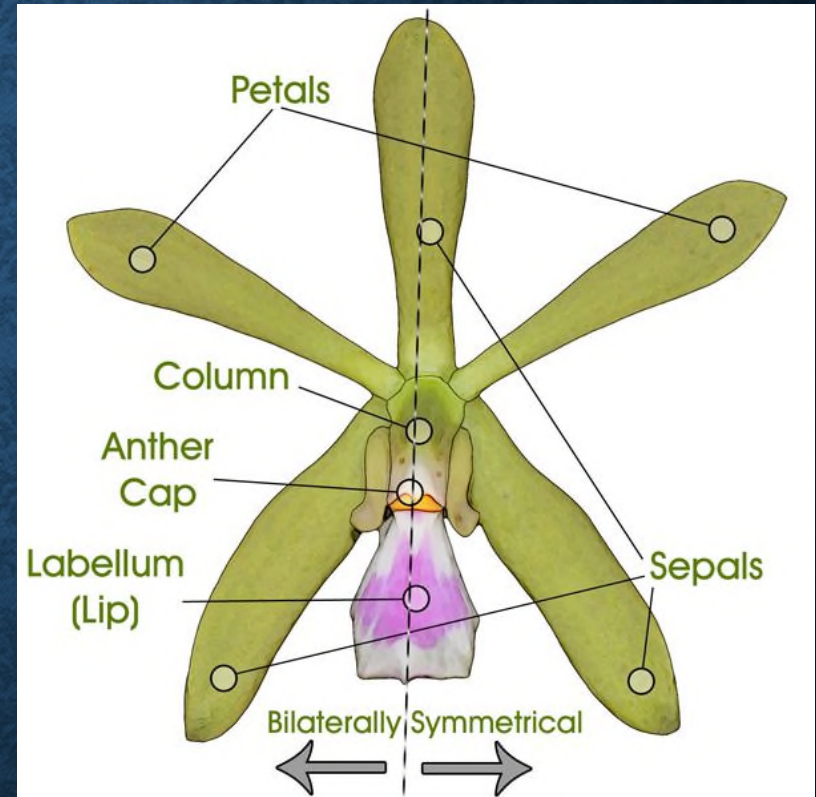


# ORCHIDS 101

Bill Gunning

# WHAT MAKES A PLANT AN ORCHID ?

- Flower symmetry
- Flower structure
  - 3 sepals
  - 3 petals – one of which forms the “lip”
- Pollen
  - Encased in waxy mass called pollinia
- Microscopic seeds (seeds contain the embryo but no food source)
- Roots
  - Covered with a spongy layer (velamen) that acts like a sponge
  - Roots perform function of gas exchange



# ORCHID FACTS

- Orchids are the 2<sup>nd</sup> oldest class of flowering plants on earth
  - Very primitive plants
  - Fossil evidence (pollinia) - least 100M years
  - DNA diversity - possibly 200+M years
- How many are there?
  - 25,000 – 30,000 orchid species
  - Over 200,000 registered hybrids
  - Orchids represent 10% of all seeded plants on earth
- Where are they found?
  - Every continent except Antarctica
  - Every climate except most arid deserts and high arctic
  - Would you believe Thousand Oaks ?

# HOW DO ORCHIDS GROW IN THE WILD?

- Most are **epiphytes** – growing in trees
- Some are **lithophytes** – growing on rocks
- A smaller group are **terrestrial** - growing on the ground , but mostly in leaf litter or sandy very well drained soil
- Good rule of thumb – NEVER plant an orchid in potting soil – the roots will hate you and the plant will die

# EPIPHYTES

# GUATEMALA



One very happy orchid – note all the “fertilizer”

# NORTHEAST AUSTRALIA



# BELIZE



## Prosthechea (formerly Encyclia) cochleata

- Aka – Cockleshell orchid, Black orchid, Octopus orchid
- National Flower of Belize
- Found throughout Central America, Columbia, Caribbean, South Florida
- Claim to fame – the first tropical epiphytic orchid to bloom in Kew Gardens in 1787

P.S. This is very easy to grow in Southern California  
See judging table

# Lithophytes

“Litho” – meaning stone

## EASTERN AND SE AUSTRALIA



*Dendrobium speciosum*



*Dendrobium kingianum*  
(Pink Rock Orchid)

Den. speciosum, delicatum, and kingianum  
do extremely well in Southern California

