

Greater Akron Orchid Society

An Affiliate of the American Orchid Society & the Mid-American Orchid Congress

January 2019

President

Jane Bush

Vice President

Barb Ford

Treasurer

Paul Bujak

Secretary

Lore Yu

Editor

**Brandon
Spannbauer**

Trustee

Dave Miller

Minutes of Nov. 2018 Meeting

The meeting opened with our annual potluck dinner. As always, the food was delicious. It was announced that dues will be due in January.

We then had our elections and the results were as follows:

President: Jane Bush
Vice President: Barb Ford, Caroline apprentice
Treasurer: Paul Bujak, Claudia apprentice
Secretary: Lore Nestel-Yu
Newsletter: Brandon Spannbauer
Program Director: Vacant

We awarded the AOS honorary award to Darlene Thompson and Frank

We then focused on all the beautiful orchids brought to the show table. Dave gave a Presentation:

'What is in a name?' and announced a YouTube channel: Ohio Orchids

We finished with the annual holiday orchid distribution for members. Edgar provided a great variety of orchids from which everyone could choose.

Upcoming Business

It's time to start preparing for our Spring show at Donzell's, March 2-3. Please consider volunteering. There are many ways large and small that you can help contribute.

We also need ads for the show handout, I have attached a copy of the ad contract that you can print out and either mail to me (address on the ad contract) or bring with you to the February meeting which is the deadline, Feb 11.

Dues for 2019 GAOS membership are now due. Individual memberships are \$20 and Family memberships, \$30.

Individual members can receive one free plant at the November meeting while family members can get two. Please send your dues payment (checks made out to GAOS) along with your name, address, telephone and current email to:

Paul Bujak
1945 13th St
Cuyahoga Falls, OH 44223

Next Meeting

The next meeting of the GAOS will be Monday, January 14, 2018 at 6:45 pm at the Portage Lakes Kiwanis Center, 725 Portage Lakes Dr., Akron, Ohio 44319.

Program: **Round Robin**

Speaker: 3 Small Group Presentations

There will be 3 small group presentations at the Jan. 2019 meeting.

Website: www.thegaos.com

Facebook: www.facebook.com/theGAOS

President's Corner

By Jane Bush



Greetings!

Happy New Year and may you have plenty of beautiful blooms in the coming months.

GAOS has a couple of new things for 2019. First, we are going to try a "Round Table" program in which attendees sit in one of three groups. Three speakers will give mini presentations for about 20 minutes and then the speakers will rotate to the next group. For our January meeting we are trying the "Round Table" program with Barbara Ford discussing "Growing Healthy Orchids," Jane Bush discussing "Orchid Hygiene," and Darlene Thompson discussing "Growing in Windows and Under Lights."

The second change is that we will be issuing receipts for dues this year. If you pay your dues at a meeting, be sure you get your copy of the receipt. If you **pay your dues by mail**, please include a **self-addressed-stamped envelope** for the treasure to mail you your receipt. Dues are due now and the deadline is the March meeting.

A third change is that we are going to set a time schedule and make every effort to keep it. Our most popular Beginners' Corner with Edgar will continue and start promptly at 6:45 PM. To give time for questions with Edgar, the business part of the meeting will start at 7:10.

A suggestion from the survey is that we have evaluations of our meetings. So, before we wrap up our January meeting, we would like you to complete a short survey/comment so we can plan future meetings that meet our members' interests.

TIDBIT: Cooler temperatures and short days means that your orchids have slowed their functions and need less fertilizer.

Meeting Schedule

GAOS meets the second Monday of each month (except December) at 6:45pm, impromptu Q&A start at 6:30pm at the Portage Lakes Kiwanis Center, 725 Portage Lakes Dr., Akron, Ohio 44319

Members are encouraged to bring orchids from their collection for exhibit. **All are welcome; you do not have to be a member to attend.**

Jan 14	Round Robin (3 Small Group Presentations)
Feb 11	"Preparing Plants for Show" & "Miniatures" Edgar Stehli
Mar 11	Get Acquainted with New Members & "Orchids 101"
Apr 8	Repotting and Mounting your Orchids



Photo of the Month: Phalaenopsis Liu's Bright Ruby 'Tina' HCC/AOS (Phalaenopsis lindenii x Phalaenopsis Timothy Christopher). This grex bred and then registered by Hwa-Tung Liu in 2000.

