THE KEIKI

Volume 24 Issue 7
July 2016

The next meeting of the Orchid Lover's Club will be 1:00 pm Saturday July 16th At The VFW Post, County Line Road, at 18940 Drayton Street, in Spring Hill

Our speaker, Donna Goodwin comes from Goodwin's Orchids in Leesburg. You may recall they are specialists in those beautiful Vanda orchids.

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Orchid Lover's Library

When our club was meeting at the Partner's Club we had a storage area for our Orchid Library books. After moving from the Partners Club, to the present meeting place at the VFW, our Library became homeless and our Librarian, Tom Govin, has graciously received our books in his home.

Tom says we presently have about 65 books all about growing and loving orchids with plenty of illustrations. These are currently being listed on our website with a brief description and picture of each.

An order form will be on the website so that you may reserve a book(s) that will then be delivered to you at the next regular Orchid Lover's member meeting.

Newer members—See pages 17 –18 for AOS Culture Sheets on Dendrobiums and Cattleyas

OFFICERS

President

Jeff Rundell

1st Vice President & Past President

Geary Harris

2nd Vice President

Donna Fazekas

Treasurer

Helen Battistrada

Executive Secretary

Pat Dupke

Recording Secretary (not elected position)

Matt Riesz

COMMITTEES

Membership

Linda Meyer & Gloria Thomas

Publicity

Julie Smolka

Website

Set up by Ken Dunn

Webmaster Bob East

Bulletin (The Keiki)

Ken & Delia Dunn

Refreshments

Laurie Cinnamea & Pat Dupke

Trips

Sonia Terrelonge & Laurie Ciannamea

Show Table Report

Matt Riesz

Treasurer's Report

By Helen Battistrada

Previous Balance: 6975.02

Receipts: 620.00

Auction plants 174.00
Rocks (potting) 84.00
Raffle 171.00
Dues 169.00
2 Name pins 22.00

Disbursements: 387.53

Hospitality: 40.53
Raffle plants: 35.00
Program: 150.00
Exchange for the rocks: 84.00
Storage (1 month): 40.00
Bank charge: 3.00
Raffle plants: 35.00

Current Balance: 7207.49

REFRESHMENT REMINDER

By: Laurie Ciannamea

FOOD

Caitlin DiCristofalo

Lois Jensen

Pat Baig

Lori Cleaver

SODA or JUICE

Marie Tanaka

Sonia Terrelonge

President's Message

by Jeff Rundell

Welcome to July, a month that has my lanai in a state of chaos with pots, bags of potting media, hoses and assorted sharp instruments strewn everywhere. My wife says "when will it end" and I say "welcome to repotting season". This year it made me want to go entirely to mounting every orchid I own, but I know that will never happen. It would make me feel better if I knew that most of us procrastinate eternally about our orchid chores and are in the midst of the same turmoil.

There are a couple of pieces of news that I want to pass along concerning our future plans. Laurie, Yati and Sonia did an excellent job of looking at all the alternatives for our trip to Selby Gardens and Tropiflora on October 1. After examining all the responses my recommendation is that we enlist drivers and carpool to Sarasota. I feel this will greatly reduce the cost, provide more flexibility and reduce the layer of complexity that comes with money collection and commitment. It will require us to make sure we have enough drivers so that no one is left out. We will also have to collect money just before departure for admission at the lower group rate. More on this at the meeting.

You will have already received an email about this, but a couple of our members who wish to remain anonymous (Tim and Judy Smith), took a little trip over to Apopka and came back with some supplies that have been on our shopping list. Once again their support and thoughtfulness is greatly appreciated. They brought back a few bags of Orchiata, the pine bark from New Zealand, that has been recommended by a number of our speakers. We had about 10 people sign up to try some. We will be selling it to those that signed up for $4.00 a gallon at the next meeting (this is one half what it cost me thru the mail even with free shipping). If there is any remaining it will be available at the end of the meeting.

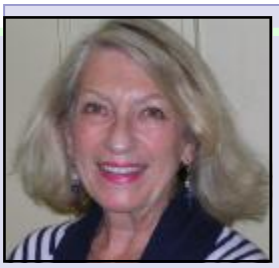
Our speaker this month comes from Goodwin's Orchids in Leesburg. You may recall they are specialists in those beautiful Vanda orchids. Grown mostly in baskets, they don't require the mess I'm dealing with on my lanai. Goodwin's import plants from Thailand and have an extensive website: goodwinorchids.com. I'm including a picture of one I currently have in bloom that (I'm embarrassed to say) has lost her ID tag. Perhaps I bought this at our last show? I'm hoping someone can help restore this fragrant little beauty to its rightful tag before I get caught naming it after one of my cats. I have seen some absolutely huge, jaw dropping Vandas in tropical areas like Hawaii and Barbados. Mine hang in the trees where they provide an occasional snack for the squirrels. Vanda comes from the Sanskrit word for the species, Vanda tesselata. Vandas originally came from SE Asia including China, India and the islands to the south. They were described back in the late 1700s and, like so many orchids, are critically endangered in their home range. The blue Vanda coerulea has been driven to near extinction in the wild.

