



The Arizona Orchidist

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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, June 2, 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: Ainsley LaCour
Edibles will be provided by:
August Lorenzini and Wilella Stimmell

Janet Jurn,
Refreshment Coordinator
(623) 386-2741

NEXT OSA BOARD MEETING

The next OSA board meeting will be
Sunday, June 1, 2003 at 1:00 p.m.
Hosted by Joe Bacik
Please contact Joe at (480) 785-2251
for directions to his home,
if you plan to attend
The meeting is open to all OSA members

GROWER ON CALL

Wilella Stimmell
(480) 947-8479
Email: wilellas@worldnet.att.net

June Program

Dr. Thelma (Del) Pace, of Pacesetters and Desert to Jungle Nursery, Montebello, CA, will present an audience participation program on Low Desert Culture of Intergeneric Orchids.

Del last spoke to us at our January, 2001 meeting. She has been growing orchids for over 30 years and has studied orchids growing in their natural habitats. She learned which orchids would grow well in her 40 degrees to 100 degrees Fahrenheit environment.

In 1985, Del retired from her day job as an Occupational Psychologist and expanded her "hobby" business (Pacesetters) into a pot nursery, Desert to Jungle Nursery. The latter is an eclectic nursery which incorporates plants from both desert and jungle environments.

Dr. Pace has been several times President of her home orchid society, San Fernando Orchid Society, is a past Advertising Manager of the ORCHID DIGEST, and is a member of OSA!

During our June meeting, there will be a silent auction of Desert to Jungle plants.



Please extend our traditional warm OSA greeting and welcome back, Del!

W. Stimmell

IN THIS ISSUE

♥ From the President's Desk	Page 2
♥ Board of Directors	Page 3
♥ Community Service Report	Page 4
♥ Article, Line Breeding by John T. Atwood	Page 5
♥ Article, Orchid by Any Other Name by Carol Kaesuk Yoon	Page 6
♥ Comments by Gustavo A. Romero	Page 7



From the President's Desk

Lou Ann Remeikis

I was impressed! Aaron Hicks presented the in-house program on "Orchids and the Internet" at our May 5th meeting. I can, unfortunately, say that I am on a number of computers each and every day. Usually my computer time is consumed in work, however I do spend a little time relaxing by "surfing" the Internet. Inevitably I look for orchid-related sites and enjoy the variety of information I can easily find.

Aaron's presentation provided me with additional sites definitely worth checking out! Aaron favors the "Google" search engine, one that is very popular to surfers, however I use another search engine regularly. Aaron's demonstration using Google gave me another alternative to find orchid websites that offer different types of information on anything orchidaceous.

The remarkable part of Aaron's presentation was that it "appeared" we went from one website's link to another website rather flawlessly. This, however, was not the case. The phone lines at the Encanto Park Clubhouse is, of course, part of the City of Phoenix phone system. This prohibits using the phone lines at the Clubhouse from accessing outside dial-up Internet Service Providers for the presentation to be "live". Aaron did an excellent job copying websites onto a computer disk, and making it look like the computer setup was live.

Great job Aaron!

It was nice to see Gerda Gallob at May's meeting! Gerda has been a member of OSA for a number of years, and holds the record for the distance a member drives to attend our meetings. Gerda lives in Sedona! Hopefully we will see Gerda at the next few meetings, but she is soon moving to California to be near her son.

Lately Gerda has been donating her orchids for our raffle as she plans on starting from scratch once she gets to California. OSA really appreciates her generosity! At the May meeting, Gerda – by her donation of a fogger – made me realize it is time to start reminding everyone to start collecting and setting aside items for our Annual December Live Auction. Gerda donated the fogger for the December auction, and Bob MacLeod volunteered to store it until then.

It really is never too soon to mention that we need donated items for the auction in December and, of course, we need personal items donated for the residents who live at the Northern Arizona Veteran Administration's Health Care System (NAVAHCS).

For the benefit of our newer members, a summer OSA Board meeting is held in Prescott at the NAVAHCS, and OSA members have proven their kindness to the residents (all veterans who have served our country) by donating items of clothing and personal items for their use. The residents, most on a very limited income, are so grateful and appreciative of anything they receive from us! I will be announcing this date of this meeting in the near future, and all OSA members, as always, are welcome to attend this meeting.

Our sincerest sympathies go out to Pamela Albright. Pam's husband, Lecil, died unexpectedly on April 27th. Pam, you are in our thoughts and prayers!

Additionally, we have a few more members who are recovering from one ailment or another – Gerda Gallob, Shirley Engberg, Gary Kooistra, Pearl Bays, Heidi Owens, Fred and Julie Rathbun. There are probably a few others that I am unaware of, but I wish everyone a speedy recovery and hope to see everyone back in the swing of things soon!

