH-kol-la)	<i>Tsuga</i> (TSOO-ga)
<i>digbyana</i> (dig-bee-AY-na)	<i>negrilensis</i> (neg-rill-EN-sis)	<i>veitchiana</i> (veech-ee-AY-nah)
<i>Disa</i> (DEE-sa or DYE-sa)	<i>Neocogniauxia</i> (nee-oh-con-nee-OH-ee-a)	<i>ventricosum</i> (ven-tree-KOH-sum)
<i>dolosa</i> (doh-LOH-sa)	<i>Neoreophilus</i> (nee-oh-ore-ee-oh-FEE-lus)	<i>walkeriana</i> (walk-er-ee-AY-na)
<i>dowiana</i> (dow-ee-AY-na)	<i>nobile</i> (NOH-bill-ee)	<i>Wallichiana</i> (wall-ik-ee-AY-na)
<i>eumosa</i> (dyew-MOH-sa)	<i>Odontoglossum</i> (oh-don-toh-GLOSS-um)	<i>wallichii</i> (wal-ik-ee-eye)
<i>elegans</i> (EL-leh-ganz)	<i>Odopetalum</i> (oh-doh-PET-a-lum)	<i>warneri</i> (WAR-ner-eye)
<i>Elleanthus</i> (el-lee-AN-thuss)	<i>Oncidiinae</i> (on-sid-EE-ee-nee)	<i>Xenosia</i> (zen-OH-see-a)
<i>equestris</i> (ee-KWESS-triss)	<i>Oncidiopsis</i> (on-sid-ee-OP-sis)	<i>yunnanense</i> (yew-nan-EN-say)
<i>ericssonii</i> (air-rik-SON-ee-eye)	<i>Oncidium</i> (on-SID-ee-um)	<i>Zonitoides</i> (zone-ee-TOY-deez)
<i>fairrieanum</i> (fair-ee-AY-num)	<i>Oncostele</i> (on-koh-STEE-lee)	<i>Zygopetalum</i> (zye-goh-PET-a-lum)
<i>farreri</i> (far-RARE-ee)	<i>Oncostelopsis</i> (on-koh-stee-LOP-sis)	
<i>fasciolatum</i> (fas-ee-oh-LAY-tum)	<i>ophioglossoides</i> (oh-fee-oh-gloss-	
<i>Fenoxycarb</i> (fen-OX-ee-KARB)		
<i>flavum</i> (FLAY-vum)		

## *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 March 1, 2022 and March 31, 2022.*

**Anonymous (3)**

Kirk Baker  
 Jay Balchan  
 Diana Blasingame  
 Bill and Deb Bodei  
 Bernardino Cagauan  
 Vanessa Castleberry  
 Pam DeLaquil  
 David Edgley  
 Cheryl Erins  
 Heather Finke  
 Harry Gallis, MD  
 Jean Hollebhone  
 Theresa Kennedy  
 Anne Kirkland  
 Kathylou Klein  
 Laura Kling  
 Leonard Knapp  
 Denise Lucero  
 Helen Luecke  
 Stephen Male  
 Fred Missbach  
 Carolyn Pedone and John Rose  
 Stephen Ryan  
 Brooke and Jeff Saal  
 Frank and Taylor Slaughter  
 Carol Ann Stuht  
 Nicholas Swicegood  
 Anthony and Jo Ann Truchard  
 Jim Vlastic  
 Susan Wedegaertner  
 Linda Wilhelm

**In honor of**

— **Charles and Susan Wilson**  
 Memphis Orchid Society (Technology)

**In lieu of a speaker's Fee**

— **Jean Allen-Ikeson**  
 Jean Allen-Ikeson  
 Greater Cleveland Orchid Society  
 — **Bill and Deb Bodei**  
 Bill and Deb Bodei  
 Mid-Hudson Orchid Society  
 — **Martin Motes**  
 Martin Motes (Motes Award)  
 Plantation Orchid Society  
 (Motes Award)

**In memory of**

— **Milton and Nancy Carpenter**  
 Patt Lindsey  
 Orchid Society of the Palm  
 Beaches (Technology)  
 — **Eric C. Shepherd**  
 Alison Gallaway (Technology)  
 — **Carol Shores**  
 Cape Fear Orchid Society

**Permanently restricted**

— **Conservation Endowment**  
 Jean Allen-Ikeson  
 Donald Bilbrey  
 Les Orchidophiles de Montreal  
 Ottawa Orchid Society  
 Richard E. Palley  
 Mark Sullivan  
 Robert Winkley

**Temporarily restricted**

— **Centennial Celebration**  
 Tere Camacho  
 Robert Fuchs  
 Russ Vernon and Anita Martin  
 — **Conservation**  
 Anonymous  
 Catherine Higgins  
 Phyllis Prestia, EdD  
 Judith Rapacz-Hasler  
 — **Library**  
 Prof. Ronald A. Javitch  
 — **Technology**  
 Greg Filter  
 Catherine Higgins  
 Joyce Medcalf  
 Laura and Wes Newton  
 Mickey O'Brien  
 Dr. Larry Sexton



**Jack's**  
FERTILIZERS



TRUST THE INNOVATORS OF  
THE HIGHEST QUALITY  
FERTILIZERS FOR ALL YOUR  
ORCHIDS NEEDS

**JR PETERS INC**

We offer a wide variety of professional grade  
Orchid fertilizers, for more detailed  
information on our orchid products visit us at:  
[jrpeters.com/orchidproducts](http://jrpeters.com/orchidproducts)



Orchid  
Digest

Join... Discover...

Learn!

[orchiddigest.org](http://orchiddigest.org)



Available for a limited time.  
The AOS centennial commemorative goblet.



Purchase at our online store, [aos.org/cheers](http://aos.org/cheers)  
Proceeds support our Centennial Fund and Conservation Endowment.

Discover a World of Diversity  
**American Begonia  
Society**

[www.begonias.org](http://www.begonias.org)  
[amerbegmembership@gmail.com](mailto:amerbegmembership@gmail.com)

**Membership:** (Paper  
subscription) \$25;  
(Digital subscription)  
\$15 US, Mexico, and  
Canada;  
\$45 Overseas airmail  
except Mexico and  
Canada

## PRESIDENT'S MESSAGE

IT IS MY honor and privilege to be elected to the role of President of the AOS. I come in filling the huge shoes of our outgoing president, Bob Fuchs, who led our organization through one of the toughest periods we have ever faced, with complete travel bans, the cancellation of shows and of course the absence of large, in-person meetings within our local societies. Thank you, Bob, for your leadership the last two years.

We often take for granted what our local society interactions add to our lives, and only when we lose this opportunity do we really appreciate what we have lost: seeing old friends, meeting new ones, having dinner together before the meeting, sharing our blooming plants, winning a raffle plant, sharing stories about how well our latest fertilizer concoction is working, arguing about the best scale treatment and a hundred other things. Covid took a lot of that away from us.

Some orchid societies, such as my home society in Houston, experimented with virtual meetings as Covid dragged on. While our attendance was lower than our pre-Covid in-person meetings, it did offer a way to get together as a group and keep our organization going (with the added bonus of being able to attend with your favorite adult beverage). Now that my local society has gotten very proficient at running virtual meetings, we intend to continue using them to broadcast our in-person speakers. Think of it as a "hybrid meeting." This way society members who may be out of town, who may not be feeling well or who simply do not like driving at night can attend our meetings, giving them the an opportunity to actively participate — something they could not have done in the past.

As we are (hopefully) coming out of the pandemic, those societies who have been able to incorporate and even master virtual meeting tools, such as Zoom and GoToMeeting, will be in a very strong position to spring forward. These systems allow local societies to have speakers they never could have afforded. A few months ago, the Houston Orchid Society (HOS) had a fantastic speaker from Brazil who spoke on *Cattleya walkeriana*. The HOS could never have had the chance to "bring him in" to speak if we would have had to pay for his travel. And to be more inclusive, we have also opened and advertise our meetings to our sister societies in Texas so folks from San Antonio, Austin and Dallas can join us.

Unfortunately, many of our societies

have not been able to effectively use these tools or they just do not have a large enough member base to justify using them. For those societies that have not met in a while, I hope you are able to now reconnect even if it is just a few core people starting to gather again. The AOS will be there to add some oxygen to help ignite a spark. We have webinars which can be shown at a meeting, without needing Zoom, if there is no speaker. We can also offer Outreach judgments, where a team of judges can hold an actual judging event at a local society meeting.

Within the HOS, we are also trying to build ourselves back better after Covid. For example, pre-Covid we had a newcomers group where new members (<2 years) would be invited to an extra "hands-on" monthly meeting at someone's home or backyard. This was a great way to introduce new members to basic culture and pest and disease tips for the Houston area so they would be more successful growers and have a better orchid experience. We are now opening that group to every member and renaming it the "Culture Club." We will keep the informational aspect of the group, but it will serve a more social purpose than it did before. Maybe your club could do the same?

Finally, I am sure you are wondering, who the heck is this new president? I am certainly not a household name in the orchid world like Bob! Let me start by saying that I am just a regular orchid hobbyist. I am not a vendor, and I am not a judge. I am just someone with a hobby that has gone a little overboard. What is the saying "there is always room for one more orchid." However, I am honestly not sure that is true in my greenhouse! My home society is the HOS and I am proud to say that we were the second Affiliated Society to have been accepted by the AOS. I have held every conceivable position in my local society (multiple times), so I know what makes these groups "tick." I am currently our show chair and have been for 10+ years. Within the AOS, I have been the Chair of the Information Technology Committee over the past several years where I have had the pleasure of being part of some large, transformational projects including *OrchidPro*, digitizing and making available through search our entire catalog of *Orchids Magazine*, *Lindleyana* and all the yearly supplements, and moving our infrastructure to the cloud.

Over the next few months I will try to give you a bit of an introduction as to why



I find this hobby fascinating.

For now, I look forward to serving the American Orchid Society as its president for the next two years and I wish you all the best as you begin to meet again in person.

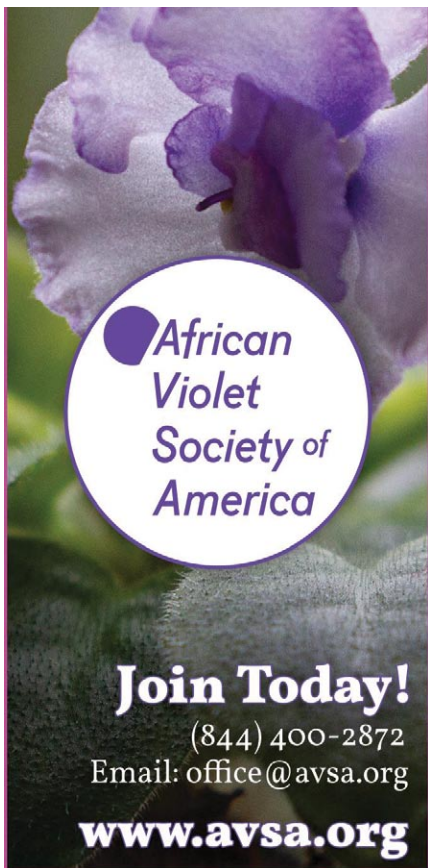
— Jay Balchan (email:).

American Orchid Society  
Education, Conservation, Research

**AOS Affiliated Societies**

Automatically receive  
**50%** off all  
display advertising!

Advertising — khall@allenpress.com



**African  
Violet  
Society of  
America**

**Join Today!**  
(844) 400-2872  
Email: office@avsa.org  
**www.avsa.org**

## 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 was too soon to safely hold the Conference.

## All that’s new in orchids from the world’s oldest authority



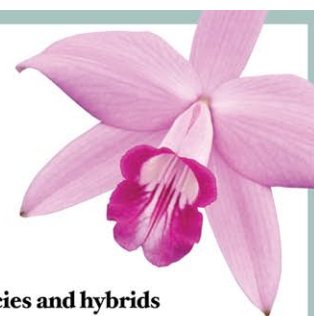
*The Orchid Review* is essential reading – it is the world’s oldest, most influential orchid magazine. Published by the RHS four times a year, each issue is packed with inspiring articles such as:

- Profiles of orchid genera, species and hybrids
- Orchids in the wild, and conservation projects
- The first descriptions of new orchid species
- RHS awarded orchids, with tips from the growers
- Orchid advice, the latest news, book reviews & events

- **Four issues with** the Orchid Hybrid List, UK £34, overseas airmail **£44**
- **Four issues without** Orchid Hybrid List, UK £29, overseas airmail **£37**

Subscribe online or by telephone

Quarterly supplements to Sander’s List of Orchid Hybrids, supplied by the Royal Horticultural Society as International Cultivar Registration Authority, can be included for a small annual fee.



Sharing the best in Gardening

**Website:** [www.rhs.org.uk/orchidreview](http://www.rhs.org.uk/orchidreview)

**Tel:** 00 44 20 7821 3401

**Email:** [membership@rhs.org.uk](mailto:membership@rhs.org.uk)

# May: The Month of Myth, Legend and Deity

By Thomas Miranda

WE ARE ALREADY aware that orchids are divine creatures. Over the centuries, many botanists have created orchid names that reflect this divinity: especially from the Greek, for example, *Paphiopedilum* and *Cypripedium* referring to Aphrodite's footwear; *Laelia*, *Satyrium* and *Calypso* suggesting mythical beings; and so on. Because all the diverse cultures of the world have their own histories and deities, names are often derived from admiration of historical figures both real and legendary, such as *Disa*, which honors a clever Swedish princess, and *Inti*, the ancient Incan Sun God. This recognition of the divine in orchids is a testament to our human proclivity to appreciate and exalt in things we find beautiful and ethereal and to attribute an almost spiritual quality to the wild denizens of the forest that haunt the far reaches of the world in many of the last unspoiled, natural places.



Thomas Miranda

For many of us, orchids represent that divine force that pervades the natural world. They have the power to move us toward peace, fellowship and transcendence.

They give us the will and ability to choose a tranquil path through a world that can be unfair, brutal and corrupt, influencing us toward appreciation, love and gratitude for this astoundingly beautiful planet that has been provided for us to inhabit. If only all humanity could see these gifts for what they are, I wonder, would all the strife on our planet dissolve away? Although I know how naïve this sounds, it is also true that so often, people who have the least in terms of material possessions, are among the happiest and most fulfilled by the blessings that surround us. Orchids simultaneously remind us of simple joy, combined with miraculous complexity and evolutionary progression so well evidenced by their perfect adaptations to their world as well as our own.

**GOOD WILL** May is likely the most important month for nearly all plants in your collection. Almost every plant is in active growth and benefiting from warmer temperatures, longer daylength, natural humidity and the blessing of spring rains. With all these optimal conditions, we can put growth and plant health into overdrive



*Cattleya Luminosa* (1901) 'Dark Waters' HCC/AOS (*dowiana* × *tenebrosa*); exhibitor: Ben Oliveros and Orchid Eros.

this month with gentle feeding, increased watering and repotting in fresh medium. Any goodwill you show your collection this month is appreciated earnestly by your plants. They will reward you almost immediately by sprouting copious roots and wonderfully emerging new growths. This is easily the most exciting time of year for orchids, as so much hope is generated by each new shoot that appears. Your job this month is to give each growth unobstructed access to light, nutrients and moisture.

**THE RIGHTFUL PLACE** Just as you would honor spirits and deities in your life with special, honored placement, now is the time to rearrange plants so that they receive optimal conditions. If plants are too crowded, new growths will dampen off or grow in awkward impeded directions that undermine a plant's natural grace. In addition, crowded plants can spread insect infestations and other pathogens such as viruses and fungi. When plants are properly spaced, gentle air movement can play a greater role in respiration and cooling that will become increasingly important as the warmer season stresses begin. Many growers from colder climates choose this month with such optimal natural conditions as the time to bring most of their plants outside. Make sure you honor your plants with a clean and spacious, lightly shaded area where they can be easily observed, pampered and

enjoyed as they progress. If your plants are on windowsills, make sure you adjust plants for higher light levels and shifting positions of the sun. Things often change swiftly this time of year; do not let plants in your southern exposure burn because of increased light intensity. Plants in light rooms can benefit from increased photoperiod that corresponds with natural daylengths increasing outside.

**SHARING THE JOY** As the world recovers from all the ravages it has endured the last few years, and we start to see our orchid friends at the many events happening around the country and world, there is nothing quite so gratifying as sharing your plants with others. This has been harder to do in recent years because so few of us can go to society meetings and events such as orchid shows because of health concerns. We are cautiously optimistic that these days are mostly behind us, and we learn to live with the challenges of being together again. Share your horticultural achievements with your friends (and the world on social media). There is nothing wrong with being proud of your 'chids, making them stars and influencers for adoring fans around the world. Indeed, this is the kind of influence our planet needs at this moment in history.

**WILD SPIRITUALITY** As May progresses, native orchids will emerge across the northern hemisphere over the next

few months. Have a look at the North American Orchid Conservation Center (NAOCC) website to see all the amazing orchids that you can observe often just a short distance from your home. You might also want to check out the Go Orchids site accessible from the NAOCC's site (<http://goorchids.northamericanorchidcenter.org/>) while you are there.

It is a spectacular time to be out of doors and to bear witness to glories, both great and small, that abound in the natural world. It is also reasonably safe to be outside enjoying fresh, buoyant spring air and the rebirth of nature all around us. If we have learned one thing from this past year, it is that the cycles of the earth go on whether we are out there to observe them or not. I hope that this year, we all venture out to enjoy the spectacle of spring and to revere and revel in the divinity of our native orchids.

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

## Webinars-Coming Attractions!






When	May 04, 2022 8:30pm EDT Wednesday	May 17, 2022 8:30pm EDT Tuesday	June 07, 2022 8:30pm EDT Tuesday	June 28, 2022 8:30pm EDT Tuesday
Topic	<b>The Birds, the Bees and the Orchids</b> Pollination in the Orchid World	<b>Greenhouse Focus</b> Everything You Wanted to Know: Pots and Potting Media	<b>Bulbophyllums of the Philippines</b> A Survey of Endemic Species	<b>Greenhouse Focus</b> Mounting Orchids Made Easy
Presenter	<b>Doug Martin</b> AOS Accredited Judge, Member-Native Orchid Conference	<b>Ron McHatton</b> Chief Education and Science Officer	<b>Jim Cootes</b> Australia-based Botanist, Author, Lecturer and Orchidologist	<b>Ron McHatton</b> Chief Education and Science Officer

**REGISTRATION REQUIRED:** <http://www.aos.org/orchids/webinars.aspx>  
 Cannot make it on the scheduled date or time? No need to worry. Register anyhow!  
 Webinar announcements are posted to Facebook,  
 Instagram and in the AOS Corner of Your Affiliated Society's newsletter.  
 We digitize the webinars and they are available to view at your leisure.  
 GREENHOUSE CHAT Webinars are Indexed by topic for future viewing.

# Orchids in Paradise

For the finest selection of quality orchids, exquisite gifts, stunning floral arrangements and more, visit R.F. Orchids, South Florida's oldest and most prestigious orchid firm. All of this awaits you in our tropical paradise.










28100 SW 182 Ave. • Homestead FL 33030

T: 305-245-4570 • F: 305-247-6568 • [www.rforchids.com](http://www.rforchids.com)





## QUESTIONS AND ANSWERS

### INSECT GROWTH REGULATORS

#### QUESTION

I am dealing with mealybugs and am interested in using insect growth regulators (IGR) to help control the problem.

Are they compatible with any potting medium? Do they wash off with watering? How do I best use them? Are there any cautions or limitations in their use? Do they work on ants and aphids?

#### ANSWER

Growth regulators are becoming more popular because they do not generally have the toxicity of regular chemical pesticides although they also have generally narrower efficacy. They are commonly mimics of hormones involved in one or more stages in the development of the target insect or mite, interfering with the development of the insects shell, interrupting the transition from one larval stage to another or by disrupting either egg development or fertility. They are also generally not systemics and remain on the surface of the plant and are taken in by direct contact with the insect either by contact with the residual material or during ingestion. They lose their residual activity over a period of a couple of weeks to months (in some cases) and they are washed off during periods of heavy rain (or pot watering in the case of indoor orchids). Most IGR's come with the instruction to reapply after heavy rains and this is the reason.

As to your first question, they are, to my knowledge, compatible with any potting material. In most cases, application is to the foliage; however for ants, fruit flies and fungus gnats, spraying of the potting mix surface might be an option.

Not all types wash off, but they do lose their potency over time. They are used as a foliar spray at intervals.

Insect growth regulators can be used alone, as part of a treatment regimen or as part of an integrated pest management plan. Because they target specific stages of the insect life cycle, application timing is often critical. If applied at the wrong time, e.g., when few, if any, larvae are present at the correct stage, it may take some time to see a significant effect. Perhaps the most common use is the third step in a treatment protocol after the infestation

## Compared to conventional pesticides, insect growth regulators are:

- More selective
- Less harmful to the environment
- More compatible with biological controls
- Less likely to be lost because of resistance

has been brought under control and the goal is maintaining any population at a very low level. For example, this could be the third step in the three-step approach I have discussed before — two chemical pesticides with different modes of activity followed by an IGR to get things under control and then maintenance applications going forward in time. I have a small commercial grower friend who has used an IGR every six months after a serious scale outbreak a few years ago. The IGR interrupts either hatching, progress from one nymphal stage to another, or the last nymphal stage to the adult. If an insect fails to mature into an adult at the proper time, it is unable to produce eggs and will ultimately die keeping the population of insects at very low levels.

The cautions and limitations are not like those of heavy-duty pesticides such as Orthene which kills almost every insect it touches with only the hardiest surviving. Growth regulators are a slow, steady attack on the nymphal or egg stages until the population gets down to the point it cannot support itself. You may still have a few insects around, but they will not develop into full-blown infestations. Their limitations include their cost (often significantly more than a chemical pesticide), their often narrow efficacy range and timing of applications and, like many chemical pesticides, damage to beneficial insects as well as the bad actors.

Many growers use Neem products for insect control, likely not realizing

that they are actually employing an IGR. Aside from the oil which coats the foliage, Neem contains azadirachtin. Initially found to be active as an antifeedant, it is now known to affect over 200 species of insects by acting as an antifeedant and growth disruptor and may actually have some efficacy against pathological mites. Pyriproxifen is the active ingredient in many IGRs such as Distance, Pivot, and Tekko Pro. Tekko Pro has shown apparent efficacy against at least some mites. Other juvenile hormone analogs include methoprene, fenoxycarb and cyromazine, all available under multiple trade names. Lufenuron functions as an insect development inhibitor.

Methoprene is an effective juvenile hormone analog effective against ants and available in numerous products — Precor for example. Although most often marketed for the control of fleas it is an effective ant growth regulator. In fact, methoprene and ab (S)-methoprene and abamectin are extremely safe and effective ant control products that can be used in agricultural lands, including vegetable gardens and pastures. They are very effective in the long term but take three to four months to reduce ant populations so applications should begin at the first sight of an ant problem.

---

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](mailto:greenhousechat@aos.org) — Ron McHatton, AOS Chief Education and Science Officer.



## Protects Orchids—Inside or Out

Growing orchids can be challenging and rewarding. Ferroxx® Slug and Snail Bait eliminates two of those challenges—slugs and snails.

Ferroxx contains 5% iron chelate which acts as a stomach poison with proven performance, regardless of indoor conditions or weather.

- Rainfast formula provides superior activity in greenhouse conditions
- Micropellet™ technology delivers uniform distribution
- Zero hour REI

Ferroxx can also be used around people, pets and wildlife.

You work hard to grow perfect orchids. Reward yourself. Get Ferroxx Slug and Snail Bait today to stop these pests in their tracks.

**FERROXX**  
SLUG AND SNAIL BAIT

Proven performance  
and value.



Neudorff North America

# Volunteer Service Awards by Jean Hollebhone

Fall 2021 Meeting

THE AMERICAN ORCHID Society had hoped to present its annual (2021) awards to volunteers who have given distinguished service at the Society's 100<sup>th</sup> anniversary gala dinner. However, a new Covid-19 variant nixed this possibility, so these awards were made virtually, at the fall meeting of members in October. The Society is proud to present the award winners below along with brief summaries of the presentations.

## SILVER MEDAL RECIPIENT

The Society's silver medal recognizes a specific, singular exceptional contribution of outstanding service to a major AOS project.

**Sandra Svoboda** As AOS President in 2012, Sandra Svoboda was intrigued by a new and still-experimental web-based service developed by a California company called Citrix and immediately saw the possibilities for the AOS to adopt it to improve both its administration and member services.

The new program, GotoMeeting, provided for group meetings via audio conferencing from online shared desktop computers, iPads, iPhones or smart phones, allowing the AOS to move from semi-annual meetings to monthly, leading to dramatic improvement in effectiveness, member outreach and productivity. Today, we are all familiar with it or similar programs such as ZOOM, but at the time it was novel and took some persuasion to overcome Board hesitancy. A major advantage of this new computer-based system was that it allowed larger participation, and replaced expensive long distance calling, making it an inexpensive tool for the AOS Board, and because of its ability to easily show visuals such as photographs and graphs, made our Board's meetings much more functional. In times of Covid-19, the GoToMeeting application capacity has been stretched further to include several thousand members who can attend the semi-annual meetings of members, as has been done throughout Covid restrictions.

The system expanded in 2014 to include GoToWebinar which allowed for video conferencing to a much larger audience and became a tremendous opportunity for training and orchid education. From its first webinar in 2014, over 200 webinars have been developed,



ALAN BRAUS

recorded and presented, touching a wide range of topics aimed at the general membership and the public, including specialized audiences such as judges. A third spin-off application has been the popular and highly valued monthly "greenhouse chats" on general orchid culture anchored by Ron McHatton, chaired by Sandra Svoboda and Cheryl Erins, which have garnered a dedicated following who attend his every lecture. These have recently been indexed and can be quickly accessed from the web site. The AOS is proud to present Sandra Svoboda with its silver medal for her vision and implementation in facilitating a new pathway for the AOS to deliver its products and services to members.

## AMBASSADOR AWARD

The Society's Ambassador Award recognizes an individual's outstanding, consistent and tireless contributions in promoting the AOS.

**Tom Mirenda** Mention Tom Mirenda to a group of orchidists anywhere in the world and chances are someone in the group, if not everyone in the room, will know who he is. Prolific author, public speaker, fantastic singer, judge, exhibitor, counselor and host, Tom has been an untiring ambassador to the orchid world and the AOS for many years. Tom has been the author of two monthly contributions to *Orchids* since 2006 and has not missed a single month in 15 years;



RON MCHATTON



RON MCHATTON

- [1] Sandra Svoboda, recipient of an AOS Silver Medal — Fall 2021.
- [2–3] AOS medals feature the corporate seal on the front and the recipient's name and reason for the medal on the reverse.
- [4] Charles and Susan Wilson, recipients of the AOS Certificate of Meritorious Orchid Education.
- [5] Thomas Mirenda, recipient of an AOS Ambassador Award.
- [6] James W. McCully photographed with one of his hybrids, *Aliceara Ysabella* 'Lunar Eclipse' at the Brooklyn Botanic Garden.



quite a record! His monthly checklists are not only chock-full of pertinent cultural information timed each month but are also an entertaining read. Our membership looks forward to his “orchids of the month” and other feature articles regarding important orchid places around the world. Tom became a member of the conservation committee in 2009 and then its chair in 2018 and continues to reach out around the world to those involved in conservation efforts. The AOS could not find a more enthusiastic emissary to the orchid world. Perhaps evangelist might be more appropriate in Tom’s case.

**Certificate of Meritorious Achievement in Orchids Education**

**Charles and Susan Wilson** The Wilsons were nominated for the Society’s Certificate of Meritorious Achievement in Orchid Education for their tireless work in providing orchid training to the AOS judging community. They have produced numerous webinars and other teaching materials to expand knowledge and love of orchids to members at large and the public. On a national level, working on the Judging Education Task Force, led by Jean Allen-Ikeson, they have been largely responsible for updating the *Guide for Education Coordinators* (instructions for those guiding students), and on proofing and recording the judging webinars now recorded as a core judges’ education series through the Judging Committee. Charles is a key member of the Species Identification Task Force which verifies the identification of orchids pending a provisional award such as a species presented for the first time or for a botanical award.