I also wanted to mention that an article in this month's AOS magazine on sphagnum moss, it's qualities and uses, is a great educational piece. Love it or hate it, there is more to know than I thought. I'll pass the magazine around so you can read it when you get tired of listening to me. I also want to mention that we are trying to breathe some new life into our library collection. The club has some wonderful books on orchids and Tom Govin (our librarian) and Delia Dunn are working on ways to make them more accessible.

I look forward to seeing everyone on the16th and be sure to have a welcoming chat with our new members and guests. Oh....and bring your plants including the beauties and even the beasts that need help.

Please look at the orchid on page 12 (President's Quiz) and see if you can come up with a name for this Vanda.

Jeff.



MEMBERSHIP NOTES

By *Linda Meyer*

June was bustin' out all over at the June meeting- we were happy to have to pull up some extra chairs to accommodate all the folks who came to hear Laura Newton speak about Bulbophyllums, and share her vast knowledge of the American Orchid Society, and orchids in general. And no one was disappointed! Such a great speaker (I'll bet I wasn't the only person to be inspired to [finally) join AOS! We do love having visitors, and that day, seven signed in, and there were at least a few who didn't. One who,did, Barbara Bass, later signed up to become a member, and I was personally so delighted to realize that she is my neighbor down the street a couple of doors! Along with Barbara, we had six other new members sign up, bringing our meeting's member attendance to 55, and the total club membership to--are you ready? Drum roll, please....**108!!!!**

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Thank you all! See you at the next meeting, July 16, at the VFW, County Line Rd.

Linda Meyer

To be found at Goodwin Orchids

OLCOSH Minutes

June 18, 2016

Jeff brought the meeting to order and welcomed our speaker, Laura Newton, who is an AOS orchid judge and had appeared in *Orchids* magazine. The previous meeting's minutes were approved.

Helen Battistrada gave our financial report:

Balance last month:	**$6975.02**
Receipts:	**$ 620.00**
Disbursements:	**$ 387.53**
Current Balance:	**$7207.49**

We had several visitors, who introduced themselves and were welcomed.

Membership: Linda said we have over 100 members, including the three who joined today. Magnetic club name pins are available. They cost $11.00, just bring a check to Linda and she will order them for you. Linda asked that all members be sure that she has your current email address, since that is how we contact you. If you DON'T have an email address make sure we know that as well: you'll get the club newsletter, The Keiki, in the mail.

Installation of officers: The newly elected officers of the club were duly introduced and sworn in by our Parliamentarian, Delia Dunn.

Jeff thanked Ken and Delia Dunn for putting together the Keiki. This month's publication was especially long, and greatly appreciated. Kara had a great article about Pahiopedilums, from our speaker last month, which is a super culture sheet on paphs. Make sure you read it if you haven't already, and keep it handy. Delia also included the Bylaws in this edition, which are good to know. Jeff says there'll be a test!

Facebook and advertising: Julie Smolka, our Publicity chair, reminded us that there are numerous free publications from homeowner associations, into which you can get announcements about our meetings and events. Julie can do the public papers, but not the HOA newsletters – YOU have to do that for us. So please contact your HOA, if you have one, and get our information included. If you need information to send, please contact Julie. There is also a Facebook page, called "Hernando Community", where you can put information, post your photographs, etc. Just search for it in Facebook and send a request to join the group. This is in addition to the "Springhill Orchid Club" to which you can send a friend request and then post pictures for all to see, ask questions, etc.

Club trip: Hopefully everyone read Jeff's e-mail about the club trip this Fall. We're trying to plan a trip on **October 1st**, which is before our Auction. We're thinking of going first to **Marie Selby Gardens in Sarasota** and then to the **Tropiflora Festival** which is nearby. Selby Gardens is a great place which has outdoor gardens, an orchid greenhouse, and other collections. It's well worth a visit and the club can get entry discounts if we pay in advance and arrive as a group. Tropiflora is a business in Sarasota and owner Dennis Cathcart is a world-renowned authority on bromeliads and will also have a major orchid dealer Plantio La Orquidea, from Venezuela, there as well with hundreds of plants for sale.

There may be some special plants to be had. You can visit their website at https://www.plantiolaorquidea.com/homeIng.html to see what kind of plants they might have and possibly pre-order plants from them. Tropiflora will also have a food vendor where you can buy lunch.

We need to plan transportation. It is possible we could take a bus, or we could have individual club members drive and share expenses between the passengers. Sonya and Laura talked briefly about the trip and there was discussion about the transportation alternatives. If we do take a bus then we would need your commitment to attend and your money (non-refundable) in advance so that the Club does not get stuck with a large bill

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when or if people back out at the last minute. We could get a 28 passenger bus or a 36 passenger bus, for about $23 to $26 per person for a 10-hour trip. With admission to Selby Gardens the total cost per person would be around $60.00. The board will make the decision on which way to go. A signup sheet was passed around with a place to indicate whether you would be willing and able to drive. If we get 28 *confirmed* attendees we will try the bus route and will need your money at the August meeting.

