



The Arizona Orchidist

Published monthly by
The Orchid Society of Arizona, Inc.
Founding Editor- Clarence S. Lindsten,
1966
Volume 40 August 2003 Number 8

NEXT OSA MEETING

Meetings are held at the
Encanto Park Clubhouse
2605 N. 15th Ave., Phoenix, Arizona
North of Encanto Blvd., On 15th Ave.
Phone (602) 261-8993

The next regular society meeting will be
Monday, August 4, 2003 at 7:00 p.m.

OSA meetings are open to all
plant enthusiasts

Refreshments will be provided
This month beverages will be furnished
by: Janet Jurn

Edibles will be provided by:
Shirley Engberg and Julie Rathbun

Janet Jurn,
Refreshment Coordinator
(623) 386-2741

NEXT OSA BOARD MEETING

The next OSA board meeting will be
Sunday, July 27, 2003 at 1:00 p.m.

Hosted by Norma Kafer
Please contact Norma at (602) 252-6197
for directions to her home,
if you plan to attend

The meeting is open to all OSA members

GROWER ON CALL

August Lorenzini
(623) 931-8239

August Program

DON'T HAVE A GREENHOUSE?

August's program will provide you with an alternative or two to growing orchids without a greenhouse. Even if you have a greenhouse, you will find the program very informative.

Joe Civello has offered to demonstrate how he grows orchids hydroponically. In case you've never had the chance to see Joe's orchids, he has enjoyed success at growing these plants we all obsess about. Joe grows in a greenhouse and, obviously, using the hydroponic method too.

Doug Baldwin is also going to show us his latest project, his self-built growing chamber or terrarium. Doug won't be bringing the terrarium to the meeting - it is much too large and quite heavy, but he will tell us how it was constructed. Doug reports that his orchids have *dramatically* improved since placing them into a more controlled environment and is willing to share this success with the OSA members!

Aaron Hicks will present a third informational tidbit on plant hormones and how they can be used with our orchid growing endeavors!



Come to the meeting and be *exposed* to new ideas in growing orchids using hydroponics, growing chambers and hormones (not the female kind)!

Lou Ann Remeikis

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From the President's Desk

Lou Ann Remeikis

I can't remember when I've seen so many members attend a summer meeting! OSA has a number of members who are able to escape the hot Arizona summers, and with vacations and holiday or weekend trips, I was pleasantly surprised to see such a wonderful July attendance at the meeting. Was the "Surprise" program teaser successful at increasing member participation at the meeting? Whatever reason, I was happy to see so many of you!

The July meeting was our official send-off for Gerda Gallob. Gerda is on her way to California to set up her new home. Gerda made her last trip from Sedona to attend, and we surprised her with a wonderfully flavored cake. We also used the cake to celebrate Gerda's birthday, and all the other members who celebrated their birthdays in July and were in attendance (Julie Langston, Christine Yamada, and Heidi Owens).

Mark your calendar for Sunday, August 24th. This is the day Board members will be taking the annual trek to Prescott to visit the Northern Arizona Veterans Administration Health Care System. This has become an annual road trip and all members are invited to participate! If you would like to take the trip with the Board members, meet at the Costco at Interstate 17 and Yorkshire/Union Hills at 8:30 A.M. We will travel by caravan to Prescott, tour (work in) the greenhouse where an arrival reception occurs, and enjoy lunch with residents, patients, and staff on picnic tables under the trees (courtesy of OSA). After lunch there will be a brief Show Planning meeting, followed by a brief Board meeting before returning to the valley.

OSA Board Members take needed donations from YOU to our honored veterans who live at the VA facility in Prescott. **DONATIONS ARE NEEDED!** The recipients are thrilled to receive such items as personal toiletries, clothing, magazines, video tapes (movies), puzzles, stationery, etc. Many of the residents are on fixed incomes and/or do not have the opportunities to go shopping for items they need on a regular basis. OSA encourages our members to support the needs of the men and women who have served our country. You can bring any donation to the August 4th meeting or contact one of the Board members and we will make arrangements to obtain your donation.

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From the President's Desk

Another date to mark on your calendar is September 1st – Labor Day! Our regular meeting place, The Encanto Park Clubhouse, is closed on holidays. Since our September meeting falls on this holiday, arrangements have been made to have our September meeting to be held at the Arizona State Veteran's Home, 4141 N. 3rd Street, Phoenix. You should remember the Arizona State Veteran's Home is where our annual show was held last year. The Arizona State Veterans Home is one block **north** of Indian School Road on 3rd Street.

I'm glad to report that Pearl Bays is home and recuperating from her hospital stay. We missed Pearl and Lois at the July meeting, but completely understand her need to be home taking care of herself. We hope Pearl continues to improve!

