



# Orchids in the Home

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# History



- Orchids became a craze by the mid 19<sup>th</sup> century.
- Tons of orchids were shipped from tropical areas, and few survived.
- Overzealous collecting and habitat destruction have made many species endangered.
- Brought to England in the early 1700's from China and the West Indies.
- The Aztecs used vanilla flavoring, and this was introduced to Europe after the Spanish conquest of Mexico.

# Growth Habits



- Epiphytes grow on trees and rocks. Most of the commercially available orchids are epiphytic.
- Terrestrial orchids grow in dirt like most other plants. Some grow wild in the US
- They come in all sizes.



- Orchids grow slowly.
- Most are adapted to survive some water deprivation.
- They are found on every continent.



Monopodial



Sympodial



# Species



- Orchidaceae is the largest family in the plant kingdom.
- Over 25,000 species and 100,000 hybrids.
- Intergeneric hybrids.
- *Vanilla planifolia*.



# Containers



- Pots, glazed clay, unglazed clay or plastic
- Ventilation for roots is mandatory.
- Baskets
- Mounting on wood, cork or osmundia.
- Mounting on trees!



# Potting media



- Fir bark chunks
- Osmundia or tree fern
- Sphagnum moss for those plants that like to be wetter.
- Coconut husk chips
- Mixes may contain bark, perlite, charcoal and other porous rock.
- Mount on cork, manzanita, osmundia or pieces of wood.



# Water



- **Don't over-water.** Over-watering is one of the best ways to kill an orchid.
- Avoid hard water and any softened water unless using reverse osmosis.
- You can fertilize each time you water, but not more often than once a week.



# How Do You Know When to Water?



- Accordion pleated leaves indicate not enough water.
- Check roots and leaves
- **Don't let pots sit in water.**
- A shower once a month is good to flush salts from media.



# Temperature



- Cool growers and warm growers
- Outside or inside?
- Many warm growers can be left outside all summer.
- Night to day temperature difference may be required for some to bloom.
- Most do well at 50-85 degrees.



# Humidity



- Most orchids like 50-70% humidity.
- Misters, humidity trays, humidifiers.
- “Cool mist” or steam vaporizers not good.
- Fans for air movement.
- Don’t mist unless outside.





# Light



- Light meters
- Natural is best and easiest, windows, skylights and solatubes.
- Types of artificial lights.
- How many hours of light?
- Outside shade.











Outside on the Patio

# Fertilizing orchids



- Remember, they grow very slowly.
- Feed weekly, weakly each time you water.
- Types of fertilizers.
- Micronutrients.
- Calcium and magnesium?



# HOW TO READ A FERTILIZER LABEL

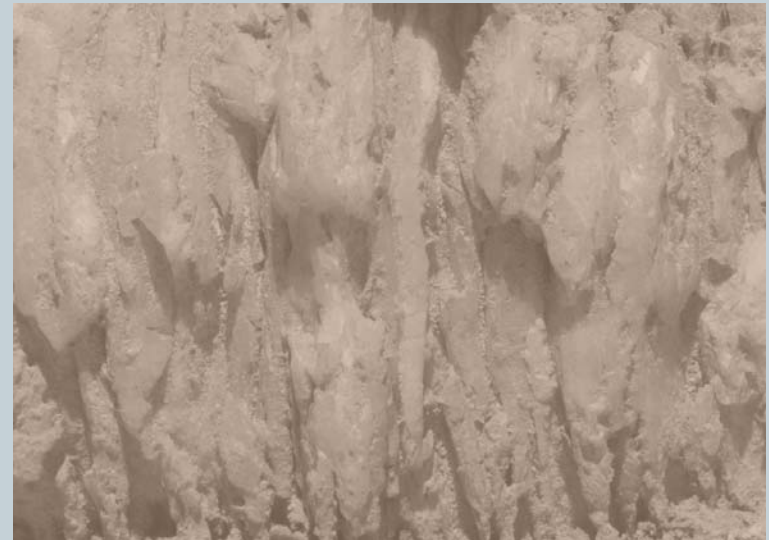


- **The BIG THREE nutrients:**
- **N=nitrogen**
- **P=phosphorus**
- **K=potassium**
- **10-10-10 means there is 10% each of N, P and K.**