Photo By: Peter Lin



Meet Our Member



Paul Bujak, Treasurer

I have been a member of GAOS since 1989. I was previously treasurer of the society from 1998 to 2009. I built the poles and stations used at our orchid shows. I also do the plant registration and award photography at the shows.

I grow my orchids in the basement under LED lights. With more than 100 plants, I have equalized my lighting by running two 100-LED units back and forth on a track. Additional lighting is with four LED tubes over a shelf.

In addition to growing orchids, I like photography, collecting stamps and woodworking. For exercise, I enjoy golf, bowling and working out at the local YMCA.

How to Read an Orchid Plant Label

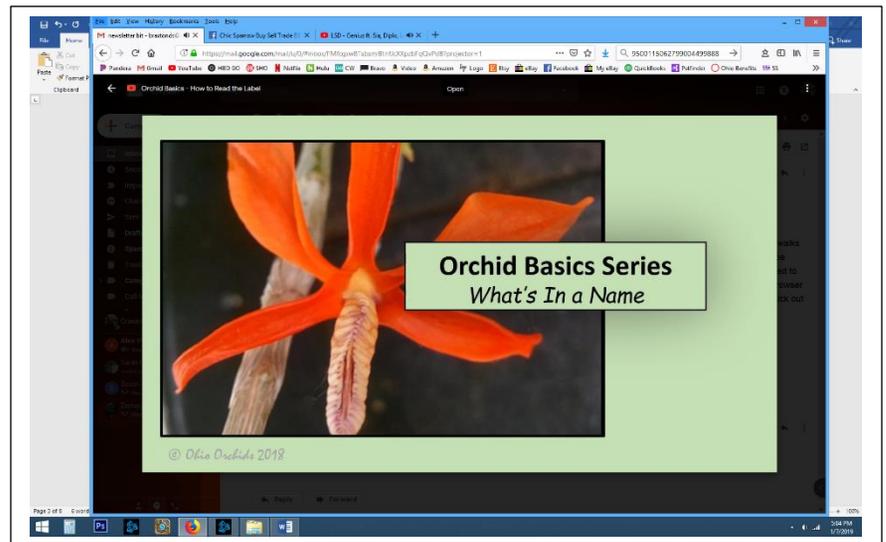
By Dave Miller

At the show table we banter around the names of orchids and it is baffling to many. There is a 10-minute video now on YouTube that walks through the ins and outs of what information is found on an orchid label and how to decipher it. It is narrated by Dave Miller and can be played as many times as you desire. It is entitled "Orchid Basics - How to Read a Label" and is the first of a number of videos designed to help society members learn about orchids.

It can be found most easily by searching YouTube for "Ohio Orchids" or by going to this browser link

<https://www.youtube.com/watch?v=KGT XUa741I4>

Learning more about what is on the label will definitely help when trying to pick out your next orchid from the sales table. Questions, problems and comments should be sent to Dave.



Orchid seeds – Nature’s tiny treasures

By Wolfgang Stuppy (Presented by Gawler Orchids)

Orchids have the smallest seeds in the world and they produce millions of them, but why? Kew's seed morphologist Wolfgang Stuppy explains the clever survival plan that lies behind this seemingly wasteful strategy. The biggest seed in the world

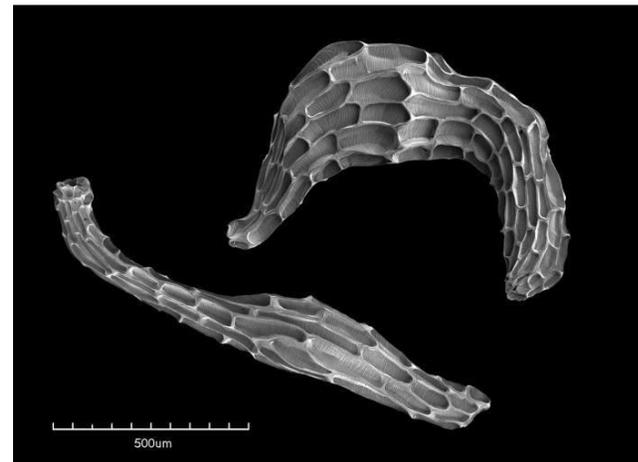
Seeds come in all shapes and sizes. Famed for both its volume and suggestive shape, the seed (actually a single-seeded stone) of the Seychelles nut or double coconut (*Lodoicea maldivica*, *Arecaceae*) holds the unbeaten record for the world’s largest seed. It can weigh up to 18 kg and resembles something that, while bobbing in the waves of the Indian Ocean, gave sailors in the Middle Ages all kinds of, well, “seedy” ideas.