Don't forget to take a few show flyers for distribution. We now have them available at our monthly meetings. It is not too early to start passing them out and posting them at your favorite locations. Also, if you have any "connections" out there for advertising contacts, please pass this information along to either Joe Bacik, this year's Show Chairman, or myself. We can never have enough contacts to promote our annual show and sale!

Stay cool – autumn IS getting closer...really it is! Until then...

Happy Growing – Lou Ann

The Arizona Orchidist is published monthly by the

Orchid Society of Arizona, Inc.

Direct inquiries to our website at:

[Http://welcome.to/orchidsocietyaz](http://welcome.to/orchidsocietyaz)

Or to any of the board officers or trustees

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The Orchid Society of Arizona, Inc. is a non-profit 501 (C) (3) organization dedicated to community service and the study of orchids. It is affiliated with the American Orchid Society, The Orchid Digest Corporation, the Arizona Federation of Garden Clubs, Inc., The Nature Conservancy, and Biosphere 2 Center.



Thank you for your July Raffle Table Donations
Lucy Redmond-Hall, Jeff Armstrong, Heidi Owens, Shirley Engberg,
Lou Ann Remeikis, Wilella Stimmell, Marleny Castillo,
Alice Grip/Santa Barbara International Orchid Estate,
White Oak Orchids and OSA



Community Service Report

by Wilella Stimmell, CSP Coordinator

Lou Ann announced at our July 7 meeting that due to our Editor moving to a new residence, the deadline for submitting copy for our August issue was earlier than usual. Therefore, a report on our July 18 programs at the TRI-CITY WEST Boys & Girls, in Avondale, will appear in our September newsletter.

But you might like to know in the meantime, that JULIE RATHBUN, one of our most reliable school program team members, shortened, BY HAND, ALL 90 pots we need for the programs. (The pots need to be cut down so that they will fit in the milk jug greenhouses the children construct.) And she did it WITHOUT anyone hinting to her that the pots needed to be cut! Thanks, Julie!!

FYI: A former school program team member, JAY MUNN, phoned us and inquired about our school programs. Jay and his wife, Mercedes, moved from Phoenix to Federal Way, Washington, a few months ago. Before they moved, Jay donated many boxes of books for the Northern Arizona VA Health Care System. (Joe Bacik is kindly storing the books until our trip "North" on August 24. Thanks, Joe!)

After his move, Jay was hospitalized for a month (recurrence of pneumonia) and then spent another month in a rehab facility. But...you can't keep a good man down! Jay's feeling much better and sends his greetings to all his OSA friends. He misses helping with our school programs, and we miss him! If anyone would like to have Jay's mailing address and/or phone number, let me know. I'm sure he'd enjoy hearing from some of his friends.

THE BELLBIRD WEEKEND SEPT. 12-14, 2003

A fund-raiser for the Monteverde cloud forest in Costa Rica is being planned for Sept. 12-14. The event will be held in two locations: Woodstock, Vermont and Lebanon, New Hampshire. (Lebanon is approximately 20 miles from Woodstock.)

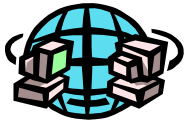
On Sept. 12, OSA MEMBER, DR. JOHN ATWOOD, will present a "Bach for the Bellbird" concert at the Unitarian-Universalist Church in Woodstock, VT. John will be playing a historic organ, the very one on which, in 1959, E. Power-Biggs recorded Variations on America for Columbia Records. Slides of Monteverde will be shown and coordinated with the music. (Although John now lives in Vermont, he is still employed by Selby and will be presenting his review of the Ornithidium clade of Maxillaria, complete with keys, full citation of specimens, descriptions, and range maps, in the near future. Not only has John, an experienced and highly-trained organist, presented other organ concerts and donated his "fees" to Monteverde, but also he has continued his research on the Ornithidium clade!)

On September 13, there will be a "Bonk" concert of jazz bands involving both high school students and professional musicians from the University of Vermont and possibly Dartmouth College. This concert will be held in the auditorium at the Woodstock Middle School.

On September 14, there will be a fund-raising dinner held at Three Tomatoes Restaurant in Lebanon, VT. Seating is limited to 100 people.

In an e-mail message, John encouraged OSA members to attend the Bellbird Weekend event. (I've got room for one more person in my room at the hotel in Woodstock!)

Wilella Stimmell



NEWSLETTER ON-LINE

If you would like to receive your copy of The Arizona Orchidist on-line via email please send a request to kjkm@att.net. We will begin emailing the newsletter to those interested beginning with the September issue. It is necessary to have Adobe Acrobat Reader loaded on your PC to read the attachment. The software is available for downloading at no cost at www.adobe.com You will receive your newsletter earlier than by snail mail, save your society postage \$ and you may still print it for future reference.