Continued on Page 3

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From the President's Desk

The Board of Directors approved, by unanimous vote, to become a corporate (Cottonwood level) affiliate of Columbia University's Biosphere. The Biosphere is located in Oracle, AZ, just north of Tucson and is a fascinating place. As a corporate level member of the Biosphere, OSA will be receiving a number of general admission tickets to their facility and will fairly and diplomatically make these tickets available to our membership. Look for additional information in future newsletters!

Don't forget to pick up your July issue of Phoenix Home & Garden. July's issue will feature an article on our very own Aaron Hicks' work on orchid conservation. Cathy Crommell interviewed Aaron and the article will report on Aaron's Orchid Seedbank Project.

Norma Kafer has agreed to accept my appointment of her to the position of Second Vice President to the Orchid Society of Arizona! A **BIG** thank you, Norma! Rhonda Woodward resigned her position as Second VP. Rhonda's personal schedule did not allow her to complete the requirements of the position. In fairness to the Board of Directors and the membership, Rhonda felt it was necessary for me to appoint a successor.

I want to thank Rhonda for all she has done to assist OSA, and thank her for the opportunity I have had to get to know her. I am grateful for the friend I have gained with Rhonda's affiliation with OSA and I look forward to seeing her at meetings when her schedule allows her to attend!

I hope everyone gets to enjoy a nice long Memorial Day weekend. I look forward to seeing everyone in June!

Until then.....

Happy Growing,

Lou Ann Remeikis

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Direct inquiries to our website at:

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

Or to any of the board officers or trustees

Board of Directors for 2003

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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., and The Nature Conservancy.



Thank you for your May Raffle Table Donations
Ken and Judy Vincent, Wilella Stimmell, Joe Civello,
Alan Ladd, Virginia Coleman, Pepper Webb, Gerda Gallob,
Mary Alice Baumberger, Glenna Petro
And OSA



On May 1, we presented an Orchids 101 program for the GARDENERS and ARRANGERS GUILD, a member group of the Arizona Federation of Garden Clubs, West Central District. The President of the group had stated that the group wanted to learn about orchids - reason enough to agree to present a program for them! Simply as a point of observation: some of the ladies who have had MANY years of gardening experience, asked far more basic questions about orchids than school children ask us.

Their elementary questions might be attributed to the fact that these ladies are not part of the computer generation and apparently have access neither to the vast amount of information on the internet, nor to such programs about the rainforest as are presented on the Discovery Channel. Nevertheless, we think that the ladies learned more about orchid culture than they knew before the program.

Our next community service programs will be presented on Friday, July 18, for children enrolled for the summer at TRI-CITY WEST/THORNWOOD BOYS & GIRLS CLUB, 301 E. Western Ave., Avondale. The first program is set to begin at 9:00 a.m., with the second and third programs to follow at 10:00 a.m. and 11:00 a.m. We need as many program team members as possible to help with these programs. We have authorized Becky Macias, Branch Manager, to enroll as many as 90 children, with no more than 30 children per program. If you can help with these programs, bring display plants if you have any plants in bloom!

Arizona State Veteran Home

Don't forget to bring a 12-pack or two of soda pop (assorted varieties) to our monthly meetings! Deliveries are made each month on the day after our meetings. This is an ongoing project, and to date, members have been generous in donating soda pop or money so that funds from our Treasury do not have to be tapped for the purchase of soda pop. The veterans GREATLY appreciate our generosity. Individual size snacks (cookies and candy) are also welcome, but the residents' desire for soda pop has priority! (The summer months are upon us, and the veterans' soda pop consumption will increase from 5 - 6 cases per month to 7 - 8 cases per month.)

You might also like to know that the prototype indoor greenhouse (lovingly dubbed the "shower stall") designed by the late Deacon Bell and built by Bob MacLeod in 1995, now resides in the Adult Day Care section of the Arizona State Veteran Home. Diane Mcguire, Recreation Therapist, at ASVH, reports that the veterans truly enjoy placing and tending plants in the indoor greenhouse. Bob placed an engraved plaque at the top of the greenhouse. It identifies the designer (Deacon) AND the builder (Bob)! For several years after Bob built the indoor greenhouse, we hauled it around to our various public displays. However, we now haul a portable 3-shelf greenhouse to our public displays. This "greenhouse" demonstrates to potential growers, a suitable growing environment for growing their orchids in their homes. And the "shower stall" was recycled and found a good home!

