



The Arizona Orchidist

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NEXT OSA MEETING

The next regular society meeting will be

Monday, August 3rd at 7:00 P.M.

Meetings are held at the

Training Center

at the

Arizona State Veteran Home

4141 S. Herrera Way, Phoenix.

(Formerly North 3rd Street)

OSA meetings are open to all

plant enthusiasts

Refreshments will be provided

Beverage-no volunteer!

**Snacks - Iva Dobson and
Carol Erwin**

Refreshment Coordinators:

Barbara Parnell (602) 451-5952

Lou Ann Remeikis (602) 803-6889

Jo Anne Waddoups 480-654-9883

Growers on Call

August – Barbara Parnell
(602) 451-5952

September – Dean Toms
602) 588-4028

Board Meeting

August – TBA

September 20th at 1 PM
at the home of Bob and Cece Blue

AUGUST/SEPTEMBER

August Program

Chris Gubler of Gubler Orchids, Landers, CA, will present a PowerPoint program about his participation in his latest International Orchid Show. Chris last spoke to us at our Jan., 2012 meeting. Welcome back, Chris!



Raffle Donors

June – Gary Cauble, Carol Erwin, Bob MacLeod,

Julie Rathbun, Wilella Stimmell,

and non-member Mark Obermayer

July – Julie Rathbun, Randy Ricardi, Wilella Stimmell,

and Mark Obermayer

Thanks to all for your support of this important fundraiser.

IN THIS ISSUE

From The Presidents Desk
Bringing Home the Baby
Community Service Report
Botany
Smithsonian

Julie Rathbun Page 2
Ray Barkalow Page 3
Wilella Stimmell Page 4
Nature Page 5
Nature Online Page 7



From the President's Desk

Julie Rathbun

Several of our members enjoyed summer vacations in cooler climates. I busied myself this summer by taking jobs and working for other people by house-sitting and by taking care of other people's dogs and horses. As long as I'm physically able, I do what I need to do to get my bills paid.

For our June 1 meeting, our speaker was James Crook, sales representative for High Energy Fish AZ. Several months before our meeting, he had visited my greenhouse and had given me a sample of the Whole Fish Solution. I tried it on a few orchids, and the new growth on the plants impressed me. So we invited him to speak to our group. Not only was his presentation educational, but he was very personable and also brought samples for all of our members. (We like free stuff!) After our meeting, one of our members bought a much larger quantity of the solution, divided it into quart size spray bottles and sold them at our July meeting. While the product does have a slight fish odor, it's acceptable and is certainly a big step forward from the old-fashioned Fish Emulsion product with which most of us have had some experience.

Among the bullet points in the hand-out sheet describing what the whole fish product **replaces** were: calcium, amino acid, bug control, microbes, Fusarium control, and growth regulator. The entire fish (Asian carp) is used in the solution.

The website for High Energy Fish AZ is: www.wholefishsolutions.com and James can be reached at crook.je@gmail.com.

Our members and friends were very generous with their raffle table donations for both the June and July meetings. Thanks to all of our donors!

Also at both our June and July meetings, I mentioned that OSA will NOT make our annual August field trip to the Northern Arizona VA Health Care System greenhouse. We will miss the interaction with the residents, but in recent years, NAVAHCS has been short-staffed. Without the cooperation of staff members, we have no way of gaining access to the residents.

The program for our August 3 meeting will be a PowerPoint presentation by OSA member, Chris Gubler. He will show us pictures of the most recent International Orchid Show that he attended.

Also, we hope to have show flyers available at our August meeting. Please do your part to help publicize our annual show!

It's that time of year when a **Nominating Committee** prepares a slate of candidates for our November election. It has been our custom for a retiring trustee to serve as Chairperson. **Two other members will also serve on the Nominating Committee.** The slate will be published in our October newsletter.

Reminder: We will not hold our September meeting because it falls on Labor Day.

See you on August 3!