More News

JULY PROGRAM NOTES: Attending OSA Members were treated to a blooming size (not yet bloomed) *Dendrobium abberans*, a miniature dendrobium species. These adorable orchids were obtained from Country-side Orchids. The catch? We want the members to bring their plant to a meeting when it blooms and/or report on your success (or failure) at the July, 2004, Society meeting!

NEW MEMBER WELCOME: Join us in welcoming Alana Johnson to OSA.

MEMBER ON THE MEND: Suz Cramer is still among the walking wounded, but she reports that the surgery to remove the metal pins in her left ankle was successful. She's still wearing the infamous "boot", but in about a month, the tacky footwear will be a mere memory. Suz reports that she saved the metal removed from her ankle! (OSA members are second to none in recycling!) For benefit of our newer members, Suz moved from Telluride, CO, to Phoenix and served as care giver extraordinaire for her aunt, Ruth. We worked Suz hard while she was here! After enduring Phoenix summers for several years, she packed up her aunt, and moved back to Telluride. We still miss Suz! She's a very talented, creative lady!

ROSTER PAGE UPDATE: There will be a 2003 Membership Roster Page Update available at our meeting on August 4. Be sure to pick up a copy. They will be available on the raffle ticket sales table.

HOT OFF THE PRESS: *GENERA ORCHIDACEARUM* Volume 3 Orchidoideae and Vanilloideae (Part two), has recently been published. This monumental work which will conclude with volume 5, includes new DNA data and incorporates it into a truly phylogenetic classification of the Orchidaceae. Volume 3 describes the remaining 105 genera of subfamily Orchidoideae and all 15 genera of subfamily Vanilloideae. The series is published by Oxford University Press and is edited by Alec Pridgeon, Phillip Cribb, Mark Chase, and Finn Rasmussen. For anyone interested in perusing Volume 3 before purchasing the book, you will find it available for viewing at our August meeting.

FROM THE ARCHIVES

"How is Paphiopedilum Pollinated?"

By John Atwood, Jr.

AOS BULLETIN, Volume 51, Number 10, October, 1982, pp. 1057 and 1058.

"The 'LADY'S-SLIPPERS' are classic examples of orchids pollinated by deceit since they offer no food reward in return for the pollinator's services. The pollinators must approach the flower through response to visual and fragrance cues, fall into the labellum and leave via the stigma and pollinia at one of two exits. Because pollen removal occurs only after the stigma is passed, the insect must be trapped a second time (usually by a different flower) for one successful pollination.

Most *Cypripedium* species are pollinated by the hymenopteran families, *Andrenidae*, *Halictidae* and *Megachilidae*, although *Cypripedium acaule* utilizes the bumble bees (see Stoutamire, 1967; Newhouse, 1976; and Nilsson, 1979, for reviews). Although visitations by syrphid flies have been observed, no pollen smears have been seen; therefore there is little evidence for myophily (fly pollination) in *Cypripedium*.

In *Phragmipedium*, few observations have been made. Dodson (1966) observed the halictid bee *Chlerogella* and also syrphid flies with pollen smears; thus myophily is known to occur in *Phragmipedium*. Despite the intriguing possibilities, nothing is known to occur in *Phragmipedium caudatum* complex outside the autogamous *Phrag. lindenii*. Knuth (1909) has suggested snail pollination (malacophily) in these bizarre orchids, but this seems ridiculous.

As far as I can determine, nothing is known of pollination in wild populations of *Paphiopedilum*. Van der Pijl and Dodson (1966) have suggested myophily based on presence of lurid colors and spotting patterns. I have observed 'ordinary' flies hopelessly trapped in labella of *Paphiopedilum concolor* and *Paph. ciliolare*, but, lacking the necessary behavioral patterns to follow the escape route, they died in place. However, the following observations in the botany greenhouses of the University of Florida suggest that

some syrphid flies may have the behavioral patterns necessary to effect successful pollination.

The small brown insect in question, *Baccha fuscipennis* Say*, is a visually nondescript syrphid fly compared to many of its more familiar brightly-colored, bee-mimicking relatives. Its flight pattern is not as quick and erratic as that of many syrphids, and its wings produce little discernible sound.

The first observation involved a small-growing clone of *Paphiopedilum philippinense* sometimes sold as *Paph. laevigatum*. The fly repeatedly circled the petals on which it eventually alighted. Although the fly took an interest in the staminodial region, it was never caught in the labellum. The fly alighted on a leaf about one meter from the flower, but soon returned exhibiting the same behavioral patterns.

A few days later I noticed a similar fly that was stuck to a pollen mass of *Paphiopedilum argus* by its thorax and wings. It lacked sufficient strength and energy to free itself and died in place.

