

An Affiliate of the American Orchid Society

# FORT LAUDERDALE ORCHID SOCIETY

N • E • W • S • L • E • T • T • E • R

July, 2009

## Learn More About *Bulbophylums* From Marc Burchette

July 13<sup>th</sup> will be another lucky Monday night for us. Marc's program two years ago was well received and we can look forward to his new topic this time. His friendly accent reflects that he was originally from North Carolina where he was a 1979 graduate of NC State University. Marc's B.S. was in Poultry Science, and any on site chicken-barn training may have made him not mind the odor that can be emitted from his topic orchids for our program night, the fly pollinated *Bulbophylums*.

During the decade that followed graduation Marc spent two years in London, and then he returned to Charlotte, N.C. Also during that decade, Marc's interest became less foul and more floral.

Around 1990 Marc started collecting orchids and a collection of about 300 spent summers outside and winters in a basement with lights and fans.

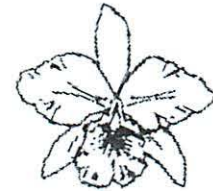
He moved to Florida in 2000 and joined our society in 2001. His orchid collection is mostly species. Marc has worked and learned from Gene Monier at JEM Orchids, from Mickey at Mickey's Orchids and by assisting R.F. Orchids at major shows.

There are between 1,000-1,200 species of *Bulbophyllums* and New Guinea is believed to be the center for their distribution. Not all of them have foul smelling flowers, but almost all have unique and interesting flowers. Marc will be supplying the plant raffle table, so plan to win your share of these bizarre and unique orchids.

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## Meeting Program Notes

Joan Connors has brought us many popular and interesting speakers and her last selection will be a program on miniature orchids by Carol De Biase August 10<sup>th</sup>. Wayne Musgrave will be responsible for speaker selection for the coming year. If you 'need' to hear a particular speaker or a particular topic, please make him aware of your needs.



### Life member

## Mickey Carmichael

If we asked our members to name the member they most respected and liked, Mickey would win hands down. Her addition to our 'life member' list is more than appropriate. Mickey is one of our most long-time members. Besides running her business, and rearing her daughters, she has a long history of being active in our society. She was show judging clerk superior for many years. She has also encouraged her customers to join our society, and she has shared her orchid knowledge with all who asked a question.

Mickey has also contributed to the state of orchids today. She is famous for her *B. nodosa* hybrids and the genus *Carmichaelara* bears her name.

A month or so ago her Stlma. Florida Sunset 'Mickey's Orchids' had about 600 blooms and was awarded an AM/AOS with 83 points and a CCM/AOS with 86 points.

Thank you Mickey for being one of us for so long and so well. You are a source of pride for all of us.

## So Little Time, So Much To Learn

1.  **Serious quest:** We have little written history of our society from its founding in 1951 until the early 1980s. If you have any information about who we were, and what we did, please call (954-772-4836) so I can use the information in a 'history newsletter'. D.H.

2. **Other quest:** Mickey's Stlma. Is a combination of a *B. nodosa* and a *Cattleytonia*. The first person to report the crosses in *Cattleytonia* and also *Carmichaelara* will win a seedling and an A+ in research. Asking Mickey or Gale for help is not allowed. Call or email [bboddt@bellsouth-net](mailto:bboddt@bellsouth-net)



## Alan Koch Made Mini Catts a Must

Alan made us see that today's species *Cattleya* alliance plants have been bred to be superior to the original wild collected orchids. Breeding has followed two directions. Line breeding occurs when hybridizers select parents to emphasize one desirable trait, and dispersion breeding occurs when a variety of traits are selected and then the losing traits are bred back out. Desirable traits include: long lasting flowers, brighter clearer flowers, improved floral size and shape, and more than one blooming per year. **By improving species, the hybrids made from them will be improved as well.**

Part of Alan's program was devoted to parents of mini catt hybrids. He commented that he had line bred *Laelia sincorana* for 20 years. *Sophranitis coccinea* with beautiful bright red flowers is used in most crosses today. While it originates where nights are cool, it fails here because it is intolerant of hard water and it must stay damp. It should be watered with reverse osmosis water.

