

# CVIOS NEWSLETTER

## CENTRAL VANCOUVER ISLAND ORCHID SOCIETY

November 2017

*CVIOS Meetings are held September to June on a Saturday at the Harewood Activity Center, 195 Fourth St, Nanaimo. Doors open at 11:00 with a brief business meeting starting at 12pm. Following is a display of plants brought in by members, a coffee break, prize draw and a featured presentation or demonstration. There is a sales table where orchid supplies and plants brought in by members can be purchased*

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### CVIOS EXECUTIVE 2017/18

**President & AOS Chair:** Laurie Forbes

**Past President:** Bryan Emery

**Vice President:** Constance Gordon-Webster

**Treasurer:** Darlene Rathwell

**Secretary & Newsletter:** Suzanne Currie

**Membership:** Dora Glover

**Plant Sales Table:** Donna McDonnell

**Library:** Michael DeLeur

**Refreshments:** Sandra Lathrope

**Programs:** Alexey Tretyakov

**Directors At Large:** Sheila Wilson (publicity), Corey Timmins

### UPCOMING MEETINGS & EVENTS

#### 2017/2018:

November 18: Visit to  
Paramount Orchids in  
Parksville

December 9: Christmas Party

January 20: Meeting

February 17: Meeting & Bag  
Draw

March 17: Meeting

April 21: Meeting

May: 26: Plant Sale

June 16: Last Meeting until  
September

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November 2017



### CVIOS UPCOMING EVENTS:

**November 18 Paramount Orchid Visit – no regular meeting this month**

**December 9 CVIOS Christmas party and potluck**

The Christmas party and potluck begins at 12pm. There will be a bag draw or silent auction – please bring items. Members please bring a dish to share, a plate and utensils. Members can also make an orchid display with their orchids and the winner will receive a prize.

### INFORMATION:

- ❖ The CVIOS membership form is on the next page. It can also be found on the website at [www.cvios.org](http://www.cvios.org). The membership fee off \$25 is due now and can be paid at the meeting
- ❖ AOS judging schedule is on page 4
- ❖ Minutes are on page 5
- ❖ AOS Article: “Cattleya Species and their Culture” on page 6

### CVIOS MEMBER’S WHO WON RIBBONS AT THE CVIOS SHOW

Bryan Emery - Masd. Monarch 'Statley' AM/AOS (Best Pleurothallis Group)

Donna McDonnell - Den partheuium (Best Dendrobium Grouping)

Mike Miller - Aerangis mystacidii (Best under Artificial Lights)

Julia Thunander - Paph sukhakulii “B12” (Best on Windowsill)

Paramount Orchids - Miltonia candida var Graudiflora (Best Miltonia)

- Cat. alaorii x sincorana (Best in Special Classes)

- Brassavola “Little Stars” (Best Mounted)

Bryan Emery won the AOS award for best Display

BEST PLANT IN SHOW was Coel. fimbriata grown by Yolanda Beck from Fraser Valley



# Central Vancouver Island Orchid Society Membership Form

2017-2018

Society mailing Address: P.O. Box 1061, Nanaimo, B.C., V9R 5Z2, web site: [www.cvios.org](http://www.cvios.org)

Household membership \$25.00 per year (Sept.-Aug.) \_\_\_\_\_

Meetings are held September through June on the Saturday near the middle of the month at the Harewood Activity Centre, 195 Fourth Street, Nanaimo, in the hall on the second floor, doors open at 11:30, with the business meeting starting at 12:00 noon.

Contact: Dora Glover, Membership Chairperson (250) 754-9634

Date \_\_\_\_\_

.....  
Name(s) for membership card(s)

\_\_\_\_\_  
Mailing Address

\_\_\_\_\_  
Postal Code \_\_\_\_\_

Phone number \_\_\_\_\_

Email address for newsletter \_\_\_\_\_

Where I grow my orchids ☐ Windowsill CHECK ONE OR MORE

☐ Under Lights

☐ Greenhouse

☐ Other \_\_\_\_\_

I have (circle one) (0 - 10), (11 -20), (20 -35), (36 - 50), (50 -100), (100+) orchid plants

\*\*\*\*\* I  
hereby give permission to have my name address, phone number and email address included in the  
published membership list that will be distributed to members only. I (GIVE) ( DO NOT GIVE )  
permission for publication. (CROSS OUT ONE PLEASE ) Date \_\_\_\_\_

Signed \_\_\_\_\_

*Please note if this section is not filled in we cannot list you as a member in the membership list.*

# AOS JUDGING SCHEDULE

One of our commitments to orchid exhibitors is to provide opportunities to have your orchids evaluated, and to allow more exhibitors and society members to observe monthly judging processes.

To this goal, we are going to split our monthly judging's to be held both in the Lower Mainland and on Vancouver Island. We have secured a convenient venue in the Victoria area, as well as maintaining our meeting place at Sea Island Community Centre.

For the remainder of 2017, below is the schedule of monthly judging dates, time and locations. This schedule is also reflected in the AOS Events page on their website (<http://www.aos.org/news-events/event-calendar.aspx>) and reminders will be included in the judging newsletters that we send out. Orchid society personnel, please feel free to share this with your society members.

