
Orchid Growing Basics

Growing Orchids in and Around the Home

Orchid Growing Basics

- So what is an orchid?
 - Any member of the family *Orchidaceae*.
 - *Orchidaceae* is the largest family of flowering plants on earth.
 - It includes more than 25,000 species.
 - It includes more than 800 genera.
 - There are native orchids on every continent except for Antarctica.
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Orchid Growing Basics

- And where do these orchids grow?
 - The majority of orchid species come from tropical or sub-tropical areas, but they are also abundant in temperate areas.
 - Orchids from the tropics are often *epiphytic* – that is they perch above ground on trees and other vegetation.
 - Orchids from temperate zones are usually *terrestrial* – that is they grow on the ground in soil or leaf mold.
 - Orchids from the tropics usually grow year-round.
 - Orchids from temperate zones often die back in cold weather.
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Orchid Growing Basics

- The first step in growing an orchid is to understand its native environment.
 - An orchid **WANTS**:
 - **Water**
 - **Air Movement**
 - **Nutrition**
 - **Temperature**
 - **Sunlight**
 - And it wants the levels it receives in nature.
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Orchid Growing Basics

- Once you understand an orchid's native environment, you must approximate that environment in your growing area.
 - Sometimes an orchid's growth habits give you a clue to its environment.
 - Epiphytic orchids have stiff roots with a thick white coating called *velamen*.
 - Epiphytic orchids often have air roots sticking out of the pot.
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Orchid Growing Basics

- Epiphytic orchids generally like:
 - ❑ A loose potting medium that provides good drainage
 - ❑ Moderate humidity
 - ❑ Good air movement
 - ❑ A fertilizer that is readily utilized
 - ❑ Warm temperatures
 - ❑ Bright light, but not direct sun



Orchid Growing Basics

- Terrestrial orchids generally like:
 - ❑ A potting medium that retains more moisture
 - ❑ Even watering
 - ❑ Moderate humidity
 - ❑ Less air movement
 - ❑ Less fertilizer
 - ❑ Cooler temperatures
 - ❑ Lower light levels



Orchid Growing Basics

- Some orchids have a thickened stem called a *pseudobulb*.
 - ❑ Pseudobulbs are used to store water and nutrients.
 - ❑ Orchids with pseudobulbs expect a dry period between waterings.
 - ❑ Orchids without pseudobulbs expect to stay evenly moist.
 - ❑ Orchids with pseudobulbs can withstand neglect better than those without!
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Orchid Growing Basics

- Some orchids are *deciduous*, that is they lose their leaves at some point.
 - Deciduous orchids expect a change in season, with an extended period of cooler or drier weather.
 - Deciduous orchids need a rest period after the leaves fall.
 - Move the orchid to a cooler area.
 - Water only occasionally and do not fertilize.
 - Wait for new growth to appear.
 - Deciduous orchids usually want plenty of water and nutrients when in active growth.
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Orchid Growing Basics

- Sometimes an orchid's name or type gives you a clue to its environment.
 - All orchids have two names, the first of which is the *genus* (plural *genera*).
 - A genus is composed of one or more *species*, which are closely related
 - Members of the same genus generally require the same environment.
 - Related genera may be grouped into a *tribe* or *alliance*.
 - Orchid growers talk about culture for a certain type of orchid, which may be a genus or a group of genera.
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Orchid Growing Basics

- *Phalaenopsis* (common name Moth Orchid)
 - A species or hybrid from the genera *Phalaenopsis* or *Doritis*
 - An epiphyte without pseudobulbs
 - Like slight drying out, moderate humidity, some air movement, warm temperatures, regular fertilizing, medium light



Orchid Growing Basics

- *Lady Slippers*
 - A species or hybrid from one of four genera (three tropical, one temperate)
 - A terrestrial with no pseudobulbs
 - Paphiopedilums and phragmipediums are commonly grown (tropical)
 - Like to be evenly moist, grow in relatively low light, tropical types like warm temperatures



Orchid Growing Basics

■ *Cattleyas*

- ❑ A species or hybrid from several genera, primarily *Cattleya*, *Laelia*, *Brassavola*, *Sophronitis*
- ❑ An epiphyte with prominent pseudobulbs
- ❑ Like to dry out between waterings, high humidity, plenty of air movement, warm temperatures (mostly), regular fertilizing, high light



