

April 2006 - Volume 3 Number 4

Published by the South Florida Orchid Society

# **April Program: AUCTION**

Be on hand this month for South Florida Orchid Society's fabulous annual auction, which will be conducted by professional auctioneer, Bryan Kinsley, of the Sunset Auction Co. The auction will start promptly at 8:00 pm.

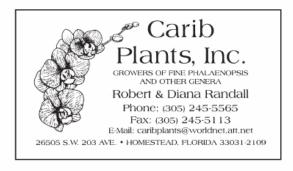
Our auction is always a spectacular event, and this year will be no exception. So far we've received donations from Amazon Orchids, Amazonia Orchids, Baldan Orchids, Blue Sea Imports, Carmela Orchids, Godlove & Son Orchids, H & R Orchids, Hawaii Pacific Orchids, Hawaiian Island Orchids, Indian River Orchids, J & M Orchids, Krull-Smith, Norman's Orchids, Odom's Orchids, Orchis Floriculturing, PCK Orchids, Piping Rock Orchids, Plantio la Orquidea, Redland Orchids, Sew Special Embroidery, Stalt, Inc., Water Orchids, Whimsy Orchids, and Woozworks – and more are coming in!!

For the auction we will be accepting cash, checks and credit cards – so come prepared. There will be great bargains to be had!! This is your chance to add orchids from some of the finest growers in the U.S. to your collection! Proceeds from the auction will benefit SFOS programs for the coming year. Be sure to support your society and be on hand for an evening of fun.

Looking forward to seeing you all there!

Michael Coronado VP – Program Chairman





# President's Message

Dear fellow orchidists,

It's that time of year again! In the midst of the whirlwind of spring shows...Miami, Naples, Fairchild, Orlando....South Florida Orchid Society is pleased to offer you a chance to relax and purchase a wide assortment of orchids from the comfort of your chair – our annual orchid Auction!!

Don't miss out on the wonderful bargains on orchid plants that have been donated to help us fund the needs of our society. We have contributions from many of our favorite orchid vendors some in bloom — as well as from various orchidrelated vendors and individuals.

Once again this year, we will have Bryan Kinsley from Sunset Auction Co. as our professional auctioneer. Marlene Clark will be providing refreshments throughout the evening. It promises to be a great time for all – bidders and buyers, alike.

Please be sure to pay close attention to the list of donors. These individuals and firms continually contribute to our society. Whenever possible, please be sure to patronize our supporters.

In May we'll be winding our year down – or cranking up for next year – with our annual election. Be present to vote for your candidates.

I look forward to seeing you at the auction!

Sincerely, Robert Fuchs President



Amy Simons

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# The following are listed as donors for the auction this month:

H & R Nurseries
Krull-Smith
Orchid Floriculturing
Piping Rock Orchids
Mac Orchids
Eclectic Orchids of Ft Lauderdale
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Plantio La Orquidea
Hawaiian Pacific Orchids
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#### NOMINATING COMMITTEE REPORT

The 2005-06 Nominating Committee, comprised of Sandy Schultz (Chair), Maria Wood, Carol De Biase, Marlene Clark, and Robert Fuchs (alternate), met during the period of March 1-3, 2006 and proposes the following slate of nominees for the coming election to be held in May 2006:

President Robert Fuchs

1st Vice President Richard Brandon

2nd Vice President Michael Coronado

Secretary Maria Wood

Treasurer Joan Viggiani

Directors, term expiring 2009: Valerie Foster

Respectfully submitted, Sandy Schultz, Chair Person

## **Zoo Project**

It's that time of year again! Our project of putting orchids up in the Miami Metro Zoo is about to begin. We will be going out one week day a month to put irrigation into the trees and one Saturday a month to put up orchids. The early birds will start pulling orchids out of pots and baskets at 8:15 am and we will be headed into the zoo at 9 am. We will be on our way home by or before 12 noon.

If you're new, we work off 6 and 8 ft. stepladders and each ladder worker benefits from having a helper. Ladder workers need to have good balance for safety reasons.