Just as exhibitors on Vancouver Island have been sending plants with judges coming over to the Lower Mainland for monthly judging's for evaluation, Lower Mainland judges will be glad to take plants from exhibitors over to the Island when a monthly judging is being held in Victoria.

We look forward to welcoming new exhibitors and observers both on Vancouver Island and in the Lower Mainland at our monthly meetings!

(also to AOS Affiliated Societies, if your society would like to hold an "AOS Outreach Judging" session at your society's meeting, please contact me and we can work out details)

Lower Mainland judging location:

**Sea Island Community Centre : 7140 Miller Rd, Richmond BC V7B 1L4**

Vancouver Island judging location:

**Swan Lake Christmas Hill Nature Sanctuary : 3873 Swan Lake Rd, Victoria, BC V8X 3W1**

## AOS JUDGING DATES:

### September 2017:

The Western Canada Judging Center's monthly judging in September will be held on Friday, September 29 at the Central Vancouver Island Orchid Society Show & Sale at Nanaimo North Town Center. CVIOS show judging starts at 9:30 am followed by AOS nominations at 11 am

(there will NOT be a separate monthly judging at the Sea Island Community Centre / Swan Lake Christmas Hill Nature Sanctuary on September 9)

### October 2017:

The Western Canada Judging Center's monthly judging in October, will be held on Saturday, October 14, 2017 at the Fraser Valley Orchid Society Show & Sale at the George Preston Recreation Centre, 20699 42<sup>nd</sup> Ave., Langley, BC

(there will NOT be a separate monthly judging at the Sea Island Community Centre / Swan Lake Christmas Hill Nature Sanctuary on October 14).

### November 2017:

Date, Saturday, November 18, Time : 1:00pm (after business meeting), Venue : **Swan Lake Sanctuary**

November 2017: *(WCJC semi-annual business meeting November 18 – 19)*

*(third weekend in November since second is long weekend and WOC)*

### December 2017:

Date, Saturday, December 9, Time : 11:30am, Venue : **Sea Island Community Centre**

# **CVIOS MEETING MINUTES**

**October 21, 2017**

President Laurie Forbes brought the meeting to order at 12:00pm with 17 members present

## **SEPT. MEETING MINUTES**

Dora Glover moved to accept September minutes, Donna McDonnell second. Motion Carried

## **CORRESPONDENCE**

None

**TREASURERS REPORT:** Laurie reviewed general income and expenses and the CVIOS show income and expenses. The show was a successful and revenue exceeded expenses. CVIOS paid for Glen Decker's travel costs but other societies where he spoke will be reimbursing CVIOS so the expense will be shared.

## **MEMBERSHIP**

Two new members are present, Leslie Milne and Shaun Weber. Membership dues are due by the end of November

## **GENERAL BUSINESS**

Paramount Orchid Visit Saturday November 18 beginning at 10am

Members please save your divided garden plants and start extra seeds for the plant sale in May

CVIOS is looking for speakers for 2018 please let someone on the board know if you can speak or know of someone who can

CVIOS is concerned the CVIOS and FVOS shows are too close together in October and it has affected CVIOS ability to attract vendors. This led to a discussion about moving the CVIOS show to February 2019. The date would be close to Valentines day as it has been in the past.

## **CVIOS SHOW**

Laurie thanked all the volunteers who were able to spend so much time at the mall helping with the show

## **FRASER VALLEY SHOW AND SALE OCTOBER 14 & 15**

29 plants went to the show. Mike and Angie designed the display. Thank you, Mike and Angie, for your hard work

## **CHRISTMAS PARTY**

December 9 is the CVIOS Christmas party and potluck at 12pm. There will be a bag draw or silent auction – please bring items. Members please bring a dish to share, a plate and utensils. Members can also make an orchid display with their orchids and the winner will receive a prize.

**WEBSITE:** If members have any ideas for the website, please email or give Don and he will post it online

**Meeting adjourned at 12:45pm**

## CATTLEYA SPECIES AND THEIR CULTURE

The information I share here about *Cattleya* species and their culture is based mostly on observations accumulated over a 20-year period as a hobbyist grower. Although hybrids tend to be more popular than species with the general orchid growing public, I believe species are worthwhile and interesting to grow. First, species are the fundamental building blocks of hybrids; one of the best ways to understand hybrids is to appreciate the growth habits and characteristics of their species ancestors. Second, species comprise a wider variety of distinctive and unusual flowers than can be found in hybrids. The public seems to only desire showy, large, flat, round flowers in bright colors with heavy substance, and this can produce a certain boring sameness in many *cattleya* hybrids. All sorts of unique shapes, fragrances, textures and colors have evolved in nature, and it is fascinating to experience them all. Third, while many *cattleya* hybrids are not fragrant, or draw their scents from a limited palette, most *Cattleya* species are very fragrant, with broad ranges of different and unusual fragrances across the genus. Finally, *Cattleya* species exhibit a variety of distinctive and different growth cycles. Many hybrids send out one growth after another whenever there is enough sun. In contrast, most species have quite sharply defined annual growth cycles. These different growth patterns can be intriguing to learn about. Of course, such distinctive growth patterns can be a double-edged sword to the grower and makes them more of a challenge. You can basically water most hybrids without worrying about rest periods, and simply repot them in the spring. Most species, however, need distinct rest periods and are quite particular about when they are repotted. You must understand this to grow them successfully.