We had some further discussion about orchid **materials purchases,** same way as we did the Sta-lite purchase at the prior meeting. Jeff passed around a sheet with some ideas of the type of materials that might be available, for people to sign up if they might like them. Jeff also passed around some samples of potting mixes.

Annual auction: The auction is the third week in November at our regular meeting time. It will be at the 1st Methodist Church on Spring Hill Drive in Spring Hill – same place as last meeting, and where we held it last year. Jeff reminded the membership that when you repot your plants please think of our auction if you divide them, and keep some divisions for us. We're also considering consignments, and/or buying in orchids from other-growers to get some interesting plants. Jeff mentioned that he gets constant requests to come and speak about orchids at other clubs, etc. If you think you might be able to do this please let Jeff know.

Laura Newton brought some of her famous **Plant Potion #9,** a chelated mix that can really perk up your orchids. Members were directed to talk to her about getting some.

We adjourned for show table judging and refreshments. Laura Newton, Matt Riesz and Julie Smolka did the honors. Jeff, Matt and Laura spoke about the awarded plants after ribbons were awarded. Note that we love to see your flowers, even if there are only a few, so don't hesitate to bring them. Please also feel free to bring in any problem plants, as there is plenty of expertise in the club to help you figure out what's wrong and how to correct it.

Our speaker, Laura Newton then gave a terrific presentation on Bulbophyllums; we did the raffle; and then the meeting was adjourned.

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A Little Quiz About Orchids

Charles Darwin is renowned for his theory of evolution. He also determined that orchids must be pollinated by whatever was available in the native fauna. Thus, he predicted a moth in Madagascar must exist that was capable of reaching 10 to 11 inches inside a particular orchid to reach the nectar and perform pollination.

Was such a moth ever discovered?