# Micronutrients



- Present in minute amounts, less than 1%
- Iron
- Copper
- Manganese
- Magnesium
- Boron
- Zinc
- Molybdenum



# Repotting



- Don't repot very often; most orchids like to have crowded roots.
- It is often normal for roots to grow outside the pot.
- Usually repot after bloom when new roots and leaves are growing.
- Repot when old medium is breaking down or when roots are too crowded.



# Repotting



- Use either a clean pot which has been disinfected or a new pot.
- Wet new media.
- Water first to make it easier to remove roots from old pot.
- Gently pull plant out and knock off old medium.
- Trim off old or diseased roots.

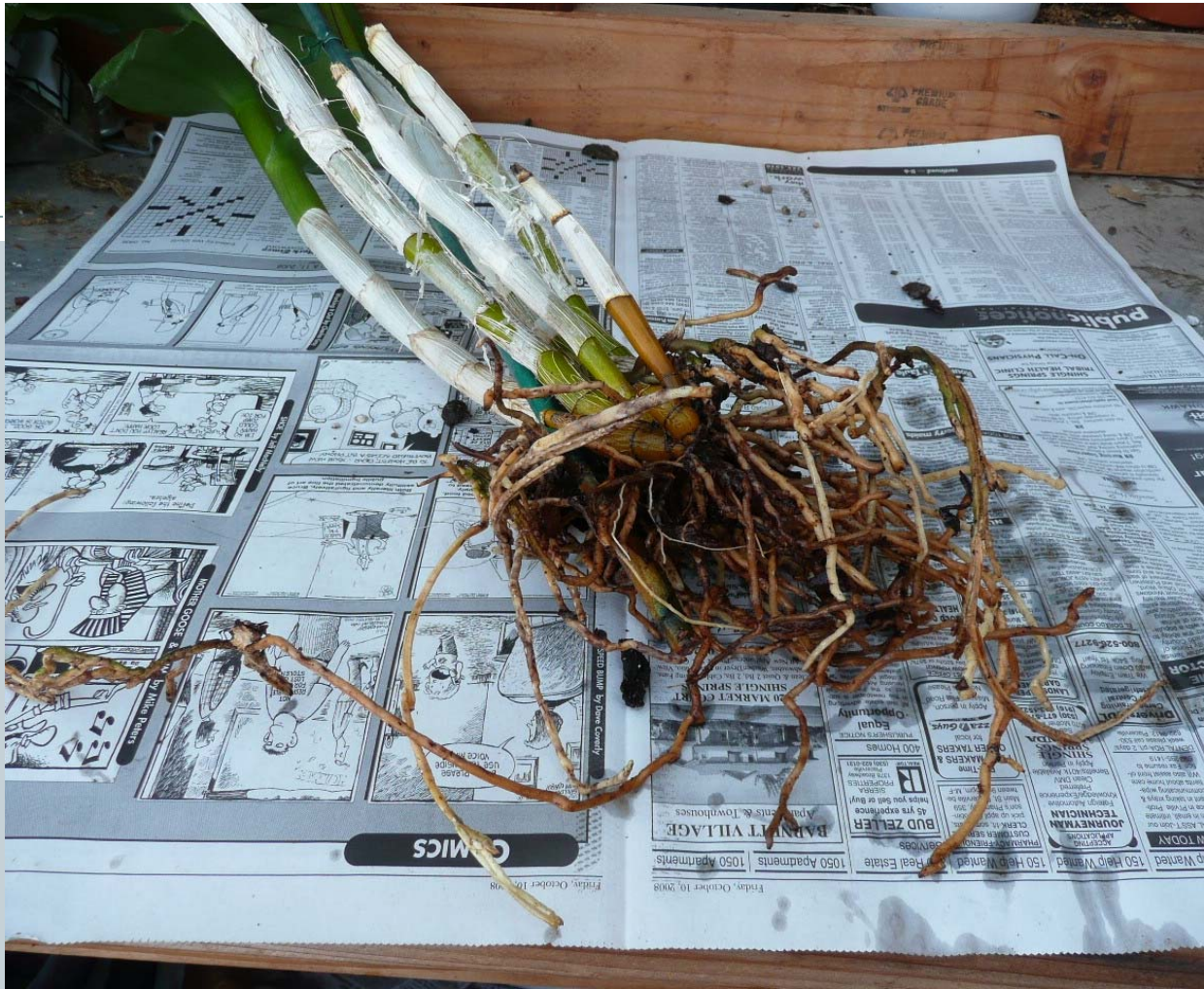


# Repotting



- Spray with dilute Physan 20 for disease control.
- Spread roots over new medium in the pot.
- Gently pack new medium around roots.
- Mark the date.
- Some plants may not bloom for over a year after being repotted.





Dendrobium repotted.





Healthy roots



Broken down medium on right,  
new on left



Three Odontoglossums from one.



Phalaenopsis with too many roots growing out of the pot.



After repotting; note that plant is sitting lower in pot.

# Insect Control



- **Aphids:** wash them off, insecticidal soap, horticultural oil, biological such as Lady Beetles.