Charles is the immediate past chair of the Conservation Committee. Under Charles, the Committee was very active and made a point of insisting that all the work supported by the Conservation Committee be published in *Orchids* magazine for all to share. Some examples of work supported include preservation of grass pinks (*Calopogon*) in New York state, cypripediums in the Pacific Northwest, orchid conservation in the Andes (Peru and Colombia), conservation of the small white lady’s slipper (*Cypripedium candidum*) in high grass prairie in Manitoba, Canada and development of seed banks in central Africa and orchid education programs in Madagascar.

**Excellence in Hybridization**

**James W. McCully** The AOS is proud to recognize James W. McCully of Mauna Kea Orchids in Hawaii for his outstanding contributions to the creation of hybrid



MICHAEL CURTIN

4



MATTIAS SEELIS

5



FRANCINE MCCULLY

6

lines in Oncidiinae worldwide. He has made thousands of crosses and grown out millions of plants during a career spanning over 45 years. OrchidWiz lists 458 registered hybrids attributed to McCully as originator, with over 50 of these hybrids granted AOS awards and more than 95 individual AOS plant awards. In addition, he has received many other awards internationally.

McCully hybrids are famous for consistently providing the newest advances in Oncidium Alliance intergeneric hybrids: bright color, high floriferousness, longer lasting and easier growing intergeners. McCully early on saw a bright future for orchids as preferred replacements for traditional pot plants and he also saw that although phalaenopsis were at the beginning of their explosive success as pot plants that the Oncidiinae, with their ease of culture, short time period to flowering (18–20 months) and larger and more diverse genetic pool on which to draw, could also be strong contenders

for this market.

By the late 2000s he had developed a series of very successful pot plants, protected by licensed breeder’s rights. His most successful early pot plant hybrid is *Oncostele Catatante*, a cross of *Oncidium Sphacetante* ‘Evelyn Extra’ (seed parent) x *Oncostele Wildcat* ‘Chocolate Danish’ HCC/AOS (pollen parent). The cross was fast growing, early to flower, had good color and frequently produced two or more inflorescences per pseudobulb. McCully considered Catatante to be an ideal basis for further breeding (although it is still popular on many vendors’ sales tables) and used it with a wide range of pollen donors and as a pollen parent itself. Some of his well known Catatante hybrids are: *Oncostelopsis* Brazilian Sun (*Oncidopsis* Pacific Waters x *Oncostele* Sunup), *Oncostele* Hot Cats (Catatante x Suncat), *Oncostele* Hilo Firecracker with two clones: ‘Lucky Strike’ — a two-toned gold and white, and ‘Sangria’ — a deep carmine red, *Oncostele* Firecat

and *Oncostele* Rising Sun, a very rich, supersaturated red.

Other major crosses include *Oncidopsis* Fiesta, an *Oncidium fuscatum* hybrid with *Oip*. Pacific Waters, and several very successful *Bratonia* hybrids (*Brassia* × *Miltonia*) with the vibrant fuchsia-purple *Bratonia* Dark Star (with nine AOS awards) and *Bratonia* Shelob with six AOS awards.

Around 1995, McCully added *Miltoniopsis* to his breeding mix, successfully increasing floriferousness, size, color, ease of growth and potential fragrance when crossed with oncidiums. The result was improved structure, multiple and branching inflorescences, longevity, and most important to the pot culture industry, clean foliage and early maturity (18–20 months). Some of his *Catatante* hybrids were successfully crossed with *Miltoniopsis*, a good example being the yellow *Oncostelopsis* Sunkissed ‘Buttercup’. Others include *Oncidopsis* Francine (*Miltoniopsis* Maui Titan × *Edna*), flowering easily and early from flask with deep red clones ‘Roseglow’ and ‘Red Devil’, *Oncostelopsis* Mayor Billy (*Oncostele* Warm Memories × *Francine*), a breakthrough cerise red, improved on Nelly Isler, with double inflorescences, *Oncidopsis* Oranje (*Francine* × *Oncidium* Sanguine) with its clean foliage and bright orange, *Oncidopsis* Onolicious (*Francine* × *Miltoniopsis* Pearl Ono) which had the advantage of extra days in market duration and an improved structure leading to less damage in transit, and finally new colors such as clear pinks, *Oncidopsis* Bizzaro (*Celtic* Sun × *Francine*) and *Oncidopsis* Anthony Helemauna (*Francine* × *Miltoniopsis* Andres Charm) which combined clear red and yellows.

Currently James McCully continues to add much to our knowledge regarding the *Oncidiinae* as he continues to investigate how to incorporate desirable but elusive fragrance, and better understanding of the mechanism of controlled flowering, which if addressed would allow predictive year-round flowering. Our thanks to James McCully for developing such beautiful plants and we look forward to more in the future. For more information on McCully’s accomplishments read *Reflections of a Hybridizer* by James McCully in the *Oncidium Supplement to Orchids* (October 2016, p:21–27).

**Terry Root, the Orchid Zone, California** For many decades Terry Root and the Orchid Zone Nursery near Salinas, California were synonymous with excellence in slipper orchid breeding and

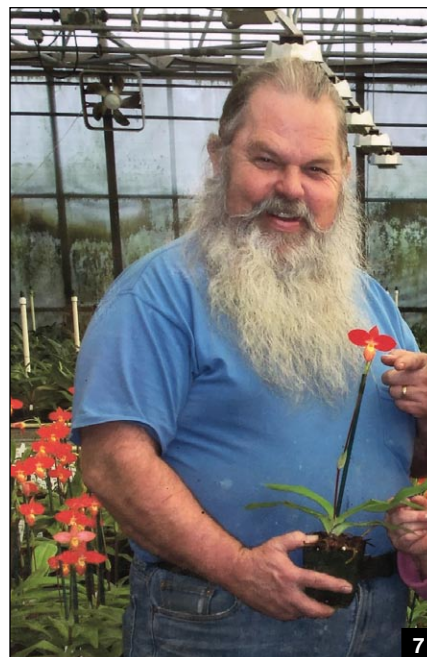
were usually acknowledged as the premier nursery in the world to go to for the best slipper orchids. Terry was responsible for producing major advances in many of the most popular sections in both *paphiopedilums* and *phragmipediums*.

**MAUDIAE-TYPES** When Terry started, the first generations of vinicolored Maudie-type hybrids had already been made, however, he made very many additional hybrids, selected for early maturation, and often flowered his plants two years from the flask. He also selected for size and was able to produce diploids that exceeded the size of tetraploid flowers of the time. This avoided the many years it took tetraploids to flower. He also line bred certain crosses improving them over several generations. *Paphiopedilum* Macabre is a good example. He selected for increased petal width and achieved magnificent flowers that have still not been surpassed. One example (and there were many others), *Paphiopedilum* Flame Arrow, was an excellent plant for its time.

**WHITE COMPLEXES** Terry utilized *Paphiopedilum* Skip Bartlett ‘White Pepper’ HCC/AOS with complex greens to create a series of white hybrids starting with *Paphiopedilum* White Knight and leading to *Paphiopedilum* Mystic Knight that were the envy of the slipper orchid world. Unfortunately, these hybrids tended to lose fertility. He then switched to slippers with the white form of *Paphiopedilum* Greyi in their background and made even better and larger white complex hybrids culminating in *Paphiopedilum* Icy Icy Wind which has superior flowers even beyond those of the earlier wonderful flowers.

**GREEN COMPLEXES** Terry Root also produced several exceptional standard green hybrids. Perhaps the most unusual was a cross he made of *Paphiopedilum* Greenvale with the green form of *Paphiopedilum* fairrieianum. The latter species has an unusual chromosome number, and its hybrids are usually sterile but *Paphiopedilum* Scarborough Faire proved to be fertile and produced *Paphiopedilum* Irish Eyes, itself fertile and has bred on. Other standard green lines led to *Paphiopedilum* Elfstone, *Paphiopedilum* Stone Lovely and *Paphiopedilum* Starstone, all considered to be superior flowers.

**UNUSUAL COMPLEXES** Perhaps Terry’s cross of *Paphiopedilum* Wawona Maiden (*Hellas* × *charlesworthii*) back to *Paph. charlesworthii* illustrates his ability to think outside the hybridizer’s box. This was a most successful hybrid producing



[7] Terry Root (left) with the late Helen Congleton admiring Terry’s outstanding strain of *Phragmipedium besseae*.

[8] St Croix Orchid Society members rescuing encyclias.

flowers with rare pink dorsal sepals. They varied in size from miniatures to very large with flower shapes resembling those of the species to large, rounded complex flowers.

**PARVISEPALUM HYBRIDS** One of the most popular primary hybrids that has been remade time and time again is Terry Root’s *Paphiopedilum* Magic Lantern (*delenatii* × *micranthum*). It is an ideal flower for both beginners and advanced growers. Terry also made the popular *Paphiopedilum* Norito Hasegawa (*malipoense* × *armeniicum*).

**MULTIFLORAL HYBRIDS** Although Terry was among the first to produce crosses between *Paphiopedilum* *rothschildianum* and *Paphiopedilum* *sanderianum*, his main contribution was in fact line-breeding *Paph. rothschildianum*. Using selected cultivars of this species and the skill to mass produce them allowed Terry to not only make them available to hobbyists at reasonable prices but also improve the quality of the flowers and shorten their time to maturity.

**PHRAGMIPEDIUMS** As with *Paph. rothschildianum*, Terry was able to transform *Phragmipedium besseae* into superlative plants. He line-bred these getting shorter generation times and improved flower shape and size. His tetraploid forms were magnificent and



SUSAN KRIGER

his improved *Phrag. besseae* were used to make wonderful hybrids as well.

These examples only touch on a few select groups but Terry Root made advances with other orchids as well. He has likely made more crosses than any other orchid nursery in this country having registered over 434 hybrids in the Cypripedium Alliance alone, and his registered hybrids have won over 1,400 individual AOS awards — an astounding record!

The AOS congratulates Terry Root on his tremendous achievement.

**DASSA AWARDS (2021)**

**Distinguished Affiliated Societies Service Awards (DASSA)** were presented to six Societies. These societies share certain characteristics:

- All have provided sponsorship to shows, public education projects, conservation efforts, workshops and local, regional or national orchid events over the long term.
- All produce and distribute outstanding newsletters that educate and inform not only their members but others interested in growing fine orchids.
- All significantly sustain and support an AOS judging center with financial resources, judges

and time.

- All Provide education to member growers and other orchid growers in their area.
- All Promote and support to the AOS organization in many ways.

**The St. Croix Orchid Society** was founded in March 1963 and celebrated its 50th anniversary in 2013. After the devastating effects of Hurricane Maria, the Society partnered with the Botanical Garden of the Virgin Islands to restore and repopulate the Orchid Garden House on the St. George Estate, a former sugar plantation which is now the botanic garden. In 2019, concerned with the diminishing populations of native orchids in the four Virgin Islands, the Society started collecting specimens of the 15 native orchids, housing them on the grounds of the Botanic Garden and in the orchid house. This is providing an opportunity to educate visitors and residents and will allow repopulation of island areas in the event of manmade and natural disasters. In December 2020, the Society took over the ruined sugar factory in the garden, creating the “1000 Orchid project,” dedicating it to the enslaved peoples who lived, worked and died on Estate St. George. Proceeding in stages, currently the Society is working on preparing the site, installing electrical

and irrigation systems and developing educational programs and signage for welcoming students and visitors to the site.

**Southeastern Pennsylvania Orchid Society (SEPOS)** is one of the longest-standing affiliates of the AOS; in 1945 it became the 5th local AOS affiliate, reaching 250 members at its peak and averaging today 120 members. In January, 2022 SEPOS celebrated its 75th anniversary. It has a large AOS commitment with many experienced judges, speakers who regularly are invited to present talks to other societies, and a commitment to participating in many shows in the mid-Atlantic region. It has adapted to the virtual world with virtual meetings and virtual show tables which frequently reach over 140 plants! Exceptional plants are acknowledged by certified AOS judges who discuss historical significance and cultural requirements. Net proceeds from shows are marked for conservation and the society has supported many worthwhile orchid conservation organizations, most recently collaborating with the Smithsonian and Longwood Gardens on a project to isolate, identify and bank mycorrhizal fungi and the seeds of *Platanthera* species to repopulate areas which have lost these



native orchids.

**The Tampa Bay Orchid Society** is a very active society in which many members are AOS judges or AOS national volunteers. Education is a high priority; members participate in neighboring society shows, installing and staffing an annual exhibit at the Florida State Fair, giving orchid workshops at local gardening centres and in annually contributing photos to the Internet Orchid Species Photo Encyclopedia. The Society has financially supported a conservation project on *Pogonia ophioglossoides* with the University of Florida and contributes to Conservation Alliance projects. One of their special projects is “Orchids in the Community,” a program to resuscitate and rebloom donated orchids and give them to assisted-living facilities and nursing homes to enjoy.

**The Southern Ontario Orchid Society (SOOS)** started in 1965 as the only orchid society in eastern Canada, and over the years has spun off or supported many societies in southern Ontario and Quebec province as well as two very active judging centers, the Toronto judging center and the Montréal judging center. It is the largest orchid society in Ontario, with a membership of around 200 attending its monthly meetings, its annual Valentine’s Day Show and a summer orchid extravaganza called the Summer Orchid Fest. Neighboring orchid society members are invited to Summerfest to share their friendship and enthusiasm, to listen to outstanding speakers and can purchase plants from vendors to whom they do not usually have access.

Conservation, particularly habitat preservation is a main tenet of the Society. In just the last 10 years over \$100,000, raised through successful shows, has allowed the Society to make generous contributions to conservation, mostly for the purchase of land in Ontario with native orchid habitat.

Over the years, the Society has been a staunch supporter of the AOS, both financially and through the promotion of AOS educational materials and AOS sanctioned shows. In 1998 the Society hosted a very successful joint AOS, MAOC, and Canadian Orchid Congress (COC) at



TBSP 2019 DISPLAY TEAM



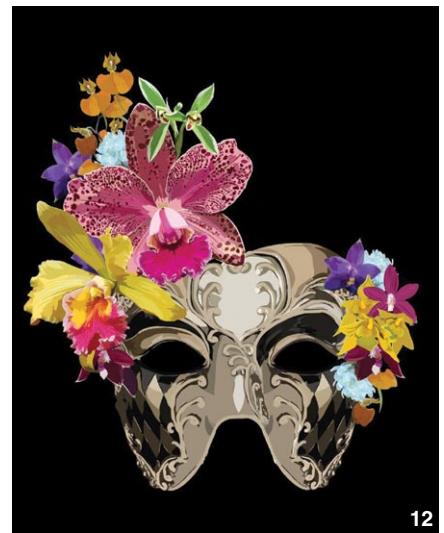
JEAN HOLLEBONE

which all the other alliances and focus groups were represented. Through the years the Society has held several other MAOCs, COCs and specialty events.

**The San Francisco Orchid Society (SFOS)** has grown from seven members in 1952 to over 250 today and plays a pivotal role, not only locally, but also through the use of its digital platforms and social media, it now serves a broader representation both across America and internationally.

Key events each year include the Pacific Orchid Exposition, a winter show and education event, and a smaller summer show and sale, Orchids in the Park, which continue the Society’s community outreach and public orchid education. The Society supports the AOS Pacific Central judging center both financially and through participation in the bimonthly judgments at PCJC and local shows. This society is fortunate to have an exceptional writer and photographer in Mary Gerritsen and Ron Parsons whose books on orchid culture have provided essential references to experienced and novice growers everywhere. Since 2000, the Society has donated over \$50,000 to support local horticulture, education and botanical gardens, research and international conservation efforts.

**The Orchid Society of Greater Kansas City** has the distinction, with the Orchid Society of Saint Louis, of cohosting the first World Orchid Congress which has become the international showcase for world orchid exhibition, education and conservation. In addition, the Society was a founding member of the Mid-America Orchid Congress (MAOC) and continues to be active in its programs, shows and educational and conservations efforts.



SFOS 22' SHOW POSTER

- [9] The Southeastern Pennsylvania Orchid Show (SEPOS) at the Oaks ExPo Center, Valley Forge, PA. Photograph courtesy of the Southeastern Pennsylvania Orchid Society.
- [10] Tampa Bay Orchid Society educational display at a Florida State Fair.
- [11] A whimsical display from the Southern Ontario Orchid Society show.
- [12] The San Francisco Orchid Society Orchid Masquerade poster for the 2022 Pacific Orchid Expo.
- [13] Setting up the Orchid Society of Greater Kansas City’s Halloween-themed display at the Kansas City Mid-America Show.

Each year the Society undertakes growing a project orchid plant. Members grow the same orchid and learn together about culture, supporting each other in the growing of the group plants. Their newsletter also features a section where blue ribbon winners discuss the care and culture of their winning plant, thus passing on knowledge to their members.

**Acknowledgments**

With thanks to Harold Koopowitz who provided the write-up of Terry Root, Laura Newton for her help and guidance on the Education Award and Ron McHatton who provided the write-up of Tom Mirenda.

— *Since 2011, Dr. Jean Hollebhone has held a number of positions on the Society's Board, including trustee, secretary and Vice-President. She is currently the immediate Past-Chair of the Society's Governance Committee and chairs the Awards Task Force which vets and recommends to the Board potential award recipients. She is an associate judge in the Toronto Judging Center and she grows orchids in Ottawa, Canada.*



COURTESY OF THE OSGKC

JEAN HOLLEBONE

**International Palm Society Biennial in Hawaii**

October 9<sup>th</sup>-15<sup>th</sup>, 2022

Experience the lush, tropical Hawaiian Islands with the International Palm Society (IPS).

The IPS will host its 32<sup>nd</sup> Biennial meeting on Oahu and the Big Island with an optional pre-Biennial tour to Maui. We shall tour the most important private and public palm collections and gardens, enjoy knowledgeable and entertaining evening speakers, visit a world-renowned nursery, and reconnect with palm and tropical horticulture enthusiasts from all over the world. It will be a week-long immersion in tropical horticulture at its best!

Registration opens March 1<sup>st</sup>, 2022 and is limited to the first 150 participants. For more information and the full itinerary, please visit the IPS website, [www.palms.org](http://www.palms.org).

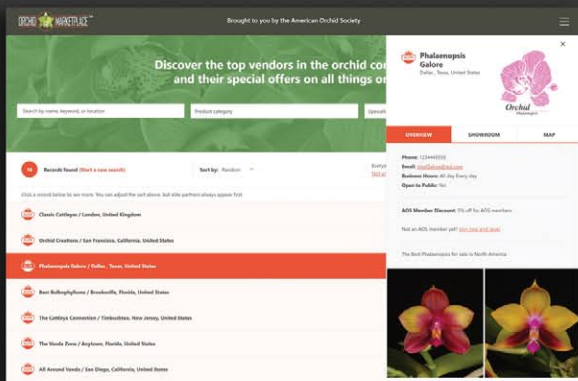



Photo by Dean Ouer

The American Orchid Society is pleased to bring you



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



 Find your favorite vendors  
(and discover new ones!)

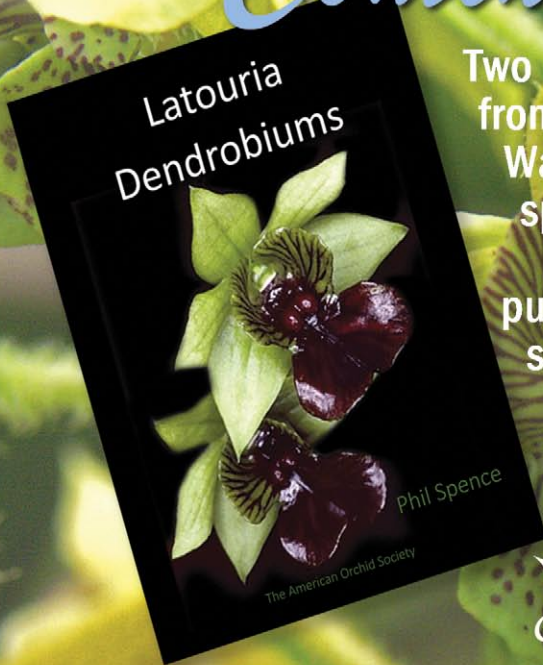
 Enjoy discounts exclusive  
for AOS members

 Mobile friendly

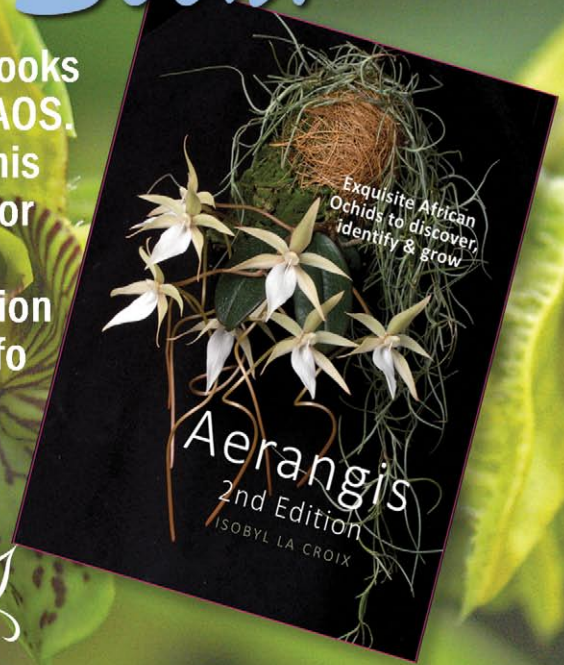
[orchidmarketplace.com](http://orchidmarketplace.com)

Where orchid growers discover orchid vendors from around the world

# Coming Soon!



Two new books  
from the AOS.  
Watch this  
space for  
pre-  
publication  
sale info



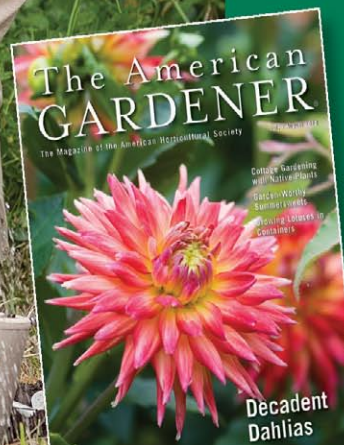
American Orchid Society  
Education. Conservation. Research.



The American Horticultural Society (AHS) is a national membership organization that supports sustainable and earth-friendly gardening.

Member benefits include:

- Six issues of *The American Gardener* magazine
- Opportunity to participate in the annual AHS Seed Exchange program
- Access to members-only area of website
- Free admission and other discounts at 300 public gardens and arboreta



Join the  
American  
Horticultural  
Society

**JOIN TODAY!**  
Visit  
[www.ahsgardening.org/join](http://www.ahsgardening.org/join)

# Slug and Bush Snail Problems?

## Solved!

Text by Chuck Oldenburg

I HAVE BEEN growing orchids for over 20 years and have had many struggles along the way: learning how much and when to water, figuring out the optimum light level to maximize flowers but not burn the leaves, battling with scale and other pests and coping with the depression of finding a favorite plant infected by a virus. However, no problem has given me the headache and struggle that I have faced with slugs and bush snails.

I built my greenhouse 23 years ago and shortly afterward slugs started to appear. Some moved in naturally, but I suspect many were stowaways in plants brought in from nurseries and fellow orchid growers. My greenhouse in western Pennsylvania is the ideal habitat for slugs and bush snails: it is moist, warm, and has a plethora of food throughout the four seasons. At the time, I did not think it was a big problem, after all they are small and move at a snail's pace (ha! ha! get it?). How much damage could they possibly do? Like a lot of other orchid growers, I had to find out the hard way — a lot.

We need to talk about the enemy. There are at least two species of slugs living in my greenhouse and at least one species of snail. The most predominant species is the gray garden slug, *Deroceras reticulatum*. It is a common agricultural pest and anyone who has ever grown a garden has observed these voracious creatures at work.

Less common in the greenhouse, but prevalent nonetheless, is the European black or red slug, *Arion subfuscus*. This species does not appear to be as prolific as the gray garden slug, but they take a fancy to freshly opened cattleya flowers. I have noticed other species of slugs to a lesser extent, but they do not appear to be as prolific as the gray garden slug or European slug or their numbers would be higher.

A lot of my pots are infested with bush snails (*Zonitoides arboreus*). At first, I did not pay much attention to them because they are small (3/16 inch [0.5 cm] in diameter) and rather cute. However, they are much like icebergs: you have to multiply what you see on the surface by 10 to get an idea of how many are actually in the pot. Bush snails feed on the green



tips of the roots. Enough of them will stunt the growth of the plant and lead to no flowering and a slow decline in the overall health of the plant.

With a background in engineering and good with my hands, I designed and built my 35 × 17 foot (10.7 × 5.2 m) greenhouse entirely by myself. However, I made a major error during the construction phase of my endeavor. I decided to fill the benches and line the floor with tons and tons of pea gravel. Little did I know that the pea gravel is a great habitat for slugs and snails and gives them a warm, moist place to hide during the daylight hours. I

- [1] Grey field slug (*Deroceras reticulatum*). Courtesy of hedera.baltica at <https://flickr.com/photos/125741467@N05/50965453392>. Wikimedia Commons.
- [2] European black or red slug (*Arion subfuscus*). Courtesy of Aleksandrs Balodis, Latvia. Wikimedia Commons.
- [3] Common garden snail (*Cornu aspersum*) feeding on a cattleya flower.
- [4] Slug and snail damage, especially that of bush snails, can be subtle. The damage to these roots was caused by bush snails.

GREG ALLIKAS

GREG ALLIKAS



have considered removing the pea gravel, but it provides a good heat sink, and it would be a monumental task to remove all of it again (and I am 23 years older now, so not as ambitious as I was then!). If I were to build another greenhouse, I would skip the pea gravel.

Slugs feed on the green algae that grows on the polycarbonate glazing and hard surfaces of the greenhouse. They do a reasonable job of keeping the algae down so the light level stays high; however, they do not stop with just eating the algae. They like to supplement their diet with the green growing tips of the roots, plump buds, and open flowers. I would gladly trade cleaning the glazing by hand than have slugs do it for me. It is maddening to go out to the greenhouse and find slug damage to a flower on a plant that you have spent the past year cultivating. The whole reason we grow orchids is for the flowers, so having a slug make a meal of your prize is quite insulting.

I have found slugs to be damaging to the overall health of orchid plants. In the spring when the lead pseudobulb starts sending out new roots, those fresh roots are especially delectable to the pests. Good flowering is contingent on a healthy plant and a healthy plant is contingent on healthy roots free from slugs' nibbling. If you get enough root damage, flowering is out the window.

**SLUG LIFECYCLE** We need to discuss the lifecycle of slugs so you can see why these creatures can be so prolific. First of all slugs are hermaphroditic, meaning they possess both female and male reproductive parts. For the orchid grower, this is bad news because all it takes is a single slug for things to get out of hand quickly. The average adult slug lays about 40 eggs in a clutch, and, depending on temperature, the eggs hatch in about a month. Within three months, those hatchlings mature and are ready to lay their own eggs. So, if one slug lays 40 eggs, and the hatched 40 slugs each lay their own 40 eggs and within five months your population has grown to 1,600 slugs. Three months later, those 1,600 slugs are ready to begin laying eggs again! Slugs can put bunnies to shame. Of course, not all the eggs are going to hatch and not all the slugs will live to maturity, but you get the picture. If slug populations are allowed to grow unchecked in the greenhouse, a disaster is brewing.

**THINGS I HAVE TRIED**

**COPPER** When I first realized I had a problem with slugs many years ago, I did some online research and found that

a chemical reaction happens when slugs crawl over copper and causes unpleasant feelings on their skin. Thus, they avoid moving over copper. I thought, "Great! I'll line the benches with copper to prevent the slugs from moving around the greenhouse. That will take care of the problem!" I located as much sheet copper as I was able to get at various scrap metal yards and lined the inside of the benches and hard surfaces. A few months later and a couple grand poorer, I realized this was a failure or, should we say, a "learning experience." The copper did prevent some movement from plant to plant but did not do anything to help or protect the plants that had already been colonized by slugs and bush snails. Those slug populations still needed to be eradicated. One side-benefit of copper though is that orchid roots do not stick to it, unlike pretty much every other hard surface on the planet!

**DIATOMACEOUS EARTH** Diatomaceous earth is advertised to be effective at killing slugs, so I decided to try that next. It is a powdered rock made of fossilized diatoms that have sharp edges. When slugs crawl over it, the sharp edges cut their bodies. In theory, this sounds like a slam dunk. In practice, I found the diatomaceous earth to be completely ineffective in a greenhouse setting. Not only is it time consuming and difficult to spread in an orchid greenhouse where leaves are sticking out in every direction, but it also becomes an ineffective mud after the first watering. There may be applications where diatomaceous earth is effective, but in my experience an orchid greenhouse is not one of them.

