**New York Botanical Gardens: Phalaenopsis (moth orchid) in Your Home**

The orchid family, Orchidaceae, is one of the largest of all flowering plant families, with plants growing in many different habitats. Successful orchid culture is the result of imitating an orchid's natural habitat as closely as possible.  All orchids need appropriate light, temperature, humidity, moisture, nutrients, ventilation, potting medium, and maintenance.

*Phalaenopsis* (moth orchid) is relatively easy to care for and an excellent start to a life of loving orchids. The approximately 50 species of *Phalaenopsis* are mostly epiphytic plants, that is to say they grow in fast-draining pockets of debris on trees, below the leaf canopy. Though most of the *Phaleanopsis* grown in our homes are hybrids, this natural setting of loose, fast-draining, growing medium and gentle, filtered light is also what they need to prosper.

The primary period for flowering takes place in late winter through spring, though plants can flower repeatedly before they take a rest to restore their energy. Flowers may last for months.

**Light:**

*Phalaenopsis*requires bright but indirect light. In the New York City area, an unobstructed, east-facing window with gentle, morning sun is usually perfect. In a south or west-facing window where light is harsher, protect the plant from direct sunlight with a filtering curtain or distance from the window.

With the use of a light meter, you can directly measure the light exposure of a potential growing area. A bright, sunny day out of doors may measure 10,000 foot-candles, while a south-facing window may be about 5,000 foot-candles.*Phalaenopsis* is considered a low-light orchid and requires about 1,000 to 1,600 foot-candles of light.

LED artificial light can be used to supplement light for most orchids. Be careful not to place the light too close and burn the plant. Look for a full-spectrum light option made for plants.

**Water and Humidity:**

Orchids are killed more often by the common mistake of over-watering than anything else. *Phalaenopsis*does not have a water storage organ like some orchids, so while restraint is essential, it is also important to not let it dry out entirely.  It needs to be watered when the potting medium has almost dried out. Watering frequency is likely to change during the year. Day length, humidity and individual heat systems will affect the rate at which water evaporates from the growing medium. Use your finger to test an inch or so down before you water. Moss potting mixture will dry more slowly than bark mix.

Always water in the morning. Place the plant in a sink and allow the water to soak through and drain out completely. It is best to use tepid water, as it will help to dissolve fertilizer salts and not shock the plant. Bark potting mix initially repels water before it becomes saturated, so it is important to water until the bark is saturated.  Uneven watering will result in shallow or uneven root growth. Do not let the plant sit in a dish of run off water. Gently dry any water that has splashed on the leaves or stems to avoid rot.

Humidity in the air is just as necessary as moisture in the soil. A minimum of 50% relative humidity is required to grow*Phalaenopsis*whereas an average home in the northeast may have humidity as low as 25%. Both heating in winter and air conditioning in summer remove a lot of moisture from the air. Supply extra humidity with humidifiers, or group plants on a gravel-lined tray that is filled with water to increase air moisture through evaporation. You can use a simple hygrometer to assess the humidity and keep it in the 65%+ range that *Phalaenopsis*prefers.

**Air Movement:**

The high humidity in tropical habitats is often accompanied by gentle and constant air movement through the high tree locations in which these orchids grow. Stagnant, humid air is as detrimental to orchids as cold drafts. Air movement is essential, as it evaporates moisture on leaves and stems and helps protect plants from the spread of disease. If you are keeping your orchids in a closed room, an open window (when temperatures are in the target range), the movement of air from a humidifier or from a fan are an often-neglected factor in growing healthy orchids.

**Temperature:**

Most orchids need a distinct fluctuation between day and night temperatures to successfully produce flowers. Warm-growing orchids such as*Phalaenopsis* prefer day temperatures between 65 and 85°F., with night temperatures between 55 and 60°F. In autumn, lowering night temperature for several weeks to 55 - 60ºF. can help to initiate flowering. If exposed to a sharp drop in temperature or sudden temperature spike, a *Phalaenopsis* can drop its buds.

**Nutrition:**

Since orchid potting mediums are not composed of nutritious garden soil, the rule of thumb for orchid feeding is "feed weakly, weekly". Generally, a balanced, powdered fertilizer (20-20-20) is best, at ¼ of the recommended strength on the label, every time or every other time you water. It's important to flush the plant out with water once a month to get rid of any residue salts left over from the fertilizer. It's better to give an orchid too little fertilizer than too much as over-fertilizing can reduce flowering. Continue feeding year-round.