- **Mealy bugs:** same as aphids and use an alcohol soaked Q tip to remove.
- **Whiteflies,** same controls as aphids.



- Scale: wipe and scrape off with alcohol soaked Q tip or cotton ball.
- Snails and slugs: hand pick or use baits.



- ❑ Spider mites are nearly microscopic; use a hand lens to see them. Use horticultural oil.
- ❑ Mites cause stippling and a silver appearance of the leaves. Check for them by wiping the leaf with a tissue.



# Crown Rot



- Caused by water sitting in the crown of the plant—misting too much.



# Fungal and Bacterial Diseases



- Fungal infections of roots may be caused by too much water, poor drainage or contamination.
- Soft, rotten roots cause plants to die for lack of water.
- Fungal infection of leaves causes brown or black spots and discoloration.





- Bacterial infections may cause soft mushy spots on leaves.
- Use good sanitation, clean and disinfect cutting tools. Physan and other fungicides.



# Viral Diseases



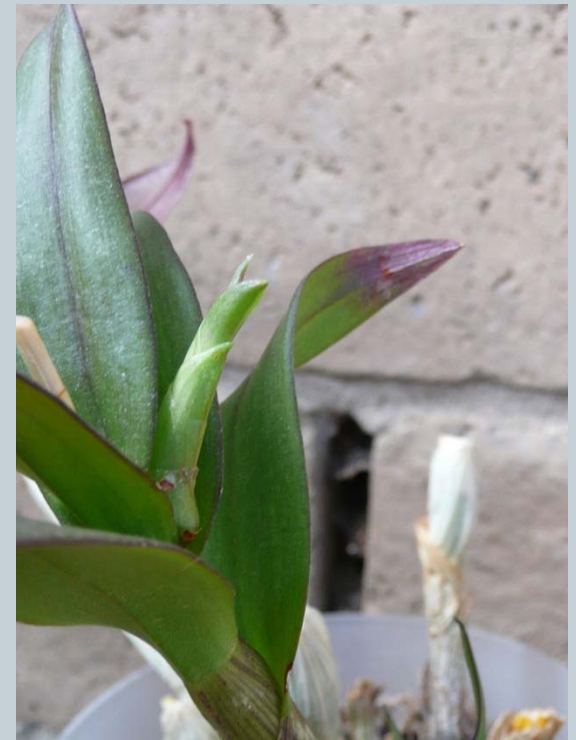
- Tobacco mosaic virus, Cymbidium mosaic virus and others.
- Use good sanitation and disinfection of cutting tools and used pots.
- Testing for viruses.
- Symptoms are variable and sometimes hard to recognize.
- Get rid of infected plants.