# TERRESTRIAL ORCHIDS



*Epipactis gigantea*  
(Stream Orchid)  
Thousand Oaks



*Corallortiza striata*  
Washington State



*Neotinia ustulata*  
(Burnt Orchid)  
Europe to Western Siberia

# ORCHID GROWING REQUIREMENTS

- **Air**
  - Orchid roots perform gas exchange (Oxygen / CO<sub>2</sub>)
  - Standing water will kill them
- **Water quality**
  - Low mineral content – TO water ~ 200ppm TDS – OK for most
  - Some orchids require pure water (distilled, reverse osmosis, ...) – use fertilizer that provides micronutrients
- **Light** – Varies by type of orchid– Most require at least 50% shade – see chart
- **Fertilizer** – Fertilize weakly, weekly
- **Temperature** – Varies by type – Seek “temperature tolerant” orchids
- **Something to sit in or on**
  - Extremely well drained potting mix or mounted
  - Remember roots need access to air

# TABLE OF LIGHT RANGES

| Plant Name                   | Light range in foot-candles |       |       |        |       |       |       |       |
|------------------------------|-----------------------------|-------|-------|--------|-------|-------|-------|-------|
|                              | Low                         |       |       | Medium |       |       | High  |       |
|                              | 500                         | 1,000 | 1,500 | 2,000  | 2,500 | 3,000 | 3,500 | 4,000 |
| <i>Brassavola</i>            |                             |       |       | 2,000  | 2,500 | 3,000 | 3,500 | 4,000 |
| <i>Brassia</i>               |                             |       |       | 2,000  | 2,500 | 3,000 | 3,500 |       |
| <i>Cattleya</i>              |                             |       |       | 2,000  | 2,500 | 3,000 | 3,500 |       |
| <i>Cymbidium - Standard</i>  |                             |       |       | 2,000  | 2,500 | 3,000 | 3,500 | 4,000 |
| <i>Cymbidium - Miniature</i> |                             | 1,000 | 1,500 | 2,000  | 2,500 | 3,000 | 3,500 |       |
| <i>Dendrobium</i>            |                             | 1,000 | 1,500 | 2,000  | 2,500 | 3,000 | 3,500 | 4,000 |
| <i>Epidendrum</i>            |                             | 1,000 | 1,500 | 2,000  | 2,500 | 3,000 | 3,500 |       |
| <i>Laelia</i>                |                             |       |       | 2,000  | 2,500 | 3,000 | 3,500 |       |
| <i>Ludisia</i>               | 500                         | 1,000 | 1,500 | 2,000  | 2,500 | 3,000 | 3,500 |       |
| <i>Masdevallia</i>           | 500                         | 1,000 | 1,500 | 2,000  | 2,500 | 3,000 | 3,500 |       |
| <i>Miltonia</i>              | 500                         | 1,000 | 1,500 | 2,000  | 2,500 | 3,000 | 3,500 |       |
| <i>Odontoglossum</i>         |                             | 1,000 | 1,500 | 2,000  | 2,500 | 3,000 | 3,500 |       |
| <i>Oncidium</i>              |                             |       |       | 2,000  | 2,500 | 3,000 | 3,500 | 4,000 |
| <i>Paphiopedilum</i>         |                             |       |       | 2,000  | 2,500 | 3,000 | 3,500 |       |
| <i>Phalenopsis</i>           |                             | 1,000 | 1,500 | 2,000  | 2,500 | 3,000 | 3,500 |       |
| <i>Phragmipedium</i>         |                             |       |       |        | 2,500 | 3,000 | 3,500 |       |
| <i>Sophronitis</i>           |                             |       | 1,500 | 2,000  | 2,500 | 3,000 | 3,500 |       |
| <i>Vanda</i>                 |                             |       |       |        | 2,500 | 3,000 | 3,500 | 4,000 |

# ORCHIDS AND LIGHT RULES OF THUMB



- If an orchid isn't blooming it's most likely due to insufficient light
- Dark green leaves are typically a sign that the orchid isn't receiving enough light
- Be careful returning an indoor plant to its outdoor growing location
  - It will have adjusted to lower light indoors and can burn when returned to old outdoor location – Make gradual adjustments
- Note: It isn't light intensity that damages orchids, it's leaf temperature – protect on hottest days

# FERTILIZER

- N-P-K – nitrogen, phosphorous, potassium
- Any “orchid” fertilizer – but at low concentration
- GrowMore – 4 types
  - **Red** – High nitrogen (30-10-10) – cymbidiums during summer – green growth
  - **Yellow** – Balanced (20-20-20) – Most orchids year round
  - **Blue** – Low nitrogen “Bloom formula” (6-30-30)
  - **Green** – Balanced “Urea Free” (20-10-10) a MUST for Phalaenopsis, Paphiopedilum, Phragmipedium and Mounted orchids
- Mix at at  $\frac{1}{2}$  recommended concentration
- Nutricote time release (270 day) – Once a year
- DO NOT USE OSMOCOTE – It will burn orchids