Yes, years later after his death ___

He made no such prediction ___

No, the prediction is too bizarre ___

William Cattley made the prediction ___

(See page 16 for answer)
~~~~~~~~~~~~~~~~~~~~~~

We love to see your flowers, so don't hesitate to bring them to the show table. Below are some of the entries from the June meeting. **(Also on next page)**


Ascosentrum miniatum


Burrageara Kilauea


Ascoscenda Suksamran Sunlight

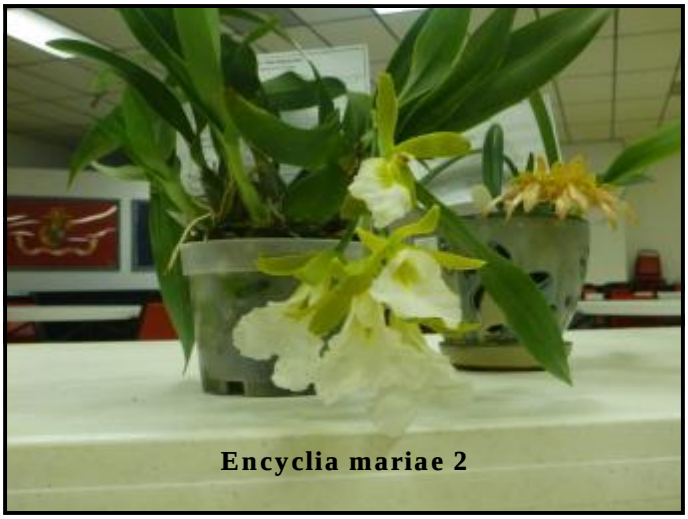

C. Petite Doll


Bulb. bicolor


C. Tinker Toy


Encyclia Cindy


Encyclia oerstedii


Encyclia mariae 2


Lc. Hicks Yellow

OFFICERS WERE SWORN INTO OFFICE FOR

2016-2017

by Nominating

Committee member:

Delia Dunn

Jeff Rundell, President,
Geary Harris, 1st V-President,
Donna Fazekas, 2nd V-President,
Helen Battistrada, Treasurer,

Pat Dupke, Secretary, was absent

June 18th SHOW TABLE By Matt Riesz

Blue Ribbon given to plants in blue print

PLANT NAME	GROWER	HOW LONG Owned	Growing
Vanda hybrid	Arlene & Arty Appelbaum	2 yrs	
Catasetum pileatum 'Green Jade' X sib.	Delia Dunn	6 yrs	21 y
Encyclia alata	Delia Dunn	3 yrs	21 y
Gongora tricolor	Jarewer	3 yrs	20 yrs
Paph. rothschildianum 'New City' X Paph. liemianum	Javon Parker	1 month	
Aliceara Pacific Nova 'Okiika'	Javon Parker	1 month	
Lc. Hicks Yellow `	Jeff Rundell	3 yrs	
Encyclia Cindy	Jeff Rundell	4 yrs	
Encyclia dickinsonia	Jeff Rundell	8 yrs	
Encyclia oerstedii	Jeff Rundell	5 yrs	
Encyclia belizensis	Jeff Rundell	8 yrs	
Bulbophyllum Laura Newton	Laura Newton	3 yrs	
Bulbophyllum More Than Aghast	Laura Newton	3 yrs	
Dendrobium lowii	Laura Newton	2 yrs	
Lepanthes telipogoniflora	Laura Newton	4 yrs	
Phalaenopsis cornu-cervi var. chattaladae	Laura Newton	3 yrs	
Encyclia mariae	Matt Riesz	5 yrs	15 yrs
Bulbophyllum bicolor	Matt Riesz	3 mos	15 yrs
Ascocenda Suksamran Sunlight	Matt Riesz	1 month	
Maxillaria tenuifolia	Matt Riesz	14 yrs	15 yrs
Burrageara Kilauea	Matt Riesz	15 yrs	15 yrs
Cattleya Petite Doll	Matt Riesz	3 yrs	15 yrs
Paphiopedilum Joyce Hasegawa	Sonia Terrelonge	2 yrs	
Oncdioda Copper Scarab 'Brass Brethren'	Sonia Terrelonge	2 yrs	
Encyclia alata	Thomas Govin	7 yrs	12 yrs
Cattleya Robert Strait	Thomas Govin	6 mos	12 yrs
Cattleya Tinker Toy	Thomas Govin	6 mos	12 yrs
Ascocentrum miniatum	Yati Douglas	5 yrs	13 yrs
















More Show Table Pictures

April Club Speaker

by Kara Warnock

Our speaker this month was club member and AOS Judge Laura Newton. The topic of her presentation was on the genus Bulbophyllum {a mostly stinky genus of unusual, mostly fly and gnat pollinated flowers}. Bulbophyllums (pronounced 'bulb-o-fill-um' because of the double L) are the largest genus of orchids, with over 3,000 species, each more different and varied than the next. In order to grow Bulbophyllums you really do have to have an appreciation for the unusual, especially when the scent that some of the flowers can have starts to be described as smelling like red tide, septic tanks, or dirty socks. The more pleasant smelling flowers get classified as "fruitier" like over ripe strawberries or over ripe apples on the verge of apple cider. Most species of Bulbophyllums are found in Indonesia, growing in warm, moist mountainous regions typically within the valleys where conditions stay consistently moist year round. Bulbophyllums are not tolerant of cold temperatures and they will not recover from any cold damage they may suffer. They prefer not to be below temperatures of 55F, but can occasionally tolerate brief periods of 40F if they are in a sheltered location. In general, Bulbophyllums prefer moderate to bright light. Laura commented that she likes to grow some of her plants in pretty bright light, which can cause some damage to leaves, however, she finds that the brighter light promotes better blooming in her plants.

Bulbophyllums like a lot of humidity and a lot of water, with some species requiring a dry rest period. Laura grows her Bulbophyllums potted in plastic bulb pans, which are shallower than your typical orchid pot and allow the plant to stay consistently wet but not rot. A layer of Styrofoam peanuts is used to line the bottom of the bulb pan and provides needed aeration to the roots. She fertilizes her plants with a ½ strength solution of fertilizer during every third watering. That way when it is warm and she is watering more often, the plants are getting plenty of fertilizer for growth, and as the cooler months approach and her watering schedule decreases, the length between fertilizer application increases. Laura also uses her Plant Potion #9 on her plants, which is a specialized chelated foliar spray for her plants. She applies it roughly every 7-10 days during the growing season and biweekly during the winter. Another warm growing genus that is closely related to Bulbophyllums is Trias, which consists of smaller, odd smelling plants that generally prefer mounted culture on cork bark. Bulbophyllums come in all sizes. Some species such as B. phalaenopsis can have a leaf span of 6-7 feet and take a really long time to achieve blooming size.

Jeff mentioned that a large specimen of this plant can be viewed at Selby Gardens in Sarasota, FL, which is where the club plans to take a field trip to this fall.

Bulbophyllum macrobulbum

Bulbophyllum macrobulbum is another species that can get up to 6 feet and must be fairly large size before it is ready to bloom. This species is one of the parents used in the hybrid named for Laura, Bulbophyllum Laura Newton (B. macrobulbum x B. agastor). The beauty of the hybrid is that the B. agastor parent allows the cross to bloom at a much smaller size, yet the hybrid retains the larger flower size from B. macrobulbum.

