

# BEST PRACTICES IN CULTURE OF CATASETUM, CLOWESIA, CYCNOCHES, MORMODES AND THEIR HYBRIDS

PHYLLIS S. PRESTIA

SOME YEARS AGO, I received my first *Catasetinae* seedling, *Fredclarkeara* After Dark 'Black Pearl' from an opportunity table supplied by Fred Clarke of Sunset Valley Orchids in Vista, CA. I was at once excited at the prospects of growing such a curious and beautiful orchid and terrified at potentially killing what surely was a valuable one. I didn't have a greenhouse at that time and had no knowledge about the plant's cultural requirements.

So I consulted the experts, a few friends who grew *Catasetinae* (some well, some not so well) and read what I could find about culture. As with any orchid, a thorough understanding of the natural habitat and seasonal conditions is the key to trying to replicate as closely as possible what exists in an *ex situ* growing area. Now many years later, I am growing and blooming a burgeoning collection of colorful, gorgeous *Catasetinae*. This article is the culmination of what I've learned to date.

## Culture Myths

**Myth #1:** You can't grow *Catasetinae* without a greenhouse. Really? Don't they grow just fine out there in the woods? Well sure, but we all don't live where they grow and don't have the same ideal cultural conditions. The answer lies in examining your growing areas and comparing them with where and how these plants grow *in situ*. If some of the conditions are similar, use them during the times of the year when possible and adapt for them in the parts of the year that are not. For several years, I grew *Catasetinae* outside in California for most of the spring, summer, and fall and took them into a sunny, warm area in the house once the temperature outside fell lower than about 55°F (13°C). Now I bring them into the greenhouse instead of the bedroom. Both work. Depending on your latitude and longitude and temperature variations, adjust accordingly.

**Myth #2:** *Catasetinae* are hard to grow. This myth is perpetuated by those who overlook or forget that these orchids depend on their specific cultural conditions for survival. If you grow them like cattleyas, *oncidiums*, etc., they will do poorly and possibly perish. If you consider their habitat and cultural needs, they will thrive and bloom. It's that easy.

## The Habitat

*Catasetinae* is a subtribe of *Orchidaceae* that contains eight genera: *Catasetum*, *Clowesia*, *Cycnoches*, *Cyanaeorchis*, *Dressleria*, *Galeandra*, *Grobya*, and *Mormodes*. Within this subtribe, four genera have very similar cultural requirements: *Catasetum*, *Clowesia*, *Cycnoches*, and *Mormodes*. Most hybrids produced today are comprised of one or more of these genera. Therefore, this article

will discuss the cultural requirements of these specific *Catasetinae* and their hybrids.

Orchid culture *ex situ* is an attempt at simulating the cultural conditions of temperature, light, air movement, moisture, humidity, and fertilizer. *In situ*, these all work in conjunction. It can be helpful to examine these separately.

**Temperature:** The genera we are discussing are found in Mexico and the Tropical Americas between the Tropic of Cancer and the Tropic of Capricorn. Located around the equator, these are primarily tropical and subtropical plants which prefer warmer temperatures. High temperatures in the 80's and 90's F to lows in the mid to high 50's F are ideal. Temperatures slightly above or below this range may stress the plants but probably won't cause their demise. Extreme temperatures could cause serious problems, such as frozen or burnt leaves, which are unsightly and taxing to a growing plant.

**Light:** These four genera grow in open, lowland forested areas at elevations up to 1,500 meters (4,921 feet). Here the plants receive bright light most of the day. The plants do get periodic shade from tree leaves or palm fronds at times as the sun passes over. This type of light is referred to as dappled light, having short periods of sun and shade.

**Air Movement:** These are epiphytic orchids which attach themselves to other plants without harming the host. They prefer the crooks of trees and along branches with rough surfaces. They also can be found in the spaces created by fallen fronds along the bark of palm trees. They occasionally grow in the crevices between rocks which simulate similar conditions. In these types of growing areas, there is plenty of room for the wind to pass through and over the plants, wafting through the plant's leaves with breezes throughout the day.

**Moisture:** The tropical and sub-tropical areas where these orchids grow are subject to a rainy, summer monsoon season. During the monsoons, there is heavy, regular rainfall. With the passing of the monsoons, in the fall, the plants begin to go into a dry, dormant period lasting throughout the winter and early spring.

