

December 2015 The Orchid Grower

Orchid Growers' Guild of Madison



Meeting Dates

December 13, Meeting Room
January 17, 2016, Meeting Room

February 21, Meeting Room
March 20, Meeting Room
April 17, Meeting Room
May 15, Meeting Room
September 25, Meeting Room
October 16, Meeting Room
November 20, Meeting Room
December 18, Meeting Room

Meetings start at 1:30 pm at Olbrich Gardens unless otherwise noted

Up-Coming Events

- **January 30-31, 2016** - Orchid Quest
- **January 30-31, 2016** - Orchid Society of Minnesota Show
- **March 5-6**, NE Wisconsin Orchid Society Show
- **March 12-14**, Illinois Orchid Society Show, Glencoe, IL
- **March 19-20, 2016** -- The Spring MAOC, Cincinnati, OH

Officers and Committees

President:
Lorraine Snyder (2016)
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Vice President:
Sue Reed (2017)
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FROM THE PRESIDENT

Next Meeting Annual Holiday Party, December 13th

NOTE THE DATE IS SECOND SUNDAY!

Hello Orchid Lovers,

It is hard to believe another year is almost over. There much to be thankful for in our Guild. I am very thankful for the effort, energy and dedication our members have graciously donated to our small guild in 2015 to make our meetings, programs and plant sales a success. We have much to look forward to as well.

Sunday December 13th is the annual holiday party at Olbrich Gardens with "Santa," good food, good fellowship, and of course, orchids. It is also time to let our treasurer Davis Kohlwey know if you want a holiday party orchid at a cost of \$10.00. You can pay for the orchid and your 2016 membership at the party, but

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do let Dave know in advance of the party so your orchid is available. We will also name OGG award winners.

We also look forward to 2016 and Orchid Quest January 30th and 31st. The Orchid Quest committee has been working very hard to make this a successful event. You can purchase tickets for Orchid Quest at the holiday party. Tickets also make great gifts for your friends and fellow orchid fanatics.

Happy holidays to you and your families and happy growing.
See you in 2016.

--Lorraine Snyder



Dendrochilum cobbianum, Bolz Conservatory

Secretary:
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Liaisons:
AOS: Nancy Thomas
MAOC: Keith Nelson
Orchid Digest: Open

15 Years of Lessons in Orchid Conservation in Ecuador

Keynote address at September's Mid-America Orchid Congress

Preserving lush cloud forest for the benefit of its native bromeliads, orchids, mosses, and ferns does not necessarily require buying the land from its native humans. Dr. Joe Meisel, vice president and founder of the Ceiba Foundation for Tropical Conservation, explained how the foundation supports both conservation and local ownership, in his keynote address on September 25 at the Mid-America Orchid Congress in Chicago.

The Ceiba Foundation, based in Madison, Wisconsin and Quito, Ecuador, is a nonprofit organization dedicated to the preservation and rehabilitation of tropical habitats and the conservation of their plants and animals. In 2001, the foundation signed a conservation easement with a family who owns and lives on what is now the El Pahuma Orchid Reserve in Ecuador, the first conservation easement established in South America.

El Pahuma occupies 1,500 verdant acres at an elevation of over 8,000 feet in Ecuador's Avenue of the Volcanoes. To the east are dry Andean forests; to the west, Amazon rain forest. Upon creation of the orchid preserve, the resident family immediately started rescuing orchids and moving them to the entrance of the preserve. Since then, more than 200 orchid species have been identified in the preserve, which is particularly good for *Pleurothallis* and *Draculas*. The *Draculas*, whose lips mimic mushrooms, are pollinated by fungus gnats.

To enable the landowners to survive economically without cutting the forest or ranching, the Ceiba Foundation provided the necessities for a family-supporting ecotourism income. The foundation built an information center, started forest patrols, and trained guides, speakers, and inventoried birds and plants. When the preserve opened, it received 200 visitors a month and now hosts 3,000, who come to see the orchids, watch birds, and take in the sights and sounds of the forest and three spectacular waterfalls. Those who hike to El



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Pahuma's gentle summit are rewarded by panoramic views of the Pichincha volcano and forested valleys. At first almost all visitors were foreigners, but now about half are from Ecuador.