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Not all of the species in this genus are gigantic, B. lasiochilum is a smaller species with cute little raspberry and white colored flowers that smell of over ripe strawberries. Laura mentioned that Louis Del Favero sells this orchid at his nursery in Tampa

Because this genus is mostly pollinated by flies and gnats, the unique scents of the flowers and appearance of the floral parts (especially the lip) are all tailored to be appealing to the pollinator. Bulbophyllum echinolabium is an example of a beautiful species that has large, star-shaped yellowish flowers with pink stripes and a colorful, large, frilly lip hangs downward to simulate rotting, hanging meat. Another species B. kermesinum, which is not often seen in cultivation, has a filament with a meteor-like appendage that dangles above the lip in order to attract the pollinator. A personal favorite of Laura's is a species called B. pintugense that has small hairs that flutter in the breeze and dorsal lines on the flowers to direct flies towards the pollen. Most Bulbophyllum flowers are the typical cream, green, red or chartreuse colors. However, B. pectin-veneris (syn. tingbarinum) flowers are unusual in that their color is a brilliant orange.

Laura mentioned that she has been growing orchids now for over 11 years. Initially she started out simple, however, her collection has now grown to an excess of 3,000 individual plants within two greenhouses. She commented that when she sees a plant that she likes she will purchase three of the same plant, that way she can pick the best one when they bloom. Obviously she must know what she is doing, she has been awarded 50+ AOS awards as a result of her efforts. When growers bring their plants in for judging and the plant is issued an award the owner of the plant gets to assign a name for the plant that was awarded.

For all of Laura's plants that get awarded she attaches the word 'whisper' (short for orchid whisperer) somewhere in the name.

You really do catch a glimpse of Laura's quirky personality in a lot of the names that she assigns her awarded plants. As an example, More than Aghast 'Whisper Skew-u' (B. echinoabium x B. agastor), is a plant with a large red flower with a decidedly skewed lip. However, the lip is supposed to be like that, that is just the way the flower is. The judges that day apparently didn't see it that way, and she overheard them talking about how skewed the lip was. She was understandably a little upset that the flower only got an HCC award (hence the name). Another of her plants, B. depressum 'Whisper Magnify Me' was named because the flowers are really tiny (approximately ½" in size) and you need a magnifying glass in order to view the details of the flowers. Bulbophyllum streptotriche 'Whisper It's Alive' CBR/AOS has tons of tiny, hair-like appendages that cover the surface of the flowers and move at even the slightest stimuli (even your breath) and makes the whole plant look like it is coming to life.

When her B. triflorum 'Whisper Mow Me Over' CBR/AOS plant was being judged she had heard one of her judging mentors (who was judging her plant) comment that a CBR awarded plant is one that you simply mow over, where as a CHM (a higher award) plant is one that you would mow around. Thus, to spite her mentor the plant got its name.

In case you want to try your hand at having your plants judged by the AOS, the closest judging center to us is at the Christ the King Catholic Church, McLaughlin Center, Room C, which is located at 821 S. Dale Mabry Hwy in Tampa. Judging is held the fourth Wednesday of every month at 7:00 pm. The fee for having your plant judged and/or awarded is $36. Laura is active in the American Orchid Society (AOS) as the awards registrar and also serves on five other committees. For those that are not members of the AOS she

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(Continues from prior page) mentions that their website, www.aos.org, contains a lot of free information including culture sheets, videos, and glossaries for non-members. She reminds those of us who are active members that our memberships go beyond the 13 beautiful issues of Orchids magazine that we receive each year. Members are able to watch webinars each month, access the AOS library now located at Fairchild Botanical Garden, get free admission to botanical gardens (including USF and Selby Gardens), and soon will have digital access to back issues of Orchids magazine online.

Our Speaker, Laura Newton AOS Judge

The President's Quiz

Who recognizes this fragrant, but nameless, little beauty ?

Email me if you have the answer.

jrundell@tampabay.rr.com

Vasco. Wine Festival

GOODWIN ORCHIDS

V. Robert's Delight 'Garnet Beauty'

GOODWIN ORCHIDS

Some of Nature's Most Interesting Flowers

Today we tell about the beauty and science of orchids, some of nature's most interesting flowers.

Many people think of orchids as beautiful, sweet smelling, costly flowers that grow in hot tropical forests. But that is not the whole story of orchids. Some of the plants are found above the Arctic Circle. Some have an unpleasant smell. Not every species is lovely. And if you want to buy an orchid, it will cost a lot less than it once did.

Orchids are among the most common plant groups in the world. But some orchids that grow naturally are in danger of disappearing from Earth. At the same time, orchids produced in factories have become an important greenhouse crop.