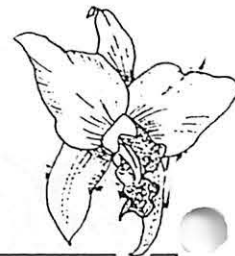
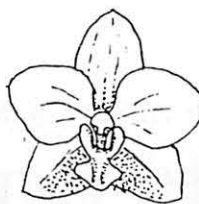
*Cattleya luteola* comes from a habitat like ours in South Florida and it blooms 3-4 times a year. It is not fussy about water, but requires lower phal light. Red leaves in species where red does not normally occur is a sign of sun burn and the plant should be moved to lower light. Sc. Beaufort and Pot. Free Spirit are examples of hybrids that need lower light.

*Laelia briergeri* can have yellow or pink flowers, and when those colors are crossed the progeny may be semi-alba. *Laelia anceps* fails when its roots are trapped in a pot because of exposure to trapped salts. Its hybrids also need free roots or yearly repotting to remove salts. Two other favorite parents are *Cattleya walkeriana* which blooms twice a year and has long lasting flowers and *Cattleya schilleriana* which Alan uses because it is warm tolerant.

Alan commented that the seedlings that grew best in a flask were the least likely to bloom, and that plants that had been cloned too often, often failed. Pot. Burana Beauty was made into 10,000 clones and so many clones resulted in mutations and few if any blooms.

Two hybrids that Alan likes for here are Lc. Aloha Case and Slc. Pink Doll. Alan's wife was taken with Slc. Sierra Doll which he bred for South Florida. She put one by a small bathroom window where it blooms happily. It lasts for 7 weeks in summer and 10 weeks in winter and it smells good.

Alan suggested that we try double clay pots to help some orchids survive our hottest weather. The plant in the inside pot is potted normally and the whole pot is sat into a larger clay pot which sits in a shallow tray of water. The water evaporates from the dampened outside pot resulting in cooling. Thanks Alan. D.H.



## June Ribbon Judging Results

Bonnie Bonneau /blue/ *Zygonisia cynosure* 'Blue Bird' /red/ *Dendrobium lindleyi*

Mary Burtoff /blue/ Den. Jaquelyn Thomas 'Uniwail Royal', *Vanda bensonii* /red/ *Epi. oerstedii*, Lc. Canhamiana 'Azure Skies' AM/AOS

Marc Burchette /blue/ *Trichopilia* N.R. *Bulbo. laciniatum*, Paul Gartner /blue/ Blc. Lucky Strike 'Chaimongi Koltragiul' FCC/CST x *C. walkeriana*

Chip Jones /culture/ *Enc. tampensis*

Tom Kuligowski /blue/ *Epi. Green Hornet*

Sue & Bruce Muntz /blue/ *Acanthephippium mantinlanum*

Gary Pierce /blue/ Blc. Waianae Leopard 'Ching Hui'

Mary Schul /red/ Blc. Lawless Freischutz 'Carmela'

Kaler Westphalia /blue/ Paph. Laser, Mtssa. Olmec Kanno, *Encyclia tampensis* 'alba', Aranda Blue /red/ *Enc. Vallezi* Isle, Wilsonari Hot Spot 'Exotic Protusion', Paph. Pinnocchio

## Member News

### Welcome new members:

Barbara LeGette

Jeannie Nezvadovitz

Rick Salomon

Gerry and Jill Smith

Darlene Studenmund

Kaler Westphalia

### Kiss the cooks who made special birthday treats:

Vicki Hallock, Ellen B. Kirby, Brian Boyle,

Ginny Salus, Rubben Howe, Paul Gartner,

Laura Klink, Bonnie Bonneau, Lisa Davis,

Chris Crepage, Betty Runde, Vickie Trank,

Carol Clarkson, and Suzi Williams

## New Membership Roster Help

Members who picked up their Rosters at the June meeting saved us postage and others will have that same opportunity at the July meeting. Left-over Rosters will be mailed in the August newsletter.

Anthony MacKenzie will get a free membership next year since his name was left out of the Roster. Next month I will print an updated and corrected list to this point. We have a late renewal, a changed phone number, and probably other corrections that you should make me aware of. Please call 954-772-4836 or email bobdot@bellsouth.net to let me know of changes. DH.