We will be working April through Sept. If you would like to join us, please call Danny so he can put you on his call list, or if you just want more information. Call Danny at 305-448-8057.

#### SFOS Meeting Schedule

Wednesday, April 19, 2006

Fire Fighters Memorial Building 8000 N.W. 21st Street Miami, Florida 33122

7:30 pm - Registration & Judging of Plants

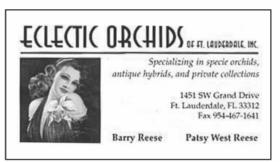
7:45 pm - Announcements

8:00 pm - Program

8:45 pm - Orchid Clinic & Refreshments 9:00 pm - Awarded Plants Discussed

9:15 pm - Raffle





#### Orchid Profile - Jewel Orchids

Jewel orchids are so called because of their extraordinarily beautiful foliage which comes in a variety of colors. They are not a specific genus of orchids, but rather a grouping based on their intriguing leaf coloration. The leaves are often velvety which increases the visual effect of the colors and sometimes provides a different coloration when viewed from different angles. Most are terrestrial or ground growing plants, although they must be grown in open mediums. Most require constant moistness and high humidity. For terrarium or Wardian Case growers, the jewel orchids are considered among the best plants to grow as they provide year-round beauty and contrast. Many people have had very good luck growing these jewels in bathrooms where they normally thrive due to the high humidity. They do flower, of course, but these flowers are generally of little interest to most gardeners.

The best known and easiest to grow of the jewel orchids is *Ludisia discolor*. It has dark green velvety leaves with reddish veins. From Southeast Asia, they are considered a weed in their native environment. They make ideal house plants since they need low light and adapt well to home temperatures. One unusual thing about Ludisia is that they will root and grow if they are cut apart and planted separately. Thus it is easy to produce large plants by putting multiple plants in one container.

Less well known is the *Goodyera* genus of orchids found in tropical and temperate areas around the world. Most of those grown in captivity come from the tropical areas. A nice example is *Goodyera hispida* which has a lovely light green leaf with white veins. The species is found in Vietnam and India. This color form of the jewel orchids contrasts nicely with *Ludisa discolor* if you are planning a terrarium.

Another genus generally included in the jewel category is *Macodes. Macodes sanderiana* has lovely dark green, velvety leaves with golden veins. It likes warm, humid growing conditions. *Macodes petola* has bright green shiny leaves with nice veining and is a nice contrast when used with the velvety-leaved varieties.





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### **Plant Thallus and Roots**

Pseudobulbs of an epiphytic orchid

All orchids are perennial herbs, lacking any permanent woody structure.

- \* Some orchids are terrestrial, growing rooted in the soil. Terrestrial orchids may be rhizomatous, forming corms or tubers. These act as storage organs for food and water. The root caps of terrestrials are smooth and white. Terrestrials are mostly found in colder climates.
- \* A great many orchids are epiphytes, which do not require soil and use trees for support. They occur in warmer regions. Epiphytic orchids have modified aerial roots and, in the older parts of the root, an epidermis modified into a spongy, water-absorbing velamen, which can have a silvery-gray, white or brown appearance. The cells of the root epidermis grow at a right angle to the axis of the root. This allows them to get a firm grasp on their support. These roots can sometimes be a few meters long, in order to take up as much moisture as possible. Nutrients mainly come from animal droppings on their supporting tree that are washed down when it rains. The aerial roots of epiphytes that lack leaves have an additional function. They contain chlorophyll and take up carbon dioxide.
- \* A few species, especially in Australia and Tasmania, are lithophytes., i.e. they grow on rocks.