Julie

CULTURAL NOTE

Bringing Home the Baby

When folks acquire new plants, they often just stick them in with the rest of their collection and hope they do well, figuring that the seller knows what medium is best, etc. To be more successful, it is important to do some assessment of the plant, its stage of growth, and the pot & medium it's in, while thinking about your own growing conditions and watering habits.

The very first thing you should do is inspect the plant for insects and diseases. Check every nook and cranny, and treat, if necessary. Next, make a good, critical assessment of the potting medium. What condition is it in? Is it compatible with your conditions and watering tendencies - i.e., will it hold enough water, or will it require more-frequent watering than you're accustomed to? Will it hold too much water and suffocate the roots? If you decide that a repot is in order, there's more to consider.

If the plant is showing signs of new growth, with new root tips emerging from the base of the plant, it is probably wise to repot it immediately into your preferred medium, as it will get re-established much more quickly. If the plant is in bud or bloom, can you just "baby it" a little, giving it more time to dry out between waterings to avoid root suffocation? If the medium is just "too far gone", you really have no choice but to repot, so soak the potting medium to loosen it up and make the roots more supple, carefully extract the medium while doing as little damage as possible, trim any dead roots, and pot it up. Keep the plant shady, warm and in maximum humidity, and it should recover quickly.

Ray Barkalow

First Rays

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www.orchidsocietyaz.org

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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 Arizona Federation of Garden Clubs, Inc., and The Nature Conservancy.

Community Service Report and Schedule

Wilella Stimmell

May was a busy month for OSA's program team.

On May 11, **Bob MacLeod, Julie Rathbun, Dean Toms,** and I presented a hands-on repotting program for Jamie Schmadeke's 3rd grade class at the Mabel Padgett Elementary School in Goodyear. Her students were enthusiastic and well-behaved. After the program, Jamie sent the following message: "I wanted to THANK YOU and your team of volunteers again for giving my students a great opportunity! They keep talking about the orchids and how excited they were to see the blooming plants."

On May 20, **Lou Ann Remeikis** joined our program team, and we presented **two** programs at two different libraries in Gilbert. The first hands-on repotting program was presented at Perry Branch Library. The first program was scheduled for 1 PM. At the conclusion of the first program, we drove to the Southeast Regional Library where we stowed our display plants, seedlings, and potting supplies until 6 PM, the scheduled time for the second program. In the meantime, our group ate lunch at a local restaurant. Following the second program, we received a thank you message from Karrie Romero, SRL's Youth Services Supervisor: "I wanted to send a quick THANK YOU to you and the Orchid Society of Arizona for coming and doing your wonderful program here at the Southeast Regional Library. I got a lot of positive feedback from customers as they were leaving, and I know I enjoyed it. We would love to have you back when our schedules permit. Thank you again! We appreciate you!"

Although we were invited to return to the Waddell Library in August, we do not schedule hands-on programs for June through August.

On **September 4, at 10 AM**, our program team will be presenting an Orchids 101 program for the **Sun City Branch Library**, 16828 N. 99th Ave., Sun City. **We need a blooming phal to use as a door prize.** If anyone who can't participate in our community service programs, would like to donate a plant for this particular program, please bring it to our August 3 meeting.

The next local programs we will schedule will be for November, 2015 and then for a date in Jan., 2016. Remember that we operate for a first come, first serve scheduling basis.

Wanted: One or more volunteers to make copies of our phal culture sheet! We give each program participant a copy, and we also have them on hand for our show. During the past 16 years, and at no cost to OSA, I have made many hundreds of copies of the sheet. Now I would appreciate some help!

September Birthdays

Lou Remeikis 3rd - Joe Bacik and Dennis Olivas 5th - Marlene Hill 17th - Iva Dobson 18th
Jeanette Socaciu and Megan Stuff 19th - Gary Remeikis 25th

HAPPY BIRTHDAY

New Member

Gene Gyger has joined OSA.

Please seek him out, introduce yourself and make him welcome.

