

# Catasetinae Plant Culture By Fred Clarke

Secrets of Success for Growing *Cynoches*, *Catasetum*, *Mormodes* and *Clowesia*



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I GOT HOOKED ON THIS GROUP OF plants almost 20 years ago when I purchased a package deal of five plants for the price of four from a JEM Orchids' ad in the *AOS Bulletin* (now called *Orchids*). I received them in the spring and they grew well under my cattleya conditions. In the autumn, when the leaves yellowed and began dropping off I got worried, so I began reading about catasetums and learned how they had a need for a winter dry dormancy and that, to my relief, leaf drop was normal. The following season I again had excellent growth and in late summer the plants began blooming. The flower color, shapes and fragrances were like none I had ever seen before and that, combined with the seasonal changes, made me realize these plants were for me. One of those original plants, *Cynodes* Jem's Dragon 'Sunset Valley Orchids' (*Cynoches chlorochilon* × *Mormodes frymirei*) became my first FCC/AOS.

Some of the most unusual and intriguing types of orchids are found in the Catasetinae, a group that includes several genera, among them, *Cynoches*, *Catasetum*, *Mormodes* and *Clowesia*. As a part of their annual growth cycle, these orchids have distinct winter dormancy and an active

growth phase where you can almost watch them grow. In nature, the factors determining dormancy are marked by the end of the rainy season and the resulting cooler night temperatures. This combination is the dormancy trigger. Few orchid plants go through so many rapid seasonal changes. Once you understand their requirements, this unique growth cycle makes these plants fun to grow and flower.

The flowers are equally intriguing. Like most orchids, *Mormodes* and *Clowesia* have perfect flowers with both male and female floral segments. However, *Cynoches* and *Catasetum* can flower with male or female flowers that sometimes are quite different from one another. As one might imagine, this flowering habit led to much confusion when many of the species were discovered and described in the late 19th century. This male/female flower trait is called floral dimorphism and it adds interest to the flowers, but it is the male flowers that are generally the showiest. Another aspect of the dimorphism, particularly in *Catasetum*, is the male flowers' ability to eject or shoot their pollinia. One of the funniest things in the greenhouse is to watch the expression of an unsuspecting guest when he or she triggers the

pollinia and it shoots out from the flower. These flowering habits and traits are unusual, adding to their intrigue.

The cultural information below is a generalization and will apply in most situations; however, each grower and growing environment is different. I encourage you to make adjustments based on your experience and growing conditions.

**GROWTH CYCLES** Plants in the Catasetinae have distinctive growth and rest periods (dormancy). For best plant development, it is important to understand and respect these growth phases. When the plants are in active growth, maintain constant root-zone moisture and fertilize regularly. This is essential to optimizing the development of new growth. When the plants are dormant, little or no water is needed as the pseudobulbs store enough moisture and nutrients to survive dormancy.

Catasetinae culture is not difficult. All it takes is an understanding of the seasonal growth patterns. The plants' vegetative state signals to the grower their changing needs. Interpret the signals and make the appropriate cultural adjustments. Here is what to look for:

**Early Spring** Catasetinae begin their new growth in early spring. However, watering should wait until the new growth has well-developed new roots. This means you should let the new roots grow to an approximate length of 3 to 5 inches (7.5 to 12.5 cm) before you begin watering. Let me emphasize this point. Wait to water until the new roots are well developed. Waiting to water is not easy; my natural instinct is to begin watering when I see new growth, but I have learned through trial and error that it is better to wait to water than start watering too soon. I also believe that Catasetinae roots deteriorate during dormancy and in the following year they are not as effective at taking up moisture and nutrients. This makes the new roots vital in the plant's health and reinforces the message about not watering too early.

**Mid-Season** Once the new roots are sufficiently developed, this is the period where the plants are rapidly developing their new pseudobulbs.



RICHARD CLARK

There is a surprising amount of growth that occurs in these three to four months; often the plants will double their size. Due to this, the plants require constant moisture and regular fertilization. In most cases, irrigation will be needed two or three times a week. A balanced fertilizer at full strength is suitable for this rapid growth. Light levels at or above those suggested for cattleyas will help ensure good strong growth and flowering. This is the time when the fruits of your labor will begin to pay off as the flowering season is under way.

**Late Season** Sometime after flowering, in the late autumn, the plants

will begin to enter the dormancy phase. Understanding a plant's signals of the initiation of dormancy and the factors triggering it are important in good plant's culture. The first signals are the yellowing and browning off of the leaves. At this time, stop fertilizing and reduce watering by one half. When most leaves are yellow/brown and have dropped off, cease watering altogether. The general rule to follow is: by November 15th stop fertilization and reduce watering by one half. Most leaves should have yellowed or fallen off by January 1st; however, if the plants still have leaves all irrigation should be stopped.

**OPPOSITE** Fred Clarke in his Vista, California, greenhouse surrounded by encyclias, a group of orchids he enjoys. **ABOVE** The author's first plant to receive a First Class Certificate was *Cycnodes* Jem's Dragon 'Sunset Valley Orchids', FCC/AOS (*Cycnodes chlorochilon* × *Mormodes frymirei*).