SPECIAL NOTE

The first 2003 Show Planning Meeting will be held at Joe Bacik's home just prior to the Board Meeting on June 1st. Members are invited and encouraged to attend. Bring your ideas for the Mardi Gras theme and help make this year's show an even bigger and better success.

LINE BREEDING AND THE IDENTIFICATION PROBLEMS

by Dr. John T. Atwood, Director, Orchid Identification Center, June 1, 1998



Laelia purpurata

The latter part of the 19th century witnessed an unprecedented discovery of new orchid species, exquisite by modern standards. One only has to look through the ORCHID ALBUM and LINDENIA to see some of the clones (usually now lost to cultivation) portrayed during this dynamic period of orchid discovery. The fascination with species, however, waned with the development of hybrids, particularly after 1900. In the last thirty-five years with increasing concern for conservation of orchid species in a world of diminishing habitats and expanding human populations, there has been a new appreciation for species and a few natural hybrids, particularly those lost to cultivation.

With the use of **line breeding**, orchid species are being perfected to match market demands. Note for instance, the wonderful clones of *Laelia purpurata* currently available. Most of these are the result of line breeding of selected clones. One would be hard pressed to find a clone in the wild of a quality matching the best of these.

As applied to orchids, line breeding refers to the repeated crossing of selected clones of a particular species for many generations, such as we see in *Laelia purpurata* and *Cattleya skinneri*. Line breeding in dogs has enabled us to create the kind of pets we want! That is what has given us our Chihuahua and Dachshund, but that took thousands, perhaps tens of thousands of years. We are doing the same thing with orchids.

So what is the problem with identification? Note how the extinct aurochs once native to Europe has given rise to virtually all of our cattle breeds. There is a similar story to be told of domesticated cats and dogs. Modern domesticated animals often look very different from their wild ancestry, and the same is happening with orchids. The Orchid Identification Center frequently receives flowers of line bred species with characteristics that take them out of the known definition of their wild counterparts. Sometimes with the *Laelia purpurata* example we see an odd flower that looks "too good", with four large and four rudimentary pollinia. Since *Laelia purpurata* is known to produce only eight pollinia per flower, any reduction is good evidence of hybrid origin somewhere back in the lines. But *Laelia purpurata* is not the only problem. We are seeing dark forms of *Cattleya mossiae* and canary yellow forms of *Vanda denisoniana* that are just too good, but otherwise seem to be the species suggested by the owners of these plants. All we can really do with most of these is to give a provisional acceptance of the names as submitted.

There is a promising solution being developed - DNA fingerprinting. What is needed is a library of the gene sequences from many clones of parental species. The research is just now beginning at the Marie Selby Botanical Gardens, Sarasota, FL. Dr. Norris Williams of University of Florida is now looking at several clones of *Cattleya dowiana* from Costa Rica and *Cattleya aurea* (a species name often accepted) from Colombia and will compare a curious clone with odd smokey-lavender lip and the even more odd flowering time of November and December. The clone known as cultivar Blumen Insel has intrigued us for some time, as it might represent a mistake with a toothpick depositing the wrong pollinia! Williams will also compare a questionable dark purple flowered clone of *Cattleya mossiae* with a few known wild collected clones. Also known clones of *Cattleya Hardyana* (a natural hybrid) will be compared with the parents, *C. aurea* and *C. warscewiczii*.

Over the years we have collected examples of plants with identification problems, stemming from line breeding or natural hybridization, and so Selby is an appropriate place to initiate this project. We hope within two years to have working protocols to confirm or reject the names of at least a few line bred species. Meanwhile we must continue a system of acceptance or rejection of these plants based on our best knowledge and experience sometimes often involving several individuals. Yours truly is working with Dr. Williams to sample *Maxillaria* species for the purpose of improving the classification of this large group of cultivated orchids. There are exciting times ahead for Selby's research orchid collection!

An Orchid by Any Other Name: An Asparagus?

By CAROL KAESUK YOON

Orchids can be elegant, gaudy, lurid and even downright bizarre. But while the unusual flowers of these species have excited plant lovers for centuries, they have also made it difficult for evolutionary biologists to place them in the plant family tree and identify their closest relatives.

But now, scientists say, studies of the DNA of orchids are revealing a host of surprises, chief among them, that orchids are actually part of the asparagus group, closer kin to these vegetables than to the other, flashier, flowering plants they had been placed with before.

"They're so weird, so different from everything else," said Dr. Ken Cameron, orchidologist at the New York Botanical Garden in the Bronx.

At the same time, scientists are finding that orchids, long thought to be the recent product of plant evolution, are actually quite ancient, having emerged more than 90 million years ago.

It is often easy for experts to pick out an organism's closest relatives, but sometimes — as with orchids — appearances can point in many directions and no direction at all.