**BEER** We have all read about how slugs are fatally attracted to beer — just put out a tray with some beer in it and wait for the slugs to drown their sorrows after a hard night destroying orchid roots and never return. I bought a six pack of Milwaukee's Best, submerged a half dozen trays in various locations throughout the greenhouse and waited for nightfall. It felt like Christmas morning when I headed out to the greenhouse the next day to check the trays. However, I was completely disappointed when I found a grand total of zero slugs in all the trays combined. I experimented with this method for weeks: changing the location of the trays, trying different fill levels of beer and letting the beer age; however, no success. I did catch a few slugs, but I think it was just bad luck on the slugs' part to happen upon a tray of beer in its path. It is also possible that slugs just do not like Milwaukee's Best, they may prefer a good

Kolsch or maybe a New England IPA. I am not sure, never tried them.

**BAIT PELLETS** I have also tried numerous over-the-counter slug and snail bait pellets that are sold at garden centers. The pellets contain molluscicides (mainly metaldehyde), a poisonous substance that kills slugs and snails, as well as an attractant that makes the slugs and snails want to eat the pellets. I have tried many different brands of bait. They can be effective under the right circumstances, but I have found they do not last long in the high-humidity greenhouse environment. They become moldy in a matter of days and become a great site for botrytis spores to begin developing. The mold is unappetizing to slugs so they lose all efficacy quickly. In a 600 square foot (58 m<sup>2</sup>) greenhouse with over 800 plants, it is not cost effective to spread an expensive bait with a short lifespan to deal with slugs and bush snails. They can be effective for spot treatment, but population control is not practical.

**LIQUID BAIT** One of the most effective materials I have used is Force II Deadline Slug & Snail Killer. It is a ready-to-use liquid bait with metaldehyde as the active ingredient and is available in most garden centers. A teaspoon (5 ml) squirt of this thick, dark-gray liquid on the surface of the pot or on a hard surface in the greenhouse can be very effective at controlling slugs and snails. The liquid can be applied to the plant and roots without fear of damage; however, there are numerous drawbacks. First, my experience is that once the thick liquid dries in a few days, the attractant becomes inactive and requires reapplication. Second, the product itself is unsightly. It is a thick, dark-colored liquid that can easily be mistaken for bird poop. Third, the active ingredient metaldehyde is not only toxic to slugs and snails, but it is toxic to humans and other animals as well. Breathing the vapor can result in damage to the kidneys and liver in the long term. Obviously, this is a chemical that needs to be used with caution. Since I have children, pets and other guests that regularly visit my greenhouse, this was not a good, long-term solution for me.

**HUNT AND PICK** The most environmentally friendly method of slug eradication that I have found over the years is the "hunt and pick" method. Because slugs are most active at dusk and dawn, I would get up before sunrise armed with a flashlight and a cup of coffee and check all the surfaces and plants in the greenhouse. I would then repeat this process after sundown. There is definitely a lot of satisfaction in this method but

it is time consuming. After years, I was only able to reduce the slug population, not eradicate it. Damage to green root tips and flowers was still a regular and frustrating occurrence. There are other advantages to this method in that you get to know all your plants well while you inspect them each day. It is easy to stay on top of scale outbreaks, rodent problems, check for developing buds, etc. However, you need to have a lot of free time on your hands, which most of us do not. As an aside, I tried many times to convince my wife that slug hunting is a great bonding experience. I had absolutely no success with that tactic!

**THE SOLUTION**

After years and years of unsuccessful trying, I finally admitted to myself that I have a problem that I could not solve and did something completely uncomfortable for me: I reached out to other growers for advice. I contacted Dave Off of Waldor Orchids in Linwood, New Jersey. After a phone discussion on the matter, it became clear that we were experiencing similar problems and the control methods just were not cutting it. Dave reached out to some of his contacts in the commercial orchid-growing industry. One grower recommended we investigate commercial, agricultural slug baits with iron as the active ingredient. Some internet research indicated that an agricultural slug bait called Ferroxx made by a German chemical company, Neudorff, met the criteria.

Ferroxx contains 5 percent iron chelate, which acts as a stomach poison with proven performance regardless of the weather. The product can be used around people, pets and wildlife, which for me is a huge plus given the frequent visitors my greenhouse receives — from human beings to birds and rodents. Moreover, the rain-fast material is supposed to provide superior performance in moist greenhouse conditions, prolonging the useful life of the product and minimizing sites for botrytis fungus. The shelf life is 5+ years as well, so there is minimal concern about the product spoiling before it can be used.

I contacted Neudorff and was put in touch with the local salesman for my area of the country, Eric Maurer. Eric was kind enough to direct me to an agricultural supply store in eastern Ohio that stocked Ferroxx. I contacted the store and was pleased to find out they had inventory and it was only about \$2/lb (\$4.42 kg). I picked up a couple 50-pound (23-kg) bags and could not wait to try the product in the greenhouse.



CHUCK OLDENBURG

5

I applied the Ferroxx for the first time last August and am pleased to say after eight months, the material is working exactly as advertised. I estimate that the population has been reduced by 99 percent with little effort on my part.

My application method is as follows:

- Process: I use a handheld Scotts, grass-seed spreader to disburse the blue pellets across the benches, the walkways and under the benches. I try to cover all surfaces as evenly as possible because slugs do not travel far from home. Since they are not going to travel to find the bait, it is imperative to get it right to their front doorsteps.
- Volume: About six or eight of the highly visible blue pellets on the surface of the pot are enough to clear out all the bush snails and slugs that might be living in the medium.
- Cadence: Slugs and bush snails are determined and prolific pests. A few always slip through and it will not take them long to repopulate, so monthly reapplication is wise to ensure population control. A little goes a long way, and a 50-lb (23-kg) bag of Ferroxx is enough for years to come in my greenhouse.

Ferroxx has solved a lot of problems for me. I wish I had reached out for help years ago so I could have purchased this product sooner. Maybe I should call Dave Off and see if he knows anyone that has cured virus!



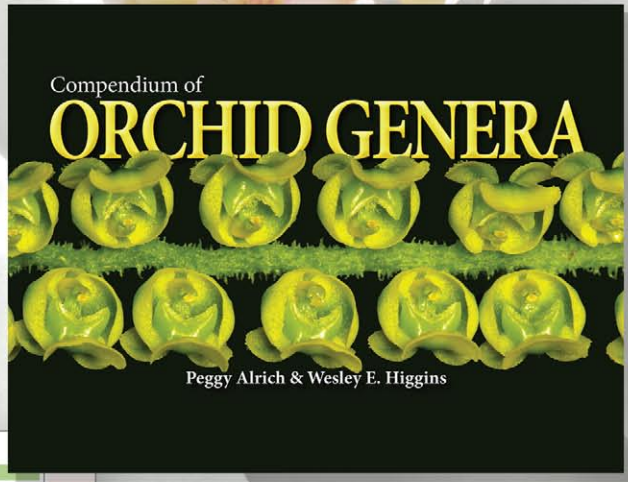
CHUCK OLDENBURG

6

[5] Ferroxx loaded into a garden spreader.  
[6] Ferroxx (bright blue pellets) sprinkled over the potting medium of this cattleya.

— Chuck Oldenburg has been growing plants since his early teens and caught orchid fever over 20 years ago. A 1991 Penn State graduate in chemical engineering, he tries to use his background to optimize his growing area, become a better grower and solve orchid growing problems (email [the\\_oldenburgs@comcast.net](mailto:the_oldenburgs@comcast.net)).

Presenting  
**The Compendium of Orchid Genera**  
 by Peggy Alrich  
 and Wesley Higgins



**Angraecum** Bory  
 (by Dr. August 13, 1841, 1846)  
**Epithet:** *Angraecum*  
**ETYMOLOGY:** From the Latinized form of the Malay word (*Angrak* or *Angrok*) for the epiphytic orchids that resemble *Ardisia* and *Tinida* in habit. The name *Angraecum* originated with Georg Eberhard Rumphius (1628-1702), who coined it from the word *Angrak*, a name or title given by the Sultans to "heraldical" plants, the meaning of which has not been discovered. From English literature (1631-1716) we learn that *Angrak* or *Angrok* is also the name used by the Javanese for these plants.  
**GENETIVE:** *Angraecum* *angraecorum* Bory  
 Illustration: *Angraecum* Bory

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

**Valid Angraecum Synonyms**

**Aerobion** Kamferer ex Sprengel  
 Bot. Voy. Sprengel, ed. 16, 34:279 & 716 (1836).  
**ETYMOLOGY:** Greek for air and life. Referring to the epiphytic habit of the plants.  
**LECTOTYPE:** *Angraecum superbum* (Thunberg) Sprengel (*Angraecum superbum* Thunberg) designated by Soto & Soto, Bot. 20:10 (1975).  
 Now recognized as belonging to the genus *Angraecum*. *Aerobion* was previously considered to include twenty-five epiphytes found in warm, mid elevation, montane forests of Madagascar and the Mascarene Islands.

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

**Archangraecum** (Schlechter) Schlachter, Mytnik & Goechko  
 Bot. Voy. Res. Conservation, 29: 11 (2013).  
**ETYMOLOGY:** Greek for spider and *Angraecum*, a genus of orchids. Refers to the long, spider-like segments.  
**TYPE SPECIES:** *Archangraecum rimboutum* (Thunberg) Schlachter, Mytnik & Goechko (*Angraecum rimboutum* Thunberg).  
 Now recognized as belonging to the genus *Angraecum*. *Archangraecum* was previously considered to include thirteen epiphytes found in cool, mid elevation, hill scrub and montane forests in found in northwestern Madagascar, Mauritius and Réunion.

**Bonnieria** Candolle  
 Bot. Voy. Res. 13: 416, 418-19 (1899).  
**ETYMOLOGY:** In appreciation of Eugène Marie Bonnier (1853-1922), a French botanist, editor of *Revue Générale de Botanique* and publisher of Candolle's notes on the orchids of Réunion.  
**TYPE SPECIES:** *Bonnieria* *None designated*.  
 Now recognized as belonging to the genus *Angraecum*. *Bonnieria* was previously considered to include two epiphytes found in mid to upper elevation, bushy montane rain forests of Réunion.

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

**A**



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.



**Order now for \$99.00\***

Available online at [www.aos.org](http://www.aos.org)

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

Prepared for download exclusively for Oval Orquidifils Valencians

COLLECTOR'S ITEM

# *Dendrobium amethystoglossum*

The Amethyst-Colored Dendrobium

By Judith Rapacz-Hasler



SYNONYMS: *Callista amethystoglossa* (Rchb. f.) Kuntze 1891; *Pedilonum amethystoglossum* (Rchb.f.) M.A.Clem. 2003

The genus *Dendrobium* was named by Olof Swartz in 1799 and is an amazingly diverse genus with over 1,000 species. The name *Dendrobium* comes from ancient Greek meaning *dendros* (tree) and *bio* (life) and refers to the epiphytic habit of most of its species. *Dendrobium* is the second largest orchid genus, behind only *Bulbophyllum*, and is one of the most widely distributed genera, growing as far north as Korea and Japan, throughout China, west to India and Sri Lanka, down through Peninsular Malaysia, Indonesia, Borneo, the Philippines, Guam, New Guinea and Australia, and as far east as Tahiti.

*Dendrobium amethystoglossum* is a beautiful, medium-sized, lithophilic, cool-to warm-growing species that thrives on mossy limestone cliffs at 4,600 feet (1,400 m) on Luzon Island in the Philippines, which is in fact, considered one of the centers of biodiversity for the genus and its relatives. The upright canes are 12–24 inches (30–60 cm) tall and have purple striations, and the slightly oblong 4-inch (10-cm) pale green, shiny and leathery leaves characteristically roll somewhat back at the apices. The leaves usually fall before flowering occurs, so look out for this signal when you are waiting for the beautiful flowers of this plant to appear. Inflorescences arise from nodes near the apex of the mostly leafless canes and reach 6 inches (15 cm) or more long with each inflorescence carrying 15–20 flowers. The sepals and petals are pure white and the contrasting lip is amethyst. The flowers are long-lived and fragrant.

I acquired a small plant of this species a few of years ago, having been fascinated by the lovely *Cattleya amethystoglossa* that was once part of our orchid collection. I set the plant in a piece of coconut shell and attached it to the shaded side of a palm tree in southern Florida. It never flowered, so a while back, I decided to detach it from the palm tree and moved it to another branch exposed to late afternoon sun. A few weeks later I noticed two little shoots arising from nodes at the apex.

This species may be grown mounted or in a pot or basket. It has an active growth period that lasts from spring through summer or even into fall in a warm to intermediate climate. When mounted, frequent misting will keep the plant happy. High humidity is necessary throughout



CARMEN JOHNSTON

2

[1] *Dendrobium amethystoglossum*; photograph courtesy of Andy's Orchids.

[2] *Dendrobium amethystoglossum* 'Bredren's Spectacular' CCE/AOS, exhibited by Phillip Hamilton and Bredren Orchids carried an estimated 2,800 flowers.

the year. When in active growth, plants benefit from regular fertilization using ¼ the recommended concentration. Before fertilizing, it is important to water the plant thoroughly to avoid potential fertilizer burn on the dry roots.

For potted plants choose a clay pot (with drainage holes at the bottom), that allows for adequate root growth for about two years. Hanging baskets are also ideal for successful culture. My potting is a blended mix of New Zealand medium-grade bark with added Kanuma (a volcanic rock), organic mushroom compost, volcanic pumice and sponge rock. During the active growing period, the medium needs to be moist and never dry out completely, but also must never stay soggy. Once a month flush the entire plant with abundant water to prevent the build-up of fertilizer salts.

After blooming, a period of dormancy kicks in from fall until the following spring. During this period, reduce the amount of water gradually so that the medium dries

up a bit. Do not fertilize during this period but maintain high humidity.

Morning or evening sun is beneficial to good flowering, and plants should be kept in intermediate to warm temperatures (55–77 F [15–25 C]). The species appreciates very bright, but filtered, light and should receive ample water from spring until late fall. The drier period lasts from two to four months. This species is native to cooler habitats, and although it grows in Florida, growers in somewhat cooler regions may see more reliable and abundant flowering.

*Dendrobium amethystoglossum* produces beautiful flowers with a welcoming fragrance and it looks heavenly when grown in a basket with its hanging inflorescences displaying the flowers at eye level.

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

Now Open!

## White Plains Orchids

Phone (914) 948-2064  
 Email whiteplainsorchids@gmail.com  
 Website www.whiteplainsorchids.com  
 @WhitePlainsOrchids  
 Address: 1485 Mamaroneck Ave.  
 White Plains, NY

# Outreach AOS Judging at an

By Jean Allen-Ikeson

JUDGES AND MOST of the AOS membership are aware of the judging centers that meet (see [aos.org](http://aos.org) for a list under Awards and Judging) or are invited to conduct AOS judging at AOS-affiliated society shows. Awards may be granted, for instance, for flower quality, cultural excellence, species of interest or merit, and, in the case of shows, to exhibits or floral arrangements. There is a third venue at which AOS awards may be granted, called an "Outreach" judging. These are held at the request of a local society and are unrelated to monthly judging at a judging center or shows. Outreach judging is a relatively new concept that began to be offered by the AOS in 2013 "as part of their ongoing commitment to engaging AOS-affiliated orchid societies and the orchid-growing public with the process of orchid judging" (Sect. 5.7 of the *Handbook on Judging*).

The intent is to be both practical by bringing judging to the grass roots and to be educational by familiarizing the members with the judging process. Outreach is usually held as a program for a society during which a group of judges evaluate plants brought in for AOS awards. Society members are able to see plants judged first hand and, after each plant is judged, may ask questions about the process. Judges should comment openly during evaluation.

While the *Handbook on Judging* suggests that it is the responsibility of the society to provide a computer with *OrchidPro* loaded for use during judging, in practice, most judges will (and should!) arrive with a laptop with *OrchidPro*. It is helpful to have *OrchidPro* projected on a screen so that the society can view what the judges are using in their evaluation: photos and descriptions of previous awards to that species or hybrid, parents of the hybrid, etc. If Internet is available, it may be useful to be able to switch to Kew's *World Checklist of Selected Plant Families* or the *Orchid Species Encyclopedia* for information on species or the Royal Horticultural Society's *Orchid Register* for hybrids. Note that projection of such programs or websites requires that the venue at least have a projector with cables and connectors that are compatible with the average laptop and hopefully provide Internet. As some venues do not have Internet, the ability to use the offline



GREG ALLIKAS

version of *OrchidPro* is essential.

Such a judging makes the judging process understandable and transparent for the public with the exception of an individual judge's score—only the range of scores and the average are announced. An important *advantage* for judging centers is that such a judging can be a useful tool to recruit new judges in the short or long term and stimulate a greater understanding of what judges do.

There are two short webinars that may be played while judges set up and prepare to judge: the "Process of Judging: What do Judges Look For" (November 15, 2021, webinar page, [aos.org](http://aos.org)) and "Come Join Us" (Feb. 25, 2022, webinar page, [aos.org](http://aos.org))—for both, use the filter at the start of "Recorded Webinars" and choose "Judging" to speed retrieval. "Come Join Us" explains what is involved in becoming an AOS judge and is a useful recruitment tool.

A suggestion for the "head" judge at an Outreach: have each judge view the plants submitted on the show table and pick the top five in order of preference to judge. Then the head should collate the judges' responses and start judging from the top of the list down according to the time allowed (note that judging, photography and award descriptions need be completed before the society must vacate the venue). Such prescreening should not be carried out at monthly judgments and is only done at Outreach events due to

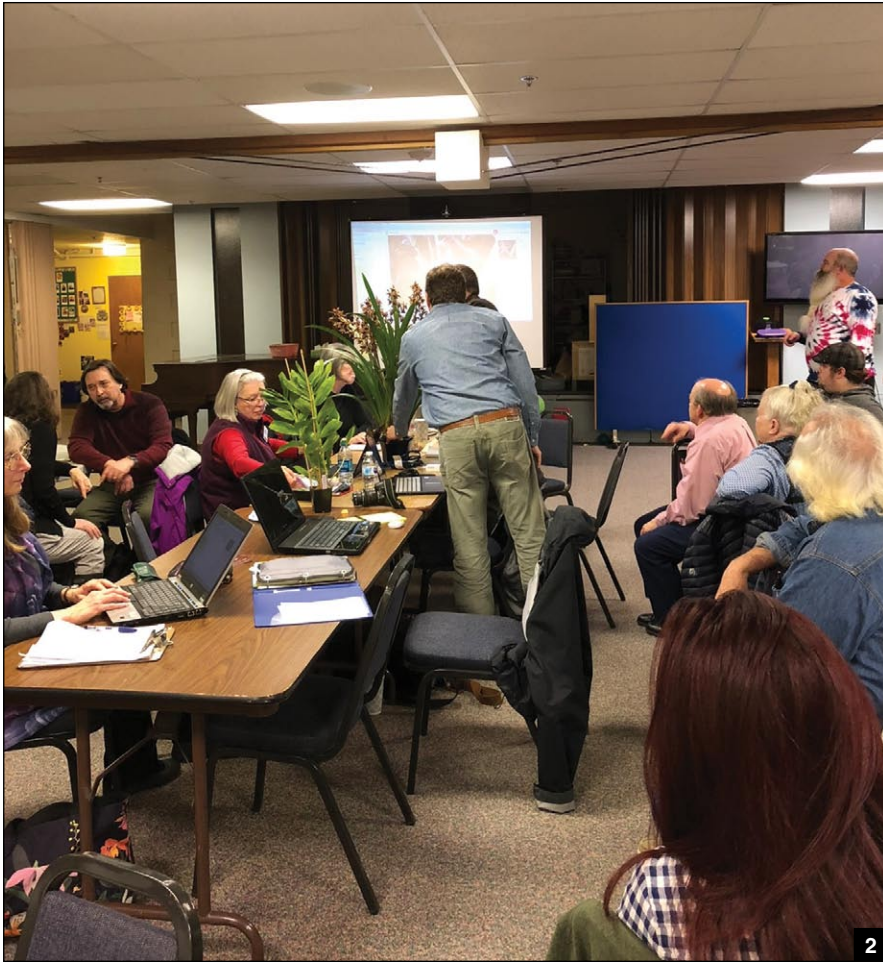
time limits. Plants are brought to society meetings to share what is in bloom but to judging centers specifically to be judged and fully evaluated—so these are different situations.

Who can have an Outreach judging? An AOS affiliated orchid society or orchid societies preparing to become affiliated with the AOS.

How does an Outreach differ from shows and monthly judging? These are in addition to monthly judgments and shows and do not and cannot replace them. There is no fee for an AOS-sanctioned Outreach judging although the same application form (available on the "Affiliated Societies" section of [aos.org](http://aos.org): "About Us; Affiliated Societies"; scroll to "Request AOS Judging for a Show") is used.

While there is no fee for this service, the society is not allowed to charge exhibitors directly for any expenses for the meeting or official award photography and must secure and pay any expenses for the services of a photographer (speak to the local judging center chair for suggestions). However, publicity for Outreach is the responsibility of the affiliated society; it is not advertised by the AOS, although they might request a center to add an announcement on a Facebook or web page, if available. Note: societies cannot limit submissions or attendance to society members or deny any judge from any center the ability to

# Affiliated Society



SUSAN HEUER

judge at an Outreach.

Application should be made up to two months in advance. It is the responsibility of the orchid society to obtain the commitment of at least five judges, of which three must be accredited, and approval of the date by the center chair. It is preferable that dates do not conflict with monthly judging or shows if sufficient judges are to be obtained. A list of local judges may be acquired from the closest judging center (or centers if more than one is within reasonable driving distance). Once an application is complete and approved, it is the responsibility of the center chair to provide forms, award stickers, etc. to the head judge at the Outreach.

International societies may request an Outreach judging but they must abide by the same rules as US and Canadian societies with local judging centers and the AOS.

- [1] An outreach judging event held at the former headquarters of the American Orchid Society, Delray Beach, Florida.
- [2] An outreach judging event held for a local Portland, Oregon orchid society.

— *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).*

## 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  $\frac{3}{4}$  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.

### 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](http://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.

# Jamaica: Land of Extremes “Yah Man”

Text by Thomas Mirenda/photographs by Thomas Mirenda unless otherwise credited

THE ORCHID WORLD dazzles us with its biodiversity. Although many plant families exhibit similar variability as they adapt to all the available habitats and ecological niches, orchids do this in the most exceptional and spectacular ways, often within close proximity. On the fantastic island of Jamaica for example, one can drive from searingly hot desert-like conditions to cool, misty cloud forest in just an hour or two. Incredibly beautiful endemic orchids have evolved in these disparate, yet contiguous juxtapositions. In our desire to understand the requirements of orchids, it is essential to experience the plants in nature. Although books can give great advice, visiting habitats in person brings insights and impressions words alone cannot.

In my orchid travels, I have had the pleasure of making really great friendships with individuals that share passion and ideology. One such friend is Claude Hamilton who owns and operates Hamlyn Orchids in Jamaica. At his gracious invitation, I visited the island this past February, and got the chance to see habitats of plants I have long admired and coveted, but did not necessarily understand their needs. One such genus often misunderstood is *Broughtonia*. Little jewels of the plant world, these wonderfully colorful *Cattleya* Alliance relatives are usually overwatered and kept in cooler than optimal conditions. I always knew they should be grown warm and “on the dry side” but there was a disconnect in my mind about what that really meant. This was brought home in graphic detail as Claude took me to the extreme lowland habitat of *Broughtonia sanguinea* in the southernmost part of the island near Jackson Bay. Endemic to Jamaica, this is probably the species most closely associated with the island, and it is a fascinating plant.

Its habitat, just slightly uphill from the seashore, was extremely hot and dry, growing among agaves, cacti and thatch palms in scrubby dry-forest conditions — a rather arid place indeed. Local guides are a must for exploring places you have never been before and Claude arranged for his friend and guide, Macca, to take me into the habitat. “Macca” means prickly in Jamaican parlance, but he turned out to be the kindest and sweetest guy, carefully



watching to ensure I avoided contact with the other prickly denizens of this spiny forest. I would never have seen as much as I did without him. *Broughtonia* plants occur all over lowland Jamaica and receive differing amounts of rainfall, heat and air movement, but all drain thoroughly on their lightly shaded branches and trunks and remain quite dry even after a squall wets them down. Successful growers put them on well-draining wooden mounts and rafts or in very small pots with barely any medium and most roots exposed. Do

not make the mistake of overpotting or overwatering these species. The same is true of the other broughtonias such as *Broughtonia negrilensis* and their natural hybrid *Broughtonia* × *jamaicensis* as well as the Cuban species, *Broughtonia lindenii*, the rarely cultivated *Broughtonia cubensis* and my all-time favorite, *Broughtonia ortgiesiana* with its deep purple-magenta coloration, superb form and floriferousness. Armed with this new knowledge and informed by personal observation, I expect to grow these plants





4

much more proficiently in the future.

Ever the gracious host, Claude asked me about plants I wanted to see while visiting. My answer was immediate: *Neocogniauxia monophylla*. This beautiful plant was long thought to belong to Laeliinae (cattleya relative) due to its showy and fiery orange-red flowers, but despite many attempts it has never been successfully crossed with any other members of the Cattleya Alliance. Recently, DNA analysis has shown us that it is more closely allied to the pleurothallids than any other group, and that the flowers are an extreme adaptation likely to attract hummingbirds. I have been fascinated by the genus *Neocogniauxia* since I first saw its illustration in the little *Golden Book of Orchids* when I was 8 years old! Something about it just captured my imagination and I simply had to see its habitat for myself and hopefully find some plants to photograph. On the spot, Claude got on his phone, called a friend, Sindrey, and arranged for us to go into the Blue Mountains the following morning to a place known as Faerie Glade. I might have thought better of this request had I known more about the habitat. I am no longer the robust, intrepid orchid explorer I was in my youth. While I was completely unfit to delve into this rugged, steep, rocky, misty and dense jungle, my extreme plant lust propelled me forward to an area I would never have dared enter on my own. Indeed, the trail seemed to have been abandoned as if no



5

one had ventured there for several years and had to be “re-opened” by Sindry with his machete. Believe me when I tell you, this was no easy task!

As we ascended to the summit of Faerie Glade, the air cooled considerably and a misty breeze enveloped us. While searching we came across several unusual orchids including species of *Elleanthus*, *Scaphyglottis*, *Lepanthes*, pleurothallids, *Spiranthes* and others. As the time sped by in this wonderland, it seemed despite our travails, we would not see the super-rare neocogniauxia plants this particular day. But Sindrey was determined that this opportunity would not elude us. He decided to climb one of the emergent trees, and there in full sun but bathed in mist, were the plants we were seeking.

- [1] The view from the cool and misty Blue Mountains where the elusive *Neocogniauxia monophylla* grows in a magical place called Faerie Glade.
- [2] The wildly contrasting habitat of *Broughtonia sanguinea* is an extremely arid place just adjacent to the seashore, full of agaves, cacti and thatch palms.
- [3] Macca scouting the first of many broughtonia sightings in this unique habitat.
- [4] Standing proudly with the cultivated broughtonias in his home garden, Macca is a fine orchid guide and enthusiast in his own right.
- [5] A roadside eatery on the way down from the Blue Mountains was good place to renew and refresh after a day of vigorous orchid hunting.



Although not in flower, it was a peak experience and revelation for me to be there with these lovely plants that had captured my imagination since boyhood. It is reassuring to know they continue to thrive in their unique and very specific habitat even during the age of climate change.

So, just one day apart, I got a genuine lesson in ecology and biodiversity. A lesson that will inform my understanding of culture. Yah Man! These outstanding experiences taught me not just about the culture of these spectacular orchids, but also of the beautiful culture of the kind and welcoming people of Jamaica, especially the country folk, who so freely give of their time, knowledge, and spirit to guide a weird orchid nut like me to crazily unlikely places in search of the unique plants that occur only there on their magical Island. I will be forever grateful to have had the opportunity to learn from you.

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



[6–7] Although I did not get to see them in bloom on this trip, you can see why *Neocogniauxia* species are so universally revered; they are exceptionally beautiful. The genus contains only two known species, *Neocogniauxia monophylla* (6) and *Neocogniauxia hexaptera* (7). Both photographs were taken in cultivation by Eric Hunt. The inset photograph shows what the diminutive plants look like.