The onset of dormancy is caused by several factors: the maturity of the pseudobulb, shorter day length, cooler day/night temperatures and a reduction of root-zone moisture. In most of the United States, dormancy occurs naturally. But when the plants are





FRED CLARKE

cultivated in warm growing areas, such as South Texas, Florida, Hawaii or in the home or under lights, sometimes dormancy needs to be encouraged. I have found that stopping watering in early January regardless of the number of green leaves will trigger dormancy.

Watering during dormancy should only be done if the plant shrivels severely. Usually a single irrigation is sufficient to restore the pseudobulbs.

In summary, follow these steps:

- ◆ As the new growth develops wait to irrigate until the new roots are well developed and are 3 to 5 inches (7.5 to 12.5 cm) long. Don't be in a hurry to water; it is better to wait.

- ◆ Irrigate and fertilize frequently while the plants are in active growth.

- ◆ Stop fertilization and reduce irrigation by one half by mid November.

- ◆ Cease watering by January 1st.

**CULTURE** I use the following techniques in my greenhouse, but they could also be applied to growing areas on a windowsill and under lights.

**Light** Catasetinae do best with

light levels comparable to those given to cattleyas, about 2,500–4,000 foot-candles. However, the plants are widely adaptable and do well with light levels as low as 1,500 foot-candles and as high as 5,000 foot-candles. For optimal growth I suggest a southern exposure or a location where the plants will receive plenty of bright filtered light.

**Medium** For mature plants, I have been using a 50/50 of mix of coconut-husk chips and Maidenwell diatomite. When using coconut-husk chips, the contained salts need to be leached out prior to use. Always use a triple 24-hour soak, changing the water between each treatment prior to use.

For seedlings up to a 3-inch (7.5-cm) pot size, I like to use New Zealand sphagnum moss with the bottom one third of the pot filled with styrofoam peanuts. However, this group of orchids is not too particular in what it is potted in and any well-drained medium will do.

**Containers** I prefer to grow in plastic pots; however, clay pots,

baskets and cork slabs will all work. Do not overpot Catasetinae; select a pot size that will allow for two to three years of growth.

**Fertilizer** When the plants are in active growth, regularly use 1 teaspoon of your favorite fertilizer per gallon of water.

**Air Movement** Catasetinae benefit from abundant air movement. If you are growing in a greenhouse, use air circulating fans. Also, suspending the plants allows for maximum air movement around them and often they do best hanging.

**Repotting and Dividing** This is done as the new growth is just starting to develop and before the new roots start to show. (Remember, no watering until the roots are well established, about 3 to 5 inches, or 7.5 to 12.5 cm, long). Unlike most orchid plants, Catasetinae do well when divided into pieces consisting of two pseudobulbs. Divisions are made by cutting with a sterile tool or by pulling the pseudobulbs apart. I try to keep the size of my





plants at between two and five pseudobulbs.

**Ailments** Catasetinae are generally free of pests. However, spider mites are attracted to the soft leaves of these plants. Spider mites are quite small; they live and feed on the undersides of the leaves. Take care in checking for them as the plants are leafing out and control them with a recommended miticide from your garden center. Although the leaves will drop off during dormancy this is not an excuse to not treat for them.

**SELECTIONS** If you are into species, I recommend trying *Catasetum pileatum*, *Catasetum tenebrosum*, *Cynoches warscewiczii*, *Cynoches cooperi*, *Cynoches barthiorum* and *Clowesia russelianum*. And if hybrids are of interest, then good choices would be *Catasetum* Orchidglade (*pileatum* × *expansum*), *Catasetum* Donna Wise (*tenebrosum* × Orchidglade), *Cynoches* Jean E. Monnier (*barthiorum* × *cooperi*), *Cynoches* William Clarke (*herrenhusanum* × *cooperi*), *Cynoches* Martha

Clarke (*herenhusanum* × *barthiorum*) and *Clowesia* Rebecca Northern (Grace Dunn × *rosea*).

*Fred Clarke owns and manages Sunset Valley Orchids. His interests in Catasetinae span over 20 years. In the United States, he is recognized as one of the foremost breeders of this group. His hybridization efforts have created many hybrids that are garnering AOS awards across the country. He has developed a new genus, Fredclarkeara After Dark (Mormodia Painted Desert 'Sunset Valley Orchids', HCC/AOS × Ctsm. Donna Wise 'Kathleen', AM/AOS), a hybrid that has been producing "the blackest flowers the AOS judges have ever seen." To date, there have been 11 AOS awards: an Award of Distinction (AD), two Cultural Certificates of Excellence (CCE), three Awards of Merit (AM) and five First Class Certificates (FCC). 1255 Navel Place, Vista, California 92081 (e-mail fred.clarke@worldnet.att.net; Web site www.sunsetvalleyorchids.com).*

**OPPOSITE** Hundreds of plants of Catasetinae — *Cynoches*, *Catasetum*, *Mormodes* and *Clowesia* — in the author's greenhouse in January during the plants' dormant phase. Wood-frame benches rest on concrete blocks, allowing for water to drain away freely to the gravel floor and pathways below.

**ABOVE** The same section of the greenhouse in summer filled with robust plants whose healthy leaves obscure the benches and ventilated closet shelving on which the plants grow. Overhead fans coupled with vents in the greenhouse walls provide much-needed ventilation, while the correct amount of light reaches plants through sheets of fiberglass glazing sheathing the greenhouse wood frame.