# Propagation



- Commercial—seeds, meristem clones, hybrids.
- Keikis.
- Splitting sympodial orchids.
- 3 pseudobulbs per division.



# Why Won't It Bloom???

1. Not enough light.
2. Too much water.
3. Wrong temperature.
4. Not enough humidity.
5. Disease.

I don't know; maybe it doesn't like me.



# Growing Phalaenopsis



- “Moth orchids”
- Commonly available and easy to grow.
- They tolerate relatively low humidity and light and common household temperatures.
- Very reliable bloomers.





Very long lasting  
flowers

After blooming cut  
the flower stalk just  
above a node, and it  
may rebloom.

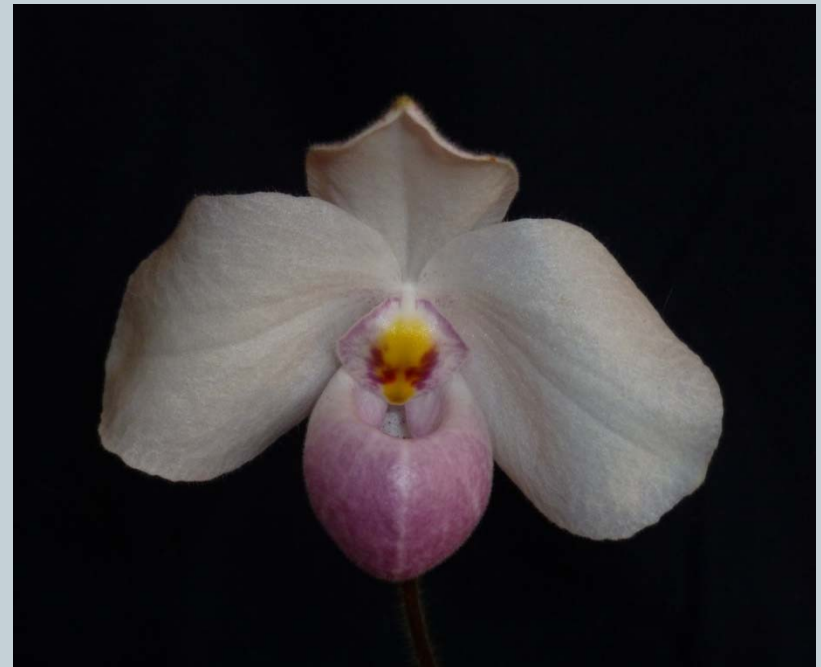
Usually bloom late  
winter and early  
spring.



# Paphiopedilum



- Slipper orchids
- Require less light than many others.
- Don't let them dry out completely.







# Cymbidiums



- Outdoors; no direct sun except in winter.
- Bloom midwinter to early spring.
- Leaves tolerate light frost, but flowers do not.
- Excellent cut flowers.
- Easy to propagate with pseudobulbs.







Cymbidium  
pseudobulbs



Bolopetalum



Bulbophyllum 'Jan Rayan'