### BIFOLIATES AND UNIFOLIATES

*Cattleya* species are often divided into two broad subgroups based on the number of leaves on top of each pseudobulb. Unifoliate have a single leaf; those with two leaves (or sometimes three leaves, depending on the species) are bifoliate. It is useful to further divide unifoliate into two subgroups, which I call large-flowered unifoliate and small-flowered unifoliate. Withner (1988) lists 48 *Cattleya* species : of these, 15 are large-flowered unifoliate, 22 are bifoliate and nine are small-flowered unifoliate. My classification of each species is shown in Table 1. The large-flowered unifoliate group includes all of the large-flowered, mostly lavender, species that were avidly collected by Europeans in the nineteenth century, and which were used to create the traditional large-flowered unifoliate “corsage” hybrids so popular until the 1970s. Individual flowers on these species tend to be large, from 5 to more than 9 inches (12.7–22.9+ cm) across. Plants generally bear three to five flowers per inflorescence. Each bloom tends to display the round, flat form that orchid judges view as desirable. These plants are quite robust and grow well in cultivation (notable exceptions are *Cattleya dowiana* and its various subspecies and varietal forms) . Size of the vegetative parts does not vary dramatically among the various species. In general, pseudobulbs and leaves are between 1 and 2 feet (30–60 cm) tall for all of these species, and pseudobulbs tend to be quite full and stout. Bifoliate generally have smaller, waxier flowers, and many more blooms per inflorescence. They exhibit a much broader range of colors, and many species have spotted sepals and petals. Flowers of bifoliate are much less likely to show the round, flat form considered ideal in judging. Plants generally have thinner pseudobulbs, and show a much larger range of plant sizes than large-flowered unifoliate. The smallest species, such as *Cattleya forbesii*, are only around 6 inches (15 cm) tall, while the largest species, such as *Cattleya tigrina* and *Cattleya guttata*, can grow 5–6 feet (1.5–1.8 m) tall. Generally speaking, bifoliate tend to be a little more finicky to grow than the large-flowered unifoliate. In particular, they seem more resentful of repotting. Small-flowered unifoliate are probably the least well-known group of *cattleyas*. While they share the trait of having only one leaf per pseudobulb with large-flowered unifoliate, their flowers are generally more similar to those of the bifoliate (i.e., they are often smaller, with poorer shape, and a larger number of flowers per inflorescence). While some of the members of this group are fairly large plants, comparable in size to the large-flowered unifoliate, many are virtually dwarfs. For example, both *Cattleya luteola* and *Cattleya kerrii* are, on average, less than 6 inches (15 cm) tall. Some of the larger species, such as *Cattleya maxima* and *Cattleya iricolor*, are fairly robust, easy-to-grow plants, with cultural requirements comparable to those of large-flowered unifoliate. Some of the smaller species, however, can be more difficult to grow successfully.

### GROWTH PATTERNS AND REPOTTING TIME

An essential rule when cultivating *Cattleya* species (or most other sympodial orchids, for that matter) is to repot when new roots emerge. In this article I explain what this means and why it is so important, then review the various growth patterns of *cattleyas* — in particular, when new root growth occurs. The bloom times or other stages of the annual growth cycle provided here are based on observations of my own plants in a greenhouse in the Chicago area. From conversations with friends living in more southern areas of the United States, blooming times for many of the species can likely be a few weeks earlier in more southern areas. The “repot only when new roots emerge” rule follows from two basic facts about *cattleyas*. First, each lead sends out a single flush of roots once — and only once — in its lifetime. Roots grow down into the medium for the next few months, until they reach maturity and stop. No new roots will emerge from the old lead; furthermore, very few (if any) new roots will grow from the existing roots once they have matured. Even when plants do send out new root branches from existing roots, this tends to happen at the same time as new roots emerge from the new pseudobulb. The only way for the plant to grow new roots is to send up another lead, and for new roots to emerge from this new lead. Second, the repotting process is generally very hard on roots, resulting in extensive damage even when done carefully. Since roots are tender, and tend to intertwine and cling to pieces of the potting medium and the pot, dislodging roots from the pot and from the decayed potting medium generally causes substantial