**Do you love Orchids?  
Have you ever thought about becoming an  
American Orchid Society Judge?**



**Come learn with us  
[judges@aos.org](mailto:judges@aos.org)**



Miss Drake Del.

Pub<sup>d</sup> by J. Ridgway. Piccadilly Feb 1. 1838.

# *Bulbophyllum* section *Cirrhopetalum*

by Wesley Higgins and Peggy Alrich

East Africa, India, China, Japan, East to Southwestern Pacific



*Bulbophyllum* sect. *Cirrhopetalum* was originally described by Lindley in *Genera and Species of Orchidaceous Plants* (1830, *nom. cons.*) as genus *Cirrhopetalum*. In 1861, Reichenbach f. (1861) reduced the genus to a section of *Bulbophyllum* in *Annales Botanices Systematicæ*. The taxon name comes from Latin *cirrus* (fringe) and Greek *petalon* (petal), hence meaning fringed-petaled.

## DEFINITION OF SECT. CIRRHOPETALUM

Dorsal sepal and petals hirsute or glabrous without paleae (appendages or fringe); in fully mature flowers the lateral sepals project from a divergent base twisted once so as to form a convex blade united through conjoined outer margins and thus forming a tunnel-like passage around the lip.

## DESCRIPTION

Circa 45 epiphytic species with creeping rhizomes in forests up to 5,900 feet (1,800 m) elevation; distributed from Central east Africa, Madagascar, India, and eastwards to the southwestern Pacific Islands. Pseudobulbs are distinct

compared to the size of the plant sprouting at basal node. Leaves thick, persistent, single-leaved. Inflorescence developing from basal node of pseudobulb; many-flowered, subumbellate raceme with flowers spirally arranged; rachis thickened, round in section. Floral bracts shorter than the flowers. Flowers resupinate. Dorsal sepal free; lateral sepals 2–5.5 times as long as the dorsal, twisted near the base so that the upper margins turn inward, adnate along their upper margins. Labellum mobile on a thin ligament, undivided, margins glabrous, thick and solid. Anther abaxial with a small crest not overlapping the anterior margin; pollinia four.

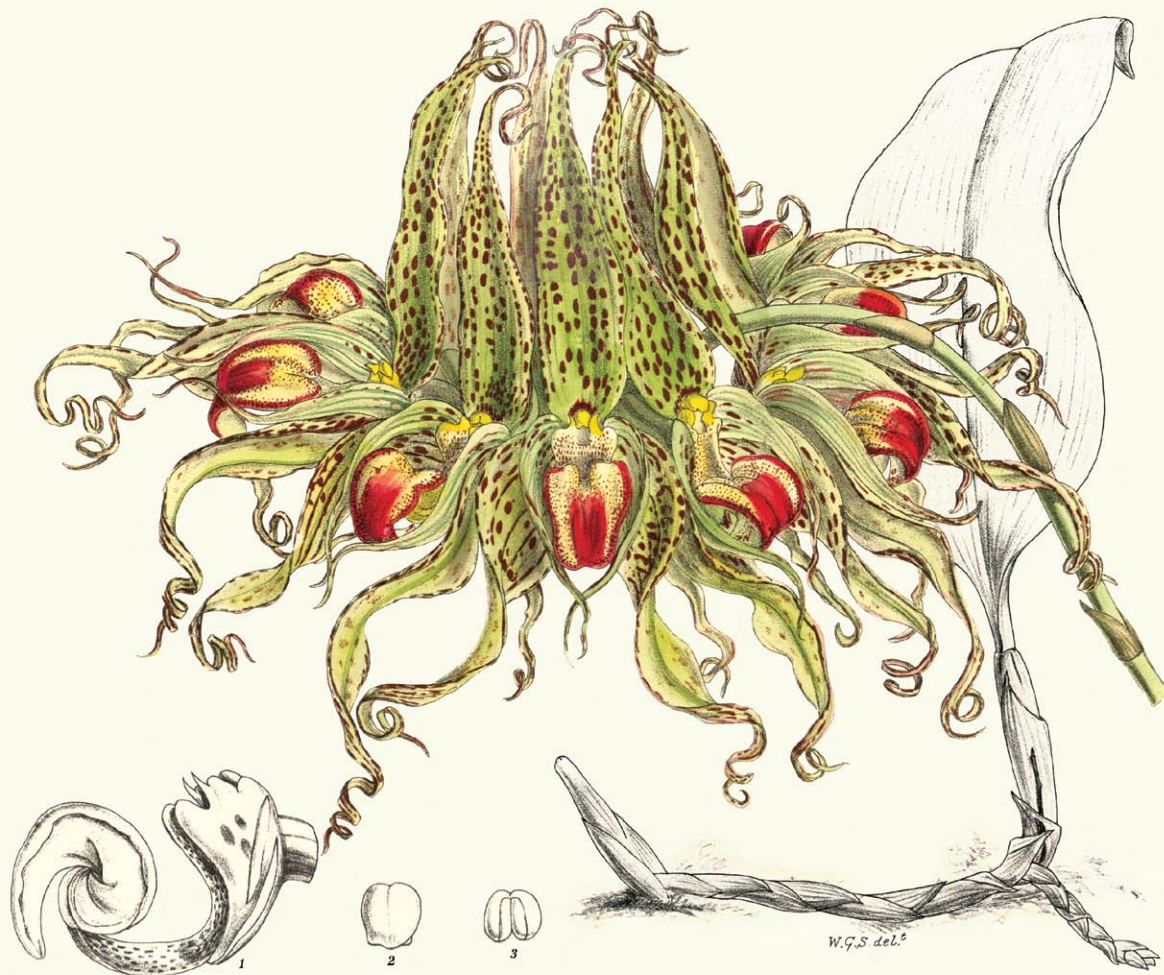
In a robust phylogeny of the *Cirrhopetalum* Alliance using DNA sequence data, Hu et al. (2020) found that the *Cirrhopetalum* Alliance is a well-supported monophyletic group characterized by clear synapomorphies. However, previous taxonomic subdivisions of *Cirrhopetalum* proved to be polyphyletic or paraphyletic (nonmonophyletic).

## CULTURE

*Cirrhopetalums* are easy to care for and can be fast growing under ideal conditions. The key is to keep them moist between waterings. The recommended water-retentive potting media are sphagnum moss, coconut chips, fibers or tree fern. Plants prefer moderate to bright light; 2,000–3,500 foot-candles (2.2–3.8 lumen/cm<sup>2</sup>). Most species are warm growing from humid rain forests (humidity should be kept at 60%) and should have a night temperature of at least 65 F (18 C). Use a balanced fertilizer at quarter-strength once a week during the summer; reduce to once a month in the winter.

## References

- Hu, A.-Q., S.W. Gale, Z.-J. Liu, S. Suddee, T.-C. Hsu, G.A. Fischer, R.M.K. Saunders. 2020. Molecular Phylogenetics and Floral Evolution of the *Cirrhopetalum* Alliance (*Bulbophyllum* Orchidaceae): Evolutionary Transitions and Phylogenetic Signal Variation. *Molecular Phylogenetics and Evolution*, 143:106689.
- Lindley, J. 1830. *Cirrhopetalum* Lindl. *Gen. Sp. Orchid.* Pl. 45, 58.
- Reichenbach, H.G. 1861. *Bulbophyllum* sect. *Cirrhopetalum* (Lindl.) Rehb.f. *Ann. Bot. Syst.*, 6:259.



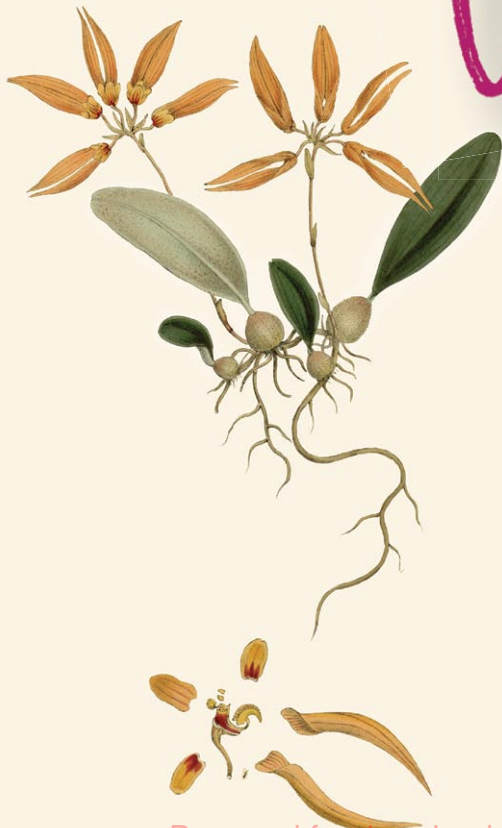
M.S. del./J.N. Fitch lith.

L. Reeve &amp; Co. London.

Vimosey, Brooks, Day &amp; Son. Ld. Imp.

2

# Cirrhopetalum



3

## ANTIQUÉ PLATES

[1] *Bulbophyllum longiflorum* as *Cirrhopetalum thouarsii*,  
*Botanical Register*, 24: t.11 (1838).

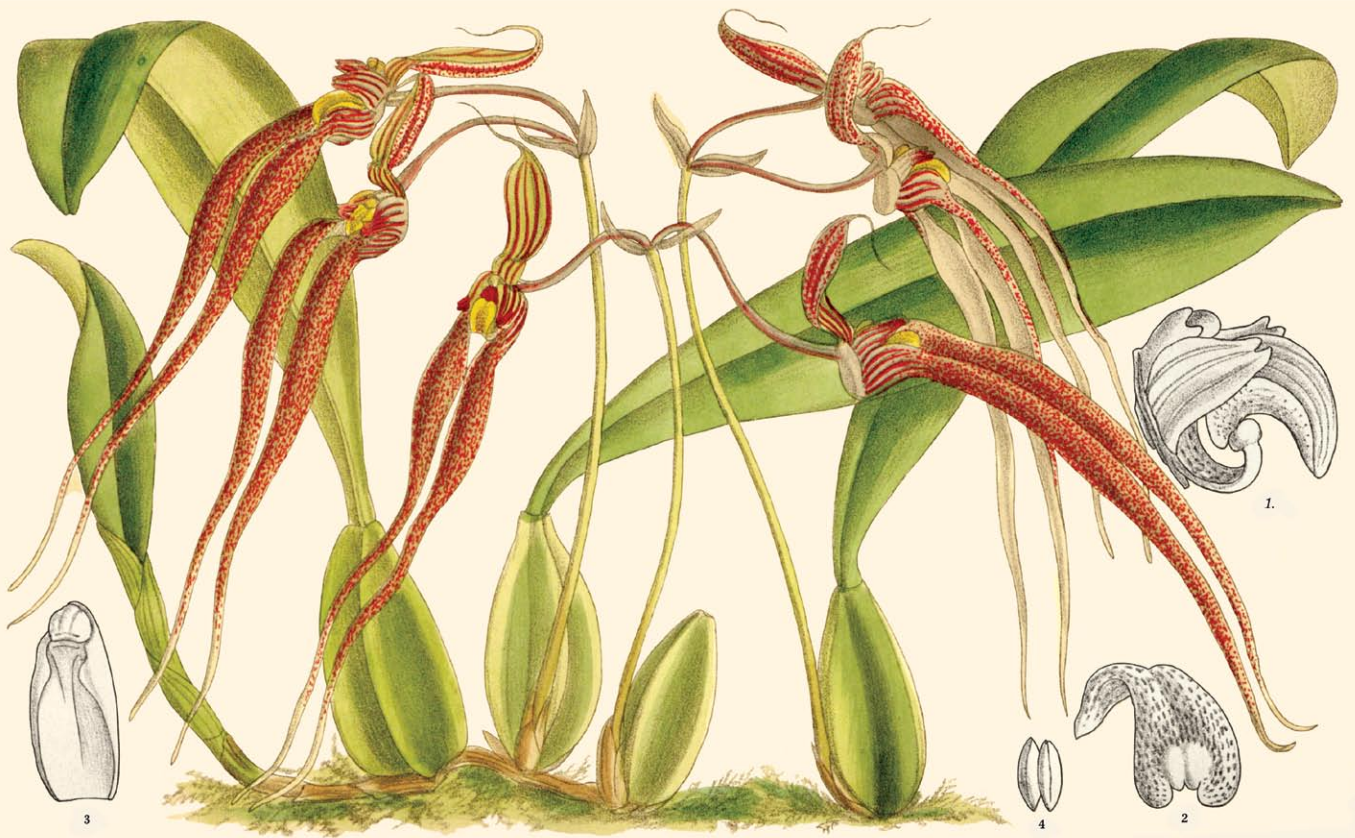
[2] *Bulbophyllum ericssonii* as *Bulbophyllum binnendijkii*,  
*Botanical Magazine*, 134: t.8187 (1908).

[3] *Bulbophyllum muscicola* as *Cirrhopetalum wallichii*, *Plantae  
Asiaticae Rariores*, 1: t.67 (1830).

[4] *Bulbophyllum biflorum* as *Cirrhopetalum biflorum*, *Botanical  
Magazine*, 136: t.8321(1910).

[5] *Bulbophyllum mastersianum* as *Cirrhopetalum  
mastersianum*, *Botanical Magazine*, 139: t.8531 (1913).

[6] *Bulbophyllum ornatissimum*, as *Cirrhopetalum  
ornatissimum*, *Orchid Album*, 8: t.369 (1889).



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

L. Reeve & Co London.

Vincent Brooks, Day & Son Lit<sup>d</sup> imp.

8327

4



8531

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

Vincent Brooks, Day & Son Lit<sup>d</sup> imp.

5



PL: 369.

J. Wiggins Fitch del et lith.

CIRRHOPELALUM ORNATISSIMUM.

S.S. Williams Publ.

6

# Orchids of Bhutan

*Cypripedium*

PEM ZAM, STIG DALSTRÖM, CHOKI GYELTSHEN, NIMA GYELTSHEN, KEZANG TOBGAY



1



# ZAM, DALSTRÖM, GYELTSHEN, GYELTSHEN AND TOBGAY

THE GENUS *CYPRIPEDIUM* L., in Bhutan is currently represented by five very different looking but in various combinations sympatric species: *Cypripedium cordigerum* D. Don, *Cypripedium elegans* Rchb.f., *Cypripedium guttatum* Sw., *Cypripedium himalaicum* Rolfe and *Cypripedium tibeticum* King ex Rolfe. The genus itself is widespread over the entire Northern Hemisphere and currently consists of about 53 species, some with numerous “varieties,” and several alleged natural hybrids (World Checklist of Selected Plant Families [WCSP] 2021). When going through this list of names it becomes clear that some widely distributed species, such as *Cypripedium calceolus* L., *Cypripedium macranthos* Sw. and *Cyp. tibeticum* King ex Rolfe, appear more like “superspecies,” with many more or less similar “forms,” sometimes accepted as distinct species, sometimes as “varieties,” and sometimes just as an expression of natural variation. This has caused a plethora of taxa where distinguishing features, published illustrations and descriptions are causing confusion rather than clarity. A basic treatment of the genus, dealing with the history, biology, classification and other complex issues was published by Cribb (1997), which we refer to here for additional information. Other and more recent treatments have also been published, and it appears safe to conclude that the last word about the evolution and taxonomy of this constantly enlarging and rather “fluid” genus has yet to be spoken.

*Cypripedium cordigerum* was originally described by David Don in his *Prodromus Florae Nepalensis* (Don 1825). The description is based on a Nathaniel Wallich collection from the Gosainthān Mountain area in Nepal (also called “Shishapangma”), which is the 14th highest mountain in the world, with a peak at ca. 24,000 feet (8,027 m) (Wikipedia 2020). *Cypripedium cordigerum* is distributed from Pakistan in the west, throughout the Himalayas to western China, growing as a terrestrial at high altitudes. In Bhutan it appears to be well distributed and can be found in wet and shady woods, open *Abies densa*, *Picea spinulosa*, *Pinus wallichiana*, and *Tsuga dumosa* forest; on outskirts of forests; or in open glades, in *Caragana*, *Juniperus* and dwarf bamboo scrub, on south-facing slopes, at 6,300–12,000 feet (2,100–4,000 m). Flowering occurs from May through August (Pearce and Cribb 2002). The beautiful flower with a snowy white lip renders this attractive orchid easily identified among the Himalayan



STIG DALSTRÖM



KEZANG TOBGAY

species. It is sympatric with *Cyp. guttatum* in at least one area in central Bhutan, but no hybrids are known. The plant featured here was photographed on June 9, 2021 at ca. 8,400 feet (2,800 m), growing in a mixed coniferous forest together with various ferns and an *Euphorbia* species.

*Cypripedium elegans* was originally described by Heinrich Gustav Reichenbach (1886) and is based on a collection by one of George King’s collectors in Tibet, China (Pearce and Cribb 2002). The original collector appears to be a Dr. “Kirsch” (?), as his name appears on an isotype sheet in Vienna (no. 13368). The plant was apparently found “2 days N. Phun,”

- [1] Habitat of *Cyp. cordigerum* along a trail in the Haa district. Photograph by Pem Zam.
- [2] The Chelela pass is home to several *Cypripedium* species, as well as a plethora of attractive alpine plants, and dead trees caused by a forest fire.
- [3] The forests in the Mongar district are dense with various conifers and *Rhododendron* species. This is also where *Cyp. cordigerum* and *Cyp. guttatum* can be found.

on August 3, 1878. *Cypripedium elegans* is not a competitor of the former species in terms of attractiveness, although certain “cuteness” can be attributed to its dwarfed habit with a flower that does not fully open. The miniature size makes this species difficult to spot among many other green-leaved plants, but once the eyes have adjusted to what they are looking for, larger populations can appear almost “magically” among grass and other herbs. *Cypripedium elegans* is distributed from northwestern India throughout the Himalayan range to western China. It appears to favor similar habitats as for the former species and grows on limestone at about 8,400–13,200 feet (2,800–4,400 m).

A very different-looking species, but also rather small in growth habit and flowering, is *Cyp. guttatum*. This species has an impressive global distribution that stretches from the Ural Mountains in Russia, across the Asian continent, including the Himalayan range, to northwestern North America. It was first named as “*Cypripedium guttatum*” in *Kongliga Vetenskaps Academiens Nya Handlingar* by Swartz (1800), who was a pupil of Carolus Linnaeus. The type plant, however, was originally collected in eastern Siberia, Russia, by Johann George Gmelin, or by one of his collectors, and included in his *Flora Sibirica* as “*C. calceolus. Calceolus minor...*” (Gmelin 1747). Linnaeus included this species as “*Cypripedium calceolus*  $\delta$ . *Calceolus minor...*” in his *Species Plantarum* (1753). It was based on Gmelin’s specimen, but also on an illustration and description by Amman (1739, Tab. 22), which also was cited by Gmelin.

Despite the impressive area of geographic distribution, *Cyp. guttatum* is so far rarely encountered in Bhutan. The reason may be because few people look for it, or bother to report sightings, but also because without flowers it is very difficult to spot. So far, the authors, who constitute the members of the orchid team at the National Biodiversity Centre in Serbithang, Thimphu (NBC), have only been able to visit a single and very small group of plants in the Mongar province of central Bhutan. The growth habit of this delicate orchid consists of an elongate subterranean rhizome that divides easily under favorable conditions, so what appears to be a small (or large) population can be represented by a single clone. This seems to be the case with the only photographically documented Bhutanese plants. Without a doubt, however,



- [4] *Cypripedium cordigerum*, from the *Annals of the Royal Botanic Garden, Calcutta* 9(1): pl. 151 (1906).
- [5] *Cypripedium cordigerum* growing in a surprisingly dry-looking habitat in the Haa district.
- [6] *Cypripedium elegans*, from the *Annals of the Royal Botanic Garden, Calcutta* 8: pl. 446 (1898).
- [7] A large group of the difficult-to-spot *Cyp. elegans*.
- [8] The rather unimpressive plant of *Cyp. elegans*, from the Thimphu district; photographed by Nima Gyeltshen. Close-up of an open flower by Kezang Tobgay.

PEN ZAM

KEZANG TOBGAY

additional and larger populations most certainly exist, but a dedicated search effort is needed to find them. *Cypripedium guttatum* is a dainty and very attractive species with its white and purple-spotted flowers. Its wide distribution and occurrence and adaptations to various habitats also make this species relatively easy to cultivate if acceptable conditions can be provided (Dalström, pers. exp.).

*Cypripedium himalaicum* was originally described by Robert Allen Rolfe in 1892, based on a plant that was collected in Sikkim, India, by Joseph Dalton Hooker and Thomas Thomson. It was first believed to be a version of *Cyp. tibeticum* (Cribb 1997), with which it is sympatric in Bhutan and possibly elsewhere in the Himalayan region, but the flowers are quite different when viewed side by side. These two species also flower at the same time of the year, early June to July, and natural hybridization is therefore a possibility. Cribb (1997) mentions that some specimens in herbaria from the Himalayas show intermediate features such as a somewhat pubescent ovary (a more typical *Cyp. himalaicum* feature), which may be an indication of natural hybridization. But some plants of what is considered to be *Cyp. tibeticum* in China also have a pubescent ovary, as well as some of its close and confusing relatives that sometimes are treated as distinct species. But it is not the ambition here to fall into the quagmire of Chinese *Cypripedium* taxonomy, which most likely will demand an in-depth molecular study to try and figure out where and if any specific delineations should be drawn. Further field studies are also required to investigate whether natural hybridization indeed is a factor in any of the Bhutanese *Cypripedium* populations. The plants featured here were photographed on June 23, 2021 at the Chelela pass between the cities of Haa and Paro, growing in bright light on limestone outcroppings at ca. 11,500 feet (3,843 m) together with a plethora of alpine plants such as *Gagea serotina*, *Juncus* cf. *thomsonii*, *Anemone rupicola* and *Rhododendron lepidotum*. Blooming plants of the spectacular blue poppy *Meconopsis horridula* were also seen nearby. *Cypripedium himalaicum* appears to be a rather commonly occurring species and is reported from many areas in Bhutan, growing among grass-clad limestone boulders, in crevices, among small shrubs on steep hillsides, in alpine pastures and in partial shade in subalpine *Betula* forest, at 8,400–14,700 feet (2,800–4,900 m). It flowers in May to



STIG DALSTRÖM



10



11

July (Pearce and Cribb 2002).

*Cypripedium tibeticum* is the real taxonomic “troublemaker” because of its polymorphic appearances, with some of the different-looking forms being described as separate species or “varieties.” But based on field observations in the Sichuan province of western China, some of these “forms” merge into each other even in the same population, making it very difficult to distinguish them convincingly and consistently from each other (Dalström, pers. obs.). Perhaps the *Cyp. tibeticum* complex is better off treated as a single “superspecies” with numerous geographic forms or “subspecies.” An explanation for this polymorphic appearance may be that they appear to be pollinated by bumblebees — at least that is the case in cultivation. Bumblebees of several species are very attracted by *Cypripedium*

[9] Probably the only photographically documented population of *Cyp. guttatum* in Bhutan. From left: Kezang Tobgay, Ngawang Gyeltshen, Choki Gyeltshen. Photographed in the Mongar district. Close-up photograph by Kezang Tobgay. *Cypripedium guttatum* is both attractive and easy to grow if the right conditions can be provided.

[10] *Cypripedium guttatum*, as *Cyp. calceolus minor* from Amman’s *Stirpium rariorum in Imperio Rutheno Icones et Descriptiones* (1739).

[11] *Cypripedium himalaicum*, from the *Annals of the Royal Botanic Garden, Calcutta* 8: pl. 448 (1898).

# ZAM, DALSTRÖM, GYELTSHEN, GYELTSHEN AND TOBGAY

flowers, and when several species and hybrids are cultivated near each other, the bees go from one plant to another without seemingly caring about color, size or shape, or our elaborate taxonomic applications. Photographic documentation of bumblebees emerging from the flower “trap” (the saclike lip) smeared with pollen on the thorax confirms this fact. The multitude of developed seed capsules among the cultivated plants is more evidence of frequent visits. This happens in cultivation in a land far away from the plants’ natural habitats (Sweden versus Asia in this case), so why would this not be a naturally occurring phenomenon as well? The plethora of flower variations in the *Cyp. tibeticum* complex surely suggests that this is a possibility. *Cypripedium tibeticum* has been reported from several locations in Bhutan, growing in open meadows, margins of coniferous and mixed woodlands, open limestone ledges and screes at 6,900–12,600 feet (2,300–4,200 m), (Pearce and Cribb 2002).

Many artificially propagated species and hybrids of *Cypripedium* are available for growers today, and most of them are quite rewarding to grow outdoors as long as the right climatic and horticultural conditions can be provided. Some people also grow these fascinating orchids under light with apparently good results. For more information about cultivation, we refer to Cribb’s excellent treatment (1997), and literature that is available online, because a general horticultural description is beyond the scope of this article.

## Acknowledgments

The authors thank Dr. Karma D. Dorji, Program Director of the National Biodiversity Centre (NBC) for support and guidance. We also thank the Department of Forest and Park Services for granting permits to visit Protected Areas and for assistance in the field. A special thank you goes to the Sarasota Orchid Society for financial support and Wesley E. Higgins for viewing and improving the manuscript.

— Pem Zam, National Biodiversity Centre, Ministry of Agriculture and Forests, Serbithang, Thimphu, Royal Government of Bhutan; Stig Dalström (corresponding author [stigdalstrom@gmail.com]), Lankester Botanical Garden, University of Costa Rica and the National Biodiversity Centre, Ministry of Agriculture and Forests, Serbithang, Thimphu, Royal Government of Bhutan; Choki Gyeltshen, Nima Gyeltshen and Kezang Tobgay, National Biodiversity Centre, Ministry of Agriculture and Forests, Serbithang,



12 RAM KRISHNA



13 PEM ZAM



14 NIMA GYELTSHEN



15

Thimphu, Royal Government of Bhutan.

## References

- Amman, J. (1739). *Stirpium Rariorum in Imperio Rutheno Icones et Descriptiones*. St. Petersburg, Russia.
- Cribb, P. (1997). *The Genus Cypripedium*. Published in association with the Royal Botanic Garden, Kew. Timber Press, Portland, Oregon, USA.
- Gmelin, J.G. (1747–1749). *Flora Sibirica*. St. Petersburg, Russia.
- Linnaeus, C. (1753). *Species Plantarum*. L. Salvius, Stockholm, Sweden.
- Pearce, N.R. and P.J. Cribb. (2002). *The Orchids of Bhutan*, as Part of *Flora of Bhutan*, Vol. 3 part 3. Royal Botanic Garden Edinburgh, Edinburgh, in collaboration with the Royal Government of Bhutan.
- Swartz, O.P. 1800. *Cypripedium* L. *Kongliga Vetenskaps Academiens Nya Handlingar* 21:250, 251. Stockholm, Sweden.
- World Checklist of Selected Plant Families. (2021). Facilitated by the Royal Botanic Gardens, Kew. Published on the Internet; <http://wcp.science.kew.org/> Retrieved Jan. 25, 2021.
- Wikipedia contributors (2020). Gosainthän. Wikipedia, The Free Encyclopedia. Jan. 25, 2021.

[12] Habitat of *Cyp. himalaicum* and *Cyp. tibeticum* at the Chelela pass, here studied by Pem Zam.

[13] The very distinct flower of *Cyp. himalaicum* easily distinguishes this species from the sympatric *Cyp. tibeticum*.

[14] Habitat on limestone cliffs of *Cyp. himalaicum*.

[15] *Cypripedium tibeticum*, from the *Annals of the Royal Botanic Garden, Calcutta* 8: pl. 447 (1898).



16



17

CHOKI GYELTSHEN



18

STIG DALSTRÖM

- [16] Healthy plants of *Cyp. tibeticum* photographed by Kezang Tobgay at the Chelela pass. A variable species, the inset by Nima Gyeltshen is of a different-looking form in the same area.
- [17] Plants of *Cyp. himalaicum* and *Cyp. tibeticum* are sympatric at the Chelela pass, but whether they hybridize is open for discussion.
- [18] A bumblebee (*Bombus* sp.) carrying a pollen smear is emerging from a flower of the hybrid *Cypripedium* Tilman (*fasciolatum* × *tibeticum*, made by Holger and Wenqing Perner). Plant cultivated in Sweden.