Hawkinsara



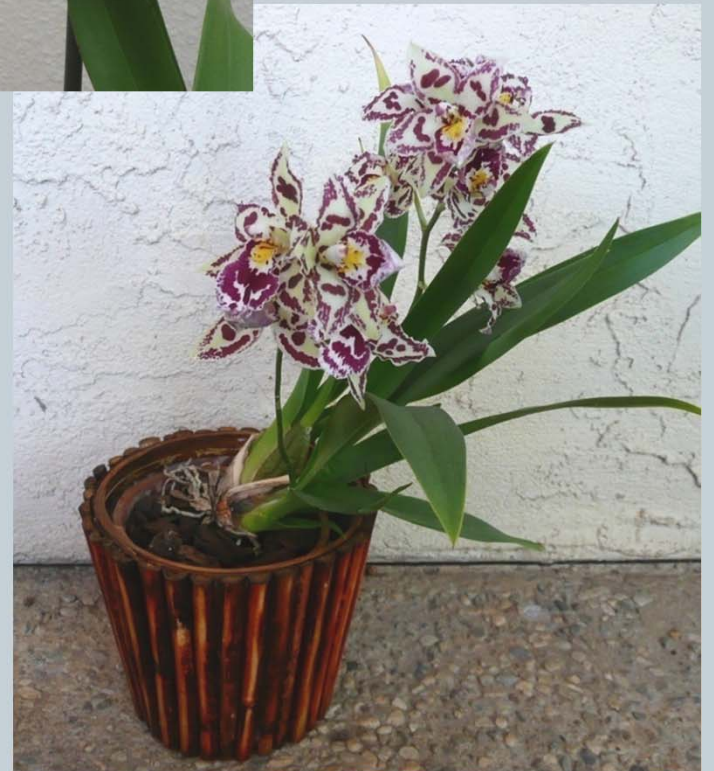
Howara



Brassia



Miltassia



Odontoglossum

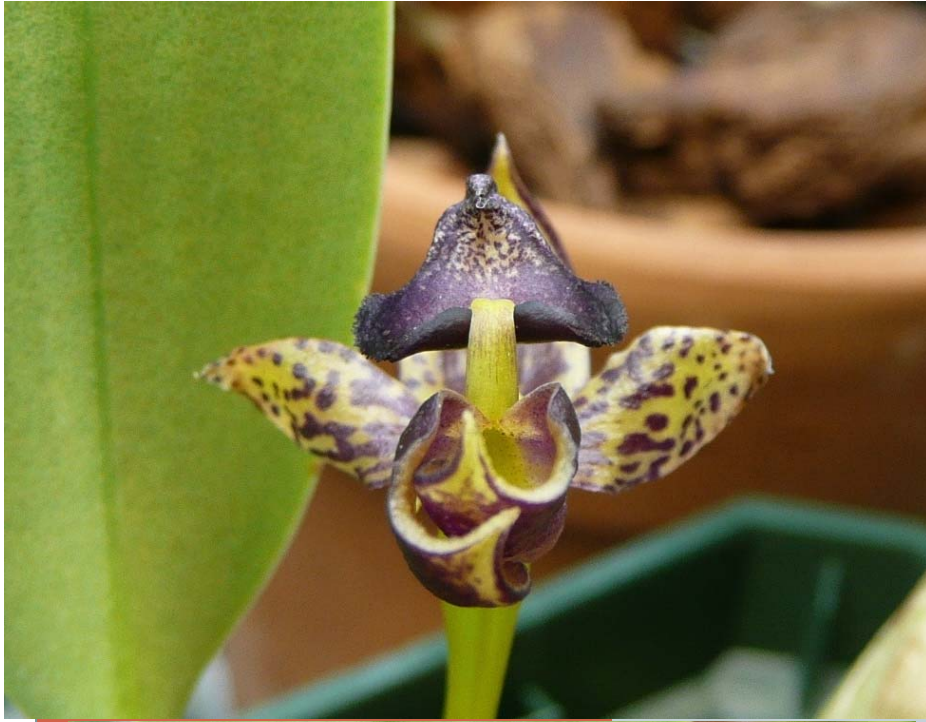


**Colmanara (Oncidium)**



**Bletilla striata is on the Arboretum All Stars List. It can be grown outside in our climate.**





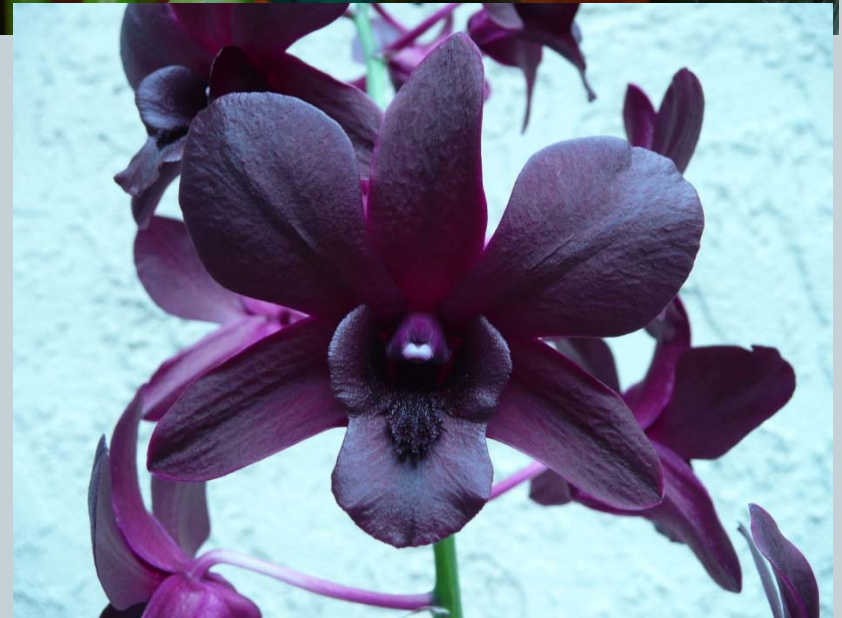
**Bulbophyllum on left and  
Degaramora on right.**



**Dendrobium and Masdevallia**

# Cattleyas





Dendrobiums



Miltoniopsis