damage. Since repotting so extensively damages existing roots, it is critical to repot cattleyas only when they are about to send out new roots that can replace the damaged roots. The ideal time window for repotting is fairly brief. If you repot earlier than a few weeks before new roots emerge, the plant may suffer dehydration stress during the period between repotting and emergence of new roots. However, new root tips are extraordinarily tender, and brushing the emerging tips even very lightly against the side of a new pot is likely to crush them or break them off. It is therefore almost impossible to repot the plant without damaging new roots if they have emerged more than a quarter of an inch (about 5 or 6 mm) from the lead. About a one-week period exists from when the first emerging roots are visible until they have grown too long for repotting to occur without risk of significant damage. You can cope with this narrow time window of repotting opportunity in two ways, and I recommend both of them. First, constantly inspect your orchids for signs of new root growth, and be ready to repot them immediately. Second, learn about each plant's growth pattern, so you can anticipate when to repot. The precise point in the growth cycle at which new roots emerge can vary dramatically among different cattleyas (as I explain below), but any particular plant tends to exhibit the same pattern over and over again. Once you know an orchid's growth cycle, it is simple either to repot it a few weeks before it will send out roots, or to be vigilant so you can repot it at the first sign of new roots. I generally keep an eye on entire groups of orchids that I know root at the same time; the emergence of new roots on any one of these plants is a signal to repot all of them. *Cattleya* species exhibit two sharply distinct patterns of growth. In the first growth pattern that I call "root before bloom," roots emerge as a new lead grows; blooming occurs only after the lead and roots are mature and basically finished growing. In the other growth pattern that I call "root after bloom," a new lead sends out roots only after it has fully matured and bloomed. Cattleyas that follow the root before bloom growth pattern often bloom in fall, winter or spring. They typically send out new leads and roots during the spring and summer months so the leads are generally fully mature by the time fall arrives. At this point, the plant enters a rest phase that lasts until its internal clock tells it to bloom. After blooming, the plant perhaps enters another rest period and begins the cycle anew. Plants in this group sometimes send out successive leads during the summer growing period. The plant stores up all of these leads and then they all bloom simultaneously during the blooming period. Tables 2 and 3 list some of the unifoliate and bifoliate species that follow the root before bloom growth pattern, and their period of blooming. Most large-flowered unifoliate species follow this growth pattern. Almost all of the fall, winter and spring blooming unifoliate hybrids descend from these species and follow the same growth pattern. *Guarianthe* ( *Cattleya* ) *aurantiaca* is a bifoliate species that follows the root before bloom pattern. Many of the winter- and spring-blooming reds and oranges have *Gur . aurantiaca* as an ancestor and they all generally follow the root before bloom growth pattern. Cattleyas that follow the root after bloom growth pattern often bloom in late spring, summer or fall. An orchid in this group sends up new leads in late winter, spring or summer and blooms almost immediately as the leads reach maturity. Roots emerge immediately after blooming. Many of them, particularly bifoliate, enter a long rest period after rooting. In this group of plants, if a plant sends up successive leads in the same season, each lead will bloom as it matures. Some bifoliate and unifoliate species that follow this growth pattern are listed in Tables 4 and 5. Most bifoliate species and hybrids derived from them follow the root after bloom pattern. While orchid growers often associate this growth pattern only with bifoliate, a number of large- flowered unifoliate exhibit this pattern. For example, *Cattleya lueddemanniana* sends out new leads over the winter months, then blooms in March. Only after blooming do leads send out new roots. It is more typical for unifoliate in this group to send out new leads in the spring, which then bloom in summer or early fall. This group includes *Cattleya warscewiczii*, *C . dowiana* and its varieties and *Cattleya rex* . Many summer- and fall-blooming unifoliate hybrids follow this pattern. For example, the very famous yellow hybrid *Rhyncholaeliocattleya Toshie Aoki* has almost exactly the same growth pattern as *C. dowiana* subsp. *aurea*, which figures prominently in its parentage. Orchid growers who are not aware of the difference in these two growth patterns tend to repot all of their orchids in the spring or early summer when new leads are emerging. Of course, this is precisely the correct time to repot those in the root before bloom group. However, results are much less satisfactory for the root after bloom group; these species make their largest and most heroic growth effort of the year in a very short period of time by sending out a new lead that blooms almost immediately. The new lead sends out no new roots during this explosion of growth and instead relies completely on the existing root structure from older leads to sustain itself. Repotting these cattleyas at this time of year effectively destroys many of the plant's existing roots at just the time it is going to depend most heavily on them. Plants repotted at this time of year often become severely dehydrated and do not recover fully for years. In my view, it is no coincidence that most of the *Cattleya* species that people view as being difficult to grow belong to the root after bloom group. Many people routinely repot these plants at the wrong time in their annual growth cycle. Some of the species in the root after bloom group are not completely reliable in their rooting behavior and occasionally send out new roots either while the new lead is growing or while it is blooming. These plants should be repotted when the new roots emerge, even if they emerge before the plant blooms. Therefore, one needs to be particularly vigilant with this group and check for early root growth. I list four species in Table 6 that are "oddballs" in the sense that they do not follow either of the two growth patterns discussed above. Although *Cattleya aclandiae* and *Cattleya violacea* are very similar in many respects to the root after bloom bifoliate, they are perhaps best classified as having their own growth pattern, which I call "root while blooming." They send up new leads in the spring and summer; these bloom almost immediately as they mature, without any rest. However, roots sometimes emerge from new leads while they are still growing or blooming, and only sometimes wait until after leads finish blooming. It is therefore best to repot these two species when a new lead emerges, instead of waiting for it to bloom. Another unusual feature of these two bifoliate is that after their first growth finishes blooming, *C . aclandiae* and *C . violacea* almost always send out a second new growth which blooms a month or two later. Many of my plants bloom three times during the summer period. In contrast, most of the root after bloom bifoliate bloom only once per season. Only rarely do they send up a second lead that blooms later in the summer (plants grown in more southern areas than Chicago may be more likely to send up a second growth that also blooms). *Cattleya walkeriana* and *Cattleya nobilior* have perhaps the most unusual growth



pattern of all. They generally send out special leafless growths in winter and early spring that bloom immediately as the leads mature. Roots may or may not emerge from these blooming growths. After the plants have bloomed, regular leaved growths begin to grow in March, April and May that generally do not bloom. Roots tend to emerge from these nonblooming growths as they grow. Therefore, the best time to repot these species is after blooming when the new leaved growths emerge in March, April and May.