Orchid Growing Basics

- *Dendrobium*
 - ❑ A species or hybrid from the genus dendrobium, which is large and varied
 - ❑ An epiphyte with thickened stems called canes, sometimes deciduous
 - ❑ Like to dry out between waterings, variable temperatures, mostly high light. Some need a rest period



Orchid Growing Basics

- *Cymbidiums*
 - ❑ A species or hybrid from the genus *Cymbidium*
 - ❑ A large terrestrial with pseudobulbs and grassy leaves
 - ❑ Like heavy watering and fertilizing, cool temperatures, high light
 - ❑ Standard varieties need cool temperatures in the fall to set blooms



Orchid Growing Basics

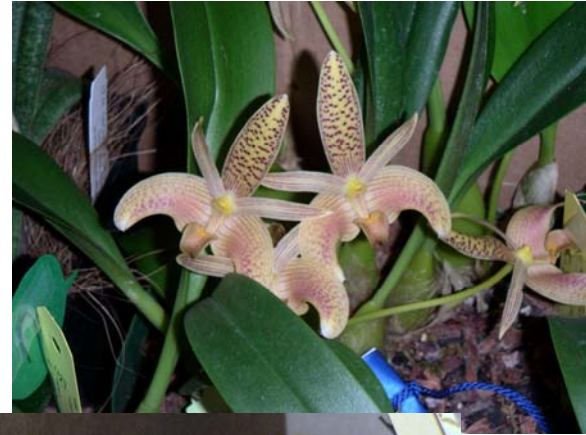
- *Oncidiums* (common name Dancing Ladies)
 - A species or hybrid from a number of genera, primarily *Oncidium*, *Brassia*, *Miltonia*, *Odontoglossum*
 - Epiphytes, most of which have pseudobulbs
 - Most like conditions similar to cattleyas, but some are cooler growers



Orchid Growing Basics

■ *Botanicals*

- ❑ A term commonly used to group orchids that are cultivated, but have no value as cut flowers
- ❑ Some frequently grown botanicals include bulbophyllums, pleurothallids, catasetums, maxillarias, masdevallias
- ❑ Some are easy to grow, some require very special growing conditions



Orchid Growing Basics

- *Terrestrials*
 - Sometimes used to refer to terrestrial orchids from temperate zones that are increasing available
 - May come from North America, Australia, Europe, and cooler regions of Asia
 - Usually require a rich, organic potting mix, moist conditions while growing, and a rest period



Orchid Growing Basics

- So where can we grow orchids?
 - In the house, in front of a window or in the sunroom
 - Under lights, on a plant shelf or in a climate-controlled case
 - In containers, on a patio or in the yard
 - In a climate-controlled greenhouse
 - In a shady or sunny wildflower garden
 - The second step in growing an orchid is choosing the right one for your growing area.
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Orchid Growing Basics

- Considerations when growing in the house:
 - ❑ The humidity is very low, especially in winter.
 - ❑ The temperature is constant.
 - ❑ Air movement may be limited.
 - ❑ Light levels may be limited.
 - ❑ Size is a factor.
 - Warm-growing tropical orchids are best for home temperatures.
 - Avoid orchids that need cool nights or seasonal variations.
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Orchid Growing Basics

- Avoid botanicals like masdevallias that require extremely humid conditions.
 - When growing in front of a window, consider the light levels
 - ❑ North-facing windows generally will not provide enough light to bloom an orchid.
 - ❑ East windows will work for lady slippers and some phalaenopsis.
 - ❑ West windows will work for some phals, and small varieties of cattleya, dendrobium, and oncidium.
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Orchid Growing Basics

- ❑ Cattleyas, dendrobiums, and oncidiums can be grown in south-facing windows, as well as warmth-tolerant small cymbidiums.
 - ❑ Don't place orchids too close to the window, especially in winter.
 - Use a small table fan or ceiling fan for air movement.
 - ❑ Don't blow air directly on the orchid.
 - Place the orchids on a humidity tray.
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Orchid Growing Basics

- Humidity trays:
 - ❑ Can buy a heavy plastic tray with a grid.
 - ❑ Can use any shallow dish, filled with pebbles.
 - ❑ Keep water below the pot level (no wicking).
 - ❑ Help keep humidity around the plants.
 - ❑ Help protect your furniture!
 - Many people grow orchids in a sunroom.
 - ❑ More room usually for larger orchids.
 - ❑ More like growing in the house than outdoors.
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- But what if I don't have a good window or a sunroom?
 - In home growers can be successful with orchids growing under lights.
 - ❑ Floral carts can be purchased from many vendors.
 - ❑ Do-it yourselfers can build a plant shelf with materials from Home Depot or Lowe's.
 - ❑ Special cases are also available to keep up humidity – and can also be build by the do-it-yourselfer.
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Orchid Growing Basics