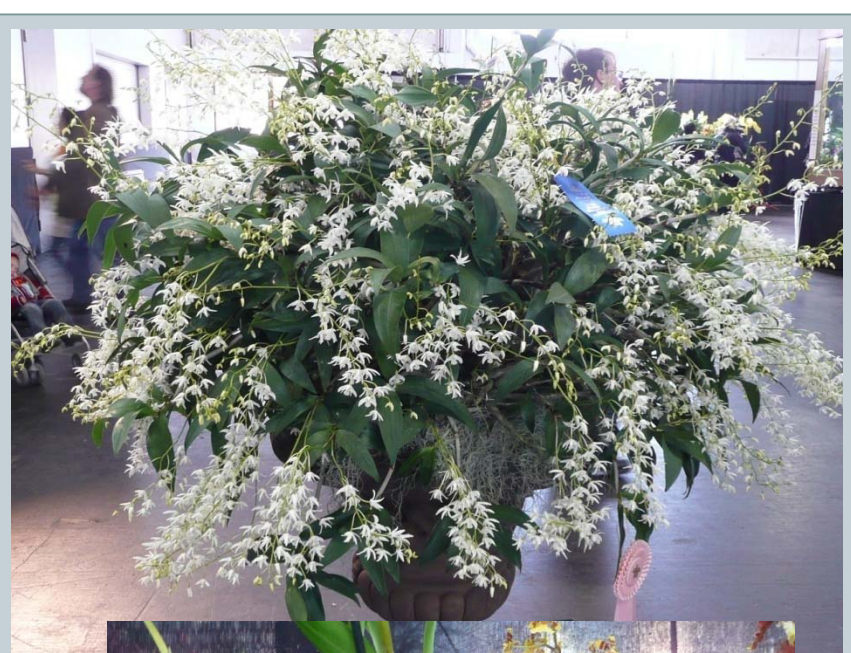
Cochleanthes



Coelogyne



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# Good Resources



- American Orchid Society
- Sacramento Orchid Society
- San Francisco Orchid Society  
[www.orchidsanfrancisco.org](http://www.orchidsanfrancisco.org)
- Sunset Orchids
- <http://www.ipm.ucdavis.edu/index.html>
- <http://www.orchidspecies.com/index.htm>
- Google the name to get information on growing requirements.