Orchid industry sales are especially important to places like the Netherlands, Singapore, Taiwan and Thailand. People enjoy orchids as decorative plants and cut flowers.

Orchids come in all shapes, sizes, designs, colors and color combinations. The flowers may be tiny or large. But most have some common characteristics. The sepals of an orchid form the outside of the bud before the flower opens. There also are two regular petals. The third petal is the lip. Orchids share this structure with lilies and irises.

For reproduction, orchid flowers have male and female parts joined into one structure. The structure is called the column. The column is the most important quality that identifies the orchid family.

Not all orchids grow from the ground. Some are "air plants" that grow on trees. Unlike parasites, however, they do not rob the trees of nutrition.

Visitors are currently learning about orchids at the United States Botanic Garden in Washington, D.C. America's plant museum and the Horticultural Services Division of the Smithsonian Institution are presenting the show "Orchids: A Cultural Odyssey."

Among the many visitors, Tonya Johnson came to the exhibit with young children from the Shabach Christian Academy in Landover, Maryland. She helped the children make discoveries about orchids.

Live orchids form a rainbow of colors in the Botanic Garden's conservatory building. Orchid plants are blooming out of pots, climbing on trees or overflowing from baskets among the garden's permanent collection.

The world has an estimated twenty-five thousand kinds of orchids. A big blue globe near the opening of the exhibit shows places where orchids grow. The number of species in an area is written near its name.

For example, Costa Rica has one thousand five hundred species. The United States has seventy. The far northern nation of Greenland has four.

Signs and overhanging banners help tell the stories of the plants on exhibit. Some of the orchids look like insects – butterflies, bees or spiders. Others look like stars, cups or lighted fireworks.

A colorful figure of a dragon with big teeth attracts attention to information about orchids in Sri

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Lanka. Orchids play an important part in special events in that country and on that country's money. One banner shows the flowers on Sri Lanka's one-hundred rupee note. Another banner shows delicate orchids on a five-dollar note from Singapore.

Many visitors to the exhibit say they recognize some common orchid plants. The Cattleya, for example, gets a lot of attention. The flower is sometimes called the corsage orchid. People wear the cut flower on clothing to celebrate special events like birthdays or Mother's Day. There are many species of Cattleya. Most come from the treetops in wet tropical forests in Central and South America. They need warm temperatures to grow well.

The Cattleya probably owes its existence to William Cattley, a British botanist. In eighteen eighteen, Cattley saved the orchid plant from being thrown away. At the time, the plant was used as packing material that protected other orchid plants arriving from Brazil. Cattley succeeded in getting the unknown plant to flower. Later another botanist named it the Cattleya in his honor.

People often describe the deep color of the Cattleya lip as "showy." But this part of the flower provides more than beautiful appearance. It serves as a landing area for bees and other insects that spread pollen to the plant. The colors and design of the lip help attract the insects.

The nun's orchid has an interesting name and shape. Not surprisingly, the flower looks like the head covering worn by some female Catholic religious workers. The nun's orchid came first from China. It reached the United States in the eighteenth century. The flowers can be big, up to almost thirteen centimeters across. Some are brown with a lip that looks purple. Other possible color designs include yellows, reds and browns.

The vanilla orchid also has an interesting form. The fruit is inside the seedpods of its thick leaves. The leaves grow on tree trunks. Extract of vanilla provides a spice used in foods. The tiny dark dots in vanilla ice cream are from the seedpods of the vanilla orchid. The orchid grows in the rain forests of Mexico. It also grows in Madagascar, South America, Central America and warm areas of Asia and Africa.

It is illegal to collect orchids growing in nature. But poachers often do so. And orchids reproduce with difficulty. They depend on birds, bees or insects to spread their pollen to another orchid flower.

Some orchids trick their pollinators. Such plants produce a smell that attracts pollinators not normally attracted to them. Other orchids trick male flies by making themselves look like female flies. Still others temporarily trap a pollinator. The action forces the insects to touch the orchid pollen. They pick it up on their bodies and carry it to another flower. Once the second flower is fertilized, seeds begin to form.

Orchid seeds grow slowly. Sometimes they take months to develop inside the seedpods. The very small seedpods contain as many as three thousand seeds. The seeds float in the air when the pods break open. But they do not begin growing just anywhere. The seeds need to be near what is called a mycorrhizal fungus. The seeds lack nutrients, and the fungus feeds them. But the fungus is rare, and some of its habitats are threatened.