**Humidity:** Humidity levels in the tropics and subtropics can vary greatly. Summers have high humidity due to the monsoons. Winters have much less humidity as the monsoons gradually abate and end with the dry season. The typical winter to summer range can vary from 40% to 80% or higher humidity.

**Fertilizer:** Organic litter accumulates in the crooks and crannies of branches and the cracks of bark, creating a nutrient-rich environment for the orchids. Also, it's the lucky orchid that grows underneath a perched animal contributing its droppings—nature's fertilizer.



©Phyllis Prestia

Catasetinae in early spring after leaf drop. Roots on the new growth are just beginning to emerge.

## One Year in the Life Cycle

In autumn, after the monsoons have ebbed, the leaves begin to yellow and will eventually fall off. The yellowing of leaves is due to the reduction of water, shorter days, and cooler nights. Once the leaves have fallen, the plants have gone into their winter dormancy period.

During winter the plant uses the water and food stored in its pseudobulbs to survive the dry period. If the plants are healthy and large enough (for their type) they will bloom. The plant does not require any water at this time. Repot in late winter just before or as the new growths emerge to minimize damage to tender young shoots. Repotting is necessary if there is a lack of room in the pot to accommodate the size of another mature pseudobulb.

Early spring brings the growth of new shoots in response to the changing light levels. As the season progresses, the new growths will develop new roots in anticipation of the coming rains. The plant will continue to grow new roots until the rains come in late spring, sometimes as many as three or four sets if the rains are late. Once the rains begin, the plant shifts the emphasis of its growth from growing roots to growing leaves and

to lengthening and thickening the new pseudobulbs.

During the summer months, the rains are heavy and frequent. Plant growth is accelerated, elongating the leaves and plumping the pseudobulbs. The plant needs to do all of its growth for the year during this brief period. In fact, plant growth is so rapid that it may be gauged daily. Once autumn begins, the cycle winds down, finally giving the plant a dry, rest period so that its cycle of life may start all over again.

## Culture

When I began to employ growing methods based on conditions in situ, I followed some simple, benchmark dates until I learned to observe and listen to what the plants were telling me. These benchmark dates are practically foolproof when followed.

## Benchmark Dates

November 15 in the Northern Hemisphere (May 15 in the Southern Hemisphere):

**REDUCE WATERING!** It's autumn. If growing outdoors, when or if the temperature drops below 55°F (13°C), provide warmer growing conditions. In nature, the monsoons have ebbed and will stop soon. In response to seasonal changes, the leaves are yellowing. Reduce the amount of water to approximately half the amount and frequency to simulate monsoon abatement. Remember, you are simulating the monsoon and the lack of it.



©Phyllis Prestia

The root length of this plant indicates that it is not ready to be watered.



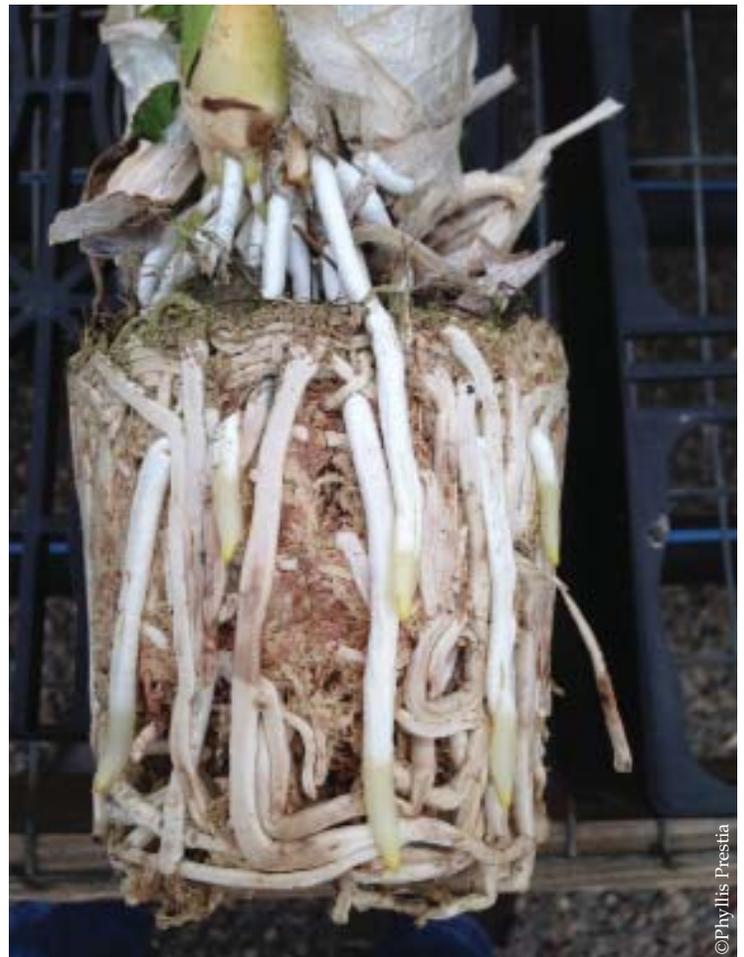
These roots are not yet 3-5 inches (8-13 cm) long. Do not water yet.