# Cypripedium in China

Cypripedium species of the Subsections Cypripedium and Macrantha and Their Resulting Hybrids

BY JUDITH RAPACZ-HASLER,

TOM VELARDI AND WENQING PERNER

PHOTOGRAPHS BY WENQING PERNER

UNLESS OTHERWISE

CREDITED



THE GENUS *CYPRIPEDIUM*, with its slipper-shaped lip, represents one of the showiest and certainly the most popular genera of terrestrial orchids today. Distributed circumglobally in temperate regions, this genus is experiencing a steady increase in horticultural popularity, mainly because of advances in propagation technology and the commercial availability of species and hybrids to enthusiasts in the horticultural community.

China is rich in cyripediums, represented by 37 native species and some infraspecific taxa, accounting for 70% of the total 51 species recognized in the genus. Sichuan province in China covers an area that encompasses jagged mountains and rolling valleys carved by glaciers eons ago. The Hengduan Mountains cover much of western Sichuan province as well as the northwestern portions of Yunnan, the easternmost section of Tibet and also touch upon parts of southern Qinghai. Even some parts of eastern Kachin State in neighboring Myanmar are considered part of the Hengduan group. Tucked within this vast mountain range, Huanglong National Park (one of 36 global biodiversity hotspots) is where Dr. Holger Perner became obsessed with the rich variety of orchids of the region, including lady slippers, and, in time, with his wife, Wenqing, founded Hengduan Mountains Biotechnology.

Hengduan Mountains Biotechnology operates two nurseries in China, one in the southern Minshan Mountains of northern Sichuan and the other on the hot Sichuan Plain on the outskirts of Chengdu city. The high-altitude nursery is located nearly within the boundaries of Huanglong National Park in a deep valley at around 9,850 feet (3,000 m) elevation. There the winters are cold, long and dry, extending from November through March uninterrupted. Summers are cool and wet, with most days overcast and temperatures rarely, if ever, above 77 F (25 C). In this climate, Hengduan Mountains Biotechnology have their temperate lady's slipper orchid nursery. Several long shade houses containing thousands of cyripedium seedlings as well as adult stud plants make up the bulk of the nursery. Native Chinese cyripediums flourish in these conditions.

Today Wenqing Perner continues the breeding and cultivation of *Cyripedium* hybrids, and seven of the hybrids have recently been registered with the Royal Horticultural Society (RHS). The parents of these hybrids include four species of *Cyripedium* in subsection *Cyripedium*



2



3



4

- [1] *Cyripedium tibeticum* in situ, Huanglong National Park photographed by Tom Velardi; inset photograph by Wenqing Perner of a nursery-grown specimen.
- [2] Two color forms of *Cyp. x ventricosum* (*calceolus x macranthos*) one bright red and the other cream-white with pale yellowish sepals and petals.
- [3] *Cyripedium shanxiense* in situ, Wanglang National Nature Reserve; inset photograph taken at the Hengduan Biotechnology Nursery. Both photographs by Tom Velardi.
- [4] *Cyripedium farreri* in situ, Wanglang National Nature Reserve. Photograph by Tom Velardi.

and four *Cyripedium* in subsection *Macrantha* plus one naturally occurring hybrid.

***Cyripedium*: subsection *Cyripedium* (later abbreviated C)**

- Cyripedium calceolus*
- Cyripedium farreri*
- Cyripedium parviflorum* var. *makasin*
- Cyripedium shanxiense*

***Cyripedium*: subsection *Macrantha* (later abbreviated as M)**

- Cyripedium calcicola*
- Cyripedium macranthos*
- Cyripedium tibeticum*
- Cyripedium yunnanense*
- Cyripedium* × *ventricosum* (*calceolus* × *macranthos*)

CYPRIPEDIUM HABITATS AND NATURAL DISTRIBUTION

*Cypripedium* × *ventricosum* is the natural hybrid between *Cyp. calceolus* (subsection *Cypripedium*) and *Cyp. macranthos* (subsection *Macrantha*), occurring in nature only where the two species are found growing together with the greatest concentration in far southwestern Russia and adjacent parts of China, as well as perhaps into North Korea. Mixed populations of *Cyp. calceolus*, *Cyp. macranthos* and *Cyp. × ventricosum* occur as far west as the Ural Mountains of Russia and extend across the entire taiga forest belt of southern Russia to Primorsky on the Sea of Japan. In China both species are found in Heilongjiang, Jilin, northeastern Inner Mongolia and Liaoning, and so it is possible this hybrid could be found within that area, but to date it has only been reported from Heilongjiang and northeastern Inner Mongolia within China.

Large “hybrid swarms” of the two species have been found throughout its distribution. Because of the frequent introgression of genes of the two parent species and of *Cyp. × ventricosum* itself, there is a surprisingly wide range of flower color and morphology of *Cyp. × ventricosum*. This has led to quite a bit of confusion with a number of would-be taxa proposed over the years, including *Cypripedium* × *barbeyi*, *Cypripedium* × *manchuricum*, *Cypripedium* × *agnicapitatum*, *Cypripedium* × *freynii*, *Cypripedium* × *kesselringii*, *Cypripedium* × *krylowii*, *Cypripedium* × *morinanthum*, *Cypripedium* × *roseum* and *Cypripedium* × *sinapoides*. All are synonymous with *Cyp. × ventricosum*, however.

This hybrid is found in forests typical of the region, which are composed mostly of pine, larch, poplar and birch trees, as well as the margins of wet marshes, and occasionally on dry limestone slopes at relatively low elevations. Forest structure in these areas is open, allowing for abundant light because of periodic forest fires that clear away underbrush and young trees.

*Cypripedium tibeticum* is one of the more widespread and common *Cypripedium* species in western China, indeed extending beyond that country’s borders into adjacent areas of northern India (Sikkim) and Bhutan. Within China it has been found from southwestern Xizang (Tibet), northern Yunnan, much of northern and western Sichuan, southern Gansu, and perhaps even parts of Guizhou. Considering its native range in



such close proximity to Arunachal Pradesh (India) and extreme northern Myanmar, there are possibly habitats in those areas as well.

These plants can be found on grassy to scrubby slopes and meadows, often occupied by herds of yaks, or growing in rocky, thin woods, forest margins, on travertine formations, perched on scree slopes, and growing out of cliff faces. It is not found in dense woodlands, but rather in a denizen of open environments. This

is a plant of high mountains, having been reported from 7,550 to 13,800 feet (2,300–4,200 m) elevation, often accompanied by *Cypripedium flavum*, *Cyp. calcicola* and *Cypripedium bardolphianum*, and more rarely *Cypripedium guttatum*, *Cyp. shanxiense* and *Cyp. farreri*. It can form sizable colonies with many dozens of flowering plants in view or simply grow here and there in small groups. Seeing a mixed colony of *Cyp. tibeticum* and *Cyp. flavum* in full bloom is a sight not soon



forgotten.

*Cypripedium calcicola* is near relative of *Cyp. tibeticum* and has a far more restricted range than its more common cousin, being found only in western Sichuan and northwestern Yunnan. They can be found in open forests, forest margins, thickets, on grass slopes and travertine formations from 8,530 to 12,795 feet (2,600–3,900 m) elevation. It is commonly found alongside other members of the genus including *Cyp. shanxiense*, *Cyp. flavum*, *Cyp. guttatum*, *Cyp. bardolphianum* and *Cyp. tibeticum*. Mixed colonies of *Cyp. calcicola* and *Cyp. tibeticum* can be seen in northern Sichuan with many intermediate forms, suggesting that either these species are simply forms of one another or that gene introgression is frequent at such locales.

*Cypripedium yunnanense* is a small-growing species having a restricted range in nature extending from southwestern and western Sichuan into southeast Xizang and northwestern Yunnan. It is found growing on north/northwest-facing slopes in rocky pine forests (*Pinus yunnanense*), thickets and grassy meadows, as well as cool, mossy, mixed forests from 8,850 to 12,500 feet (2700–3800 m) elevation.

*Cypripedium farreri* is one of the rarest of all lady slipper orchids in the world, with only four known localities, all in the Hengduan Mountains of southwestern China ranging from northern Yunnan in the south to northwestern Sichuan and up to southern Gansu (the type locality) in the north. Its habitat is on rocky scree slopes, often near cliffs, in limestone gorges. In northern Sichuan, it often grows away from tree cover even in the flatter reaches of valley bottoms favoring open areas with a little companion herbage other than short grasses and small shrubby herbs. Although this is a typical habitat for the species, some sources say that it can be found in open woodlands as well. In Sichuan and Yunnan, it is found up to 11,200 feet (3,400 m) and at 8,530–9,200 feet (2,600–2,800 m) elevation in southern Gansu.

*Cypripedium shanxiense* is a plant with a broad, yet narrow, corridor of distribution, extending from eastern Qinghai in the west end of its range to southern Gansu and northwestern Sichuan, Shanxi, western Hebei, southern Inner Mongolia, as well as extreme southeastern Russia (Primorsky and Sakhalin Island), probably extending into North Korea and the island of Hokkaido in Japan. They are found in open deciduous and mixed forests, grassy slopes, and



travertine limestone formations from 3,280 to 10,500 feet (1,000–3,200 m) elevation often in the company of other cypripediums, for example, *Cyp. flavum*, *Cyp. guttatum*, *Cyp. calcicola* and *Cyp. tibeticum*.

*Cypripedium parviflorum* var. *makasin*, a dwarf plant, can be found from sea level to ~4,920 feet (~1,500 m) elevation from northern New England, throughout much of northern New York, northwest Pennsylvania, south to northern New Jersey, northernmost parts of Ohio, Indiana, Illinois, Wisconsin, most of Iowa, and northward to Newfoundland, through the southern half of Quebec, much of Ontario, the southern third of Manitoba, central Saskatchewan, most of Alberta, and the eastern half of British Columbia. It is also found southward down the mountains into western Washington state, the Rockies of western Montana, and northward into the Northwest Territories, the Yukon, and the mountains of northern Alaska. Two disjunct populations have been recorded in extreme northeast Utah, and the northwest corner of California (based on one collection in Sierra County). Variety *makasin* is most commonly found in wet habitats such as wet prairies, mesic (moist, drought resistant) to wet fens, meadows, nonsphagnous bogs, damp roadside ditches and marly cedar



[5] *Cypripedium calcicola* in situ, Huanglong National Park photographed by Tom Velardi. Inset photograph by Wenqing Perner of a nursery-grown specimen.

- [6] *Cypripedium yunnanense*
- [7] *Cypripedium parviflorum* var. *makasin*
- [8] *Cypripedium* Hengduan New Era (× *ventricosum* CM × *farreri* C)
- [9] *Cypripedium* Jiang Hong (× *ventricosum* CM × *yunnanense* M)
- [10] *Cypripedium* Huanglong Love (× *ventricosum* CM × *tibeticum* M)



swamps, but can also be found in open coniferous or mixed forest. This plant prefers habitats with calcareous soils throughout its range. It is frequently found alongside *Cyp. reginae* in nature. In open habitats, it often forms large clumps which can be quite stunning in spite of its relatively diminutive size.

HYBRIDS

*Cypripedium* Hengduan New Era (× *ventricosum* CM × *farreri* C)

*Cypripedium* JiangHong (× *ventricosum* CM × *yunnanense* M)

*Cypripedium* Hengduan Cutie (× *ventricosum* CM × *shanxiense* C)

*Cypripedium* Huanglong Love (× *ventricosum* CM × *tibeticum* M)

*Cypripedium* Wenqing (*tibeticum* M × *farreri* C)

*Cypripedium* Huanglong Sweet Memory (*tibeticum* M × *parviflorum* var. *makasin* C)

*Cypripedium* Jean (*tibeticum* M × *calcicola* M)

The advantage of *Cypripedium* hybrids is their relative ease of cultivation. *Cypripedium* species as a rule are not easy to maintain in open garden conditions, especially in warmer and more humid areas. Luckily, many hybrids are showing more vigor than their parent species, though that is not true for all hybrids. Out of all the 12 sections of the genus *Cypripedium*, only section *Cypripedium*, which includes subsection *Cypripedium* and subsection *Macrantha*, have potential long-term success in the open garden. That means all other sections of the genus are difficult, though not impossible, to grow in a typical garden or even in container



culture.

If you look at all the registered hybrids to date, the vast majority of them are hybrids between species with section *Cypripedium*. In fact, all the hybrids featured in this article are crosses within section *Cypripedium*. Hybrids between sections do exist, for example *Cypripedium* Lady Dorine [*formosanum* (section *Flabellinervia*) × *fasciolatum* (section *Cypripedium*, subsection *Cypripedium*)] and *Cypripedium* Princess [*reginae* (section *Obtusipetata*) × *lichiangense* (section *Trigonopedia*)]. From reports, it appears that *Cyp.* Lady Dorine grows fairly well and flowers reasonably well, while *Cyp.* Princess flowers rarely. It is likely that hybrids between sections are more problematic in culture due to mismatches in their genomes, similar to “far out” crosses within the tropical slipper orchid genus *Paphiopedilum*.

Although hobbyists may enjoy the challenge to grow showy flowers for a fabulous garden or container culture displays, the long-term goal for cypripedium hybridization is to produce intermediate, easier-to-grow and adaptable hybrids that thrive in both cooler and warmer climates.

A natural hybrid *Cyp. × ventricosum* (in Latin *ventrosus* “bellying outwards” or inflated) is derived from *Cyp. calceolus* (yellow) and *Cyp. macranthos* (showing a variety of color forms and flower sizes). The beauty of this rare orchid is that within a small group of plants, each may show a different phenotype that is expressing different (various) floral coloration, ranging from white to yellow to crimson or dark purple with all possible combinations of these colors on the dorsal, petals and lip. This genetic variation is generally observed with hand pollination and is quite unlike the outcome of cloned orchids, which generally are fairly uniform.

*Cypripedium* Hengduan New Era (registered 2021) resulted from a cross of *Cyp. × ventricosum* (seed), a natural and variable hybrid, with *Cyp. farreri*, a rare and rather uniform species. *Cypripedium farreri* has a cream-to-pastel pouch with light-green sepals and petals marked by maroon stripes and spots and a pronounced yellow staminode with a maroon margin. The flower depicted in front of the image shows a cream-white pouch with purple venation, more compact than its *ventricosum* parent, sepals and petals also with purple venation. The yellow staminode appears to be inherited from the *farreri* parent.

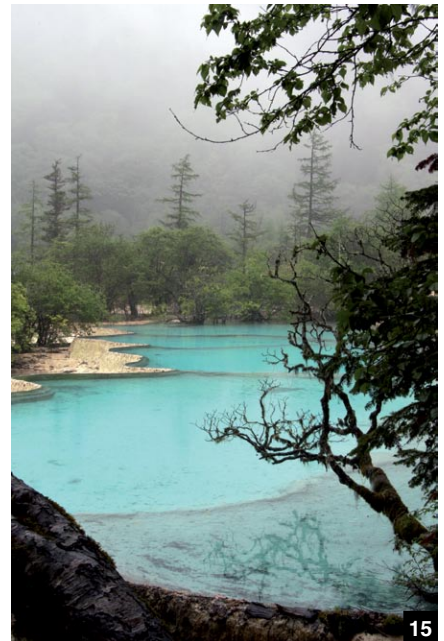


The flower behind has a cream-to-pastel pouch like its *farreri* parent, but sepals and petals are cream-to-pastel with a lighter purple venation inherited from its *ventricosum* parent.

*Cypripedium* Hengduan New Era has a large, round pouch and one plant at its first flowering produced three inflorescences each with one flower, impressive in its floriferousness. It also has a nice fine pinkish-toned color that the photo could not accurately capture. One could imagine in one or two years, that it would become a big clump of vigorous plants with large numbers of beautiful flowers.

*Cypripedium* Jiang Hong (registered 2021) resulted from a cross of *Cyp. × ventricosum* (seed) with *Cyp. yunnanese*. The flower color of *Cyp. yunnanese* is similar to *Cyp. macranthos*, but the flower is smaller in relation to that species. *Cypripedium* Jiang Hong has a smaller pouch and twisted petals, which usually stand further away from the lip. The flower color is cream-white with reddish-purple venation. *Cypripedium* Jiang Hong appears to have inherited more characteristics from its grandparent *Cyp. calceolus* having a lip that is smaller than either of their parents and the heart-to-shield-shaped staminodium is yellow with a purple middle stripe, more like its grandparent, *Cyp. calceolus*.

*Cypripedium* Hengduan Cutie (registered 2021) resulted from a cross of *Cyp. × ventricosum* (seed) with *Cyp. shanxiense*, the later a small plant with one, two or rarely three flowers per inflorescence. The resulting offspring express a color form unlike either of their parents. The entire flower, including the staminode, is dark burgundy with a shade of tan-to-yellow around the margin derived from its *shanxiense* parent. The extended petals are more like its *shanxiense* parent, as are the petals that are slightly twisted and stand further away from the lip. *Cypripedium shanxiense*



[11] *Cypripedium* Wenqing (*tibeticum* M × *farreri* C) illustrating the variation in this hybrid.

[12] Two examples of *Cypripedium* Huan-glong Sweet Memory (*tibeticum* M × *parviflorum* var. *makasin* C).

[13] *Cypripedium* Hengduan Cutie (× *ventricosum* CM × *shanxiense* C)

[14] *Cypripedium* Jean (*tibeticum* M × *callicola* M)

[15] Huanglong Preserve showing one of the beautiful blue pools. These pools are surrounded by travertine formations. Photograph by Tom Velardi.

has always shown great potential for multifloral hybrids and the dark-burgundy tone has been seen in other hybrids, just as in *Cyp. Hengduan Cutie*. This hybrid shows amazing flowers with a low-key, graceful matte red, the shape somewhat like an enlarged *shanxiense*, but with an attractive deep dark-burgundy color. This is certainly a splendid hybrid showing

excellent results in terms of color, form, floriferousness and size.

*Cypripedium* Huanglong Love (registered 2021) resulted from a cross of *Cyp. × ventricosum* (seed) with *Cyp. tibeticum*. Some of the offspring had flowers similar to *Cyp. yunnanese*, which is a reddish-purple flower with a less-distinct venation in the pouch, sepals and petals. The color of the heart- to shield-shaped staminode is white above and purple below. Other offspring showed a color form, unlike either of their parents, that is entirely dark purple with slightly darker stripes on sepals and dorsal. The staminode is off white at the base and purple below. Certainly, it is an interesting hybrid showing excellent results in terms of color, form and size and also interesting color variations.

*Cypripedium* Wenqing (registered 2012) resulted from a cross of *Cyp. tibeticum* (seed) with *Cyp. farreri* and is an artificial hybrid remake of *Cyp. × wenqingiae*. *Cypripedium tibeticum* is notably variable in flower size, shape and color, depending on where in the wild the plants were growing. Therefore, it can be hard to distinguish this species from other species such as *Cyp. macranthos* or *Cyp. calcicola*.

The resulting offspring showed considerable variations in coloration, form and size. The base color of the flowers is cream–white, but in some offspring, the pouch has dark purple to maroon venation. Some offspring show coloration of sepals and petals between their parents that is brown–greenish to brown–reddish. Other offspring show the pouch with a lighter red–purple venation.

The venation on the pouch, sepals and petals of *Cyp. Wenqing* are considerably more intense than those of the cross of *Cyp. × ventricosum × Cyp. farreri* (*Cyp. Hengduan New Era*), suggesting homozygosity of the red color gene in *Cyp. tibeticum* versus heterozygosity in *Cyp. × ventricosum*.

*Cypripedium* Huanglong Sweet Memory (registered 2019) resulted from a cross of *Cyp. tibeticum* (seed) with *Cyp. parviflorum* var. *makasin*. The offspring inherited most of their characteristics, in particular the yellow-colored pouch, from the *parviflorum* parent. The yellow color appears to be dominant over the red color. Some offspring inherited brown-to-maroon sepals and petals from the *parviflorum* parent, and others showed a pale-yellow-colored pouch with a touch of red around the margin of the pouch from the *tibeticum* parent. The bright-



[16] A typical limestone canyon where cyripediums thrive. Photograph by Tom Velardi.

[17] A Tibetan woman tending her yaks at one of the high-elevation mountain passes. Photograph by Tom Velardi.

yellow staminode is also inherited from the *parviflorum* parent. A plant with an almost pure pale-yellow flower and a large pouch and twisted petals appeared in the same batch of seedlings. Whether it resulted from a gene mutation or is a selected combination of genes remains to be determined.

*Cypripedium* Jean (registered 2019) resulted from a cross of *Cyp. tibeticum* (seed) with *Cyp. calcicola* (also a variable species ranging from deep red to almost black). *Cypripedium calcicola* has a deep plum–blue pouch and red–brownish sepals and petals with red venation. *Cypripedium* Jean has a ball-round pouch from the *calcicola* parent and the large-sized flower with venation in sepals and petals similar to the *tibeticum* parent. The wine-red color of *Cyp. Jean* is an improved fine red, mixed with almost black from its *calcicola* parent and bright red from its *tibeticum* parent. The intense dark-red color and shape of the pouch is different from its parents. This splendid hybrid is quite vigorous and shows the best sides of both parents. This achievement of perfection is a dream-come-true hybrid for a breeder.

#### CULTURAL NOTES

The natural range of *Cypripedium* species is mainly in the cooler regions of the northern hemisphere, that is, Europe, North America and Asia. Most species of this genus are, therefore, cold and even frost resistant. All cyripediums have a creeping rhizome (rootstock, underground shoot axis) that serves to store nutrients.

The rhizome spreads sympodially (horizontally growing main shoot from which leaves and inflorescence and side shoots emerge for new plants in the next growing season). The underground parts of the plant are perennial; the above-ground stems and leaves die after one growing season.

*Cypripedium* have four seasons in their growth cycle. As a hardy perennial, they require a cold rest period during the winter when they are dormant. In the spring, they break dormancy and grow rapidly, reaching flowering state in a few weeks. During the summer, they grow roots, store food and produce buds for the following spring. In the fall, the stems and leaves wither and die back to the surface of the medium in preparation for winter dormancy.

Successful culture can be enjoyed provided a few key elements are considered. It is important to keep moisture to a minimum during the winter, by using porous medium and raised beds. Alternatively, plants can be kept in pots or plastic storage boxes in the refrigerator, in unheated garages or other cold but protected areas. In such conditions, they may be wrapped in plastic bags to assure that rhizomes do not become desiccated while in storage. If stored in plastic bags it may be advisable to spray with Debug, an all-purpose insecticide, which contains neem oil.

In general, cyripediums are moisture-loving plants and do not like to dry out between watering, preferring to stay



17

consistently and evenly moist. If stored in pots or plastic storage boxes, watch for the shoots of the new plants emerging in spring. Once in growth, they should be moved to an open and partially shaded area.

Fertilizer may be applied either in dilute liquid form or as a slow-release pellet during the growing phase of the plant. Plants grown in completely inorganic compost must be fertilized regularly, while those in the open garden will require fewer applications. Refrain from fertilizing once the plants show signs of dormancy.

The plants in the Hengduan Mountain nursery are grown in a mix of 4–5 parts perlite to 1 part sedge peat taken from the alpine grasslands of the region. In this mix, the plants flourish in beds overlain with conifer needles. The cover of oak leaves and conifer needles prevents excessive moisture to the dormant plants during winter. It is essential to protect plants from midwinter warm spells or they will start to grow, and early spring frost may damage the leaves. Hengduan Mountain nursery fertilizes with Osmocote (six month) once a year in spring when the shoots start to grow. *Cypripediums* need little fertilizer. Originally, they used their own liquid fertilizer with application at each watering. Later, Osmocote helped

to reduce labor and only weeding was necessary to manage the plants.

Ronald Burch, Gardens at Post Hill, now located in the Seattle, Washington area, provides excellent information on cultivation in the garden as well as container or pot culture. With his extensive experience in raising species and hybrids, he finds that most *cypripediums*, especially Asian species and hybrids, do much better over several years in artificial, inorganic media. For additional information see [www.gardensatposthill.net](http://www.gardensatposthill.net)

Dedication

Dedicated to the late Dr. Holger Perner

Acknowledgment

Thank you to Spiro Kasomenakis for his comments and corrections.

References and Additional Reading

- Avent, T., and D. Carey. 2019. *Cypripedium* – Does the Lady's Slipper Fit Your Garden? *The Slipper Orchid Alliance Journal* 20(3).
- Eccarius, W. 2009. *Die Orchideengattung Cypripedium*. (The Orchid Genus *Cypripedium*). EchinoMedia Verlag, Albersdorf, Germany.
- Frosch, W. 1986. Asymbiotic Propagation of *Cypripedium reginae*. *AOS Bulletin* 55:14–15.
- Frosch, W., and P. Cribb. 2012. *Hardy Cypripedium: Species, Hybrids and Cultivation*. Kew Publishing, Kew, UK.
- Malmgren, S. 1993. Orchids from Seeds? Large Scale Propagation of *Cypripedium calceolus*. *Wildflowers*. Summer.
- Perner, H. 1998. *Cypripedium* × *wenqingiae*, Eine Naturhy-

bride aus Südwestchina. *Die Orchidee* 49(5):201–203. <http://botanyboy.org> (A number of wonderful video clips on *Cypripedium* species and their habitats in China) <http://gardensatposthill.net/Cypripedium%20overview.htm> [http://www.orchideen-im-garten.de/cyp\\_arten\\_ecca.php](http://www.orchideen-im-garten.de/cyp_arten_ecca.php)

— Judith Rapacz-Hasler is a member of the AOS Editorial Board. She spends the winter months on Florida's west coast and the summer in Europe. Among her most rewarding experiences are frequent travels to observe orchids in their native habitats (email: [jorapacz@wisc.edu](mailto:jorapacz@wisc.edu)). Tom Velardi has travelled extensively in China with the late Dr. Holger Perner and has visited several sites where *cypripediums* grow. He is the author of *BotanyBoy* (<http://botanyboy.org/>) and has a YouTube channel under the same name. There you will find several videos of *cypripediums* in China (email: [tvelardi1@yahoo.com](mailto:tvelardi1@yahoo.com)). Wenqing Perner is owner of Hengduan Mountains Biotechnology ([www.hengduanbiotech.com](http://www.hengduanbiotech.com), [info@hengduanbiotech.com](mailto:info@hengduanbiotech.com)).

# First Ladies and Their Cattleyas

## Grace Coolidge (1923–1929)

BY ARTHUR E. CHADWICK

GRACE ANNA GOODHUE COOLIDGE was perfectly content as Second Lady of the United States where she could mingle in public relatively unnoticed and avoid all the hoopla associated with the highest office. But fate had other plans and when President Warren Harding passed away unexpectedly while on vacation in the summer of 1923, she was thrown into the limelight. In an instant, the Coolidges were moving to 1600 Pennsylvania Avenue.

As First Lady, Mrs. Coolidge steered clear of taking political stances and gave no interviews or public remarks. Instead, she hosted nearly weekly events with special interest groups and civic clubs. Her relaxed nature made her a popular figure and among her many visitors was famed aviator Charles Lindbergh.

She was a lifelong advocate of the Red Cross as well as the Clarke School for the Deaf, where she had previously been a teacher. Her famous photo with disability rights activist Helen Keller helped raise \$2M towards that cause. She was also a role model for young women pursuing higher education with her four-year degree from the University of Vermont.

Coolidge had a keen interest in plants and opened spring flower shows, planted trees, hosted garden parties and oversaw the installation of a water lily pond on the White House property. She not only had a chrysanthemum named after her but personally visited, along with the Secretary of Agriculture, the greenhouse where it originated.

Now, she also has a namesake orchid.

*Rhyncholaeliocattleya* Grace Coolidge is a recent effort that combines two early primary hybrids that could very well have been in private collections at the time. Both parents as well as their offspring are perfect for windowsill growers because they stand less than a foot tall and bloom on short spikes.

The Coolidge namesake produces delightfully waxy and fragrant flowers in a wide range of lavender shades. The seedlings are vigorous and bloom for at



JOHN STANTON

least a month every autumn. Some even bloom twice a year. It was exciting to watch the variations unfold.

*Rhyncholaeliocattleya* Grace Coolidge (Cynthia × *Cattleya* Heathii) was bred by The Orchid Trail of Morrisville, North Carolina and is their third First Lady effort, having previously created *Cattleya* Lady Bird Johnson and *Cattleya* Eleanor Roosevelt. Owner John Stanton ran a successful orchid business for two decades before retiring earlier this year.