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Thomas Mirenda is an orchid collection specialist at the Smithsonian Institution. Mister Mirenda says orchids growing in nature depend completely on their environment to survive.

Human development or natural disasters can change that environment. The orchids cannot reproduce if birds and insects are no longer living in the area. He says loss of forests and climate change are part of the problem.

Mister Mirenda also says very little money is available to help orchid conservation. He says financing is seriously endangered, like the orchids themselves.

Today, science and technology can produce orchids in large numbers in greenhouse settings. In nineteen seventeen, Cornell University scientist Lewis Knudsen found that under certain conditions, the fungus was not needed. He discovered that seeds or spores could grow if the seed could develop in a special preparation. The preparation had a sugar base and was similar to gelatin, a food product. The method was put into use a few years later in greenhouses.

Seed germination in sterile nutrients is now a common way to reproduce orchids.

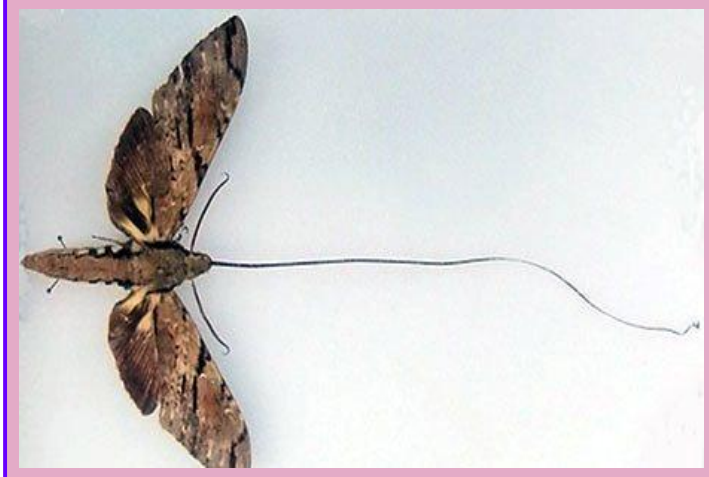
Mericloning also is a common modern method. The process calls for culturing from the merismatic tissue on a plant. Active growth takes place in that area. In the process, a small piece of tissue is taken from a high quality orchid. The tissue is made into tiny pieces and grown in a laboratory. Many exact copies of the orchid are produced. Whether grown naturally or through technology, people who love orchids say they are the most beautiful flowers on Earth.

Source: ***An Odyssey of Orchids at the United States Botanic Garden***

Written for Science in the News by Jerilyn Watson

Answer to: A Little Quiz About Orchids (From page 6)

It took nearly 150 years to prove that a suggestion by Charles Darwin in 1862 was correct. So the answer is: “Yes, years after his death”



The theory of evolution has some wonderful predictive powers and because attempting to verify or falsify hypotheses is a core part of any science, setting up ideas for testing is fundamental to research. Some of these hypotheses are rather harder to work on than others, especially in the case of direct observations of an unusual event being required to provide confirmation. In the case of Darwin's moth, it has taken a whole series of studies over a huge period of time to provide conclusive evidence of one of the great ecological and evolutionary predictions in the field.

Dendrobium

den-DROH-bee-um

Dendrobium is a diverse genus of orchids with different cultural needs. Many go through a growth phase and then a rest phase during the course of one year, and must be given water and temperature to match these periods of growth and rest. Flowers can last one day to many weeks, depending on the type. Owing to the extreme diversity of the genus, we have categorized culture according to the following main types:

PHALAENANTHE

Evergreen for several years, with thin, tall pseudobulbs, terminal inflorescences, usually appearing in the autumn or twice a year (see culture).

Species such as *Den. affine, Den. bigibbum (phalaenopsis), Den. dicuphum* and *Den. williamsianum.*

Culture Grow warm year round (see below); 60 F nights; water and fertilize heavily when roots appear from new growth; medium light; reduce water and fertilizer after growth finishes. If a short (three- to four-week), cooler (55 F) dry rest is given, and then plants are warmed again (60 F mininum), another growth may mature during winter and flower in the spring. Treat this growth as a summer growth cycle. These grow well with phalaenopsis, except for the rest period. Plants will go deciduous if grown too cool and dry.

SPATULATA (Antelope Type)

Evergreen for several years. Most are large, vigorous plants with long-lasting flowers in summer to several times a year.

Species such as *Den. antennatum, Den. canaliculatum, Den. discolor, Den. gouldii, Den. johannis, Den. lineale (veratrifolium), Den. stratiotes, Den. strebloceras* and *Den. taurinum.*

Culture Warm all year (60 to 65 F nights, 75 to 90 F days); no rest period; can be kept cooler in winter if dry; medium to high light.

DENDROBIUM

Most of the plants are pendulous, with leaves all along the canes that most often drop with onset of cooler, drier weather. One to five flowers per node are borne from the nodes of the leafless canes in midwinter through early spring.

Group 1

Species such as *Den. chrysanthum, Den. friedricksianum, Den. nobile* and *Den. wardianum.*

Culture Growth period in summer; give warmth, water and fertilize heavily from when roots appear until top leaf appears on canes. Then give high light, little or no water, no fertilizer, cool nights (40 to 50 F). In other words, forget about them.

Group 2

Species such as *Den. anosmum (superbum), Den. crassinode, Den. falconeri, Den. fimbriatum, Den. findlayanum, Den. heterocarpum (aureum), Den. loddigesii, Den. moniliforme, Den. parishii, Den. primulinus* and *Den. transparens.*

Culture Same as Group 1, but winter nights 55 F. Deciduous species need virtually no water in winter.

CALLISTA

Most are pseudobulbous plants with pendent inflorescences.

Species such as *Den. aggregatum* (now properly *lindleyi), Den. chrysotoxum, Den. densiflorum, Den. farmeri* and *Den. thyrsiflorum.*

Culture Summer give warmth (60 to 90 F), medium light, medium quantities of water and fertilizer. Winter keep cool (50 F nights), medium light, just enough water to keep pseudobulbs from shriveling, no fertilizer.