January 15 in the Northern Hemisphere (July 15 in the Southern Hemisphere):

**STOP WATERING!** It's winter. Most leaves have dropped. Stop all watering and allow the plant to go into dormancy. Even if there are some green leaves still on the plants, stop watering. Robust, mature plants will bloom during winter. Even if they are in bloom, stop watering. The pseudobulbs can take the load; it's their job. If they shrivel so much that you are concerned, mist lightly or occasionally, trying not to allow water into the root area. The introduction of water in the cooler months could cause a soggy condition for roots in which root rot could develop. Many plants succumb to root rot if they are watered out of season. Remember, you are the monsoon and lack of it. Buy supplies if you have to do something.

May 15-June 15 in the Northern Hemisphere (November 15-December 15 in the Southern Hemisphere):

**WATER LIKE A MONSOON!** The heat of summer is almost here. Check the roots. Slip the plant out of the pot to measure root length. Begin watering when the new roots are three to five inches long. Err on the longer side to make sure the roots are plentiful. During the monsoons, rains wash small amounts of natural debris over the roots with every rain, so fertilize lightly with every watering. You want to grow the best pseudobulbs possible during this short growing season.



These roots are over 5 inches (13 cm) long and now is the time to begin watering.

Higher humidity in summer is not a problem. Low humidity stresses the plants and causes them to be susceptible to spider mites, which is the main orchid pest for these genera. Misting or providing pebble trays filled with water in dry summers can raise the humidity levels.

## The Catasetinae Whisperer

When you are new at growing these genera, the benchmark dates can be very helpful in setting a schedule. They can give you the confidence that you are providing the cultural conditions these plants need. Once you are successful in re-growing roots and leaves, you will begin to watch and listen to your plants in a different way. With careful observation and a sense of changing seasons, you will begin a type of conversation with your plants which will lead to better growth, bigger pseudobulbs, more robust plants, and the largest inflorescences possible for your plant.

Instead of treating all your plants together, begin to look at them as individuals. For instance, in autumn if one plant has yellowed leaves before the others, reduce its water at that time rather than waiting for the right "date." If a plant drops all its leaves before January 15 (July 15), stop watering it, but continue to water the others with more leaves. Use the benchmark dates as a guide, not a rule.

It's all about the roots. The more roots the plant produces, the more surface area the roots have to absorb water and fertilizer. Give plants that extra time to grow secondary and possibly tertiary roots so that the pseudobulbs grow large and plump, giving the plant the best opportunity to produce the biggest pseudobulbs and the most floriferous inflorescences. With some older plants, I have cultivated the restraint to wait for these additional roots, sometimes into the middle of June. I know these larger plants have the back bulbs to supply the nutrients needed during this waiting period. The plant knows the monsoons always come. I do not withhold water on smaller plants or seedlings. I wait until they have two to three old pseudobulbs to provide nutrients. Think of root growth in relation to the overall size of the plant.