Orchid Growing Basics

- Making use of the outdoors
 - ❑ Move high light orchids outdoors in warm weather to get better growth.
 - ❑ Make sure the orchid gets some shade – depending on type.
 - ❑ Leave cool-temperature orchids like standard cymbidiums out in the fall to initiate flowering.
 - ❑ Remember that orchids growing outside will get visitors you may not want in the home!
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- Orchids for the garden
 - Only folks in Florida can grow tropical orchids in the US!
 - But many temperate zone terrestrials from the US, Europe, Australia, and Asia can be grown year round here.
 - Cypripediums can be grown in shady areas.
 - Bletilla striata is a popular orchid for garden areas.
 - Ladies tresses (spiranthes) and other wildflowers, make good garden orchids.
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Orchid Growing Basics



Orchid Growing Basics

- So what do I do when I fill up the house?
 - *Build a greenhouse!*
 - A greenhouse can give you:
 - More light
 - More humidity
 - More space, especially vertical space for hanging orchids in baskets
 - Many greenhouse plans are available.
 - For immediate gratification, choose a kit.
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Orchid Growing Basics

- Greenhouses can be free-standing or attached to your home.
 - Remember that greenhouses are made to be watered if you go for attached!
 - Greenhouses can be many sizes.
 - Even a small (6 x 8) greenhouse can accommodate a number of orchids, even large ones.
 - Greenhouses can be built of various materials – glass, soft plastic, PVC.
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Orchid Growing Basics



Orchid Growing Basics

- Greenhouses must be climate-controlled.
 - Orchids usually don't like temperatures below 50 degrees.
 - Cooling and shading may be needed for orchids in the summer.
 - Equipment may still be needed to keep the humidity high.
 - Most tropical orchids will be very happy in a greenhouse here!
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Orchid Growing Basics

- Orchids require regular care wherever they are growing.
 - Watering and fertilizing
 - Pest and disease control
 - Re-potting and/or dividing
 - Watering needs depend on the type of orchid.
 - Once a week for orchids that like to dry out
 - More frequently for orchids that like to stay moist
 - Less frequently when orchids are resting
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Orchid Growing Basics

- Fertilizing needs depend on several factors:
 - Type of orchid – some orchids are light feeders, like lady slippers, some heavy feeders like cymbidiums
 - Potting media – some types of potting mix, like sphagnum moss, provide some nutrients, some potting mixes drain more freely than others
 - In general orchids like a balanced fertilizer with readily available nitrogen
 - Look for mixes with nitrogen from sources other than urea.
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Orchid Growing Basics

- Orchids growing in bark may need a fertilizer that is high in nitrogen.
 - Basic fertilizing guidelines
 - ❑ Never use more fertilizer than manufacturer's recommend. Less is better!
 - ❑ Always water before you fertilize to protect the roots.
 - ❑ Flush your pots periodically. A rule of thumb is fertilize three times, then water heavily the fourth.
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Orchid Growing Basics

■ Orchid pests

- ❑ Scale affects many orchids – cattleyas are very susceptible.
 - ❑ Soft scale and mealybugs are the bane of phalaenopsis.
 - ❑ Spider mites affect some soft-leaved orchids.
 - ❑ Thrips and aphids may infest orchid flowers and buds.
 - ❑ In a greenhouse, ants may find a home in orchid pots!
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Orchid Growing Basics

■ Controlling pests

- In the home, try low-toxicity pest control.
 - Rubbing alcohol, full strength, sprayed or applied with a cotton ball or q-tip
 - Insecticidal soap, or a mix of a cleaning formula and alcohol
 - Pepper-based sprays, pyrethrum sprays, neem oil
 - Greenhouse growers may need stronger insecticides.
 - Only use insecticides that are recommended for orchids.
 - Always use according to directions and take proper precautions.
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Orchid Growing Basics

- Use more than one insecticide and rotate use.
 - More pests
 - Slugs and snails may affect orchids in the greenhouse or outside.
 - Low toxicity solutions include a saucer filled with beer.
 - Small mammals may burrow in orchid pots.
 - Bees and wasps may fertilize your orchids.
 - A fertilized flower wilts, and an unwanted seed pod uses a lot of the plant's resource.
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Orchid Growing Basics