The base of the stem of sympodial epiphytes, or in some species essentially the entire stem, may be thickened to form what is called a pseudobulb. These contain nutrients and water for drier periods. Pseudobulbs have a smooth surface with lengthwise grooves. They typically stay alive for five or six years. They look on the inside more like a corm than the embryonal stage of leaf sheaths. They have different sizes and shapes. They can be conical or oblong. In the Black Orchids (Bulbophyllum), the pseudobulbs are no longer than 2 mm. The largest orchid in the world, the Giant Orchid (Grammatophyllum speciosum), has pseudobulbs with lengths of 2–3 m. When the orchid has aged and the

pseudobulb has shed its leaves, the pseudobulb becomes dormant and is called a backbulb. The next year's pseudobulb then takes over, exploiting the last reserves of the backbulb. Eventually, the backbulb also dies off, having given life to newer growths. At the end of the pseudobulb typically appear one or two leaves, though there may be up to a dozen or more. Some *Dendrobium* have long, canelike pseudobulbs with short, rounded leaves over the whole length. Some orchids have hidden or extremely small pseudobulbs hidden completely inside leaves.

Some sympodial terrestrials, such as *Orchis* and *Ophrys*, have two subterranean tubers (more like tuberous roots) between the roots. One is used as a food reserve for wintery periods, and provides for the development of the other pseudobulb, from which visible growth develops.

In warm and humid climates, many terrestrial orchids do not need pseudobulbs.

#### **Orchid flowers**

#### Calopogon orchid

Orchids are truly flowers of superlatives. Even a complete layman in botany is awed by the beauty of orchids. No plant family has as many different flowers as the orchid family.

There are many types of specializations within the Orchidaceae. Best known are the seemingly endless structural variations in the flowers that encourage pollination by particular species of insects, bats, or birds.

Most African orchids are white, while Asian orchids are often multicolored. Some orchids only grow one flower on each stem, others sometimes more than a hundred together on a single spike.

The typical orchid flower is zygomorphic, i.e. bilaterally symmetric. Notable exceptions are the genera *Mormodes*, *Ludisia and Macodes*.

The flowers grow on racemes or panicles. These can be:

- \* basal (i.e. produced from the base of the pseudobulb, as in *Cymbidium*)
- \* apical (i.e. produced from the apex of the orchid, as in *Cattleya*)
- \* or axillary (i.e. coming from a node between the leaf axil and the plant axis, as in *Vanda*).

The basic orchid flower is composed of three sepals in the outer whorl, and three petals in the inner whorl. The medial petal is usually modified and enlarged (then called the labellum or lip), forming a platform for pollinators near the center of the corolla. Together, except the lip, they are called tepals.

Sepals form the exterior of the bud. They are green in this stage, but sometimes, if the orchid blossom is, for example, purple, the buds can show a purple tint. When the flower opens, the sepals become intensely colored. Sepals may mimick petals such as in some phalaenopsis or be completely distinct. In many orchids, the sepals are mutually different and generally resemble the petals. It is not always easy to distinguish sepals and petals. The normal form can be found in Cattleya, with three sepals forming triangle. But in Venus Slippers (Paphiopedilum) the lower two sepals are concrescent (fused together into a synsepal), while the lip has taken the form of a slipper. In Masdevallia all the sepals are fused into a calyx. In an example like this the sepals are very prominent, especially in lycaste orchids, the actual petals become diminished and inconspicuous.

The reproductive organs in the center (stamens and pistil) have adapted to become a cylindrical structure called the column or gynandrium. On top of the column lies the stigma, the vestiges of stamens and the pollinia, a mass of waxy pollen on filaments. These filaments can be a caudicle (as in Habenaria) or a stipe (as in Vanda). These filaments hold the pollinia to the viscidium (sticky pad). The pollen are held together by the alkaloid viscine. This viscidium adheres to the body of a visiting insect. The type of pollinia is useful in determining the genus. On top of the pollinia is the anther cap, preventing self-pollination. At the upper edge of the stigma of singleanthered orchids, in front of the anther cap, is the rostellum, a slender beaklike extension.