## Tid-bits

**Personal:** Some of you know that Bob has been in and out of the hospital this spring. It could have been avoided IF he had not been on 13 prescription meds related to diabetes and a pace maker. Four of the drugs were not supposed to be taken with at least one other drug on the list. Granted when you get a new prescription the accompanying advice suggest no grapefruit juice, but it will not include all the information that you might need.

If you take several meds, go to Google, read several descriptions of each, and if you find conflicts, ask your doctor whether the Google information is correct. It may or may not be perfect, but at least you have made your doctor aware of possible problems. D.H.

**Car Wax:** Use it to lubricate hinges of garden clippers or scissors. Coat a clean shower door to prevent future mold. Use on a stainless fridge door to keep fingerprints from showing. P. 20

**Hoses and nozzles:** The hose and nozzle was invented in 1672 by Jan van der Heiden to put out fires. Smear some petroleum jelly on threads of a hose coupling to prevent mineral deposits that make a nozzle hard to remove. P. 78

This Old House Magazine. July/August, 2008

**Good Florida News:** Every citizen lives within 60 miles of a beach. Florida has one of the nation's most sophisticated health care systems. Florida universities ranked 10<sup>th</sup> in the nation in attracting \$1.5 billion for research and development. The University of Central Florida beat out Princeton, Sanford, and UNC to rank seventh for the number of 'power' patents. Tampa has the largest desalination plant in the country, and a St. Petersburg company has devised a way to remove 20 gallons of drinkable water a day by removing humidity from the air.

Florida Trend Magazine. June, 2009. Pp. 20-22

## Fish Emulsion Suppresses Fungi

Friend Carolyn has used fish emulsion on orchids and all plants for years, and her plants have always looked great. Maybe we should try it on a few orchids? Out-of-flask or community pot young orchids may have better survival rates. The nitrogen-phosphorus-potassium ratio listed in the pint I bought was a non-burning, gentle 5-1-1. D.H.

Research scientists at McGill University and a Canadian food research center have determined that fish emulsion kills most of the fungal spores that cause wilt and damping off diseases in plants within a day and almost all the spores in six days. The toxin in the fish emulsion was described as an organic acid.

The American Gardener. May/June 2009. P. 46

## AOS Botanical Gardens To Remain Open

The American Orchid Society Botanical Gardens, which were slated to close at the end of June, were given a new lease on life by the AOS Board of Trustees who voted unanimously on June 2, 2009 to keep the gardens open to members and to the public.

President Carlos Fighetti said there were a number of factors that help support the decision. First and foremost was the local support that came forward both in terms of existing members and the general public who did not want to see the gardens closed. Over 10,000 signatures were gathered that urged the Board to look for ways to sustain the gardens during months when visitors are at low ebb. In addition, a pledge drive headed by the South Florida Leadership Council consisting of many local orchid societies secured some \$40,000 in pledges toward that end. Also many people volunteered their time to maintain the gardens along with AOS staff.

Jim Jordan the CEO at the Delray facility authored this press release which has been abbreviated since the news is old but VERY GOOD.

Shown is a picture of a silver colored pin which can be also be worn as a necklace. The cost is \$25 which includes shipping. Profit from pin sales will support the AOS.



## Yikes Termites

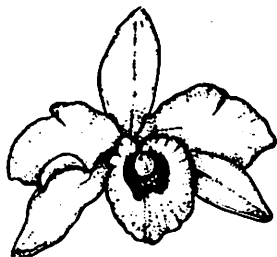
Ants and termites are the most successful insects on earth, and it is estimated that termites alone make up 10% of the planet's total animal biomass. Unfortunately their wood-fiber diet causes them to emit 11% of global methane. Some termites raise fungus gardens, adjust the temperatures of their homes, and the Formosan termite fumigates its nest with naphthalene to repel ants and nematodes. No one knows how they make the naphthalene.

Termites were once placed in the same order with ants, but DNA tests have now moved them over into the cockroach order. Hopefully cockroaches won't mutate to be more like their relatives.

A queen mound-building termite lays an egg a second or more than 80,000 eggs a day. Termites can burrow through concrete. In North America they cause more damage than fires and floods put together.

Scientists are studying the microbes in termite guts in an attempt to turn corn into clean burning fuel. Another possible bright side to termites is that they are a favorite high protein food for some tribal people in South America and Africa.