## GROWTH PATTERNS AND BLOOMING TIMES AS AN AID TO SPECIES IDENTIFICATION

Besides helping you grow your plants better, careful observation of their growth patterns and blooming times can often help identify species. For example, there are at least three look-alike pairs in the group of bifoliate cattleyas where their growth pattern and blooming season can be used to help tell them apart. These are *Cattleya granulosa* – *Cattleya schofieldiana*, *C. tigrina* – *C. guttata* and *Cattleya loddigesii* – *Cattleya harrisoniana* (while the blooms of *C. walkeriana* and *C. nobilior* are somewhat similar, these species are actually easy to tell apart because *C. walkeriana* is unifoliate while *C. nobilior* is bifoliate.) *Cattleya granulosa* blooms for me in May or early June, while its look-alike relative, *C. schofieldiana* blooms in July or August. In my greenhouse, *C. tigrina* blooms in June or July on a green sheath, while *C. guttata* blooms in September on a brown sheath. The most striking difference is between *C. loddigesii* and *C. harrisoniana*. While the flowers look similar, the plants exhibit different growth habits and bloom at different times. *Cattleya harrisoniana* follows the root after bloom pattern, sending up new leads in spring which bloom in June or July; roots emerge only after blooming is complete. *Cattleya loddigesii*, on the other hand, follows the root before bloom pattern. New leads start during May or June and roots emerge as the leads mature. By the end of summer, plants exhibit fully mature rooted growths with green sheaths; they rest until late winter or early spring, then bloom. Although the literature points out some physical differences between the look-alike pairs that can be useful in identification, these differences can be quite subtle. In my experience, observing the plants' growth patterns and blooming times provides valuable extra information for identification. Flowers of *C. granulosa* tend to have better shape and fewer spots than *C. schofieldiana*. Blooms of *C. tigrina* tend to be much darker and have a wider lip than those of *C. guttata*. Flowers of *C. harrisoniana* tend to be darker, with poorer shape and fewer spots than those of *C. loddigesii*. The lip of *C. harrisoniana* flowers also tends to have yellow longitudinal ridges; these ridges are absent in *C. loddigesii*. An extra element of confusion for the *C. harrisoniana* – *C. loddigesii* pair is created because hybrids between the two species exist in nature and have almost certainly also been created in cultivation. These hybrids tend to exhibit the growth cycle and blooming time of *C. harrisoniana*, but lack the yellow ridges on the lip that are characteristic of true *C. harrisoniana*. They also tend to have larger, better-shaped, lighter flowers than true *C. harrisoniana*. Based on their growth patterns and blooming times, these plants would be classified as *C. harrisoniana*. However, based on the absence of yellow ridges on the lip, they might be classified as *C. loddigesii*. In my own collection, I classify them as varieties of *C. harrisoniana*. Fowlie (1977), Miranda (2004), McQueen (1993) and Withner (1988) provide additional discussion on the differences between these three look-alike pairs. Once you learn to distinguish these look-alike pairs, you will be surprised how often they are misidentified in the trade. One of the most common and persistent errors concerns plants often sold as *C. guttata* f. *alba*. The flowers have apple green sepals and petals and a pure white lip; most — if not all — descend from two famous clones owned by Stewart Orchids, 'Bracey's Variety' and 'Fields'. Stewart Orchids always referred to these plants as *C. guttata*, and the cultivar 'Fields' was awarded as *C. guttata*. Anyone who cultivates them, however, will discover that they bloom in the middle of summer on a green sheath. Furthermore, they have the wide lip of *C. tigrina* instead of the narrow lip of *C. guttata*. To the best of my knowledge, all plants in cultivation labeled as *C. guttata* f. *alba* are actually albinistic cultivars of *C. tigrina*. However, following on Stewart's original error, most are still labeled as *C. guttata*. In addition, many of the normally colored plants in cultivation labeled as *C. guttata* are actually *C. tigrina*. *Cattleya tigrina* tends to be more horticulturally desirable than *C. guttata*, so people tend to keep this species in their collections, and growers are more likely to propagate it. True *C. guttata* is rarely seen in collections in the United States. Observation of growth pattern and blooming time can also help you distinguish among the various lavender, large-flowered unifoliate species. Once again, while some physical differences exist among these species, in my experience, these differences can be subtle. Distinctions in growth pattern and blooming time, however, can be clear-cut. For example, I suspect virtually no one can distinguish between *Cattleya labiata* and *Cattleya warneri* solely by comparing flowers. Their growth patterns and blooming times, however, are unmistakably different. *Cattleya warneri* follows the root after bloom pattern and blooms in the spring; *C. labiata* follows the root before bloom pattern and blooms in the fall. Chadwick (2003) also emphasizes that differences in blooming time and growth patterns can be used to distinguish among large-flowered unifoliate species. Another identification issue is whether a plant that appears to be a vastly improved or unusual version of a species is actually a pure species, or whether it is a hybrid. Again, one possible source of information comes from observing the plant's growth pattern and bloom time to see if these are consistent with patterns of the species it is supposed to be. For example, some years ago, a prominent California grower sold mericlones of a plant labeled *C. dowiana* 'Blumen Insel'; one of these mericlones was awarded an AM/AOS under this name. Considerable controversy has simmered over whether or not this plant is truly *C. dowiana*. People who think it is incorrectly labeled say the flower is simply "too good" (i.e., too large, too well-shaped, too thick) to be a true *C. dowiana*. Furthermore, they note the yellow striations in the lip are much less prominent than expected in *C. dowiana*. Finally, some pointed out that 'Blumen Insel' was an extraordinarily vigorous plant, while *C. dowiana* is generally considered very difficult to grow. I have closely observed this cultivar's growth pattern and blooming time over a 10-year period, and found it consistently grows and blooms like *C. trianae* — that is, it sends out new leads and roots in the summer and then flowers around Christmas. On the other hand, *C. dowiana* blooms in July on leads that have not yet sent out roots, rooting only after blooming is complete. That the clone 'Blumen Insel' consistently shows a growth pattern different from that of *C. dowiana* settles the issue in my mind; it is not a true *C. dowiana*. I am now concerned