One problem is that orchid flowers have undergone striking evolutionary elaborations, evolving myriad forms and devices, sometimes to entice very particular animal pollinators. In the process, elements of flower structure that may have pointed to the group's evolutionary history have been distorted or lost.

One particular oddity of orchid flowers is their highly unusual reproductive structure, the normally separate array of reproductive parts having evolved to be fused together inside a typical orchid bloom.

"You look inside an orchid, and say, 'Where are all the parts?' " said Dr. Cameron. "It doesn't look like anything else."

By looking at DNA, researchers were able to free themselves from limits of vision. Comparing instead a wide variety of genes both among the orchids and between orchids and the other flowering plants, Dr. Cameron and colleagues found that the orchids fell squarely within the so-called Asparagales, the group that includes asparagus.

"People found it hard to believe," Dr. Cameron said. But the Asparagales is large and diverse, containing amaryllis, onions, irises, daffodils as well as agaves and yuccas.

Scientists say the evolutionary history of orchids has also been obscured by the oddities of their pollen. While the pollen of most plants is nearly indestructible, the pollen of orchids is typically extremely delicate, leaving no fossil record.

"With other groups you can find a fossil and conclude that the group must be at least that old or older," said Dr. Mark Whitten, a botanist at the Florida Museum of Natural History. "But with orchids it's been pretty much sheer speculation."

Now, when DNA data are used to build an evolutionary tree of the plants, they show that orchids branch off fairly early, the first among the Asparagales plants, meaning they are the oldest in that group.

Orchids also branch off before the palms. Because there are palm fossils that are 90 million years old, scientists know, orchids must be at least that old. The same evolutionary trees also showed that orchids first lived on the ground, and later evolved to live on other plants, as most orchids do, suggesting that life in the trees, a less exploited habitat, might have helped orchids diversify into so many species.

Continued Page 7

Continued from page 6

But while DNA has provided these answers, Dr. Cameron said, researchers may have had clues to the history of the orchids if they had not focused so much on the showy and high profile orchid species.

One curious aspect of the Asparagales is that their seeds are encased by a distinctive black, crusty coat.

Because most orchids have very thin seed coats, the Asparagales seemed unlikely to be close relatives. Yet Dr. Cameron has found that some of the more obscure orchids have exactly the Asparagales sort of seed. He noted that *Neuwiedia*, an unusual Bornean orchid, lady-slipper orchids and vanilla orchids, which produce the vanilla used in cooking, also have these seeds.

In fact, Dr. Cameron points out that the tiny black specks seen in some vanilla ice creams, are, in fact, those crusty black-coated seeds that show the clear alliance of the orchids with asparagus, meaning that the answer to a longstanding scientific puzzle has long been right on the tip of people's tongues.

New York Times May 6, 2003

Comment

"The recent article in the Science Section of the New York Times is exhilarating. The notion that orchids belong in Asparagales is not new: it had been presented in scientific articles and textbooks in the past few years. However, comparing asparagus and orchids is a bit extreme. As the article says, "Asparagales is large and diverse, containing amaryllis, onions, irises, daffodils as well as agaves and yuccas", and perhaps the contrast would not have been as dramatic if other plants families within Asparagales had been selected (for example, orchids versus irises).

The announced findings, however, are exciting because they confirm that orchids are older than we had imagined. Orchidaceae had been placed before in the "lower" Asparagales (e.g., Judd et al., 1999, 2002, *Plant Systematics [a Phylogenetic Approach]*, Sinauer Associates, Inc., page 185, and pages 254-255 in the 2002 edition), and therefore the oldest taxa within that order, and even considered older than the palms (Judd et al., l.c., 2002), and the research of Dr. Cameron and collaborators seems to confirm this hypothesis. In contrast, scientists in the past thought that orchids had evolved recently (in geological time). The new scenario proposed by Dr. Cameron et al. is one more variable that could explain why Orchidaceae are so diverse (more time, more species)."

Gustavo A. Romero, Keeper
Orchid Herbarium of Oakes Ames
Harvard University

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 June 2003 Calendar



Sun	Mon	Tue	Wed	Thu	Fri	Sat
1 <i>Board Meeting</i>	2 OSA Meeting <i>7:00 p.m.</i>	3	4  <i>Bryan LaCour</i>	5	6	7
8	9	10	11	12	13 <i>Fred Rathbun</i>	14
15 <i>Father's Day</i>	16	17	18	19  <i>Pearl Bays</i>	20  <i>Suz Cramer</i>	21
22	23	24	25	26	27	28
29  <i>Dan MacLeod</i>	30					



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