BOTANY

Plant collections get pruned back North America's herbaria wilt under budget pressure.

Herbaria in North America are withering away. Collections of preserved plant specimens that have been accumulating for a century or more are being closed and consolidated as tight budgets and competition for space put pressure on universities to direct resources to facilities such as labs.

More than 100 North American herbaria have closed since 1997, leaving just over 600 remaining. The latest casualty came in May, when the University of Missouri in Columbia announced that it will close its Dunn-Palmer Herbarium, a 119-year-old collection of more than 170,000 plants and thousands of mosses, algae and fungi.

There is a perception that herbaria are dead places, says plant biologist Kathleen Pryer, who manages the herbarium at Duke University in Durham, North Carolina. But far from being relics, botanists argue, these repositories of preserved specimens are relevant to today's research.

For instance, DNA from specimen plants helps botanists to improve the accuracy of phylogenetic trees, and surveys of when and where specimens were collected can show the effects of climate change on species range. Ecologists and conservationists will always need to be able to distinguish thorn from thistle in the field, says biologist Roxanne Keller of the University of Nebraska Omaha. Digital archives are useful, she says, but only with the real thing can you feel the points of a bristle or trace a tendril's curl. "You can't get those details from a picture."

That sensory experience may be less valued these days because many botanists now find themselves small players in broader biological sciences departments. Few outside their field appreciate the merits of having specimens on hand. Department heads and deans are always "mystified" about herbaria, Pryer says.

Herbaria can feel more antique than avant garde. The US National Herbarium in Washington DC houses a preserved cutting from the first Concord grape, a commercially important US breed first cultivated in 1849. The label identifying a sunflower from South America, brown with age, is written in the spidery Cyrillic scrawl of a nineteenth-century Russian collector.

That fusty feel belies the present-day questions that the specimens are being tapped to tackle. Isotopic analyses of specimens of the rainforest species *Humiria balsamifera* that date as far back as 1788, for example, show that as atmospheric carbon dioxide levels increased with industrialization, the plants responded by increasing photosynthetic activity and using water more efficiently (D. Bonal et al. *Plant Cell Environ.* 34, 1332–1344; 2011). The findings are important to climate modellers and others who want to predict how ecosystems will respond as CO₂ levels rise in coming decades.

Researchers have also used specimens collected during the first few decades of the twentieth century to track the spread of cheat grass (*Bromus tectorum*), an invasive species from Europe, throughout the US southwest. The pattern supports a growing body of evidence that successful invasions require multiple introductions of an exotic species (A. R. Pawlak et al. *Biol. Invasion.* 17, 287–306; 2015).

Continued on page 6

Continued from page 5

Herbaria do not necessarily disappear altogether when they close. Their specimens are often absorbed by other institutions: the Rancho Santa Ana Botanic Garden in Claremont, California, for example, has taken in at least three other collections since 2000. In one case, staff had to race against an impending rainstorm to rescue specimens from a loading dock where they had been unceremoniously dumped. “We more or less had to drop everything and go and fetch it,” recalls Lucinda McDade, the garden’s executive director.

Drama also surrounded the 2004 transfer of the herbarium at the University of Iowa in Iowa City to Iowa State University in Ames. A lawsuit tried to stop the move, but eventually more than 200,000 specimens were packed up and driven the 200 kilometers to Iowa State. And last year, the Brooklyn Botanic Garden in New York said that it would sell the building that housed its herbarium. In April, the garden lent its collection to the New York Botanical Garden until room can be found for it elsewhere. But some curators worry that the move out of Brooklyn will prove permanent.