that this incorrectly awarded plant will compromise the gene pool of those *C. dowiana* plants in cultivation, as growers use it for selfings or sibblings to produce more *C. dowiana* plants. These hybrid impostors will be more vigorous than *C. dowiana*, and are more likely to thrive in cultivation than the species. Observing the growth pattern of a problematic plant will not, of course, always provide definitive identification. Within a species, individual plants do not bloom at precisely the same moment. I know of many clones of various true species that routinely bloom a few weeks earlier or a few weeks later than most. So if a problematic plant flowers a few weeks earlier or later than others of the species, this does not prove the plant is not a true species. A case in point concerns the identity of two plants, one awarded as *Cattleya mossiae* 'Panther Creek', AM/AOS, and the other as *C. mossiae* 'Willowbrook', FCC/AOS. Both are pictured in this article. For comparison purposes, a side-by-side photo of 'Panther Creek' next to a typical *C. mossiae* is also presented. From these photos, clearly 'Panther Creek' and 'Willowbrook' are remarkably larger, darker and better shaped than typical clones of *C. mossiae*. These clones also have thicker substance than typical forms of *C. mossiae*. People who doubt the clones are true *C. mossiae* point in particular to their dark color. They claim that no true *C. mossiae* is this dark, and suggest that the dark color was probably caused by breeding with *C. lueddemanniana* at some point. Very dark varieties of *C. lueddemanniana* do exist. Furthermore, both species are from Venezuela; they were often imported together, and natural hybrids of the two exist. On the other side of the argument, however, these plants purportedly came from huge populations of *C. mossiae* raised for cut flower production, where successive generations have been line bred for quality improvements. Both plants are obviously tetraploids. It may well be that 10 generations of line breeding populations of tens of thousands of plants could produce such superior clones, based on the selection of chance tetraploid mutations during the line breeding process. I have grown both of these clones for many years alongside plants that are definitely true *C. mossiae*. I have noticed these two cultivars consistently bloom in March or April, while the bloom season for all my true *C. mossiae* plants begins in April, and peaks in May. However, the shift is not that large and sometimes true *C. mossiae* plants have been in bloom at the same time as one or both of the disputed clones. Of course, *C. lueddemanniana* blooms about two months sooner than *C. mossiae*, and this could be interpreted as providing additional evidence that *C. lueddemanniana* is in their background. The shift in blooming season is subtle enough, however, that observing growth pattern/blooming season can only provide suggestive evidence the clones may not be true species, rather than settling the debate, as for 'Blumen Insel'.

## OTHER ASPECTS OF CULTURE

My goal in this section is to highlight particular cultural practices I recommend, rather than to present a complete discussion of all aspects of orchid culture suitable for a beginner. When asked to summarize the key aspects of cattleya culture in a few simple rules, I tell people the following: (a) repot only when new roots are emerging, (b) provide a lot of sunlight, (c) let plants dry out between waterings and (d) do not over-pot, otherwise the potting medium decays too quickly.

## LIGHT

One of the most common and serious cultural problems I observe in cattleyas grown in the United States (other than the Southeast and California) is they do not receive enough light. In Chicago, where I grow my orchids, my greenhouse is roofed with acrylic that transmits approximately 85 percent of natural sunlight. It has full southern exposure and I generally use no additional shading even during the summer. My plants have very sturdy light green leaves and generally bloom their little hearts out. Dark green leaves, weak growths, and few or no blooms are signs of too little light. I encourage you to experiment (carefully) with giving your cattleyas more light, and observe any changes this brings about. Keep in mind that high light levels in summer can be maintained only if a greenhouse has a correspondingly powerful cooling system. Although I have grown orchids in a greenhouse for the last 10 years or so, I previously grew under lights. In my experience, smaller-growing cattleyas thrive under fluorescent lights, but larger-growing species, including many large-flowered unifoliate, need high intensity discharge (HID) lights to grow to their full potential. I was able to successfully grow even the largest and most light demanding *Cattleya* species under HID lights. Plants often benefit from going outside and getting a little fresh air and sunshine in the summer; keeping plants outdoors under 50 percent shade cloth worked very well for me.