Lloyd, J. and J. Mitchinson. 2007. *The Book of Animal Ignorance*. New York. Harmony Books. Pp. 206-207



## Uses for *Dendrobiums*

In parts of Malesia local *Dendrobiums* were thought to possess magical powers to reunite lovers, give courage to head hunters, to make hunting dogs skillful and to exorcise spirits of the dead.

In Sri Lanka and Japan flowers were used in religious rites, and the Japanese associated them with long life. Australian Aboriginal people used canes from two species for food.

Canes from several species were used in weaving and basketry and dried canes that produced a yellow dye were used by many populations for decorations.

The drug *shi-hu* was considered a precious medicine by the Chinese since 200 BC. Other Asian countries also use this drug which is comprised mainly from *D. nobile*. It was used to promote long life and as an aphrodisiac. It is still sold in Chinese herbalist shops.

The list is long and the countries many\*, but various peoples have used various *Dendrobiums* for a variety of maladies including: cough treatment, stopping internal hemorrhage, as an emolient, to treat earache, as a linament for ringworm, to treat skin infections, to relieve headache, to prevent baldness, to treat infections, and to cure a number of diseases. The most universal use among early cultures was as an aphrodisiac.

Today *Dendrobiums* bring a sense of joy to hobby growers and hybridizers and, they support a considerable proportion of the retail orchid trade. *D. bigibbum* has been named the state flower of Queensland.

\**Dendrobiums* are naturally distributed throughout the Western Pacific and East Asian regions and from as far north as Japan and as far south as Tasmania and southern New Zealand: east to Tahiti and west to western India.

Lavarack, B. et al. 2006. *Dendrobium And Its Relatives*. Portland, Oregon. Timber Press. Pp.43-45, 77

## More on Past Orchid Collectors

The 1850s marked the peak of importation of orchids to England. Sadly 80% of the collected plants died in transit. The orchid hunters enhanced the value of their finds with tales of native peoples, often the tales related to sex or religion.

Kramer, J. 1989. *The Conservation International Book of Orchids*. N.Y. Abbeville Press. Pp. 24-25

## The Functions of Orchid Root Tips, Velamen, and Root Hairs

When water falls on a root, it is absorbed by both the velamen and the root tip. In a natural setting the root tip conducts water to the orchid's tissues, and the velamen, which is above the root tip catches the first water which runs off from the tree bark which contains the highest concentration of minerals. The velamen continues to supply these trapped nutrients to the root tip when run off water is deficient in minerals.

There seems to be a correlation between the thickness of the velamen and the severity of the environment. Moist-growing species have only a single layer of velamen and orchids growing in areas where there is a dry season may have up to seven layers of velamen.

When a root first appears, it is green. As it grows longer the velamen develops behind the green tip. As soon as a new root touches a firm surface, it produces root hairs which cling to the surface. Root hairs absorb water, and here velamen will be thin or absent to allow the root hairs to absorb freely. These root hairs are always associated with a mycorrhizal fungus which assist in the break down of organic matter.

Teoh Eng Soon. 2005. *Orchids of Asia*. Singapore. Saik Wah Press. P.30

*More on root hairs found in non-orchid ground plants: When you transplant a tomato seedling, it wilts for 2-3 days. It needs that time to regrow its root hairs. Put end to end these root hairs which are above the root tip of a tomato would measure up to several or many miles long. These root hairs are responsible for water and mineral intake. As the root grows old root hairs die, and new ones constantly form.*

*On a slightly related note an orchid with pseudobulbs lived for 8 years in a laboratory without water. D.H.*

## Orchids and Animals

\* Orchids have been used as animal food in several parts of the world. Cherokees in North America and natives in New Guinea used them to fatten pigs.

\* In Malaysia *Cymbidium* roots were used as part of a tonic for sick elephants. In Vermont *Habernia* leaves were used as a poultice for sick horses. The phytoalexins produced by the orchids may kill pathogens and could have been a real help to the horses and elephants.

Arditti, J. 1992. *The Biology of Orchids*. John Wiley and Sons. N.Y. P. 638

## Section Dendrobium, Genus Dendrobium

*That headline shows why I find this genus so confusing!*

This section is large and contains the species most often grown. The flowers are often large and showy. Here is a quick run-down on two plants you may own, or wish to own, and a third species to think about.