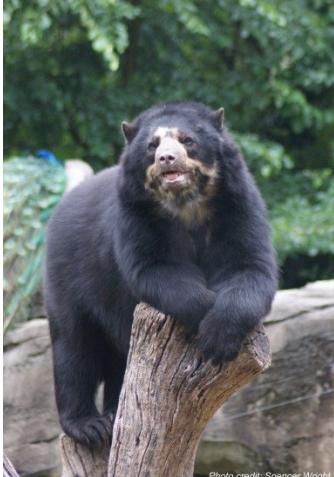


Photo credit: Spencer Wright

The income has created generational continuity. Children of the landowner who initiated the preserve are continuing to operate El Pahuma, and the family has now signed an agreement to extend the conservation easement to 2050. In his remarks, Dr. Meisel stressed that educating and developing opportunity for the landowners to lead has been critical, and that personal relations between Ceiba Foundation staff and the family at El Pahuma have been critical.

The success of El Pahuma has inspired similar operations and helped to promote Ecuador's Socio Bosque Programme, which uses private conservation agreements to protect key river watersheds while delivering vital economic benefits. Landowners participating in the watershed program sign a 25-year conservation agreement, which pays a land owner for conserving the forest and is monitored by satellite. While not designed to attract funds from an emerging international finance system for Reduced Emissions from Deforestation and Degradation (REDD, a mechanism under negotiation by the United Nations Framework Convention on Climate Change

since 2005), the program has achieved many intended REDD outcomes and has made a material contribution to Ecuador's climate compatible development.

Dr. Meisel also treated his audience at the Orchid Congress to delightful photos of the preserve and its non-human residents, including the spectacled bear, which requires corridors provided by El Pahuma for survival. Researchers associated with El Pahuma study and photograph the bears with trail cameras, and have discovered the bear's favorite bait is Calvin Klein fragrance for men.

To learn more about visiting, volunteering, or donating to the El Pahuma Orchid Preserve, visit www.ceiba.org/aboutceiba.htm. The busy season is spring and summer. January and February are wet; August is dry. The Ceiba Foundation will organize an El Pahuma and Galapagos trip April 1-11, 2016. The 2017 World Orchid Congress will be held in Guayaquil, close to El Pahuma.

Founded in 1997, the Ceiba Foundation for Tropical Conservation sponsors scientific research, provides public education and supports community-based action to promote the conservation of ecosystem integrity and biodiversity.



NOVEMBER OGG RIBBON JUDGING

First Place

Nancy Thomas	<i>Phrag</i> Jason Fischer
Lorraine Snyder	<i>Paph</i> (Crazy Jolly 'Perfection' x Pacific Shamrock 'Magnificent')
Steven Thimling	<i>Epidendrum nocturnum</i>
Shirl Roberts	<i>Ansellia gigantea nilotica</i> 'Waunakee'
Shirl Roberts	<i>Rhyncattleanthe</i> Golden Chieftain (<i>Cattlianthe</i> Chocolate Drop x <i>Rhyncholaeliocattleya</i> Golden Delicious)
Steven Thimling	<i>Aerangis biloba</i> [1]
Terri Jozwiak	<i>Dendrobium</i> compact Phal type
Terri Jozwiak	<i>Bulbophyllum laxiflorum</i>
Terri Jozwiak	<i>Cattleya intermedia</i> x <i>Rhyncholaeliocattleya</i> Diadem
Keith Nelson	<i>Holcoglossum wangii</i> x sib

Second Place

Terri Jozwiak	<i>Rhyncattleanthe</i> Michael's Charm (<i>C. Green Emerald</i> x <i>Rhyncattleanthe</i> Love Sound)
Steven Thimling	<i>Aerangis biloba</i> [2]
Steven Thimling	<i>Pelatantheria insectifera</i>
Terri Jozwiak	<i>Den Micro Chip</i> (<i>Den normanbyense</i> x <i>Den aberrans</i>)
Nancy Thomas	<i>Phalaenopsis violacea</i> var. <i>violacea</i>
Jeff Baylis	<i>Cochleanthes amazonica</i>
Jeff Baylis	<i>Laelia rubescens</i>

Third Place

Steven Thimling	<i>Paphiopedilum spicerianum</i>
Steven Thimling	<i>Brassocattleya</i> Binosa 'Wabash Valley' (<i>Brassavola nodosa</i> x <i>Cattleya bicolor</i>)
Jeff Baylis	<i>Brassavola cucullata</i>