Wolfgang Stuppy with a *Lodoicea maldivica* seed

Seeds like dust

At the other extreme of the spectrum we find the seeds of orchids. Famed for their beautiful and fascinating flowers, with over 26,000 species worldwide, orchids are the largest of all flowering plant families. What’s more, they also hold the world record for having the smallest seeds of all flowering plants. A typical orchid seed is merely the size of a speck of dust.



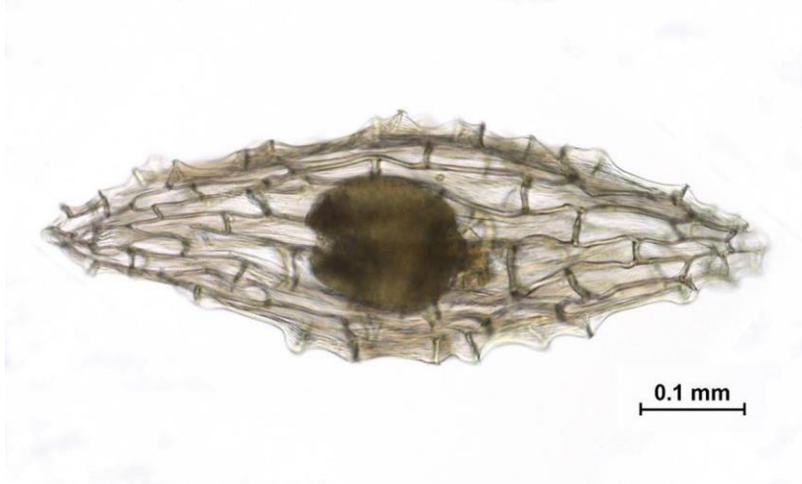
Top: seeds of the Wild Coco (*Eulophia alta*), on a British one penny coin. Below: two seeds of the same species in the SEM (the scale bar shows half a millimetre)

Tiny ones and not so tiny ones

To give an impression of the dimensions involved: a single capsule of the tropical American orchid *Cynoches chlorochilon* produces almost four million seeds, and one gram of seeds of the southeast Asian species *Aerides odorata* contains 3.4 million seeds.

Balloon travelers

The reduction in seed size and weight is mainly achieved at the expense of embryo and endosperm, the latter failing to develop in orchids. At the time of dispersal, orchid seeds consist of a spindle-shaped, wafer-thin seed coat that encloses an extremely small and simplified embryo in the shape of a spherical cluster of cells. Just one single cell layer thick, the seed coat (also called testa) forms a balloon around the embryo, a clear adaptation to wind dispersal.



Cymbidium dayanum Rchb.f. seed. Photo: Chip Molly

With a little help from their friends

Because orchid seeds lack a food reserve in the form of an endosperm or a large embryo, most of them, especially terrestrial ones, are generally unable to germinate on their own. They first have to engage in a mycorrhizal relationship with a fungus that helps to feed the emerging seedling. Some orchids are able to join up with many different species of fungi whilst others only accept a very specific fungus to enter their lives (or rather roots). Few orchids don't need any fungus at all for their germination, such as certain species of *Disa* from South Africa, a remarkable exception among terrestrial orchids.

Why so many?

Their dependence on certain fungal partners is most probably the reason why orchids produce vast numbers of tiny seeds. With their small size, low weight and balloon-testa, orchid seeds are perfectly adapted to wind-dispersal. However, their strategy is not to travel long distances. Scattering large numbers of seeds with the wind merely heightens the chances that at least some end up in a place where they are lucky enough to meet their specific fungal partner without which they cannot germinate.

Long-distance dispersal would mean that the same amount of seed is distributed over a larger area which could actually lower the odds of encountering a compatible host in a suitable location. The fact that many orchid species are endemics with very limited distributions supports this theory. This does not mean, however, that their seeds are not able to cover long distances. Orchids managed to reach isolated islands far away from the mainland. As famously documented, they were among the first pioneers to resettle on the islets of Krakatoa after the catastrophic volcanic eruption of 27 August 1883.

Why so small?