*D. anosmum* is also known as *D. superbum*. It produces beautiful medium pink flowers in spring after a dry winter. Flowers are produced on pendulous stems up to 9 feet long. The stems are deciduous and flowers may last 2-3 weeks. Water this one often during the growing season.

*D. aphyllum* is also known as *D. pierardii*. It is a spring blooming plant with pale pink flowers with white lips. This species is one of the easiest species to grow and it tolerates a wide variety of temperatures. It needs to be grown in baskets or slabs and needs a winter rest from watering and copious water during the growing season.

*D. nobile* plants are classified as 'intermediate' zone orchids. They need a distinct winter or an ice cube cooling. *Some of the modern hybrids are better suited for here. You probably don't have time to provide the species needs.*

Lavarack Bill. et al 2006. *Dendrobium And Its Relatives*. Portland, Oregon. Timber Press. Pp. 140-142, 150

## Large Flowered Catts for Summer

There are three, *C. warscewiczii*, *C. eldorado*, and *C. rex*. None of the three have been used for hybridizing as have most other species catts. Of these *C. rex* is the one we are most likely to be able to buy.

Historically orchid collectors had limited success getting plants to Europe from Peru. They were difficult to get to, before roads were open for gold mining and before the airplane. They were further hard to get to because they were found on top of 70 feet tall trees with 2'+ diameters. The trees had to be cut down which took two men half a day and often the falling tree crushed the orchids.

By 1940 the plants were available, and an ad in the *AOS Bulletin* offered a package of 5 plants for \$37.50. While that was real money at that time many hobbyists acquired this, their first species *Cattleya*. *C. rex* flowers can be 7" across and there may be 5-6 flowers per spike.

*C. rex* is relatively easy to grow. It sends out a new lead in late winter or early spring. Growth of the lead is complete by May or June, and buds will show in the sheath before growth is complete. The plant will flower in mid-July or August. It stays in bloom for about three weeks which is a positive. After blooming, the plant needs to rest until it begins to grow again in late winter. *This probably is not a plant to buy unless you can provide a night temperature of 60 and a day temperature of 80-85.*

Chadwick, A.A. and A.E. Chadwick. 2006. *The Classic Cattleyas*. Portland, Oregon. Timber Press. Pp. 131-136

## Pray for Dragon Flies?

### Things that don't control our mosquitoes:

Tan or gray clothing, Bounce dryer sheets, Listerine mouth wash.

### Things that help some:

Working in an area outside where strong fans are hitting you, putting a light dusting of Sevin over the water held by bromeliads; covering an itching bite with tooth paste!

## July 8<sup>th</sup> Trivia

04:05:06 07/08/09

At five minutes and six seconds after 4 AM on the 8<sup>th</sup> of July this year you can tell the time and date as shown. When this email made the rounds a couple of months ago Ray Ratliff came up with another never-again time: 05:06:07 08/09/10

## Guess What?

1. Guess what Hank Aaron, Neil Armstrong, Charlie Duke (astronaut), Gerald Ford, Michael Blumberg, Steve Fossett (adventurer) and Steven Spielberg have in common?
2. Guess what 35.5% of West Point Cadets, 26 of the first 29 astronauts, 11 of 12 astronauts that walked on the moon, and 87% of class presidents have in common?
3. Guess what the largest youth organization in America is?

Answers:

1. Hint they achieved the highest rank in the organization. They were Eagle Scouts.
2. These were not all Eagles, but all were involved in Boy Scouting.
3. Of course Boy Scouts of American is the answer. BSA has about 5 million members and was founded in 1910.

Sources: Kathy's email and Google.



## Latin Help For Orchid Terms

(Latin is a dead language, dead as it can be, it killed the ancient Romans, and now it's killing me! I was dumb enough, in grade 9 to write this on the cover of my book. It gave me a 'C' that grading period. How much do you remember?)

Some where along the way you remember the endings:

- us are mostly masculine
- a endings are mostly feminine
- um endings are neuter

Species names of orchids are considered adjectives and agree with the genus noun. Thus made-up-names *Dendrobium individualium* and *Eria pulchelia* have matching genders for genus and species names.