ANNUAL DUES ARE DUE SOON

Take advantage of the savings by paying your dues at the next meeting. Dues are \$18 for a single membership and \$24 for two. After January 1, all renewals will be an additional \$2. See the treasurer at the meeting or mail your payment to the OGG at PO Box #5432, Madison, WI. 53705



Paph (Crazy Jolly 'Perfection' x Pacific Shamrock 'Magnificent')

Orchid Quest 2016 Up-Date

At the December meeting of OGG not only will we enjoy a delicious potluck meal and a visit from 'Santa' Liz, you will hear the latest updates on Orchid Quest. We will be giving out the "2 for one" OQ admissions tickets that you can give to friends. They can be good stocking stuffers.

You can also sign up for the OQ banquet Saturday night at Benvenuto's for \$30 and hear the OQ featured speaker Sam Tsui from Orchid Inn. He will give a presentation on "The Care and Culture of *Brachypetalum* and *Parvisepalum*".

There is an opportunity to be a sponsor for the show. A tax-deductible donation of \$50 will allow you to sponsor a prize for one specially chosen orchid at OQ. This is a great opportunity to honor a special person or just celebrate your favorite orchids.

Of course our sign-up lists for volunteer opportunities at OQ will be available. This is a great opportunity for new members to discover the nitty-gritty of our Guild, learn more about orchids and have fun too. I hope you have saved the dates, set-up is on Friday, January 29 with Orchid Quest on January 30-31. This year the Super Bowl is the previous week.

All hands on deck, all suggestions for OQ seriously considered.

Any additional ideas, email Terri Jozwiak
lodijoz@charter.net



Dendrobium compact Phal-type grown by
Terri Jozwiak

UP-COMING EVENTS

- **January 30-31, 2016** - Orchid Quest
- **January 30-31, 2016** - Orchid Society of Minnesota "Winter Carnival Orchid Show," Como Park, Marjorie McNeely Conservatory, 1225 Estabrook Drive, St. Paul, MN
- **March 5-6**, NE Wisconsin Orchid Society Show, "Orchid Magic"
- **March 12-14**, Illinois Orchid Society Show, "Amazing Orchid Odyssey", Chicago Botanic Gardens, 1000 Lake Cook Rd., Glencoe, IL
- **March 19-20, 2016** -- The Spring MAOC will be in the historic Netherland Hilton Hotel in downtown Cincinnati, OH
- **November 8-12, 2017** -- 22nd World Orchid Conference, Guayaquil, Ecuador

Synopsis:

Uncovering Pollination Strategies in a small group of Neotropical Orchids: Perspectives from Floral Evolution

Presentation by Rafael E. Arévalo B.

Center for Wood Anatomy Research, Forest Products Laboratory, U.S. Department of Agriculture

Orchids are well known as a very diverse group of plants whose reproduction is closely tied to insect pollination. There is an ironic aspect to this, since for the vast majority of orchid species the insect pollinator and mechanism of insect attraction and pollen transfer are unknown. Rafael's doctoral research examines the various pollination systems in a wide ranging genus of orchids. The Neotropical orchid genus *Mormolyca* Fenzl, is closely allied to *Maxillaria*, with at least 28 species. It consists of epiphytic plants distributed from southern Mexico to Bolivia, and Peru to northern Brazil, including the Greater Antilles. For a relatively small genus, the species exhibit considerable flower diversity, possibly correlated with different pollination systems, which include both sexual deception (characterized by male insect pseudocopulation) and mutualism (rewards of nectar or other substances). Given that very little is known about the mechanisms and evolution of orchid pollination systems in the Neotropics, *Mormolyca* offers an opportunity for evolutionary studies. Therefore, a phylogenetic inference based on multiple DNA markers was constructed to use as a framework for further understanding the evolution of pollination strategies within the group. The resulting phylogenetic tree, which has good resolution and support, reveals patterns of flower



Rafael E. Arévalo B.

morphology that are likely related to pollination systems, and that have resulted in floral convergence with the closely related genus *Maxillaria*. At the same time, the phylogenetic tree facilitated the classification and placement of new species that were discovered in the course of this study.