Merging collections can have benefits, says James Miller, vice-president of science and conservation at the Missouri Botanical Garden in St Louis, which will absorb the Dunn Palmer collection. Samples can be better curated at larger institutions, and might catch more researchers’ attention. But taking in an orphaned collection is a mixed blessing. It can take years to catalogue the new samples, making it difficult to access them for study. And institutions must also find a way to do that work at a time of dwindling funds and staff cuts. “I’m glad we’re getting new specimens,” says Miller. “But a part of me is always sad when another herbarium closes.” Compared with other biological sciences, botanists feel that they have long struggled for respect. In 1988, 72% of the 50 top-funded US universities offered advanced degrees in botany. More than half of those programmes have been jettisoned, even though the need for soil and plant scientists is expected to rise modestly over the next decade, according to the US Bureau of Labor Statistics. “Getting people interested in living plants is a challenge,” says Pryer. Convincing them of the importance of keeping flattened, wizened sprigs is even tougher.

But it is important to do so, botanists say. “A lot of us got started studying plants by wandering into the college herbarium by accident,” says Vicki Funk, a botanist and curator at the US National Herbarium. “What happens if they all get carted off?”

CHRIS MADDALONI
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Smithsonian sets up frozen-plant repository

Collection is intended to catalogue biodiversity and facilitate genomic research.

The Smithsonian Institution has embarked on an effort to preserve biodiversity by assembling a large collection of frozen vegetables. On 8 July, its National Museum of Natural History (NMNH) in Washington DC launched an initiative to collect and freeze plant tissues from half of the world's families of flora. Researchers behind the scheme say that the repository will yield useful samples for scientists studying genomics and biodiversity, and see the project growing to include all plant families and half of all plant genera in two years.

“It will be like an herbarium for the twenty-first century,” says Jonathan Coddington, director of the museum's Global Genome Initiative (GGI), which aims to collect specimens, tissues and data from across the tree of life. By September, the project hopes to have some 800 plant samples, representing some 250 families, all held in just three institutions in Washington DC — the US Botanic Garden, the US National Arboretum and the Smithsonian Gardens.

Kneeling around plants at the US Botanic Garden on an oppressively hot morning, a botanist led students in a demonstration of how fresh plants are preserved. The researchers dropped little plastic tubes containing cuttings from a cacao tree into wispy vapors wafting from a flask of liquid nitrogen.

These frozen samples yield higher-quality genetic data than older, pressed samples. Such information can be used to reveal taxonomic relationships, uncover evolutionary history or identify ‘cryptic’ species — those distinguishable from near relatives only by their DNA.

Unlike animals and fungi, most of the estimated 400,000 species of flora are known.. Some 30–40% are thought to be currently cultivated in botanic gardens, so assembling a representative collection of frozen samples is a feasible undertaking.

Waning enthusiasm

There is a data component to the GGI, but Coddington says that collecting samples is the primary goal. Comprehensive repositories of this kind would be “cool to have”, says Henrique Miguel Pereira, head of biodiversity conservation at the German Centre for Integrative Biodiversity Research (iDiv) in Leipzig. “But is it really the most important thing?” he asks.

Researchers have already been depositing plant gene information into databases, and various cryopreservation projects exist worldwide. Frozen seed banks, such as ones run by the Israeli government and the US Department of Agriculture, store important food-related plants. Private enterprises are also trying to start their own networks for plant tissue. But there is no full picture of what holdings are already available. Accessibility to biorepositories of all kinds is a big problem, says Jim Vaught, president of the International Society for Biological and Environmental Repositories in Bethesda, Maryland.

The GGI hopes that institutional partners can help to expand the scope of its plant project worldwide. But it is unclear whether there is appetite to take on such projects. A cryopreserved-plant bank that began in Australia in 2002 was shuttered four years ago owing to a lack of interest. Robert Henry, who helped start the bank at Southern Cross University in Lismore, suspects that enthusiasm will continue to cool. “The case for storage of DNA is now not as strong, as we can now store those sequences as data instead,” he says.

OSA August 2015 Calendar

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
						1
2	3 OSA Meeting 7 PM	4	5 Pat Miller 	6	7	8 Ann Cherny 
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23 ↙ 30	24 ↘ 31	25	26	27	28	29 Karen Barber 



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