To save space only the masculine endings will be shown below:

### Terms describing the number or nature of the flower

Latin terms	Meanings
biflorus	two flowers
densiflorus	numerous or densely flowered
laxiflorus	open or loose flowered
tenuiflorus	thin, slender flowered
pallidiflorus	pale flowers
viridiflorus	with green flowers
albus	white flowers
aurantiacus	orange or gold colored
flavus	pure yellow
purpuratus	purple color, more to red
roseus	red, pink, rose
violaceus	violet or purple

### General other areas of the flower or leaf :

maculatus	spotted or blotched
gracile	thin, slender
pulchellus	pretty
speciosus	very pretty
tessellatus	color in small squares
verigatus	irregular color
verrucosus	bumpy swellings on surface
venosus	conspicuously veined

Smith, A.W. (1997) A Gardener's Handbook of Plant Names. Dover. Pub. N.Y

Ching, Chang Yoon (2002) Orchid Society of the Northern Territory Bulletin. Australia

## Think about conservation....

### Even With Vanilla

The vanilla orchids of Mexico are facing extinction but not from the usual threats to orchids which are habitat destruction and over-collection. In Mexico other crops are replacing vanilla as an important agricultural crop. Mexico is where the respect for this special orchid began.

Vanilla was unknown in the Old World until 1492, but it was widely used in Pre-Columbian American by the Aztecs who used it in a drink with chocolate and red peppers. Montezuma probably served the drink to Cortez.

Vanilla was described botanically in 1651 and the name comes from the Spanish word for the shape of the seed pod, or vanilla bean.

Although there are 90 species of Vanilla only two species, *V. planifolia* from Mexico, and *V. pompona* from South America, are commercially important. Here they are naturally pollinated by hummingbirds and insects. In areas where these natural pollinators are not native, hand pollination is carried out, but it is labor intensive.

Plotkin, M. 'Forward' in Kramer, J. 1989. The Conservation International Book of Orchids. Abbyville Press. New York. Pp. 12-13

## Liar, liar, pants on fire ?

### How To Spot A Whopper

If you ask a question and the responder looks up and to the left, he is probably just trying to remember, but if he looks up and to the **right** he is probably composing a lie! This response is not universal. *If you suspect that you might be dealing with a liar ask an innocuous question first which would elicit a true response and check out the direction of his look. Of course a liar can be either a 'he' or a 'she'.*

Lehoczkzy, E. 'To Catch a Liar' Dec. 2005. Money Magazine. p.56A

## More About Rots

Orchidists used to think night rains caused rots, not so, night rains are normal in nature. What causes rot is often bad orchid-keeping by us!

The first time Norman Fang visited us he told me to get my hose nozzle off the ground to avoid shooting mold spores and bacteria on the plants when I began water. **We CAN cut down on things that cause rots by removing spent leaves and flowers, by using absolutely clean potting tools, and not having clutter or compost near a growing area.** D.H.

## Aardvarks and More Trivia

\* An **aardvark** can travel 30 miles in a night and eat 10 pints of termites. In the Kalahari they have a relationship with the aardvark cucumber plant which produces underground fruit. The animal eats the fruit for moisture then buries its own seed laden dung to replant the seeds. Pp. 1-2

\* One species of **albatross** has an 11 foot wing span and can circle the planet in less than 2 months. These birds sleep on the wing, and may stay airborne for 10 years until they seek land for nesting. The birds mate for life and may fly 1,000 miles to bring back food for a chick. Pp. 3-4

\* Most **ants** live in the jungle where their population may reach 2.4 billion to the square mile. Their mass would be 4 times greater than all the other animals in that square mile. Harvester ants bury seeds for future meals but often forget where the seeds were placed. They are thus responsible for planting a third of all herbaceous growth. Some ants make slaves of other ant species, some have fungi food farms. *As most orchidists know, they take cow-like aphids out to suck plant juices in the day and bring them back to the colony to be 'milked' of the juices at night. In return the ants look after aphid young.* P. 7-9

\* A fifth of all mammals are **bats**. Mexican free-tailed bats may have roosts comprised of 50 million individuals. Mother bats in the nursing roost are crowded with as many as 1,500 babies in a square foot, yet each mother can find her own offspring.