Yet another day passed and I noticed a fly on the dorsal sepal of *Paphiopedilum hennisianum*. It was effortlessly caught by gently pinching its wings. Under a dissecting microscope a pollen smear was visible on the thorax and wings, probably from the *Paph. hennisianum* on which it was found. Although the fly managed to free itself, it was apparently exhausted by the effort as evidenced by its ease of capture. The only way the insect could have obtained the pollen smear was to have passed through the orchid flower in the same way that normal pollinators do.

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"How is *Paphiopedilum* Pollinated?"

These observations, although made half a world from native habitats, have several implications. (1) At least one syrphid fly species has the correct behavioral patterns for pollinating *Paphiopedilum*. However, I would expect that a slightly larger and stronger insect is required for successful pollination, especially since a minimum of two visits is necessary, (2) The interest expressed in two very dissimilar *Paphiopedilum* species suggests that pollinator specificity might be low. The question then arises, can two or more *Paphiopedilum* species with contemporary flowering times occur sympatrically without hybridizing, and if so, what are the isolating mechanisms? I would suspect that species as diverse as *Paphiopedilum philippinense* and *Paph. argus* are pollinated by different vectors, but within the *barbata* group, it seems highly possible that several species could be serviced by the same pollinator. (3) Is *Paphiopedilum* generally fly-pollinated? The lurid colors and spot patterns suggest that it is, although bee-pollination (melittophily) cannot be ruled out. Some of the brachypetalums (including *paph. concolor*, *Paph. bellatulum* and *Paph. niveum*) with putrid odors similar to sour milk would seem well adapted to myophily. (4) What are the functions of the staminodes and auricles of *Paphiopedilum*? Although the staminode has been thought to restrict the pollinator's exit, its position well away from the exit casts doubt upon this function. Given the bizarre shapes and general interest in this region of the flower (Nilsson, 1979) it might serve to localize the pollinator for subsequent capture. I suspect the auricles behave as 'guard rails' causing the insect to be deflected into the pouch.

These questions are important because they affect out orchid species concepts. If pollinator specificity is low as these observations suggest, then many hybrid swarms could feasibly occur where two or more species are sympatric. Only with careful field studies based on testable hypotheses can we understand how *Paphiopedilum* flowers work."

*Kindly determined by Dr. Howard V. Weems, Jr., Taxonomic Entomologist and Curator of the Florida State Collection of Anthropods. Dr. Weems indicates that the larvae feed on aphids and white flies, so its presence in orchid greenhouses could indicate partial biological control of greenhouse pests. The adults are nectar feeders, hence their interest in flowers.

References Cited:

- Dodson, C.H. 1966. "Cypripedium, Phragmipedium and Allied Genera", AMER. ORCHID SOC. BULL. 35: 125-128.
- Knuth, P. 1909. HANDBOOK OF FLOWER POLLINATION. Clarendon press. Oxford, 644 pp.
- Newhouse, C. 1976. POLLINATION BIOLOGY IN SEVEN TAXA OF MICHIGAN ORCHIDACEAE AND A STUDY OF CYPRIPEDIUM CALCEOLUS IN MICHIGAN BASED ON LIVING PLANTS AND HERBARIUM SPECIMENS. Thesis. Michigan State University, 98 pp.
- Nilsson, L.A. 1979. "Anthecological Studies on the Lady's Slipper, *Cypripedium calceolus* (Orchidaceae)", BOT. NOTISER 132: 329-347.
- Stoutamire, W.P. 1967. "Flower Biology of the Lady's Slippers". THE MICHIGAN BOT. 6: 159-175.
- Van der pijl, L. and C.H. Dodson. 1966. ORCHID FLOWERS: THEIR POLLINATION AND EVOLUTION. University of Miami Press, Coral Gables, FL. 214 pp.

International Orchid Conservation Congress II Registration Forms Available


At each of our monthly meetings from June, 2003 through April, 2004, registration forms for the International Orchid Conservation Congress II, will be available on our raffle ticket sales table. The Congress will be held at Selby Gardens, Sarasota, FL, May 16-21, 2004.

OSA was the FIRST orchid society to donate funds for the IOCC! The goal of the organizing committee is to have funds available so that scientists from Third World countries will be able to attend the congress. Your OSA Board of Directors voted unanimously at our March 2 Board Meeting, to donate funds for the IOCC.



OSA August 2003 Calendar



Sun	Mon	Tue	Wed	Thu	Fri	Sat
31					1	2
3 Ramona Jungwirth 	4 OSA MEETING 7:00 P.M.	5	6	7	8 Ann Cherny 	9
10	11	12	13	14 Joanne Woodfill 	15	16
17	18	19	20 Anne Marie Cooper 	21	22	23 Vic Polk 
24 Joe Freasier  Prescott Trip	25	26	27	28	29	30



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