**Encouraging Flowering:**

An orchid needs to have all its needs met to generate the energy necessary to flower. Adequate light, proper watering, and proper temperature and humidity levels all contribute to a flowering *Phalaenopsis*. In nature, orchids experience a 10ºF. temperature difference between day and night. This differential is important when trying to initiate flowering, particularly in autumn when several weeks of 55ºF. night temperatures are helpful. After about two weeks of cooler nights, a vigorous plant will initiate a new flower spike that lengthens slowly and buds emerge a few months later.

Increasing the light that the orchid receives is another way to trigger flowering. Raising the humidity level encourages flowering.

**Care After Flowering:**

*Phalaenopsis*can re-bloom from an old spike if your plant is still vigorously growing, but our orchid growers recommend cutting back the spike after flowering to preserve energy for next year's flowers. The spike will have several nodes (swollen areas) on it. If you want to experiment with re-blooming in the same season after your*Phalaenopsis h*as finished flowering, cut it down to just above the second node. A new spike may form and flower in 8 to 12 weeks.

It is important to cut the spike all the way down to the base by mid-summer to allow the plant to rejuvenate and grow for the next flowering season.*Phalaenopsis*leaves will start to flop and look tired if the plant has been flowering for a long time.

**Re-potting:**

When *Phalaenopsis*outgrow their pots or the potting medium has deteriorated, they should be re-potted. This is best accomplished every two to three years when new growth is beginning. Try to avoid transplanting in midwinter and in the heat of summer. Usually, plants in bud and flower prefer not to be transplanted. It is important to remove as much of the old potting medium from the roots as possible by shaking or rinsing the roots under water. Any rotting roots need to be removed immediately with sterile tools.

Orchids require good drainage and good root aeration to grow. Medium-grade, bark, potting mixture is preferable for *Phalaenopsis.*Be sure to use only quality orchid potting mixes and never substitute landscape mulches for orchid potting mediums.

**Hygiene:**

Cleanliness is important for orchids. Wash orchid leaves occasionally with mild soapy water to reduce the harmful effects of excess debris that can slow photosynthesis and minor insect infestation. Since orchids are susceptible to viral diseases, use gloves when handling them and/or wash hands often between handling. When cutting stems always use tools sterilized in a 10% bleach solution (1 part bleach to 9 parts water) and/or alcohol, or use a clean, single-edged razor blade.

**What to watch for:**

Over-watering reduces air circulation around the roots leading to root rot. If a plant looks off-color, yellow and weak, shake it out of the pot and check the roots for signs of root rot. Root color should be beige or white; black or brown roots indicate rotting. You may be able to save the plant by removing the rotting roots and re-potting in fresh potting medium.

Bud drop usually indicates that temperatures or other conditions have fluctuated too much and stressed the orchid. Exposure to a draft or the cold during a trip home from the nursery is a common cause. Proximity to a hot or cold windows, air conditioning or heat vent draft, over-fertilization, or too much variation in temperature between day and night can cause buds to fall off. Moving your orchid from a plant shop to a space in your home with different humidity or light may lead to bud drop.

An under-watered plant will have wrinkled leaves that flop on the potting medium. The same symptoms occur if a plant has been over-watered is not draining well or sits in run off water and its roots are no longer healthy enough to take up water.

Crown rot can develop quickly if water is left amongst the leaves on the above surface plant after watering. Pat off any water that has splashed up while watering. If the*Phalaenopsis* is growing in a moss medium, do not let the crown sit in damp surface moss.

An orchid may produce new leaves but not flower if it does not have conditions that give it the energy for this taxing part of it's annual cycle. It is important to cut the flower spike all the way down to the base by mid-summer to allow the plant to rest and rejuvenate for the next year's flowers. A plant that flowers multiple times from a spike in a single season may lose vigor.  Check that your orchid has generous humidity and that there is a 10 degree temperature differential between day and night. Review the plant's light and nutrition requirements. If your plant skips a year of flowers, do your best to improve conditions to match those described in this care guide and you should have success next year.