Vampire bats live exclusively on blood, but a blood thinning drug developed from their saliva, called draculin, is used to treat heart attack and stroke victims. Bat saliva numbs the animal being attacked so that it is unaware that it is losing blood. Pp. 14-15

\* **Bears** are closely related to dogs. If you are confronted by a brown bear, play dead. If confronted by a black bear, don't play dead. It will think you are carrion and eat you! You are 25 times more likely to be killed by a snake, 180 times more likely to die from a bee sting, and 90,000 times more likely to be killed by a human than to die at the paws of a bear. Pp. 16-17

\* Honey was found in 3,000 year old Egyptian tombs. Archaeologists tasted it and deemed it edible. Honey is hygroscopic, it absorbs and holds the moisture in molds and bacteria and microbes soon die from lack of moisture. One third of our food is pollinated by bees and in the United States the value of bee pollinated crops is said to be \$19 billion. Pp. 21-22

Lloyd J. and J. Mitchinson. 2007. *The Book of Animal Ignorance*. New York. Harmony Books.

## Survival Adaptations in Orchids

Many orchids live in habitats where from time to time they must undergo imperfect growing conditions.

### Adaptations to xeric conditions include:

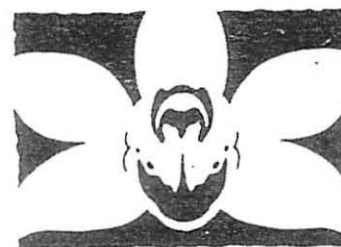
1. Succulence - accumulation and storage of water. *Pseudobulbs and root velamen serve this purpose.*
2. Protected stomata- *when stomata are sunken or protected by nurse cells*, water is conserved due to reduced transpiration (*leaf sweating*).
3. Reduced leaf size reduces transpiration. *Think B. nodosa living on a tree. A few orchids are leafless and again the area of transpiration is reduced.*
4. Reduced growth during inclement conditions.
5. Thick cuticles which are protective coatings which reduce transpiration.
6. Thick leafed orchids use Crassulacean acid metabolism (CAM) carbon fixation. This pathway requires less water and occurs at night when there is less competition from tree leaves.
7. *Gramatophyllums* and some other species have 'trash basket' roots that grow upward to form a cup to catch water holding debris.

### Other survival adaptations:

8. Hollow stems and root masses serve as shelters for ants which repel grazing insect pests and produce fertilizer
9. Vanilla and some other orchids produce a toxic sap to repel insects.
10. Flowering is usually controlled by day length, but temperatures, or rain can be involved in some orchids. *Flowering has co-evolved with pollinator life cycles as well.*
11. Resupination, the 180 degree rotation of many orchid flowers to better allow pollinators to do their job is a survival of the species adaptation..
12. Long lived flowers are a bonus for orchids because it gives the pollinators more time to find the flowers.

Italic information. D.H. Non- italic information from:

Ardetti, J. et al. 'Some Structural and Physiological Features Which Facilitate the Survival of Orchids.' 1984. *Proceedings of the Eleventh World Orchid Conference*. Singapore. International Press Co. pp. 102-104



### Filler Quote

".. acquaintance with a good man was like entering a room full of fragrant orchids" Confucius (551-479 B.C.)



Sandi Jones  
Tom Wells

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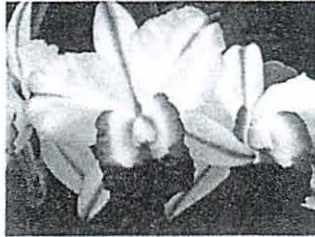
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**Directions:** Use Oakland Park Blvd. from I-95.  
Go East for 2.4 miles, go to the rear of the church  
which is on the North side of Oakland Park Blvd.  
Or take US-1 (Federal Hwy.) to Oakland Park  
Blvd. And go West for 2 blocks.

1955 East Oakland Park Blvd.  
**Place:** Christ Lutheran Church Social Hall  
**Time:** 7:30 P.M. Workshop, 8:20 P.M. Program  
**Regular meetings:** Second Monday of each month

P.O. Box 4677  
Ft. Lauderdale, FL 33338

**FORT LAUDERDALE  
ORCHID SOCIETY**