## WATERING, POTTING, AND REPOTTING

Watering and potting are integrally related. The most common reason to repot a cattleya is because the potting mix has begun to rot, becoming soggy and blocking air to the roots. By watering no more than necessary, a grower can delay decomposition of potting medium, pot less frequently and produce more vigorous plants. Cattleyas are adapted to live in environments where their roots dry out between rainfalls and are exposed to air, so most cattleyas in cultivation grow better if allowed to reach a point of dryness for a day or two before they are watered. I suggest that the grower consistently monitor the wetness/dryness of his plants to get a good sense for when plants of various sizes and types of mix approach dryness during the year. This can be done by poking a finger in pots, or gently slipping a plant out of its pot and picking up the pots to assess how heavy they are (wet pots are heavier than dry pots). Mix that appears completely dry on top may be very wet a few inches (cm) down. The need for water varies considerably through the seasons, as well as week-by-week in the same season, depending upon ambient sunlight and heat. The watering schedule must be adjusted in response to changing conditions. Be sure to run quite a bit of water through the pot in order to leach out minerals and salts that can affect the health of roots. It is a mistake to overpot a cattleya under the premise that it will fill the pot in a few years like a geranium; instead, it will decline and possibly die. I generally pot my plants to allow for one or two years growth at most; the roots will fairly quickly fill the pot and little or no rotting of the medium occurs. Sometimes, when a plant in a 5- or 6-inch (12.5–15-cm) pot is watered correctly, the medium decays very little over a year's

time. In this case, the entire root ball can be removed and slipped into a larger pot without significantly disturbing roots. In my experience, the absolutely best blooms are often produced on plants whose roots have been undisturbed for three or more years. One word of warning about my advice to disturb plants as infrequently as possible: this applies only if the medium has not begun to decay. Once decomposition sets in, the mix quickly becomes toxic to the plant, and this can be even more detrimental than root damage during repotting. So if you are unsure about the condition of the medium, my recommendation is to repot. Carefully observe the condition of the medium in plants as you clean off the old mix, and you will develop a better ability to judge from external appearances whether the medium is decayed or not. I grow most of my mature *Cattleya* species in plain medium bark. For seedlings and small plants in pots 4 inches (10 cm) or smaller, I make up a fine bark mix consisting of five parts fine fir bark, one part perlite and one part fine charcoal. For plants in pots over 4 inches (10 cm), I use a 50-50 mixture of the above fine bark mix and medium bark. These media tend to dry out fairly quickly and thus decay more slowly. I have begun to grow some of the most finicky species that are unusually prone to rot (e.g., *C. dowiana* and *C. dowiana* subsp. *aurea*) or unusually sensitive to having their roots disturbed (e.g., *Cattleya schilleriana* and *C. granulosa*) in expanded clay pellets. These pellets dry out more rapidly than bark, and because they are inorganic, never rot. I like to use clay pots in which I have drilled extra holes in the bottom with a power drill. Drilling extra holes is very important for two reasons: first, it allows the pot to dry out more quickly, eliminating standing water. Second, it becomes easier to run a lot of water through the pot to leach out excess salts and minerals. I like clay pots because they “breathe” and because they are heavy, staying upright when a large plant leans over the edge. I expect plastic pots would probably also be adequate for someone who did not want to take the time to drill extra holes in the bottom of all his or her pots. Be cautious and gentle when repotting to minimize damage. Since roots are more pliable and more resistant to being broken or torn when they are wet, it is a good idea to water a plant thoroughly before repotting it. *Cattleya* roots often cling to clay pots; breaking apart the pot on a concrete floor can help to detach the roots with less damage. While this means you cannot reuse the pot, in my opinion, clay pots should never be reused in any event to prevent spread of viruses and other diseases. A few species, namely, *C. aclandiae*, *C. walkeriana* and *C. nobilior*, definitely grow much better when mounted rather than potted. I mount these on cork and water them every day (less frequently in midwinter) and they grow like weeds, with no extra care required. When potted, they grow poorly and, in the case of *C. aclandiae*, sometimes die. Over time, white mineral deposits can accumulate on leaves of mounted plants that are watered every day or frequently misted, especially in areas with high total dissolved solids (TDS) in the tap water. This white crust of insoluble salts is unsightly and likely interferes with photosynthesis. More importantly, these same salts could be accumulating on the roots, which could damage the sensitive growing tips and affect the plants’ health. Although our Chicago tap water comes from Lake Michigan and is considered to be relatively low in minerals, in years past I would still notice white deposits on my mounted plants. Then I installed a reverse osmosis (RO) water system, and this has completely solved the problem. I continue to water mounted plants with tap water once or twice a week to guard against mineral deficiency due to ultrapure water. As a bonus, I can now use RO water to mist plants, too.

## TEMPERATURE

According to most authors of orchid books, cattleyas are intermediate growers, requiring nights of 55–60 F (12.7–15.6 C) with daytime temperatures rising 10 to 15 degrees (5.6–8.3 C) higher. I find that in my northern climate of Chicago, however, plants do better when I maintain a nighttime temperature of 65 F (18.3 C) in the winter, and daytime temperature of 75 F (23.9 C) using a thermostat and timer. While many plants in my collection enter a resting period for at least part of the winter, they seem healthier when resting at a slightly higher temperature. In summer, the challenge is cooling instead of heating. I use two large swamp coolers all summer. I intentionally oversized the capacity of my swamp coolers relative to the size of my greenhouse so that, even on a sunny humid day midsummer, the greenhouse is a few degrees cooler than outside. A common cultural error of many hobbyist growers in small greenhouses is lack of sufficient cooling capacity, resulting in the high spikes in daytime temperatures that can be detrimental to plants. Growers sometimes try to compensate with excess shading, which can also be unhealthy for plants. So, to grow your plants in optimal light, you must have an extremely good cooling system.