■ Orchid diseases

- ❑ Orchids are susceptible to various bacterial and fungal infections.
 - ❑ Water orchids early in the day, especially orchids like phalaenopsis and vandas.
 - Water sitting in the crown of these types of orchids can lead to crown rot.
 - Powdered cinnamon sprinkled in the crown is an effective non-toxic solution.
 - ❑ Several fungicides can be used to treat orchids.
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Orchid Growing Basics

- Orchids are also susceptible to viral infections.
 - There are no treatments for orchid viruses – infected plants must be destroyed.
 - Viruses can be spread by insects, so use effective insect control.
 - Viruses are often spread by using the same cutting tool on multiple plants.
 - Use a razor blade and discard after a single use.
 - Sterilize cutting tools with a disinfectant or flame.
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Orchid Growing Basics

■ Repotting orchids

□ Some orchids have a growth pattern known as *sympodial*.

- Sympodial orchids have a horizontal rhizome, and make new growths from the rhizome.
- Sympodial orchids include cattleyas, lady slippers, dendrobiums, oncidiums, and cymbidiums.

□ Other orchids have *monopodial* growth.

- Monopodial orchids produce leaves along a vertical stem.
 - Monopodial orchids include phalenopsis and vandas.
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Orchid Growing Basics

- Sympodial orchids often grow out of their pot.
 - Orchids with long rhizomes, like bulbophyllums, spread out very quickly.
 - Orchids with large pseudobulbs quickly crowd a pot.
 - Orchids that stay in the pot like to be repotted too.
 - Potting media that is breaking down interferes with drainage.
 - Mineral salts build up in the mix over time.
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Orchid Growing Basics

- Repotting orchids involves:
 - ❑ Choosing a pot and type of mix.
 - ❑ Deciding whether to move the orchid to a bigger pot or divide it (for sympodial orchids).
 - ❑ Preparing your tools.
 - ❑ Removing the orchid and cleaning up the roots.
 - ❑ Placing the orchid in a new pot (or pots) and adding potting mix.
 - ❑ Stabilizing the plants and creating labels.
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Orchid Growing Basics

- Choosing a pot:
 - ❑ Plastic is lighter, doesn't break, and holds more moisture.
 - ❑ Clay pots are heavier, help keep orchids cooler.
 - ❑ Make sure you choose a pot with good drainage.
 - ❑ Choose a pot large enough to accommodate the roots.
 - ❑ Choose a pot large enough to allow some outward growth for sympodial orchids.
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Orchid Growing Basics

- Potting mixes for orchids:
 - Only some terrestrial orchids can actually be grown in potting soil.
 - Orchids like a well draining mix that doesn't pack around the roots. Some commonly used are:
 - Bark – properly treated fir bark or cypress chips
 - Coconut chips – properly treated to remove salt
 - Sphagnum moss
 - Peat moss – a coarse grade especially for orchids
 - Lava rocks or clay pellets
 - Special mixes with sponge rock, other additives
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Orchid Growing Basics

■ Repotting orchids

- ❑ Select a time after flowering, and before the orchid begins active root growth.
 - Avoid stressful times of the year if possible!
 - ❑ Gently remove plant from pot.
 - ❑ Remove dead leaves and pseudobulbs.
 - ❑ Place in new pot so that room is left between the newest growth and the edge of the pot.
 - ❑ Gently add potting mix, press down into the pot.
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Orchid Growing Basics



Orchid Growing Basics

- Dividing orchids:
 - Always use a sterile cutting tool.
 - Make sure each division has a new growth.
 - Make sure each division has several old growths to support it.
 - If an orchid seems unsteady after repotting, use a rhizome clip or stake to stabilize it.
 - Don't fertilize orchids for several weeks after dividing or repotting.
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Orchid Growing Basics

■ Mounting orchids

- ❑ In nature many orchids grow on trees.
 - ❑ Mounting an orchid on cork bark, a stick or a piece of vine is much more natural to them.
 - ❑ Some orchids will also grow in a basket with a little bark or charcoal or nothing at all.
 - ❑ Remember that mounted orchids and orchids in baskets will need more frequent watering.
 - ❑ Mounted orchids are not so good for in the home!
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Orchid Growing Basics



Orchid Growing Basics

- Learning more:
 - Come to an orchid show
 - Join a local orchid society
 - Join the American Orchid Society
 - Branching out:
 - Attend regional, national, and international events
 - Mid-America
 - World Orchid Congress
 - Take a tour to view and collect orchids in the wild.
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