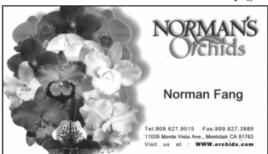
# Reproduction

Bumblebee Orchid (Ophrys bombyliflora)

It is in the variety and the refinement of their reproductive methods that orchids truly amaze. On many orchids, the lip (labellum) serves as a landing pad for flying insects. The labellum is sometimes adapted to have a color and shape which attracts particular male insects via mimicry of a receptive female insect. Some orchids are reliant solely on this deception for pollination. After pollination, the epigynous ovary starts developing and produces a many-seeded capsule.

- \* The Lady's Slipper (*Paphiopedilum*) has a deep pocket that traps visiting insects, with just one exit. Passage through this exit leads to pollinia being deposited on the insect.
- \* A Eurasian genus *Ophrys* has flowers that look and smell so much like female bumble bees that male bees flying nearby are irresistibly drawn in, such as with the Bumblebee Orchid (*Ophrys bombyliflora*). The viscidium, and thus pollinia, stick to the head or the abdomen of the bumblebee. On visiting another orchid of the same species, the bumblebee pollinates the sticky stigma with the pollinia. The filaments of the pollinia have, during transport, taken such position that the waxy pollen are able to stick in the second orchid to the stigma, just below the rostellum. Such is the refinement of the reproduction. If the filaments had not taken the new position on the bee, the pollinia could not have pollinated the original orchid.
- \* An underground orchid in Australia, *Rhizanthella slateri*, never sees the light of day, but depends on ants and other terrestrial insects to pollinating it.
- \* Many Bulbophyllum species stink like rotting carcasses, and the flies they attract assist their

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reproduction.

- \* Catasetum saccatum, a species discussed briefly by Darwin actually launches its viscid pollen sacs with explosive force, when an insect touches a seta. He was ridiculed for this by the naturalist Thomas Huxley.
- \* Some *Phalaenopsis* species in Malaysia are known to use subtle weather cues to coordinate mass flowering.
- \* Some *Phalaenopsis*, *Dendrobium* and *Vanda* species produce keiki, offshoots or plantlets formed from one of the nodes along the stem, through the accumulation of growth hormones at that point.

The filaments of the pollinia of some orchids dry up if they haven't been visited by an insect. This way, the waxy pollen falls on the stigma causing the orchid to self-fertilize.

#### Fruits and seeds

cross-section of an orchid capsule, showing 3 or 6 longitudinal slits

The orchid ovary is always inferior (located behind the flower), three-carpelate and one or three-partitioned, with parietal placentation (but axile in the Apostasioideae).

If pollination was successful, the sepals and petals fade and wilt but they remain attached to the ovary. The epigynous ovary typically develops into a capsule that is dehiscent by 3 or 6 longitudinal slits, while remaining closed at both ends. The ripening of a capsule can take 2–18 months. The microscopic seeds are very numerous (over a million per capsule in most species). They blow off after ripening like dust particles or spores, barely visible to the human eye. Since they lack endosperm, they must enter symbiotic relationship with mycorrhizal fungi to germinate. These fungi provide the necessary nutrients to the seeds.

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All species rely upon mycorrhizal associations with various fungi, mostly genus Rhizoctonia (class Basidiomycetes), for at least part of their life cycle. Some achlorophyllous (lacking chlorophyll) species are adapted to be entirely dependent upon these fungi for nutrients. The relationship between fungi and the plant is often called symbiotic, but it is not at all clear what, if anything, the fungi derive from the relationship. It has been referred to by some as "mycotrophic", meaning that the plant is parasitic upon the fungus. At the very least, the fungi decompose surrounding matter, freeing up water-soluble nutrients. Because most orchid seeds are extremely tiny with no food reserves (endosperm lacking), they will not germinate without such a symbiont to supply nutrients in the wild. Some fungi continue to live in the roots of the adult orchid. This enables an orchid such as Neottia nidus-avis to function without chlorophyll. The chance for a seed to meet a fitting fungus is very small. Of all the seeds released, only a minute fraction grow into new orchids. This process can take years; in some cases up to fifteen years.

Horticultural techniques have been devised for germinating seeds on a nutrient-containing gel, eliminating the requirement of the fungus for germination, and greatly aiding the propagation of rare and endangered species.

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