

Catasetum and Cycnoches — Part 5 — Growth Cycle

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AUTUMN is a season of dramatic changes, both out-of-doors and in a collection of catasetums and cycnoches. After flowering, plants of these genera generally cease growth. Appropriately enough, at this time their leaves begin to yellow and fall (FIGURE 1). These deciduous orchids remain leafless until new growth begins in the spring. This period of inactivity is often called a rest period in orchid literature, and is a source of confusion to many growers, especially beginners.



Photography: Greg Allikas

FIGURE 1 — *Catasetum pileatum* showing that most of its leaves have fallen. It will initiate new Growth in January or February.

Just how long is the rest period for catasetums and cycnoches? In this regard, it is difficult — and dangerous — to generalize! The *Catasetum* pictured in FIGURE 1, which completed growth in warm southern Florida, is losing its leaves in early December. The rest period of this plant, then, is short and rather ill-defined. In contrast, the *Catasetum* illustrated in FIGURE 2, which has endured a cool greenhouse in New England, lost its leaves in November and is beginning new growth in April — a rest period of over four months!

Michael and Stella Roccaforte, in their article on the culture of *Cycnoches ventricosum*, make this comment: "In our growing we do not give our plants any defi-

nite rest. One simple reason is there is always some activity, either full growth, primary blooming flower spikes, secondary flower spikes, smaller maturing pseudobulbs or the starting of new growth." (Roccaforte, 1974, page 394) Their plants experience ideal conditions, with minimum temperatures never below 60°F (16°C). The plant of *Cynoches chlorochilon* in FIGURE 4, on the other hand, lost its leaves after flowering in early March and is pictured resuming active growth in late June. This plant experienced temperatures often in the low 50's F (10-13°C) throughout the winter and into spring.



Photography: Stephen Batchelor
FIGURE 2 — *Catasetum expansum*, after being leafless for over four months begins new growth in April

Photography: Stephen Batchelor
FIGURE 3 — Despite a prolonged rest period, the root system of this *Catasetum expansum* is alive and healthy. Note how readily these roots have branched.



Apparently, the duration of the rest period for catasciums and cynoches is determined in large part by the prevailing growing conditions. Plants of these genera grown under optimum conditions, in particular warm temperatures, have a momentary period of leafless inactivity after flowering before new growth begins in earnest. Plants grown under less than ideal conditions, especially under cool temperatures, are far more likely to have a pronounced and lengthy rest period.

During their rest period, whatever its length, do catasetums and cynoches lose their roots as well as their leaves? Not naturally! The root systems of the plants pic-

ured in FIGURES 3 and 4 are intact and viable, despite the fact that the plants they support had been inactive for months. The root systems of *Catasetums* and *Cynoches* in general resume growth at about the same time the new growth begins. The root system illustrated in FIGURE 4, at least a year old, has begun growing again, as is indicated by the greenish-yellow root tips (below those of the new growth itself).



Photography: Stephen Batchelor
FIGURE 4 — *Cycnoches chlorochilon* resumes growth in June after three months of inactivity.

Rest period should not be confused with dormancy. *Pterostylis pedunculata*, one of the Australian "Greenhoods", is an example of one of the few orchids in cultivation which truly go dormant. In order to survive the long dry season of its native land, this species loses both its leaves and roots, forming pea-like tubers. Even in this dormant state, however, some moisture is necessary to avoid desiccation (Thocrlc, 1982). It only follows that *Catasetums* and *Cynoches*, though lacking in leaves during their rest period, still have pseudobulbs and roots which require some water to maintain their succulence. Without adequate moisture, the pseudobulbs may crack (FIGURE 2) or shrivel, and the roots may dry out and die. Towards the other extreme, too much water during this period of inactivity and reduced transpiration can result in smothered, rotted roots.

Catasetums and *Cynoches* are by nature vigorous growers. Even if, for one reason or another, much or all of a plant's root system is lost during a rest period, the new growth to follow, given proper culture, will produce a new root system capable of supporting the entire plant. The root system pictured in FIGURE 4 was entirely produced in one year. Before that, the plant consisted of a single, rootless pseudobulb. It appears that the natural longevity of *Catasetum* and *Cynoches* roots is determined by the lifespan of the pseudobulb which produced them. *Cynoches* pseu-

dobulbs, and their roots, rarely last over three years, while those of *Catasetum* can last much longer.

Soon after new growth initiates on catasetums and cynoches in the spring, the new roots follow in great profusion (FIGURE 4). From this point on, growth is astonishingly rapid. The new growth elongates at first, then begins leafing out as the roots penetrate and spread within the medium (FIGURE 5). During this phase of rapid expansion, the growth is tender and vulnerable, and is susceptible to rot. Within a few short months, generally by mid-summer, the new leaves stop expanding and reach maturity. At this point the new growth begins to swell, forming the pseudobulb which provides energy not just for flowering, but to support the new growth it, in turn, will initiate the following spring.



Photography: Stephen Batchelor

FIGURE 5 — *Cynoches warscewiczii* reaches the peak of its growth in August.

In general, soon after the new pseudobulb swells and matures, the first inflorescence appears (FIGURE 5). Yet this is not always the case. *Catasetum roseum*, as well as other species of the *Clowesia* section of *Catasetum*, often flower in the late winter, early spring, long after their newest pseudobulbs have matured and lost their leaves. Towards the other extreme, some unisexual catasetums, *Catasetum tenebrosum* for example (Teuscher, 1973), may initiate an inflorescence from a new growth soon after it initiates in the spring, well before it reaches maturity. Plants which have experienced a dramatic change in growing conditions may flower in this eccentric manner. This would seem to indicate that the energy needed for flowering comes not just from the newest growth, but from the older pseudobulbs as well.

By virtue of their size alone, pseudobulbs of the catasetums and cynoches are great reservoirs of energy. Their size and condition determine to a large extent the



Photography: Stephen Batchelor

FIGURE 6 — Reaching maturity in September, The same pseudobulb of *Cycnoches warscewiczii* pictured in Fig. 6 initiates its first inflorescence.

Photography: Stephen Batchelor
FIGURE 7 — *Catasetum expansum* produces two inflorescences from its newest growth Maturing in August.



vigor of the new growth produced each year. A single, tall and healthy pseudobulb of a cynoches, given suitable growing conditions, can produce a vigorous new growth (FIGURE 5) which will flower abundantly. Whether one or more inflorescences are produced from the newest growth each year depends on the vigor of both this growth and the older pseudobulbs of the plant. Often, robust new growths will flower several times in succession, greatly prolonging the flowering season of catasetums and cynoches.

Unlike dendrobiums, for example, the pseudobulbs of catasetums and cynoches flower only during their first year, never to flower again. They lose their leaves during the fall and winter which follows their season of extravagant growth, and serve the remainder of their leafless lives contributing reserves to the growth and flowering of the pseudobulbs to come (FIGURE 7).

In the next article for this series, we will examine how this cyclical growth pattern of catasetums and cynoches affects the cultural practices of those who grow them. — 84 Sherman Street, Cambridge, Massachusetts 02140.

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