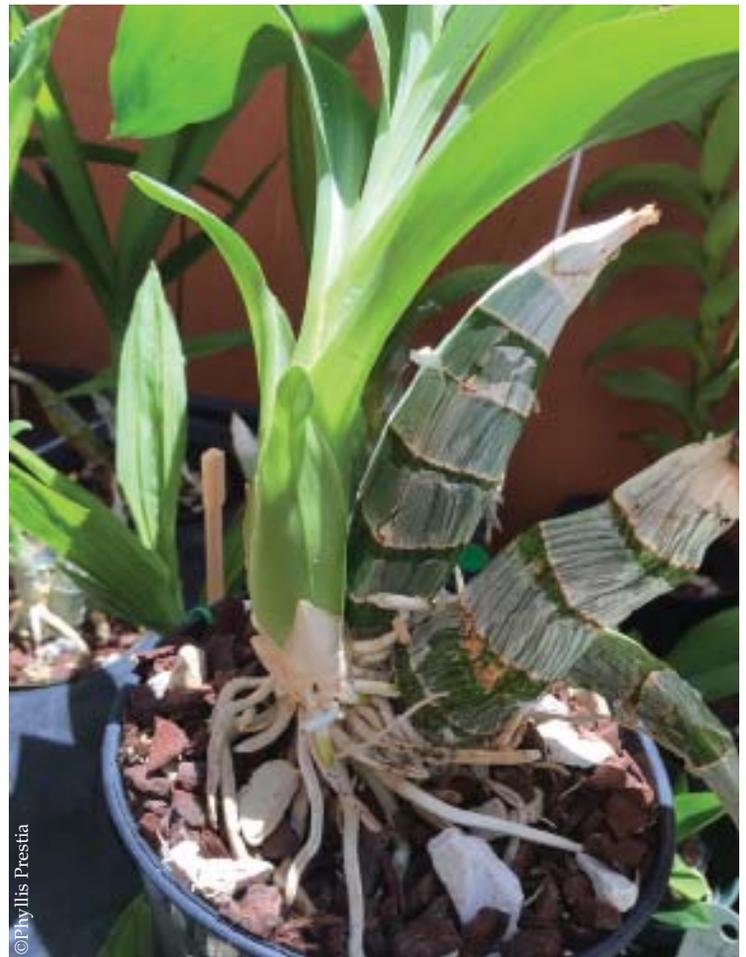
Also, once you are successful in growing larger, more robust plants you can consider the element of sexual dimorphism. Both *Catasetus* and *Cyclopogon* have evolved further than other orchid genera to produce both male and female flowers. These can occur on separate inflorescences or, more rarely, on the same inflorescence. Male flowers tend to be produced first, providing pollen for the pollinator, the Euglossine bee. Female flowers tend to appear a bit later in an attempt at decreasing the odds of self-pollination.

It's no guarantee, but the tendency is for large, robust plants to produce female flowers. These are plants that have access to abundant resources such as light, temperature, moisture, humidity, and fertilizer, and, as a result, have larger pseudobulbs which house the energy reserves of water and food. Therefore, they are more capable of the laborious task of carrying seed pods through the dry, winter dormancy period. Smaller plants which have a lack of resources or are immature with smaller or fewer pseudobulbs are more likely to produce male flowers, which require a lesser expenditure of resources to produce pollen. In other words, the better you grow *Catasetinae*, the more likely you are to be rewarded with the less flashy female flowers!

As a *Catasetinae* whisperer, you can have the best of both worlds. You can take a large, robust plant and remove and pot up a small section of it. In this way, you can attempt to produce both male and female flowers at the next blooming. As a whisperer, even hybridizing with your plants becomes possible.

## Summary of Best Practices

- As a beginner, follow the benchmark dates.
- In autumn when leaves yellow, reduce watering to about half the amount and frequency.
- In early winter, stop watering. Even if the plants are blooming or some green or yellow leaves remain.
- In early spring, when the new growths emerge, check to see if there is enough room in the pot for a new, mature pseudobulb. If not, repot.
- Potting media can contain some organics such as small bark and some aerating media such as perlite



A larger plant in a 6 inch (15 cm) pot growing secondary roots.

or rock. Seedlings are usually grown in sphagnum moss.

- If pseudobulbs become extremely shriveled, mist lightly. Take care not to wet the media in cold temperatures.
- Begin watering when roots are three to five or more inches long. It's OK to slip the plant out of the pot to measure root length.
- Once watering begins, WATER LIKE A MONSOON, fertilizing lightly with each watering.
- Mist lightly or use a pebble tray during periods of low humidity.
- Treat for mites immediately when they appear on plants to limit the infestation.
- Once proficient at growing these genera, use the benchmarks as a guide to fine tune your growing methods. Learn to become a *Catasetinae* whisperer.

In conclusion, the purpose of this article is to emphasize the importance of understanding the cultural conditions in situ so that they may be created in an ex situ growing area. When you attempt to match your cultural conditions with those in situ, these plants become the easiest ones on the bench to grow. Imagine going on vacation in winter and not having to return until the early spring to care for your *Catasetinae*. How easy is that? With success, your collection of these genera will grow to include some of the most beautiful and colorful species and hybrids.\*