The Orchid Trail started in 2001 when it moved into the former greenhouses of

- [1] First Lady Grace Coolidge along with Secretary of Agriculture, Henry Wallace, visit a greenhouse full of her namesake chrysanthemum in the 1920s. Courtesy of Alamy.
- [2] Breeder John Stanton of The Orchid Trail in Morrisville, North Carolina, stands behind a bench full of his *Cattleya purpurata* (Carnea) siblings. Courtesy of Sara Gallis.
- [3] A dark variety of *Rhyncholaeliocattleya* Grace Coolidge (Cynthia × *Cattleya* Heathii).

the popular nursery, Bloomin' Orchids, which had introduced plant boarding into the Raleigh area in 1982. Stanton continued to offer boarding but modified it such that clients paid by the square foot of bench space rather than by the plant. He also required clients to repot their own collections.

The boarding business paid the bills and allowed Stanton to follow his real passion of breeding cattleyas. He amassed an impressive collection of stud plants, many of which came from local nurseries, Breckinridge Orchids and Lenette Greenhouses, as well as from area hobbyists, Courtney Hackney and Keith Davis. On his many buying trips to Florida, he would stop by Joe Grezaffi's greenhouse for additional breeder plants and when the legendary Stewart Orchids made their ill-fated move to Mississippi, Stanton picked up their extras.

He bred cattleyas by the hundreds and the offspring filled an entire 30- × 96-foot (9.2- × 29.3-m) greenhouse. As they bloomed, the seedlings were sold to walk-in clients, but Stanton always kept the very best for himself. It was from this fine collection of cattleyas that Grace Coolidge's namesake was born.

The first parent of *Rlc.* Grace Coolidge is the primary hybrid, *Rhynchoaeliocattleya* Cynthia (*Rhynchoaelia digbyana* × *Cattleya walkeriana*), that was registered in 1917 by British naturalist and amateur hobbyist, William Herbert St. Quintin (1851–1933). He lived in a sprawling country estate in Yorkshire, England known as Scampston Hall that today is a tourist attraction ([scampston.co.uk](http://scampston.co.uk)). The 420-acre (16.2 ha) property had been in the family since the late 1600s when Sir William St. Quintin, 3rd Baronet and Member of Parliament, acquired it. William Herbert was a capable man and held many titles including Deputy Lieutenant, Justice of the Peace and Fellow of the Zoological Society.

Every good estate needs a head gardener and, in 1900, Frederick Charles Puddle came on board, having trained under the legendary James Veitch & Sons of Chelsea. Puddle was assigned the task of building a world class orchid collection to fill the newly built greenhouse that served as the focal point of the gardens. A wide range of orchid genera was amassed with the preponderance for cattleyas, William Herbert's favorites.

The Scampston Hall greenhouse or "conservatory" was the long narrow type, stretching 120 feet (36.6 m) with an octagonal atrium-style entrance in the



4

JOHN STANTON



5

TONY WELLS



6

FRED CLARKE

middle. The structure was well built — with brick knee walls and painted wood A-frame construction. A long top ventilator and swiveling side louvers helped cool the plants through natural convection and external roll down slats tempered the summer sun.

A sizable boiler house was situated behind the greenhouse and piped in hot water when the night temperatures dipped below 60 F (15.6 C). The orchids received the best possible growing conditions throughout the year and, by 1909, Puddle had acquired fine varieties of all known cattleya species, both unifoliate and bifoliate, and was registering new hybrids. He dabbled with other genera as well including dendrobiums, oncidiums and paphiopedilums.

This was a tumultuous time for England and the threat of German

[4] A light variety of *Rlc.* Grace Coolidge.

[5] One of the parents of *Rlc.* Grace Coolidge is *C.* *Heathii* (*harrisoniana* × *walkeriana*) from 1907. Shown is a modern remake by The Orchid Zone.

[6] The other parent of *Rlc.* Grace Coolidge is *Rlc.* *Cynthia* (*Rhynchoaelia digbyana* × *C. walkeriana*) from 1917. Shown is 'Lilac Gem' AM/AOS, a late 1980s remake from Stewart Orchids grown for 30 years by noted hybridizer Fred Clarke.

bombings was ever-present. Their city of Yorkshire had received some direct hits and among Puddle's dozens of new hybrids were lady slippers that honored the end of the conflict — *Paphiopedilum* Armistice, *Paphiopedilum* Peace and *Paphiopedilum* General Petain (war hero). It was Puddle's work with cattleyas,



however, that left a lasting legacy as he would later receive the Victoria Medal of Honor for “his work on the hybridization of orchids, rhododendrons, and other plants and for his cultural skill.”

Puddle’s cattleya crosses are considered to be first- and second-generation breeding and, in many cases, combine a species with a primary hybrid. One of his earliest efforts was in 1911 with a delightful art shade, *Cattleya Scampstonensis*, (La France × *dowiana*), which paid tribute to the country estate, Scampston Hall.

Puddle was one of the few breeders who saw the hybridizing potential of *Cattleya quadricolor* whose flowers are notoriously scant and cupped. There can be a surprising amount of color inside a quadricolor bloom once the half-closed petals are artificially opened. He is credited with naming two *quadricolor* primaries — *Cattleya Madonna* (× *trianae*) in 1913, and *Cattleya Camilla* (× *warneri*) in 1915.

He was also fond of another overlooked species — *Cattleya walkeriana*, which has the unusual habit of blooming from a leafless growth as well as diminutive foliage and smallish flowers. His *walkeriana* primaries were not the big show stoppers that adorned the exhibition halls at flower shows but rather of a style that the public had rarely seen — compact and easily grown on a windowsill. They include *Cattleya Hecate* (× *labiata*) in 1915, *Cattleya Edala* (× *mendelii*) in 1916 and *Cattleya Egerides* (× *dowiana*) in 1917, as well as the future parent of Grace Coolidge’s namesake, *Rlc. Cynthia* (× *Rl. digbyana*) in 1917.

Stewart Orchids of Carpinteria, California offered clones of *Rlc. Cynthia* ‘Lilac Gem’ AM/AOS in the late 1980s. Noted breeder Fred Clarke of Sunset Valley Orchids obtained a plant and has grown it for 30 years. He writes that it “blooms reliably in late April and what I remember most about it is the perfume-like fragrance.”

The other parent of *Rlc. Grace*



Coolidge is the primary hybrid, *C. Heathii* (*harrisoniana* × *walkeriana*), that was bred in 1907 by William Heath (1810–1892) & Son of Cheltenham, located about 100 miles (160 km) west of London. The company was part of Veitch’s massive Royal Exotic Nurseries conglomerate, which was comprised of an astonishing 11 plant divisions — orchid, fern, new plant, decorative, tropical, soft-wooded, hard-wooded, vine, propagating, seed and glass — making it the largest of its kind in Europe.

Heath’s full-time grower, Mr. Treseder, oversaw a wide range of orchids and had a fascination with breeding. In one reported case, in 1897, he bloomed 300 *Zygopetalum* seedlings just to see the variation and presented his findings at a monthly meeting of the Royal Horticultural Society.

Treseder registered his very first orchid hybrid in 1888 from the Cattleya Alliance with the novelty cross, *Cattleya crispa* × *Cattleya loddigesii*, and named it after himself, *Cattleya Tresederiana*. There are no known plants in existence today, but the flowers must have been unusual as *C. crispa* is rarely used in breeding due to its small, twisted sepals and petals. He was drawn to the idea of preserving his own legacy through namesakes and next delved



into the *Oncidium* Alliance with *Oncidium Tresederianum* (*nobile* × *spectatissimum*) in 1893 followed by *Odotopetalum Treseder* (*Zygopetalum mackayi* × *Odontoglossum nobile*) in 1897.

Just for fun, he remade a natural hybrid in the genus *Phalaenopsis* that Veitch had flowered 20 years earlier but never registered, respectfully naming it *Phalaenopsis Veitchiana* (*equestris* × *schilleriana*). The horticultural magazine of the day, *The Gardener’s Chronicle*,



noted his work, “The parentage was proved by Mesers. Heath and Son in 1896.” He soon launched into a slew of primary hybrids using newly discovered lady slipper species and, after a brief stint with masdevallias in which Treseder honored his boss with *Masdevallia* Heathii (*ignea* × *veitchiana*) in 1899, it was back to cattleyas, his true love.

His final foray in orchid breeding came in 1907 with two more primary hybrids — both compact cattleyas and a continuation of Heath namesakes — *Cattleya* Heathii (*coccinea* × *schroederae*) and *Cattleya* Heathii (*harrisoniana* × *walkeriana*). He exhibited the latter at an RHS meeting in 1907 where *The Gardener’s Chronicle* wrote that *C. Heathii* was “a home-raised hybrid . . . and resembling *C. O’Brieniana*” (× *dolosa* × *loddigesii*). There were not many compact cattleya hybrids at the time and the judges were not sure what to make of the results.

Over the next century, *C. Heathii* has been used many times by breeders looking to make new and exciting compact hybrids. Nurseries such as Cal-Orchid, Hawaii Hybrids, Dogashima and Gold Country have all registered Heathii crosses in recent years. Hobbyists love these little plants because they do not take up much space and can be grown on a windowsill. The Coolidge orchid is solidly in this category.

Grace Coolidge’s namesake is a lovely addition to the First Lady series of cattleyas, which spans 19 consecutive United States Presidential administrations dating back to 1915. Each hybrid is unique and has its own story. The entire collection resides at the Smithsonian in Washington, DC and there is a book on the subject forthcoming, *First Ladies and their Cattleyas: A Century of Namesake Orchids*.

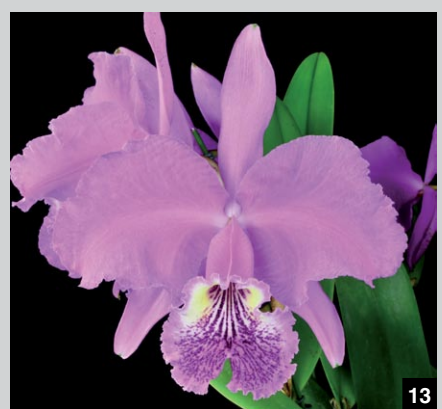
— Arthur E. Chadwick is a coauthor of *The Classic Cattleyas*, now in its second printing, that describes the large-flowered species that make up today’s hybrids. He is president of Chadwick & Son Orchids, which operates 11 greenhouses in Powhatan County, two retail stores in Richmond, Virginia and boards over 13,000 orchids for local clients. Arthur E. Chadwick is a regular contributor to *Orchids magazine* (email: [art@chadwickorchids.com](mailto:art@chadwickorchids.com); website: [www.chadwickorchids.com](http://www.chadwickorchids.com)).



- [7] British Naturalist and Amateur Hobbyist William Henry St. Quintin (1851–1933) owned a world class orchid collection at his Scampston Hall greenhouse overseen by his grower, Frederick C. Puddle. Photograph courtesy of Scampston Hall.St.
- [8] Quintin resided at the sprawling country estate of Scampston Hall that had been in the family since the late 1600s when Sir William, 3rd Baronet and Member of Parliament acquired it. Photograph courtesy of Scampston Hall.
- [9] The St. Quintin orchid collection at Scampston Hall was extensive and included this crop of nobile dendrobiums. Shown is their grower, Mr. Taylor, who worked under Head Gardener, Frederick C. Puddle. Photograph courtesy of Scampston Hall.
- [10] William Herbert St. Quintin was a British naturalist and Amateur orchid hobbyist who registered 58 crosses between 1909 and 1919. Photograph courtesy of Scampston Hall.
- [11] Grace Coolidge’s namesake gets much of its flower quality from the species *C. harrisoniana* which grows naturally in Brazil. *Cattleya harrisoniana* (as *C. loddigesii* var. *harrisoniae* from *Lindenia* 14:Pl. DCLXVII).

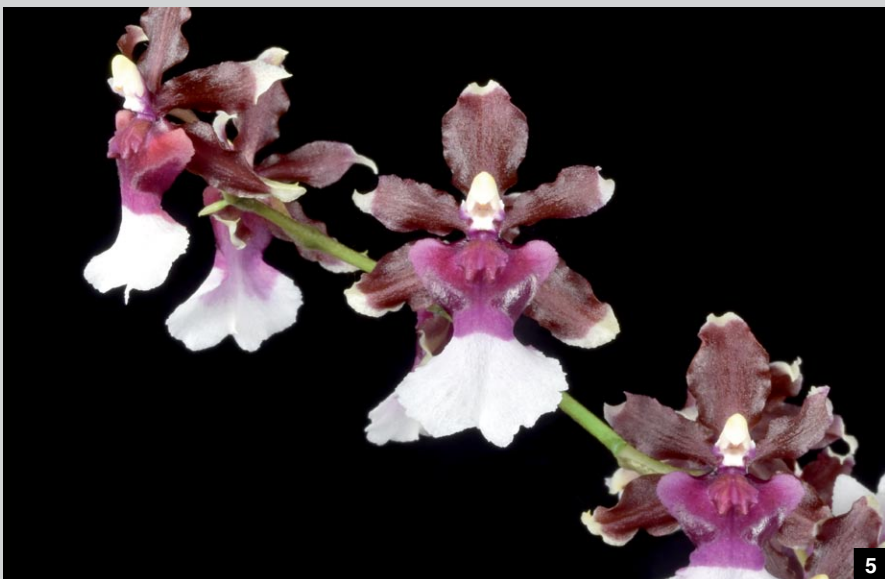
**FOR OUR READERS IN THE UNITED KINGDOM**

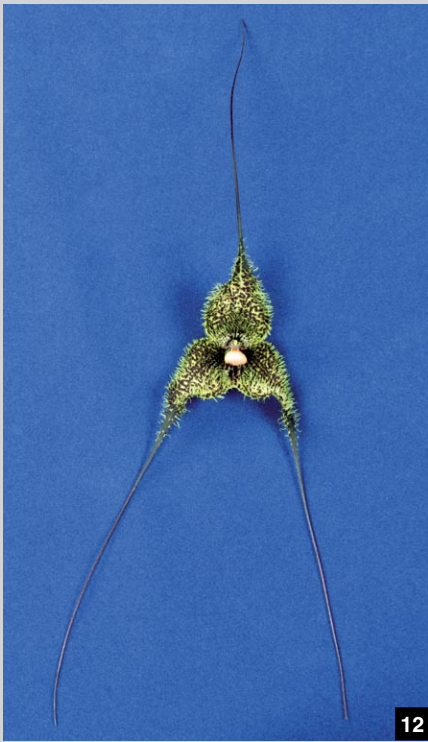
— Art Chadwick will be speaking at Scampston Hall on June 8 in the very greenhouse that the St. Quintin collection was grown. For more information, <https://www.scampston.co.uk>.





- [1] *Dryadella barrowii* 'Nathalie' HCC/AOS 76 pts. Exhibitor: Douglas Kubo; Photographer: Ramon de los Santos. California-Sierra Nevada Judging
- [2] *Cattleya aclandiae* 'Marilyn Manson' AM/AOS 85 pts. Exhibitor: Ben Oliveros and Orchid Eros; Photographer: Glen Barfield. Hawaii Judging
- [3] *Maxillaria schunkeana* 'Kathleen P' CCE/AOS 91 pts. Exhibitor: Douglas Kubo; Photographer: Ramon de los Santos. California-Sierra Nevada Judging
- [4] *Paphiopedilum* Norito Hasegawa 'Sophie' AM/AOS (*malipoense* x *armeniacum*) 81 pts. Exhibitor: Hausermann's Orchids, Inc.; Photographer: Lois Cinert. Chicago Judging
- [5] *Paphiopedilum* Petula's Valentine 'Slipper Zone Valentine's Eve' AM/AOS (Love Song x Petula's Love) 80 pts. Exhibitor: Lehua Orchids; Photographer: Glen Barfield. Hawaii Judging
- [6] *Paphiopedilum* Petula's Distinction 'Slipper Zone Petal Darkness' HCC/AOS (Macabre Contrasts x Petula's Magic) 79 pts. Exhibitor: Lehua Orchids; Photographer: Glen Barfield. Hawaii Judging
- [7] *Cattleya schroederiae* 'Kathleen' CCM/AOS 82 pts. Exhibitor: William Rogerson; Photographer: Lois Cinert. Chicago Judging
- [8] *Paphiopedilum* Petula's Distinction 'Slipper Zone Petal Darkness' HCC/AOS (Macabre Contrasts x Petula's Magic) 79 pts. Exhibitor: Lehua Orchids; Photographer: Glen Barfield. Hawaii Judging
- [9] *Phragmipedium* Fritz Schomburg 'John Trevor' HCC/AOS (*kovachii* x *besseae*) 77 pts. Exhibitor: George A. Bogard; Photographer: David Gould. Dallas Judging
- [10] *Laeliocattleya* Santa Barbara Sunset 'Showtime' AM/AOS (*Laelia anceps* x *Ancibarina*) 81 pts. Exhibitor: Andy Braun; Photographer: George Lechner. Atlanta Judging
- [11] *Phalaenopsis* I-Hsin Sesame 'OX 1699' HCC/AOS (Ching Her Buddha x Leopard Prince) 77 pts. Exhibitor: Hausermann's Orchids, Inc.; Photographer: Nile Dusdieker. Chicago Judging
- [12] *Paphiopedilum* Graciously Hawaiian 'Slipper Zone Good Grief' AM/AOS (Hawaiian Kapuna x *hookerae*) 83 pts. Exhibitor: Lehua Orchids; Photographer: Glen Barfield. Hawaii Judging
- [13] *Cattleya lueddemanniana* 'Shogun's Beast' HCC/AOS 77 pts. Exhibitor: Shogun Hawaii- Matthias Seelis; Photographer: Glen Barfield. Hawaii Judging
- [14] *Cattleya intermedia* (Coerulea) 'Cherry Kay Houck' AM/AOS 80 pts. Exhibitor: Jungle Mist Orchids; Photographer: Glen Barfield. Hawaii Judging
- [15] *Mormodia* Gabina Jack 'Norma Coe Cinert' HCC/AOS (*Clowesia* Grace Dunn x *Mormodes ignea*) 77 pts. Exhibitor: Lois Cinert; Photographer: Lois Cinert. Chicago Judging
- [16] *Paphiopedilum* Petula's Distinction 'Slipper Zone Kopakai' AM/AOS (Macabre Contrasts x Petula's Magic) 84 pts. Exhibitor: Lehua Orchids; Photographer: Glen Barfield. Hawaii Judging





12



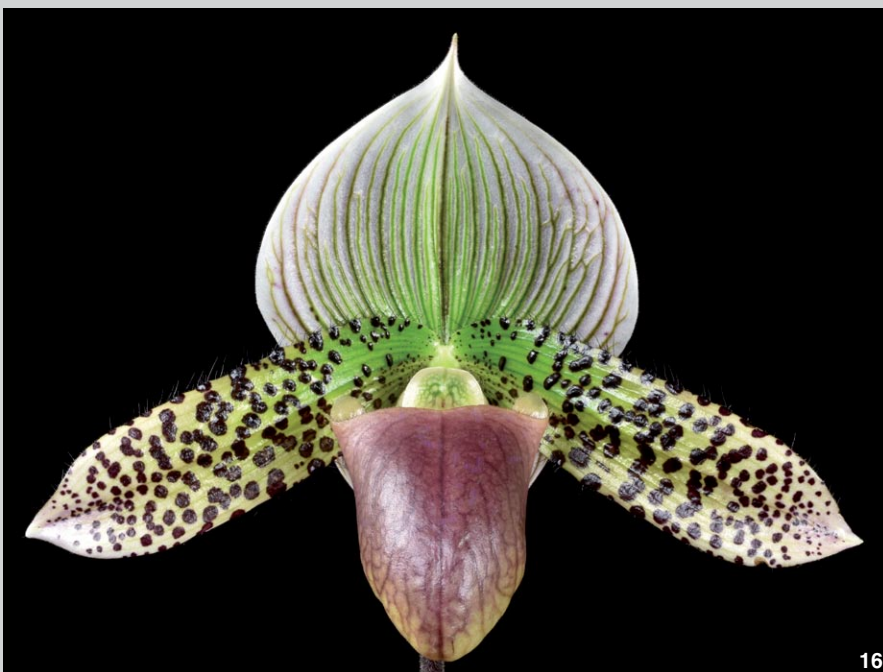
13



14

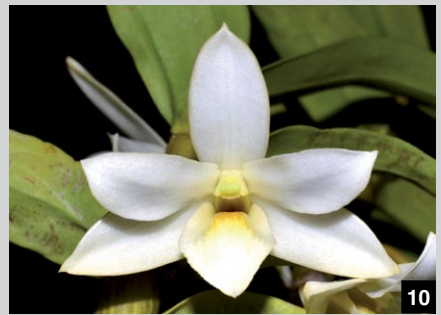


15



16

- [1] *Paphiopedilum* Petula's Distinction 'Slipper Zone Dark Matter' AM/AOS (Macabre Contrasts x Petula's Magic) 83 pts. Exhibitor: Lehua Orchids; Photographer: Glen Barfield. Hawaii Judging
- [2] *Paphiopedilum* Petula's Distinction 'Slipper Zone Sepal Glow' AM/AOS (Macabre Contrasts x Petula's Magic) 82 pts. Exhibitor: Lehua Orchids; Photographer: Glen Barfield. Hawaii Judging
- [3] *Paphiopedilum* Petula's Pink Delight 'Slipper Zone Vivid Pink' AM/AOS (Petula in Pink x Petula's Magic) 81 pts. Exhibitor: Lehua Orchids; Photographer: Glen Barfield. Hawaii Judging
- [4] *Paphiopedilum* Odette's Whim 'Slipper Zone Almost' HCC/AOS (Odette's Fantasy x Macabre Pops) 79 pts. Exhibitor: Lehua Orchids; Photographer: Glen Barfield. Hawaii Judging
- [5] *Oncidium* 21st Scentury 'Sweet Baby' HCC/AOS (Aka Baby x Pagans Scent) 75 pts. Exhibitor: Hilo Orchid Farm; Photographer: Glen Barfield. Hawaii Judging
- [6] *Paphiopedilum* Petula's Distinction (Macabre Contrasts 'Black Flourish' x Petula's Magic 'Black on Maroon) AQ/AOS. Exhibitor: Lehua Orchids; Photographer: Glen Barfield. Hawaii Judging
- [7] *Paphiopedilum* Majestic Fred 'Slipper Zone Spot Prominence' HCC/AOS (Grand Fred x President Fred) 79 pts. Exhibitor: Lehua Orchids; Photographer: Glen Barfield. Hawaii Judging
- [8] *Rhyncholaeliocattleya* Reminiscence 'Gloria' AM/AOS (Regal Red x Sachiko Tsugawa) 81 pts. Exhibitor: Aka's Orchids Hawaii; Photographer: Glen Barfield. Hawaii Judging
- [9] *Paphiopedilum* Fred Fantastically 'Slipper Zone Last & Least' HCC/AOS (Fred's Magic x President Fred) 79 pts. Exhibitor: Lehua Orchids; Photographer: Glen Barfield. Hawaii Judging
- [10] *Paphiopedilum* Lake Superior 'Matcha Latte' AM/AOS (Emerald Lake x Supersonic) 81 pts. Exhibitor: Hilo Orchid Farm; Photographer: Glen Barfield. Hawaii Judging
- [11] *Masdevallia* Highland Monarch 'Mauna Loa' AM/AOS (Highland Fling x Monarch) 82 pts. Exhibitor: Okika Ltd. Glen Barfield; Photographer: Glen Barfield. Hawaii Judging
- [12] *Dracula chimaera* 'Jungle Mist Mind Flayer' AM/AOS 81 pts. Exhibitor: Jungle Mist Orchids; Photographer: Glen Barfield. Hawaii Judging
- [13] *Dracula* Ecuagenera 'Memoria Cecelia Houck' AM/AOS (*gigas* x *roezlii*) 80 pts. Exhibitor: Jungle Mist Orchids; Photographer: Glen Barfield. Hawaii Judging
- [14] *Cattleya loddigesii* (Punctata) 'Sebastian Ferrell' AM/AOS 80 pts. Exhibitor: Ben Oliveros and Orchid Eros; Photographer: Glen Barfield. Hawaii Judging
- [15] *Cattleya caulescens* 'OrchidFix' HCC/AOS 76 pts. Exhibitor: The OrchidFix Nursery, Inc.; Photographer: Glen Barfield. Hawaii Judging
- [16] *Paphiopedilum* Fred's Spring 'Slipper Zone One Thru' HCC/AOS (Fred's Aura x Oriental Spring) 77 pts. Exhibitor: Lehua Orchids; Photographer: Glen Barfield. Hawaii Judging





12



13



14

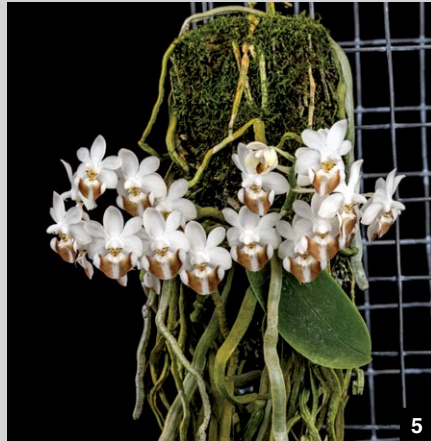
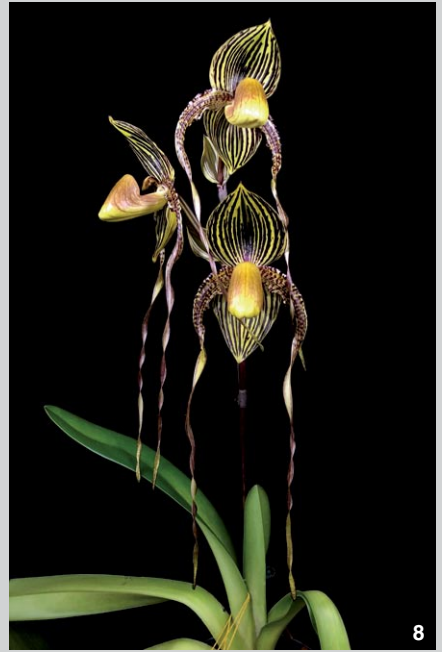


15



16

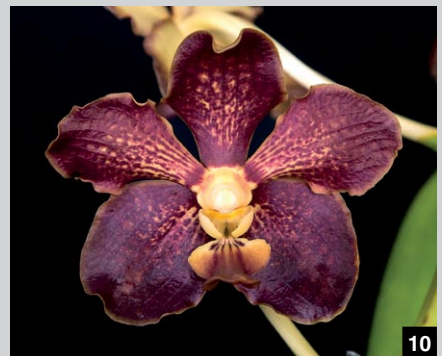
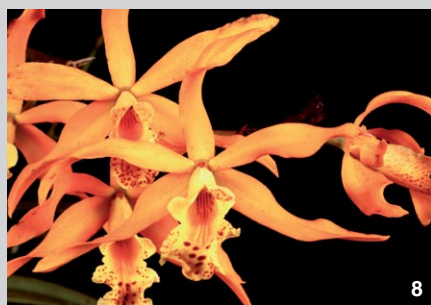
- [1] *Paphiopedilum* Macabre Charisma 'Slipper Zone One & Only' AM/AOS (Macabre Love x Macabre Contrasts) 85 pts. Exhibitor: Lehua Orchids; Photographer: Glen Barfield. Hawaii Judging
- [2] *Paphiopedilum* Fred's Jewel 'Slipper Zone Spotted Pride' AM/AOS (Fred's Touch x Jewel Green) 81 pts. Exhibitor: Lehua Orchids; Photographer: Glen Barfield. Hawaii Judging
- [3] *Paphiopedilum* Fred's Brilliance 'Slipper Zone Sepal Splendor' AM/AOS (Friedrich von Hayek x Fred's Magic) 82 pts. Exhibitor: Lehua Orchids; Photographer: Glen Barfield. Hawaii Judging
- [4] *Rhyncattleanthe* Flaming Passion 'Edwin's Sunshine' HCC/AOS (*Cattlianthe* Orchidglade x *Rhyncholaeliocattleya* Little Toshie) 79 pts. Exhibitor: Edwin A. Perez; Photographer: Marines Torres. Puerto Rico Judging
- [5] *Rhyncattleanthe* Kin Star FCA 'Stevie Nicks' HCC/AOS (Guess What x Love Sound) 76 pts. Exhibitor: William Caldwell; Photographer: Susan Hathorn. Louisiana Judging
- [6] *Paphiopedilum* Hawaiian Skies (Luna Pleasure 'Petal Boldness' x Hawaiian Wonder 'Glamor in Green') AQ/AOS. Exhibitor: Lehua Orchids; Photographer: Glen Barfield. Hawaii Judging
- [7] *Paphiopedilum* Petula's Vision 'Slipper Zone Hauntingly Red' AM/AOS (Macabre Contrasts x Petula's Pride) 80 pts. Exhibitor: Lehua Orchids; Photographer: Glen Barfield. Hawaii Judging
- [8] *Myrmecocattleya* Calista 'Machiavelli' HCC/AOS (*Cattleya* Brabantiae x *Myrmecophila tibicinis*) 75 pts. Exhibitor: René E. Garcia; Photographer: Marines Torres. Puerto Rico Judging
- [9] *Paphiopedilum* Presidentially Macabre 'Slipper Zone Pink Blush' HCC/AOS (President Fred x Macabre Pops) 79 pts. Exhibitor: Lehua Orchids; Photographer: Glen Barfield. Hawaii Judging
- [10] *Dendrobium* Hoku Quintal 'Tropical Angels' HCC/AOS (Frosty Dawn x *trigonopus*) 76 pts. Exhibitor: Fong Cing Li; Photographer: Fong Cing Li. Puerto Rico Judging
- [11] *Maxillaria schunkeana* 'Catahoula' CCM/AOS 88 pts. Exhibitor: Eron Borne; Photographer: Susan Hathorn. Louisiana Judging
- [12] *Rhyncattleanthe* Dixie Beau 'Hynson Bayou' HCC/AOS (Wanda's Fire x *Cattlianthe* Chocolate Drop) 76 pts. Exhibitor: Wilton Guillory, Jr. DDS; Photographer: Susan Hathorn. Louisiana Judging
- [13] *Rhynchostylis* Kultana 'Gecko' HCC/AOS (Chorchalood x *gigantea*) 79 pts. Exhibitor: R.F. Orchids, Inc.; Photographer: Susan Hathorn. Louisiana Judging
- [14] *Vanda* Don Ghiz 'Crownfox' AM/AOS (Susan Best x Ray Rodriguez) 82 pts. Exhibitor: R.F. Orchids, Inc.; Photographer: Susan Hathorn. Louisiana Judging
- [15] *Vanda* Crownfox Sundancer 'Luna' AM/AOS (Fuchs Gold x *denisoniana*) 82 pts. Exhibitor: R.F. Orchids, Inc.; Photographer: Susan Hathorn. Louisiana Judging
- [16] *Papilionanda* Batram 'Quinn' AM/AOS (Mimi Palmer x *Vanda denisoniana*) 80 pts. Exhibitor: R.F. Orchids, Inc.; Photographer: Susan Hathorn. Louisiana Judging