# SO WHY DOESN'T MY ORCHID BLOOM ?

- Most orchids only bloom once a year
- It might not be getting enough light
- It doesn't like where you are growing it
- It might be “ailing”
  - Insects
  - Disease
  - Damaged roots
- It's testing you

# COMMON ORCHIDS

## HOME DEPOT / TJ / COSTCO

- Phalaenopsis (including those ugly dyed ones)
- Dendrobiums (very few varieties)
- “Intergenerics” (Oncidium types)
- Cymbidiums

Why these types? – Blooms last a long time

# “INTERESTING” ORCHIDS YOU WON’T SEE IN STORES

- Cattleyas (corsage orchids) and their relatives
  - Laelias
  - Brassavolas
  - Sophronitis
- Zygopetalums
- Paphiopedilums
- Phragmipediums
- “Interesting” dendrobiums
  - Australian
  - Nobile
- Bulbophyllums
- Pleurothallis
- Epidendrums
- Vandas
- .....

# GREAT ORCHIDS TO GROW OUTDOORS IN SOUTHERN CALIFORNIA

- Laelias – Mexican and Brazilian (Purpurata)
- Laeliocattleyas – “Lc”
- Australian dendrobiums – kingianum, delicatum, speciosum
- Cymbidiums
- Cattleyas (particularly hybrids)
- Sarcochilis
- Many others – just find the “sweet spot” in your garden

# AUSTRALIAN DENDROBIUMS IN SOUTHERN CALIFORNIA



kingianum



speciosum



delicatum

# WHY IS THE NAME TAG IMPORTANT?

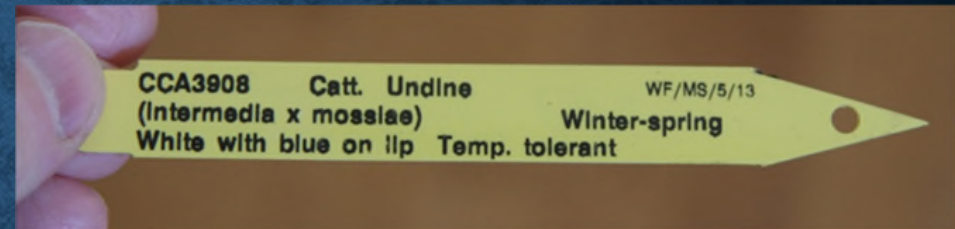
- Use the name to find culture information on the internet
  - Example search string – “orchid laelia purpurata care”
- To show the plant in an orchid show exhibit – name label required
- Full name required to enter the plant for judging
- Try to buy from a vendor that includes a complete name tag

# WHAT'S IN A NAME?

## Format:

Genus – species or hybrid name – Name given to specific clone – ( AAA x BBB) hybrid parents – AWARD

- Catt – Genus Cattleya
- Undine – Name of Hybrid Cross
- (intermedia x mossiae) – Parent species
- Note – “Temperature Tolerant”
  
- Lcn – Genus - Laeliocatanthe
- Salmon Stars – Name of Hybrid Cross
- ‘Scarlet Fire’ – “Clonal Name”



## Other things you might see:

- AOS Awards
  - HCC/AOS – Highly Commended Certificate
  - AM/AOS – Award of Merit
  - FCC/AOS – First Class Certificate

# ORCHID NAME (GENERA) ABBREVIATIONS

C. or Catt. = [Cattleya](#)

Cym. = [Cymbidium](#)

D. or Den. = [Dendrobium](#)

Epi. = [Epidendrum](#)

L. = [Laelia](#)

Lds. = [Ludisia](#)

Masd. = [Masdevallia](#)

Milt. = [Miltonia](#)

Mltnps. = [Miltoniopsis](#)

Neof. = [Neofinetia](#)

Odm. = [Odontoglossum](#)

Onc. = [Oncidium](#)

Paph. = [Paphiopedilum](#)

Phal. = [Phalaenopsis](#)

V. = [Vanda](#)

Vl. = [Vanilla](#)

Z. or Zygo. = [Zygopetalum](#)

See Comprehensive List of Orchid Name Abbreviations on COS Website  
Click on “resources” link

# WHERE DO I GET MORE INFORMATION ABOUT ORCHIDS ?

- Reference books
  - COS has a library for members - See COS website
- Internet – Orchid nurseries, orchid societies, orchid information sites, orchid blog sites
  - See handout with helpful internet locations
- A word of caution
  - Culture needs will be different depending on your location
    - Thousand Oaks isn't exactly South Florida or the UK
- When buying an orchid ask the vendor for growing advise
- Ask COS members