## PROPAGATION FROM BACKBULBS

Cattleyas, like other sympodial orchids can be propagated by removing backbulb divisions when plants are repotted. Sometimes a grower may find it very difficult to induce a backbulb to make a new growth and roots, particularly with some of the more finicky bifoliate species. This is often because roots on the backbulb are destroyed during repotting. The double shock of division and losing all of its roots is simply too much for the backbulb and it expires. The solution is to sever the backbulbs while they are still growing in the pot, so a new growth has emerged from the bulb by the time the mother plant is repotted. In some cases, I sever the backbulbs a few months before I expect to repot; the backbulb has a new growth ready to send out new roots when the time comes. In other cases, I sever the backbulbs a full year or more in advance, yielding a separate, fully established plant in the back of the pot by the time I divide it. I can generally produce good divisions from even truly pitiful-looking backbulb divisions using this technique.

**Table 1:**

Cattleya Species in Three Categories

**Large-Flowered Unifoliate**

C. dowiana and its subspecies and varietal forms C. gaskelliana C. jenmannii C. labiata C. lueddemanniana C. mendelii  
C. mossiae C. percivaliana C. quadricolor C. rex C. schroederae C. trianae C. warneri C. warscewiczii

**Small-Flowered Unifoliate**

C. araguaiensis C. iricolor C. kerrii C. lawrenceana C. luteola C. maxima C. mooreana C. wallisii ( eldorado ) C. walkeriana

**Bifoliate**

C. aelandiae C. amethystoglossa C. bicolor C. elongata C. forbesii C. granulosa C. guttata C. harrisoniana C. intermedia  
C. loddigesii C. nobilior C. porphyroglossa C. schilleriana C. schofieldiana C. tenuis C . tigrina C. velutina C. violacea  
Guarianthe

( Cattleya ) aurantiaca Guarianthe ( Cattleya ) bowringiana Guarianthe ( Cattleya ) deckeri Guarianthe ( Cattleya ) skinneri

**TABLE 2**

Blooming Seasons for Unifoliate Cattleya Species in the “Root Before Bloom” Group

Repot when they begin to send up new growths in spring/summer.

Cattleya iricolor April–May

Cattleya jenmannii December–January

Cattleya labiate October–November

Cattleya lawrenceana March–April

Cattleya luteola April–May

Cattleya maxima July–November

Cattleya mendelii April–June

Cattleya mooreana November

Cattleya mossiae April–May

Cattleya percivaliana December–January

Cattleya quadricolor Late December–January

Cattleya schroederae March–April

Cattleya trianae January–February

**TABLE 3**

Blooming Seasons for Bifoliate Cattleyas in the “Root Before Bloom” Group Repot when they begin to send up new growths in spring/summer.

Cattleya amethystoglossa January–February

Cattleya intermedia March–May

Cattleya loddigesii November–March

Guarianthe aurantiaca February–March

Guarianthe bowringiana October–November

Guarianthe × laelioides ( deckeri ) December–January

Guarianthe skinneri April

#### TABLE 4

Blooming Seasons For Bifoliate Cattleyas in the “Root After Bloom” Group Repot immediately after they bloom in spring/summer/fall.

*Cattleya bicolor* August–September

*Cattleya elongata* September

*Cattleya forbesii* April–May

*Cattleya granulosa* May–early June

*Cattleya guttata* September

*Cattleya harrisoniana* June–July

*Cattleya porphyroglossa* May–early June

*Cattleya schilleriana* April–May

*Cattleya schofieldiana* July–August

*Cattleya tenuis* September

*Cattleya tigrina* ( *l. eopoldii* ) June–July

*Cattleya velutina* August

*Cattleya wallisii* ( *eldorado* ) July–August

#### TABLE 5

Blooming Seasons For Unifoliate Cattleyas in the “Root After Bloom” Group Repot immediately after they bloom in spring/summer/fall.

*Cattleya dowiana* late June–July

*Cattleya dowiana* subsp. *aurea* July–September

*Cattleya gaskelliana* July

*Cattleya lueddemanniana* March

*Cattleya rex* July

*Cattleya warneri* May

*Cattleya warscewiczii* June–July

#### TABLE 6

Blooming Seasons of Some Cattleyas With Oddball Growth Patterns

*Cattleya aclandiae* \* April–May but reblooms over entire summer

*Cattleya nobilior* \*\* March–April

*Cattleya walkeriana* \*\* December–April

*Cattleya violacea* \* May but reblooms over entire summer \*

*Cattleya aclandiae* and *Cattleya violacea* send out successive new growths over the summer. Each growth blooms immediately as it matures and roots can emerge as soon as the lead begins growing, while the growth blooms or immediately after the growth blooms. Best to repot these just as a lead is emerging.

\*\* *Cattleya walkeriana* and *Cattleya nobilior* generally send out leafless growths in winter or early spring from which blooms emerge. Roots may or may not emerge from these leads. The plants then send out regular leaved growths later in March–May after they finish blooming. Best to repot these in March–May as the leaved growths begin to emerge