- [1] *Bulbophyllum romyi* 'Whisper In My Ear' AM/AOS 86 pts. Exhibitor: Laura and Wes Newton; Photographer: Wes Newton. Florida North-Central Judging
- [2] *Laeliocattleya* Krull's Shannon Green 'Crystelle' AM/AOS (*Cattleya* Florence Lin x *Laelia anceps*) 81 pts. Exhibitor: Krull-Smith; Photographer: Wes Newton. Florida North-Central Judging
- [3] *Mormodia* Gabina Jack 'Corinne's Spot On' AM/AOS (*Clowesia* Grace Dunn x *Mormodes ignea*) 81 pts. Exhibitor: Corinne Arnold; Photographer: Wes Newton. Florida North-Central Judging
- [4] *Phragmipedium* Charleston Sunrise 'Rivka Belle' AM/AOS (Bel Royal x Memoria Dick Clements) 83 pts. Exhibitor: Bloyce Arnold; Photographer: H. A. Russell III. Florida North-Central Judging
- [5] *Phalaenopsis lobbii* 'Fajen's Orchids Too' AM/AOS 81 pts. Exhibitor: Fajen's Orchids; Photographer: H. A. Russell III. Florida North-Central Judging
- [6] *Paphiopedilum* Emma Decker 'Big Bear' AM/AOS (*malipoense* x Fumi's Delight) 80 pts. Exhibitor: Ryan Kowalczyk; Photographer: Wes Newton. Florida North-Central Judging
- [7] *Vanda* Motes Green Goblin 'Pippen's Protégé' AM/AOS (*tessellata* x *longitepala*) 83 pts. Exhibitor: Cheryle Daniel; Photographer: Wes Newton. Florida North-Central Judging
- [8] *Paphiopedilum* Krull's Eileen Hector 'Crystelle' AM/AOS (Jan Ragan x Shiny's Pride) 86 pts. Exhibitor: Krull-Smith; Photographer: Wes Newton. Florida North-Central Judging
- [9] *Rhynchomyrmeleya* Snow Leopard 'Bill's Weed' HCC/AOS (*Rhyncholaeliocattleya* Waianae Leopard x *Myrmecophila thomsoniana*) 77 pts. Exhibitor: Bill Nunez; Photographer: Wes Newton. Florida North-Central Judging
- [10] *Laelia undulata* (Semi-alba) 'Marissa' AM/AOS 80 pts. Exhibitor: Jim Roberts Florida SunCoast Orchids; Photographer: Wes Newton. Florida North-Central Judging
- [11] *Paphiopedilum mastersianum* 'Springwater' AM/AOS 85 pts. Exhibitor: Springwater Orchids and Thanh Nguyen; Photographer: H. A. Russell III. Florida North-Central Judging
- [12] *Vanda* A. F. Buckman 'Leslie's in the Pink' CCM/AOS (*falcata* x *christensoniiana*) 88 pts. Exhibitor: Leslie Belew; Photographer: Wes Newton. Florida North-Central Judging
- [13] *Paphiopedilum* Lunatic Left 'Krull-Smith' CCE-AM/AOS (F. C. Puddle x Lunacy) 91-81 pts. Exhibitor: Krull-Smith; Photographer: Wes Newton. Florida North-Central Judging
- [14] *Cymbidium* Mad Blanche 'Hatfield's' HCC/AOS (Blanche Ames x *madidum*) 78 pts. Exhibitor: Krull-Smith; Photographer: Wes Newton. Florida North-Central Judging
- [15] *Dendrobium* Fire Wings 'Cora' CCE/AOS (Big Alex x Silver Wings) 90 pts. Exhibitor: Susan Gerhardt; Photographer: Wes Newton. Florida North-Central Judging
- [16] *Guarechea* Black Comet 'Whisper Dark Matter' AM/AOS (Miva Etoile Noire x *Prosthechea cochleata*) 88 pts. Exhibitor: Laura and Wes Newton; Photographer: Laura Newton. Florida North-Central Judging
- [17] *Phalaenopsis* Shye-Lih Star 'Crystelle' AM/AOS (Yungho Gelb Canary x Princess Kaiulani) 86 pts. Exhibitor: Krull-Smith; Photographer: Wes Newton. Florida North-Central Judging



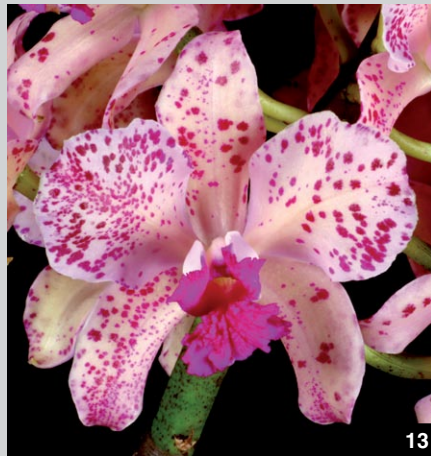


- [1] *Vanda* Jim Krull 'Krull's Raspberry' HCC/AOS (Kulwadee Fragrance x Som-sri Gold) 78 pts. Exhibitor: Krull-Smith; Photographer: Kay Clark. Florida North-Central Judging
- [2] *Cattlianthe* Charles Wilson 'Big Bear's Sunset' AM/AOS (Circle Spirit x Orchidglade) 80 pts. Exhibitor: Ryan Kowalczyk; Photographer: Kay Clark. Florida North-Central Judging
- [3] *Paphiopedilum* Nathaniel's Spectra 'Fajen's Hat-trick' AM/AOS (*thaiantum* x *godefroyae*) 80 pts. Exhibitor: Fajen's Orchids; Photographer: Wes Newton. Florida North-Central Judging
- [4] *Vandachostylis* Sagarik 'Jim Krull' AM/AOS (*Rhynchostylis coelestis* x *Vanda curvifolia*) 82 pts. Exhibitor: Krull-Smith; Photographer: Kay Clark. Florida North-Central Judging
- [5] *Vanda* Motes Adorbs 'Cherry Blossom' CCM/AOS (*ampullacea* x *christensoni-ana*) 81 pts. Exhibitor: Naoki Kawamura; Photographer: Kay Clark. Florida North-Central Judging
- [6] *Papilionanthe* teres 'A-doribil' AM/AOS 85 pts. Exhibitor: Krull-Smith; Photographer: Kay Clark. Florida North-Central Judging
- [7] *Cattleytonia* Jamaica Joy 'Goldilocks' AM/AOS (*Broughtonia sanguinea* x Capri) 86 pts. Exhibitor: Matthew Riesz; Photographer: Wes Newton. Florida North-Central Judging
- [8] *Myrmecatavola* Lanny Morry 'Bert Wortel' AM/AOS (*Brassocattleya* Richard Mueller x *Myrmecophila thomsoniana*) 80 pts. Exhibitor: Daisy Wortel; Photographer: Tom Kuligowski. West Palm Beach Judging
- [9] *Vanda* Heinz Graf 'Michael D. Gibson' AM/AOS (Golden Peddler x Indio Guacaipuro) 83 pts. Exhibitor: Naoki Kawamura; Photographer: Kay Clark. Florida North-Central Judging
- [10] *Vanda* Motes Hot Mama 'Naoki Kawamura' AM/AOS (Foxy Lady x *merillii*) 86 pts. Exhibitor: Naoki Kawamura; Photographer: Kay Clark. Florida North-Central Judging
- [11] *Bulbophyllum* Meen Poison Raspberry 'WingDreams' AM/AOS (*bicolor* x *frostii*) 85 pts. Exhibitor: Julio and Eileen Hector; Photographer: Wes Newton. Florida North-Central Judging
- [12] *Paphiopedilum* Prime Child 'Wing-Dreams' HCC/AOS (*rothschildianum* x *primulinum* var. *primulinum*) 77 pts. Exhibitor: Julio and Eileen Hector; Photographer: Kay Clark. Florida North-Central Judging
- [13] *Phalaenopsis* lobbii 'Fajen's Hat-trick' AM/AOS 87 pts. Exhibitor: Fajen's Orchids; Photographer: Kay Clark. Florida North-Central Judging
- [14] *Rhyncattleanthe* Bredren's Fire Walker 'Linkin' AM/AOS (*Cattlianthe* Rojo x *Rhyncattleanthe* Cherry Suisse) 83 pts. Exhibitor: Bredren Orchids and Phillip Hamilton; Photographer: Wes Newton. Florida North-Central Judging
- [15] *Vanda* Red Rocket 'Krull-Smith' AM/AOS (*curvifolia* x *liouvillei*) 81 pts. Exhibitor: Krull-Smith; Photographer: Kay Clark. Florida North-Central Judging
- [16] *Clowesetum* Diane Drisch 'Corinne's Pink Lemonade' HCC/AOS (*Clowesia* Grace Dunn x *Catasetum tigrinum*) 79 pts. Exhibitor: Corinne Arnold; Photographer: Kay Clark. Florida North-Central Judging





10



13



11



14



12

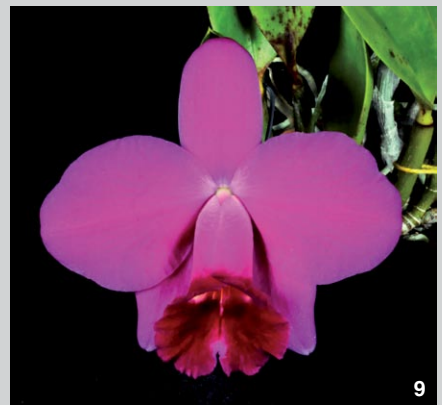
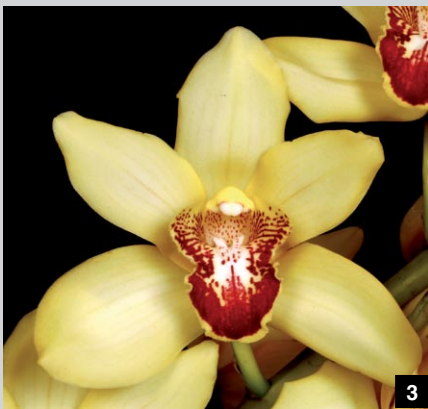


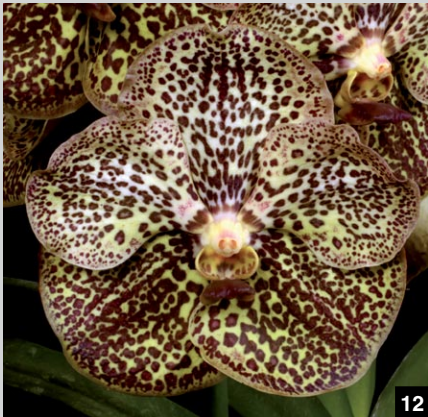
15



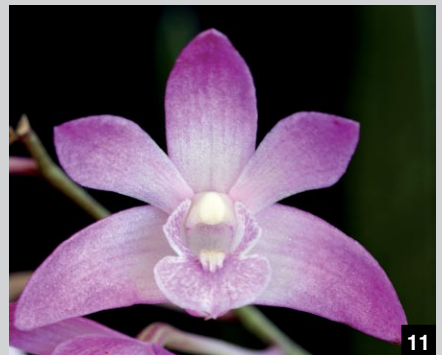
16

- [1] *Cattleya intermedia* var. *amethystina* 'Emma's Delight' AM/AOS 88 pts. Exhibitor: Matthew Riesz; Photographer: Wes Newton. Florida North-Central Judging
- [2] *Phalaenopsis tetraspis* 'Bredren's Ruby' AM/AOS 80 pts. Exhibitor: Bredren Orchids and Phillip Hamilton; Photographer: Wes Newton. Florida North-Central Judging
- [3] *Vanda tessellata* 'Marta' AM/AOS 85 pts. Exhibitor: Juraj Kojs; Photographer: Nick Nickerson. West Palm Beach Judging
- [4] *Vanda Xena* 'YourEye' AM/AOS (Memoria Thianchai x *tessellata*) 80 pts. Exhibitor: Juraj Kojs; Photographer: Nick Nickerson. West Palm Beach Judging
- [5] *Vanda Motes Adorbs* 'Redland' CCE/AOS (*ampullacea* x *christensoniana*) 95 pts. Exhibitor: R. F. Orchids, Inc.; Photographer: Tom Kuligowski. West Palm Beach Judging
- [6] *Vanda christensoniana* 'Crownfox Pink Glow' CCE/AOS 92 pts. Exhibitor: R.F. Orchids, Inc.; Photographer: Tom Kuligowski. West Palm Beach Judging
- [7] *Dendrobium tangerinum* 'Bert Wortel' AM/AOS 80 pts. Exhibitor: Daisy Wortel; Photographer: Tom Kuligowski. West Palm Beach Judging
- [8] *Guaritionia* Jean Wilson 'Wayne' AM/AOS (*Broughtonia ortgiesiana* x Why Not) 81 pts. Exhibitor: Judy Congdon; Photographer: Tom Kuligowski. West Palm Beach Judging
- [9] *Cattleya* Cariad's Mini-Quinee 'Angel Kiss' CCM/AOS (Mini Purple x *intermedia*) 83 pts. Exhibitor: So Orchids; Photographer: Nick Nickerson. West Palm Beach Judging
- [10] *Vanda* LaVoyce Porter 'Crownfox' AM/AOS (Crownfox Avocado Honey x Fuchs Harvest Moon) 84 pts. Exhibitor: R. F. Orchids, Inc.; Photographer: Tom Kuligowski. West Palm Beach Judging
- [11] *Angraecum* Alabaster 'Nicholas' CCM/AOS (*eburneum* x *Veitchii*) 85 pts. Exhibitor: Orchids In Bloom; Photographer: Nick Nickerson. West Palm Beach Judging
- [12] *Vanda christensoniana* 'Angie Sue Pitiriciu' CCE/AOS 92 pts. Exhibitor: Angie and Mike Pitiriciu; Photographer: Tom Kuligowski. West Palm Beach Judging
- [13] *Cattleya amethystoglossa* 'Redland Glo' AM/AOS 85 pts. Exhibitor: R. F. Orchids, Inc.; Photographer: Tom Kuligowski. West Palm Beach Judging
- [14] *Phalaenopsis* Zheng Min Gnu 'Ursula Wortel' HCC/AOS (Lioulin Amber x Zheng Min Diffuse) 77 pts. Exhibitor: Daisy Wortel; Photographer: Tom Kuligowski. West Palm Beach Judging
- [15] *Paphiopedilum philippinense* 'Mary Pat' CCM/AOS 85 pts. Exhibitor: John Weland; Photographer: Tom Kuligowski. West Palm Beach Judging
- [16] *Phalaenopsis* Mount Lip 'Memoria Gloria Flores' AM/AOS (South Cha-Li x Mount Beauty) 85 pts. Exhibitor: Carolyn Fuentes; Photographer: Charlotte Randolph. Alamo Judging.





- [1] *Papilionanda* Henecia Kim HyunJoong 'Ron Wnek' HCC/AOS (*Vanda* Kultana Blue x *Josephine van Brero*) 77 pts. Exhibitor: Wayne Green; Photographer: Tom Kuligowski. West Palm Beach Judging
- [2] *Procatavola* Key Lime Stars 'Crownfox' AM/AOS (*Cattleychea* Lime Sherbet x *Brassavola nodosa*) 83 pts. Exhibitor: R.F. Orchids, Inc.; Photographer: Tom Kuligowski. West Palm Beach Judging
- [3] *Cymbidium* Milton Carpenter 'Florida Sunshine' AM/AOS (Golden Elf x Via Ambarino) 87 pts. Exhibitor: Everglades Orchids; Photographer: Tom Kuligowski. West Palm Beach Judging
- [4] *Vanda denisoniana* 'Shirley and Selig Golden' AM/AOS 82 pts. Exhibitor: Juraj Kojcs; Photographer: Tom Kuligowski. West Palm Beach Judging
- [5] *Brassocattleya* North Miami 'Heaven's Journey' CCM/AOS (*Cattleya loddigesii* x *Brassavola nodosa*) 88 pts. Exhibitor: Jim Longwell; Photographer: Tom Kuligowski. West Palm Beach Judging
- [6] *Cymbidium* Jungle King 'Red Rooster' AM/AOS (Tender Love x Dream Girl) 84 pts. Exhibitor: Everglades Orchids; Photographer: Tom Kuligowski. West Palm Beach Judging
- [7] *Paphiopedilum* Magic Paradise 'Argos' AM/AOS (*Paphiopedilum liemianum* x *Paphiopedilum Avalon Magic*) 83 pts. Exhibitor: Ramon de los Santos; Photographer: Ramon de los Santos. California-Sierra Nevada Judging
- [8] *Rhyncattleanthe* Brad Koch 'Eureka' HCC/AOS (*Cattlianthe* Gold Nugget x *Rhyncholaeliocattleya* George King) 79 pts. Exhibitor: Gold Country Orchids; Photographer: Ramon de los Santos. California-Sierra Nevada Judging
- [9] *Cattleya pumila* 'Midnight Passion' AM/AOS 85 pts. Exhibitor: Jim Longwell; Photographer: Tom Kuligowski. West Palm Beach Judging
- [10] *Vanda* Fulford's Gold 'Dr. Jay Kwan See' CCE/AOS (*Iamellata* x Udomchai) 90 pts. Exhibitor: Angie and Mike Pitiriciu; Photographer: Tom Kuligowski. West Palm Beach Judging
- [11] *Sarcochilus* Dragon's Fire 'Melencia' AM/AOS (Hiccup x Kulnura Intensity) 82 pts. Exhibitor: Ramon de los Santos; Photographer: Ramon de los Santos. California-Sierra Nevada Judging
- [12] *Vanda* Leptailurus 'Shirley Ann Smith' AM/AOS (Kulwadee Fragrance x Kriengkrai) 83 pts. Exhibitor: Angie and Mike Pitiriciu; Photographer: Tom Kuligowski. West Palm Beach Judging
- [13] *Cattleya jongheana* 'Barbegazi' AM/AOS 83 pts. Exhibitor: Ramon de los Santos; Photographer: Ramon de los Santos. California-Sierra Nevada Judging
- [14] *Laeliocatanthe* Newberry Lava Burst 'Que Linda' CCM/AOS (*Cattlianthe* Rojo x *Laelia undulata*) 84 pts. Exhibitor: Louis Lodyga; Photographer: Tom Kuligowski. West Palm Beach Judging
- [15] *Cymbidium* Tranquility 'Jaybee' HCC/AOS (Dag x Sussex Dawn) 76 pts. Exhibitor: Ed Dumaguin; Photographer: Ramon de los Santos. California-Sierra Nevada Judging
- [16] *Cymbidium* Carmen Segre 'Jaybee' AM/AOS (Sleeping Carmen x *tracyanum*) 82 pts. Exhibitor: Ed Dumaguin; Photographer: Ramon de los Santos. California-Sierra Nevada Judging







12



14



13



15



16

- [1] *Paphiopedilum gratixianum* var. *christensonianum* 'Agagwe' AM/AOS 81 pts. Exhibitor: Ramon de los Santos; Photographer: Ramon de los Santos. California-Sierra Nevada Judging
- [2] *Dendrobium* Lim Tee Hooi 'Riverwood' AM/AOS (*discolor* x *tangerinum*) 82 pts. Exhibitor: Harry A. Gallis; Photographer: Jeremy Losaw. Carolinas Judging
- [3] *Paphiopedilum rothschildianum* 'Twin Sisters' HCC/AOS 78 pts. Exhibitor: Terry Partin; Photographer: Anne Kotowski. Chicago Judging
- [4] *Epidendrum agoyanense* 'Orkiddoc' CBR/AOS. Exhibitor: Larry Sexton; Photographer: Nile Dusdieker. Chicago Judging
- [5] *Phalaenopsis* Pylo's Mustard 'Freckles' CCM/AOS (Sogo Ponsai x Pylo's Dixie Gelb) 85 pts. Exhibitor: Robert Hydzik; Photographer: Jeremy Losaw. Carolinas Judging
- [6] *Phragmipedium* QF Maria 'Sarah' AM/AOS (*lindleyanum* x *dalessandroi*) 82 pts. Exhibitor: Graham Ramsey; Photographer: Jeremy Losaw. Carolinas Judging
- [7] *Paphiopedilum* Memoria Nicholas Hamann 'Judy's Joy' AM/AOS (*wardii* x Jacqueline's Joy) 81 pts. Exhibitor: Judy Cook; Photographer: David Gould. Dallas Judging
- [8] *Miltoniopsis* Morris Chestnut 'H171' AM/AOS (Martin Orenstein x Goodhope Bay) 82 pts. Exhibitor: Max C. Thompson; Photographer: Bryon Rinke. Great Plains Judging
- [9] *Phragmipedium* Jason Fischer 'Olivia' HCC/AOS (Memoria Dick Clements x *besseae*) 78 pts. Exhibitor: Graham Ramsey; Photographer: Jeremy Losaw. Carolinas Judging
- [10] *Phragmipedium* QF Red Wings 'Dalton James' HCC/AOS (Eric Young x Red Rocket) 76 pts. Exhibitor: George A. Bogard; Photographer: David Gould. Dallas Judging
- [11] *Dendrobium kingianum* 'Reece' AM/AOS 80 pts. Exhibitor: Tyler M. Albrecht; Photographer: Ramon de los Santos. California-Sierra Nevada Judging
- [12] *Brassavola tuberculata* 'My Lilika' HCC/AOS 76 pts. Exhibitor: Steve Gonzalez and Patricia Kono; Photographer: Nile Dusdieker. Chicago Judging
- [13] *Vanda* Motes Adorbs 'Soroa Pink Puff' CCM/AOS (*ampullacea* x *christensoniana*) 87 pts. Exhibitor: Soroa Orchids; Photographer: Carmen Johnston. Florida-Caribbean Judging
- [14] *Trichocentrum splendidum* 'Soroa Gold Bullion' AM/AOS 80 pts. Exhibitor: Soroa Orchids; Photographer: Carmen Johnston. Florida-Caribbean Judging
- [15] *Cyclopogon elatus* 'Bryon' CCM/AOS 86 pts. Exhibitor: Bryon K. Rinke; Photographer: Bryon K Rinke. Great Plains Judging
- [16] *Dendrobium* Bruce Gordon 'Soroa Green Panther' AM/AOS (*alexandrae* x *eximium*) 80 pts. Exhibitor: Soroa Orchids; Photographer: Carmen Johnston. Florida-Caribbean Judging

LINDLEYANA

# Orchids from Ecuador

A New Species of *Andinia* (Orchidaceae: Pleurothallidinae), from the Ecuadorian Amazon

BY HUGO MEDINA, JOSÉ PORTILLA AND IVÁN PORTILLA

PHOTOGRAPHS BY HUGO MEDINA UNLESS OTHERWISE CREDITED

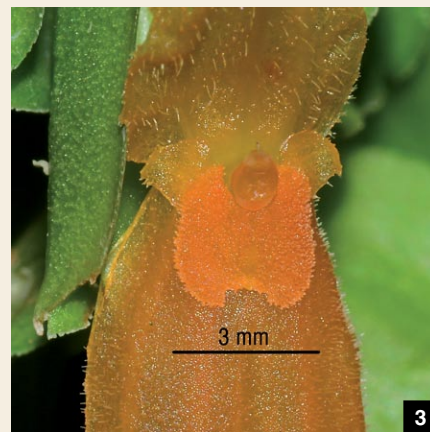
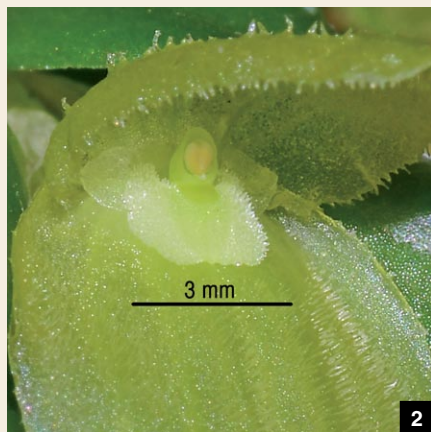


**ABSTRACT** A new species of *Andinia*, *Andinia condorensis*, is described, illustrated and compared to *Andinia lappacea* (Luer) Pridgeon & M.W.Chase. The wild plant material was collected under the investigation permit “Rescate, conservación, reproducción y manejo ex situ de la flora del Ecuador,” authorization No. 004-2016-IC-FLO-DNB/MA del Ministerio del Ambiente used in accordance with La Codificación a la ley Forestal y de Conservación de Áreas Naturales y Vida Silvestre, authorized for Ecuagenera Cia. Ltda. The new species originates from Zamora-Chinchipec, Ecuador.

**KEYWORDS** *Andinia*, *Andinia condorensis*, Ecuador, new species, Pleurothallidinae

**INTRODUCTION** The taxonomic study of species attributable to *Andinia* (Luer) Luer has been challenging when considering the vegetative morphology. The species range from having a growth habit that is caespitose to repent and erect to pendent. The leaves range from herbaceous to coriaceous and are held alternately to imbricate. The inflorescences are successive- to solitary-flowered and produced at the base of each leaf. The flower morphology is also highly variable. The first molecular phylogenetic study on the subtribe Pleurothallidinae (Pridgeon et al. 2001), based on a narrow sampling of the different genera and subgenera included in the genus concluded that *Pleurothallis* was polyphyletic. Pridgeon and Chase (2001) concluded *Pleurothallis lappacea* of *Pleurothallis* subg. *Aenigma* was sister to *Andinia pensilis* with robust bootstrap support and expanded *Andinia* to include all the species of *Pleurothallis* subg. *Aenigma* (Pridgeon and Chase 2001). However, *Andinia* remained polyphyletic with species included in both *Pleurothallis* Br. and *Lepanthes* Sw. and attributed to several genera now recognized as a synonyms of *Andinia*, including *Brachycladium* (Luer) Luer, *Lueranthos* Szlach. & Marg., *Masdevalliantha* (Luer) Szlach. & Marg., *Neooreophilus* Archila, *Oreophilus* W.E. Higgins & Archila, *Penducella* Luer & Thorerle, *Salpistele* Dressler, and *Xenosia* Luer. This was followed in 2017 by a broader sampling of the genus Wilson et al. (2017). Until a broader sampling of the genus and *Andinia*, as currently circumscribed, has about 76 recognized species (Kew Monocot List). The plants in that subgenus are characterized by their ascending habit, coriaceous leaves, lax inflorescence, echinate ovary, trilobed lip with the lobes more or less triangular and a conspicuous anther and stigma.