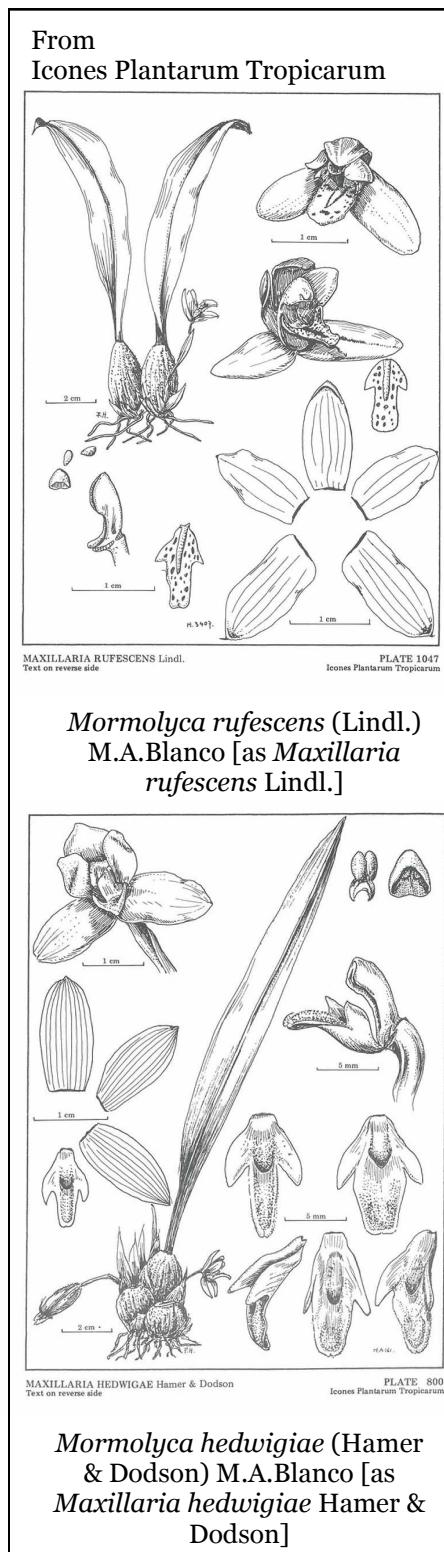


Floral micro-morphological traits were studied among the species of *Mormolyca* to gain a better understanding of the characters involved in the attraction of insect pollinators. Labella of flowers were sectioned and examined for micro-morphological and anatomical characters, as well as for the presence of possible food rewards (i.e., starch, lipids, and proteins). Based on a combination of characters—including labellar papillae (i.e., trichomes found on the

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surface of the labella), the presence or absence of secretions, nutrients, and scents—species were found to cluster into three distinct groups: Hedwigiae, Ringens and Rufescens. The presence of capillary papillae is restricted to the Ringens group, which includes all the species that are possibly pollinated by pseudocopulation (i.e., sexually deceptive). Labellar papillae with distended apices that contain starch and proteins (possibly as a reward to pollinators), were only found in species from the Hedwigiae and Rufescens groups. Observations of the labellar anatomy confirm the presence of glandular structures—believed to be odor glands or osmophores—in most of the species. Labellar papillae, in conjunction with osmophores, provide the flowers the ability to attract, guide, feed, and/or deceive pollinators through a combination of visual, tactile, and/or olfactory cues.

In order to further understand the possible chemical cues involved in attracting pollinators, floral fragrance composition was investigated in six species of *Mormolyca*, representing the three distinct groups. Volatile and nonvolatile constituents of floral extracts were identified with Gas Chromatograph-Mass Spectrometry (GC-MS). Extractions



from species that are believed to be sexually deceptive, though lacking scents detectable by the human nose, contained alkanes and alkenes, compounds known to be involved with pseudocopulation or sexual mimicry in Orchidaceae. Species thought to be offering rewards in the form of nutrient-rich labellar secretions or papillae were distinctively scented, but their scent composition was not significantly different. Nonetheless, one species, *M. aureoglobula*, presented volatiles that are characteristic of euglossophilous flowers (flowers pollinated by Euglossine bees). The presence of these compounds, methyl salicylate and eugenol, may be revealing a pollination system that is based on a different type of reward, and that has never before been recorded for species of Maxillariinae: pollination by orchid bees.

As a whole, this work shows that by documenting micro-morphological and chemical similarities and disparities among orchid flowers, and analyzing them in the light of evolution, we are able to better understand and uncover the mechanisms employed by Orchidaceae for

insect pollinator attraction, even when the species of the pollinating insect remains unknown.

Jeffrey Baylis
Professor emeritus