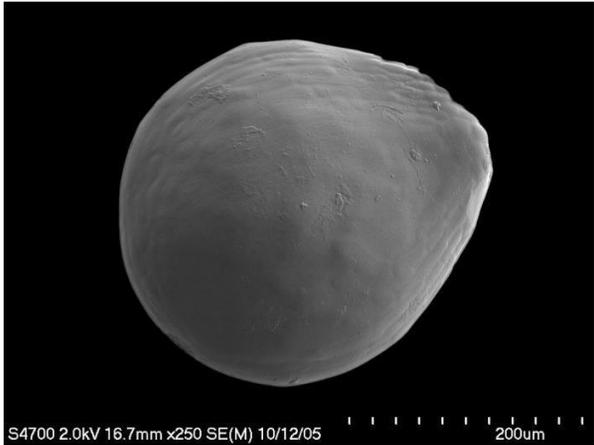
Shedding millions of seeds most of which go to waste, seems very wasteful. In fact, producing lots of very small seeds with literally no food reserve (apart from some oil droplets and starch grains in the embryo) is energetically inexpensive and doesn't take up that much of a plant's energy at all.

The survival benefits of producing millions of tiny seeds clearly outweigh the costs of producing them.

Vanilla ice cream and seed morphology

Next time you treat yourself to some good quality vanilla ice cream you can discover that the tiny black spots in it are actually real vanilla seeds. Vanilla is made from the fermented fruits ('pods') of the vanilla orchid (*Vanilla planifolia*). That's how all those seeds end up in your ice cream

In fact, the seed dispersal strategies of vanilla orchids are still enigmatic. The fruits of many *Vanilla* species, including the ones of *V. planifolia*, open when ripe to expose their tiny seeds covered in an extremely sticky layer of oil. The oil might serve as an adhesive to attach the seeds to visiting animals, which could either be insects or vertebrates.



Orchid seed research at the Millennium Seed Bank

At this point I asked my colleague, Tim Marks, to tell us something about the research into orchid seeds he is involved in at the Millennium Seed Bank and he writes:

'Being wind-dispersed, orchid seeds are naturally dry at release and appear to be desiccation tolerant. The latter is essential for us to be able to preserve them under very dry and very cold (freezing!) conditions, as we do with other seeds in the Millennium Seed Bank.

'Unfortunately, orchid seeds have the reputation to be short-lived under seed banking conditions. Our research is engaged in finding out why this is and how we can extend their survival.

'A basic concept in understanding their specific requirements for storage is to test the relationship between temperature and moisture content upon viability and germination. By running long-term storage experiments with temperatures between -196°C (liquid nitrogen) and $+20^{\circ}$ (ambient), and a variety of moisture contents, it is possible to identify species-specific requirements.

'Some orchid species prove tolerant to a range of conditions, while others store better in liquid nitrogen. However, to prevent repeating this on all species, we are looking at a number of seed characteristics that could affect this response. One of these is lipid content of the seed, the physical properties of which could affect seed physiology as they go through the freeze and thaw cycles that stored seeds are subjected to. It is possible to produce thermal fingerprints describing the phase transitions between liquid and solid states that these go through, with the intention of developing a predictive model that will describe the observed responses to storage and during germination.'



-Wolfgang Stuppy-

Photo Gallery

November 2018
Meeting



Vanda Pak Chong Blue
Mary Bell



Den Classic Gem
Lore Yu



Miltonia Belvadere
Dave Miller



Phrag Manzur
Dave Miller



Masd princeps x ayabacana
Dave Miller



Bulbo fritillariflorum
Dave Miller



Paph gratixianum
Dave Miller



Paph gratixianum
Dave Miller



Mediocalcar decoratum
Edgar Stehli



Habenaria regneri
Edgar Stehli



Habenaria roeblii
Edgar Stehli



Onc Heven Sent
Mary Bell



Rhynco Kultana
Mary Bell



Paph Delightfully Wood
Meghan Lauer



Odcdm Burgundian
Cynthia Dilauro



Slc Final Touch
Georgia Knowles



Paph fairieanum
Darlene Thompson



Paph fairieanum album
Darlene Thompson



Hab medusa x carnea
Darlene Thompson



Soph cernua
Darlene Thompson



Paph spicerianum
Darlene Thompson



Paph charlesworthii
Darlene Thompson



Phrag Spot On
Darlene Thompson



Lc Clayton Wagley
Darlene Thompson



Laelia perrinii
Darlene Thompson



Haemanthus albiflos (non-orchid)
Barb Ford



Holiday Plants Table



Holiday Plants Table



Masd princeps x ayabacana
Dave Miller



Mediocarum decoratum
Edgar Stehli