**TAXONOMY** *Andinia condorensis* H.Medina, J.Portilla, & I.Portilla sp. nov. Type. ECUADOR. Zamora-Chinchipec: Cantón Yantzaza, Parroquia Los Encuentros, Cordillera del Cóndor, plateau near the Zarza community, near Rio Blanco, 3°53'46.60" S 78°31'56.43" O, 1680 m, flowered in cultivation at



Ecuagenera, Gualaceo, Jan 2019, I. Portilla 0077 (holotype: HA).

***Andinia condorensis***

*Species novae similis est Andinia lappacea (Luer.) Pridgeon & M.W.Chase, sed differunt semi-clausa figura, magnitudine et colore laete flores flavo vs. flores oblongus planus, orange conspicua maior, labrum breve sub-quadratum basi bilobum vs. labrum oblongum ad basin et apicem bilobum, petalis obtusis vs deltoideis ovatis acutis.*

**DESCRIPTION** Plant epiphytic, pendent, 6.5–7.5 cm long; rhizome abbreviated, 0.3 cm and covered by sheaths that are 0.4 cm long, 0.2 cm wide; roots are grayish white, 3.0–5.0 cm long, 0.4 cm in diameter; the stems 2.5–5.5 cm long, 0.1–0.15 cm wide, enveloped by acuminate sheaths 0.5 cm long, 0.3 cm wide; leaves orbicular, pendent, entire, mucronate, olive green, 0.9–1.3 cm long, 0.4–1.0 cm wide, generally 12–18 forming three ranks on mature plants. The inflorescence a solitary flower; pedicel 0.2 cm long, 0.1 cm wide, covered by a deltiform bract, truncate, acute, 0.2 cm long, 0.4 cm wide; flower hanging, partly closed, pale yellow, without a detectable odor, 1.3 cm long, 0.6 cm wide; dorsal sepal ovate, concave, truncate, acute, tricostate externally with trichomes along the costae, ciliate margin with trichomes most developed toward the base, 0.8 cm long, 0.5 cm wide; lateral sepals ovate, connate for about two-thirds their length with about 0.3–0.4 cm space between the apices, each sepal tricostate externally with trichomes along the costae, 0.8 cm



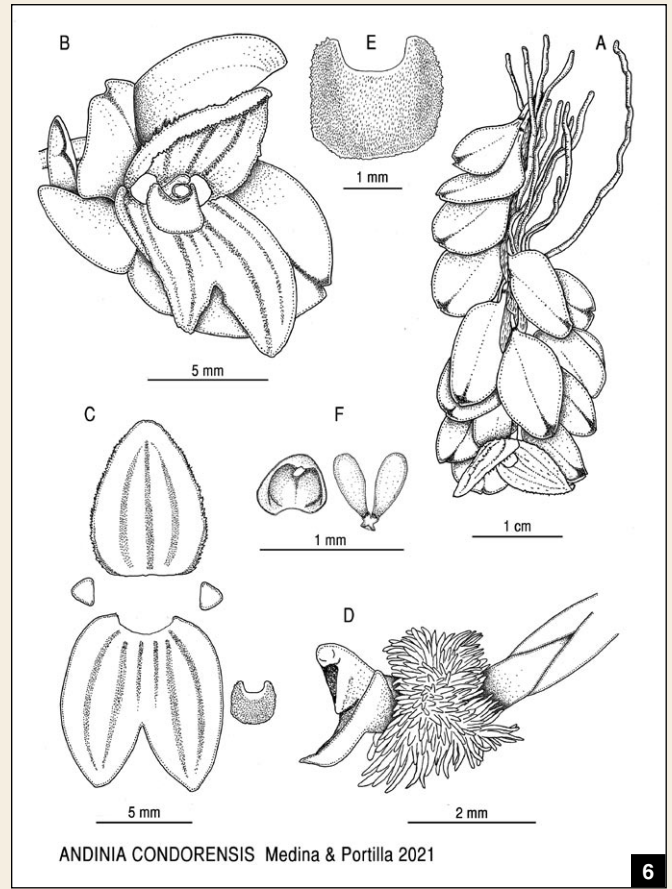
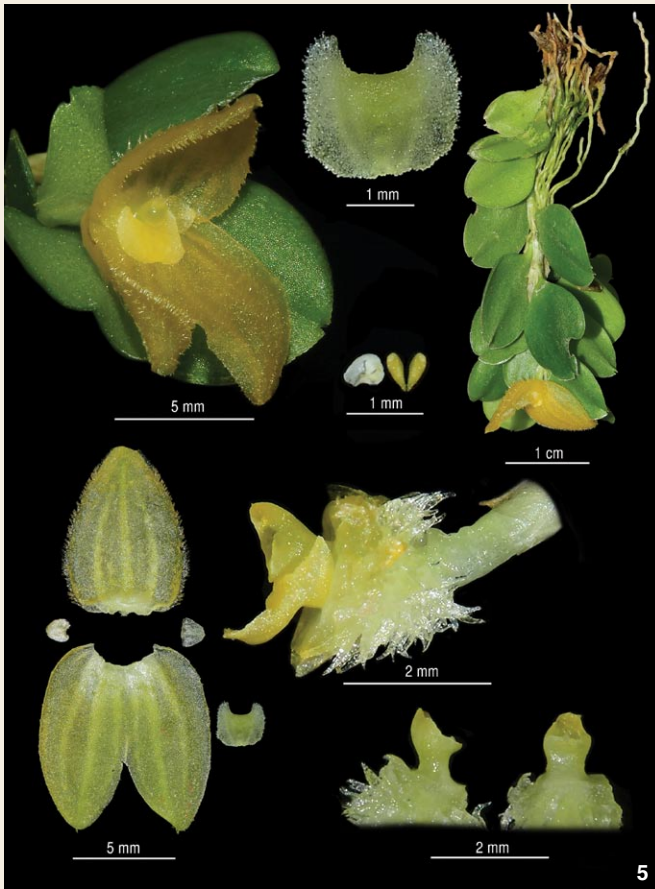
[1] Close-up of *Andinia condorensis* illustrating plant habit and flower.

[2] *Andinia condorensis* lip detail

[3] *Andinia lappacea* lip detail for comparison.

[4] Plant habit and flower of *Andinia lappacea*.

long, 0.7 cm wide; petals deltoid, entire, obtuse, hyaline, whitish, 0.1 cm long, 0.1–0.2 cm wide; lip subquadrate, the disc glandulose-verrucose, the margin denticulate, with two lateral lobes held against the column, brighter yellow than the lip, 0.2 cm long, 0.2 cm wide; column erect, semiterete, broad at the base and





[5] *Andinia condorensis*, prepared sheet of the plant that served as holotype, by H. Medina.

[6] *Andinia condorensis* H.Medina *et al.* A. Habit. B. Flower. C. Perianth dissected. D. Column and lip side view. E. Column lateral and front view. F. view lip. G. Layer of the anther and polinaria (two views). H. Bract covering the ovary, front view. Illustration of the plant that served as holotype, by Hugo Medina.

[7–12] Several different examples of the new species illustrating the conformity of sepal and lip morphology.

becoming narrowed before dilating at the apex, 0.1 cm long, 0.06 cm wide, the stigmatic cavity 0.03 cm wide; anther cap subcordate, cucullate, 0.04 cm long, 0.05 cm wide; pollinia two, clavate, 0.05 cm long, 0.02 cm wide; fruit unknown but presumably an echinate ovoid capsule.

**ETYMOLOGY** Named to honor Cordillera del Cóndor, located in the Zamora-Chinchipe, where the species was first discovered.

**DISTRIBUTION** *Andinia condorensis* is only known from the eastern region of Cordillera del Cóndor in southeastern Ecuador in the province of Zamora-Chinchipe, Cantón Yantzaza, Parroquia Los Encuentros, in the community of El Zarza, 1,680 m.

**PHENOLOGY** In cultivation the plants are grown mounted on cork or tree fern in 50 percent shade and high humidity and have been seen flowering in May, June, October and November.

**HABITAT AND ECOLOGY** Pendent, epiphytic herbs that grow in primary cloud forest on thin branches in association with lichens and moss, under the canopy of trees around 1,680 m.

**DISCUSSION** The new species is most similar to *A. lappacea* (Luer.) Pridgeon & M.W.Chase, but differs in that the flowers do not spread as freely with a

concave rather than convex dorsal sepal and in their color. The flowers of the new species are only known to be yellow, while those of *A. lappacea* range from yellow to orange. The lip also differs from *A. lappacea* in that it has an entire apex rather than cleft. Another important characteristic of the new species is its location in the Amazon region; *A. lappacea* is distributed in the northwest of Ecuador.

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

#### Acknowledgments

We thank Dr. Alfonso Doucette for carefully reading and translating this article, and his valuable corrections to the manuscript.

#### References

- Archila, F. 2009. *Neoreophilus*. *Revista Guatemalensis* 12(2):73.
- Brown, R. in W.T. Aiton (1813). *Pleurothallis*. *Hortus Kew* 5:211.
- Dressler R. 1979. *Salpistele*. *Orquideologia* 14:6.
- Luer, C. 2000. *Andinia*. *Monogr. Syst. Bot. Missouri Bot. Gard.* 79:5.
- 2004. *Xenosia*. *Monogr. Syst. Bot. Missouri Bot. Gard.* 95:265.
- 2005. *Brachycladium*. *Monogr. Syst. Bot. Missouri Bot. Gard.* 103:307, non Corda (1838), fungi.
- Luer, C. and L. Thoele. 2010. *Penducella*. *Orchid Digest* 74:68, *nom. superfl.*
- Luer, C., D.L., Szlachetko and H.B. Margon, 2001. *Masdevalliantha*. *Polish Botanical Journal* 46:117.
- Pridgeon A., R. Solano and M. Chase. 2001. Phylogenetic Relationships in Pleurothallidinae (Orchidaceae): Combined Evidence from Nuclear and Plastid DNA Sequences. *American Journal of Botany* 88(12):2286–2308.
- Swartz, 1799. *Lepanthes* Sw., *Nova Acta Regiae Soc. Sci. Upsal.* 6:85.
- Szlachetko, D.L. and H.B. Margon, 2001. *Lueranthos*. *Polish Botanical Journal* 46:117.
- Higgins, W.E. and F. Archila, 2008 publ. 2009. *Oreophilus Selbyana* 29:202 *nom. superfl.*
- Wilson M., G.S. Frank, L. Jost, A. Pridgeon, S. V. Uribe, and A. Karremans. 2017. Phylogenetic Analysis of *Andinia* (Pleurothallidinae; Orchidaceae) and a Systematic Recircumscription of the Genus. *Phytotaxa* 295(2):101–131.
- World Checklist of Selected Plant Families (WCSP). Facilitated by the Royal Botanic Gardens, Kew. wcp.science.kew.org. Accessed February 1, 2022.

## CALENDAR

### MAY

**7–8—Houston Orchid Society Show and Sale,** Memorial City Mall, 303 Memorial City Way, Houston, TX; Contact: Jay Balchan, 713-898-1265; balchan.jay@gmail.com

**7–8—Volusia County Orchid Society's "Orchademy Awards,"** Volusia County Fairgrounds, Townsend Arena, 3150 East New York Ave, Deland, FL; Contact: Jennifer Reinoso, 386-822-3178; jenorchid@bellsouth.net

**7–8—Les Orchidophiles de Quebec "Orchidofolie 2022,"** Le Montmartre, 1669 Chemin Saint-Louis, Quebec, QC; Contact: Marjolaine Plante, 613-233-7335; andrec.couture@sympatico.ca

**7—Oklahoma Orchid Society's "Spring 2022 Show & Sale,"** Will Rogers Garden Exhibition Center, 3400 NW 36<sup>th</sup> Street, Oklahoma City, OK; Contact: Jana Butcher, 405-209-7657; oos\_showchair@okorchidsociety.org

**8—Peninsula Orchid Society Show & Sale,** San Mateo Garden Center, 605 Parkside Way, San Mateo, CA; Contact: Chaunie Langland, 510-494-8850; chaunie.langland@earthlink.net

**13–15—Tamiami International Orchid Festival,** Fuchs Pavilion Miami Dade Fair/Expo, 10900 Coral Way (SW 24<sup>th</sup> St), Miami, FL; Contact: Jose Exposito, 305-898-3182; soroa@att.net

**20–22—Memphis Orchid Society Show and Sale,** Memphis Botanic Garden, 750 Cherry Road, Memphis, TN; Contact: Aleksandr Kumok, 901-849-2551; lkrfan@gmail.com

**21–22—Tulsa Orchid Society "Orchids, Jewels of the Jungle,"** Tulsa Garden Center, 2435 S Peoria Ave, Tulsa, OK; Contact: Soundra Schacher, 918-299-6466; Schacher1@cox.net

**28–29—Greater North Texas Orchid Society Show and Sale,** Texas A&M AgriLife, Water & Land Resources Building, 17360 Coit Rd, Dallas, TX; Contact: Karl Varian, 972-423-9412; k.varian@ieee.org

### JUNE

**3–5—New Orleans Orchid Society's Show and Sale,** Lakeside Mall, 3301 Veterans Memorial Blvd, Metairie, LA; Contact: Marian Prigmore, 504-810-9832; woodenbox@bellsouth.net

**11–19—2022 PHS Philadelphia Flower Show,** FDR Park, South Philadelphia, 1500 Pattison Ave & S Broad St, Philadelphia, PA; Contact: Jenna Celius, 215-988-8850; jcelius@pennhort.org

### JULY

**8–10—Baton Rouge Orchid Society Show,** LSU Botanic Garden at Burden—Conference Center, 4560 Essen Lane, Baton Rouge, LA; Contact: Jim Morrison, 225-247-1543; jwmorrisoniii@msn.com

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

### AUGUST

**6—\*Houston Orchid Society Summer Workshop (Outreach Judging),** First Christian Church, 1601 Sunset Blvd, Houston, TX; Contact: Randy Johnson, 225-205-8181; randy.johnsonian2000@gmail.com

**28–29—"Ohio Valley Orchid Fest,"** Emmanuel Lutheran Church, 4865 Wilmington Pike, Dayton, OH; Contact: Eric Sauer, 937-212-0462; eric@rvorchids.com




**Gothic Arch Greenhouses**

**Catch the Sunshine!**

- Greenhouse Kits
- Equipment • Supplies

800-531-GROW (4769)

**GothicArchGreenhouses.com**



The American Orchid Society is proud to endorse the following Better-Gro® products:

- 4 and 8 quart special orchid mixes
- 8 quart phalaenopsis mix
- 8 quart orchid bark
- ½ BU. vanda mix
- orchid moss
- 1 pound orchid plus fertilizer
- 1 pound orchid plus bloom booster

See [www.better-gro.com](http://www.better-gro.com) for a retail outlet in your area.

**American Orchid Society**  
Education. Conservation. Research.



**KULTANA Orchids**

[www.orchid.in.th](http://www.orchid.in.th)  
Pricelist Available Upon Request

Thailand's Major Orchids Producer. Specialized in Vanda and Tropical Orchids

Tel: + 662 5655463  
WhatsApp: + 6681 6419901  
Email: [kultanaorchids@gmail.com](mailto:kultanaorchids@gmail.com)



**REXIUS ORCHID BARK**

**Heat-Treated Douglas Fir Bark**

[dans@rexius.com](mailto:dans@rexius.com)  
**888-4-REXIUS**  
one pallet minimum



**Kelley's Korner Orchid Supplies**

Aircone Pots, MSU Fertilizers, Orchiata, NZ Tree Fern Fiber, Ultimate Orchid Baskets, cedar baskets, hydroponic supplies, labels, lights, custom mixes, books, and so much more!

Supplying orchid hobbyists for over 39 years:

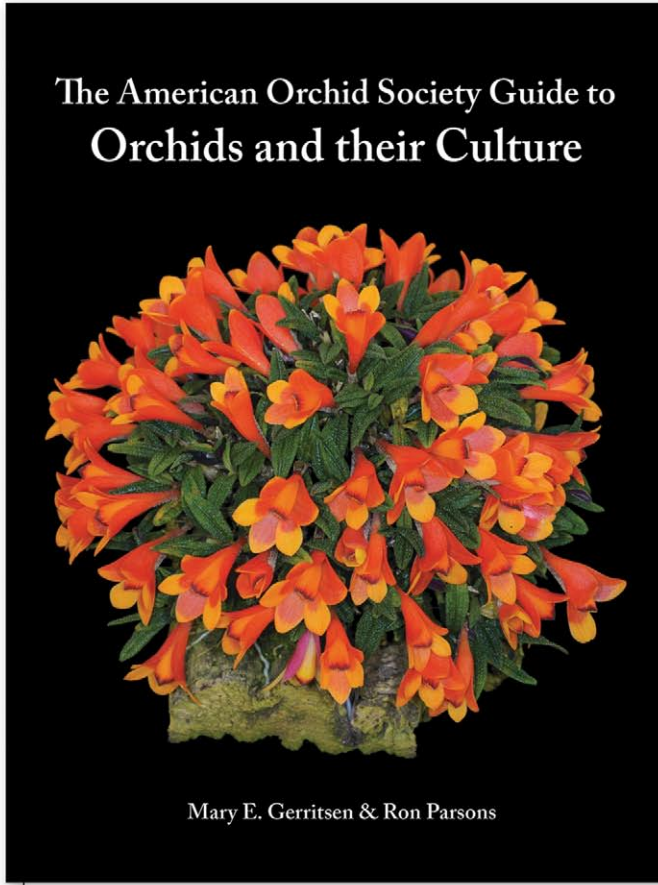
**kkorchid.com**

*Now in stock!*



American Orchid Society  
Education. Conservation. Research.

\$24.95  
10% discount  
to AOS Members



*The American Orchid Society Guide to  
Orchids and their Culture*

by Mary E. Gerritsen & Ron Parsons



Covers all aspects of the hobby from what makes an orchid, to repotting, to semi-hydroponics. Includes controlling common insect pests and a pictorial section on today's popular orchids. Printed by Redfern Natural History Productions, Dorset, England. 6" x 8.5" paperback; 249 pages, 450 color images

Order from our online shop at [www.aos.org](http://www.aos.org)

# Milton O. Carpenter (1929–2022)

By Brian Monk

OCCASIONALLY YOU MEET an outstanding individual, someone whose breadth of knowledge is matched by their depth of wisdom. This event in and of itself is worth celebrating — the world needs more of the truly wise and knowledgeable. But people are only people, and so those two qualities are often overshadowed by the least desirable of human traits.

And so, what a truly rare event it is to befriend someone who is not only both wise and smart, but genuinely kind! With the type of sincerity reserved for saints, so ridiculously true that it drives my cynical nature to prove false! But it is true for some people.

Milton Carpenter was such a person.

He was a conundrum in so many ways. He was physically impressive, a tall man with huge hands that bore their strength throughout our friendship, but with such a gentle nature his presence was never intimidating. His encyclopedic knowledge of orchid culture and hybridizing was available to anyone; he loved to teach newcomers and old guard alike, never once restricting his wisdom for some vain or commercially driven reason. His marriage to his lovely wife, Nancy, was an iconic example of commitment and love, but not the “feeling” of love. No, instead I mean the verb, “to love.” Nancy was as kind as Milton, and they were married 70 years. Ask anyone that knew them both, and they will tell you how devoted they were to their family and to each other.

I first met Milton Carpenter at the World Orchid Conference of 2008, held in Miami, Florida. I was a student judge in the AOS program, as ignorant of the intricacies of objective understanding of an orchid as I was full of knowledge and enthusiasm for these plants. My personal collection was outgrowing my back yard, overflowing the shelves and makeshift shade house, and I needed somewhere to house it. Milton was a Judge Emeritus of the AOS West Palm Beach judging center, but I was new and had yet to meet him at the monthly judging. Dorothy Bennett, the head of the judging center, casually mentioned to me that Milton had an empty greenhouse and might be willing to lease it to me at a reasonable price. Our initial meeting was painfully brief. Milton sat at a table, registering plants and performing the inevitable mountain



GREG ALLIKAS

of paperwork that comes with judging the world’s biggest orchid conference. I introduced myself, asked about the greenhouse, and with a big smile and his typical enthusiasm, Milton asked me to come to his place for a conversation. I was ecstatic.

The drive from Ft. Lauderdale to Clewiston was about an hour. The road started in the deep grass wetlands of the northern Everglades, but soon

- [1] Milton Carpenter posing with *Cyrtopodium* × *intermedium*.
- [2] *Cymbidium* Milton Carpenter ‘Everglades’ AM-JC/AOS — Milton’s breakthrough in the breeding of high-quality, truly warmth-tolerant cymbidiums. Milton spent his life in the development of warmth-tolerant breeding lines in cymbidiums as well as the Oncidiinae.



ran through sugar cane fields that had replaced them, verdant but boring in their consistent rows, standing sentinel over the soil that brought central Florida its agricultural success. Milton's house was tucked in these fields, a canal on one side, a neighborhood of small ranch homes on the other. Milton had made his home a small paradise for any enthusiastic gardener or botanist. His greenhouses and modest ranch home enclosed a private courtyard full of tropical plants, trees, and a waterfall and pond populated by koi. The tree branches dripped with orchids; dendrobiums, cattleyas and encyclias everywhere, as many out of bloom as in.

Milton greeted me with enthusiasm and happiness. His bright personality was matched by his vigor. Milton was a tall, thin man, with sparkling eyes and smile. He radiated peace and calm and great humility. It is rare to meet a truly honest person, especially one who is honest from his carriage to his words. Milton was without pretense or prejudice and had no trace of cynicism. He was an optimist, grateful for every blessing he had, and understood that even the worst of times would give way to better. His faith was indomitable, and he lived as what I can only describe as the truest example of a Christian I have ever known. Grace and forgiveness were his moral compass, and from these he never wavered.

We toured the greenhouses, and it was obvious to me that Milton needed help with his collection. Most of his plants occupied the 4,000 ft<sup>2</sup> (371.6 m<sup>2</sup>) enclosed greenhouse, with a smaller number occupying the equally large, attached shade house. We struck a deal: I would pay for the necessary materials, potting mix and fertilizer, and I would provide labor and repot and take care of his collection. In return, I could make use of the shade house for my collection. I would make the trip from Ft. Lauderdale at least once a week.

The only thing Milton was as devoted to as his family was orchids, and his pursuit of the seemingly impossible — to create plants that not only tolerated the heat in Florida, but thrived in such conditions, and to do this with two groups known for their need for cool conditions: Oncidiinae and cymbidiums. He was quick to educate me about all things orchid. Every one of my visits started with coffee and a conversation. We would talk orchids, from the cultural needs of a specific plant to the merits of a flower for judging. But we would talk about everything. I came to know Nancy and the rest of Milton's

family at these informal sit-downs, and I became a part of that family.

Milton was an accomplished hybridizer, well-ensconced in the top 10 hybridizers of all time. He had literally made thousands of crosses, and from these registering over 450 of his hybrids. When he learned that I was interested in hybridizing orchids, he was delighted. Walking with him around his greenhouse, we discussed the merits of parents and offspring, as well as the history of hybridizing and why knowledge of the plants of the past was imperative for any modern grower or judge. At times, taking in his lessons was like trying to drink from a fire hydrant!

But Milton's love of the orchid world did not stop at his greenhouse door. He had devoted himself to the American Orchid Society, serving on many of the boards, eventually serving as the 27th President, and was bestowed with the Gold Medal of Achievement in 2004 and the Ambassador Award in 2006. In 2005, the Milton Carpenter Oncidium Intergeneric Award was created "to be presented annually to the grower of the orchid plant regarded as the preceding year's most outstanding example of intergeneric hybridizing within the Oncidiinae." He was awarded the AOS Award for Excellence in Hybridizing in 2013. He was instrumental in opening the AOS center in West Palm Beach (unfortunately now defunct). He took an active role as an AOS judge and scoffed that any judge could ever truly be "retired." He served on the board of the Orchid Society of the Palm Beaches and was a contributor and life-long member of the International Odontoglossum Alliance. He loved to teach and was an accomplished lecturer (one of his lectures was orchid images presented in a 3D format, something I have been trying to accomplish for years).

By 2015, we had become close friends. Many of the plants in his collection made their way into mine as gifts and divisions. The shade house had become half filled with my orchids, both mature plants and seedlings. My weekly visits were often more about our coffee and conversations, with orchids serving as a catalyst but far from our focus. It was a bittersweet moment when I told him that I was moving to Naples, Florida, and that I would soon be moving my collection into the greenhouse I was building at my new home. On the one hand, I was ecstatic that I was finally realizing my dream of finally owning a greenhouse. On the other hand, this would mean an end to my weekly



MITCH PAROLY

visits, as my new home was almost three hours away. As was his nature, Milton was excited for me, and very happy that I would finally have a greenhouse of my own, telling me that despite missing me we would always be friends, and I would always be welcome, and not to forget to visit. And I did, many times.

Nancy passed on September 11 of 2021, at the age of 90. It was a blessing, Milton told me, after a long full life that she be allowed to pass on from any suffering she bore. But it left Milton alone, without the woman he had been married to for 70 years. As so often happens in these situations, Milton followed Nancy to heaven on the morning of February 8, 2022. I am happy to say that I was able to visit several times in the last few months, and Milton was as sharp as ever when I saw him. His passing was brief and merciful.

Milton was an outstanding individual until the end; a great colleague, mentor, and friend. He was a cornerstone of my orchid education, and a constant example to those around him. He lived a life of service, never wavering from his optimism or faith. He wanted more than anything for the chance to be a part of everyone's life, in the best way possible. And I will miss him terribly.

— Brian Monk (email [bmonkdvm@gmail.com](mailto:bmonkdvm@gmail.com)).

# 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** — Supplies for all your growing needs. Contact us for our price list or questions, 954-925-2021, browardorchidsupply@comcast.net, browardorchidsupply.com.

## 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

African Violet Society.....	329	IX International Conference on Orchid Conservation "Soroa 2022".....	329
American Begonia Society.....	327	International Palm Society.....	339
American Horticultural Society.....	341	JR Peters.....	327
American Orchid Society		Kelley's Korner Orchid Supplies.....	396
American Orchid Society Guide		Krull-Smith.....	Back cover
to Orchids and Their Culture.....	397	Kultana Orchids.....	396
AOS Commemorative Glasses.....	327	Long Island Orchid Festival 2022.....	Inside back cover
Better Gro.....	396	Neudorf, North America (Ferroxx).....	333
Classified Ads.....	400	Orchid Digest.....	327
Compendium of Orchid Genera.....	345	Orchid Review.....	329
Judging Program.....	353	Repotme.com.....	Inside front cover
New Books Coming Soon!.....	341	Rexius.....	396
Webinars.....	331	R.F. Orchids, Inc.....	331
Marketplace		White Plains Orchids.....	347
Announcement.....	340		
Gothic Arch.....	396		
Hartley Botanical.....	321		

### 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](mailto:jean.ikeson@gmail.com) or the editor at [rmchatton@aos.org](mailto:rmchatton@aos.org).

**For Advertising Information,  
Contact: Mary Elwell,  
[melwell@allenpress.com](mailto:melwell@allenpress.com)**

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.

*The Long Island Orchid Society  
in conjunction with  
Planting Fields State Historic Park  
Presents the Seventh Annual  
Long Island*



# *Orchid Festival 2022*

*Orchids and Vendors from Around the World*

**June 3rd--5th, 2022  
9 a.m. to 5 p.m.**

**Planting Fields Arboretum**

**State Historic Park**

**Conference Center**

**1395 Planting Fields Road**

**Oyster Bay, NY 11771**

For more information, please visit  
[longislandorchidsociety.org](http://longislandorchidsociety.org)  
or  
[plantingfields.org](http://plantingfields.org)





**\$65**  
plus shipping

***R/c.* Bill Krull 'Krull's Primavera' AM/AOS**

**Krull  Smith**

2800 W Ponkan Rd

Apopka, FL 32712

Tel: (407) 886-4134 • [orchids@krullsmith.com](mailto:orchids@krullsmith.com) • [www.krullsmith.com](http://www.krullsmith.com)

Prepared for download exclusively for Oval Orquidifilms Valenciens