LATOURIA

Leaves at top of pseudobulbs are large and leathery, inflorescence erect, flowers commonly yellow-green.

Species such as *Den. atroviolaceum, Den. macrophyllum* and *Den. spectabile.*

Culture Same as antelope types, but cooler and drier when resting in winter.

FORMOSAE (Nigrohirsutae Type)

Canelike pseudobulbs, with black hairs on leaf sheaths and pseudobulbs often apparent, leading to the popular name nigrohirsutae. Flowers usually white, up to 4 inches across, two to three together from near the end of the pseudobulb. Long lasting.

Species such as *Den. bellatulum, Den. dearii, Den. draconis, Den. formosum, Den. infundibulum, Den. lowii, Den. lyonii, Den. margaritaceum, Den. sanderae* and *Den. schuetzii.*

Culture Intermediate to cool year round, 50 to 60 F nights, maximum 85 F days. Water and fertilize when growing; give a slight short rest (dry) when growth is completed. Keep barely moist until growth starts again.

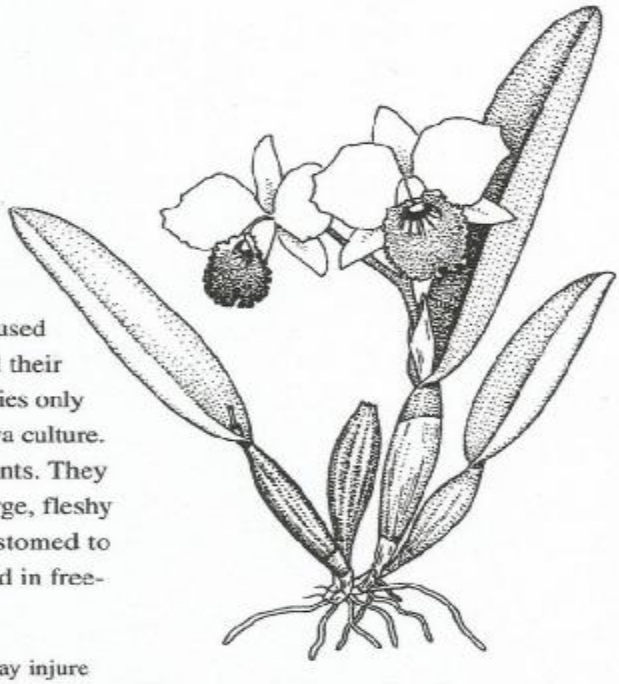
OTHER SPECIES

Among the popular types are *Den. linguiforme, Den. tetragonum, Den. gracillimum* and *Den. cuthbertsonii (sophronitis).*

Culture Depends on the plant's native environment. It is generally safe to grow them intermediate to warm (55 to 60 F at night), drying them out in winter (or as growth stops). Hybrids between sections vary in culture.

Cattleya

KAT-lee-ah



Cattleyas are among the most popular orchids. Their culture is often used as the basis for comparison with other types of orchids. Cattleyas and their related hybrids come in many colors, shapes, forms and sizes. Culture varies only slightly among most of these. This sheet is a general guide to basic cattleya culture. Like many other cultivated orchids, cattleyas are epiphytes, or air plants. They have developed water-storage organs, called pseudobulbs, and have large, fleshy roots covered with a spongy, water-retentive velamen. They are accustomed to being dry at the roots between waterings, and therefore should be potted in free-draining media.

LIGHT is the most important factor in growing and flowering cattleyas, whether in a greenhouse or in the home. Bright light to some sun should be given to the plants, with no direct sun in the middle of the day. This means an east, shaded-south (as with a sheer curtain) or west window in the home, and 50 to 70 percent full sun in a greenhouse (3,000 to 5,000 foot-candles). Leaves should be a medium-green color, pseudobulbs erect and requiring no staking.

TEMPERATURES should be 55 to 60 F at night and 70 to 85 F during the day. Seedlings should have night temperatures five to 10 degrees higher. A 15- to 20-degree differential between day and night is recommended, especially for mature plants. Higher day temperatures can be tolerated (up to 95 F), if humidity, air circulation and shading are increased.

WATER should be provided in two ways: in the pot by watering and in the air as humidity. Watering in the container is dictated by many criteria: size and type of the vessel, temperature, light, etc. Mature cattleyas need to dry out thoroughly before being watered again. Seedlings need more constant moisture. Compare the weight of a dry pot of the same size and type of mix; it can indicate if a plant needs water by the relative weight — light means dry, heavy means wet. If in doubt, it's best to wait a day or two until watering. Plants in active are resting. Water below 50 F may injure plants, as will water softened by the addition of salts.

HUMIDITY should be 50 to 80 percent for cattleyas. This can be provided in the home by placing the plants on trays of gravel, only partially filled with water so that the plants do not sit in the water. Air should always be moving around the plants to prevent fungal or bacterial disease, especially if high humidity or cool temperatures exist. In the greenhouse, the humidity is best increased by use of a humidifier. Evaporative cooling increases humidity while cooling the air.

FERTILIZE on a regular schedule. In fir bark, a high-nitrogen (such as 30-10-10) formulation, or a similar proportion, is used. Otherwise, use a balanced fertilizer. When in active growth, plants need fertilizer at least every two weeks, and when not actively growing, once a month. Fertilizer can also be applied with every watering at one-quarter the recommended dilution. Thorough flushing with clear water every month is recommended to prevent the buildup of fertilizer salts.

POTTING is necessary when the rhizome of the plants protrudes over the edge of the pot or the potting medium starts to break down and drain poorly (usually after two to three years). It is best to repot just before new roots sprout from the rhizome, Mature cattleyas are usually potted in coarser potting material than are seedlings. Until a plant has at least six mature pseudobulbs, it generally should be put into a larger pot and not divided. If dividing a plant, three to five pseudobulbs per division are required. Select a pot that will allow for approximately two years of growth before crowding the pot. Pile mix against one side of the pot and cut off any dead roots. Spread the firm, live roots over the pile, with the cut rhizome against the side of the pot. Fill the pot with medium, working it around the roots. Pack firmly and stake if necessary. Keep the plant humid, shaded and dry at the roots until new root growth is seen.

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wing Marian Sheehan/Inking Stig Dalström